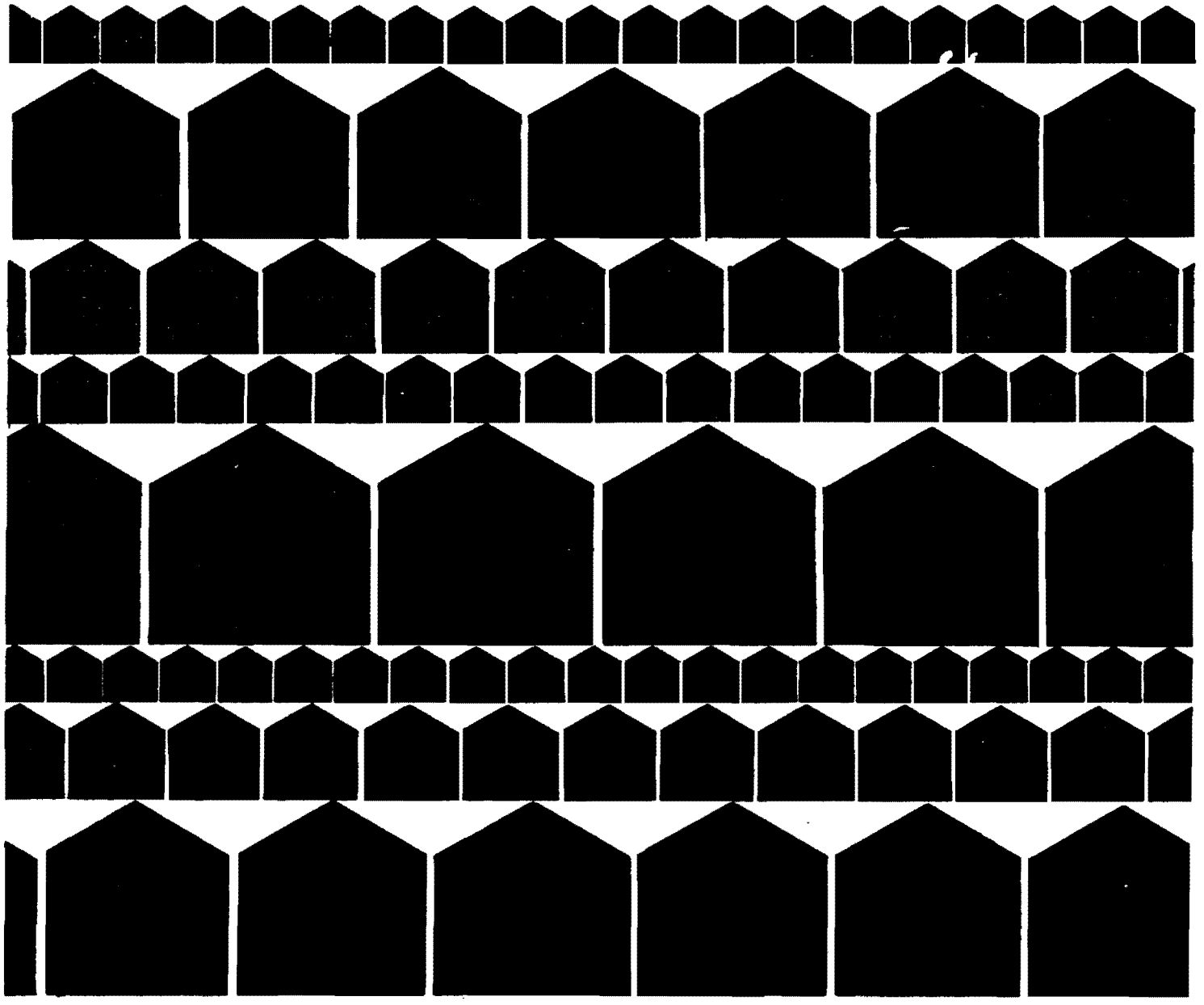
U.S. Department of Housing and Urban Development

Housing Cost Reduction Demonstration



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I. Purpose

This Demonstration was designed to test how to reduce the cost of single family housing units using local government regulations as the only variable. Inflation is rapidly pricing many middle income families out of the home buying market. The alternative to Federal subsidy (for interest rates, land costs, land development costs, etc.) is to build more rapidly and less expensively to reduce the cost of housing.

This Demonstration was concerned only with the effect of Zoning Ordinances, Subdivision Regulations, and Building Codes on the cost of housing. We looked at not only the technical specifications themselves, but also the time involved in processing the applications.

The concept behind the Demonstration was to ask the builder/developer to be creative and to design the site and the buildings to meet contemporary architectural, engineering, and site planning standards. The local governments were asked to permit minor deviations from their existing regulations, without enacting new ordinances, to permit the innovations proposed by the builders. The local governments were also asked to provide expedited processing and determine how rapidly reviews could be completed to enable construction to start as rapidly as possible.

In order that the Federal Government would not delay or impede this Demonstration concerning local regulations, the Department of Housing and Urban Development (HUD) issued instructions to its field offices to permit waivers or modifications to its outstanding instructions to permit innovation. HUD also requested its field offices to provide expedited processing for FHA mortgage insurance in order that HUD not delay any actions being taken by local governments to expedite their processing.

II. History

The Housing Cost Reduction Demonstration is the result of three years of effort by HUD to reduce the cost of housing. The Secretary of HUD appointed a Task Force on Housing Costs in 1977. The first meeting of this Task Force was held in October of 1977. The report of the Task Force was completed in May 1978. One of the recommendations of the Task Force report was that HUD should sponsor a National Conference on Housing Costs.

The HUD National Conference on Housing Costs was held in February 1979. Among the findings of the Conference were the facts that many State and local government regulations are directly responsible for increasing the cost of housing. The standards in these regulations are higher than those needed for adequate engineering purposes or for the general life style of the American public. It was further shown that the lengthy processing times for approving applications greatly increases the cost of housing.

In January 1980, the White House held a Conference on State and Local Regulatory Reform. This Conference was conducted by Dr. Alfred Kahn, the President's Advisor on Inflation. President Carter spoke at this Conference on all aspects of Regulatory Reform. Although this Conference covered many items, one of the most significant was that of housing.

As a result of this Conference, the National Association of Home Builders and others recommended that the White House conduct a demonstration to show how housing costs could be reduced by modifying local government regulations and reducing processing time. Meetings were held between the White House and HUD and a decision was made to begin the Housing Cost Reduction Demonstration. The locations were selected in March 1980 and the first meetings were held in April and May of 1980 when the Demonstration began.

III. Selection

The White House and HUD agreed to a limited demonstration in four locations in the Nation. It was agreed that only single family attached and detached homes would be built.

The locations were selected based on the following criteria:

1. Geographic spread
2. Desire for two middle sized cities and two close-in suburban locations
3. Good housing market
4. Local government interest and support
5. An experienced HUD field office with a quality staff

HUD reviewed some 25 potential locations and of these about 10 were studied in more detail. The final selections were made by HUD of the following four locations:

A. Cities

1. Hayward, California
2. Shreveport, Louisiana

B. Suburban

1. Allegheny County, Pennsylvania (suburban Pittsburg)
2. Clark County, Washington (suburban Portland, Oregon)

After selection of the locations was made, the HUD field offices were asked to select a builder for the Demonstration. The field offices were advised to use the following criteria in making their selection:

1. Knowledge of HUD/FHA programs
2. Years of experience with HUD/FHA programs
3. Years of experience in constructing townhouses or clustered single family detached
4. Number of projects built using FHA mortgage insurance
5. Quality of work as judged by the field office
6. Experience in working with the local government and understanding existing codes and ordinances

The local governments were asked to concur in the selections made by HUD.

This selection process was made in a few weeks since HUD and the White House desired to have at least a few housing units completed at each location by the end of the Fiscal Year, which ended on September 30, 1980. This is considered a very ambitious program since the builder, working with the local government and the HUD field office, was expected to move from an initial meeting to a completed home in five months. This includes site planning, engineering drawings and specifications, house designs and construction drawings, site work including roads and utilities, and the construction of the homes themselves. All local government and HUD reviews and approvals would also have to be made during the same time frame.

IV. Results to Date

By the end of October, impressive results were made at three of the four locations. Each location will be discussed separately in this section.

Shreveport

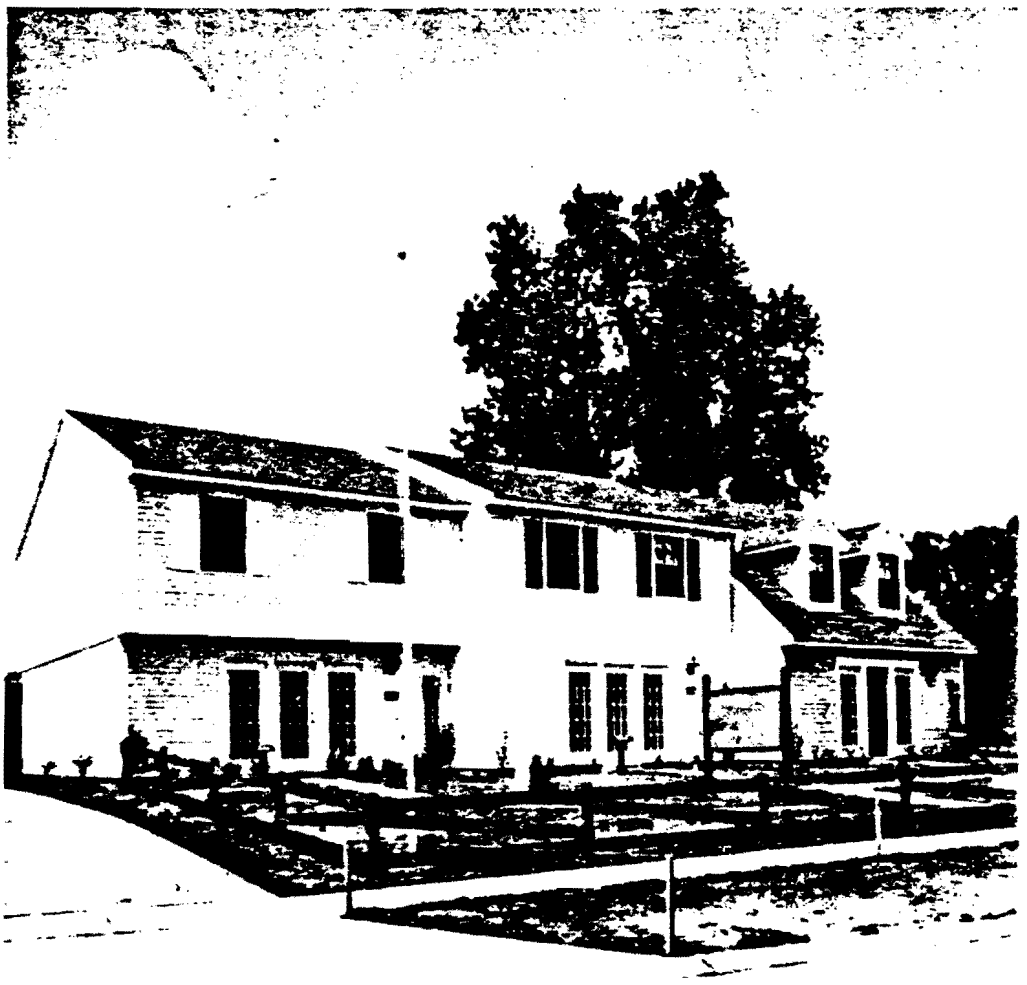
This Demonstration consists of townhouses located on three inner-city sites. The following table illustrates that these small sites are typical of what may be found in many cities and that the cost savings here may be replicated in many other locations.

Project	Acres	Units	Units Per Acre	Land Cost Per Unit	Development Cost Per Unit
Parkway	2.38	43	18.1	$2,790	$3,288
Highland	.77	16	20.8	$3,125	$3,262
Centenary	.71	16	22.5	$3,234	$3,656

The Parkway Commons project was started first and a grand opening was held at the model homes on September 12. This is an outstanding performance since the first meeting was held between the city, HUD, and the builder on May 1, 1980. The following table presents data on sizes and sales prices.

Heated Square Feet	No. of Stories	No. of Bedrooms	No. of Baths	Sales Price
998	1.5	1	1.5	$48,950*
1250	2	2	1.5	$52,850*
1333	2	3	2.5	$56,500*
1093	2.5	1	1.5	$55,900**
1345	3	2	1.5	$59,550**

*includes a 2 car carport
**includes a 2 car garage under the unit



A comparable housing unit (with two bedrooms and two baths of 1,500 square feet) in a suburban project with conventional processing times and standards sells for $70,000. The builder estimates that approximately $15,000 was saved per unit. The following table lists the areas where these savings occurred.

Cost Savings Areas

	Savings
1. Density: The density is about double the density of similar suburban projects	$ 8,500
2. Time:	
a) Land carrying costs and administration costs	500
b) Development costs, assuming 15% inflation for 12 months	500
c) Construction costs assuming 15% inflation for 12 months	4,400
3. Construction cost reductions:	
a) Electrical	100
b) Heating/Air Conditioning	50
c) Elimination of unnecessary sheetrock	100
d) Non-cantilevered roof trusses	150
e) Use of plastic pipe	100
f) Other site and unit innovations	600
Total	$15,000

This represents a 21 percent reduction in cost from the comparable $70,000 unit if the same unit was started today at a typical density and without the cost savings.

The following list is an example of small specific items, which when added together provide significant savings to the home buyer.

1. Stable soil permitted the elimination of gravel in the bottom of ditches for water and sewer lines at a savings of $.76 per foot of line or about $15 per house.

2. In Shreveport, it is typical to use a utility contractor to install water and sewer lines up to the house and a plumbing contractor inside the house. In this case, a plumbing contractor performed the total job at less cost. It is difficult to estimate the savings at this time, since much of the savings will be in time saved on the progress of construction. When the project is 100 percent complete, an estimate will be made.

3. The elimination of front sidewalks saves $125 per unit.

4. The elimination of gutters save $135 per unit.

5. Use of 2'8" x 4'4" windows in lieu of 3'4" x 4'4" windows saves $20 per window or about $100 per house.

6. The mixing of manufacturers of units of air conditioners with other units of compressors of different origin saved $50 per unit.

7. Use of plastic pipe saved $100 per unit.

8. The use of non-cantilevered roof trusses saves $150 per unit.

9. The elimination of fire code sheetrock on the underside of roof decking at separating walls between attached houses saves $100 per unit.

The grand opening was held on Friday, September 12, 1980. By Sunday evening 10 of the 16 units in phase I were sold. All financing was conventional without FHA mortgage insurance.

Hayward

This Demonstration consists of 58 townhouse units at one location. The site is divided into parcels by a street. The total site consists of 3.54 acres with a density of 16.4 units per acre.

The site is on the southern edge of the city but in close proximity to the downtown area and has all public and private urban services and facilities at or near the site. The land costs are $5,862 per unit and the development costs are $2,400 per unit. The following table presents more specific information on the project.

Square Feet of Floor Area	No. of Bedrooms	Sales Price
896	2	$53,000
1218	3	$57,000
1330	4	$65,000

The amenities include carports, solar domestic hot water, passive solar heating, energy saving fireplaces, insulated glass, garbage disposals, individual washers and dryers, R-30 insulated ceilings and R-19 walls, enclosed patios, oak kitchen cabinets and quarry tile entrances.

The developer estimates that similar units, in the Hayward area without these savings would sell for $79,500 (2BR); $85,500 (3BR); $97,500 (4BR). Therefore, savings range from $26,500 to $28,500, to $32,500 on the various types of housing units.

The cost savings have occurred principally in processing time. It normally takes the city 12 to 24 months to review plans and construction drawings through a complex two-tiered processing system. The first general meeting was held between HUD, the city, and the developer on April 17, 1980. Planning started in May and all approvals have now been made. Therefore, only six months elapsed before site work which began the end of September. A formal ground breaking ceremony was held August 20, 1980.

In this project the site was near the center of the city but was not annexed. This processing time includes an annexation process along with zoning hearings and subdivision review process. The Mayor and City Council intervened on behalf of the Demonstration to speed the annexation process between the County and State governments.

A unique feature of this project is the energy conserving element. The detailed design work for this energy system consumed much time. The features include high insulation in walls, ceilings, under slabs, and around water heaters. The house was sealed with low infiltration double glazed windows and complete weatherstripping. A thermal mass of one and one-quarter inch plaster wall was used for heat storage for evening use. Light colored building surfaces reduce unwanted heat in summer and fixed sunshading devices also assist. It is estimated that these units will have reduced energy requirements by 80 percent.

The "Commons" is uniquely landscaped with drought tolerant, native, and Mediterranean plants including a wide variety of fruit trees and other edible landscape; and maintained with a drip irrigation system to minimize water use. Water conservation is achieved in the living units through the use of low water-use plumbing fixtures.

The following table presents some of areas where specific cost savings have occurred.

Cost Saving Element	Per Unit Savings	Total Savings
One sewer lateral for every two units	$345	$ 20,000
Back-to-back units served by a single common waste vent	$129	$ 7,500
Framing at 24 inches o.c.	$172	$ 10,000
Various city fees	$2,000	$116,000
Total	$2,646	$153,500

When savings in processing time are included, these homes will sell for 33 percent less than comparable homes in the market place.

Because of the time involved in having the project annexed, and because of the extra time for the solar design, this project is behind others at the same stage. Another time delaying factor was that part of the site had three existing homes with tenants. These families were relocated and the homes have been demolished. It is anticipated that model homes will be completed in December 1980.

Allegheny County

This Demonstration consists of three sites in communities located very near the City of Pittsburgh. These are well established old steel mill towns with little or no land for new development. Difficulties occurred in one of the communities and the Demonstration has been indefinitely postponed.

In all three of the communities, the sites selected were areas that were cleared of former buildings. The Munhall site was formerly occupied by a school. The site in Duquesne was formerly occupied by a library. The site in Rankin was formerly occupied by a school.

During the process of planning the former school site in Munhall, neighborhood residents became concerned with the construction of townhouses at this location. The School Board was requested not to sell the site to the County for the purpose of constructing homes. Therefore, data on the proposed 60 townhouse units will not be presented in this report. The following data is presented for the two locations which have had housing starts.

Project	Acres	Units	Units per Acre	Land Cost per Unit	Development Cost per Unit
Duquesne	2.6	13	5	$3,385	$11,610
Rankin	2.0	13	6.5	$ 77	$15,385

Both of these projects have been started. Most of the homes were completed by October 31, 1980, when a ribbon cutting ceremony was held. All of the homes have been sold. They are single family detached and will vary in size from 900 square feet to 1,050 square feet. The homes are all prefabricated. Panels are built in a factory and shipped to the site. Each home can be erected in one day with only some interior finishing work to be completed.

Cost savings occurred primarily in the on-site and off-site work. Each development consists of 13 lots on a cul-de-sac. The street width was reduced from 32 feet to 28 feet. A sidewalk was placed only on one side. Plastic pipe was used and fewer catch basins for storm water were installed. The communities also did not require water tap charges. All of these innovations reduced the costs by $2,500 per lot.

The homes themselves were built to the basic BOCA code requirements. As permitted under BOCA, the studs were 24 inches on center, and single jacks were used under windows, which had not been previously permitted by the local government.

Time was saved in processing. The County Health Department took two days instead of two weeks. Subdivision review by the County took one month instead of six months. Total time saved over a typical project in a more remote suburban location was one year.

Other savings include the preplanning of the site to move a minimum amount of dirt which saved $1,000 and factory construction which saved $800. Because of the instability of the soil which has former school foundations underneath, it was necessary to enlarge the spread footings which cost an additional $2,800 per unit. The builder estimates additional savings could have resulted if narrower lots could have been used than those which had been previously plotted. Since these are inner city locations, overhead electrical service could have been used at a cost reduction over underground. The builder has also factored 8½ points into the sales price to cover the FHA discount rate.

The homes will sell from $42,000 to $45,600. These same homes could sell for $55,000 to $60,000 using conventional cost methods. The estimate is a 24 percent cost reduction.

Clark County

This project has not made the progress that was anticipated. The plan is for 65 single-family detached units in a suburban location north of Portland, Oregon.

This was the last of the projects to have an initial meeting. Environmental questions developed, since the Demonstration is to be on a portion of a larger Planned Unit Development. The County was in the process of changing to a new zoning ordinance and this is the first project to be processed through the new system.

The builder selected has always produced housing units of excellent quality. However, the site designs which the builder prepared quickly for this Demonstration were good and quite acceptable, but not innovative or of the highest creativity in design. The builder was also frustrated by anti-growth elements in the County who opposed attempting the Demonstration. One of the County Commissioners was opposed to moderate- and middle-income housing and worked against the project. Time was also lost by the eruption of Mt. St. Helens which is located northeast of the site. During one eruption, ash fell on the site. The County staff had to deal with volcano problems and could not devote the time necessary to this project.

The project was finally approved by the County at the end of November 1980. Construction should begin in January 1981. HUD will continue to work with the builder and the County to achieve a good subdivision for the people of the County.

V. What has been learned

This small Demonstration in four locations with no Federal funds and a very short startup period for planning has produced significant results. The prices of homes have been reduced by 21 percent, to 24 percent, to 33 percent in the three projects which moved ahead.

These savings can be duplicated in most communities in the United States. It requires that private builders and developers use creativity to produce the best designs that are innovative and use contemporary engineering standards. It requires that local governments have contemporary performance oriented codes and ordinances and provide simultaneous rapid processing.

The Mayor of Hayward, California has initiated a "one-stop" processing system to reduce time. The Townships of Rankin and Duquesne are adopting new building codes. The City of Shreveport is instituting an advisory committee composed of industry representatives and local officials to review current processing procedures.

Housing costs can be reduced. Processing time can be shortened. Flexibility can be achieved. The key, as two mayors explained, is a "good cooperative spirit." From the formative stages of development, these local officials and private developers were willing to sit down and work together. The Mayors and County Commissioners in these Demonstrations lent the full support of their offices. They wanted to work with private developers with good track records as partners to produce lower cost housing for the people of their communities. All those involved in the Demonstration, local officials, developers, and HUD representatives, attributed open communication with each other as a major ingredient in the Demonstration's success. With communication lines open, local officials and builders were able to overcome many obstacles which normally prolong construction time.

The cost savings realized in the four Demonstration communities can be achieved elsewhere across the country when local officials, builders, and Federal representatives work together. This is an important first step in reducing the inflationary spiral, in which the housing industry is locked. HUD only affects a small percentage of the Nation's total housing starts, but local governments affect all the new construction. Therefore, major reductions in housing costs can occur when local government helps in the process.