Housing Lumber

depends upon family income, cost of ownership, population growth

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Housing in California might well require more lumber annually in the next two decades than was used in the peak of the 1920's.

Since housing accounts for roughly one third of the lumber consumed in the state, a study of future needs for housing, based on past trends, will give an important indicator of coming demands for wood production.

Two housing studies were made to estimate the amount of wood used per house, and the rate of new construction during the period 1920 to 1946.

The first study, aimed at estimating the amount of lumber used in the average house, was based on surveys by the United States Forest Service.

In general, it showed that the volume of lumber increased with size of dwellings. Houses in the San Francisco Bay area were of larger average size than those elsewhere, and houses in the large cities tended to be bigger than those in small cities. Houses with wood frame and wood exterior required the same amount of lumber per square foot of floor space in all parts of the state; but for stucco dwellings, northern California used more structural lumber.

Apartment dwellings required more lumber for the same area of floor space because heavier construction is needed.

The amount of lumber needed for a single house varied from little over 4,000 board feet for concrete block and other nonwood houses, to about 12,000 board feet for wood frame houses in the San Francisco Bay area. In other regions wood frame houses averaged only about 9,000 board feet.

The amount of lumber per house is less today than it was in the 1930's. This is accounted for by:

1. A shift towards smaller dwellings. The average ceiling height has decreased 5% and the number of rooms per dwelling dropped from an average of 5.35 in 1936 to 4.64 in 1946.

2. New types of dwelling designs—using concrete blocks and other nonwood materials—have been introduced. These nonwood types of houses accounted for 10% of total construction in 1946, while they were almost negligible before the war.

3. Wood seems to be used more economically now because of its high price.

4. Modern housing designs have eliminated much wood for decorative effects. But wood siding as exterior material is used more now than in the 1930's when stucco was in fashion.

For all these reasons a modern average house requires 25% less lumber than in 1933.

The second study on rate of construction was based on surveys of building permits conducted by the United States Bureau of Labor Statistics and on the 1940 housing census.

It showed that in 1920 about 34,000 dwellings were built in California. A peak of almost 140,000 dwellings was reached in 1923. The figure remained high during the 1920's, but dropped sharply during the depression. The lowest point came in 1933 when only 20,000 dwellings were built in the state, but the figure increased during the last half of the 1930's and reached a second peak in 1941 when 119,000 dwellings were constructed. During the war years the figure leveled off to between 40,000 and 60,000, rose to 107,000 in 1946, and has since been increasing steadily.

Total lumber needs for housing are the product of lumber used per house, and rate of construction.

These total lumber requirements have been closely correlated with family income, population increase, and costs of home ownership.

During the past peak period in house building—the 1920's—family incomes were above $3,000 a year, the population increased 225,000 annually, and building costs declined by 4% per year.

Accordingly, building was active. On the average, 88,500 dwellings were constructed per year, and about 1.2 billion board feet were used.

During the depression family income fell below $2,000 a year, the population increase slowed down to 123,000, and home ownership costs continued to drop moderately.

But during the second half of the 1930's family income and population increase began to rise again, and ownership costs leveled off.

Consequently, the average for the decade 1930–39 was 53,500 dwellings a year—a drop of 40% below the 1920's average. Only 0.7 billion board feet of lumber were used annually.

The war years were no guide to the normal demands for lumber.

After the war, family incomes were almost double the prewar level although their purchasing power had increased less than a quarter. Population expansion was the most rapid in history. Home ownership costs in 1946 were nominally about 15% above prewar but difficulties in procuring labor and materials were a major obstacle to the expansion of construction.

Despite these restrictions lumber consumption for housing in 1946 was estimated at 0.93 billion board feet, and 21% more dwellings were built than in an average year of the 1920's.

By 1948 the volume of new construction appeared to be about 50% above the 1946 level. This would bring present construction well above the previous peak of 140,000 dwellings in 1923.

The study showed that during the 1920–1941 period over 75% of the variation in dwelling construction was associated with changes in the three factors, family income, population increase, and costs of home ownership.

The major conclusion to be drawn from the studies is that California will probably continue to need large supplies of wood for new housing. Past declines in the amount of lumber used per house have been more than offset by increasing population and other factors. The lumber requirements for California housing during the next few decades probably will exceed those of the 1920's, perhaps by as much as 40%.

About half of the lumber consumed in California comes from the Pacific Northwest. This area will continue to be a major source of California's lumber supply but the present balance between forest cut and forest growth in that region makes it unlikely that imports from the Northwest can be increased substantially. Therefore continued heavy reliance must be placed on local wood supply.

Recent expansion of California's sawmilling industry made it possible to cut almost four billion board feet in 1948, and provides the manufacturing facilities which will be needed to meet the prospective housing demand.

But the forest growth in California, necessary to keep these mills in permanant operation, is only about 1¼ billion board feet a year—little more than the minimum estimate for housing needs alone. It provides no margin for other major uses of wood in California agriculture and industry.

If the state's forest economy is to be kept on an even keel, the evidence suggests redoubled efforts to increase the productivity of California's timber resources.

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