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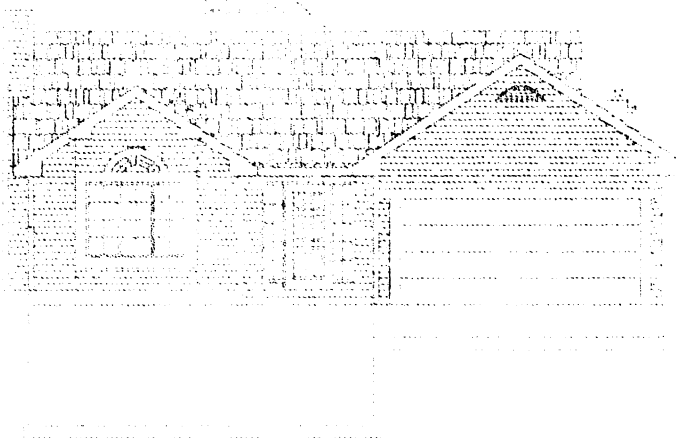
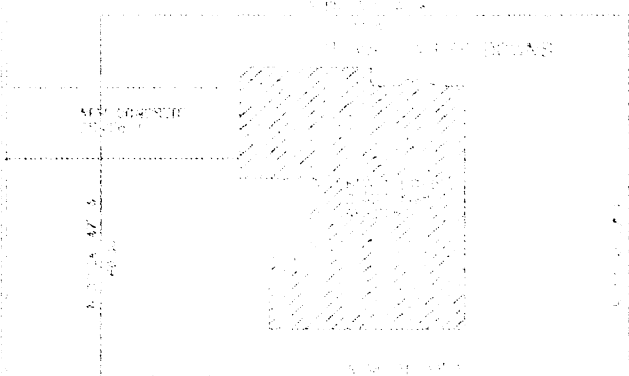
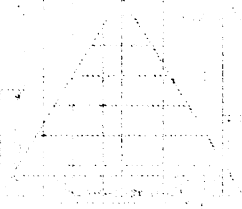
Michigan State University

Plan "B" Thesis
Alternatives For Affordable Housing

by

Jerome A. Tomczak

December 7, 1995



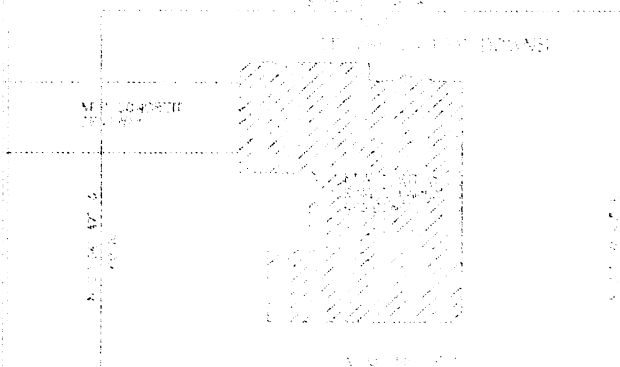
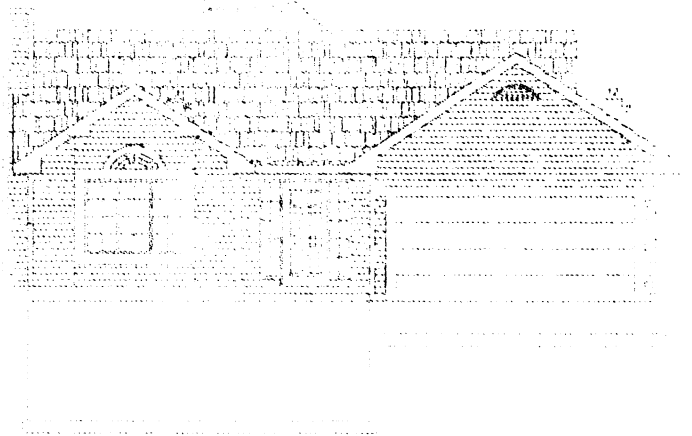
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To Colleen and Vincent

Thank you for all your support and sacrifices!

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INTRODUCTION

Is the American Dream Gone? The ability to own a home and stake claim to a piece of land that for many of our ancestors was the reason for coming to America. Well, for late twentieth century dwellers, the sensation of powerlessness is creeping upon them. Today, the average mortgage paid by Americans is over 1,200 dollars per month and only 25 percent of American households are able to afford new, single-family homes, whereas 20 years ago, 50 percent of the households could afford them. Finally, new home prices appreciated faster than inflation (3.5%) this year.¹

"When American families are denied home ownership, the entire nation suffers. Home ownership is the cornerstone of family security, stability and prosperity. It strengthens the nation by encouraging civic participation and involvement in schools and communities. It provides a firm foundation from which Americans can work to provide for their families, enhance their communities, and achieve their personal goals."² The dream of home ownership is being lost by a flood of government regulations; inflated labor and materials prices; and a lack of new design standards for building single family housing.

In this report, I will attempt to identify what previous federal government involvement has done to affordable housing today and discuss what ways the federal, state and local regulations adds to the cost of housing. I will clarify some of the many complicated issues that add to the cost of housing and ways for resolving them. Finally, I will include methods for reducing construction cost and increasing affordability for first time home buyers.

¹ Irvine, James, "The Truth About Regulations and The Cost of Housing", National Association of Home Builders, 1995, 1.

² Ibid.

United States is composed of approximately 2.25 billion acres of land. According to the 1990 U.S. Census figures, there were 248,709,873 people living in the United States, therefore, one could conclude that there is 9 acres of land available per person. Obviously, the 9 acres of land per person does not take into consideration the large quantity of unbuildable areas (e.g. wetlands, forest, etc.), however, it does raise the question - if land is so abundant then, "why is it so expensive?"

Secondly, the 1990 U.S. Census figures reported that the national median value for existing housing in the United States was 79,100 dollars. The National Association of Home Builders reported that the median new home price for 1990 was 110,000 dollars.³ Americans who earned the 1990 national median income were able to buy 25 percent of the new homes available for sale and 58 percent of the average existing homes. For those families making less than the 1990 median income, new housing was not a readily available alternative. This leads to the second question, "why is new single family housing so expensive?"

Finally, the high price of new housing has become a national problem affecting millions of families in all parts of the nation. In an effort to combat this problem, the home building industry is offering alternative products at prices lower than those for traditional single-family homes. Alternative methods like foam panels and "flexible" housing are just a few of the answers to help bring back the American dream of home ownership.

³The National Association of Home Builders, "Housing Opportunity: Where can You Afford?", Consumers' Research, 1990.

WHY IS LAND SO EXPENSIVE?

"At one time, residential land development consisted merely of acquiring a tract, filing a plat of its division into blocks and lots, and then selling those lots to buyers."⁴ As time progressed, issues of health, safety, and welfare began to affect where and how different land uses would integrate with one another. Zoning ordinances and subdivision regulations began to appear. Throughout the 1960's and 1970's, Federal subsidizing of public infrastructure such as sewer, water and roads, extended single family housing to the open land of the suburbs. The "Urban Sprawl" as it is commonly referred to as, shifted the inner city life style of limited land, public transportation, and affordable land values to larger lots and a higher demand on private transportation. "Since World War II (1945), residential development has tended to grow horizontally, outward from central cities to the urban fringes - urban sprawl".⁵

Infrastructure Improvements - "Passing On the Buck":

In the early 1980's, the results of urban sprawl began to show signs of fatigue. Public investment dried up and communities were forced with the responsibility of maintaining existing infrastructure and extending services for further development. Infrastructure expansion expenses, property tax increases and impact fees began to appear on the developers balance sheet. The cost of land improvements that once was a small percentage of the project for the developer, unfortunately turned into a large percentage of the project. "Ready-to-build lots must front onto paved streets and have all utilities at a property line: sanitary sewer, storm sewer, electrical power, telephone, gas and water. The cost of such fully developed lots in new subdivisions would ordinarily be about 15% of the total cost of new houses."⁶

⁴Urban Land Institute, "Residential Development Handbook" 1990, 1.

⁵Ibid.

⁶Amber, George H., "A Subsidy-Free Solution to the Urban Abandoned-House Problem", Succinic Press, 1993, 123.

Today, the residential developer is faced with an even larger challenge from federal, and state environmental agencies and local municipalities restricting growth of their communities. Many local communities have enacted zoning ordinances which can delay the approval of residential projects by two to three years. This includes, preliminary approvals granted by Planning Commissions, Zoning Boards, Road Commissions and Public Utility Boards. The "NIMBY" (not in my back yard) attitude becomes an indirect method for prolonging the approval process; including increased application fees and limited infrastructure availability. Once an approval is granted for a proposed residential project, the developer can easily spend thousands of dollars for architectural plans, engineering designs and governmental fees, prior to digging the first basement. Exhibit A below, illustrates the percentage change in lot prices from 1975-1990 for selected metropolitan areas as reported by the Urban Land Institute. These numbers reflect a median percentage increase for each region at least four times greater than the cost of inflation over the last 25 years.

**RESIDENTIAL LOT PRICES AND PERCENTAGE CHANGES
FOR SELECTED METROPOLITAN AREAS: 1975-1990**

source: U.L.I. Residential Land Price Inflation Survey, 1990.

Note: Based on the price of a standard 10,000 square foot lot with similar characteristics

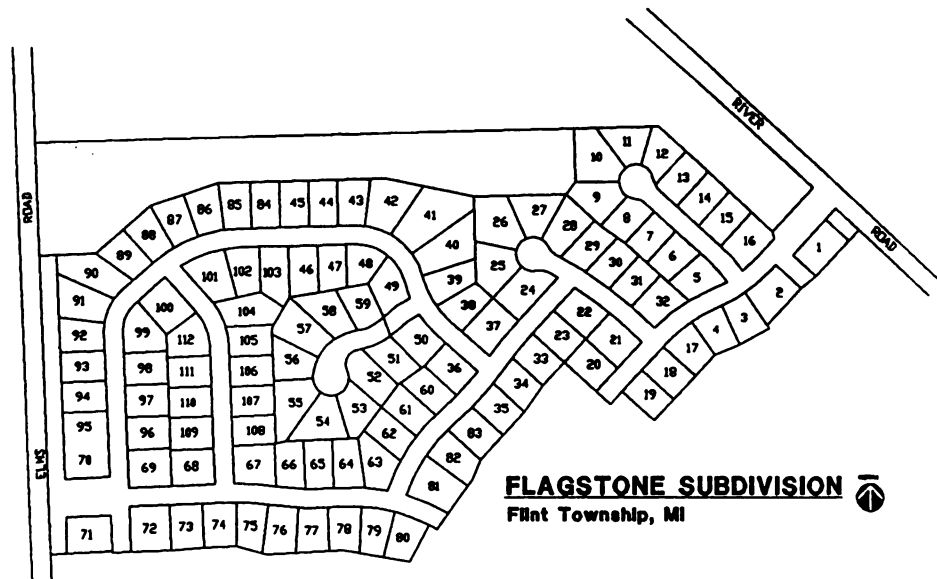
Exhibit A:

	YEAR				PERCENTAGE CHANGE			
	1975	1980	1985	1990	1975 to 1980	1980 to 1985	1985 to 1990	1975 to 1990
Northwest/ Midwest								
Boston	\$18,176	\$23,750	\$45,000	\$90,000	30.7%	89.5%	100.0%	395.2%
Cincinnati	\$8,700	\$15,000	\$17,500	\$18,000	72.4%	16.7%	2.9%	106.9%
Hartford	\$12,000	\$20,000	\$25,000	\$35,000	66.7%	25.0%	40.0%	191.7%
Indianapolis	\$7,000	\$12,000	\$16,500	\$21,000	71.4%	37.5%	27.3%	200.0%
Kansas City	\$10,000	\$14,000	\$15,000	\$26,500	40.0%	7.1%	76.7%	165.0%
Minneapolis	\$9,500	\$20,000	\$22,000	\$25,000	110.5%	10.0%	13.6%	163.2%
Pittsburgh	\$10,000	\$16,900	\$20,000	\$29,500	69.0%	18.3%	47.5%	195.0%
St. Louis	\$10,500	\$15,000	\$20,000	\$25,000	42.9%	33.3%	25.0%	138.1%
Median:					59.1%	32.5%	49.2%	214.4%
South								
Atlanta	\$8,000	\$13,250	\$16,000	\$18,000	65.6%	20.8%	12.5%	125.0%
Charlotte	\$6,000	\$9,500	\$14,250	\$16,000	58.3%	50.0%	12.3%	166.7%
Chattanooga	\$4,500	\$7,500	\$8,750	\$10,150	66.7%	16.7%	16.0%	125.6%
Dallas	\$9,500	\$16,000	\$30,000	\$32,500	68.4%	87.5%	8.3%	242.1%
Ft. Lauderdale	\$13,875	\$21,250	\$25,000	\$48,000	53.2%	17.6%	92.0%	245.9%
Houston	\$7,850	\$12,000	\$20,000	\$18,000	52.9%	66.7%	-10.0%	129.3%
Jacksonville	\$8,500	\$12,000	\$17,250	\$30,000	41.2%	43.8%	73.9%	252.9%
Lexington	\$10,000	\$14,000	\$25,000	\$31,000	40.0%	78.6%	24.0%	210.0%
Louisville	\$9,900	\$15,125	\$25,000	\$23,000	52.8%	65.3%	-8.0%	132.3%
Miami	\$11,750	\$25,000	\$30,000	\$37,500	112.8%	20.0%	25.0%	219.1%
New Orleans	\$13,500	\$21,000	\$35,000	\$32,000	55.6%	66.7%	-8.6%	137.0%
Oklahoma City	\$7,300	\$13,000	\$15,000	\$15,000	78.1%	15.4%	0.0%	105.5%
Raleigh	\$8,580	\$14,500	\$25,000	\$30,000	69.0%	72.4%	20.0%	249.7%
Median:					62.8%	47.5%	19.2%	186.1%
West								
Albuquerque	\$11,650	\$21,250	\$28,500	\$37,500	82.4%	34.1%	31.6%	221.9%
Boulder	\$11,500	\$25,000	\$35,000	\$43,000	117.4%	40.0%	22.9%	273.9%
Phoenix	\$10,000	\$20,000	\$30,000	\$30,000	100.0%	50.0%	0.0%	200.0%
Portland	\$10,000	\$22,000	\$22,000	\$31,250	120.0%	0.0%	42.0%	212.5%
Salt Lake City	\$8,375	\$16,625	\$19,750	\$25,500	98.5%	18.8%	29.1%	204.5%
San Diego	\$15,000	\$40,000	\$50,000	\$150,000	166.7%	25.0%	200.0%	900.0%
San Jose	\$14,500	\$40,000	\$70,000	\$230,000	175.9%	75.0%	228.6%	1486.2%
Seattle	\$8,000	\$20,000	\$31,000	\$77,500	150.0%	55.0%	150.0%	868.8%
Tacoma	\$7,500	\$16,500	\$21,000	\$23,000	120.0%	27.3%	9.5%	206.7%
Median:					129.3%	38.8%	110.8%	571.1%

Case Study: "Flagstone" Subdivision - Flint Township, Genesee County

"Flagstone" subdivision, located in the Northwest corner of Flint Township (See Exhibit B below) is a good example of rural growth at the developers expense. The developer of this project, Mr. Eric Riske, spent approximately 150 dollars per linear foot of street frontage in 1994 to provide sewer, water and storm lines to the 112 single family home sites in Flagstone Subdivision. The estimated cost for providing 24 foot wide roads, curbs and gutters per the Genesee County Road Commission standards was an additional 100 dollars per linear foot of street frontage. No subsidizing for this project was provided by Flint Township or the State of Michigan. The estimated cost for providing the infrastructure (e.g. storm, sewer, water and road) that once were provided at little cost to the developer in the 1960's and 1970's is now 25 percent of the site improvement budget for Flagstone Subdivision. Ultimately, the buyer pays the cost for the improvements, thus raising the cost of land and eventually the mortgage amount needed.⁷

Exhibit B:



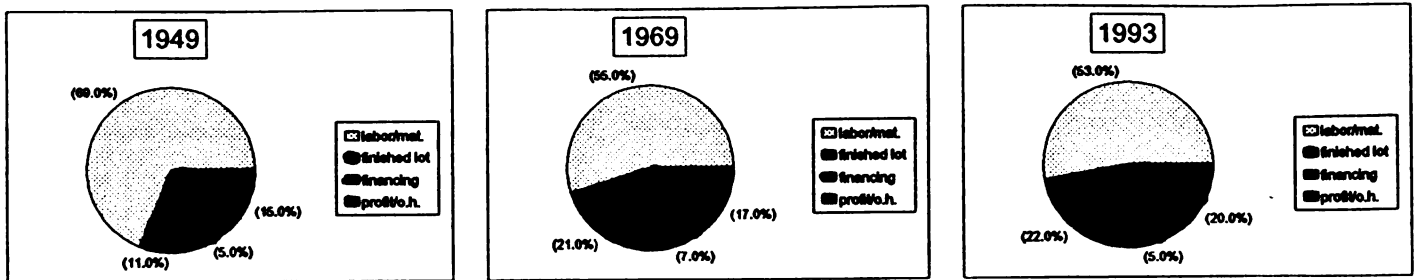
Description of Flint Township: Located in Genesee County, Michigan is a community that experienced the horizontal growth from the City of Flint in the 1960's and 1970's. Today, Flint Township has two of the largest commercial corridors in Genesee County (Miller Road and Linden Road). Flint Township includes within its jurisdiction two major highways (I-69 and I-75), Bishop Airport and the Genesee Valley Mall.

⁷ Riske, Eric, Owner of Riske Custom Homes, Personal Interview on November 12, 1995.

The cost of land and all improvements necessary for providing single family housing has doubled in the United States from 1949 to 1993. Illustrated below are 3 pie charts that represent the cost components of a new single family home for 1949, 1969 and 1993. In 1949, labor and materials comprised 69 percent of the cost of a new single-family home. By 1993, that total dropped to 53 percent while the cost of providing a finished lot increased from 11 percent in 1949 to 22 percent in 1993.

Exhibit C:

Source: National Association of Realtors, 1994.



Federal Regulations:

In 1991, a special advisory commission to President Bush found that unnecessary regulations can add 20 to 35 percent to the cost of building a new home in the United States⁸. The report was just the most recent in a long succession of studies by the Federal government, universities, and think tanks stretching back decades that reached the same conclusion. Some of the Federal Acts that contribute to the high cost of land development include the Clean Water Act and the Endangered Species Act.

⁸ Irvine, James, "The Truth About Regulations and The Cost of Housing", National Association of Home Builders, 1995.

Clean Water Act - Section 404

Over the last 20 years, growing opposition from federal, state, and local environmental groups have constricted residential projects from expansion into rural areas. Concerns over the limited and fragile wetlands have given federal, state, and local permitting authorities the leverage to control growth. One such measure is the Clean Water Act Section 404 which requires that permits be obtained from appropriate Federal Agencies (See Exhibit D) for discharges of dredged or fill material into wetlands. The 404 regulations presume that discharges into wetlands impose such serious impacts on the environment that fills should not be allowed. To implement this bias against a permit applicant, the Federal Act requires among other things that there are no practical alternatives to filling the wetland and that filling the wetland will not cause an unacceptable adverse impact on the environment. "Clearly showing that fills to wetlands cannot be avoided and that the fill will not cause significant adverse effects can prove difficult and costly for the developer."⁹

Endangered Species Act

The Endangered Species Act sets goals to protect America's abundant plant and wildlife resources. When a plant or wildlife is listed under the Act as "protected", the land that surrounds the endangered species must also be preserved. This helps to prevent the listed species from becoming extinct. However, even if there is no scientific evidence to justify that a listed species is present on a proposed development site, the species habitat may not be modified in any way. For example, a developer in Chico - California, tried to accommodate three endangered species and a nearby wetland to develop a 165 acre site that was "perfectly suited for affordable residential use". The U.S. Fish and Wildlife Service, the U.S. Army Corp of Engineers, and the California Department of Fish and Game decided to regulate the site because it contained a 4.88 acre wetland and 3 endangered species (meadowfoam plant and two shrimp). The developer offered

⁹Jensen, David, The National Association of Home Builders, "Wetlands: Development Assets", 1993, 2.

to set aside 48 acres (30%) for permanent open space and preserve the wetlands. The response by the Federal and State regulatory agencies was to set aside 50 - 80 percent of the site and provide 200 feet buffering around the wetlands. Adopting the government's plan would have cost an additional \$3,600 per home, making the project economically unfeasible. "As Americans, we cannot turn our backs on environmental protection, however, we also cannot unfairly preclude younger generations from realizing the American Dream that older Americans have enjoyed-affordable housing."¹⁰

State and Local Regulations:

The State of Michigan, its County, Township, and City municipalities have at their disposal the following list of laws to protect the health, safety, and welfare of its citizens. They include the Michigan Wetlands Protection Act, Subdivision Control Act local zoning, and land-use regulations. Each of these laws, serves as a tool to direct and stimulate public involvement and possible opposition to development proposals. Provided below is a listing of Federal, State, and Local Regulatory Agencies responsible for policing the laws and rules. They include;

Exhibit D:

Federal

- Army Corp of Engineers
- Environmental Protection Agency
- Fish and Wildlife Service
- National Marine Fisheries Service
- Advisory Council on Historic Preservation
- Council on Environmental Quality
- Department of Housing and Urban Development

State

- Department of Natural Resources
- Department of Environmental Conservation/Regulation
- Department of Health
- Department of Water Resources

Local

- Planning Commission
- Health Department
- Public Works Department
- Drain Commission
- City/Township Council Board

¹⁰ Giampaoli, Peter, "How Regulations Thwart Home Ownership", National Association of Home Builders, 1995, 2.

Michigan Wetland Protection Act:

In 1979, Michigan adopted Public Act 203-"Wetland Protection Act" which prohibits dredging, filling, or construction in wetlands. If a development is proposed in or around a wetland equal to or greater than 5 acres in size or contiguous to any lake, stream, or pond, it is regulated. If a developer wishes to fill in a wetland, a "mitigation area" must be created that essentially provides a three to one ratio "tradeoff" for the area of water filled. "Because the incredibly broad definition of "wetlands" includes vast areas too dry to meet any common sense definition of the word, there is no geographical area within the United States where it is safe to assume wetlands do not exist."¹¹ The time period for review and recommendation by appropriate federal, state, and local policing agencies can take years and thousands of dollars.

Subdivision Control Act:

In 1967, the Subdivision Control Act 288 was created by the State of Michigan to control the use of land and to make sure that it was suitable for building sites and public improvements.

Specifically identified in Act 288 are the following requirements:

- to provide for proper ingress/egress to lots,
- to promote proper surveying and monumenting of land subdivided and conveyed by accurate legal descriptions,
- to provide for the approvals to be obtained by subdividers prior to the recording and filing of plats,
- to provide for the establishment of special assessment districts,
- to control residential building development within floodplain areas, and
- to provide for reserving easements for utilities in vacated streets and alleys.

In addition to following each of the requirements stated above, the developer must also prepare engineering, planning, and surveying plans. The "ready-to-build" lots must receive "preliminary and final plats" approvals by the following list of state and local agencies:

¹¹Jensen, David, The National Association of Home Builders, "Wetlands: Development Assets", 1993, 1.

- county road commission,
- drain commissioner,
- state highway department,
- state conversation department (DNR),
- county health department,
- county plat board,
- public utilities, and
- local governmental jurisdiction (e.g. planning commission, board of appeals).

Please note that the local governmental agency requires numerous plan review stages to make sure that lot width, total lot square footage, setbacks, and minimum floor area square footage, can be obtained. Ultimately, the developer spends a considerable amount of time and cost to follow each of the steps that are outlined in Act 288.

Zoning and Land Use Regulations:

Most every city, town, village, and township has its own zoning and land use regulations. Though they undoubtedly differ somewhat, the various codes probably share many similarities. Primarily these codes were created for cities and counties to protect the health, safety and welfare of the community. However, over time, local zoning and land use regulations extended into the social and economic arena. "Cities and counties have used residential zoning to limit the incursion of obnoxious nonresidential uses into residential areas, to limit density of population and hence service demands, and to protect the social and economic status of neighborhoods."¹² Some jurisdictions increase the minimum lot size so that fewer new homes can be constructed. Other municipalities include limited growth to the infrastructure and public services needed to support a development. Finally, not approving rezoning request from agricultural uses to residential is the most common method to prevent development from occurring.

¹² Howe, Deborah A., "The Flexible House", American Planning Association, Winter, 1990, 70.

Case study: Charter Township of Flint, Michigan:

Flint Township adopted its first zoning ordinance in 1950. In 1971, it was replaced with one called Ordinance 5000. This zoning ordinance increased the minimum land area per bedroom, minimum required floor area per dwelling, and minimum required setback from a front property line. Finally, in 1995, a new zoning ordinance called 5500, was adopted by the Planning Commission. This Ordinance increased the amount of land required per single family household from 5,000 square feet to 7,200 square feet. Listed below is a comparison of each of the 3 ordinances and their percentage differences from 1950 to 1995.

Exhibit E:

Flint Township Zoning Ordinance Requirements

	1950	1971	% CHANGE 1950-71	1990	% CHA 1971-90
MINIMUM FLOOR AREA					
Apartments					
1 bedroom	600 sq. ft.	700 sq. ft.	17%	700 sq. ft.	0%
2 bedroom	800	900	13%	900	0%
3 bedroom	1000	1100	10%	1000	0%
Single Family Detached					
R-1C	1000 sq. ft.	1080 sq. ft.	8%	1080	0%
R-1D	760	900 sq. ft.	18%	960	6%
ALLOWABLE DENSITY					
Dwellings Per Acres	14.0	9.5	-47%	6.05	-36%

As shown in Exhibit E above, the 1971 zoning code shows the greatest percentage increase in minimum floor area for each dwelling and the largest percentage decrease in the number of detached dwelling allowed per acre of land. The 1995 Ordinance reflects very little change in the minimum square footage for the R-1D single family detached housing (8%), however, a 36 percent decrease in the maximum allowed units per acre. A closer look at the R-1D classification, better illustrates that in Flint Township, a "starter home" (which fits best in the R-1D district), has increased 200 square feet or 26 percent from 1950 to 1995. The R-1C district, which is provided

for a larger scale home, only increased 80 square feet or 8%. This being the case, for people who can not afford a larger home in the R-1C district, makes it even harder for them to keep up with the lowest square footage home requirements in R-1D. Whereas, over-adequate room and house areas increase costs and so do needlessly large land sites, what is perhaps more important is that 37% of the land is now being taken from agricultural and environmental terrain in Flint Township.

WHY IS NEW SINGLE FAMILY HOUSING SO EXPENSIVE?

Historical Perspective:

In 1934, the Federal Housing Administration (FHA) was created as a means to provide low down payment and low interest mortgages to the first time home buyers. Over the years, the FHA program spread into other federally funded programs (Exhibit F). After World War II (1945), social and political institutions supported the detached single family house as the dominant solution to the nation's housing problems. A high marriage rate and demand for separate households in the United States, offered the clientele for FHA.

Exhibit F:

Types of Residential FHA Mortgages

Source: U.S. Department of Housing and Urban Development, "Data for States and Selected Areas on Characteristics of FHA Operations Under Section 203(b)", (Washington, D.C., 20410).

FHA Type	Description
203(b)	Home Mortgages
203(i)	Home Mortgages in Outlying Areas
203(k)	Rehabilitation First Mortgages
213	Cooperative Mortgages
220	Mortgages in Urban Renewal Areas
221(d)(2)	Low Cost and Moderate Income Mortgages
222	Servicemen's Mortgages
223(e)	Home Mortgages in older, declining areas
233	Experimental Housing Units
234	Condominium Units
235	Home Ownership Assistance
237	Special Credit Risks
240	Fee Simple Title from Lessors'
243	Coinurance - Graduated Payment/Growing Equity Mortgages
244	Coinurance - Fixed Rate Mortgages
245	Graduated Payment and Growing Equity Mortgages
251	Adjustable Rate Mortgages

The results of federally assisted programs like FHA, resulted in two major pitfalls. First, it provided yet another tool for American families to escape from the inner cities for greener pastures in the suburbs, thus, the American cities became abandoned and segregated. Secondly, the FHA brought about abuse,

embezzlement and poor management because banks, secondary lending institutions, Realtors, and appraisers all knew the U.S. Government was backing the loans so, they became lazy in the approval and management process. The pitfalls of the FHA federally funded programs resulted in higher lending fees and tighter restrictions on lending practices for years to come.

Federal, State and Local Regulations:

Over the past 10 years, an increase in federal, state, and local regulations on single family housing, have negatively impacted its affordability in the United States. Federal regulations that are sometimes overlapping and contradicting, govern everything from infrastructure and workplace/employment related issues to mortgage financing. State and local regulations further delay projects by adding cumbersome permits and multiple reviews by agencies with overlapping jurisdiction. For example, in Flint Township, four agencies review the adequacy and approve/disapprove roads for new subdivisions-Genesee County Drain Commission, Genesee County Road Commission, Flint Township Planning Commission, and Flint Township Building Department.

Uncontrolled variables like mortgage interest rates, can affect the success or failure of a proposed development. Controlled variables like Federal and State Laws (e.g. Davis-Bacon Act, the Endangered Species Act, and the National Forest Plan), have an even greater impact on the success or failure of a proposed development. Unfortunately, the controllable variables continue to increase, causing a burden on the residential builder and ultimately the new home buyer. Listed below is a summary of the many variables and how their impact is being felt throughout the home building industry.

Mortgage Financing:

The Federal Reserve and large investment banking institutions play a major role in the affordability of housing in the United States. Home buyers typically finance most of the cost of a house, however, rising interest rates significantly affect the affordability of housing and reduce the

number of buyers in the market. As rates increase, the number of families able to purchase a home decreases. When rates drop, more households have the income necessary to purchase a home.

Davis-Bacon Act

The Davis-Bacon Act was introduced during the depression era, requiring that construction workers on publicly-funded projects to be paid a government-determined wage. Its effect has been to inflate wage costs for federally funded work. For example, in 1982 Oregon State University found that Davis-Bacon Act drove up residential and infrastructure construction cost in rural areas by an astonishing 26 to 37 percent.¹³

Occupational Safety and Health

OSHA was created to protect the worker's safety and health on construction sites. Originally, these laws were designed for large commercial construction projects, however, residential builders are also expected to follow the same practices. In recent years, state and federal OSHA officials have placed emphasis on enforcement within the residential sector, and home builders are now subject to inspections, including excessive fines that do not reflect the significance of the violations. Some of the safety issues that can be very costly and practically impossible to comply with on a residential job site include, excavations, stairways and ladders, trenching, fall protection, and scaffolding.

¹³ Irvine, James, "The Truth About Regulations and The Cost of Housing", National Association of Home Builders, 1995, 9.

Building Codes:

The Building Officials and Code Administrators (BOCA) and Council of American Building Officials (CABO), are two of the most recognized building standards used in single family construction. The purpose of these codes are to provide minimum requirements to safeguard life, limb, health, public welfare, and the protection of property. These codes regulate and control the design, construction, prefabrication, equipment, quality of materials, use, and occupancy location of one or two family detached dwellings.¹⁴ The CABO and BOCA codes are written by public employees (e.g. building officials) as Model Building Codes, then adopted in their entirety by state and local units of government.

Although CABO and BOCA were established to provide professional code administration and enforcement "for the protection of public health, safety and welfare," they continuously update perfectly functional codes to emphasize new product development and to reflect certain changes in building technology. Frequently, however, these updates have no relationship to health and safety, but do have economic consequences for builders and home buyers alike. For example, in Spring 1995, the State of Michigan adopted a National Model Energy Code (MEC) to control the amount of heat loss from floors, walls and ceilings in new residential and commercial development. The North American Insulation Manufacturers and the Department of Energy, developed the MEC as a new energy code which cost each new home buyer an average of 3,000 dollars.¹⁵

¹⁴CABO One and Two Family Dwelling Code, 1992, iii.

¹⁵Builders Association of Metro Flint, "Building Codes Authorities: The Uncontrollable Bureaucracy", (Housing Quarterly), Fall, 1995, 15.

The National Forest Plan

In 1993, President Clinton signed into law The National Forest Plan, in an effort to protect the Pacific Northwest National Forests and endangered Spotted Owl. This Act has resulted in raising the cost of lumber and wood products for a typical 1,500 square foot home by as much as 3,500 dollars in 1993. "Between July of 1993 when President Clinton instituted the National Forest Plan, and the end of the year, lumber prices increased 70 percent to a record 510 dollars per 1,000 board feet."¹⁶ Timber was long ago, cost competitive but now approaches extinction, as other alternative products become available (e.g. metal studs, panel systems, etc.)

High Cost of Housing:

The high price of housing has become a national problem affecting millions of families in all parts of the nation. During the 1970's, home buyers found that housing prices were rising faster than their income, and that mortgage interest payments were taking a much larger share of their budgets. Today, only 25 percent of American households are now able to afford new, single-family homes, whereas 10 years ago, half the households could afford them. Many factors contribute to the high cost of conventional framed housing. Already mentioned in this report is the increase in land values (Exhibit A) and the interference by federal, state and local agencies, as contributing factors to the high cost of single family housing. Other factors contributing to the high cost of housing include, a change in house buyer style; increase in labor and materials; financing availability; and supply versus demand of housing. This depends on which region of the United States you wish to build will determine how much you will pay.

A recent study conducted by the Census Bureau compared the average new home prices built in two dozen cities from 1990 to 1993. What was discovered is that prices in cities considered "inexpensive", where the average was \$125,000 or less, had increased by 17% during that 3 year period. However, during the same 3 years, prices actually fell by 11% in the areas considered "expensive", where new home

¹⁶"Rising Lumber Prices Send the Cost of Housing Through the Roof", National Association of House Building", 1994, 2.

prices averaged \$200,000. For example, the average price of a home in San Diego, California was \$278,000 in 1990, three times greater than San Antonio, Texas. By 1993, the San Diego average price dropped 12% to \$246,000, only double the price tag on the average new San Antonio home the same year. That narrow gap was evident in the existing home market as well. In Los Angeles, California for example, the median price of an existing home in 1989 was \$214,800. However, last year the median price had slipped to \$187,700. During the same period, Detroit's median price rose from \$73,700 to \$85,200.

Trend In Housing:

The inflated cost of housing has not only affected the quality of housing buyers can afford but also the lifestyles of the purchasers. To support high mortgage payments for a home of reasonable quality, more wives are going to work and unrelated people are pooling their incomes to purchase a house. One-parent households and persons living alone have also increased (see Exhibit G below).

HOUSEHOLD COMPOSITION, ALL HOUSEHOLDS 1970-1990 (numbers in 1,000s)

Exhibit G:

Source: U.S. Bureau of Census, 1980 & 1990 Current Population Reports Series P-60

	1970	1980	1990	% increase 1970-80	% increase 1980-90	1990 % of Total
All Households	63,446	80,072	87,098	26.2%	8.8%	100.0%
2- or more person households	52,295	62,334	64,518	19.2%	3.5%	74.1%
Married couple families	43,565	47,327	50,708	8.6%	7.1%	58.2%
Other male households	2,441	4,264	3,144	74.7%	-26.3%	3.6%
Other female households	6,289	10,743	10,666	70.8%	-0.7%	12.2%
1- person households	11,151	17,738	22,580	59.1%	27.3%	25.9%
Male households	3,933	6,974	9,207	77.3%	32.0%	10.6%
Female households	7,218	10,764	13,374	49.1%	24.2%	15.4%

The one person household from 1980 to 1990, reflects a smaller increase than the previous decade including one person female households, which equaled 24.2% versus 49.1% for 1980.

There are those who argue that the trends in housing will cause available housing to be used more efficiently and that Americans have grown accustomed to too much space. A recent report by the National Association of Home Builders (NAHB) suggests that the size of new homes is no longer on the rise. According to the Census Bureau, the size of the average new home built in 1994 was 2,000 square feet, the same size as the average new home in 1990. During the 1970's the average size of a single family residence was 1,100 square feet. By 1980 that number had increased to 1,300 or 18%. By the end of the 1980's the average home size increase to 1,580 square feet or 21%.¹⁷ Overall, the change in size from 1970 through 1994 reflects a significant increase of over 90%. Other changes that are relative to the increase include 2 1/2 baths, 2 car garages, central air, "great rooms" and built-in kitchens.

"The amenities that are now considered standard features in the new conventionally framed houses of today, are comparable to the Ford-Pinto and a Cadillac-Seville."¹⁸ In the 1960's the "starter homes" were small and affordable, like the Ford-Pinto. It did not include 2 1/2 baths or 2,000 square feet of living space on 1/4 acre lots. Today, the starter home is a Cadillac-Seville, roomy with central air and a high price tag.

Cost of Labor and Materials:

The materials used in construction of a conventionally framed house in the 1960's are still used in the new houses built today. Wood and nails are common supplies on the job sites, however the methods for bonding them together have changed. Today, air guns are used to drive 16d nails into 2" x 4" studs at a fraction of the speed a carpenter and his/her raw fingers could do. Also, the standard practice of using 2" x 4" wood studs at 16" on center is still used for constructing exterior and interior walls. A basement wall poured with concrete (10" wide) is an approved

¹⁷ Builders Association of Metro Flint, "Housing Brief", (Housing Quarterly), Fall, 1995, 14.

¹⁸ Amber, George H., Developer, Personal Interview on November 18, 1995.

building practice. Finally, a roof built with pre-engineered trusses at 24" on center, 1/2" plywood decking, 15 pound felt paper and asphalt shingles is the same method of construction used in the 1960's.

Although many of the same materials are used in constructing a single family dwelling, what has changed is the cost of materials. Exhibit H, provides a partial listing of materials used in construction of houses built of yesterday and today including the price differences from 1951 - 1990. Please note that lumber prices, which averaged about 200 dollars per 1,000 board-feet during the 1980's, have increased dramatically, making new homes less affordable. Other materials that have increased greater than the cost of inflation over the last 30 years include bathroom fixtures, asphalt shingle roofs, and exterior masonry brick.

Exhibit H:

STANDARD MATERIALS INVENTORY LISTING
source: Means Cost Data

#	MATERIALS	Unit of Measure	1951		1960		% change		1970		% change	
			mat.	labor	mat.	labor	material	labor	mat.	labor	material	labor
1	BATHROOM-SINK (24" x 20")	Each	\$55.00	\$17.00	\$70.00	\$26.00	27.3%	52.9%	\$120.00	\$60.00	71.4%	130.8%
2	ASPHALT ROOF SHINGLES	Sq.	\$7.50	\$6.50	\$9.00	\$10.00	20.0%	53.8%	\$13.00	\$14.00	44.4%	40.0%
3	BRICKWORK-4" VENEER	S.F.	\$0.47	\$0.53	\$0.50	\$0.80	6.4%	50.9%	\$0.74	\$1.00	48.0%	25.0%
4	STUDS-2" x 4" WOOD	M.F.B.M.	\$103.00		\$120.00		16.5%		\$135.00		12.5%	

#	MATERIALS	Unit of Measure
1	BATHROOM-SINK (24" x 20")	Each
2	ASPHALT ROOF SHINGLES	Sq.
3	BRICKWORK-4" VENEER	S.F.
4	STUDS-2" x 4" WOOD	L.F.

1980		% change		1994		% change	
mat.	labor	material	labor	mat.	labor	material	labor
\$98.00		-18.3%		\$146.00	\$75.50	49.0%	
\$23.00	\$19.50	76.9%	39.3%	\$29.00	\$34.50	26.1%	76.9%
\$1.88		154.1%		\$4.15	\$11.75	120.7%	
\$2.50	\$2.36			\$3.56	\$3.81	42.4%	61.4%

M.F.B.M. = 1,000 feet board measure

Sq. = a square or 100 square feet

S.F. = square feet

L.F. = linear feet

WHAT ALTERNATIVES ARE AVAILABLE FOR AFFORDABLE HOUSING?

Over the years, methods for reducing housing cost met;

- reducing land costs,
- reducing capital costs for roads and utilities,
- reducing labor and materials cost for construction,
- reducing overhead costs, including professional services fees and profits, and
- reducing financing costs for construction loans.

Unfortunately, many of these methods have been exhausted and now home buyers and home builders are forced to counter the problem of home affordability by looking for housing products that meet their means, even if it is necessary to accept new forms of housing. Some of these new ideas are realistic and obtainable. They include;

- increasing the density of use,
- introducing "Flexible" housing alternatives,
- re-introducing pre-manufactured housing; and
- introducing innovative products for constructing housing.

Increased Density:

Land, capital improvements, materials, and labor usually account for the largest share of all costs for single family housing and labor and materials are the most significant costs in the production of multi-family housing. Reducing any of these major cost items will help to reduce the final housing price to the consumer. One of the least expensive alternatives that does not require any financial investment is increased density of use. Local public constraints on the amount of land required for detached and attached units normally requires the local planning commission approval. Once approved, the local building department administers the requirements to make sure that the Ordinance is followed and upheld.

Please refer to Exhibit E, in this report for further illustration of how the density of housing has changed for one municipality (Flint Township) over the last 45 years. Ultimately increasing the number of units allowed per acre of land, can significantly reduce the cost of each housing unit sold.

"Flexible" housing:

"One way of easing the shortage of affordable housing is to design new and rehabilitated single family residences so that accessory apartments are easily and cost-effectively created or removed. This mode of design will facilitate the adaptation of the house to changing household needs and in so doing will broaden access to home ownership."¹⁹ This allows the owner the opportunity to lease a portion of the surplus space for a second occupant, thus offsetting the high monthly mortgage payments. In a flexible home, the design inside the house is what changes; only minor alterations are required to create or remove an accessory apartment. Over the years, as the size of the occupants change, due to marriage, children, divorce, etc., the house to, changes and conforms. This suggests that many more lots should be available for two family and multi-family districts. Not merely for the many income duplexes or apartments that would be built, but for the many new houses planned to be single family at the onset, convertible to a two-family in the future.

The flexible house offers the owner-occupant a continuous monthly income, even after its original owner has moved out to larger, more pretentious, and far costlier single-family house. Also, the constant income from the rent hedges against inflation because, as inflation rises, interest rates rise and less opportunities prevail for home buyers. In bad times, earning drop, unemployment soars, sales languish, and rent increases cease. But demand continues for the necessities of life: food, transportation, fuel, and shelter. "Middle of the line rental dwellings which offer quality housing at a good value good times or bad, remain an re-rent more readily in any economy."²⁰ Other benefits of flexible housing include tenants

¹⁹Howe, Deborah A., "The Flexible House-Designing for Changing Needs", (APA Journal), Winter, 1990, 69.

²⁰Amber, George H., "Income Houses", Succinic Press, 1993, 51.

who are provided a modern home-like, semi-private apartment at competitive rent and lending institutions who retain long-term commitment fees and interest from a securable owner-occupied income generating property. Finally, school districts receive additional financial support for each new student added to the district and municipalities are able to preserve their housing stock while alleviating the problem of inadequate housing.

One of the major impediments to flexible housing is zoning and land use regulations. Many local townships and cities prevent two family or multi-family units in single family zoned districts. And, for those areas where multi-family districts exist, only limited, unattractive areas are available with high price tags. Another obstacle to flexible housing is the notion of "traditional" American housing, which is viewed by some observers as "nothing more than a dream based on nineteenth-century conceptualizations of the house as the woman's sphere and the city as man's world."²¹ In other words, the male is looked at as the breadwinner and the female as the housewife, but during a time when housing was affordable (after World War II). Today, the traditional family structure has changed (see Exhibit G) and indeed we now have two breadwinners and a larger population of single family households. "The challenge therefore is to provide housing, not for one mainstream need, but for so many different needs that there is virtually no dominant housing solution."²²

Pre-manufactured/Modular Homes:

As financial constraints mark the lives of most Americans, purchasing and living in factory-built houses have increasingly become the means of owning a house in the United States. According to a recent article published in the Detroit Free Press, one out of every 16 Americans lives in a mobile home or modular/pre-manufactured home. No longer are these perceived "tin-cans", inhabited by poor people living on top of each other in small trailer parks. Rather, median income home seekers are picking out

²¹Howe, Deborah A., "The Flexible House-Designing for Changing Needs", (APA Journal), Winter, 1990, 70.

²²Ibid.

these new designs made in sophisticated factories, and having them delivered to suburban sites everyday. Why? Because the amount of time and cost associated with buying the modular/pre-manufactured home and constructing a new foundation for it, is 10 to 30 percent less than conventionally framed houses.²³ Also, the quality of workmanship of many pre-manufactured homes are just as good, if not better than "stick built" houses. Today, 2" x 6" framed walls with 1/2 inch drywall finish are standard features in many of the pre-manufactured homes. Even custom changes can be accommodated on modular homes, of course cost would be added because the factories constructing these homes operate much like an automobile assembly line but at a much slower pace.

Products For Reducing Construction Cost:

Many methods exist for providing affordable housing in the United States. Previously mentioned were two obtainable "macro" methods - higher density uses and flexible housing. Other methods include the reduction of costs for amenities such as recreational buildings, swimming pools, and lush landscaping. Products on a "micro" level are available to help increase worker productivity and reduce materials cost. They include; foam panel systems, blown cellulose insulation, and wood foundations.

Foam Panel System:

The Foam panel system, is a more recent product that reduces the number of man hours needed for constructing conventionally framed walls and roofs. Traditionally, 2" x 4" or 2" x 6" walls are framed on the job site and then erected to support roof trusses. Instead, the foam panel system is pre-fabricated in a factory using 5/8 inch plywood on both sides with foam insulation sandwiched between them. The length of the panels range from 8 foot by 10 foot to 16 foot by 24 feet. Once the panels are delivered to the field, they are lifted into place and openings (e.g. windows and doors) are cut out. Ideally, the foam panel system saves the home builder in less cost for labor and the home owner in reduced monthly energy bills.

²³Watkins, A., "The Complete Guide To Factory Made Houses", 1991, 15.

A foam panel system home has lower heating and cooling bills than homes insulated with conventional framed wall and ceiling materials (e.g. batt insulation, studs, etc.). First foam panels achieve thermal ratings two times greater per inch than fiberglass insulation . Secondly, the panel system contains 15 percent less wood, thus reducing "thermal bridging" which leads to voids in the walls. Finally, when not installed properly, batt insulation is susceptible to voids. The foam panel system does not allow any voids or air movement thru the walls, thus reducing the energy loss.

In a recent article published by Builder Magazine, data was compiled from a single family, two story home built with panels versus conventionally framed 2" x 6" exterior walls studs. Using the foam panel system, the exterior walls were erected in 22 man hours. "This includes prep work on panels and the cutting in of doors and windows for a total cost of 6,543 dollars." The conventionally framed 2" x 6" stud walls, using 5/8 inch plywood, headers for doors and windows, and insulation, took 47 hours and a total cost of 11, 684 dollars."²⁴ The cost savings of using the foam panel system versus the conventionally framed system was 5,141 dollars or 78 percent. Please note that the home described above was constructed in South Dakota, Colorado and Massachusetts. The heating bills for winter months in those three States were four times less in panel systems versus the conventional frame homes.

Cellulose Insulation:

Energy efficiency is a top priority and insulation, the necessity, to keeping high quality housing in the United States. Over the past 30 years, fiberglass has been used as the primary necessity for keeping homes warm and snug during cold winter months. Today, an affordable and healthier alternative exists using blown cellulose insulation. Made primarily from recycled newspaper, treated with borax and boric acid, cellulose insulation is nonabrasive, contains no suspected

²⁴"Energy Pack" (Builder Magazine), May, 1989, 222.

carcinogens and is environmentally friendly."²⁵ On the other "pricky" hand, fiberglass insulation is blown glass and formaldehyde. These fibers are abrasive to the skin and can trigger serious respiratory problems if inhaled. Please note that the U.S. Department of Health and Human Services', lists fiberglass as a suspected carcinogen.

Cellulose insulation is more economical than fiberglass partly because it is more efficient, nearly 50 percent better than fiberglass at keeping a house warm. Also, it reaches tight spots where fiberglass insulation is hard to reach (otherwise uninsulated). For the average 1,500 square foot home using cellulose insulation versus fiberglass, the cost saving is approximately 40 percent. To cover the typical 1,000 square foot attic space to the recommended thickness of R-30 (which means the heat resistance is 30 time greater than an uninsulated space), you would need to buy 245 dollars of cellulose insulation or 340 dollars of fiberglass insulation.²⁶ That difference may not seem a lot, however, when you take into consideration the remaining walls and floors that need to be insulated, the cost is three times higher.

Wood Foundations:

Wood foundations are becoming ever more popular as an alternative method for affordable construction of basements, knee walls and sub floors. The advantages of wood over traditional masonry walls are less mustiness, clamminess and humidity. Unlike conventional foundations, wood foundations do not crack and do not absorb moisture from the ground. Also, the wood foundation walls cost 15 percent less than masonry foundations and do not require special trades people (e.g. masons). The same carpenters that will construct the floors, trusses and roofs are the same people used to erect the wood foundation walls.²⁷

²⁵ Sinanoglu, Elif, "Pass On The Pink Stuff When You Pick Insulation", (Money), Oct. 1994, 25.

²⁶ Ibid.

²⁷ Bolam, Richard, "A Home Buyer's Guide to the Permanent Wood Foundation", 1993, 5.

Wood foundations are constructed much like the wood-frame walls in the rest of the house except that much of the lumber and plywood materials are pressure treated with preservatives that become chemically fixed in the wood. This treatment protects the foundation from fungi, termites and other causes of decay. The foundation walls are engineered to support the structure and to withstand the forces of earth surrounding the foundation. According to the U.S. Department of Agriculture, pressure-preservative-treated wood like that used in the wood foundation has withstood continuous testing in extreme decay and termite conditions with no failures reported after 50 years.²⁸

²⁸Permanent Wood Foundations, "Basement Alternative", June, 1995, 1.

CONCLUSION

After World War II, social and political institutions supported the detached single family house as the dominant solution to the nations' housing problem. This came at a time when land was abundant and the cost of materials were inexpensive. Now, as significant demographic changes call into question the belief in the traditional family, it becomes evident that the diversity in housing alternatives must to increase. At the same time, Federal, State and Local building regulations need to re-evaluate the zoning, land use restrictions, and building codes currently on the books. Regulations add to the final purchase price of a home. Although some regulations are needed, layers of unnecessary regulations drive up housing costs, pushing potential buyers out of the market, and slowing new home construction and America's economy. According to the National Home Builders Association, for every 1,000 dollar increase in the purchase price of a median-priced home can force more than 21,000 potential buyers out of the market nationwide."²⁹

In this report, I identified what previous federal government involvement has done to affordable housing today. Also, what ways the federal, state and local regulations adds to the cost of housing. Finally, I included methods for reducing construction cost and increasing affordability for first time home buyers.

The American Dream of home ownership can not continue to diminish (as alluded to earlier in this report). Eventually, the average citizen will not be able to reach their dream and history will repeat itself - "pre-World War II". Innovative alternatives must continue to be introduced that bring down cost and increase full utilization of land and materials. A healthy housing industry will help improve the prospects of decent housing for all.

²⁹Irvine, James, "How Do Regulations Impact the Country's Economy?", National Association of Home Builders, 1995, 6.

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