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The North Billerica Garden Suburb: Affordable Housing for Workers in 1914

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The North Billerica Garden Suburb
Affordable Housing for Workers in 1914

By
Patricia C. Henry

**A Research Project Submitted in Fulfillment of the
Requirements for the Degree of
Master of Community Planning**

University of Rhode Island

2004

BILLERICA GARDEN SUBURB
NORTH BILLERICA TOWN
PRELIMINARY PLAN



**Master of Community Planning
Research Project
Of
Patricia C. Henry**

Approved:

Major Professor: _____

Acknowledged:

Director: _____

Abstract

This thesis project is an historical analysis of the Billerica Garden Suburb planned in 1914 with the benefit of the Massachusetts Homestead Commission's advice. The Billerica Garden Suburb is a unique example of providing affordable housing through working partnerships with many stakeholders including: industry (Boston & Maine Railroad), government (Massachusetts Homestead Commission), city planners (Arthur C. Comey), landscape architects (Warren H. Manning), the community and the workers.

Chapter One, Forces Behind the Development of the Billerica Garden Suburb, examines the political, economic and social forces involved in the development of affordable housing for workers as people became concentrated in urban centers in response to immigration and the industrial revolution prior to World War I.

Chapter Two, Planning the Billerica Garden Suburb, looks closely at the significance of the Billerica Garden Suburb and the planning issues facing rural towns along powerful rivers. Pressure to create healthy housing for workers is also explored as labor strengthens and brings attention to the hazards of their living conditions.

Chapter Three, Billerica Garden Suburb discusses the planning elements and the physical design elements of both the site plan and the cottage design.

Acknowledgements

My journey through this Community Planning program begins and ends focused on the same geographic location - Billerica, Massachusetts, my hometown. In my application essay, I wrote about Billerica's dramatic transformation from a rural town with historic character to an endless stream of subdivisions, gas stations, strip malls, fast food restaurants, office parks and unbounded parking lots. I have since learned about the planning profession's progress in remedying these past mistakes. It was validating to learn that the New England charm that was obliterated from my hometown is now the model for New Urbanism complete with town centers, main streets, commons, mixed use zoning and alternative modes of transportation. It was consoling to learn about efforts being made to preserve history, protect the environment, conserve open space and control sprawl.

Unfortunately, affordable housing for the area continues to be a perplexing and complicated problem. During the course of my studies, I was astounded to discover that in 1914, Billerica had embraced progressive planning ideas including affordable housing. The Billerica Garden Suburb was referred to as a "workers' paradise". Ninety years later this same neighborhood is relatively unaffordable to those in the area with low to moderate income. I enjoyed researching the Billerica Garden Suburb and depth of understanding it has brought to me regarding the "complex social, economic and political forces" involved in this problem.

I would like to thank Drs. Farhad Atash and Howard Foster for their advice and support. It was during Dr. Foster's CPLA 501, Introduction to Community Planning, that I learned about the significance of the Billerica Garden Suburb. His encouragement and meticulous attention to detail are deeply appreciated especially given his "retired" status.

I must confess it was the anonymity of electronic mail that provided me with the courage to ask two renowned urban historians to participate as outside readers for this thesis project. In all honesty, I never thought they'd agree; I just thought, why not start with a reach? When they both agreed, my first reaction was elation. Naturally, my second reaction was trepidation realizing that now I had to produce. However, fear can transform into motivation and fortunately it did. Thank you to Drs. Sam B. Warner Jr. and Howard Chudacoff for graciously reading and commenting. Your suggestions and insight have enriched my experience and this thesis project.

I would like to thank Billerica's town historian, Margaret Ingraham for the pleasant visit, conversations and documents which benefited my research. Thanks also to Billerica's Town Manager, Evelyn Haines, for opening doors and providing invaluable information and support.

This journey, of course could never have happened without the love, support and tolerance of my extended family and friends. My mother, Claire Henry, thank you for the endless behind-the-scenes support you provided to me, Jody, Nick and Nola. Thank you to my sisters, Nancy and Cynthia, for the encouragement and sincere interest. Thank you to my children, Nicholas and Nola, for tolerating an endless stream of caregivers. Thanks to the many caregivers who helped out - especially Hilary (uber-caregiver, artist and friend); Alice from Frankfurt and Erna from Iceland – now permanent members of our extended family. A special thanks to all my friends who humored me throughout this process.

Finally, and most importantly, thank you Jody. This project is dedicated to you.

**The North Billerica Garden Suburb
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CHAPTER 1

FORCES BEHIND THE DEVELOPMENT OF THE BILLERICA GARDEN SUBURB

Prologue

It would be impossible to evaluate the planning contributions of the Billerica Garden Suburb without also appreciating the efforts of the Massachusetts Homestead Commission and those of a few notable advocates - the Rev. Charles Williams, Arthur C. Comey and Warren H. Manning. Yet, although the Billerica Garden Suburb and the Massachusetts Homestead Commission (MHC) are intertwined, their relationship has often been incorrectly documented and almost always discounted as a financial failure. The intent of this monograph is to shed light on both the significance of the Billerica Garden Suburb and the progressive concepts borne from the Massachusetts Homestead Commission.

Presented here, is a summary of the accomplishments of the Massachusetts Homestead Commission and a look at what is known about the Billerica Garden Suburb, how it came to be and what is it like today. By evaluating both the contributions of the Massachusetts Homestead Commission and assessing the Billerica Garden Suburb, the objective is to sort out the history of these under-appreciated efforts and to derive valuable lessons regarding comprehensive planning for and financing of affordable housing.

Reviewing the MHC's annual reports highlights not only their accomplishments but also the obstacles and roadblocks that they faced from the same legislature that instructed the MHC to present

a bill or bills embodying a plan and the method of carrying it out whereby, with the assistance of the commonwealth, homesteads or

small houses and plots of ground may be acquired by mechanics, factory employees, laborers and others in the suburbs of cities and towns. [Massachusetts Housing Commission Annual Report (MHC), 1915,8]

It took six years for the MHC to receive appropriations from the Massachusetts Legislature and then it only received half of what it estimated was needed to conduct an experiment to demonstrate what could be supplied to the workingman as a viable alternative to the tenement. Given the historical setting - the industrial revolution in full swing, World War I wreaking havoc on the economy and labor, and a Legislature reluctant to provide financial assistance for worker housing, conducting this experiment necessitated a herculean effort from the MHC.

This was a dynamic period in the history of this country. Populations were migrating as the United States shifted from an agrarian society to that of a market economy driven by the industrial revolution. Cities suffered from the degradation of overcrowding and exploitative industries. Housing consisted of deplorable tenements, poorly lit with no ventilation and inadequate plumbing. Labor suffered from lack of power and homeownership was out of their reach. Nascent professions were emerging and eager to influence the course of events in a variety of fields including planning, public health, social work, engineering, law and landscape architecture.

This evaluation of the Billerica Garden Suburb provides a unique opportunity to appreciate the complexity and tension between all these elements in the context of desperately needed affordable housing. In the words of Mel Scott:

Even the least successful attempts at planning reveal the play of highly complex social, economic and political forces and invariably

foreshadow movements and struggles of national significance. [Scott, xviii, 1995].

Massachusetts Homestead Commission

The Massachusetts Homestead Commission played an important, and perhaps undervalued role in the development of homesteads for workers at the turn of the century. At a time when it was unconstitutional for the Legislature to provide financial support for housing, the MHC established the rudiments of planning across the state in addition to providing technical and moral support to those seeking to improve housing for workers. It was a time when newly evolving industrial towns, such as Billerica, hoped that prudent planning would help them avoid the deplorable conditions seen in nearby industrial cities.

The following look at the accomplishments of the Massachusetts Homestead Commission is instructive in understanding the complex forces involved in providing wholesome homesteads for industrial workers.

The Issue

In the midst of the industrial revolution, between 1850 and 1910, the country-to-city population shift in Massachusetts was alarming if not overwhelming. Where nearly one-half the population once lived in towns of less than 5,000, by 1910 only one-eighth of the population lived in small towns. During that same time period Boston's population had increased from 13.8 percent of the state's population to 20 percent. [MHC, 1914, 30] Between 1890 and 1910 seven of Massachusetts' largest cities were also the most crowded cities in the country with no less than eight persons per dwelling unit.

With a conservative government reluctant to interfere with the private market to solve the housing shortage, the Massachusetts Homestead Commission was appointed once in 1909 and then again in 1911 largely due to the “agitation begun in 1908 for State aid to workers in obtaining wholesome homes.” [MHC 1917, 1] Although the Massachusetts Homestead Commission of 1909 voted against providing financial assistance for worker housing, “five bills seeking to obtain State aid for homes for workers were filed in the General Court in 1911.” [MHC, 1917, 1] This led to the appointment, in 1911, of a more permanent Homestead Commission with new members and a determination to address the housing shortage despite the numerous challenges and roadblocks it would encounter.

The Commission Members

The members of the Massachusetts Homestead Commission appointed in 1911 covered a broad spectrum of talented and respected professionals committed to working together to solve the dire problems confronting Massachusetts’s cities and towns. The Commission consisted of Charles F. Gettemy, Chairman, Director of the Bureau of Statistics; Augustus L. Thorndike, the Massachusetts Bank Commissioner; Kenyon L. Butterfield, the President of the Massachusetts Agricultural College; Clement F. Coogan, from the State Board of Health, and Henry Sterling represented labor and served as the commission’s secretary. As required by the Legislature, two additional members were appointed from the general public - one had to be a woman. Eva W. White and Warren Dunham Foster, joined the commission in this capacity.

In 1913, the commission added two more members - Arthur C. Comey, a noted city planner and Cornelius A. Parker, a lawyer.

The Commission Mission

The Massachusetts Homestead Commission's stated instructions as promulgated by the state legislature in the Acts of 1911, Chapter 607, was "to assist mechanics, laborers and others to acquire homesteads or small houses and plots of ground in suburbs of cities and towns." [MHC, 1914,1] Cognizant that "nowhere in the world has the problem of providing homes for workingmen been solved by the private initiative of landowners and builders alone," [MHC, 1914, 20] the MHC went to great lengths to identify principles for improved housing and the mechanisms for organizing housing companies. In addition, the MHC provided leadership in the formation of city and town planning boards and the writing of comprehensive plans as planning tools. They organized planning conferences, and distributed educational materials and information.

Although the MHC has received recognition for its accomplishments in municipal planning, its contributions to the provision of worker housing is often only remembered as the twelve homes that it financed in Lowell before its demise in 1919. [Scott, 1995,132/Szylvian,1999, 653] Considering the political and legislative barriers the MHC faced, review of their annual reports demonstrates that they made many contributions towards sound planning for affordable housing and these contributions remain valuable and relevant today.

Accomplishments of the Massachusetts Homestead Commission

The MHC's accomplishments are focused in three areas – the investigations justifying their mission, the legislation promoting their goals, and the educational and technical support provided to the emerging planning boards across the State.

Additionally, the MHC took particular interest in two homestead projects: The Billerica Garden Suburb and the Lowell Homestead Experiment. In the former, the MHC played the role of advisor; the latter was financed through the Legislature, as a demonstration – a prototype - of what could be provided to industrial workers at affordable costs.

After being charged with the immense task of providing homesteads to the workers of the Commonwealth of Massachusetts, MHC's first proposal was a recommendation (House 441 and 442) that the unclaimed savings bank deposits, which had been called into the State treasury by Chapter 590, Section 56, of the Acts of 1908, should be loaned to the commission for the purpose proposed. Unfortunately, the Supreme Court declared the proposition unconstitutional (House 2339, 1912).

Without the necessary financial resources to actually build homesteads, the Legislature instructed MHC not to build homes directly and thereby changed MHC's instructions to

continue its investigation of the need of providing homesteads for the people of the Commonwealth, and its study of plans already in operation or contemplated elsewhere for housing wage earners . . . and recommend such legislation as in its judgment will tend to increase the supply of wholesome homes for the people. [MHC ,1914, 7]

The MHC undertook these revised instructions and investigated the need for homesteads by looking at infant and child mortality, tuberculosis deaths and population shifts in industrial cities; it studied homestead operations elsewhere; and it made several legislative recommendations that resulted in structuring municipal governments that are still in affect today.

The following is a summary of these important investigations, findings and recommendations from the Massachusetts Homestead Commission.

Investigation of the Need For Worker Housing

The MHC looked at infant and child mortality, tuberculosis deaths, and population shifts to gauge the character and environment of the industrial cities. This data provided the means for determining the extent of need for worker housing.

Infant and Child Mortality. The MHC conducted several significant statistical investigations demonstrating the need for improved planning in cities and towns. Using infant morality as an index of the social environment and sanitary and economic conditions, the commission compared rates between cities within Massachusetts between 1908 and 1912.

Table 1 – Infant Mortality per 1000 in Massachusetts 1908-1912

Year	The State Average	Boston	Lowell	New Bedford
1908	134	149	202	144
1909	127	120	185	143
1910	133	126	231	177
1911	119	126	189	148
1912	117	117	184	156

Source: MHC annual report 1915

These statistics demonstrated the urgent need to improve living conditions. Although there were cities with lower mortality rates, in the larger industrial cities

there was little change in the rate during a five-year period. For those who did not believe there was a housing problem, these figures presented startling evidence.

A comparison of Massachusetts to other countries such as England, Hungary, Chile and New Zealand confirmed these same findings. Compared with 19 countries, Massachusetts was in the top half in infant mortality. [MHC, 1914, 53] An even more profound mortality statistic was the number of children under five years of age that accounted for every 100 deaths of all ages. For example, in Lowell in 1912, 36.8 children died out of 100 deaths of all ages.

Children under five years of age constitute about one-tenth of the population... It might be expected that such children would contribute more than their proportional share to the total number of deaths, but we are in no wise prepared to find this one-tenth of the population furnishing one-fourth or one-third, or in some instances one-half, the entire number of deaths in the community. [MHC, 1914, 54]

Tuberculosis Deaths. Tuberculosis rates were also an indication of problems associated with congestion. In cities with populations under 30,000, there were less than 100 tuberculosis deaths per 100,000. However, in cities with populations greater than 100,000, there is a marked increase to 144 deaths per 100,000.

The marked increase in the number of deaths in cities above 100,000 emphasizes the need for better homes with more air and sunlight for the many families crowded in the unhealthy quarters of our large cities. [MHC, 1914, 57]

The MHC 1915 annual report quotes Dr. Robert Koch providing further evidence for the need of healthy housing.

Tuberculosis is less frequent, even among the poor, when the population is not densely packed together, and may attain very great dimensions among a well-to-do population when the domestic

conditions, especially as regards the bedrooms are bad. So it is the overcrowded dwellings of the poor that we have to regard as the real breeding-place of tuberculosis. [MHC, 1915, 56]

Population and Occupational Shifts. The MHC investigated the dramatic population shifts from rural areas to the already congested industrial cities. Between 1890 and 1910, 47 percent of the population in the United States was living in communities greater than 5,000. Towns with populations of 5,000 or less, decreased by 20 percent between 1890 and 1910 and the number of people living in cities with populations of 100,000 or greater rose by 738 percent during the same period. In 1910, there were 193 cities in the United States with populations over 30,000; 22 were in Massachusetts (17 were in New York, and 16 were in Pennsylvania). [MHC, 1914, 30]

Occupational changes also helped to explain the shift towards the city. According to the 1910 United States Census, in Massachusetts 47 percent of the workforce were engaged in manufacturing and mechanical work, 23.5 percent in trade and transportation, 19 percent in domestic service and 5 percent in professions.

The investigation of need for worker housing conducted by the MHC indicated that what Massachusetts was experiencing was no different from the experience of other industrial cities abroad. However, their investigations also demonstrated that elsewhere the government participated extensively and directly to solve the housing problems.

Left to its own devices, the response of private capital to the enormous growth of urban population in all civilized countries has been the erection of cheap tenements and workingmen's barracks with their accompanying evils, squalor and vitiating influences. [MHC, 1914, 49]

Instructed to also study plans elsewhere, the MHC proceeded with its search for the most viable solutions and models that could readily be applied in Massachusetts.

Study of Plans Elsewhere

With many cities experiencing the same dire problems, the English Garden City, as a private enterprise aided by government loans, had become increasingly popular as it promised to solve all problems in all places. It reduced mortality, decreased overcrowding, provided ownership for the workers and there was room for a garden.

A study in 1911 demonstrated the dramatic decrease in infant mortality in garden cities. The three garden cities, Letchworth, Bournville and Port Sunlight were compared with the average of 26 English cities in terms of infant mortality. The English cities' average of 145.0 deaths per 1000 when compared to Letchworth (38.4), Bournville (80.2) and Port Sunlight (65.4), provided the impetus for further investigation. [MHC, 1915, 43]

The MHC appointed a special committee to conduct in-depth investigations of the English garden city and other housing models where private enterprise is aided by government loans. To provide guidance, the commission identified three basic fundamental recommendations for improved housing finance. First and foremost, speculative profits must be eliminated and money must be available at a fixed rate – a limited dividend. Second, there must be wholesale operations where collective actions will permit savings and community planning will provide for social

advantages such as playgrounds, club rooms, shared gardens. Third, there must be resident participation to foster a sense of responsibility for property.

The MHC's special committee provided four alternative financial mechanisms for providing home ownership that met the fundamental recommendations.

1. The Mutual Homebuilding Association "presented few novel features as an application from current co-operative banking methods in Massachusetts for individual operations to a collective scheme." [MHC, 1914, 21] The association would acquire the land, determine the layout, and the conditions for membership, building and maintenance. The purchaser would need a mortgage for the land and a second mortgage for the home.

2. The Limited Dividend Corporation or Improved Housing Company is a stock company but the dividends are limited to a fixed rate (5 percent). There were several companies active in Massachusetts with houses and tenements. In this scenario, the corporation would either sell on installments, offering the same advantages as a homestead company, or would rent the houses as does a co-partnership. However, if a resident were not also a stockholder, they would have no say in the affairs of the company. [MHC 1914, 21-23]

3. In a Co-partnership, the property remains in collective ownership permanently and the district is planned along advanced garden suburb principles. Residents would buy a minimum amount of shares and pay rent.

4. The Homestead Company proposes to sell homes on installments. Buyers were required to initially pay ten percent, and then monthly payments of one percent were required to be applied against the interest, taxes and principal. After 40 percent

is paid, a 60 percent first mortgage could be renewed. If a buyer moved, the company would buy back his property at 95 percent. [MHC, 1914, 21]

The Garden Suburb Model and The Homestead Experiment

The Massachusetts Homestead Commission was eager to present a demonstration so they could show the legislature viable homestead scenarios for workers. The MHC was particularly interested in bringing to the United States, a true garden suburb with a co-operative method of collective ownership. Originating in England, the garden suburb was embraced in Germany and was quickly being adopted throughout the world.

Unfortunately, in 1914 it was unconstitutional in Massachusetts for the MHC to financially support worker housing. The MHC applied for appropriations in 1916 (though they were not granted until 1917), after a constitutional amendment was ratified in November 1915. However, in 1914, it did serve as an advisor to the Billerica Garden Suburb, which is documented to have built 70 homes based on advanced garden suburb principles. In 1917, when the MHC did receive funding, it chose a seven acre site in Lowell on which 12 houses were built.

The Billerica Garden Suburb and the Lowell Homestead Experiment are often blurred together. Although the Billerica Garden Suburb will be assessed in more depth separately, a brief explanation is included here in an effort to recognize and differentiate these two distinct accomplishments of the Massachusetts Homestead Commission.

The Model - The Billerica Garden Suburb

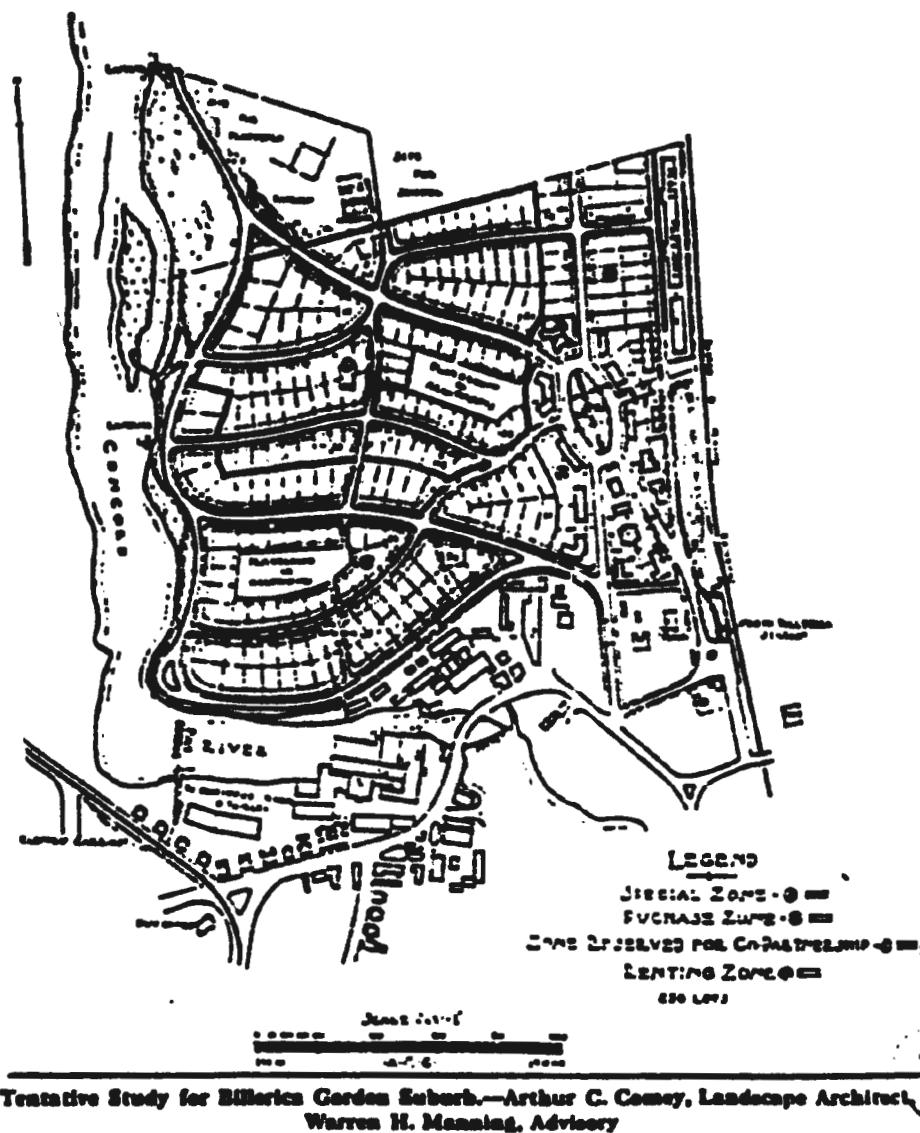


Figure 1

Though Billerica was still a rural community, it was becoming more of an industrial village due to its location on the Concord River and adjacent to the Boston and Maine railroad. When the Boston & Maine repair shops opened in North Billerica in February 1914 there were 1,200 employees without an adequate supply of

affordable housing nearby. The Billerica Board of Trade, particularly its president, Rev. Charles Williams, expressed interest in MHC's recommendations. Working with Arthur C. Comey, both the Billerica Board of Trade and the Boston & Maine were presented with the co-partnership financing scheme and the garden suburb principles which both endorsed. The Billerica Board of Trade embraced MHC's recommendations and technical support and received considerable guidance in drafting its prospectus, its site plan and even the floor plans for the cottages. Emulating English worker villages such as Letchworth developed in 1903, the Billerica Garden Suburb was incorporated on June 30, 1914 marking the first effort in the United States to use the garden city model for worker housing.

This marked the first conclusive stage in bringing into existence in this country improved co-operative methods of housing for workingmen that have proved successful in England, for nowhere else in the United States, so far as is known, have the houses per acre, wholesale operations, limited dividend and participation by the residents – been combined in an undertaking designed to meet the needs of the workman earning \$12 to \$20 per week. [MHC 1915, 28-29]

The Billerica Garden Suburb came to represent and illustrate the limited dividend, co-partnership model the MHC endorsed based on the English garden suburb mode. Although it is important to note that the Billerica Garden Suburb never received financial support from the MHC, the MHC continued to encourage its progress and monitored such until the MHC's abolishment in 1919. In its final annual report, the MHC reported that the Billerica Garden Suburb had constructed seventy workingmen's homes (see Figure 2 below of BGS homes under construction).



COTTAGES IN BILLERICA GARDEN SUBURB, NORTH
BILLERICA, MASS.

Figure 2

Source: Massachusetts Homestead Commission 1916

The Lowell Homestead Experiment

When the constitutional amendment permitting land taking for the purpose of relieving congestion and providing homes for citizens was ratified on November 12, 1915, the obstacle preventing the MHC from requesting appropriations from the legislature for the purpose of a small housing demonstration project was finally removed. In 1916, the MHC began implementation of its original instructions from 1911 for providing worker housing by submitting a new bill to promote wholesome homes,

providing for a moderate, conservative, carefully conducted experiment, or demonstration, in order that experience might show what may properly be done, to aid workers seeking to acquire homes. [MHC, 1916, 8]

Although Billerica demonstrated favorable conditions for a garden suburb, it was not selected as the site for the MHC's demonstration project. In contrast to rural Billerica, Lowell had deplorable tenement conditions and a consistently elevated infant mortality rate of 202 per 1000 birth in 1908; 231 in 1910 and 184 in 1912. In 1912, there were 36.8 deaths of children under five years of age to every 100 deaths of all ages, whereas the average for 33 cities in Massachusetts was 26.3. [MHC, 1915, 48]

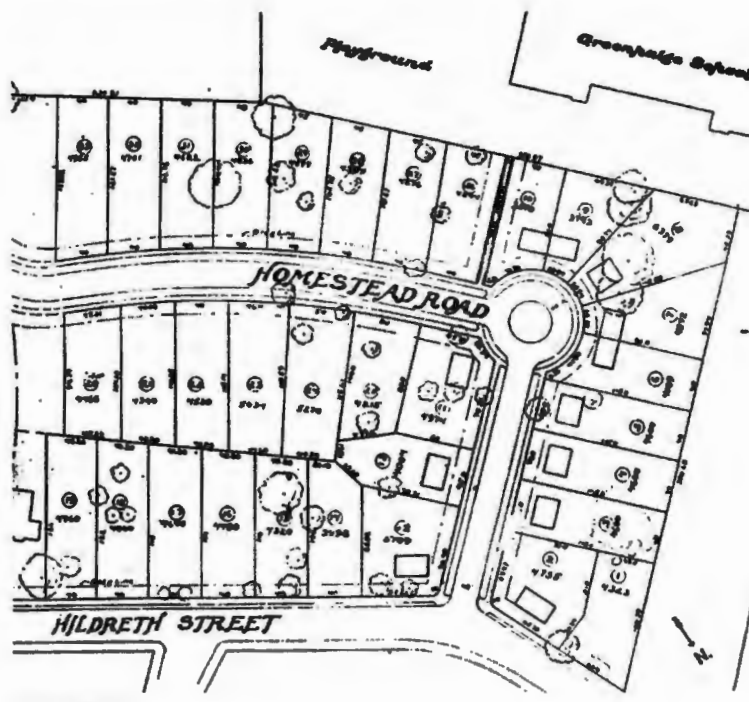
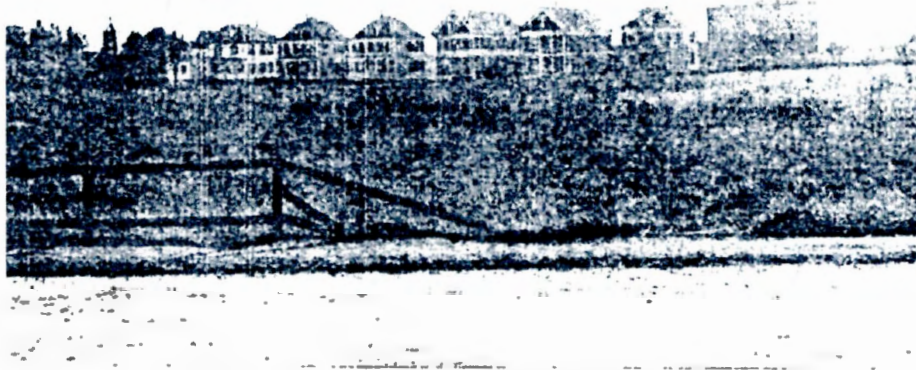


Figure 3: Layout for Lowell Homestead Experiment
Source: Massachusetts Homestead Commission 1916

The objective of the Lowell Homestead Experiment was not to increase the supply for worker housing directly. The objectives were:

- (1) to determine what could be supplied within the workman's income;
- (2) to reduce the burden by giving a longer time for payment than is the practice of the bank or individual; (3) to effect the economies of group building. [MHC, 1917, 8]

It was hoped that this experiment would demonstrate that small garden homes were a viable alternative to tenements when given appropriate financial mechanisms designed for the workers. With increased ventilation and gardens, the health benefit would be reflected in improved work attendance and productivity.



View of lot on Parker Street, Lowell, for which development plans were made.

Figure 4

Source: Massachusetts Homestead Commission 1917

The Legislature delayed a year, but did appropriate \$50,000 in 1917. Though the appropriation was half of that requested and given that this was at a time of escalating costs due to World War I, the MHC did manage to build 12 houses before the War ended. The 1919 annual report states that the houses, when completed, were attractive. The houses were in demand and all taken. As far as the building cost,

there were non-union houses that were being sold cheaper but this was also due to labor being very cheap at the end of the war. Unfortunately, no further appropriations were made to the MHC and the development was not complete.

Legislative Recommendations

The MHC actively pursued every legal avenue towards increasing worker housing. Although its investigations unquestionably justified the need for decent homes for workers, these same investigations pointed out that,

if there is to be created a sufficient supply of wholesome homes within the means of the ordinary wage earner, cities and towns must be built according to well-considered plans which eliminate the unhealthful homes now productive of excessive infant mortality. [MHC, 1914, 8]

Accordingly, the MHC recommended the enactments by the General Court of 1913, Chapters 494 and 595. Both Acts were an effort to establish planning boards and to enlarge the supportive role of the Commission.

Chapter 494, an act to provide for the establishment of local planning boards by cities and towns (for every city and every town with a population greater than 10,000), was approved by the General Court on April 16, 1913. It required local planning boards to produce comprehensive plans to,

promote health, convenience and beauty in the city, thereby conserving human life and energy... cities and towns of over 10,000 population are required to create local planning boards to study resources, possibilities and needs of their respective municipalities, and to make plans for their development, with special reference to proper housing. [MHC, 1914, 16]

The MHC believed that haphazard growth, economic losses, overcrowding and degradation could be avoided and that the comprehensive plan was a viable tool in accomplishing that goal. Chapter 283, an amendment to Chapter 494, was passed

in 1914 authorizing the establishment of planning boards in towns with populations less than 10,000.

Chapter 595, an act to enlarge and define the duties of the Homestead Commission (enlarged by 2 new members), was approved by the General Court on May 2, 1913. This Act expanded the MHC's role to oversee, provide guidance, and assure compliance to Chapter 494. The MHC notified and encouraged cities and towns to comply with the law to form planning boards and produce comprehensive plans. In its final annual report written in 1919, the MHC reported:

In compliance with chapter 494 of the Act of 1913, 29 cities and 16 towns with a population of more than 10,000, and 5 towns with a population of less than 10,000 have established local planning boards.
[MHC, 1919, 94]

Education/Bureau of Information

The MHC also considered education as an important part of their role. They provided technical assistance and guidance in writing comprehensive plans and generally acted as a bureau of information on all matters pertaining to planning. The MHC conducted annual conferences to educate the newly appointed planning boards and provide opportunity for exchange between more established planning boards. The first Massachusetts City and Town Planning Conference was held at the State House on November 18 and 19, 1913, with nine meetings held over two days. A second conference was held on December 16, 1914. There may have been other conferences, though much of the MHC activities were disrupted due to the War. A final conference is referenced in the final annual report, stating that it would be scheduled once the MHC is absorbed into the Department of Public Welfare.

Why was the Massachusetts Homestead Commission Abolished?

In reviewing the annual reports, there is no full explanation as to why the MHC was abolished. It is simply suggested that it is reorganized under the Department of Public Welfare. However, changes in the MHC's membership are worthy of note. When the United States entered World War I, several of the member's services were required in Washington, which disrupted the Commission's work. Kenyon L. Butterfield, the President of the Massachusetts Agricultural College was called to conduct educational work for the War Department. Warren Dunham Foster, worked for the Community Motion Picture Bureau abroad under the auspices of the Y.M.C.A. Eva W. White went to work for the Community Camp Service in Washington. Arthur C. Comey went to service for the United States Housing Corporation in Washington (which may also account for influences between World War I worker housing and garden suburbs; the Billerica Garden Suburb being an immediate predecessor). Henry Sterling, resigned and went to work in Washington. Charles F. Gettemy had resigned in 1918 to work for the Federal Reserve Bank. Mr. Gettemy was replaced by George A. Bacon (also from the Bureau of Statistics), but not as chairman of the MHC.

In the 1919 final annual report, August L. Thorndike, the Massachusetts Bank Commissioner, is listed as chairman. This is a significant change because of Mr. Thorndike's noteworthy addendums in two of the annual reports stating his opposition to the report's content. On the cover page to the 1914 annual report Mr. Thorndike states the following:

The MHC also published their annual reports as well as informative bulletins geared towards educating newly formed planning boards always promoting homesteads for workingmen. Their bulletins were quickly exhausted because of the demand for the information. In fact, the MHC's first annual report, Public Document No. 103, 1913, required reprinting because of the high demand and in 1919 requests were still being received though it was no longer in print. Of particular interest was information regarding the work of foreign governments in providing housing for it's workers. The overall consensus of this report was the idea that:

private initiative and enterprise will furnish a sufficient supply of wholesome homes for the people has been abandoned in all leading progressive countries. Everywhere governments are doing something to stimulate or supplement the production of working people's homes. For some years this activity took the form of encouraging the construction of model tenements; but in later years the loans, credits, land favors, and special favors by taxation or exemption from taxation, which were intended to encourage the building of homes, have been allowed almost exclusively to enterprises which seek to promote the construction of 'small houses and plots of ground in the suburbs of cities and towns. [MHC, 1915, 8]

Finally, the MHC promoted education in agriculture, both through the Massachusetts Board of Education as well as its own educational bulletins. The MHC saw the lack of agricultural knowledge as an obstacle hindering a city dweller that was otherwise unemployed, from participating in this sort of venture. They reasoned, that if provided the education in agriculture, and provided a temporary plot of ground, both the worker and the Commonwealth would gain from this "elevated standard of citizenship and intelligence." [MHC, 1915, 34] It would offset the population shift into the cities; the worker would live and work in a healthier environment; and, food would be produced from local soils.

I am unable to concur with the conclusions and recommendations in regard to further regulation and extension of planning boards and the establishment of residence districts as embodied in House bills 121 and 122. I also dissent from any inference that might be drawn from the report, advising the passage of a constitutional amendment empowering the Commonwealth to use its credit to provide homes for a particular class of individuals. It certainly seems to me to be a new function in government to provide homes for able-bodied people. However beneficent the plan, it appears to be too paternalistic, and carrying out this scheme would tend to interfere with the right of personal freedom and initiative, and would appear in many ways opposed to the natural law of supply and demand and of trade. [MHC, 1914, cover addendum]

Mr. Thorndike also takes exception to the recommendations for legislation contained within MHC's fifth annual report published in 1917, namely legislation giving powers to local planning boards, giving permission for planning conferences, and providing agricultural education. Mr. Thorndike, again includes a lengthy objection that ends with:

It seems to me that the initiative for new legislation should come properly from the Legislature, or from people outside the Commission. I, for myself, would favor that the Commission recommend no new legislation of the character suggested, particularly as the Legislature has omitted to direct us to do so. [MHC, 1915,41]

This opposition in 1915 portends the future for the MHC as its demise is quick once it is disrupted by war and Mr. Thorndike's chairmanship. Mr. Thorndike's apparent unfriendliness towards improving the circumstances for workers was evident in other areas as well. As the Massachusetts Bank Commissioner, Mr. Thorndike had some authority over credit unions and had been reported, "to hold up charters because of alleged incompetence of officers." [Moody/Fite, 1997, 47] In 1915, Mr. Thorndike criticizes the lending practices of credit unions and not infrequently has them

liquidated. In 1916, Mr. Thorndike supported a bill in the Massachusetts legislature eliminating a tax exemption provision from the original credit union act. The bill was not passed. Also in 1916, Mr. Thorndike supported another bill, which would require all saving and loan institutions to be audited by the bank commission, with the expenses being borne by the audited institutions. This too would have had disastrous effects on small credit unions. This bill did not pass either.

The Massachusetts Credit Union and the MHC had a common objective: to improve the circumstances for the worker. In both instances, new terrain was being covered that could have been perceived as unconventional and threatening to the traditional banking community. Mr. Thorndike's record indicates a resistance to facilitate change that benefits the worker, driven by his allegiance to the banking community and the private sector.

Conclusion

This review demonstrates the accomplishments of the MHC and its contributions to the creation of healthy homesteads for workers against the tremendous reluctance of the legislature and banking interests. It conducted important investigations, made valuable recommendations providing the formation of town and city planning boards and the creation of comprehensive plans as planning tools. To its credit, the MHC never gave up its original goal of providing funding for worker housing and in this capacity was influential in the development of the Billerica Garden Suburb and the Lowell Homestead Experiment.

It would be a mistake to suggest that the MHC was abolished because it was a failure. In fact, it could be argued that because of its success and knowledgeable members, the United States government drew from this talent upon its entrance into World War I. Ironically, although World War I became the ultimate housing experiment for reformers, the postwar climate was inhospitable to a noncommercial housing market for workers. On the national level, after the armistice, Congress almost immediately ceased production of worker housing and in many cases auctioned-off the housing developments thereby missing the opportunity to provide a “noncommercial housing sector for workers trapped between the ‘devil of the speculative builder’ and the ‘deep sea of the predatory landlord’.” [Szyllivan, 1999, 648] Despite this missed opportunity to lessen the continuous demand for worker housing, review of MHC’s accomplishments is instructive as the demand for affordable housing continues unabated nearly a century later.

CHAPTER 2

PLANNING THE BILLERICA GARDEN SUBURB

The Billerica Garden Suburb presents a significant contribution to planning not just because it models the Massachusetts Homestead Commission's recommendations for worker housing but, because it represents a concerted effort by the Board of Trade to guide future action which is the essence of sound planning. [Forester, 1948, 3] Still a rural town, Billerica did not suffer from overcrowding or degradation; it was not trying to remedy these problems; it was trying to use planning as a tool to prevent these mistakes from occurring in the face of a two-fold increase in its population.

Perhaps the Board of Trade was heeding the advice of John Nolen who saw in rural towns both vulnerability and opportunity. In his address titled, *Comprehensive Planning for Small Towns and Villages*, delivered at an American Civic Association's annual meeting, Nolen argues that it is far easier to avoid the problems facing industrialized cities than to correct them.

My plea is for the smaller places, the towns and villages with a population ranging from 2,500 to 25,000, or even up to 50,000.... In big cities the conditions are fixed, inelastic, unyielding. Comprehensive planning, especially with our limited city charters and the hampering laws of our States, can have as yet but little play in larger places. At most it must content itself with relieving only the worst conditions, ameliorating merely the most acute forms of congestion, correcting only the gravest mistakes of the past. [Nolen, 1911c, 1,] (see appendix for complete essay)

With 1,700 towns with populations between 2,500 and 25,000 in 1910, Nolen's plea demonstrated his foresight and concern for rural towns and his trust in the comprehensive plan as a tool to guide and control development. Nolen considered

small towns as embryonic cities, vulnerable to unplanned development “For there is scarcely anything in them (small towns) that cannot be changed, and most of the territory that is to be built upon is still untouched.” [Nolen, 1911c, 2] With the belief that it would be easier to plan in advance rather than to correct and re-plan after the fact, he recommended three guidelines:

1. the exercise of more forethought;
2. the use of skill; and
3. the adoption of an appropriate goal or ideal.

The Billerica Board of Trade was certainly following these three guidelines in their effort to implement their garden suburb. They exercised a concerted effort to avoid speculators and tenement housing through the use of the MHC’s expertise and although their primary goal was to attract industry and boost the town’s economy, they made every effort not to exploit labor or degrade the area’s resources and natural beauty.

Looking at the Billerica Garden Suburb through this historic lens further reveals the complex forces involved in planning. The following is an examination of relevant newspaper and journal articles, conference papers and discussions, not to mention the contributions of its champions, particularly the efforts of Reverend Charles Williams, Arthur C. Comey and Warren H. Manning.

Billerica Garden Suburb – Workers’ Paradise

On May 16, 1914, the *Boston Evening Transcript* headlined, “Billerica as a Workers’ Paradise.” (see appendix) The subheading announced, “New Homestead Commission Trying There the First American Experiment With the

English Garden City Idea.” Hallmarked the Billerica Garden Suburb, this housing scheme for skilled and unskilled labor was the recommendation of the Massachusetts Homestead Commission. The enthusiasm of Reverend Charles H. Williams, a local clergyman, president of the Billerica Board of Trade and former State Legislator was the driving force behind the development. Working together with Warren H. Manning, a fellow member of the Billerica Board of Trade and prominent landscape architect and Arthur C. Comey, one of the country’s first city planners and a member of the Massachusetts Homestead Commission, these three men were profoundly interested in the success of the Billerica Garden Suburb for professional if not altruistic reasons.

Williams, Manning and Comey

As president of Billerica’s Board of Trade, Charles H. Williams was instrumental in the 1912 announcement that the Boston & Maine Railroad planned to locate their new \$3,000,000 repair shops in North Billerica (today known as Iron Horse Park – see Figure 5 below). Having acquired the options for the land on which the shops were to be completed in 1914, Rev. Williams had to then anticipate 1,200 employees and their family members, which would at least double Billerica’s population. In 1910, Billerica’s population was 2,775, 1200 employees were expected to bring families as well; the Board of Trade was anticipating the population to at least double. North Billerica had a favorable location - along the Concord River and the Boston & Maine Railroad line. The railroad would provide a free train for their workers. The location was also near the electric lines of the

Bay State Street Railway, schools, post office, public library, churches and shops. The Board of Trade hoped to boost Billerica's economy and anticipated an increase in its population to 10,000 as a result of the Boston & Maine repair shop as well as other manufacturing industries located in North Billerica. This was to provide a stable employment base.



THE LOCOMOTIVE SHOP, STOREHOUSE, AND OFFICE. Pictured are the operations of the Boston and Maine Car Shops, where engines were built and repaired in North Billerica. This photograph dates from c. 1914. The shops were located in what is now called Iron Horse Park, off High Street. (Courtesy of Tom Paskiewicz.)

Figure 5



THE NORTH BILLERICA STATION. First chartered in 1829, the Boston and Lowell Railroad opened a line from Boston to Lowell in 1835. In 1867, the Talbot family sold the land to the railroad, and a station was built. This is possibly the earliest image of the depot, complete with its baggage storehouse, photographed c. 1875. The station remains an active commuter railroad station to this day, having been fully restored in 1998. (Courtesy of the Billerica Historical Society.)

Figure 6

Optimism about Billerica's economic future was counterbalanced by realistic concerns for worker housing. After all, the most deplorable and overcrowded tenements in Massachusetts were just six miles away in Lowell. Lowell had the dubious distinction of having the highest infant and child mortality rates from 1908 to 1912 (Chapter 1, Table 1). Not unfamiliar with tenements, North Billerica had tenement housing of its own with the two mills, the Talbot and Faulkner located near the site of the garden suburb. Billerica's Board of Trade was acutely aware that appalling tenement conditions were not exclusive to industrial cities. In industrial villages, which Billerica was becoming, the same unsanitary housing conditions often existed. Though less densely populated, there were examples of poor living conditions and dire health consequences that were no different from nearby overcrowded cities. Complicating matters, industries were migrating to be near more powerful rivers, such as the Merrimack and its tributaries, which included the Concord River. Where industry goes, speculators follow.

The Billerica Board of Trade was aware that speculators created inflated land prices, and inflated prices would exacerbate an already potentially problematic housing situation. The Board of Trade needed a plan that would provide healthy affordable housing. In this endeavor, Mr. Williams was allied with Warren H. Manning.

Warren H. Manning's interests and experience made him an invaluable compatriot to Rev. Williams and a dedicated public servant to the Town of Billerica. Previously, Mr. Manning had worked for eight years with Frederick Law Olmstead Sr. on a variety of landscape architecture projects including industrial housing. In 1896, Mr. Manning left Olmstead's practice eager to make his own name in landscape architecture. Though he grew up in nearby Reading, Manning's ancestral home, the Manning Manse dating back to 1696 (see Figure 7 – Manning Manse), was located in North Billerica.



Source: Billerica Historic Society/David D'Apice

Figure 7

Setting-up his own practice nearby, Manning restored the Manning Manse and became a tremendous influence on the planning of Billerica. Besides his work on the Board of Trade, Manning was the Billerica Tree Warden and formed the Billerica Improvement Association. Dedicated to preserving the natural characteristics of Billerica, Manning was also cognizant that some of the features that distinguished Billerica were particularly well suited for development of manufacturing business. These were particularly evident in North Billerica, which was situated on the Concord River with the Boston & Maine Railroad nearby and access to power and transportation within one mile.

In 1913, Manning published “The Billerica Town Plan” in *Landscape Architecture* clearly understanding both the trend towards decentralizing industry as well as labor and the implications this could have on Billerica. Further, Manning wisely used the Town Plan to educate citizens and to build consensus, as he strongly believed well-considered plans were necessary to provide economic development as well as healthful affordable homes for workers.

Increased business, population, road, and other public facilities that such new conditions must create, made the preparation of a plan as a guide to the town’s future growth quite essential. Such a plan, to best meet the needs and have the general approval of the community, must be understood by at least a majority of the voters and land owners; and, as this understanding will best come from a direct participation in the work, all citizens were urged to give information and assistance in the preparation of articles and maps. [*Landscape Architecture*, April 1914, 108] (see appendix for Manning’s Town Plan for Billerica)

Manning’s plan for Billerica was a precursor for his later works in environmental planning and resource-based design in which he used overlay maps to analyze the best economic use of the identified resources. Despite Manning’s desire to create the ideal town in Billerica [*Lowell Courier Citizen*, July 7, 1914], it should be remembered that as a professional landscape architect, Mr. Manning depended on

the commissions from his practice and his client list including several ‘captains of industry’ who may not have been supportive of a noncommercial housing sector. This may explain why Mr. Manning, though an advisor to the Billerica Garden Suburb, was far less vocal on issues directly related to worker housing than Mr. Williams.

In 1914, when Rev. Williams enlisted help from the Massachusetts Homestead Commission, though still bound by the Constitution not to directly finance housing with public funds, they saw in Billerica an opportunity to demonstrate a variety of innovative worker housing mechanisms that had been employed in England and Germany. The conditions could not have been more favorable. With the Boston & Maine shops opened, there was not only a demand for housing but affordable land was still available. MHC’s city planner, Arthur C. Comey explained the garden suburb concept to the Board of Trade as well as to the officials from the Boston & Maine Railroad. Both the Board of Trade and Boston & Maine officials supported the concept and both were represented on the Board of Directors. In July 1914, The Billerica Garden Suburb, Inc.’s prospectus was drafted based on the recommendations of the Massachusetts Homestead Commission with the site plan and cottage designs drafted by Mr. Comey with Mr. Manning as advisor (see appendix).

Prior to his appointed to the Massachusetts Homestead Commission, Mr. Comey trained under Frederick Law Olmstead, Jr. and honed his skills as a city planner after receiving his degree from Harvard in 1907. Convinced the garden suburb model should be tested in the United States, Comey was eager to implement this concept in Billerica.

In that same May 16, 1914 *Boston Evening Transcript* article, centered on the fold, was the tentative site plan as drafted by Mr. Comey. Clearly, Williams, Manning and Comey understood that co-partnership was a novel concept in the United States.

Aware that they were embarking on untested territory, good press coverage espousing the virtues of the garden suburb as a way to provide affordable housing for workers would serve them well in educating the stakeholders, the general public and assuaging political opposition. In addition to the *Boston Evening Transcript*, the worker-housing story was also carried by the *Lowell Citizen-Courier* on July 7, 1914. These articles reflect only a fraction of the personal effort extended to spread the word about the Billerica Garden Suburb and 'housing the wage worker' campaign.

Educating the Public and Influencing Politicians

The National Housing Association's annual conferences offered the opportunity for reformers from a range of disciplines to discuss and exchange information about the pressing housing problems. It provided a forum in which both conservatives, like Lawrence Veiller and Robert DeForest, the association's founder and president respectively and, communitarians, such as Edith Elmer Wood could discuss their views thereby educating the public sector and private enterprise.

Both groups made valuable contributions to the improvement of worker housing. For example, Veiller as head of the Tenement House Commission in New York City and credited with establishing housing codes that were adopted across the nation. Wood, on the other hand, did not believe regulation went far enough. She believed that industry, by being dependent on low-wage labor, contributed to the deplorable poverty and therefore should recognize its moral duty to provide safe and sanitary housing. Wood is also credited with establishing the baseline standard for crowding used by the U.S. Census of no more than one person per room as a reasonable standard and that affordable rents should be no more than 20 percent of the family income.

The first National Housing Association conference was held in New York City in 1911 and naturally, addressed large city problems. Subsequent conferences were hosted by cities of lesser size and focused on the corresponding problems of medium size cities. Succeeding conferences addressed police power, subdivision and the problems of rural towns. The proceedings of each conference, published under the title, *Housing Problems in America* provide a rich historic dialogue of thematic papers as presented and the subsequent directed discussions. The attendees and participants were delegates from city governments, health departments, improvement societies, volunteer citizens' associations, real estate and building organizations.

The Fifth Annual National Housing Association conference, held in Providence, Rhode Island in October 1916, was of particular interest for a number of reasons as explained by conference participant Edith Elmer Wood in her discussion regarding Focusing Community Interest.

When the object is simply to get a piece of legislation through, I think most of us who have had anything to do with that end realize that no amount of general publicity alone will do. You have got to get the personal influence and interest of the political leaders and sometimes of the chairman of the committee to which your measure has been referred... But as a piece of legislation is only a means to an end... it is no good unless you have a strong public opinion behind it to see that it is enforced. [*Housing Problems in America*(HPA), 1916, 421]

For these exact sentiments, both Rev. Williams and Mr. Comey attended this conference, as did other members of the MHC such as Henry Sterling (labor) and Cornelius Parker (lawyer). Fervent about the need for worker housing and eager to draw attention to the Billerica Garden Suburb as a worthy model, both Rev. Williams and Henry Sterling presented papers while Arthur Comey formally participated in the discussions.

Rev. Williams' paper titled, "How To Get Garden Suburbs in America" extols the virtues of decent worker housing then addresses three elements that would allow America to benefit from Garden Suburbs. As with the Massachusetts Homestead Commission findings, Williams's upholds that the necessary elements for a garden suburb were limited dividend, government loans and co-partnership. Rev. Williams announced that at that time, 35 families were living in the Billerica Garden Suburb. The tone of his paper was clearly that of pride in the progress made thus far and an urging for others to take this radical step to solve their housing problems. [HPA, 1916, 102-110]

Direct in his style, Mr. Sterling answers the question his paper poses, "How To Get Garden Suburbs in America" with a blunt response, "cut out the graft as much as possible." Mr. Sterling explained how Germany had encouraged her cities and towns to buy and hold land for housing. The German government then loaned social insurance money to municipalities, building associations, employers and individuals who intended to produce homes. In addition to Germany, England, Ireland, and New Zealand were given as examples of countries that provided loans for housing.

Finally, during the discussions segment of the proceedings, Mr. Comey expanded on Rev. Williams' paper and pointed out that the MHC was supportive of the Billerica Garden Suburb but could not help financially because the legislature had not yet appropriated money. He praised Rev. Williams' efforts as he had brought down the housing costs by supervising the work himself and using day labor. Despite these efforts, the Billerica Garden Suburb would be serving the worker making a

weekly wage of \$15. The worker making \$10 or \$12 per week still had no prospects of owning a home. [HPA, 1916, 295-299]

Though he did not present a formal paper at the conference, Arthur Comey did participate in promoting the Billerica Garden Suburb. In 1914, he had written an article for *Landscape Architecture* titled “Billerica Garden Suburb” and in *The American City*, he wrote an article titled “Plans for an America Garden Suburb.” Both articles describe the Massachusetts Homestead Commission’s findings covering other methods for establishing improved housing for the worker particularly the limited dividend and the co-partnership mechanisms. Also, both articles described the Billerica Garden Suburb as the first attempt to apply the English methods of housing workmen using the garden suburb with a limited dividend corporation and co-partnership as a means of providing resident ownership that would otherwise be unattainable.

The intention of this review was to provide insight into the level of effort necessary to test non-commercial new housing concepts in the United States. This public relations campaign demonstrates only a fraction of the effort exerted by those involved directly and indirectly with the Billerica Garden Suburb. Directly involved in the supervision and construction of the Billerica Garden Suburb, Rev. Williams worked fervently to promote the garden suburb co-partnership concept, generate consensus that hard working people deserved homes, and foster change in the attitudes towards government participation in housing. Even with the help of the MHC and many other reformers, this attempt to solve the housing problem struggled financially. Despite knowledge that industrialization of cities had devastating effects, especially on workers, change required tremendous effort. Planning, though a new profession,

had insight into the housing problems but few tools to prevent the same mistakes from being repeated. This quandary was well stated by Frederick Law Olmsted, Sr.,

Remedy for a bad plan once built upon being thus impracticable, now that we understand the matter we are surely bound, wherever it is by any means in our power, to prevent mistakes in the construction of towns. Strange to say, however, here in the New World, where great towns by the hundred are springing into existence, no care at all is taken to avoid bad plans. The most brutal pagans to whom we have sent our missionaries have never shown greater indifference to the sufferings of others than is exhibited in the plans of some of our most promising cities, for which men now living in them are responsible. [Nolen, 1911c, 12]

CHAPTER 3

BILLERICA GARDEN SUBURB THE PLANNING ELEMENTS

In 1912, when the Boston & Maine Railroad elected to locate their \$3,000,000 repair shops in North Billerica, they were not solvent enough to also provide worker cottages (*Boston Evening Transcript*, May 16, 1914). The Billerica Board of Trade, desirous of the economic development that would accompany the Boston & Maine repair shops, was determined to avoid the exploits of speculators and the accompanying squalor of tenement housing. Viewing this challenge as an object lesson that would demonstrate the virtues of comprehensive planning combined with progressive housing initiatives, the Billerica Board of Trade embraced the innovative housing concepts proposed by the Massachusetts Homestead Commission. Hence, the Billerica Garden Suburb, the first attempt in the United States to combine limited dividend corporation with co-partnership to provide affordable housing for workers, was incorporated on June 30, 1914. [MHC, 1915, 29] The Billerica Garden Suburb's officers reflected the concerted efforts of labor, private enterprise and both local and state government. They included Boston & Maine's General Superintendent of Shops, Thomas Jennings (president), as well as Superintendents of the Car Department and Electrical Department, and William Sheppard, Esq., (clerk). From the Billerica Board of Trade, Rev. Charles H. Williams was treasurer and general manager and Warren Manning was an advisor, as was Arthur Comey from the Massachusetts Homestead Commission.

The Billerica Garden Suburb marked -

the first conclusive stage in bringing into existence in this country improved co-operative methods of housing for workingmen that have proved successful in England, for nowhere in the United States, so far as is known, have the five essential elements – site planning, limited number of houses per acre, wholesale operations, limited dividend, and participation by residents – been combined in an undertaking designed to meet the needs of the workman earning \$12 to \$20 per week. [MHC, 1915, 29/prospectus, 1914]

Providing a variety of housing options suitable for a range of workers, conventional rental and homeownership opportunities were also integrated in the site plan, as were gardens, playgrounds and linkages to other nearby amenities. . However, it was the elimination of speculative profits combined with the five elements of advance garden suburbs: resident participation, limited dividend, site planning, limited number of houses per acre (density), and wholesale operations, that distinguished the Billerica Garden Suburb as the first garden suburb specifically developed for workers.

Resident Participation

Of the five elements cited in the quote above that were employed in the design of the Billerica Garden Suburb, it was the ‘resident participation’ or copartnership that qualified this endeavor as a progressive attempt at worker housing. The design principals of Ebenezer Howard’s garden suburbs had already been employed in model towns as in 1911 with the Russell Sage Foundation’s Forest Hills Garden in Queens, New York, but there it was based on individual ownership, which was out of the reach of a worker earning a weekly wage between \$12 to \$20. Other efforts to house workers, such as company towns like Pullman, Illinois, only demonstrated the inherent problems of paternalistic housing schemes and the uneven distribution of power in such scenarios.

The intent of the Billerica Garden Suburb's co-partnership scheme was to allow the worker to become his own landlord through the purchase of shares in the corporation thereby truly emulating the intent of Howard's garden suburb. At that time, homeownership for workers was thought of as a burden and that such debt would be ruinous financially and confining economically. In a market economy, labor needed to be mobile in order to meet the demands of industry while at the same time pursuing the best wage for his labor. Mobility was considered the workingman's greatest asset. However, because Billerica had other industries located near the proposed garden suburb there were other opportunities for employment thereby reducing the risks of homeownership. In fact, many of the foremen of the Boston & Maine repair shops were older with several years experience and intended to settle in Billerica for the rest of their lives if the right opportunity presented itself. (*Boston Evening Transcript*, May 16, 1914).

The Limited Dividend Corporation

The Billerica Garden Suburb prospectus prepared with the help of the Massachusetts Homestead Commission had subscriptions for \$16,540 as of July 27, 1914. The charter indicated that the value of the capital stock was \$50,000 divided into 5000 shares of \$10 with 5 percent cumulative dividends. The benefit of a limited dividend corporation is that it eliminates speculative profits with the surplus going into the payment for improvements and maintenance.

During the first decade of the 20th century, there were many limited dividend corporations though it is hard to distinguish which ones were organized primarily for profit versus those organized primarily to improve housing conditions. [MHC, 1915, 30]

The Massachusetts Homestead Commission monitored limited dividend corporations that met its recommendations of being primarily organized to improve housing conditions. Their 1915 annual report indicates the popularity of this trend in housing across the country:

Fifteen million was invested in this type of property and nearly 6,500 families are housed, nearly 1,200 of these being in one-family homes. [MHC, 1915, 30]

The Site Plan and Density.

The Billerica Garden Suburb purchased 56 acres of inexpensive land along the Concord River just 200 feet from the North Billerica train station, from which a free workmen's train to their repair shops would be provided. Although modeled after the English garden suburbs which had at least nine dwellings per acre, the Billerica Garden Suburb was modified to allow for five or six single family dwelling units per acre. Semi-detached houses (two-families) were not considered.

The principle objection to it is that it is a step away from the ideal single-family home... Where sufficient land is available the social advantages of houses entirely separate probably outweigh the economies effected by semi-detached construction. [MHC, 1916, 11]

However, concern about overcrowding was somewhat countered with the need to minimize costs. Lots ranged from 5,000 to 10,000 square feet and varied in width from 50 to 100 feet and are from 80 to 110 feet in depth with a 10 foot setback.

Because the site had excellent drainage and traffic was expected to be light, the major roadway, Letchworth Ave was 32 feet in width and half this width was surfaced with cinder as was its 4-foot walkway. The secondary roadways, 24 feet in width, were

also cinder-surfaced with no sidewalks as the traffic was expected to be minimal and the roadway would be fit for walking.

Located near a kindergarten, a public school, a public library, social halls, churches, a post office and the Bay State Street Railway, the site was ideally located. In addition, it already had six buildings providing 16 tenements with two to four apartments in each which provide rental income of approximately sixteen hundred dollars annually (see appendix for Billerica Garden Suburb Financial Statement, 1915).

The plan, designed by Arthur Comey with the supervision of Warren H. Manning, designated four zones (See Figure 8 – Billerica Garden Suburb site plan w/zones):

- Special Zone A was intended for workshops and stores; business and social center.
- Purchase Zone B was for houses sold on installments each owner acquiring 10 percent of the value of his property in stock. These houses were intended for the older workmen and foremen who demonstrated interest in settling in Billerica and staying in service there as long as they worked.
- Co-partnership Zone C was intended for rental housing that workmen would take shares in and collectively act as their own landlords. Property remains in collective ownership, with residents renting from the company of which he is a member. To become a tenant in a co-partnership settlement, each applicant must be approved by an admission committee, and must take \$100 in tenant shares, paying at least \$10 as the first installment. The tenant becomes a renter from the Billerica Garden Suburb which he holds stock and has a vote in the election of the Board of Directors. [*Boston Evening Transcript*, 1914]
- Renting Zone D was intended as a conventional rental housing.



PLAN OF BILLERICA GARDEN SUBURB
 Purchase zone. B. Zone reserved for copartnership.
 Renting zone. D. Special zone)

Figure 8

Source: *Engineering News*, April 29, 1915

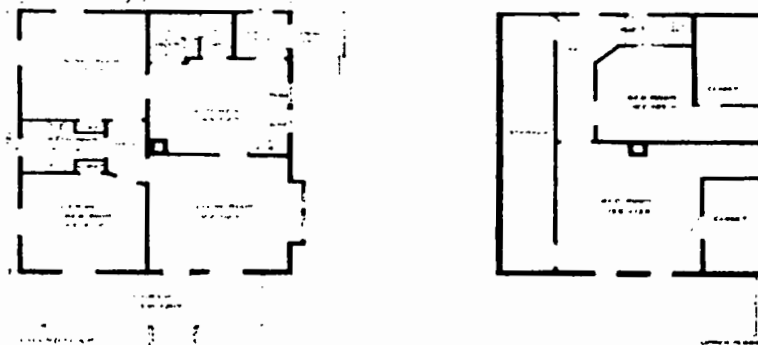
Wholesale Operations

Rev. Williams supervised the construction of the Billerica Garden Suburb houses and employed day-labor to conserve costs. Using Arthur Comey's cottage designs, economies of scale were realized by building many standard houses at one time. Of modest size, a typical two-story bungalow, as depicted [Figure 9 – Billerica Garden

Suburb Cottage] was approximately 1400 square feet. The cottages ranged slightly in size, but the cottage below at 28 by 25 feet is representative, with two levels plus a cellar and a 20 by 7 foot piazza. Each cottage contained six or seven rooms and bath to accommodate parents and children of each sex.



Six-room semi-bungalow, Billerica Garden Suburb, 1916 Construction cost \$1,600.



Floor plans of above.

Figure 9

Source: Massachusetts Homestead Commission 1916

The rooms are of ample size and conveniently arranged. Special provision is made for storage room and closet space, with place for refrigerator and for hanging outdoor clothing in back entry. The cellarway has a number of shelves to save steps in doing the necessary work. The cellar walls are of concrete, with four window openings giving ample light in all parts. The building is of frame construction, triple studding at the corners and double studding at all openings; sides are covered with matched boards, a layer of good building paper and cypress clapboards; roof closely boarded and covered with asphalt shingles and slate chip

surface laid 4.5 inches to the weather. The inside is finished in North Carolina pine with hard pine flooring of good grade, cypress five-panel doors, front door of the craftsman type of quartered oak; outside painted with three coats of lead and oil and inside finished with two coats of shellac and one of spar varnish; kitchen and bathroom have three coats of good wall paint. Three fixtures of modern type are in the bathroom, and the kitchen has set tubs, sink and necessary cabinetwork. The house is lighted throughout with electricity, triple "showers" in living room and dining room and two fixtures in the kitchen. It has a furnace of adequate capacity to furnish necessary heat without forcing. It is of attractive design, homelike in appearance and of comparatively low cost, as it was built for little over \$1,800. [MHC, 1916, 15]

At the time of incorporation, sixteen families were already housed on the site and water was already piped in. By October 1, 1914, thirty acres had been graded and the first three houses were under construction. In December, nineteen families were living on the estate. In 1915, four miles of streets had been staked-out and cleared. A mile of streets has been surfaced, electric light poles and wires had been installed and a general store had been built. In 1916 there were 35 families located in the Billerica Garden Suburb. [MHC, 1916, 109] According to the last annual report of the Massachusetts Homestead Commission, 70 houses had been built by 1917. [MHC, 1919, 10] Unfortunately, the documented history of this small neighborhood diminished with the demise of the Massachusetts Homestead Commission.

The Billerica Garden Suburb Today

Today the North Billerica Garden Suburb is still recognizable for its garden suburb design elements. [Campbell, *Boston Globe*, May 21, 1995] (See Figures 10-14). Beyond street names reminiscent of England's first garden cities such as Letchworth, Port Sunlight and Hampstead, very little has been altered. With lot sizes that are relatively small by today's standards and cottage-style houses with shallow setback, the

neighborhood remains compact and socially interactive. The semi-grid, curvilinear street pattern reflects Frederick Law Olmstead Sr.'s influence on the Comey/Manning site plan providing alternative routes around the neighborhood highlighting the vistas of the Concord River. Not designed specifically for the automobile, these streets are narrower than today's standards with widths tapered further by cars parked along their edges. However, these streets are conducive to keeping neighborhood traffic slow allowing children to walk and bike ride in relative safety. Unfortunately, the automobile has also impacted the small lots as many now possess a garage and a paved driveway.

Overall, the compact design has afforded the neighborhood the capacity for only minimal change. Besides the automobile's influence, the only other changes are the occasional enclosed front porch or added room to the back of the house increasing the average square footage of these dwellings only marginally. These alterations have not diminished the sense of community often absent in more contemporary neighborhoods.



Figure 10 – Billerica Garden Suburb March 2004

Source: P. Henry



Figure 11 – Billerica Garden Suburb March 2004

Source: P.Henry



Figure 12 – Billerica Garden Suburb March 2004

Source: P.Henry



Figure 13 – Billerica Garden Suburb March 2004

Source: P.Henry



Figure 14 – Billerica Garden Suburb March 2004

Source: P.Henry

Unaffordable Housing

Unfortunately, despite minor physical changes in the past ninety years, the most pronounced difference in this neighborhood today is price. Because of the increasing demand for housing, this once affordable neighborhood is now escalating in price. Three houses on the market in March 2004 are indicative of this “affordability squeeze.”

Table 2 - March 2004 Real Estate Under Agreement – Billerica Garden Suburb

Address	Lot Size/Living Space	Rooms	Price
46 Letchworth Ave.	7000 sf/1600 sf	5 rooms/3br/1bath built in pool	\$279,900
5 Mason Ave.	8700 sf/1700sf	5 rooms/2br/1bath garage	\$284,900
2 Indian Knoll Road	7800 sf/1200 sf	6 rooms/3br/1bath 2 car garage	\$309,900

Source: Century 21, Billerica office

To put these prices in perspective, consider that in 1998 the median house value in Billerica was \$144,000; in 2002 it was \$211,437 - a 46 percent increase in five years. When compared to income change, the problem becomes more profound. In 1990, Billerica's the median income was \$50,210; in 2000, the median income was \$67,799 - a 35 percent increase over 10 years. Harvard's Joint Center for Housing states that "...in an economy where house price gains have outstripped income gains, homeownership options dwindle for those in the bottom fifth of the income distribution." [State of the Nation's Housing, Joint Center for Housing Studies of Harvard University, 2003]

Billerica Garden Suburb and Affordable Housing

Housing has been a problem in the United States since the nineteenth century as urban populations increased dramatically with shifting populations due to immigration

and industrialization. Relying on waterpower, manufacturing was distributed along powerful rivers and their tributaries. Consequently, this pattern was also reflected in worker housing. Therefore, squalor was not confined to congested urban areas; it was also prevalent in smaller cities and villages along important rivers and transportation routes. It was only a matter of time before rural towns would be experiencing the housing problems. Billerica, Massachusetts was a case in point with inexpensive land and transportation, its location along the Concord River, a Merrimack River tributary, was ideal for industry.

The combined work of Manning, Williams and Comey provided a unique model community. Unlike other efforts to relocate workers to planned communities in non-urban areas, the Billerica Garden Suburb was neither a paternalistic private initiative nor a government funded action. The Billerica Garden Suburb was the first known attempt to combine limited dividend corporation with co-partnership in the United States.

Modeled after Ebenezer Howard's garden city, the Billerica Garden Suburb was an effort to combine the best of urban and rural living – the Town-Country magnet. It would be wholesome, social and near employment. Labor, content with both employment and good homes, would become dedicated citizens of the community. From a planning perspective, it was an object lesson demonstrating that the ills afflicting the city can be countered through comprehensive planning incorporating advance garden suburb principals and financial mechanisms.

This review of the Massachusetts Homestead Commission's annual reports; the National Housing Association's annual proceedings as well as relevant articles from Landscape Architecture, American City and Engineering News, supports the Billerica

Garden Suburb's significance and deepens our understand of the struggle to supply affordable housing in suburban settings. In addition to the goals congruent with advance garden suburb principles, the intent of the Billerica Garden Suburb was to provide a model for solving the worker housing problem. The Billerica Garden Suburb was described as "a strictly business organization to earn business profits, it will readily be appreciated that in its operations it will not only very materially improve living conditions in Billerica, but will act as an object lesson, and thereby benefit the Commonwealth of Massachusetts as a whole." [Prospectus, 1914]

Although it is unlikely that Zone C, the co-partnership portion of the site plan, ever came to fruition, the Billerica Garden Suburb was the first successful application of the garden suburb principles implemented to meet the housing requirements and financial constraints of workers. The Billerica Garden Suburb was neither government funded, nor company funded. Championed by town leaders, it was morally supported by labor, industry and progressive initiatives. Despite the inherent tensions between government, private enterprise and labor, the Billerica Garden Suburb demonstrated that wholesome affordable housing could become a reality.

Are there lessons that could be applied to the current housing debate in Rhode Island? First, one of the major problems identified by the Massachusetts Homestead Commission was the problem of speculative profits. When the Rhode Island legislature opened affordable housing to for-profit developers, it was taking a step back in history and condoning speculative profits. Second, it is ironic that the impetus for the passage of Chapter 494 of the Acts of 1913, the creation of town planning boards and the development of comprehensive plans, was to have well considered plans so that a

sufficient supply of wholesome homes within the means of the ordinary wage earner could be created. Third, New Urbanism and Grow Smart both advocate higher density, as did the garden suburb, yet zoning still exists that excludes rather than encourages affordable housing.

Rather than a financial failure, the Massachusetts Homestead Commission and the Billerica Garden Suburb should be recognized as extraordinarily successful given the constraints and opposition they faced. The Massachusetts Homestead Commission initiated the groundwork for municipal planning, comprehensive plans and the exchange of valuable information through annual planning conferences, not to mention the affordable housing demonstrations both in Billerica and Lowell.

As the recent photographs of the Billerica Garden Suburb indicate, this was a successful affordable housing endeavor. The last Massachusetts Homestead Commission report indicated that there were 70 homes constructed. It is a known quantity; it worked.

Rather than repeat bad plans, as Frederick Law Olmstead Sr. warned, why not repeat good, successful plans. Further, why not support the more progressive aspects that have proven successful not only in England and Germany but locally in Billerica, Massachusetts. Perhaps now is the right time to require each town to have affordable housing plans, as comprehensive plans were originally intended, as well as designated land banks and proven financial mechanisms providing wholesome homes and dignity to the low-wage families upon which this state depends.

⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗

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BILLERICA GARDEN SUBURB, INC.

(Incorporated under the Laws of Massachusetts)

Capital Stock	\$50,000
Subscribed to July 27, 1914	16,540

Divided into 5,000 shares of \$10.00 each, which are now offered for subscription at par, payable as follows:

\$1.00 on application
3.00 on allotment
3.00 60 days after allotment
3.00 120 days after allotment
<hr/> Total, \$10.00

or payment in full may be made at the date of any instalment. Dividends on instalments will be credited at the rate of 4 per cent. per annum.

NOTE.—Shareholders are entitled to a cumulative dividend of 5 per cent. per annum, and any surplus profits after the payment of such dividend will be used for the benefit and further development of the Company's property.

Officers

President, THOMAS JENNINGS, Superintendent Boston & Maine Shops, Billerica

Vice-President, Mrs. HERBERT B. HOSMER, Billerica

Treasurer and General Manager, CHAS. H. WILLIAMS, President Board of Trade, North Billerica

Directors

THOMAS JENNINGS

Mrs. HERBERT B. HOSMER

CHAS. H. WILLIAMS

CLARENCE W. TRUCKER

FREDERICK FOSTER KENDALL

Advisers

ARTHUR C. COMEY, City Planner

WARREN H. MANNING, Landscape Designer

PROSPECTUS.

This Company has been formed for the purpose of engaging in the business of buying and developing land and providing desirable, attractive, and sanitary houses at a moderate cost or rental for persons desiring to purchase or lease the same.

It proposes to assist in permanently solving the increasingly difficult housing problem on the areas under its control:

1. By elimination of speculative profits, all earnings over 5 per cent. being used for the benefit and development of the property.

2. By distributing the payments for the home over a period of years, thereby bringing it within the reach of all who desire to improve their home conditions.

3. By participation by the residents, each resident acquiring 10 per cent. of the value of his property in stock.

4. By wholesale operations and efficient management, thereby effecting economies in construction.

5. By constructing houses of durable materials, thereby saving the serious depreciation of cheap frame dwellings.

6. By limiting the number of houses per acre, thereby avoiding the disastrous overcrowding of homes.

7. By scientific planning along advanced garden suburb lines, determining the character and arrangement of roads and houses, thereby securing the maximum practical and aesthetic values.

8. By providing for community buildings and playgrounds, thereby promoting the social atmosphere of the neighborhood, and by engaging in other beneficial undertakings as may from time to time prove feasible.

9. By laying out allotment gardens, where the wage-earner may successfully carry on intensive gardening, which under competent instruction will go towards paying the cost of the home.

10. By promoting the formation of a Co-partnership Society along the lines recommended by the Massachusetts Homestead Commission, which will take over successive portions of the estate and develop them by the co-partnership method. This is sharply distinguished by collective ownership of the property, each resident renting from the society of which he is a member. This will constitute a radical advance over current methods of tenure.

At Billerica, twenty-one miles from Boston, the establishment of the \$3,000,000 Boston & Maine repair shops, early in 1914, with 1,200 operatives at present and ultimately 2,000 to 3,000, has created a great demand for workingmen's houses in a formerly rural community. Furthermore, other manufacturers will locate there in order to utilize the new supply of labor. This means a steady influx of 10,000 people and more.

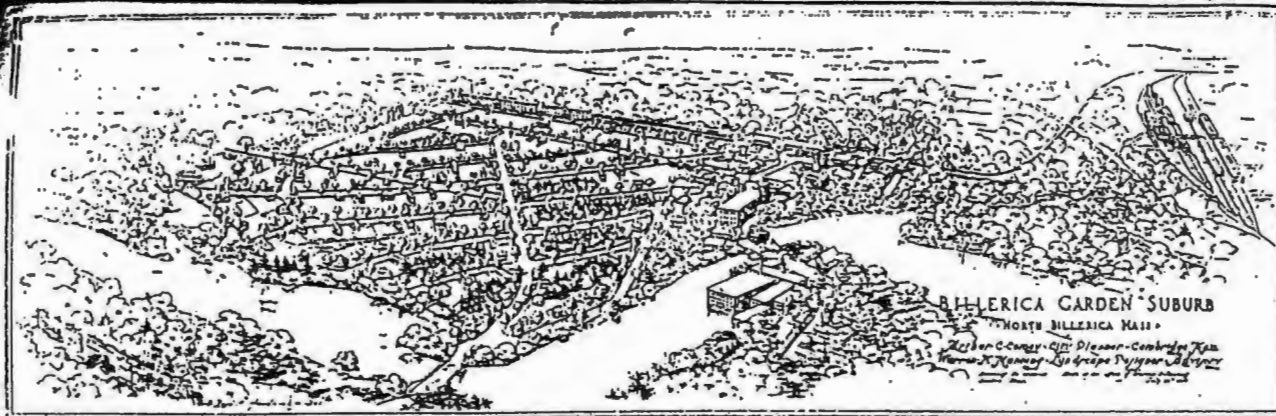
Land is as yet cheap, though much of it has been exploited and is held at values no longer attractive to the operatives. The establishment of a model community near the factory has the unqualified approval and backing of the officials of the shops, who desire, as much as the workmen, to secure good living conditions.

The Company has secured a tract of 56 acres, favorably located, adjoining the North Billerica Station and the present village centre, where schools and other public buildings make immediate development possible. This lies less than a mile from the shops, and, furthermore, a free workingmen's train carries the men directly from the North Billerica Station into the works. The cost of this property is far below that demanded by real estate operators farther from the works and with much less attractive surroundings.

Accompanying this prospectus is a sketch plan and a perspective view of the tract, showing the proposed type of development along advanced garden suburb lines, providing five to six families per acre. Plans for a typical dwelling are also shown.

Special note should be made of the river front, which is to be a part of a proposed series of attractively wooded public reservations along the Concord River, for the benefit of all the people. A large grove of pines in the southwest section is an additional æsthetic attraction. The underlying gravel and sand furnish abundant material for concrete construction, and greatly simplify the grading of roads and sanitary problems. Water is already piped upon the estate, supplying sixteen families now housed in the southeast corner. The dwellings yield an income sufficient to pay all carrying charges not chargeable to development.

We have here a combination of advantages,—demand for many homes, cheap land, and low construction cost. The moral support of the Boston & Maine officials is added assurance of its success from the start. In fact, many operatives have already signified their intentions of living on this tract when developed.



BILLERICA GARDEN SUBURB, INC.

Directors

THOMAS JENNINGS
 CHAS. H. WILLIAMS
 Mrs. HERBERT B. HOSMER
 WILLIAM T. SHEPPARD
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Officers

THOMAS JENNINGS, President
 Mrs. HERBERT B. HOSMER, Vice-President
 CHAS. H. WILLIAMS, Treasurer and
 General Manager
 WILLIAM T. SHEPPARD, Clerk

NORTH BILLERICA, MASS.

FINANCIAL STATEMENT. January 1, 1915.

ASSETS.

56 acres of land with improvements, including streets, water mains, electric light poles, etc.	\$16,000.00
6 tenement houses containing 16 tenements	17,900.00
New houses completed and in process of construction,	7,000.00
Tools and material,	500.00
Cash,	1,000.00
	<u>\$42,400.00</u>

The income from the tenements is now about
 \$1600.00 per year.

LIABILITIES.

Mortgage notes	\$21,000.00
Stock certificates issued for cash	11,000.00
" " " in part payment for land	8,000.00
Outstanding bills	600.00
	<u>\$36,600.00</u>
Surplus value of property,	3,800.00
	<u>\$42,400.00</u>

Billerica, Mass.,
 January 8, 1915.

I, the Directors of the Billerica Garden Suburb, Inc:

I have examined the expense account of your Treasurer, together with his vouchers, and have found the same correct.

Respectfully,

Albert H. Richardson,
 Auditor.

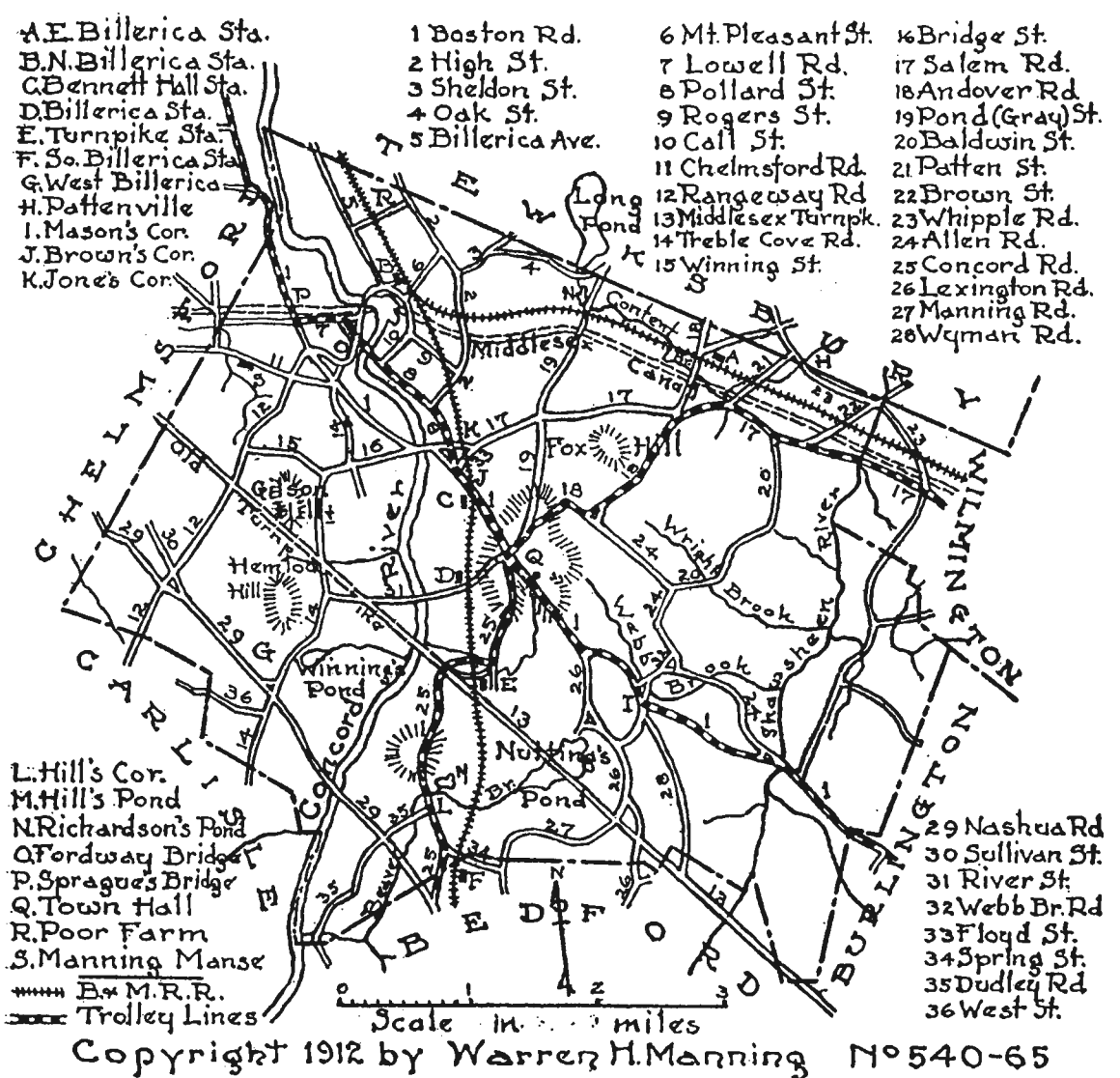
THE BILLERICA TOWN PLAN

BILLERICA, twenty-two miles from Boston and four miles from Lowell, is a farming and manufacturing town. It contains in round numbers three thousand people on sixteen thousand acres, with sixty miles of highways.

Two rivers, ten brook-valleys and seven hills give the town great beauty of topography. This, with a varied soil, two-thirds in wild vegetation, gives notably attractive landscapes and much interest in plant, bird, and animal life. In fifty years, Billerica's wild land has increased a third, as it has in most of New England's old towns; but now the tide is turning toward the farm again. At North Billerica, woollen mills have been established for years. The Boston & Maine Railroad shops being erected there will soon increase population by several thousand.

About the Center, a most attractive part of the town, are some well-appointed summer estates that are sure to increase. In the south and in the north of the town, as in parts of many similar towns adjacent to our cities, large areas have been subdivided into small lots upon which camps and small cottages are being erected, for either summer or all-the-year occupancy, by families of moderate means from the city.

Increased business, population, road, and other public facilities that such new conditions must create, made the preparation of a plan as a guide to the town's future growth quite essential. Such a plan, to best meet the needs and have the general approval of the community, must be understood by at least a majority of the voters and land owners; and, as this understanding will best come from a direct participation in the work, all citizens were urged to give information and assistance in the preparation of articles and maps. It was found here, as it will be everywhere, that, while few citizens



I. Map of Billerica, with Local Names, Indicating the Manner of Presenting the Plan to the Public through the Magazine "Billerica"

will volunteer information, nearly everyone is ready to give the best he has if he is interviewed and not required to write.

In this town, as in most towns, the hills, valleys, and the larger soil divisions that are the same for all time, control the main features



II. Map Indicating Topography

of the plan. Some existing roads will surely stay, because they are direct thoroughfares on lines of least resistance to outlying trade centers, or in Billerica to the seashore and mountain resorts eastward and northward. Other thoroughfares and local roads will be

abandoned, as were the Middlesex Canal, parts of the Middlesex Turnpike, and many minor roads.

Some of these abandoned roads had 20 per cent grades,—that is, 1-foot climb in every 5 feet long. Engineers now strive for 1-foot climb in 20 feet long, viz., 5 per cent. A town should not accept now over 6 per cent on any part of a road; for it is the steepest grade that determines the possible load, not the average grade.

The new Billerica subdivision plats show forty-four miles of narrow new roads. If these roads were properly constructed on suitable grades, their maintenance would increase the yearly road tax from about \$5,865 to \$8,811. This cost might be returned to the town in taxes on increased valuation, if houses should be established on half the lots that are reported as sold by the real-estate agents. It is seldom, however, that all reported sales are completed, or that houses occupy enough lots on a new subdivision to justify the town in building roads for years.

There is authority enough established by law to lay down, acquire, and hold the land for a future road and reservation system.

The town has accepted the 1907 Board of Survey Act, requiring owners to submit plans of roads before beginning constructions to the Board of Survey, who are to advertise a public hearing and exhibit plans, and who can require modifications as to width, direction, and grade of street before acceptance. Unless thus accepted, new roads can have no public utilities placed therein or public work done thereon. When accepted, no damages can be collected by persons for buildings or improvements made on such roadway after acceptance.

A recently elected Park Commission have the authority to lay down a system of reservations for public recreation, acquire and hold land therefor, and improve roads.

The County Commissioners have the power to lay out or alter

the location of or discontinue highways, and will act upon a petition of a town or any five inhabitants thereof in such matters.

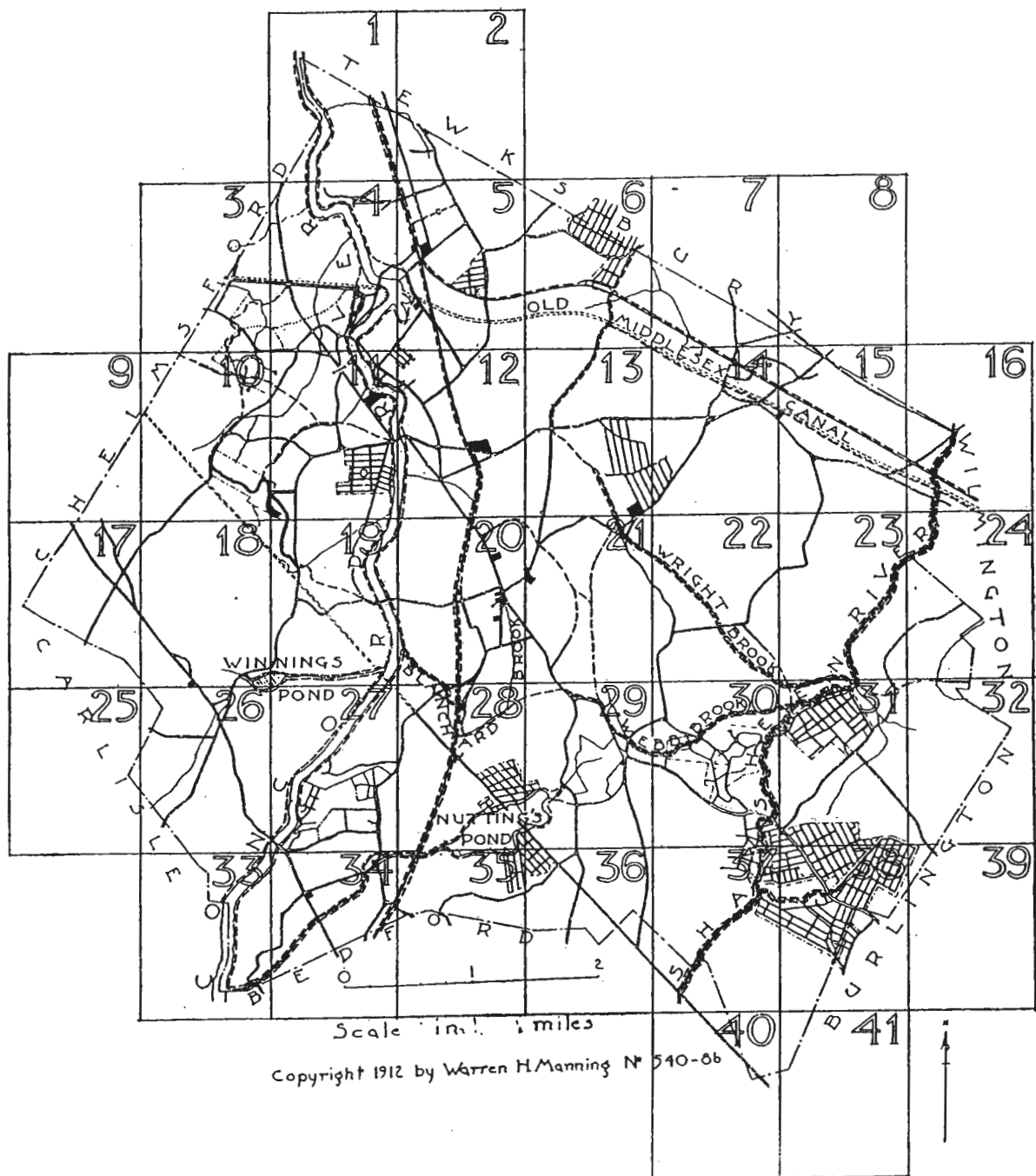
The State Highway Commission locates, constructs, maintains and controls state highways. It directs the expenditure for a town's road construction of any amount that the town may appropriate over the average road cost of five preceding years. Such excess appropriations are doubled by the state, which may also maintain such roads and charge a cost of not exceeding \$50 a mile to the town.

An examination of the soil map, in conjunction with the topography, will show that only the wet, black-soil sections have boundaries that are easily recognized, and such areas are indicated on the soil map. Other sections having a distinct soil character can be indicated only in a general way on a map of this scale, for a detailed study shows a considerable, and often a wide, variation in the soil of almost any one-hundred-acre plot in the town. The light, porous soils that are nearly free of stones, and lie so level that large fields can be worked at low cost, are in the northerly and easterly parts of the town. For this reason the town plan should recognize big fields by placing roads along such natural boundaries as the shores of streams, the base of steep slopes, instead of through the center of big fields, to cut them in small patches.

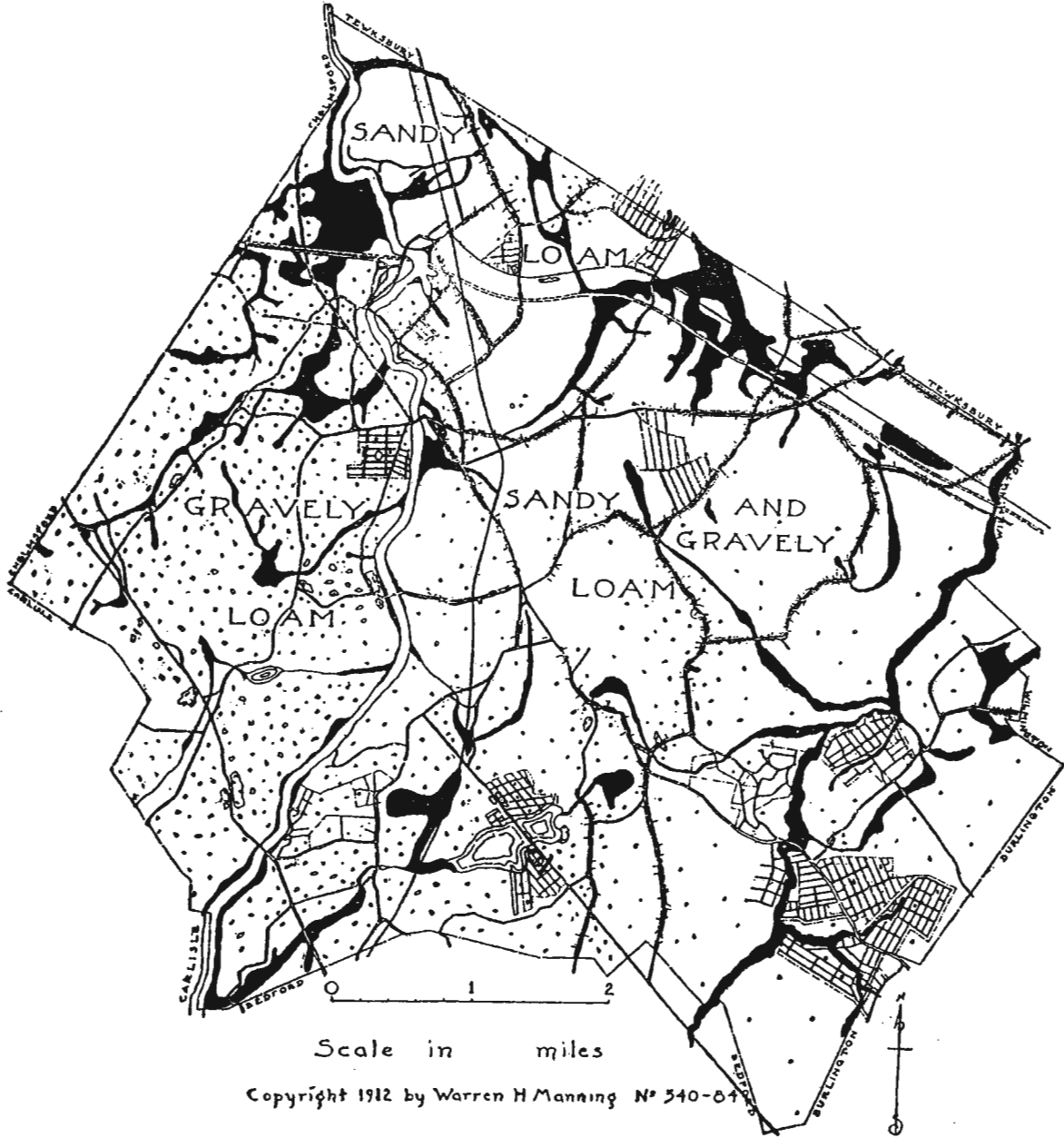
In the southern part is a heavier soil that is more retentive of moisture, with more boulders, a rolling and varied surface. This is a market-garden section of diversified crops.

West of the Concord River, hills are higher, more crowded together, with steeper slopes, and with more ledges and boulders than in other parts of the town. Much of this land is best suited to fruit-growing. In these irregular sections, the roads of the town plan should generally follow the valley and avoid hill-climbs.

The most attractive residential section is on the edge of the



III. Map Showing Recent Subdivisions Indicated by the Crowded Road in Various Parts of the Town, and also Showing the Suggested Reservation and Road Extension System and the Existing Public Reservations. The Squares Show Sub-division of the Town, for the Purpose of Bringing Together Detailed Information on a Scale of Two Hundred Feet to the Inch.



IV. General Soil Map

plateau, about the town center, and on the hills to the south and west.

Of Billerica's 16,000 acres, 9,804 are covered with forest or sprout-growth, as against the 5,035 acres of such growth indicated on the town map of 1853. A decrease of nearly one-half in the acreage of cultivated and pasture land is thus indicated in less than sixty years. This increase of woodland represents a decrease, not an increase, of forest values.

It is clear that forests are not so profitable as farm crops. Furthermore, the State Forestry Department does not recommend the growing of forests as a crop on Billerica land, because nearly all of it is suited for field crops or fruit, and is near the Boston market.

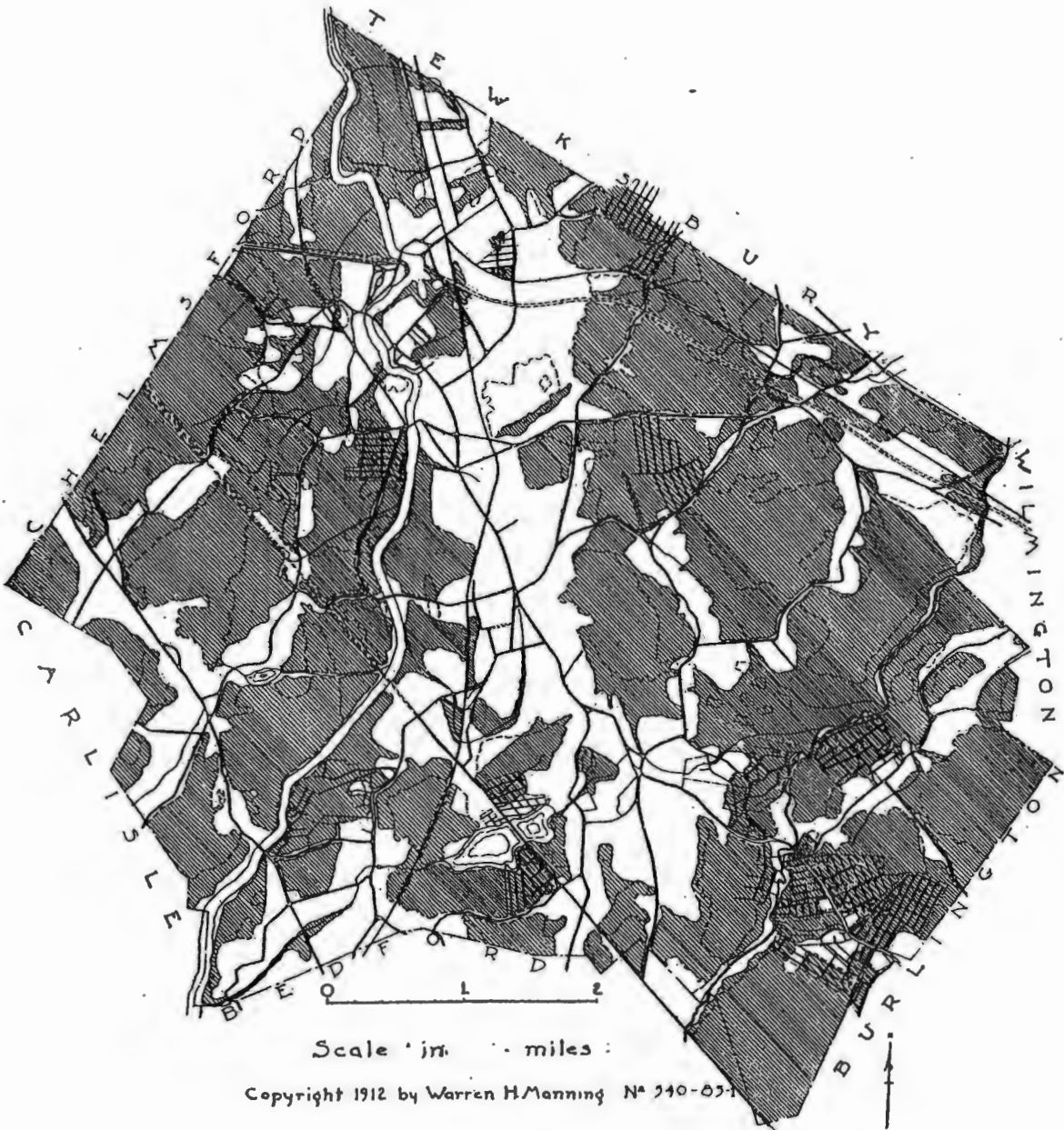
On the last map of this article, church, school, town, commons, and the Gilson Hill reservation lands, are indicated in black. The heavy dotted lines are suggestions for future roads and reservations. This was submitted to a joint meeting of the Board of Survey and Park Commission of the town. It was agreed that the Concord River shores should be acquired for ultimate roads and trails, to form part of a system of drives from the sea up the Merrimac to the Concord, and up the Concord to its source, and to the great metropolitan water-supply reservations on the Nashua River branch. Similar shore reservations are being acquired on the Charles and Neponset Rivers leading out of Boston.

It was the opinion of the Park Commission and the Board of Survey that land should be secured by gift from owners, not purchased by the town, for such purposes; and that the town should not be asked to make appropriations for improvements on such lands until public necessities demanded roads.

The other reservations under consideration are along the Shawheen River and the town brooks, along the steam railroad, to take advantage of its direct line and right-of-way opening, and also to have house fronts, not backs, in view from trains. These questions

too are to be considered: Should we determine the lines of future thoroughfares and acquire land therefor? Are there parts of roads that should be superseded by new lines?

The preparation of the plan was initiated by the Billerica Improvement Association, and is continued with the coöperation of the more recently organized Board of Trade, of which the pastor of a Baptist Church is president, and of other local societies. The problem of presenting the information thus gained to the people was partly solved when the pastor of the Unitarian Church expressed a desire to see a local magazine established, and a willingness to edit it. This magazine, "Billerica," has now been published seven months, and in each issue have appeared such maps of the town as accompany this article, together with an explanation, and other articles that have a direct bearing upon the problem. The first map gave the roads and localities before the period of expansion represented by the small-lot subdivisions. The second, a topographical map, showed also existing roads by numbers, and abandoned roads by numbers in circles. To the next map the various small-lot subdivisions were added. They will be recognized in the patches of crowded streets on the fifth of the accompanying maps. The next two were the soil and the forest maps. A map showing existing public reservations in solid black, and suggesting future reservations and road extensions in dotted lines and shading, was followed by one that was subdivided into forty-one squares for convenience in plotting the detailed information on a scale 200 feet to the inch. This information will include artificial and natural features, the topography and the property lines. You must understand that, to do this in a town as small as Billerica, it is best to secure many volunteers, and to direct their work toward the definite end in view. Whatever costs there are for surveys and drafting should, in fact usually must, at first, be borne by individual contributions of time and money. I believe, too, that such a plan can be realized



V. Forest Map

in a conservative old town only by gradually leading the citizens to understand it, and to realize that, to be successfully accomplished, it will require the gift of the land for roads and reservations. Such gifts represent a small part of each estate, usually not over a tenth, and usually the land of least value and greatest natural beauty, and roads and reservations thus provided for will increase the value of the remaining property. The data for such plans must be secured by special methods that will give all that is essential, with a reasonable degree of accuracy, at low cost, by the one-man survey methods, and the collection and compilation of existing data, rather than by the expensive engineer with a force of rodmen and chainmen.

The reader should understand that much of this article is made up of abstracts from the articles that have appeared in the magazine "Billerica," for it has seemed to me desirable that your readers should thus gain an idea of the manner of presentation to the town.

WARREN H. MANNING.

Comprehensive Planning for Small Towns and Villages

By

John Nolen

Boston

American Unitarian Association

25 Beacon Street

Comprehensive Planning for Small Towns and Villages*

My plea is for the smaller places, the towns and villages with a population ranging from 2,500 to 25,000, or even up to 50,000. There are many misconceptions about city planning, but none is farther from the fact than the notion that comprehensive planning is only for large cities. As a matter of fact, the reverse is nearer the truth. In big cities the conditions are fixed, inelastic, unyielding. Comprehensive planning, especially with our limited city charters and the hampering laws of our States, can have as yet but little play in larger places. At most it must content itself with relieving only the worst conditions, ameliorating merely the most acute forms of congestion, correcting only the gravest mistakes of the past. Wide, many-sided, imaginative planning for large American cities must be confined for the present at least mainly to the extension of those cities, to the improvement of suburban areas, to the betterment of what are often really separate towns on the outskirts.

But with smaller towns and villages the case is

*Address delivered in Washington, D. C., at the annual meeting of the American Civic Association.

Comprehensive Planning for

different. To them comprehensive planning can render a big and lasting service. For there is scarcely anything in them that cannot be changed, and most of the territory that is to be built upon is still untouched. The present town is only the nucleus of the future city. In them railroad approaches can be set right, grade crossings eliminated; water fronts redeemed for commerce or recreation or both; open spaces secured in the very heart of things; a reasonable street plan can be made and adequate highways established; public buildings can be grouped in some proper way, and a park system, a true system, with all sorts of well-distributed, well-balanced public grounds can be outlined for gradual and orderly development. And all these elements, indispensable sooner or later to a progressive community, can be had with relative ease and at slight cost. As we have given heretofore too much attention to caring for the mere wreckage of society, and too little toward establishing a better social order that would reduce that wreckage, so we have expended too much of our energy in merely thinking of the ills that afflict our great cities instead of providing against an unnecessary repetition of those selfsame ills in smaller places, many of them to be the important cities of to-morrow. To cure is the way of the past, to prevent the divine voice of the future.

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Then smaller towns are important because of their great number. In 1900, there were over 1,700 places in the United States with a population from 2,500 to 25,000, and the aggregate of these towns exceeded ten million. The figures of the 1910 census will no doubt show a vast increase, and these figures will probably exceed the total of all cities with a population of 300,000 or over. The six great cities with 500,000 or more had by the same census (1900) only a population of 8,000,000, 2,000,000 less than these smaller towns. How extensive, therefore, are the interests of these widely distributed smaller cities, with more than ten million souls to-day and the number and proportion steadily and rapidly increasing!

The two important methods of town and city planning are: (1) cities planned in advance of the settlement of population, and (2) established cities replanned or remodeled to meet new conditions. The former method has obviously great advantages, and many cities intended primarily for governmental, industrial, or residential purposes have been so planned. It is a method which needs wider use. Washington is the most notable illustration. But after all, it is seldom possible to foresee the future of a town or city from the very start, and the complex influences which determine the selection of the site and location of the first streets and buildings

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must usually be left to work out their natural results. When, however, a small population has been attracted to a town by natural causes and there are unmistakable indications that because of situation, climate, the trend of trade and commerce or other forces, an important city is to be established, then it is entirely practicable intelligently to replan the town so as properly to provide for its future. There are scores of cities in this country with a population to-day of 25,000 people that will have 50,000 in a generation or less, and the same rate of increase may be predicted with equal confidence of cities of larger population. The greatest neglect is right here, the failure to plan and replan, to adjust and readjust, consistently to use art and skill and foresight to remodel existing conditions and to mould and fit for use the new territory about to be occupied.

The emphasis, it would seem, needs to be placed less on the original plan and more on replanning and remodeling, provided action is taken in time. The beautiful cities of Europe, those that are constantly taken as illustrations of what modern cities should be, are without exception the result of a picturesque, almost accidental growth, regulated, it is true, by considerable common sense and respect for art, but improved and again improved by replanning and remodeling to fit changed conditions

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and rising standards. It is here that we fall short. Throughout the United States there are cities with relatively easy opportunities before them to improve their water fronts, to group their public buildings, to widen their streets, to provide in twentieth century fashion for transportation and to set aside areas now considered indispensable for public recreation, and yet most of these cities have until recently stood listless, without the business sense, skill, and courage to begin the work that must sooner or later be done.

In the development of city plans for these smaller communities, I wish to advocate three points: (1) the exercise of more forethought; (2) the use of skill; (3) the adoption of an appropriate goal or ideal.

First, then, more forethought. One clear lesson of the census is the growth of cities. They move noiselessly from one class to another with little notice and less preparation. With growth their requirements change radically, but little or nothing is done to meet these changing requirements. Especially is this true of the construction of wide thoroughfares and the acquisition of land for public purposes. Instead of being always in advance of the requirements, as the city should be in these matters, it is almost invariably behind. The foresight of the German cities, the best-handled munici-

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palities in the world, is instructive. Their plans are nearly always a score of years in advance of the requirements, and there is a definite and liberal policy for the purchase of land against future needs, some cities owning as much as half their building areas and having permanent land funds of millions of dollars set apart for further acquisitions.

Secondly, a greater use of skill and experience should be employed in the planning and building of small cities. Failure to employ such skill is the reason for much of our trouble to-day. Somehow, we are not yet very generally convinced of the value of the man who knows. "Democracy's attitude toward the expert," declares a contemporary writer, "is a mean and foolish attitude. No greater service can be rendered to the democratic cause than that which shall cleanse it of this fault. Generous, whole-hearted, enthusiastic recognition of superior ability and training, a reverent appreciation of high character and high attainment, and a capacity to trust and value these as they deserve: these are virtues which democracy cannot set itself too resolutely to attain, nor can it value too highly any lesson that will assist it in their cultivation." Long ago, John Stuart Mill gave brief expression to the same idea when he said: "The people should be masters employing servants more skilful than themselves."

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A third requirement is the adoption of an appropriate goal or ideal. Changes are inevitable. We know that. And if these changes are unguided they are almost certain not to be good. The future should not be taken at hap-hazard. We should determine, at least in a general way, what we wish it to be, and then strive to bring it to pass. Above all, consistency is a requirement, and some appropriate and controlling ideal of development. The individual topography and situation of cities, the differences in social conditions, in the varying economic functions of different communities—these factors and others should all find opportunity for natural expression in the city plans of smaller places, which can often be carried out easily, especially if the co-operation of private individuals can be secured.

These three suggestions for smaller places are perfectly practicable, and have already been adopted and acted upon by some American communities. As a concrete illustration, I should like to present an outline at least of the policy and achievements of Glen Ridge, New Jersey, a Borough, about twelve miles from New York City, with a population slightly less than twenty-five hundred. To the natural loveliness of its situation, Glen Ridge has added much by an enlightened public policy and a united civic spirit, that are seldom found

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in such a highly developed form in so small a place. Foresight, generous public expenditure, and wisdom have combined to give to the present generation and insure to the future certain public advantages of very great value. In the first place, the most characteristic and most beautiful natural feature of the Borough—the Glen—has been secured for a public park. This is a valuable asset, one that could not be duplicated by human means. Yet its character and situation are such that in private hands it probably would have become a nuisance and an eyesore. The people of Glen Ridge cannot be too highly commended for making this acquisition in time. Then the Borough, acting, I presume, with the railroad officials, has given what appears to be, on the whole, the best locations for the railroads and the stations. There are within the Borough limits only two grade crossings (these soon to be removed), the stations are central and their surroundings attractive. There has been displayed a tenacity and foresight as fine as it is unusual in controlling certain outdoor features which tend in a high-grade residence town to become nuisances. I refer particularly to unsightly poles and wires, ill-placed and inappropriate stores, apartment houses and tenements.

Following this wise and progressive policy, as the next logical step, some of the public-spirited citizens of Glen Ridge arranged to have prepared a

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comprehensive plan and report as a guide to future action. That report was prepared, and contained the following recommendations:

(1) That the plan for the contemplated improvement of the Station and surroundings of the Lackawanna Railroad include the widening of Ridgewood Avenue at the bridge, adequate space south of the station for carriages and other vehicles, with a new approach from Woodland Avenue, the abolishing of the grade crossing at Hillside Avenue, and the widening of Clark Street where it passes under the railroad.

(2) That efforts be made to obtain from the Erie Railroad the removal of the grade crossing at Wildwood Terrace and the construction of the Sherman Avenue bridge.

(3) That the Glen Ridge Centre, at the intersection of Ridgewood and Bloomfield Avenues, be improved and perfected by the acquisition of the property at the northwest corner, and its use for some public or semi-public purpose.

(4) That the advantages of building a Borough Hall, a few stores, and perhaps a small hotel or inn near the Borough Centre be seriously considered with a view to action.

(5) That consideration be given in advance of actual need to a convenient trolley route to provide

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service when necessary north and south through the Borough.

(6) That Ridgewood Avenue and its proposed extension be improved as an integral part of the proposed twelve-mile Circuit Drive in Montclair and Glen Ridge.

(7) That the Essex County Park Commission be petitioned to locate at once, and execute as soon as possible, a parkway that will connect the main drives of Glen Ridge with the County Park System.

(8) That the whole method of locating public streets and roads be investigated for the purpose of protecting the interests of all the people of Glen Ridge and the further improvement of the Borough as a place of residence.

(9) That building ordinances be considered, with the intention of promoting health, preserving the homogeneity of neighborhoods and protecting the stability of real estate values; also that property owners be asked to co-operate in this provision by writing suitable restrictions in their deeds of sale.

(10) That the Shade Trees Commission, the formation of which is advocated, be requested to take up in a broad and efficient way, the whole question of planting and maintaining street trees.

(11) That the land already purchased by the

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Borough for parks and playgrounds be developed and utilized as rapidly as possible under carefully prepared plans, including a wading pool, skating pond, and outdoor gymnastic apparatus.

(12) That some public authority be empowered to study and survey the Borough with a view to establishing an adequate system of school yards, school gardens, playgrounds and parks for the present population and to reasonably anticipate the needs of the immediate future.

These twelve recommendations have not ended on paper. Although they were presented only a year ago, definite and substantial progress has been made on every one of them, and six of the twelve, the most important six, have been carried out completely. Glen Ridge is already unlike any other town; it has its own character, its own claims to distinction. Wisely has it reflected its topography in its streets and other public places, and developed its public ideals with a rare regard to essential public needs. Consistently following what is best in the past, the present plan is intended to promote an even clearer consciousness on the part of the citizens generally of what the Borough life should be, to avoid the oversights and mistakes of merely drifting, and secure the well-defined results of a carefully considered plan and program for the future, all of which upholds my view of the possibili-

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ties of comprehensive planning for small towns and villages. Compare with these results the inaction or halting action of larger places even when admirable and generally approved of plans have been placed in their hands for execution.

Finally, the most astonishing thing about American town and city planning is the constant repetition of the same mistakes. Over and over again we see the same errors, the same foolish and costly departure from what is recognized as good practice. Our towns and cities are inert. If they were not, the smaller ones at least could be saved by foresight and skill from many of the mistakes from which the larger cities now suffer. "Remedy for a bad plan once built upon being thus impracticable," wrote Frederick Law Olmsted, Sr., decades ago, "now that we understand the matter we are surely bound, wherever it is by any means in our power, to prevent mistakes in the construction of towns. Strange to say, however, here in the New World, where great towns by the hundred are springing into existence, no care at all is taken to avoid bad plans. The most brutal pagans to whom we have sent our missionaries have never shown greater indifference to the sufferings of others than is exhibited in the plans of some of our most promising cities, for which men now living in them are responsible."



**COTTAGES IN BILLERICA GARDEN SUBURB, NORTH
BILLERICA, MASS.**



**Billerica, 2004
Source: P.Henry**



Six-room semi-bungalow, Billerica Garden Suburb, 1916. Construction cost \$1,800.



Billerica, 2004
Source: P.Henry

Billerica as a Workers' Paradise

New Homestead Commission Trying There the First American Experiment With the English Garden City Idea

By Benjamin Baker

THAT it is not usually to the advantage of the workman to own his own home is the principle presented in a scheme for a garden suburb at Billerica which is being worked out in cooperation with the Massachusetts Homestead Commission. It seems to be the "American idea" that ownership of house and land is the ideal evidence of the thrift and solidity of American skilled labor, much as "the little red schoolhouse" has been our traditional emblem of popular education. But modern industrial conditions have set up a new standard, recognized both by economists and social workers. Today the workman, whether skilled or unskilled, must be free to take his family where there is the best market for his labor. He cannot be free if he is tied by ownership of house and land, to leave which usually means to him a money loss that he cannot afford. The mobility of labor is a fact and a phrase familiar to the modern economist and social worker, and it is receiving Government recognition in this country in the proposal to establish Federal employment agencies for bringing the man and the job together from different parts of the country. In the Billerica plan the need for the workman to be free to seek his market has been recognized by basing the plan mainly on the copartnership scheme of home ownership, which during the past decade has been so brilliantly successful in England and some parts of the Continent. It is sharply distinguished by the collective ownership of property, each resident renting from a company of which he is a member. That principle has never been applied to American conditions, and the Billerica plan therefore has special interest as an attempt to establish in this country a new and potent economic invention.

How the Billerica Scheme Started

The beginning of the Billerica scheme lay in the establishment in that town of the new \$3,000,000 Boston & Maine repair shops, now employing about a thousand men, and likely, in the future, to give work to 2000 or 3000 men. The placing of the shops in Billerica was due, it is said, to Rev. Charles W. Williams, a Billerica clergyman who is president of the Board of Trade of the town, who has been a member of the State Legislature, and who set out to "boom" his town by bringing there the great repair shops of the railroad. Skeptics laughed at him while he was securing options on land to provide a site for the shops; but the railroad came. The move was of great importance to Billerica, for whatever the financial condition of the Boston & Maine, from the point of view of stock owners, it is plain that the railroad must repair its cars. The industry is therefore a permanent one, and is reasonably likely to add some ten thousand persons to the permanent population of Billerica.

Where to live was the problem immediately presented to the Boston & Maine workmen when the shops opened. Billerica, being a rural community, had no quarters open for them. Real estate operators rushed in and began to lay out tracts, on some of which they put up tenements and charge for lots and houses prices which do not attract the workmen. The workmen as a body have decidedly held back, and the new houses have been sold or rented, so far as they have moved at all, to other classes of persons, such as speculators. At present most of the shop workmen come from Lowell, the railroad running trains for them morning and night. Some of the workmen frankly want to own their own places, an attitude mainly accounted for by the fact that the shops have brought from Fitchburg and Keene foremen and other workmen who have been many years in the service of the railroad, and who expect to stay in its service as long as they work. A much larger class, however, want to live in Billerica without paying excessive rents in speculators' tenements, and without being tied down to the ownership of house and land with the usual appendages of building loans and long-lived mortgages. If the railroad had been "flush" it might perhaps have followed the course of many other companies, built some acres of "workmen's cottages," and tried to tie up its workmen by selling them these houses, as others have tried to do, and partly succeeded in doing. But the railroad was not "flush," as everybody knows. The real estate speculators did not provide a solution of the housing problem. Something "totally different," as the commercial tailors say, was clearly required.

A Sixty-Acre Garden Suburb

At this point Mr. Williams had become interested in developing a workmen's housing tract on some plan that would meet the requirements of the men. Mr. Thorndike of the Homestead Commission

also took a hand, and Mr. Conroy, who is the city planning member of the commission, and who has studied the English copartnership system on the ground, explained this method to the board of trade. The board, and later the workmen, became interested in this idea, many of the workmen declaring themselves ready to "sign up" for shares in the copartnership scheme as soon as the plan could be financed. President Eliot and other students of the matter who were consulted strongly advised the copartnership plan, and this is the central feature on which the whole development now rests, though individual ownership has been provided for in response to the requirements of a considerable number of the railroad workmen. The Boston & Maine officials are giving the plan their hearty moral support.

The actual launching of the development now waits for capital, the comparatively small sum of thirty thousand dollars being sufficient to start operations under an incorporated, limited dividend company, in which workmen will buy shares, and under successful operation ultimately buy

an advanced garden suburb lines, as shown in the map, by Mr. Conroy, with the advice of Warren H. Manning, who has taken active interest in the improvement of Billerica.

Division A, in the southeastern part of the tract, is intended for workshops, stores, and other buildings which would form a social and business centre for the community. A row of model factories along the east border would screen the settlement from the railroad, and there appears to be a demand for them.

Division B, occupying most of the southwestern quarter of the land, is intended for houses which are to be sold to workmen on instalments. The conditions at Billerica are not wholly those of some other industrial centres. As already noted, a considerable number of the employees in the railroad shops are "old timers" with the company; and they regard themselves as settled in Billerica for the rest of their lives—if they can get the right houses. There are, of course, others of the workmen who for reason, wise or otherwise, want to own house and land.

from that pioneer society which bought inks, most of which are associated in a central company. Their holdings, now total about 650 acres of land, and the total value of their properties is upwards of six million dollars. The plan has provided for working people of all trades, and for the tenant stock, or "shares," which are owned by the workmen tenants of the company's houses; and the "loan" stock, which represents the capital invested to set building in motion. The tenant stock is entitled to five per cent interest after the preferred dividends, fixed charges and surplus have been provided for. The preferred, or "loan" stock, receives four or four and a half per cent cumulative dividends, and no more. As noted, the starting capital in the English companies represented by the loan stock has in every case made good its dividends. Such companies, in their appeal to capital, are not charities, but business enterprises which have shown themselves good for a four to four and a half per cent return.

To become a tenant in a copartnership settlement, each applicant must be approved by an admission committee, and must take \$100 in tenant shares, paying at least \$20 as the first instalment, and small ones, month by month. The new tenant thereby becomes a renter from a company in which he holds stock, and has a vote in the election of the board of directors. A limit is set on the value in these shares that one person may acquire, usually it is \$1000; but loan stock is available without limit of individual amounts.

markets for his labor.

In the copartnership company, the tenant is not thus bound. He is secure in his tenancy as long as he behaves himself. But if he wishes to work in a distant city he can leave, receiving back the value of the shares he holds, or retaining them as an investment on which he draws better interest than he can get from a savings bank.

American schemes in great variety have been tried out with the aim of providing satisfactory homes for working people; but none on the copartnership principle. The new town built by the Russell Sage Foundation on Long Island, for instance, is based on individual ownership, and the result has not met the workman's needs. The most common scheme, that of the model village or town such as the Pullman Company and many others have established, has led workmen to buy homes on small instalments—an apparent boon to the man earning fifteen dollars a week; out in reality often a burden, since ownership ties him to that particular place, and prevents his taking advantage of better markets for his labor.

The Cost at Billerica

The advantages of the copartnership housing plan spring in the main from enabling the workman, with the aid of a small amount of outside capital, which is amply secured, to do for himself what he cannot do individually, and what he cannot get from any other type of ownership. Freedom to "follow the job" without financial loss due to his moving is the most important result, and has already been set forth. Besides that he gets the use of capital at a restricted low rate of interest, five per cent, which is a good deal less than the speculative builder and the tenement house owner demand from their investments in houses. The copartnership organization makes it possible to develop a good-sized tract of land as a whole, with provision for the common interests of those who are to inhabit it. Further, the scheme gives the advantages, in cost, of what is practically wholesale construction and buying of materials.

Billerica costs have been figured rather closely to a point which seems to assure successful operation. At the full price for the fifty-seven acres in the Billerica tract, the "raw" cost per acre is about \$200. Assuming that half the area is streets, parks, areas and garden allotments, the housing area is about 28 acres, costing \$400 per acre. With a limit of eight lots to the acre, this would give the raw cost of a house lot fifty by a hundred feet at about \$80. The calculations of many real estate experts have shown that the cost of a house not improved—i. e., with roads, walks and sewers, and including carrying charges, is about three times the raw cost. It is believed, therefore, that the improved lots at Billerica can be sold for about \$250, or about five cents a foot.

In the matter of building, concrete construction seems to be indicated. There is abundant and suitable material on the ground. A concrete house sparsely built deteriorates very slowly, much less than a frame building, and requires much less outlay for repairs. Moreover, new methods of concrete construction which are being pushed by some large companies (not the Edison multi-twin huckleberry sort of house) give promise that a five-room house can be built properly for about \$1700.

It Makes for Steadier Workmen

Experience with copartnership in England has shown that the tenant's own interest in his rented house leads him to avoid abuse of the property, to pay rent promptly, and to find tenants for empty houses. This individual interest of the tenant has been found to mean a saving equal in value to one per cent per year on the capital, or ten per cent on the rent. This element of proprietary care would be further enhanced by permitting to the tenant the rent for each twelfth month after the cost of repairs have been deducted from it. This gives him a second money interest in good care of his holding.

Billerica rents are to be based on one week's wages for the month. With the cost of a house and improved lot at about \$2000, the average week's wage of the Billerica railroad workmen, \$15, will provide an adequate return, amounting to nine per cent gross. A rent of \$150 a year (\$15 a month) will pay five per cent on the \$2000 investment, give one per cent for surplus account, and leave three per cent or \$60 for taxes and depreciation and repairs during the year.

It is proposed to incorporate a limited dividend company under a form of charter prepared by the Homestead Commission with a capital stock of \$750,000, divided into 500 shares of common stock of par value \$150. Such a company could undertake the Billerica development, it is believed, with every prospect of financial success. The copartnership side of the undertaking could be turned over to another company organized on that plan, for the development of successive portions of Division C as it secured capital. In the judgment of the Commission the opportunity is a peculiarly good one. The railroad working population, and manufacturers are looking at the town favorably because of the large labor supply likely to be drawn in with the railroad workers.

There is here a combination of advantages—demand for many houses, cheap land and low construction cost. The land is extremely attractive, the river side quiet, equalling the best sites along the Charles River in Dedham.

Details of the financial plan, with terms of stock subscriptions, dividends, etc., will be issued in a few days by the Homestead Commission. Unskilled workman as well, good, substantial, sanitary houses in pleasant surroundings at rents which run as low as \$2 a week when taxes and all outside charges are included. And they have all proved profitable in a financial way.

In general outline, the English copartnership housing companies are limited dividend only nine house lots to begin with info about twenty large copartnership undertak-



Billerica Garden Suburb for B. & M. Workmen

(Tentative Plan of Homestead Commission, A. B. Conroy, Landscape Architect—Warren H. Manning, Advisory)
—Zone A Reserved for Special Community Development—Zone B Is for Purchase—Other Territory Is for Copartnership Purposes

out the capital furnished to start operations.

Options have been secured on a tract of fifty-seven acres of pine land, roughly square in shape, as shown on the plan; and lying in a bend of the Concord River. The Boston & Maine Railroad extends in a north and south line along the eastern border of the tract, with the North Billerica station at the southeast corner.

The advantages of this area are several and important for the purpose in view. First of all, it is healthful, being a tract of pine land well above the river, with underlying sand and gravel which will make sanitation easy, and will in addition provide on the site abundant material for concrete construction, which appears to be at least as cheap as good frame construction. It is less than a mile from the railroad shops, which lie to the south, and to which free transportation will be furnished to the workmen by the railroad company. Then, just across the bend of the river, barely a quarter of a mile distant, are the school, post office and stores which make up the village centre. This can be reached by a footbridge. The tract is therefore near to the community interests of the town, and yet sufficiently isolated by the intervening river to make it a unit.

Last—and investors would perhaps put this feature first—the price at which the land is now held is low.

The Plan for Development

The tentative plan for the development of the Billerica tract has been worked out

east corner, is intended for houses to be rented in the usual way.

Division C, which, as shown, covers about a third of the whole area, is intended for copartnership ownership, and the erecting of houses and their renting to workmen who will take shares in the copartnership company, and who will be collectively their own landlords. Included in divisions B and C are central areas which may be used as playgrounds, or be allotted to tenants or owners for garden plots. The intensive cultivation of even small gardens under the expert instruction and advice which would be made available would enable the cultivators to offset a large portion of their yearly rent from their produce.

For landscape effects and a generally park-like development the Billerica tract offers a good opportunity. In Division B there are a good many large white pines. In parts of Division C there are many other pines, mostly hard pine. The middle stretch of the western border along the river rises rather abruptly in a low bluff cut by a shallow ravine; while at the extreme northwestern part there is a low, marshy area in which a pond could be constructed. Trees would be used to the utmost as landscape features, and the rows of facing houses included between two cross streets, at least, would be made homogeneous in color effect, while varied in their details.

The Co-partnership Plan

Copartnership in housing was begun on a very small scale at Ealing, a suburb of London, in 1901, and has since expanded

as an investment. The social, the sanitary and the money benefits to the tenant from living in an attractively planned, open suburb, in good houses with a garden for each house, plenty of play room for children, and with everyone working together to keep things bright and attractive, have been proved as real and actually attainable as they seem probable in the mere statement of them.

Fluidity of Modern Labor

While giving all these advantages, copartnership settlements have the further great merit of fitting modern industrial conditions. The fluidity of labor today, both the skilled and the unskilled, is one of the important social and economic features of the time. That skilled labor will move from a place of slack work to another place where work is abundant, seems natural and obvious. But one of the curious results of the factory system has been to make this true also of the unskilled labor of the textile mills, for instance. In the modern factory unskilled labor tends machines, and that labor has learned that it can tend equally well one kind of machine in one industry and a wholly different kind of machine in another unrelated industry. Unskilled labor of this type has become a specialized machine-tending class, able to move not only from town to town but from industry to industry. For mobile labor house ownership is a burden because the owner can rarely or never rent or sell his house without financial loss. His ownership therefore works to prevent his moving freely to take advantage of the best