DIVISION OF
PLANNING COORDINATION
OFFICE OF THE MAYOR
CITY OF HOUSTON
TEXAS

TRANSFERABLE HOUSING PLANNING TECHNOLOGY

AUGUST, 1979
WORKING PAPER .
DESCRIPTION OF A METHODOLOGY FOR
EVALUATING HOUSING MARKET
IMPACT OF GROWTH OPTIONS
FOR THE CITY OF HOUSTON

TRANSFERABLE HOUSING PLANNING TECHNOLOGY

WORKING PAPER:
DESCRIPTION OF A METHODOLOGY FOR
EVALUATING HOUSING MARKET IMPACT
OF GROWTH OPTIONS FOR
THE CITY OF HOUSTON

AUGUST, 1979

Submitted by:
DIVISION OF PLANNING COORDINATION
OFFICE OF THE MAYOR
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PREFACE

This paper serves as a review of the efforts by the City of Houston to develop a methodology by which forecasts of households and housing units can be matched to estimate the needs for assisted housing by low and moderate income families. This methodology has been incorporated as a module within a housing calculation tool which is being used to forecast population, households, and housing units in five year intervals.

The evaluation methodology is described as well as a summary of its use in preparation of a 1980 Housing Assistance Plan by the Community Developmnet Division, Office of the Mayor, City of Houston.

The paper was prepared by the Division of Planning Coordination, with the support of The Assistance Group Incorporated, Silver Spring, Maryland, consultants to the project.

WORKING PAPER: DESCRIPTION OF A METHODOLOGY FOR EVALUATING HOUSING MARKET IMPACT OF OPTIONS GROWTH

I. INTRODUCTION

This paper is one of a series of papers describing the efforts of the City of Houston to develop methodologies for expressing and evaluating growth options for the City. Specifically, the paper addresses the methodology for evaluation of growth options on the housing market. Separate papers describe the methodology for expressing growth options and the use of the Housing Calculation Tool to test the impact of growth options on the housing market. The content of this report has been structured to provide:

- An overview to the Department of Housing and Urban Development contract supporting this effort;
- A review of the methodology being used to express growth options;
- A review of the methodology for evaluating housing market impact; and
- A review of the use of the housing market evaluation methodology in preparation of the 1980 Housing Assistance Plan.

II. CONTRACT OVERVIEW

In December, 1977, the City commenced a twelve month study of how the city could develop transparent, useful approaches to identifying alternative growth scenarios for the City and their likely impact on the local housing market and requirements for City services. This is a continuation of work initiated by the City under a DHUD capacity building contract. Under this previous contract, the City established a Policy Planning Division in the Office of the Mayor. This unit, since named the Division of Planning Coordination, over time was charged with responsibilities for developing various policies to guide operational planning, budget formulation, capital improvements programming, legislative analysis, and inter-agency coordination.

Given the responsibilities of this unit, it was apparent that a clearly stated, well developed urban growth policy would be necessary to guide upcoming City planning/programming decisions.

As a first step, the City developed and began implementing an integrated work program utilizing City and Federal funds to address the issues related to urban growth:

- EPA (Sec. 201/208) funds were used to develop population and land use forecasts;
- FHWA (Sec. 112) funds were used to establish an accurate land use base;
- EDA (Title III) funds were utilized to develop more accurate employment projections;
- UMTA (Sec. 9) funds were used to develop various growth options and policy sets to implement these options; and
- Local funds were used in all of the preceding studies to provide integration and consistency among the end products.

As part of the capacity building contract, various working committees of City staff were created to consider how growth planning should be approached. Various planning responsibilities were reviewed (e.g., wastewater, transit, capital improvements) to determine the nature and type of urban growth policy planning which would be useful as a guide to these functional area planning decisions. Based upon these reviews tentative decisions were made as to what type of urban growth planning would be appropriate. These decisions were incorporated in an overall urban growth work program of which one component is the HUD contract.

The objectives for the current contract focus principally on the development of a methodology and related calculation routines for expressing and evaluating various growth options in terms of their impact on various sectors of the housing market, and the capital/operating costs of the City. Specific objectives are as follows:

- Refine and integrate existing calculation tools and procedures in the City of Houston to assess urban growth patterns in terms of potential impact on private and public investments;

- Develop refinements to the Housing Calculation Tool to allow: (1) testing and impact of alternative housing policies on sectors of the housing market; and (2) generating data to support preparation of Housing Assistance Plans;

- Develop documentation and a detailed description of the Housing Calculation Tool to enable local officials in other municipalities to determine the Tool's applicability for their locale;

- Design and test procedures making it easier for users to understand and use the Housing Calculation Tool;

- Plan for improving the data base for planning and analysis in Houston; and

- Define and test a method for framing and evaluating growth pattern options.

The approach being taken toward development of the growth planning methodology/calculation routine is to expand and/or adapt existing analytic tools of the City. In recent years the City has developed a water model, wastewater load/flow calculation tool, various transportation models, growth share allocation routines, and a Housing Calculation Tool. The growth share allocation methodology, recently developed by the Division of Planning Coordination, coupled with an expanded Housing Calculation Tool will be used to create a calculation process for expressing growth options as a series of five year land use, employment, housing unit, household, and population projections at the Census tract level. The water, sewer, transportation, and housing tools will be used to conduct the evaluation of various options in terms of their impact on the housing market and requirements for various City facilities and services.

The Division of Planning Coordination, Office of the Mayor, is responsible for development of the growth methodology and its implementation. Contract performance has been structured to yield products which will support current efforts by the City staff and an Advisory Committee representing private sector interests convened by the Mayor to develop an overall urban policy for Houston. The projections provided by this contractual effort will provide alternative futures to be discussed in the context of developing such an urban policy.

III. REVIEW OF THE GROWTH PLANNING METHODOLOGY

Development of the growth planning methodology is being guided by a series of design assumptions. These assumptions and the resultant design structure are described below.

A. Design Assumptions -- Efforts to develop a methodology for expressing and evaluating growth options are being guided by the following design assumptions:

1. The methodology should be user oriented. Both the forecasts and the processes for generating and evaluating the forecasts should be oriented to allow staff control over the content.

2. The methodology should be structured to function as a calculation tool rather than a model. Of interest to the City staff is a methodology composed of a series of calculation routines which are transparent. Thus, forecasts would be the product of a series of readily identifiable calculation processes, driven by a series of externally derived, explicit assumptions about various components or factors in urban growth (e.g., labor force participation rates, birth and death rates, inflation rates, housing unit demolition rates, conversion rates, inflation rates, vacancy rates, etc.). Further, the calculation routines should allow the user to isolate the effects of any one assumption on the resultant growth forecasts.

3. The methodology should provide for forecasts incorporating a high level of detail to foster effective evaluations. More precisely, the forecasts should be framed to provide the following level of detail:

   - Time period frequency -- Five year intervals
   - Geographical detail -- Census tract level, census tract aggregates, and City totals
   - Unit forecast detail -- Units by tenure, age, value/rent and size classes
   - Household forecast detail -- Households by ethnicity, size, and income classes, and, where feasible, sex and age of head of household
   - Population forecast detail -- Age, sex, race

4. The methodology should be able to accomodate changes in the geographic area of the City over time through annexation/deannexation.

5. The methodology should be structured to ensure that all forecasts for any time period are consistent. The employment, land use, housing unit, household and population forecasts should constitute a logical set in both their aggregated and disaggregated forms.

6. The methodology should be sufficiently modular to allow improvments to be made in various portions of the methodology or calculation routines without jeopardizing the overall design.

7. The methodology should allow the City staff to pose City policies/programs as assumptions within various modules of the methodology and to be able to ascertain the effect of these policies or programs on the amount and type of growth to occur in future time periods.

8. The evaluation portion of the methodology should allow assessment of the impact of alternative options. Each option will be evaluated using the same evaluation criteria related to the housing market and the requirements for City services.

9. The methodology should provide for assessment of the housing market impact of an alternative, giving particular emphasis to that portion of the housing market related to low and moderate income households.

10. The housing market evaluation should be designed to be consistent with existing DHUD requirements for estimating needs for assisted housing.

11. The methodology for evaluating the impact of various options on the costs of City facilities/services should provide for the projection of multi-year costs and revenues. Thus at a minimum the methodology should be able to highlight possible changes in advalorem tax rates and the implications concerning sales tax and user fee rates.

12. Forecasts should be adequately supported by an audit trail of all assumptions used in the calculations.

13. Provision should be made for use of alternative assumptions for any time period and for any module.

14. The methodology should be convertible to a series of computer routines for performing all necessary calculations.

B. Resultant Design Structure -- Given these underlying assumptions, the methodology which has emerged for expressing growth options utilizes the following modules:

- Population and Household Module
- Locational Preference Module
- Census Tract Share of Growth Module
- Unit Forecast Module
- Tract Level Household and Population Module

Their interrelationships are depicted in Exhibit 1 and each module is briefly described below:

1. Population and Household Modules -- A series of routines for estimating households by age, race, and sex in five year increments for the period 1970 through 2000. County level employment projections are used to generate estimates of associated population using labor force participation rates. Population forecasts are disaggregated by age, race, and sex characteristics based upon City derived assumptions about the components of net natural increase and net imigration. Resultant population projections are converted to associated household forecasts using headship rates as a basis for conversion. Households are disaggregated by type (i.e., race, size, and income) using City generated, exogenous assumptions. These forecasts are performed at the County level and factored down to correspond to the land area associated with current City boundaries and areas of possible annexation.

2. Locational Preference Module -- A series of routines for estimating residential locational preferences of households. Estimates are made for each five year forecast of previous period households displaced through demolition and/or conversion of units, the net new households resulting from in-migration, and net natural household formations. These households are defined as the households to be housed during the forecast period.

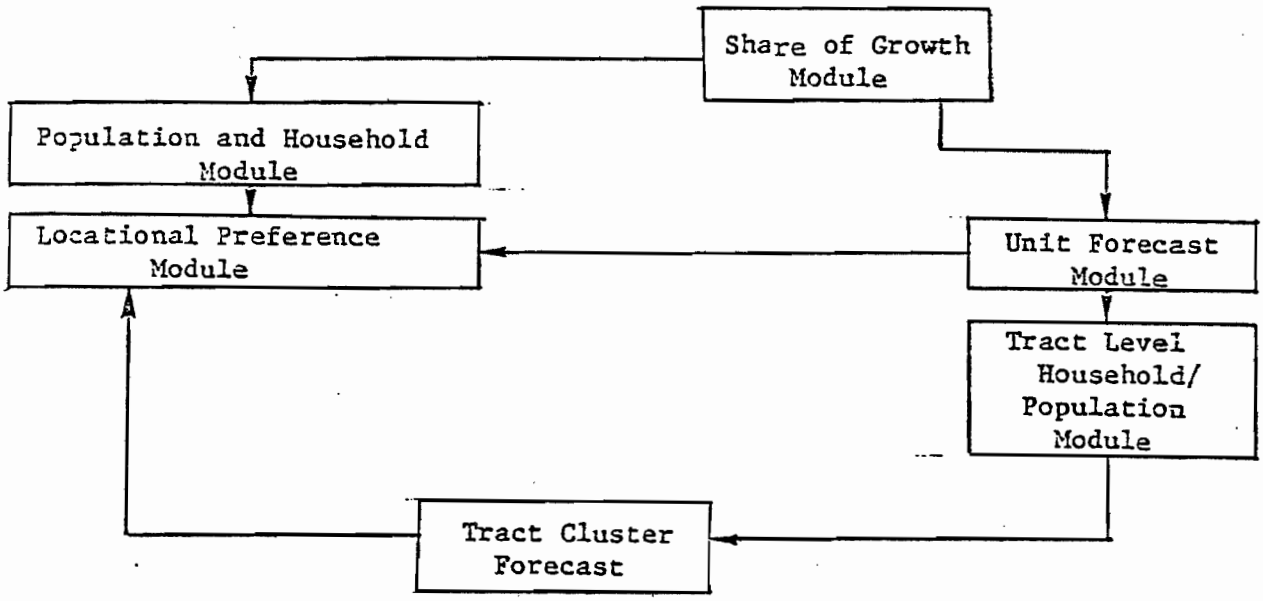
   Households' locational preferences are related to household size, income, race, and density preference characteristics. Each Census tract's previous period household race, size, income, and density characteristics are used to create a set of tract clusters exhibiting similar characteristics. Households to be housed are allocated to clusters based upon the cluster's share of total City households by type (i.e., race, size, income) and its residential density characteristics.

3. Census Tract Growth Share Module -- A calculation process for allocating growth to tracts based upon the relative weightings of tracts as to their relative attractiveness for growth. Each tract is rated on a number of common characteristics such as proximity to schools, land costs, proximity to major places of work, etc. These ratings/weightings are used to create a cumulative attractiveness index for each tract by time period which in turn is used to allocate household growth to tracts.

4. Unit Forecast Module -- A calculation routine for estimating changes in the housing supply from period to period. Preceding period unit forecasts are reduced by use of separate demolition rates and conversion assumptions for each unit type (i.e., tenure, age, value/rent, size). Remaining units are revalued based on rehabilitation assumptions, and the entire stock is then aged five years. New units are added based upon new construction assumptions developed by users. All units are adjusted by five

Exhibit 1

Module Interrelationships



year inflation rates which are the differential rates between that of household income and housing unit value/rents, presently assuming value/rents inflate faster than incomes.

All of the above transitions are performed tract by tract. It is also possible to introduce estimates of occupied units in the tract level based upon City supplied vacancy rate assumptions and estimates of substandard units using City generated suitability assumptions by unit type.

5. Tract Level Household/Population Module -- A series of calculations designed to estimate tract level households by characteristic (i.e., size and income) as a function of the tract level housing unit forecasts.

The tract level household forecast created in this module is a disaggregated forecast; that is, an estimate of households initially disaggregated by size and income. By contrast, the growth share allocation routine allocates numbers of households without specifying their characteristics.

The tract level households are further disaggregated by race. The tract level count of households (by size and income created from the unit forecast) are first distributed by race using the preceding period race distribution. Then, the City level household forecast created in the population/household module is compared with the City sum of the tract level households by race developed in this module. To the extent that any one race is understated in the tract level forecast a reallocation is performed to achieve conformance between the two household forecasts.

The reallocation is performed through use of transition tracts. Those tracts which are predominantly Anglo, but likely to exhibit a trend toward increasing minority residency are specially designated and are used to modify the tract level race distributions. The race allocation process is based upon an assumption that preceding period race distributions will not adequately reflect moving patterns or changes in race distributions based upon differing birth and death rates among population groups. Thus, City staff for each time period establish assumptions about what percent of the minority increase should be allocated to the specially designed tracts and what percent will be allocated to remaining tracts in the City. A tract ceases to be specially designated whenever the percentage of minority households in the tract is equal to or exceeds the percent minority for the City as a whole.

To derive the tract population, average person per household assumptions are developed as a function of race. These assumptions will be City wide and allowed to vary period by period. They are consistently applied to tract level household forecasts by race. The result is a tract level population forecast by race.

The specific calculation steps used by the methodology are summarized in Exhibit 2. Given the considerable complexity of the methodology brought on by the number of calculation steps and the level of detail required of the various forecasts, computerization is required. The calculation steps shown in Exhibit 2 have been developed into a series of computer programs. Using assumptions supplied by the City the computer programs perform the calculations and put on file the resultant forecasts. Report generation routines exist which can be used to produce reports on population, households, or units at various levels of geographic detail.

Even though the level of data manipulation is quite high, the computer system has been designed to run on a minicomputer, an IBM 5110 computer with floppy disks, and a 64,000 byte processor. A complete five year run for all modules can be completed in eight hours. This is an acceptable run period; thus, precluding the need for access to a large, mainframe computer.

User procedures exist for creating, altering, or selecting assumptions for any module, for any time period. Standardized report formats have been designed as well as assumption documentation routines for auditing the assumptions used to generate any given forecast, for any period, for any module.

For purposes of this contract the City envisions expressing two growth options using the computerized routines. These options are:

- Trends Option, using assumptions relating to changes in population, households, units, land use, and employment based upon prevailing trends. This option generally will tend to allocate growth into outlying areas, creating a pattern of continuing sprawl.

- Inner City Growth Option, which will reflect possible private sector actions and public programs which contribute to increased concentration of development in inner city areas.

Based upon the experience developing these two growth scenarios utilizing the growth planning calculation routines, modifications will be made to the methodology as required. Consideration will then be given to using the methodology to express other options, such as a multi-modal development option, corridor development option, and possibly an "energy crisis" option.

EXHIBIT 2
GROWTH OPTION GENERATION METHODOLOGY

Study Area Population/Household Module

1. Develop a place of work employment force forecast for all projection periods.

2. Develop a conversion ratio from place of work to place of residence employment.

3. Apply the conversion ratio to the work place employment forecast to obtain resident employment.

4. Define unemployment/employment rate assumptions for all periods.

5. Apply unemployment rates to resident jobs to determine total civilian labor force for the County.

6. Define labor force participation rates.

7. Apply the labor force participation rates to the civilian labor force to derive a total County population forecast 16-and-over.

8. Develop the under 16 population ratio (from national census projections applied to local base).

9. Apply the under 16 population ratios to derive a forecast of total County population.

10. Evaluate the population projection for accuracy.

11. Develop a ratio of the study area's population to the County total population for each time period.

12. Apply the appropriate ratio to the County population total to generate the study area population projection.

13. Obtain population distributions by race, age, and sex for each five year period.

14. Apply the population distribution assumption to population projections for the study area.

15. Develop birth and death rates for use in development of a net natural increase population.

16. Develop a net natural increase forecast based upon the preceding period forecast and the specified birth/death rate assumptions.

17. Develop an in-migration population projection from the net natural and total projections.

18. Develop study area household control count for the same period related to the population projections.

19. Develop assumptions about household characteristics, such as household size and income distribution.

20. Apply assumptions to household control projections to create a household forecast disaggregated by the characteristics specified above.

21. Develop household formation assumptions for net natural households.

22. Develop net natural household projection disaggregated by specified characteristics.

23. Develop a net migration household forecast disaggregated by specified characteristics.

Location Preference Model

24. Develop a count of previous period housing units surviving demolition and conversion during the current period. (Performed as part of the Unit Forecast Module.)

25. Develop an assumption which can be applied to an estimate of housing units to derive an estimate of the related characteristics of households living in the units.

26. Apply the assumption to the estimate of surviving units (Step 24) to obtain an estimate of households already housed (i.e., surviving households).

27. Subtract surviving households by characteristics (from 26) from total households by characteristics (Step 20) to obtain an estimate of households to be housed (i.e., newly created households, displaced, and net immigrant households).

28. Develop an assumption as to residential density preferences of households as a function of other household characteristics on a total tracts basis.

29. Apply the assumption to the estimate of total households to be housed (Step 27) to yield a count of total households to be housed by characteristics including residential density preference.

30. Apply tract cluster designations generated from the preceding period to the Step 29 result to obtain a distribution of households to be housed among the clusters.

Unit Forecast Module

31. Develop a count of previous period housing units surviving demolition.

32. Develop a count of units surviving demolition which also survive conversion to a non-residential use.

33. Develop an assumption as to the level of rehabilitation expected to occur during the five year period.

34. Apply the rehabilitation assumption to the stock to derive a redistribution of housing units by housing condition and value.

35. Age all surviving units five years.

36. Develop assumptions as to new unit characteristics by tract cluster.

37. Apply the assumption to the total new units added by clusters as estimated in the Growth Share Module to obtain a count of total new units by type for each cluster.

38. Develop new unit assumptions for each tract to allocate new units by type from clusters to tracts.

39. Apply the tract level assumption to the Step 37 estimate to obtain an estimate of new units by type for each tract.

40. Add the new unit counts to the count of surviving units by tract to obtain a total unit count.

41. Develop estimates of unit value/rent inflation.

42. Apply the inflation assumptions to the unit forecasts to create a redistribution of units by value/rent.

43. Develop vacancy rate assumptions by unit type.

44. Apply the vacancy rate assumptions to obtain a forecast of occupied units.

45. Develop suitability assumptions by unit type.

46. Apply suitability assumptions to develop estimates of standard units.

Tract Level Household/Population Module

47. Apply the assumption developed in Step 25 to the Step 42 unit forecast to obtain a forecast of tract level households by characteristics (size, income, tenure).

48. Apply the preceding period's household ethnicity distribution for each tract to obtain a tract level households forecast by characteristic including ethnicity.

49. Sum resultant tract level ethnic counts for all tracts from Step 48 to obtain a total tract ethnic distribution.

50. Compare the Step 49 distribution to the same distribution in the Step 20 total tracts household forecast to determine relative consistency of the tract level distribution in the tract level forecast and the need for adjustment of the racial distributions at the tract level (i.e., which races were underestimated).

51. Define a list of transition tracts to receive a proportion of the reallocated households by ethnicity, using a fixed number of tracts to start and allowing tracts to become non-transition when ethnicity composition exceeds the city ethnic proportion.

52. Define as an assumption the proportion of residual households by ethnicity to be allocated to all non-transition tracts.

53. Allocate the assigned proportion of residual households to the non-transition tracts on a proportional basis (using the ethnicity distribution of the tracts as a basis for comparison).

54. Apply the transition tract proportion defined in Step 52 to the Step 50 result to determine the number of residual households by ethnicity to be allocated to the transition tracts.

55. Distribute resultant Step 54 households to transition tracts based on preceding period ratios of households by ethnicity for each transition tract to the total transition tracts.

56. Develop an average persons per household assumption by ethnicity.

57. Apply the assumption to the tract level household forecasts to obtain population by race for each tract.

Tract Cluster Forecast (Portion of Locational Preference Module)

58. Determine tract density for the period using the growth share module output.

59. Determine the median household income for each tract.

60. Define the prevailing household size and prevailing ethnic distribution for each tract.

61. Using the density class assignments, and household size, race and income assignments created in Steps 58, 59, and 60 create tract clusters of like characteristics.

62. Calculate the proportion of each cluster's household to the total City households by type and density preference.

IV. REVIEW OF HOUSING MARKET EVALUATION METHODOLOGY

Once each growth option has been framed, the City must be able to evaluate the option. Any number of issues can be identified and pursued for each option. Given limitations on resources, decisions were made concerning the type of evaluation issues to be analyzed. Candidate evaluation foci were classified as either input issues or implementation issues. Within these two areas specific evaluation questions were identified.

In the case of growth option impact, any number of conditions, or characteristics of the urban environment could be singled out for review from a City perspective, i.e., those characteristics which the City is in a position to influence through its actions or programs. Two such areas were singled out for review--housing and transportation.

From an implementation perspective, each option carries implications for the level and type of private and public services. Emphasis will be given to the public sector role, especially as it relates to level of City services required to support the fulfillment of either option and their associated costs.

The evaluation portion of the methodology will be conducted as two separate and relatively independent assessments--impact on the housing market and requirements for City services. The evaluation methodology pertaining to requirements for City services will be based upon tract-level population and unit counts. Using generally accepted standards or performance criteria for specific services and improvements, City staff will develop assumptions relating to per capita service levels and unit cost estimates for services and improvements. These will be used to create estimates of required service provision and their cost for the City by period by growth option. This methodology will be described as part of a separate project report.

Evaluation of the impact of the growth options on the housing market will be the focus of the remainder of this report. The methodology will be reviewed in terms of: (a) requirements; (b) selected methodology; (c) evaluation process; (d) evaluation process review.

A. Requirements/Criteria for Development of the Housing Market Evaluation Methodolgy

When the range of roles and responsibilities for the City of Houston in housing are reviewed, several analytic needs emerge which in turn influence how the City approaches evaluation of growth options for impact on the housing market. The issue is whether or not the various needs for housing market analysis can be satisfied with one overall market analysis methodology. For example, any growth option is going to affect the entire housing market, from either a geographic, unit, and/or household perspective. The evaluation methodology must be capable of profiling the effect of nay option on the whole market. Nonetheless, the City has specific responsibilities for addressing the needs for housing experienced by low and moderate income households. Thus, the methodology must be capable of providing an overall profile of impact and a specialized review of the impact of City programs or actions on the housing needs for low and moderate income families.

The requirements for preparation of the Housing Assistance Plan have provided form and scope to the type of information on housing market conditions as they pertain to low and moderate income families. Specific estimates of needs for assisted housing by household type must be prepared. Therefore, any housing market analysis methodology selected for use by the City should incorporate the requirements of the Housing Assistance Plan. Against these more general requirements, more specific requirements pertaining to the methodology were identified. They include:

1. Comprehensiveness -- The methodology should generate data on projected characteristics of both supply and demand in short-term (five year) increments for the City as a whole, selected study subareas, and estimates of housing need based upon a matching of projected households and units for the time period

2. Flexibility -- The methodology should be capable of testing the impact of growth options on housing need and also be able to test the effect of specific City programs on the housing market.

3. Versatility -- The methodology should be capable of generating data which not only support specific market analysis but which also contribute to the development of a data base on characteristics and conditions of the housing market which can be accessed, tabulated, and reported in support of many different informational needs.

4. Compatibility -- The methodology should result in the ability to interface the routines for evaluation of growth options with the routines used to develop forecasts of households and housing units for any given growth option.

5. Transparency -- The methodology should reduce the dynamics of housing choice to a select series of primary determinants incorporating the major aspects of demand/supply interaction without becoming excessively complex.

6. Efficiency -- The methodology should allow the user to quickly and easily determine market impact based upon altered growth projections or policy/program options.

7. Cost minimization -- The selected routine should allow many different growth forecasts to be tested for any given five year period for a minimal cost.

8. Accountability -- The methodology should provide for convenient, comprehensive documentation of the growth forecasts used in any given market analysis, and indicate the specific matches required to completely match demand and supply forecasts.

9. Availability -- The methodology should be capable of identifying and generating specific outputs pertaining to market impact in diverse output formats.

10. Transferable -- The methodology should have a generic structure, allowing the transfer of the methodology for use in other metropolitan areas.

These requirements were identified as broad guidelines to the development effort. It was understood the eventual design could not fully satisfy all of these requirements. However, through introduction of these requirements it was anticipated the resultant design would be the result of conscious trade offs of the various design criteria.

At a more specific level, the Housing Assistance Plan, Tables I and II, have specific data requirements which must be incorporated into the design. Sample formats of Tables I and II are shown in Exhibits 3 and 4. Table I is structured to allow summary to the housing stock conditions, emphasizing the number of substandard units, the number of units suitable for rehabilitation, and estimated vacancies. In effect Table I is a special summary of a housing unit forecast requiring estimates of units by:

- Tenure
- Suitability (standard/substandard)
- Occupancy (occupied/vacant)
- Rehabilitation Status

Table II summarizes the estimate of needs for assisted housing by household type. Specifically the forecasts must assess households having housing needs by:

- Income Status (80% or below median household income)
- Size - Household size
- Age of Head - Elderly
- Sex of Head - Female
- Minority Status - Total minority, Black, Spanish-American
- Handicapped
- Expected to Reside

Both Tables require the specific unit or household characteristics to be cross tabulated in various ways. Thus the methodology must not only incorporate the required characteristics but interrelate the characteristics in a defined fashion.

B. Selected Methodology

The design which emerged from consideration of the above consists of a series of calculation steps designed to interrelate or match independent household and unit forecasts. The specific steps used to accomplish the match are described in the next subsection. This subsection outlines the major features of the methodology, how it works, and its basic structure, using the requirements for the methodology as a context.

1. Representation of the Market Behavior -- The logic for relating forecasts of future household's to their preferences for housing units and the resultant match of those preferences to forecasts of available stock has been structured to simulate the market based upon association of unit

Exhibit 3

Form Approved
OMB No. 63-R1471

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM
HOUSING ASSISTANCE PLAN

TABLE I – SURVEY OF HOUSING CONDITIONS

1. NAME OF APPLICANT

2. APPLICATION/GRANT NUMBER: B – – – –

3. PERIOD OF APPLICABILITY
FROM: TO:

4.
☐ ORIGINAL
☐ REVISION, DATE _____
☐ AMENDMENT, DATE _____

5. DATE OF SURVEY(S) USED

KEYPUNCH CODE
A

	STATUS AND CONDITION OF ALL HOUSING UNITS	YEAR OF ESTIMATE	NUMBER OF HOUSING UNITS					
			ALL UNITS		OWNER		RENTER	
			TOTAL	SUITABLE FOR REHABILITATION*	TOTAL	SUITABLE FOR REHABILITATION*	TOTAL	SUITABLE FOR REHABILITATION*
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	1. Occupied Units - Total							
2	a. Substandard							
3	b. Standard *(line 1 minus line 2)*							
4	2. Vacant Available Units - Total							
5	a. Substandard							
6	b. Standard *(line 4 minus line 5)*							
7	3. Housing Stock Available - Total *(sum of lines 1 and 4)*							
8	4. Standard Housing Stock Available - Total *(sum of lines 3 and 6)*							
9	5. Current Standard Available Vacancy Rate *(line 6 ÷ line 8)*							

DEFINITIONS, DATA SOURCES, AND METHODS *(Attach additional sheets, if necessary, and identify with items above.)*

1. Definition of "substandard" used.
2. Definition of "suitable for rehabilitation" used.*
3. Data sources and methods used.
4. Special housing conditions.

*Required only if the applicant proposes rehabilitation as a part of its Housing Strategy and as a goal for housing assistance.

HUD-7031 (6-78)

Form Approved
OMB No. 63-R1471

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM
HOUSING ASSISTANCE PLAN

TABLE II-1 — HOUSING ASSISTANCE NEEDS OF LOWER-INCOME HOUSEHOLDS

1. NAME OF APPLICANT

2. APPLICATION/GRANT NUMBER: B – – – – –

3. PERIOD OF APPLICABILITY
FROM: TO:

4.
☐ ORIGINAL
☐ REVISION, DATE _____
☐ AMENDMENT, DATE _____

5. DATE OF SURVEY(S) USED

KEYPUNCH CODE
D-1

STATUS OF HOUSEHOLDS REQUIRING ASSISTANCE		NUMBER OF HOUSEHOLDS											
		ALL HOUSEHOLDS				ALL MINORITY HOUSEHOLDS				ALL FEMALE-HEADED HOUSEHOLDS			
		TOTAL	ELDERLY (1-2 persons) and HANDICAPPED	SMALL FAMILY (4 or less persons)	LARGE FAMILY (5 or more persons)	TOTAL	ELDERLY (1-2 persons) and HANDICAPPED	SMALL FAMILY (4 or less persons)	LARGE FAMILY (5 or more persons)	TOTAL	ELDERLY (1-2 persons) and HANDICAPPED	SMALL FAMILY (4 or less persons)	LARGE FAMILY (5 or more persons)
	(a)	(b-1)	(b-2)	(b-3)	(b-4)	(c-1)	(c-2)	(c-3)	(c-4)	(d-1)	(d-2)	(d-3)	(d-4)
1	A. Total Owner Households *(sum of lines 2 and 3)*												
2	Owner Households to be Displaced during the three year program												
3	Owner Households *(excluding displacees)*												
4	Percentage of Total by Household Type	100%	%	%	%								
5	B. Total Renter Households *(sum of lines 6, 7 and 8)*												
6	Renter Households to be Displaced during the three year program												
7	Renter Households *(excluding displacees)*												
8	Households Expected to Reside												
9	Percentage of Total by Household Type	100%	%	%	%								

NARRATIVE *(Attach additional sheets, if necessary)*

1. Data sources and methods.
2. Special housing needs of lower-income households.

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM
HOUSING ASSISTANCE PLAN

TABLE II-2 – HOUSING ASSISTANCE NEEDS OF LOWER-INCOME HOUSEHOLDS

1. NAME OF APPLICANT

2. APPLICATION/GRANT NUMBER

B – . – – –

3. PERIOD OF APPLICABILITY

FROM: TO:

4.
- ☐ ORIGINAL
- ☐ REVISION, DATE _____
- ☐ AMENDMENT, DATE _____

5. DATE OF SURVEY(S) USED

KEYPUNCH CODE
B-2

PROVIDE DATA FOR EACH CATEGORY OF MINORITY HOUSEHOLD, AS APPROPRIATE

STATUS OF MINORITY HOUSEHOLDS REQUIRING ASSISTANCE		(Check appropriate box) 1. Reserved 2. ☐ Black, not Hispanic 3. ☐ American Indian or Alaskan Native 4. ☐ Hispanic 5. ☐ Asian or Pacific Islander				(Check appropriate box) 1. Reserved 2. ☐ Black, not Hispanic 3. ☐ American Indian or Alaskan Native 4. ☐ Hispanic 5. ☐ Asian or Pacific Islander				(Check appropriate box) 1. Reserved 2. ☐ Black, not Hispanic 3. ☐ American Indian or Alaskan Native 4. ☐ Hispanic 5. ☐ Asian or Pacific Islander			
		TOTAL	ELDERLY (1-2 persons) and HANDI-CAPPED	SMALL FAMILY (4 or less persons)	LARGE FAMILY (5 or more persons)	TOTAL	ELDERLY (1-2 persons) and HANDI-CAPPED	SMALL FAMILY (4 or less persons)	LARGE FAMILY (5 or more persons)	TOTAL	ELDERLY (1-2 persons) and HANDI-CAPPED	SMALL FAMILY (4 or less persons)	LARGE FAMILY (5 or more persons)
	(a)	(f-1)	(f-2)	(f-3)	(f-4)	(g-1)	(g-2)	(g-3)	(g-4)	(h-1)	(h-2)	(h-3)	(h-4)
1	A. Total Owner Households *(sum of lines 2 and 3)*												
2	Owner Households to be Displaced during the three year program												
3	Owner Households *(excluding displacees)*												
4	B. Total Renter Households *(sum of lines 5 and 6)*												
5	Renter Households to be Displaced during the three year program												
6	Renter Households *(excluding displacees)*												

REMARKS

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characteristics to household characteristics. For instance, it is possible to estimate how many households of a given age, race, sex of head, size and income prefer units of a given tenure size or value/rent. For example, in 1970, a certain percent of households of a given type lived in 1 and 2 room units, 3 rooms, etc. For many, the unit size was their preference, for others the unit might have been too small, forcing overcrowding. Regardless of preference, households by size can be distributed by unit size based upon historical data. Exhibit 5 defines the distribution for 1970 in Houston of unit size to household size can be defined.

Exhibit 5

UNIT SIZE

Household Size	1 & 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 Rooms or more
1 Person	.19	.32	.23	.16	.10
2 Persons	.05	.16	.25	.26	.28
3 Persons	.02	.09	.24	.27	.38
4 Persons	.01	.05	.17	.26	.51
5 Persons	.01	.04	.14	.26	.55
6 Persons or More	.01	.04	.16	.28	.51

The evaluation methodology uses the concept of household distributions among unit preference types, but in a much different way. As can be seen in Exhibit 5, even assuming no overcrowding is allowed, most households still have many unit size options available to them. Therefore, in the evaluation version, household preferences for units by type can be allowed to shift in an orderly progression by adoption of the following procedure:

- Households of a given type (a single age, race, sex, size, and income class) would be treated as one group in terms of preferences for unit size and value/rent. Rather than a certain portion "preferring units" of one type and another portion "preferring" another unit size, all households of a given size and income will initially prefer one unit size and one unit value/rent.

- Household unit size preferences are initialized by assuming all households first prefer the smallest units possible without violating the constraint of overcrowding.

- Household value/rent preferences are initiated by assuming all households first prefer units whose value/rent is the highest possible without violating the unit value/rent constraints (.25 of income for renters and 2.5 times income for owners).

- If all households initial value preferences cannot be matched with the forecast units of the same value category, then the remaining unmatched households are assumed to prefer the second highest unit value in the second preference set.

- Preference shifts are made for value preferences first. Only after every possible value shift occurs are unit size preferences successively shifted.

The effect of the above assumptions about value and rent preference shift is to match first those households with the highest income and the lowest size to the highest value/rent units which are of the smallest size. If these households cannot be matched, then they compete for the next lowest value/rent units, with households of lower income. Using this methodology an initial set of preferences were built. Implementation of the methodology can been seen through the following example. In Exhibit 6, the household size to unit size matrix is presented again. As can be seen, households of a given size have all been placed in one housing unit size category; in effect stipulating all households of that size prefer one unit size. With this assumption, a count of total households preferring units of a given size can be determined.

Exhibit 6

UNIT SIZE

Household Size	1 & 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 Rooms or more
1 Person	100%				
2 Persons	100%				
3 Persons		100%			
4 Persons			100%		
5 Persons				100%	
6 Persons or More					100%

Note the shaded cells in the matrix represent household size and unit size matches which would constitute overcrowding. For every unit size category, it is possible to define the percent of households by each household size which prefer that unit size. As an example, only six person households "prefer" six room units in this preference series. Both one and two person households prefer one and two room units. When the above preference is used, the Housing Calculation Tool matches all the six room units against the number of six room unit preferences--which is composed exclusively of six person households. Should there be more six room standard

units than six person households, all the six person unit preferences would be matched. However, if there were more six person households than six room units, the difference would remain as unmatched preferences.

After the first match the computer routine performs a preference shift by moving remaining unmatched households of the smallest size to the next highest unit size preference category. Thus, the next preference set is based upon a size preference distribution for remaining unmatched households as shown in Exhibit 7.

Exhibit 7

UNIT SIZE

Household Size	1 & 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 Rooms or more
1 Person		100%			
2 Persons		100%			
3 Persons		100%			
4 Persons			100%		
5 Persons				100%	
6 Persons or More					100%

In the next preference shift all the remaining unmatched one, two, and three person households are assumed to prefer four room units. The next shift places all the remaining one-to-four person households in the five room category and the final shift places all remaining households in the six room preference category.

As can be seen in Exhibit 7, there are five shifts in size preference which can occur. It is important to point out, however, that each preference set is a combination of a tenure preference, unit size preference, and unit value/rent preference. Therefore, a methodology was devised for combining preference types into a preference set which is a sequencing routine. In addition to the five possible unit size shifts illustrated above, there are seven possible value/rent shifts and three possible tenure shifts. For tenure the first possibility assumes a preference based upon 1970 tenure distributions, the second option assumes remaining unmatched households prefer owner units and the third assumes any remaining unmatched prefer renter units. Given the possibility of five size shifts, seven value/rent shifts and three tenure shifts, there are 105 possible combinations. Value shifts are performed first, size second, and tenure last; resulting in the sequence partially illustrated below:

Exhibit 8

Preference Set	Preference Options: Tenure Option	Size Option	Value Option
(1)	1	1	1
(2)	1	1	2
(3)	1	1	3
(4)	1	1	4
(5)	1	1	5
(6)	1	1	6
(7)	1	1	7
(8)	1	2	1
(9)	1	2	2
(10)	1	2	3
(11)	1	2	4
(12)	1	2	5
(13)	1	2	6
(14)	1	2	7
(15)	1	3	1
(16)	1	3	2
		etc.	

The evaluation methodology is designed to match units to a preference set, and add the count of matched households to those matched through previous preference sets. Unmatched preferences are converted back to counts of unmatched households by type. Unmatched households are then used to create a new set of preferences based upon the next set of preference options defined by the preference shift sequence. Once complete, another match is attempted. Matches continue until all preferences are matched or there are no suitable units left for the remaining households.

When the last possible match occurs. the remaining unmatched preferences are converted back into a matrix of households by type. This five dimensional matrix (i.e., households by age, race, sex, size, and income) serves as the data base for creation of the counts appearing in Table II in the Housing Assistance Plan. A report generation routine combines the necessary elements of the matrix to create the special categories of needs for assisted housing such as:

- Lower income
- Elderly 1 & 2 person
- Large family
- Family
- Race of household

When tabulated, these counts can be used to complete Table II.

2. Conformance with Criteria for Design -- The methodology as outlined above was designed to be responsive to the aforementioned design criteria. The extent to which the methodology meets each criterion is outlined below:

- Comprehensiveness -- All households and units are considered in the evaluation methodology. In addition the entire City plus areas likely to be annexed by the City over the next several years are included in the design. Unit and household forecasts will exist at the tract level for each growth option. This will allow evaluations to be performed for user-defined subareas of the City or outlying areas.

- Flexibility -- The housing tool has been structured to generate a growth option forecast and then evaluate the growth option for its impact on the housing market. The tool can also be used to express various policy and program options for the City pertaining to housing (e.g., demand subsidies, rehabilitation program and the like). These options are expressed as assumptions which in turn are used to generate either household or housing unit forecasts. These forecasts can then be evaluated using the previously described evaluation.

- Versatility -- The user procedures for the evaluation allow any number of evaluation results to be stored and compared using standardized report generation routines. Should the user desire different tabulations, the evaluation routines incorporate the use of data files for all evaluation results. These data files can be accessed and manipulated through various report generation routines.

- Compatibility -- The computer routines established for evaluation are designed to operate on the same computer, using the same language, file structure formats, etc. as that used to generate any given growth option. This allows one integrated set of user procedures for developing and evaluating a growth option.

- Transparency -- The approach taken to represent market functioning (outlined above) is a distillation of many diverse variables. As structured, the evaluation methodology has been designed to reflect primarily the interplay between housing preferences of households and available stock. Basic household characteristics are identified as determinants of housing preferences. This simple interplay is in turn capable of being constrained by user supplied criterion for matching of preferences to supply pertaining to overcrowding, etc. These criterion can be easily introduced and explained to users of the evaluation results.

- Efficiency -- The methodology used for evaluation will allow testing of alternate growth forecasts in the matter of minutes. Each evaluation is scheduled to taken 10 to 15 minutes to execute. This allows the user to vary parameters influencing a growth option, or test policy options for the City very rapidly. Furthermore, the design is structured for an interactive computer environment; machine operations are under the control of the user and not subject to the delays in batch processing.

User procedures are designed to allow a minimum of user orientation to the procedures for evaluation. Set up time for each evaluation is also rapid and for the most part automatic.

- Cost Minimization -- Excluding operator/user time the normal processing cost for any given evaluation would be less than $20. The significant cost in the entire effort will be the framing of a growth option, not the evaluation.

- Accountability -- The design is structured to allow documentation of each evaluation, showing the sequence of value/rent, size, or tenure preference shifts required in order to exercise all allowable matches. Each evaluation run is paralleled by a summary of the forecast households and units used in the evaluation. Further, the evaluation methodology is structured to produce a summary of the housing stock characteristics for the time period to which the evaluation relates.

- Availability -- Standardized reports have been structured which indicate the number of low and moderate income households which have needs for assisted housing; that is, cannot be matched to a housing unit which meets established criteria such as no overcrowding, and the like. These reports provide descriptive detail on the extent of housing need by various housing types such as elderly, large households, minority households, and/or female households. See Exhibit 9 for a sample format.

- Transferable -- The methodology is designed to be transferred to other working environments. Data requirements are substantial, but generally obtainable from standard sources from any SMSA. The logic of the existing computer routines are readily transferable; however, conversion of the actual code to another language may be difficult. Conversion of the computer routines to another machine supporting the same language, APL, will be possible.

Generally, the selected methodology is able to respond to the requirements with few tradeoffs. Short of a very complex model requiring large quantities of data generally not available locally, the methodology incorporates major aspects of the interplay between supply and demand forces in the market. Data requirements are reasonable, the logic is discernable, and the evaluation results specified in a form which can be used for comparison of the impact of various growth options.

C. Evaluation Process

Eleven major steps are used by the evaluation methodology to assess housing market impact of any particular growth forecast. The steps are as follows:

1. Select time period for evaluation.

2. Select household and unit forecasts to be evaluated for the selected time period.

3. Select the geographic area of analysis.

4. Establish policy criteria with respect to unit and household matching.

5. Establish initial household preferences for units by type.

6. Perform initial match of households to units.

7. Shift value/rent preferences of all unmatched households.

8. Shift size preferences of all unmatched households after the value/rent preference shifts.

9. Shift the tenure preferences of all remaining unmatched households.

10. Develop a distribution of remaining unmatched households by household type.

11. Determine unmatched households having low and moderate incomes.

Each of these steps will be described as to their purpose, approaches being employed in their performance, and any required user assumptions.

1. Select Time Period for Calculation -- Evaluations can be performed for any forecast period. As a rule evaluations will be performed on five year forecasts (e.g., 1975, 1980, etc.) used to express a particular growth option. However, should the user prefer any other time period, the evaluation methodology will accomodate the analysis assuming the user has generated the appropriate household and unit forecasts (e.g., 1979 households and units), has an assumption as to City boundaries for the forecast time period, and corresponding assumptions as to unit vacancies and the condition of units (i.e., standard or substandard for the time period).

2. Select Household and Unit Forecasts -- For any given time period, the computer can store up to three separate household or unit forecasts. As an example, three unit forecasts may be on file, each representing the forecast of units for three separate growth options. The preferred unit forecast must be identified for the time period in question.

   Two types of household forecasts are available for each time period. The first is a household forecast for the City as a whole derived from an employment-based population forecast. The second is a household forecast derived from an estimate of housing units for the area. Therefore, one can choose from up to six different household forecasts in any time period.

3. Select Geographic Area of Analysis -- For any period, the user can select a tract, group of tracts, the City or outlying areas as options for evaluating housing market impact. Generally most evaluations are run for the City as a whole; however, the user will be able to perform the option on a small area basis.

   Geographic area selection should be on a tract basis. Subareas must be defined in terms of their tract membership.

4. Establish Policy Criteria -- Rules for matching must be selected. They pertain to whether or not certain matches will be allowed. For example, a match which results in overcrowding may not be allowed. This rule is expressed by constraining the allowable unit size preferences of households to those which would not result in overcrowding. Ceilings on the limits any household would pay for housing can also be introduced. Percentages of household income spent on rent or the value of an owner-occupied unit can be established. Again, these are expressed by constraining the allowable unit value/rent preferences of households to those classes where a ceiling on payment would not be exceeded.

   At this time the Housing Calculation Tool is configured to allow no match which allows an excess of 1.01 persons per room, a rent which exceeds 25% of income, or value which exceeds 2.5 times annual income.

   It is also possible to define only certain unit types which will be used in the match process. The user can decide to disallow substandard units. Reserves for vacancy can be created or units for various subareas can be disallowed from the match as well.

5. Establish Initial Household Unit Preferences by Type -- Whenever an evaluation is performed, preferences for units must be identified and the protocol for their shift after each match attempt. Currently the Tool uses one set of preferences and preference shifts. The preferences and their shift were described in the previous section. Whenever the evaluation module is used, the household forecast used as input is transformed into a related set of initial unit preferences using a fixed assumption as to initial preferences of households. The user does not have the ability to readily change the preferences or their shift logic.

6. Perform Initial Match of Households -- Initially, the computer prepares for a match by reducing the housing unit forecast by those units disallowed from the forecast by the user. Then the computer prepares a forecast of units for the appropriate geographic area to be evaluated. Once complete, the count of forecast units is subtracted from the count of unit preferences for the same unit type. The counts are stored and operated on as 2x7x5 arrays whose dimensions are tenure (2 classes); value/rent (7 classes); and size (5 classes).

   The results of a match are counts of unmatched units and unmatched unit preferences, both in the form of 2x7x5 arrays.

7. Shift Value Preferences of Unmatched Households -- According to the preference shift logic after the initial match has occurred, all unmatched households' value/rent preferences are shifted to the next lowest value class. There are appended to the initial size and tenure preferences and another match is attempted. In this second iteration only those units remaining unmatched after the first iteration are used in the match. Successive value shifts are made until no further shifts can be made, i.e., all remaining households "prefer" the lowest value/rent class.

8. Shift Size Preferences of All Unmatched Households -- After all value shifts have been made and unmatched households still remain, size preference shifts are initiated. The shifts occur in much the same fashion as the value/rent shifts. All household size preferences are shifted one size class, and combined with the original value/rent preference and original tenure classes. Thus the first size preference shifts results in the following size preference shift for owners:

Tenure Preference	Size Preference	Value Preference
1	2	7

and the following size shifts would be:

1	2	6
1	2	5
1	2	4
1	2	3
1	2	2
1	2	1

then another size shift will occur:

1	3	7 etc.

9. Shift the Tenure Preference -- The tenure preference is shifted only after every combination of size and value/rent preference shift has been attempted. The first tenure preference is that of owners and renters as exhibited by Houston residents in the 1970 Census. In the first shift, residents are all shifted to an owner preference. If unmatched households still remain, they are all shifted to a renter preference.

The Housing Calculation Tool performs all of these preference shifts automatically. Each time unmatched households remain, their preferences are shifted and another match is attempted.

10. Develop a Distribution of Remaining Unmatched Households by Household Type -- After the tenure shifts occur, all unmatched households have needs for assisted housing. Their characteristics must be identified according to age (elderly/non-elderly), race, sex, size, and income. Since unit preferences are expressed for each household, "unmatched" preferences are easily transformed by the system into household characteristics.

11. Determine Unmatched Households Having Low and Moderate Incomes -- Using the array of unmatched households, the Housing Tool computes the income distribution of the households by the income classes. The midpoint household is identified and the income class in which it falls. The related "midpoint" income is defined and 80% of median income calculated. The income where 80% of median income falls is identified and based upon this location on the income distribution curve the number of households to the left of this point on the curve is defined. These households by definition are low or moderate income. This step is used as part of a report generation routine. Forecast files for unmatched households are for total households. The user who wants to see unmatched households which are low and moderate income, selects this option as part of report generation.

D. Review of the Use of the Housing Market Evaluation Methodology in Preparation of the 1980 Housing Assistance Plan

As a practical test of the methodology, the 1980 Housing Assistance Plan prepared by the City of Houston was based upon the estimate of needs for assisted housing prepared by the Housing Calculation Tool. Descriptions of the assumptions and forecasts related to households and units are provided.

The 1980 household and unit forecasts used to prepare the estimate of needs for assisted housing were generated based upon corresponding 1975 household and unit forecasts. The 1975 forecasts have been established as a base for the Housing Calculation Tool.

Creation of the 1980 household forecast begins with creation of an employment based 1980 population forecast. A series of assumptions about the Houston Area population and employment are made. They include:

- Number of jobs:
- Percent of jobs done by Harris County residents:
- Unemployment rate (as a %):
- Labor force participation rate (as a %):
- Percent of $\geq$16 which are $\leq$16:
- Percent in our 196 tracts:

Based upon these assumptions the Tool generated an estimate of the 1980 total population for the Housing Calculation Tool study area. To help refine this forecast, a forecast of the net natural increase of the 1975 population to 1980 was made using birth and death assumptions shown in Appendix II. With this forecast an estimate of the resultant net immigration for 1980 was created.

The 1980 population forecast was transformed into a household forecast. This required several assumptions on household characteristics including headship rates by population cohort, household size and income distribution assumptions. These appear in Appendix II. When applied the study area household forecast is adjusted down to the City boundaries using rates derived from the City's efforts to express growth options in its growth share module.

In summary form, the calculation steps resulting in counts of population and households are as follows:

Step 1 Develop Employment Assumptions to Forecast Population

- 1.1 Number of jobs:
- 1.2 % jobs done by Harris County residents
- 1.3 Unemployment rate (as a %)
- 1.4 Labor force participation rate (as a %)
- 1.5 Percent of $\leq$16 which are $\geq$16:
- 1.6 Percent in our 196 tracts:

Step 2 Develop Estimates of Net Natural Increase and Inmigration

- 2.1 1975 Base Forecast
- 2.2 Apply 1975-80 estimate of net natural increase assumptions to 1975 base population
- 2.3 Develop estimate of net immigration by subtracting the 1980 net natural increase population from the total population estimate created from the employment forecast
- 2.4 Resultant 1980 population forecast for study area
  - White
  - Black
  - Spanish-American

Step 3 Convert 1980 Population Forecast to Related 1980 Household Forecast

- 3.1 Apply 1975-80 headship rate Assumptions to the 1980 population forecast cohorts:
  - White households
  - Black households
  - Spanish-American households

  Total 1980 households
- 3.2 Apply household size and income assumptions to the 1975 household forecast to create households by by age, race, sex, size, and income forecast--see detailed forecast in Appendix I.

Housing unit forecasts must be prepared for 1980 as well. These forecasts are developed using a series of calculation steps based upon the preceding 1975 housing unit forecast. The steps in the process are summarized below. Also see Appendix I for a detailed 1980 unit forecast.

Step 4 Create 1980 Housing Unit Forecast

- 4.1 1975 housing units including units in areas annexed from 1975-1980
- 4.2 Reduce 1975 stock by estimated count of unit removals using removal rates by unit
  - Total estimated removals (approx.)
  - Total remaining stock
- 4.3 Reduce remaining stock by estimated count of conversions by unit type
  - Total estimated conversions
  - Total remaining stock
- 4.4 Shift the value/rent classes of the prior period stock based on rehabilitation assumptions
  - Total number of rehabilitations
- 4.5 Age the remaining stock by five years
- 4.6 Add new construction to remaining stock
  - Total estimated unit construction 1975-1980 in study area
    -- Owner:
    -- Rental:
  - Total forecast of 1980 units
- 4.7 Apply inflation assumptions to the value/rent classes

Step 5 Prepare 1980 Unit Forecast for Match Routine

- 5.1 Reduce 1980 unit forecast by vacancies using vacancy rates.
- 5.2 Reduce estimates of occupied units by estimated number of substandard units using suitable rates
  - Estimated occupied substandard units
  - Remaining units suitable for use in match with household unit preferences

After the units are prepared for the match, both the unit and household forecasts are adjusted to the City boundaries. When adjusted, these forecasts function as the basis for projecting needs for assisted housing. The results of the use of the match routine were as follows:

Step 6 Match Suitable Units to Households Unit Preferences

6.1 Total 1980 households

6.2 Total standard occupied units

6.3 Invoke match routine to generate results:

- Matched households
- Unmatched low income households
- Matched housing units
- Unmatched units (those standard/ occupied units left over which could not be used by remaining unmatched households because they would violate size or value/rent constraints)

In Appendix III detailed breakdowns of the match results are presented in a format similar to Table II of the Housing Assistance Plan format. Following these charts, a more detailed summary is presented of the 1980 housing units by structural condition using a format corresponding to Table I of the Housing Assistance Plan.

E. Assumptions Used to Create the Housing Assistance Plan Data

As noted in the description of the Housing Calculation Tool and its use in the support of preparation of Tables I and II, a wide variety of assumptions were used in each module of the Tool. The major assumptions used are as follows:

- Population Forecast Assumptions
  - -- Birth rates
  - -- Death rates
  - -- Net immigrant population: 1975-1980

- Household Forecast Assumptions
  - -- Headship rates
  - -- Household size distributions
  - -- Household income distributions
  - -- Income inflation assumptions: 1975-1980

- Unit Forecast Assumptions
  - -- Demolition rates by unit type: 1975-1980
  - -- Conversion rates by tract: 1975-1980
  - -- New construction counts for 1975-1980 by:
    - -- Tract cluster and unit type
    - -- Tract level by owner and renter
  - -- Unit value/rent inflation: 1975-1980
  - -- Unit structural condition rates by unit type: 1975-1980
  - -- Unit vacancy rates by unit type: 1975-1980

The above mentioned assumptions are used to create forecasts of population, households, and housing units. They appear in Appendix II. Other assumptions or forecast data which do not appear in the documentation but are used in the calculations are available upon request.

APPENDIX I:

Population, Household, and Unit Forecasts Used to Generate Estimates of Needs for Assisted Housing

City of Houston - Office of the Mayor
Housing and Population Data

1980 Population * Set 4
Non-City Portion Excluded
Run Apr 9, 1979 * Printed Apr 9, 1979 * Prepared by ALAN F ACKMAN
OLDPOP FROM 35 * IPOP 2 * BIRTH 3 * DEATH 1

Sex	Age	White	Black	Sp Amer	Total
Male	0-4	35,628	27,643	15,314	78,585
	5-9	37,581	24,142	14,317	76,040
	10-14	34,899	21,023	13,437	69,359
	15-19	39,665	23,299	13,582	76,546
	20-24	42,177	20,951	11,422	74,550
	25-29	37,743	16,624	9,319	63,686
	30-34	36,354	12,837	8,226	57,417
	35-39	33,376	11,624	7,775	52,775
	40-44	31,289	10,196	5,799	47,284
	45-49	27,671	9,237	5,104	42,012
	50-54	25,426	8,232	4,568	38,226
	55-59	24,719	6,667	3,134	34,520
	60-64	21,626	5,344	2,278	29,248
	65+	24,247	8,898	3,049	36,194
	Total	452,401	206,717	117,324	776,442
Female	0-4	34,375	22,206	12,077	68,658
	5-9	34,062	19,849	10,657	64,568
	10-14	31,165	21,331	12,867	65,363
	15-19	35,813	24,048	12,492	72,353
	20-24	38,304	22,414	11,086	71,804
	25-29	37,006	18,675	9,429	65,110
	30-34	41,004	18,573	9,422	68,999
	35-39	32,719	14,829	7,289	54,837
	40-44	27,004	12,236	6,039	45,279
	45-49	26,447	11,395	5,037	42,879
	50-54	26,016	10,275	4,447	40,738
	55-59	25,733	8,039	3,194	36,966
	60-64	23,448	6,401	2,234	32,083
	65+	39,076	13,320	3,719	56,115
	Total	452,172	223,591	109,989	785,752
Total	0-4	70,003	49,849	27,391	147,243
	5-9	71,643	43,991	24,974	140,608
	10-14	66,064	42,354	26,304	134,722
	15-19	75,478	47,347	26,074	148,899
	20-24	80,481	43,365	22,508	146,354
	25-29	74,749	35,299	18,748	128,796
	30-34	77,358	31,410	17,648	126,416
	35-39	66,095	26,453	15,064	107,612
	40-44	58,293	22,432	11,838	92,563
	45-49	54,118	20,632	10,141	84,891
	50-54	51,442	18,507	9,015	78,964
	55-59	50,452	14,706	6,328	71,486
	60-64	45,074	11,745	4,512	61,331
	65+	63,323	22,218	6,768	92,309
	Total	904,573	430,308	227,313	1,562,194

City of Houston - Office of the Mayor
Housing and Population Data

1980 All Races - Male - Total Tracts - Net Immigrant Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCNAT 1 * HHINCINH 1 * INCINFL 1

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	327	366	203	156	94	132	1,278
$2,000 - $2,999	117	130	71	55	33	46	452
$3,000 - $4,999	234	273	150	113	64	92	926
$5,000 - $6,999	287	354	204	160	93	128	1,226
$7,000 - $9,999	409	544	326	263	153	202	1,897
$10,000 - $14,999	595	903	588	511	294	335	3,226
$15,000 - $24,999	547	994	698	672	377	330	3,618
$25,000 or More	361	687	458	469	253	173	2,401
Total	2,877	4,251	2,698	2,399	1,361	1,438	15,024

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	327	366	203	156	94	132	1,278
$2,000 - $2,999	117	130	71	55	33	46	452
$3,000 - $4,999	234	273	150	113	64	92	926
$5,000 - $6,999	287	354	204	160	93	128	1,226
$7,000 - $9,999	409	544	326	263	153	202	1,897
$10,000 - $14,999	595	903	588	511	294	335	3,226
$15,000 - $24,999	547	994	698	672	377	330	3,618
$25,000 or More	361	687	458	469	253	173	2,401
Total	2,877	4,251	2,698	2,399	1,361	1,438	15,024

City of Houston - Office of the Mayor
Housing and Population Data

1980 All Races - Female - Total Tracts - Net Immigrant Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCNAT 1 * HHINCINM 1 * INCINFL 1

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	327	366	203	156	94	132	1,278
$2,000 - $2,999	117	130	71	55	33	46	452
$3,000 - $4,999	234	273	150	113	64	92	926
$5,000 - $6,999	287	354	204	160	93	128	1,226
$7,000 - $9,999	409	544	326	263	153	202	1,897
$10,000 - $14,999	575	903	588	511	294	335	3,226
$15,000 - $24,999	547	994	698	672	377	330	3,618
$25,000 or More	361	687	458	469	253	173	2,401
Total	2,877	4,251	2,693	2,399	1,361	1,438	15,024

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	327	366	203	156	94	132	1,278
$2,000 - $2,999	117	130	71	55	33	46	452
$3,000 - $4,999	234	273	150	113	64	92	926
$5,000 - $6,999	287	354	204	160	93	128	1,226
$7,000 - $9,999	409	544	326	263	153	202	1,897
$10,000 - $14,999	595	903	588	511	294	335	3,226
$15,000 - $24,999	547	995	698	672	377	330	3,619
$25,000 or More	361	687	458	469	253	173	2,401
Total	2,877	4,252	2,698	2,399	1,361	1,438	15,025

City of Houston - Office of the Mayor
Housing and Population Data

1980 White - Male - Total Tracts - Net Inmigrant Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCNAT 1 * HHINCINM 1 * INCINFL 1

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	168	193	85	65	32	20	563
$2,000 - $2,999	60	69	30	23	11	7	200
$3,000 - $4,999	128	153	68	50	22	13	436
$5,000 - $6,999	169	208	97	74	35	21	604
$7,000 - $9,999	261	344	171	136	66	40	1,018
$10,000 - $14,999	418	633	360	316	162	98	1,987
$15,000 - $24,999	450	816	538	524	278	162	2,768
$25,000 or More	334	624	403	418	221	121	2,121
Total	1,988	3,042	1,752	1,606	827	482	9,697

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	168	193	85	65	32	20	563
$2,000 - $2,999	60	69	30	23	11	7	200
$3,000 - $4,999	128	155	68	50	22	13	436
$5,000 - $6,999	169	208	97	74	35	21	604
$7,000 - $9,999	261	344	171	136	66	40	1,018
$10,000 - $14,999	418	633	360	316	162	98	1,987
$15,000 - $24,999	450	816	538	524	278	162	2,768
$25,000 or More	334	624	403	418	221	121	2,121
Total	1,988	3,042	1,752	1,606	827	482	9,697

City of Houston - Office of the Mayor
Housing and Population Data

1980 White - Female - Total Tracts - Net Inmigrant Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCNAT 1 * HHINCINM 1 * INCINFL 1.

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	160	193	85	65	32	20	563
$2,000 - $2,999	60	69	30	23	11	7	200
$3,000 - $4,999	128	155	68	50	22	13	436
$5,000 - $6,999	169	208	97	74	35	21	604
$7,000 - $9,999	261	344	171	136	66	40	1,018
$10,000 - $14,999	418	633	360	316	162	98	1,987
$15,000 - $24,999	450	816	538	524	278	162	2,768
$25,000 or More	334	624	403	418	221	121	2,121
Total	1,988	3,042	1,752	1,606	827	482	9,697

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	168	193	85	65	32	20	563
$2,000 - $2,999	60	69	30	23	11	7	200
$3,000 - $4,999	128	155	68	50	22	13	436
$5,000 - $6,999	169	208	97	74	35	21	604
$7,000 - $9,999	261	344	171	136	66	40	1,018
$10,000 - $14,999	418	633	360	316	162	98	1,987
$15,000 - $24,999	450	817	538	524	278	162	2,769
$25,000 or More	334	624	403	418	221	121	2,121
Total	1,988	3,043	1,752	1,606	827	482	9,698

City of Houston - Office of the Mayor
Housing and Population Data

1980 Black - Male - Total Tracts - Net Inmigrant Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCNAT 1 * HHINCINH 1 * INCINFL 1

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	142	148	95	72	47	84	588
$2,000 - $2,999	51	53	34	26	17	30	211
$3,000 - $4,999	94	102	66	50	33	59	404
$5,000 - $6,999	99	116	78	61	38	70	462
$7,000 - $9,999	119	147	104	82	53	97	602
$10,000 - $14,999	136	187	140	115	75	132	785
$15,000 - $24,999	67	105	83	72	45	80	452
$25,000 or More	17	30	23	18	11	20	119
Total	725	888	623	496	319	572	3,623

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	142	148	95	72	47	84	588
$2,000 - $2,999	51	53	34	26	17	30	211
$3,000 - $4,999	94	102	66	50	33	59	404
$5,000 - $6,999	99	116	78	61	38	70	462
$7,000 - $9,999	119	147	104	82	53	97	602
$10,000 - $14,999	136	187	140	115	75	132	785
$15,000 - $24,999	67	105	83	72	45	80	452
$25,000 or More	17	30	23	18	11	20	119
Total	725	888	623	496	319	572	3,623

City of Houston - Office of the Mayor
Housing and Population Data

1980 Black - Female - Total Tracts - Net Inmigrant Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCNAT 1 * HHINCINM 1 * INCINFL 1

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	142	148	95	72	47	84	588
$2,000 - $2,999	51	53	34	26	17	30	211
$3,000 - $4,999	94	102	66	50	33	59	404
$5,000 - $6,999	99	116	78	61	38	70	462
$7,000 - $9,999	119	147	104	82	53	97	602
$10,000 - $14,999	136	187	140	115	75	132	785
$15,000 - $24,999	67	103	83	72	45	80	452
$25,000 or More	17	30	23	18	11	20	119
Total	725	888	623	496	319	572	3,623

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	142	148	95	72	47	84	588
$2,000 - $2,999	51	53	34	26	17	30	211
$3,000 - $4,999	94	102	66	50	33	59	404
$5,000 - $6,999	99	116	78	61	38	70	462
$7,000 - $9,999	119	147	104	82	53	97	602
$10,000 - $14,999	136	187	140	115	75	132	785
$15,000 - $24,999	67	103	83	72	45	80	452
$25,000 or More	17	30	23	18	11	20	119
Total	725	888	623	496	319	572	3,623

City of Houston - Office of the Mayor
Housing and Population Data

1980 All Races - Male - Total Tracts - Net Natural Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCNAT 1 * HHINCINM 1 * INCINFL 1

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	4,874	5,926	3,401	2,720	1,635	2,382	20,938
$2,000 - $2,999	1,737	2,112	1,207	967	579	839	7,441
$3,000 - $4,999	4,017	5,132	2,984	2,544	1,459	2,085	18,121
$5,000 - $6,999	5,992	7,954	4,926	4,072	2,480	3,594	29,018
$7,000 - $9,999	10,197	14,974	9,886	8,403	5,174	7,166	55,800
$10,000 - $14,999	18,019	30,319	21,348	19,323	11,581	13,418	114,008
$15,000 - $24,999	19,720	38,705	28,621	28,247	16,066	14,080	145,439
$25,000 or More	13,467	27,353	19,234	20,151	10,991	7,432	98,628
Total	78,023	132,475	91,607	86,327	49,965	50,996	489,393

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	1,371	1,616	894	681	426	623	5,611
$2,000 - $2,999	497	593	327	249	155	223	2,044
$3,000 - $4,999	1,318	1,845	996	765	440	533	5,897
$5,000 - $6,999	1,422	2,040	1,095	819	477	569	6,422
$7,000 - $9,999	1,414	2,091	1,147	880	497	536	6,565
$10,000 - $14,999	1,455	2,181	1,183	885	454	483	6,641
$15,000 - $24,999	1,065	1,761	893	700	348	284	5,051
$25,000 or More	979	1,663	787	624	283	214	4,550
Total	9,521	13,799	7,322	5,643	3,080	3,465	42,781

City of Houston - Office of the Mayor
Housing and Population Data

1980 All Races - Female - Total Tracts - Net Natural Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCHAT 1 * HHINCINM 1 * INCINFL 1

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	5,844	6,348	3,529	2,611	1,585	2,227	22,144
$2,000 - $2,999	2,077	2,251	1,249	923	556	784	7,840
$3,000 - $4,999	3,852	4,150	2,260	1,635	890	1,334	14,129
$5,000 - $6,999	4,177	4,689	2,586	1,879	1,048	1,357	15,736
$7,000 - $9,999	5,265	6,016	3,091	2,228	1,119	1,262	18,981
$10,000 - $14,999	5,727	6,774	3,438	2,511	1,223	1,203	20,946
$15,000 - $24,999	3,187	3,859	1,856	1,377	617	556	11,452
$25,000 or More	1,582	1,757	664	430	172	137	4,742
Total	31,781	35,844	18,681	13,594	7,210	8,860	115,970

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	2,742	2,678	1,370	1,048	602	738	9,178
$2,000 - $2,999	964	936	475	360	207	252	3,194
$3,000 - $4,999	1,392	1,257	554	301	156	210	3,870
$5,000 - $6,999	1,373	1,348	661	435	197	264	4,278
$7,000 - $9,999	1,644	1,561	637	386	141	137	4,506
$10,000 - $14,999	1,672	1,623	639	376	94	102	4,506
$15,000 - $24,999	810	727	221	92	28	14	1,892
$25,000 or More	350	302	31	16	10	5	714
Total	10,947	10,432	4,588	3,014	1,435	1,722	32,138

City of Houston - Office of the Mayor
Housing and Population Data

1980 White - Male - Total Tracts - Net Natural Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCNAT 1 * HHINCINM 1 * INCINFL 1

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	2,616	3,280	1,532	1,273	639	449	9,789
$2,000 - $2,999	931	1,169	545	454	227	159	3,485
$3,000 - $4,999	2,160	2,838	1,312	1,114	530	350	8,294
$5,000 - $6,999	3,151	4,235	2,088	1,734	868	576	12,652
$7,000 - $9,999	5,548	8,329	4,528	3,936	2,047	1,316	25,704
$10,000 - $14,999	11,618	20,158	12,499	11,599	6,243	3,919	66,036
$15,000 - $24,999	15,891	31,469	21,932	22,005	11,835	7,006	110,138
$25,000 or More	12,364	24,810	16,950	17,979	9,596	5,286	86,985
Total	54,279	96,278	61,386	60,094	31,985	19,061	323,083

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	657	857	376	283	155	99	2,427
$2,000 - $2,999	240	319	141	107	58	36	901
$3,000 - $4,999	795	1,231	586	468	224	136	3,432
$5,000 - $6,999	1,008	1,470	714	529	270	176	4,167
$7,000 - $9,999	1,071	1,637	831	697	314	191	4,651
$10,000 - $14,999	1,179	1,831	904	676	315	191	5,096
$15,000 - $24,999	944	1,544	773	594	288	151	4,294
$25,000 or More	923	1,527	694	545	234	122	4,045
Total	6,817	10,416	5,019	3,901	1,858	1,102	29,013

City of Houston - Office of the Mayor
Housing and Population Data

1980 White + Female - Total Tracts - Net Natural Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCNAT 1 * HHINCINM 1 * INCINFL 1

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	2,708	2,994	1,284	911	414	211	8,522
$2,000 - $2,999	958	1,059	453	320	144	73	3,007
$3,000 - $4,999	1,896	2,088	861	549	200	97	5,690
$5,000 - $6,999	2,421	2,695	1,188	803	344	159	7,611
$7,000 - $9,999	3,825	4,277	1,853	1,308	543	245	12,056
$10,000 - $14,999	4,586	5,197	2,311	1,664	703	294	14,755
$15,000 - $24,999	2,764	3,244	1,413	1,025	426	169	9,041
$25,000 or More	1,486	1,619	564	368	147	49	4,233
Total	20,644	23,174	9,932	6,947	2,921	1,297	64,915

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	1,621	1,591	675	484	229	132	4,732
$2,000 - $2,999	578	553	235	167	79	45	1,654
$3,000 - $4,999	927	883	324	157	61	28	2,380
$5,000 - $6,999	1,051	1,029	416	270	100	38	2,904
$7,000 - $9,999	1,396	1,347	520	312	106	36	3,717
$10,000 - $14,999	1,527	1,491	573	350	92	39	4,072
$15,000 - $24,999	768	719	220	92	28	9	1,836
$25,000 or More	341	296	27	16	10	1	691
Total	8,201	7,914	2,990	1,348	705	328	21,986

City of Houston - Office of the Mayor
Housing and Population Data

1980 Black - Male - Total Tracts - Net Natural Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCNAT 1 * HHINCINM 1 * INCINFL 1

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	1,945	2,140	1,337	1,051	676	1,289	8,488
$2,000 - $2,999	703	776	503	382	246	467	3,077
$3,000 - $4,999	1,581	1,859	1,236	957	627	1,139	7,399
$5,000 - $6,999	2,318	2,830	1,943	1,536	986	1,797	11,410
$7,000 - $9,999	3,692	4,747	3,427	2,747	1,802	3,311	19,726
$10,000 - $14,999	4,832	6,840	5,237	4,381	2,913	5,106	29,309
$15,000 - $24,999	2,644	4,203	3,426	2,972	1,929	3,341	18,515
$25,000 or More	704	1,198	951	793	494	837	4,977
Total	18,419	24,593	18,110	14,819	9,673	17,287	102,901

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	637	689	436	334	226	423	2,745
$2,000 - $2,999	232	251	158	121	82	153	997
$3,000 - $4,999	468	548	324	248	174	296	2,058
$5,000 - $6,999	367	474	303	222	151	289	1,806
$7,000 - $9,999	303	360	244	184	116	226	1,433
$10,000 - $14,999	231	276	202	154	88	184	1,135
$15,000 - $24,999	77	99	58	48	22	66	372
$25,000 or More	31	46	15	11	5	18	126
Total	2,348	2,743	1,740	1,322	864	1,655	10,672

City of Houston - Office of the Mayor
Housing and Population Data

1980 Black - Female - Total Tracts - Net Natural Households * Set 2 (HHMOD CITY)
Non-City Portion Included
Run Apr 10, 1979 * Printed Apr 11, 1979 * Prepared by ALAN F ACKMAN
OLDHH FROM 32 * POP FROM 4 * HEADSHIP 1 * HHSIZE 2
HHINCNAT 1 * HHINCINM 1 * INCINFL 1

Non-Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	2,861	2,962	1,895	1,424	924	1,622	11,688
$2,000 - $2,999	1,030	1,065	683	513	333	584	4,208
$3,000 - $4,999	1,796	1,855	1,236	937	610	1,051	7,485
$5,000 - $6,999	1,505	1,679	1,123	871	533	931	6,642
$7,000 - $9,999	1,175	1,353	930	711	447	766	5,387
$10,000 - $14,999	984	1,234	855	633	402	659	4,767
$15,000 - $24,999	311	449	291	225	105	227	1,599
$25,000 or More	52	87	51	27	8	47	272
Total	9,714	10,680	7,064	5,341	3,362	5,887	42,048

Elderly

	Household Size						
Household Income:	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person	Total
Less Than $2,000	1,002	919	580	450	299	467	3,717
$2,000 - $2,999	356	325	204	158	105	164	1,312
$3,000 - $4,999	428	353	207	136	89	165	1,378
$5,000 - $6,999	279	273	182	120	65	151	1,070
$7,000 - $9,999	205	193	97	64	28	77	669
$10,000 - $14,999	118	112	46	26	2	42	346
$15,000 - $24,999	14	3	1	0	0	0	23
$25,000 or More	4	6	4	0	0	0	14
Total	2,406	2,194	1,321	954	588	1,066	8,529

City of Houston - Office of the Mayor
Housing and Population Data

1980 Housing Unit Forecast * Set 5
Total Tracts Forecast Units -
Non-City Portion Excluded
Run Apr 12, 1979 * Printed Apr 12, 1979 * Prepared by ALAN F ACKMAN
OLDUNITS FROM 21 * ODEMO 1 * RDEMO 1 * OTCONST 5 * RTCONST 4
OCCONST 5 * RCCONST 5 * VALINFL 2 * RENTINFL 7
OSUIT 2 * RSUIT 2 * OVAC 3 * RVAC 4 * OCONV 4 * RCONV 4
CLUSTERS 3 * OREHAB 1 * RREHAB 1

Tenure and Value/Rent	Unit Size: 1 and 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 or More Rooms	Total
Owner						
Less Than $5,000	29	83	281	208	113	714
$5,000 - $9,999	116	349	1,372	1,605	914	4,356
$10,000 - $14,999	147	575	3,140	5,003	3,090	11,955
$15,000 - 19,999	137	607	4,062	8,103	5,677	18,586
$20,000 - $24,999	99	424	3,287	9,611	8,866	22,286
$25,000 - $34,999	129	526	4,184	16,794	20,506	42,139
$35,000 or More	158	555	3,447	28,029	138,510	170,699
Total Owner Units	814	3,119	19,773	69,353	177,676	270,735
Rental						
Less Than $40	592	1,051	762	339	217	2,961
$40 - $59	281	498	361	161	103	1,404
$60 - $79	380	705	657	289	134	2,164
$80 - $99	826	1,582	1,701	742	284	5,135
$100 - $149	4,750	9,252	11,959	6,249	2,296	34,506
$150 - $199	3,596	7,839	10,882	6,718	2,734	31,769
$200 or More	22,408	85,200	117,331	62,271	30,201	317,411
No Contract Rent	622	815	1,157	1,074	1,218	4,886
Total Rental Units	33,455	106,942	144,810	77,842	37,187	400,236
Total Units	34,269	110,061	164,583	147,195	214,863	670,971

APPENDIX II:

Assumptions Used to Generate Population, Household, and Unit Forecasts

City of Houston - Office of the Mayor
Housing and Population Data

Headship Rate Assumption 1
Oct 31, 1979 3:00

	Age	White	Black	Sp Amer
Male	0-4	.000	.000	.000
	5-9	.000	.000	.000
	10-14	.000	.000	.000
	15-19	.036	.020	.029
	20-24	.529	.494	.588
	25-29	.872	.811	.868
	30-34	.872	.811	.868
	35-39	.973	.888	.944
	40-44	.973	.888	.944
	45-49	.974	.846	.898
	50-54	.974	.846	.898
	55-59	.974	.846	.898
	60-64	.974	.846	.898
	65+	.919	.921	.780
Female	0-4	.000	.000	.000
	5-9	.000	.000	.000
	10-14	.000	.000	.000
	15-19	.015	.017	.010
	20-24	.085	.132	.063
	25-29	.190	.268	.123
	30-34	.190	.268	.123
	35-39	.198	.297	.136
	40-44	.198	.297	.136
	45-49	.191	.302	.132
	50-54	.191	.302	.132
	55-59	.191	.302	.131
	60-64	.191	.302	.131
	65+	.432	.492	.335

City of Houston - Office of the Mayor
Housing and Population Data

Net Inmigrant Population Count Assumption 1
Oct 31, 1979 3:00

	Age	White	Black	Sp Amer	Total
Male	0-4	5022	2223	1643	8888
	5-9	6494	2873	2125	11492
	10-14	3651	1616	1195	6462
	15-19	1665	735	544	2944
	20-24	2219	983	727	3929
	25-29	8319	3684	2721	14724
	30-34	6476	2865	2120	11461
	35-39	2903	1286	952	5141
	40-44	2013	892	659	3564
	45-49	1483	656	485	2624
	50-54	917	406	300	1623
	55-59	523	231	171	925
	60-64	412	183	135	730
	65+	591	262	194	1047
	Total	42688	18895	13971	75554
Female	0-4	5022	2223	1643	8888
	5-9	6324	2800	2069	11193
	10-14	3530	1563	1156	6249
	15-19	2425	1074	794	4293
	20-24	6365	2819	2082	11266
	25-29	7710	3413	2524	13647
	30-34	3966	1757	1299	7022
	35-39	2046	907	670	3623
	40-44	1533	679	502	2714
	45-49	1104	489	362	1955
	50-54	651	288	213	1152
	55-59	309	136	101	546
	60-64	463	204	151	818
	65+	1551	687	508	2746
	Total	42999	19039	14074	76112
Total	0-4	10044	4446	3286	17776
	5-9	12818	5673	4194	22685
	10-14	7181	3179	2351	12711
	15-19	4090	1809	1338	7237
	20-24	8584	3802	2809	15195
	25-29	16029	7097	5245	28371
	30-34	10442	4622	3419	18483
	35-39	4949	2193	1622	8764
	40-44	3546	1571	1161	6278
	45-49	2587	1145	847	4579
	50-54	1568	694	513	2775
	55-59	832	367	272	1471
	60-64	875	387	286	1548
	65+	2142	949	702	3793
	Total	85687	37934	28045	151666

City of Houston - Office of the Mayor
Housing and Population Data

Annual Death Rate Assumption 1
Oct 31, 1979 3:00

	Age	White	Black	Sp Amer
Male	0-4	.0166	.0311	.0311
	5-9	.0004	.0006	.0006
	10-14	.0004	.0006	.0006
	15-19	.0017	.0024	.0024
	20-24	.0017	.0024	.0024
	25-29	.0017	.0045	.0045
	30-34	.0017	.0045	.0045
	35-39	.0030	.0074	.0074
	40-44	.0030	.0074	.0074
	45-49	.0079	.0142	.0142
	50-54	.0079	.0142	.0142
	55-59	.0195	.0281	.0281
	60-64	.0195	.0281	.0281
	65+	.1074	.0842	.0842
Female	0-4	.0128	.0261	.0261
	5-9	.0003	.0003	.0003
	10-14	.0003	.0003	.0003
	15-19	.0006	.0009	.0009
	20-24	.0006	.0009	.0009
	25-29	.0007	.0016	.0016
	30-34	.0007	.0016	.0016
	35-39	.0016	.0036	.0036
	40-44	.0016	.0036	.0036
	45-49	.0041	.0078	.0078
	50-54	.0041	.0078	.0078
	55-59	.0094	.0164	.0164
	60-64	.0094	.0164	.0164
	65+	.0756	.0611	.0611

City of Houston - Office of the Mayor
Housing and Population Data

Annual Birth Rate Assumption 3
Oct 31, 1979 3:00

	Age	White	Black	Sp Amer
Male	0-4	.0000	.0000	.0000
	5-9	.0000	.0000	.0000
	10-14	.0004	.0026	.0026
	15-19	.0273	.0641	.0710
	20-24	.0669	.1055	.1147
	25-29	.0613	.0658	.0722
	30-34	.0267	.0303	.0335
	35-39	.0146	.0161	.0178
	40-44	.0029	.0048	.0055
	45-49	.0003	.0000	.0000
	50-54	.0000	.0000	.0000
	55-59	.0000	.0000	.0000
	60-64	.0000	.0000	.0000
	65+	.0000	.0000	.0000
Female	0-4	.0000	.0000	.0000
	5-9	.0000	.0000	.0000
	10-14	.0003	.0026	.0026
	15-19	.0257	.0584	.0643
	20-24	.0635	.0797	.0846
	25-29	.0576	.0383	.0405
	30-34	.0258	.0265	.0284
	35-39	.0146	.0169	.0184
	40-44	.0035	.0060	.0066
	45-49	.0003	.0009	.0011
	50-54	.0000	.0000	.0000
	55-59	.0000	.0000	.0000
	60-64	.0000	.0000	.0000
	65+	.0000	.0000	.0000

City of Houston - Office of the Mayor
Housing and Population Data

Household Size Distribution Assumption 2
Oct 31, 1979 3:00

	Household Size					
	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person
White Male Non-Elderly	.168	.298	.190	.186	.099	.059
Elderly	.235	.359	.173	.131	.064	.038
Female Non-Elderly	.318	.357	.153	.107	.045	.020
Elderly	.373	.360	.136	.084	.032	.015
Black Male Non-Elderly	.179	.239	.176	.144	.094	.168
Elderly	.220	.257	.163	.124	.081	.155
Female Non-Elderly	.231	.254	.168	.127	.080	.140
Elderly	.282	.257	.155	.112	.069	.125
Spanish American Male Non-Elderly	.084	.183	.191	.180	.131	.231
Elderly	.115	.204	.182	.155	.115	.229
Female Non-Elderly	.158	.221	.187	.145	.103	.186
Elderly	.209	.200	.171	.131	.087	.202

City of Houston - Office of the Mayor
Housing and Population Data

White Household Income Assumption 1 -- For Base Households
Oct 31, 1979 3:00

Male Non-Elderly

Household Income	Household Size 1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person
Less Than $2,000	.064	.046	.033	.028	.027	.032
$2,000 - $2,999	.029	.022	.015	.013	.012	.013
$3,000 - $4,999	.082	.062	.048	.041	.038	.043
$5,000 - $6,999	.105	.091	.078	.070	.068	.074
$7,000 - $9,999	.199	.197	.193	.184	.186	.196
$10,000 - $14,999	.277	.308	.337	.344	.348	.347
$15,000 - $24,999	.176	.206	.229	.248	.249	.233
$25,000 or More	.066	.069	.066	.071	.071	.063

Male Elderly

Less Than $2,000	.129	.110	.100	.100	.112	.120
$2,000 - $2,999	.091	.094	.092	.097	.095	.095
$3,000 - $4,999	.210	.200	.202	.197	.206	.226
$5,000 - $6,999	.146	.148	.158	.152	.161	.163
$7,000 - $9,999	.152	.154	.157	.156	.146	.149
$10,000 - $14,999	.130	.140	.146	.148	.148	.131
$15,000 - $24,999	.082	.087	.086	.088	.076	.057
$25,000 or More	.060	.067	.060	.063	.057	.058

Female Non-Elderly

Less Than $2,000	.175	.173	.173	.175	.189	.217
$2,000 - $2,999	.071	.070	.065	.058	.047	.052
$3,000 - $4,999	.166	.165	.170	.164	.167	.174
$5,000 - $6,999	.188	.187	.189	.192	.188	.191
$7,000 - $9,999	.195	.197	.205	.212	.213	.198
$10,000 - $14,999	.128	.134	.137	.142	.141	.126
$15,000 - $24,999	.054	.055	.049	.046	.045	.034
$25,000 or More	.022	.019	.012	.011	.009	.007

Female Elderly

Less Than $2,000	.264	.269	.302	.351	.436	.537
$2,000 - $2,999	.091	.089	.084	.058	.061	.066
$3,000 - $4,999	.182	.184	.197	.207	.201	.162
$5,000 - $6,999	.167	.167	.168	.161	.140	.100
$7,000 - $9,999	.162	.164	.167	.166	.110	.105
$10,000 - $14,999	.090	.087	.071	.048	.038	.026
$15,000 - $24,999	.031	.030	.008	.005	.011	.000
$25,000 or More	.013	.010	.002	.004	.004	.004

City of Houston - Office of the Mayor
Housing and Population Data

Black Household Income Assumption 1 -- For Base Households
Oct 31, 1979 3:00

Male Non-Elderly

Household Income	Household Size 1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person
Less Than $2,000	.142	.117	.103	.095	.094	.100
$2,000 - $2,999	.062	.054	.048	.045	.045	.046
$3,000 - $4,999	.178	.163	.151	.146	.144	.147
$5,000 - $6,999	.202	.196	.194	.190	.192	.197
$7,000 - $9,999	.236	.253	.264	.271	.276	.270
$10,000 - $14,999	.137	.164	.181	.193	.192	.186
$15,000 - $24,999	.040	.050	.054	.055	.053	.050
$25,000 or More	.003	.005	.005	.005	.004	.004

Male Elderly

Less Than $2,000	.364	.337	.336	.339	.351	.343
$2,000 - $2,999	.173	.170	.156	.158	.171	.148
$3,000 - $4,999	.221	.244	.246	.237	.247	.246
$5,000 - $6,999	.112	.111	.121	.122	.113	.117
$7,000 - $9,999	.083	.086	.100	.100	.087	.096
$10,000 - $14,999	.031	.034	.032	.035	.024	.038
$15,000 - $24,999	.014	.017	.009	.009	.007	.012
$25,000 or More	.001	.001	.001	.000	.000	.000

Female Non-Elderly

Less Than $2,000	.395	.372	.360	.358	.369	.370
$2,000 - $2,999	.158	.146	.147	.147	.154	.151
$3,000 - $4,999	.219	.222	.224	.230	.224	.223
$5,000 - $6,999	.103	.110	.115	.115	.116	.113
$7,000 - $9,999	.088	.101	.106	.103	.104	.097
$10,000 - $14,999	.031	.040	.040	.041	.030	.037
$15,000 - $24,999	.005	.008	.008	.006	.003	.009
$25,000 or More	.001	.001	.000	.000	.000	.000

Female Elderly

Less Than $2,000	.559	.562	.589	.633	.682	.587
$2,000 - $2,999	.159	.140	.133	.120	.133	.130
$3,000 - $4,999	.164	.176	.194	.178	.156	.200
$5,000 - $6,999	.071	.075	.052	.048	.028	.050
$7,000 - $9,999	.040	.041	.028	.021	.000	.033
$10,000 - $14,999	.005	.003	.000	.000	.000	.000
$15,000 - $24,999	.002	.003	.004	.000	.000	.000
$25,000 or More	.000	.000	.000	.000	.000	.000

City of Houston - Office of the Mayor
Housing and Population Data

Spanish American Household Income Assumption 1 -- For Base Households
Oct 31, 1979 3:00

Household Income	1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person
Male Non-Elderly						
	Household Size					
Less Than $2,000	.077	.057	.052	.046	.051	.058
$2,000 - $2,999	.035	.025	.023	.021	.024	.027
$3,000 - $4,999	.138	.108	.104	.099	.106	.118
$5,000 - $6,999	.185	.172	.168	.158	.167	.181
$7,000 - $9,999	.268	.262	.275	.271	.268	.274
$10,000 - $14,999	.213	.249	.257	.273	.265	.244
$15,000 - $24,999	.067	.098	.099	.110	.097	.086
$25,000 or More	.015	.028	.022	.023	.022	.013
Male Elderly						
Less Than $2,000	.284	.146	.192	.175	.166	.188
$2,000 - $2,999	.134	.079	.132	.097	.092	.121
$3,000 - $4,999	.187	.215	.195	.199	.221	.206
$5,000 - $6,999	.097	.133	.113	.180	.178	.158
$7,000 - $9,999	.112	.098	.120	.087	.117	.129
$10,000 - $14,999	.112	.174	.098	.107	.092	.083
$15,000 - $24,999	.037	.117	.105	.131	.117	.099
$25,000 or More	.037	.038	.045	.024	.018	.016
Female Non-Elderly						
Less Than $2,000	.253	.258	.272	.277	.349	.308
$2,000 - $2,999	.084	.078	.074	.089	.055	.085
$3,000 - $4,999	.249	.223	.230	.221	.260	.225
$5,000 - $6,999	.171	.183	.168	.145	.114	.133
$7,000 - $9,999	.135	.146	.137	.143	.111	.130
$10,000 - $14,999	.076	.085	.086	.094	.090	.092
$15,000 - $24,999	.018	.016	.029	.018	.021	.023
$25,000 or More	.014	.011	.003	.011	.000	.004
Female Elderly						
Less Than $2,000	.460	.680	.545	.704	.684	.556
$2,000 - $2,999	.088	.040	.045	.000	.000	.012
$3,000 - $4,999	.177	.200	.318	.296	.316	.321
$5,000 - $6,999	.115	.020	.023	.000	.000	.025
$7,000 - $9,999	.062	.060	.068	.000	.000	.062
$10,000 - $14,999	.080	.000	.000	.000	.000	.012
$15,000 - $24,999	.018	.000	.000	.000	.000	.012
$25,000 or More	.000	.000	.000	.000	.000	.000

City of Houston - Office of the Mayor
Housing and Population Data

Spanish American Household Income Assumption 1 -- For Inmigrants
Oct 13, 1979 3:00

Male Non-Elderly

Household Income	Household Size 1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person
Less Than $2,000	.077	.057	.052	.046	.051	.058
$2,000 - $2,999	.035	.025	.023	.021	.024	.027
$3,000 - $4,999	.138	.108	.104	.099	.106	.118
$5,000 - $6,999	.185	.172	.168	.158	.167	.181
$7,000 - $9,999	.268	.262	.275	.271	.268	.274
$10,000 - $14,999	.213	.249	.257	.273	.265	.244
$15,000 - $24,999	.067	.098	.099	.110	.097	.086
$25,000 or More	.015	.028	.022	.023	.022	.013

Male Elderly

Less Than $2,000	.284	.146	.192	.175	.166	.188
$2,000 - $2,999	.134	.079	.132	.097	.092	.121
$3,000 - $4,999	.187	.215	.195	.199	.221	.206
$5,000 - $6,999	.097	.133	.113	.180	.178	.158
$7,000 - $9,999	.112	.098	.120	.087	.117	.129
$10,000 - $14,999	.112	.174	.098	.107	.092	.083
$15,000 - $24,999	.037	.117	.105	.131	.117	.099
$25,000 or More	.037	.038	.045	.024	.018	.016

Female Non-Elderly

Less Than $2,000	.253	.258	.272	.277	.349	.308
$2,000 - $2,999	.084	.078	.074	.089	.055	.085
$3,000 - $4,999	.249	.223	.230	.221	.260	.225
$5,000 - $6,999	.171	.183	.168	.145	.114	.133
$7,000 - $9,999	.135	.146	.137	.143	.111	.130
$10,000 - $14,999	.076	.085	.086	.094	.090	.092
$15,000 - $24,999	.018	.016	.029	.018	.021	.023
$25,000 or More	.014	.011	.003	.011	.000	.004

Female Elderly

Less Than $2,000	.460	.680	.545	.704	.684	.556
$2,000 - $2,999	.088	.040	.045	.000	.000	.012
$3,000 - $4,999	.177	.200	.318	.296	.316	.321
$5,000 - $6,999	.115	.020	.023	.000	.000	.025
$7,000 - $9,999	.062	.060	.068	.000	.000	.062
$10,000 - $14,999	.080	.000	.000	.000	.000	.812
$15,000 - $24,999	.018	.000	.000	.000	.000	.012
$25,000 or More	.000	.000	.000	.000	.000	.000

City of Houston - Office of the Mayor
Housing and Population Data

Black Household Income Assumption 1 -- For Inmigrants
Oct 13, 1979 3:00

Male Non-Elderly

Household Income	Household Size 1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person
Less Than $2,000	.142	.117	.103	.095	.094	.100
$2,000 - $2,999	.062	.054	.048	.045	.045	.046
$3,000 - $4,999	.178	.163	.151	.146	.144	.147
$5,000 - $6,999	.202	.196	.194	.190	.192	.197
$7,000 - $9,999	.236	.253	.264	.271	.276	.270
$10,000 - $14,999	.137	.164	.181	.193	.192	.186
$15,000 - $24,999	.040	.050	.054	.055	.053	.050
$25,000 or More	.003	.005	.005	.005	.004	.004

Male Elderly

Less Than $2,000	.364	.337	.336	.339	.351	.343
$2,000 - $2,999	.173	.170	.156	.158	.171	.148
$3,000 - $4,999	.221	.244	.246	.237	.247	.246
$5,000 - $6,999	.112	.111	.121	.122	.113	.117
$7,000 - $9,999	.083	.086	.100	.100	.087	.096
$10,000 - $14,999	.031	.034	.032	.035	.024	.038
$15,000 - $24,999	.014	.017	.009	.009	.007	.012
$25,000 or More	.001	.001	.001	.000	.000	.000

Female Non-Elderly

Less Than $2,000	.395	.372	.360	.358	.369	.370
$2,000 - $2,999	.158	.146	.147	.147	.154	.151
$3,000 - $4,999	.219	.222	.224	.230	.224	.223
$5,000 - $6,999	.103	.110	.115	.115	.116	.113
$7,000 - $9,999	.088	.101	.106	.103	.104	.097
$10,000 - $14,999	.031	.040	.040	.041	.030	.037
$15,000 - $24,999	.005	.008	.008	.006	.003	.009
$25,000 or More	.001	.001	.000	.000	.000	.000

Female Elderly

Less Than $2,000	.559	.562	.589	.633	.682	.587
$2,000 - $2,999	.159	.140	.133	.120	.133	.130
$3,000 - $4,999	.164	.176	.194	.178	.156	.200
$5,000 - $6,999	.071	.075	.052	.048	.028	.050
$7,000 - $9,999	.040	.041	.028	.021	.000	.033
$10,000 - $14,999	.005	.003	.000	.000	.000	.000
$15,000 - $24,999	.002	.003	.004	.000	.000	.000
$25,000 or More	.000	.000	.000	.000	.000	.000

City of Houston - Office of the Mayor
Housing and Population Data

White Household Income Assumption 1 -- For Inmigrants
Oct 13, 1979 3:00

Male Non-Elderly

Household Income	Household Size 1 Person	2 Person	3 Person	4 Person	5 Person	6 or More Person
Less Than $2,000	.064	.046	.033	.028	.027	.032
$2,000 - $2,999	.029	.022	.015	.013	.012	.013
$3,000 - $4,999	.082	.062	.048	.041	.038	.043
$5,000 - $6,999	.105	.091	.078	.070	.068	.074
$7,000 - $9,999	.199	.197	.193	.184	.186	.196
$10,000 - $14,999	.277	.308	.337	.344	.348	.347
$15,000 - $24,999	.176	.206	.229	.248	.249	.233
$25,000 or More	.066	.069	.066	.071	.071	.063

Male Elderly

Less Than $2,000	.129	.110	.100	.100	.112	.120
$2,000 - $2,999	.091	.094	.092	.097	.095	.095
$3,000 - $4,999	.210	.200	.202	.197	.206	.226
$5,000 - $6,999	.146	.148	.158	.152	.161	.163
$7,000 - $9,999	.152	.154	.157	.156	.146	.149
$10,000 - $14,999	.130	.140	.146	.148	.148	.131
$15,000 - $24,999	.082	.087	.086	.088	.076	.057
$25,000 or More	.060	.067	.060	.063	.057	.058

Female Non-Elderly

Less Than $2,000	.175	.173	.173	.175	.189	.217
$2,000 - $2,999	.071	.070	.065	.058	.047	.052
$3,000 - $4,999	.166	.165	.170	.164	.167	.174
$5,000 - $6,999	.188	.187	.189	.192	.188	.191
$7,000 - $9,999	.195	.197	.205	.212	.213	.198
$10,000 - $14,999	.128	.134	.137	.142	.141	.126
$15,000 - $24,999	.054	.055	.049	.046	.045	.034
$25,000 or More	.022	.019	.012	.011	.009	.007

Female Elderly

Less Than $2,000	.264	.269	.302	.351	.436	.537
$2,000 - $2,999	.091	.089	.084	.058	.061	.066
$3,000 - $4,999	.182	.184	.197	.207	.201	.162
$5,000 - $6,999	.167	.167	.168	.161	.140	.100
$7,000 - $9,999	.162	.164	.167	.166	.110	.105
$10,000 - $14,999	.090	.087	.071	.048	.038	.026
$15,000 - $24,999	.031	.030	.008	.005	.011	.000
$25,000 or More	.013	.010	.002	.004	.004	.004

City of Houston - Office of the Mayor
Housing and Population Data

Five Year Income Inflation Rate Assumption 1
Oct 31, 1979 3:00

Household Income	Inflation Rate
Less Than $2,000	1.483
$2,000 - $2,999	1.483
$3,000 - $4,999	1.483
$5,000 - $6,999	1.483
$7,000 - $9,999	1.503
$10,000 - $14,999	1.600
$15,000 - $24,999	1.600
$25,000 or More	1.600

City of Houston - Office of the Mayor
Housing and Population Data

Cluster Groups - Assumption 3
Apr 7, 1979 3:20

USED FOR 1980 HAP

Cluster	Tracts in Cluster
1	125 126 316 331 401 402 403 404 405 406 407 412 413 414
2	504 505 506 507 510 511 512 513 514 515 516 517 518
3	205 206 207 208 501 502 503 508 509
4	122 123 124 201 202 203 204 209 210 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 317 318 321 330
5	332 333 334 335 336 367 415 416 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 445 446
6	442 443 444 447 448 519 524 525 526 527 528 529 530 531 534 536 537 538 539 540 541 542 543
7	213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 236 237 238 239 240 241 242 243 245 246 247 248 254 520 521 522 523 532 533 535
8	232 233 319 320 322 323 324 325 326 327 328 329 337 338 339 340 341 342 343 344 345 346 347 359 370
9	449
10	450 451 544 545 551
11	244 249 250 251 253
12	361 371
13	121

City of Houston - Office of the Mayor
Housing and Population Data

Percent of Owner Units Surviving Demolition and Fire Loss Assumption 1
Apr 7, 1979 4:20

Value	Unit Size (Rooms)	Age of Unit 0-5	6-10	11-15	16-20	21-25	26-30	31 or More
Less Than $5,000	1 and 2	1.000	.967	.890	.911	.884	.870	.857
	3	.953	.959	.924	.902	.874	.864	.840
	4	.976	.938	.899	.896	.870	.871	.852
	5	.966	.932	.870	.888	.857	.863	.845
	6 or More	.962	.765	.843	.887	.849	.856	.850
$5,000 - $9,999	1 and 2	1.000	.923	.921	.913	.879	.858	.847
	3	.802	.959	.926	.925	.887	.875	.844
	4	.965	.943	.933	.931	.910	.905	.865
	5	.955	.952	.943	.944	.918	.910	.877
	6 or More	.962	.838	.881	.924	.901	.899	.874
$10,000 - $14,999	1 and 2	.976	.890	.957	.966	.921	1.000	.917
	3	.997	.975	.961	.956	.905	.920	.886
	4	.988	.951	.959	.960	.938	.935	.900
	5	.995	.978	.974	.976	.955	.953	.929
	6 or More	.993	.940	.957	.972	.949	.950	.928
$15,000 - 19,999	1 and 2	.986	.939	.956	.952	1.000	1.000	.929
	3	.994	.982	.945	.953	.873	1.000	.881
	4	.983	.962	.949	.948	.914	.964	.911
	5	.988	.989	.980	.982	.956	.948	.942
	6 or More	.992	.982	.978	.985	.970	.972	.959
$20,000 - $24,999	1 and 2	1.000	1.000	.840	1.000	.869	1.000	1.000
	3	1.000	.981	1.000	1.000	.853	1.000	.893
	4	.979	.953	.929	.899	.914	.742	.921
	5	.990	.981	.976	.976	.970	.980	.938
	6 or More	.995	.992	.989	.991	.981	.983	.970
$25,000 - $34,999	1 and 2	1.000	1.000	1.000	1.000	1.000	1.000	.981
	3	.804	1.000	.972	1.000	1.000	1.000	.896
	4	.963	.963	.968	1.000	.926	1.000	.935
	5	.963	.987	.987	.991	.951	1.000	.939
	6 or More	.992	.996	.992	.993	.981	.982	.987
$35,000 or More	1 and 2	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	4	1.000	.963	.920	.917	.857	1.000	.930
	5	1.000	.983	.965	.966	.943	1.000	.941
	6 or More	1.000	.996	.987	.989	.983	.988	.988

City of Houston - Office of the Mayor
Housing and Population Data

Percent of Rental Units Surviving Demolition and Fire Loss Assumption 1
Apr 7, 1979 4:25

Rent	Unit Size (Rooms)	Age of Unit 0-5	6-10	11-15	16-20	21-25	26-30	31 or More
Less Than $40	1 and 2	.959	.975	.931	.905	.840	.826	.862
	3	.936	.946	.875	.885	.833	.812	.835
	4	.946	.965	.931	.892	.839	.824	.853
	5	.956	.979	1.000	.903	.850	.836	.865
	6 or More	.982	.994	1.000	.948	.895	.875	.903
$40 - $59	1 and 2	.956	.920	.914	.912	.884	.871	.871
	3	.951	.893	.895	.893	.867	.850	.850
	4	.952	.881	.891	.891	.859	.844	.834
	5	.958	.894	.898	.901	.868	.855	.843
	6 or More	.959	.902	.910	.909	.872	.854	.849
$60 - $79	1 and 2	.968	.945	.953	.954	.936	.928	.917
	3	.962	.933	.940	.938	.920	.910	.910
	4	.954	.914	.914	.913	.894	.884	.878
	5	.956	.919	.922	.923	.902	.892	.883
	6 or More	.957	.923	.922	.926	.901	.890	.885
$80 - $99	1 and 2	.986	.971	.979	.979	.975	.971	.958
	3	.977	.960	.973	.972	.962	.957	.944
	4	.971	.942	.958	.957	.943	.938	.932
	5	.979	.956	.972	.973	.960	.955	.940
	6 or More	.979	.956	.970	.971	.953	.949	.931
$100 - $149	1 and 2	.995	.993	.993	.993	.983	.983	.974
	3	.992	.989	.991	.991	.980	.978	.966
	4	.990	.981	.982	.981	.961	.957	.954
	5	.993	.986	.990	.990	.974	.971	.966
	6 or More	.995	.991	.993	.994	.981	.978	.971
$150 - $199	1 and 2	.977	.983	.998	1.000	.969	.983	.964
	3	.988	.991	.998	1.000	.979	.977	.973
	4	.995	.992	.996	.997	.984	.983	.975
	5	.998	.996	.997	.998	.995	.997	.986
	6 or More	.998	.997	1.000	1.000	1.000	1.000	.998
$200 or More	1 and 2	.985	.970	.990	1.000	.973	.962	.984
	3	.992	.983	.992	.992	.986	.987	.990
	4	.994	.988	.996	.997	.990	.986	.995
	5	.997	.993	.999	1.000	.993	1.000	1.000
	6 or More	.998	.996	.999	1.000	.996	1.000	1.000
No Contract Rent	1 and 2	.985	.996	.974	.968	.955	.950	.913
	3	.982	.978	.962	.958	.939	.928	.904
	4	.984	.979	.963	.959	.924	.908	.896
	5	.985	.980	.960	.960	.935	.929	.907
	6 or More	.988	.986	.971	.973	.945	.938	.920

City of Houston - Office of the Mayor
Housing and Population Data

Percent of Owner Units Not Converted Assumption 4
Apr 7, 1979 3:49

Cluster Group	Value Classes 1	2	3	4	5	6	7
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	1.000	1.000	1.000	1.000	1.000	1.000	1.000
3	1.000	1.000	1.000	1.000	1.000	1.000	1.000
4	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6	1.000	1.000	1.000	1.000	1.000	1.000	1.000
7	1.000	1.000	1.000	1.000	1.000	1.000	1.000
8	1.000	1.000	1.000	1.000	1.000	1.000	1.000
9	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10	1.000	1.000	1.000	1.000	1.000	1.000	1.000
11	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12	1.000	1.000	1.000	1.000	1.000	1.000	1.000
13	1.000	1.000	1.000	1.000	1.000	1.000	1.000

City of Houston - Office of the Mayor
Housing and Population Data

Percent of Rental Units Not Converted Assumption 4
Apr 7, 1979 3:50

Cluster Group	Rent Classes 1	2	3	4	5	6	7	8
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
3	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
4	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
7	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
8	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
9	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
11	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
13	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

City of Houston - Office of the Mayor
Housing and Population Data

Owner Unit Rehabilitation Assumption 1
Apr 7, 1979 3:30

Tract	Pct	Tract	Pct	Tract	Pct	Tract	Pct	Tract	Pct
121	0	239	0	326	0	420	0	511	0
122	0	240	0	327	0	421	0	512	0
123	0	241	0	328	0	422	0	513	0
124	0	242	0	329	0	423	0	514	0
125	0	243	0	330	0	424	0	515	0
126	0	244	0	331	0	425	0	516	0
201	0	245	0	332	0	426	0	517	0
202	0	246	0	333	0	427	0	518	0
203	0	247	0	334	0	428	0	519	0
204	0	248	0	335	0	429	0	520	0
205	0	249	0	336	0	430	0	521	0
206	0	250	0	337	0	431	0	522	0
207	0	251	0	338	0	432	0	523	0
208	0	253	0	339	0	433	0	524	0
209	0	254	0	340	0	434	0	525	0
210	0	301	0	341	0	435	0	526	0
213	0	302	0	342	0	436	0	527	0
214	0	303	0	343	0	437	0	528	0
215	0	304	0	344	0	438	0	529	0
216	0	305	0	345	0	439	0	530	0
217	0	306	0	346	0	442	0	531	0
218	0	307	0	347	0	443	0	532	0
219	0	308	0	359	0	444	0	533	0
220	0	309	0	361	0	445	0	534	0
221	0	310	0	367	0	446	0	535	0
222	0	311	0	370	0	447	0	536	0
223	0	312	0	371	0	448	0	537	0
224	0	313	0	401	0	449	0	538	0
225	0	314	0	402	0	450	0	539	0
226	0	315	0	403	0	451	0	540	0
227	0	316	0	404	0	501	0	541	0
228	0	317	0	405	0	502	0	542	0
229	0	318	0	406	0	503	0	543	0
230	0	319	0	407	0	504	0	544	0
231	0	320	0	412	0	505	0	545	0
232	0	321	0	413	0	506	0	551	0
233	0	322	0	414	0	507	0		
236	0	323	0	415	0	508	0		
237	0	324	0	416	0	509	0		
238	0	325	0	419	0	510	0		

City of Houston - Office of the Mayor
Housing and Population Data

Owner Unit Rehabilitation Assumption 1
Apr 7, 1979 3:30

Tract	Pct	Tract	Pct	Tract	Pct	Tract	Pct	Tract	Pct
121	0	239	0	326	0	420	0	511	0
122	0	240	0	327	0	421	0	512	0
123	0	241	0	328	0	422	0	513	0
124	0	242	0	329	0	423	0	514	0
125	0	243	0	330	0	424	0	515	0
126	0	244	0	331	0	425	0	516	0
201	0	245	0	332	0	426	0	517	0
202	0	246	0	333	0	427	0	518	0
203	0	247	0	334	0	428	0	519	0
204	0	248	0	335	0	429	0	520	0
205	0	249	0	336	0	430	0	521	0
206	0	250	0	337	0	431	0	522	0
207	0	251	0	338	0	432	0	523	0
208	0	253	0	339	0	433	0	524	0
209	0	254	0	340	0	434	0	525	0
210	0	301	0	341	0	435	0	526	0
213	0	302	0	342	0	436	0	527	0
214	0	303	0	343	0	437	0	528	0
215	0	304	0	344	0	438	0	529	0
216	0	305	0	345	0	439	0	530	0
217	0	306	0	346	0	442	0	531	0
218	0	307	0	347	0	443	0	532	0
219	0	308	0	359	0	444	0	533	0
220	0	309	0	361	0	445	0	534	0
221	0	310	0	367	0	446	0	535	0
222	0	311	0	370	0	447	0	536	0
223	0	312	0	371	0	448	0	537	0
224	0	313	0	401	0	449	0	538	0
225	0	314	0	402	0	450	0	539	0
226	0	315	0	403	0	451	0	540	0
227	0	316	0	404	0	501	0	541	0
228	0	317	0	405	0	502	0	542	0
229	0	318	0	406	0	503	0	543	0
230	0	319	0	407	0	504	0	544	0
231	0	320	0	412	0	505	0	545	0
232	0	321	0	413	0	506	0	551	0
233	0	322	0	414	0	507	0		
236	0	323	0	415	0	508	0		
237	0	324	0	416	0	509	0		
238	0	325	0	419	0	510	0		

City of Houston - Office of the Mayor
Housing and Population Data

Owner Unit Cluster Construction Counts Assumption 5
Apr 12, 1979 11:45

Cluster Group 1

Value	Unit Size 1 AND 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 OR MORE Rooms	Total
Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	0	0	0	0
$10,000 - $14,999	0	0	0	0	0	0
$15,000 - 19,999	0	0	2	6	6	14
$20,000 - $24,999	0	1	4	34	45	84
$25,000 - $34,999	0	2	4	53	131	190
$35,000 or More	0	0	4	22	335	361
Total	0	3	14	115	517	649

Cluster Group 2

Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	0	0	0	0
$10,000 - $14,999	0	1	0	0	0	1
$15,000 - 19,999	0	1	3	15	12	31
$20,000 - $24,999	0	2	13	109	147	271
$25,000 - $34,999	0	1	3	41	101	146
$35,000 or More	0	0	2	13	206	221
Total	0	5	21	178	466	670

Cluster Group 3

Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	0	0	0	0
$10,000 - $14,999	0	0	1	1	0	2
$15,000 - 19,999	0	0	3	14	13	30
$20,000 - $24,999	0	0	6	42	57	105
$25,000 - $34,999	0	0	1	24	57	82
$35,000 or More	0	0	1	11	167	179
Total	0	0	12	92	294	398

City of Houston - Office of the Mayor
Housing and Population Data

Owner Unit Cluster Construction Counts Assumption 5
Apr 12, 1979 11:45

Cluster Group 4

Value	Unit Size 1 AND 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 OR MORE Rooms	Total
Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	0	0	0	0
$10,000 - $14,999	0	7	7	0	0	14
$15,000 - 19,999	0	0	9	33	28	70
$20,000 - $24,999	0	4	22	170	229	425
$25,000 - $34,999	0	0	2	33	83	118
$35,000 or More	0	0	4	22	347	373
Total	0	11	44	258	687	1000

Cluster Group 5

Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	3	0	0	0
$10,000 - $14,999	0	14	17	3	0	34
$15,000 - 19,999	0	15	81	343	304	743
$20,000 - $24,999	0	24	123	986	1331	2464
$25,000 - $34,999	0	54	107	1503	3706	5370
$35,000 or More	0	0	71	441	6874	7389
Total	0	107	402	3276	12215	16000

Cluster Group 6

Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	3	0	0	0
$10,000 - $14,999	0	22	28	6	0	56
$15,000 - 19,999	0	20	117	492	438	1067
$20,000 - $24,999	0	28	130	1045	1410	2613
$25,000 - $34,999	0	43	87	1230	3031	4391
$35,000 or More	0	0	75	448	6951	7474
Total	0	113	437	3221	11830	15601

City of Houston - Office of the Mayor
Housing and Population Data

Owner Unit Cluster Construction Counts Assumption 5
Apr 12, 1979 11:45

Cluster Group 7

Value	Unit Size: 1 AND 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 OR MORE Rooms	Total
Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	0	0	0	0
$10,000 - $14,999	0	95	120	22	0	237
$15,000 - 19,999	0	27	141	588	526	1282
$20,000 - $24,999	0	24	122	973	1315	2434
$25,000 - $34,999	0	26	53	744	1830	2653
$35,000 or More	0	0	53	303	4692	5048
Total	0	172	489	2630	8363	11654

Cluster Group 8

Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	0	0	0	0
$10,000 - $14,999	0	95	121	22	0	238
$15,000 - 19,999	0	10	67	275	249	601
$20,000 - $24,999	0	5	40	319	427	791
$25,000 - $34,999	0	8	21	275	676	980
$35,000 or More	0	0	17	100	1539	1656
Total	0	118	266	991	2891	4266

Cluster Group 9

Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	0	0	0	0
$10,000 - $14,999	0	3	4	0	0	7
$15,000 - 19,999	0	3	15	67	59	144
$20,000 - $24,999	0	5	21	169	228	423
$25,000 - $34,999	0	10	18	252	620	900
$35,000 or More	0	0	16	94	1462	1572
Total	0	21	74	582	2369	3046

City of Houston - Office of the Mayor
Housing and Population Data

Owner Unit Cluster Construction Counts Assumption 5
Apr 12, 1979 11:45

Cluster Group 10

Value	Unit Size 1 AND 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 OR MORE Rooms	Total
Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	0	0	0	0
$10,000 - $14,999	0	8	12	2	0	22
$15,000 - 19,999	0	8	55	226	201	490
$20,000 - $24,999	0	10	52	418	563	1043
$25,000 - $34,999	0	16	33	431	1065	1545
$35,000 or More	0	0	34	203	3142	3379
Total	0	42	186	1280	4971	6479

Cluster Group 11

Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	0	0	0	0
$10,000 - $14,999	0	4	4	0	0	8
$15,000 - 19,999	0	5	23	96	86	210
$20,000 - $24,999	0	8	35	281	379	703
$25,000 - $34,999	0	18	31	458	1130	1637
$35,000 or More	0	0	29	181	2800	3010
Total	0	35	122	1016	4395	5568

Cluster Group 12

Less Than $5,000	0	0	0	0	0	0
$5,000 - $9,999	0	0	0	0	0	0
$10,000 - $14,999	0	4	7	1	0	12
$15,000 - 19,999	0	4	29	120	106	259
$20,000 - $24,999	0	7	33	277	372	689
$25,000 - $34,999	0	14	27	380	935	1356
$35,000 or More	0	0	20	112	1765	1897
Total	0	29	116	890	3178	4213

City of Houston - Office of the Mayor
Housing and Population Data

Unit Cluster Construction Counts Assumption 5
Apr 12, 1979 11:45

Cluster Group 13

Unit Size					
1 AND 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 OR MORE Rooms	Total
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	2	2
0	0	0	0	2	2

Total					
0	0	0	0	0	0
0	0	0	0	0	0
0	253	321	57	0	631
0	93	545	2275	2028	4941
0	118	601	4823	6503	12045
0	192	387	5424	13365	19368
0	0	329	1950	30282	32561
0	656	2183	14529	52178	69546

City of Houston - Office of the Mayor
Housing and Population Data

Rental Unit Cluster Construction Counts Assumption 5
Apr 12, 1979 11:50

Cluster Group 1

Rent	Unit Size: 1 AND 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 OR MORE Rooms	Total
Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	0	13	9	0	0	22
$100 - $149	4	237	300	67	9	617
$150 - $199	9	505	805	192	63	1574
$200 or More	0	639	1695	1274	639	4247
No Contract Rent	0	0	0	0	0	0
Total	13	1394	2809	1533	711	6460

Cluster Group 2

Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	0	27	18	4	0	49
$100 - $149	13	230	291	61	12	607
$150 - $199	9	362	576	137	45	1129
$200 or More	0	436	1178	877	436	2927
No Contract Rent	0	0	0	0	0	0
Total	22	1055	2063	1079	493	4712

Cluster Group 3

Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	0	2	1	0	0	3
$100 - $149	1	15	18	4	1	39
$150 - $199	1	24	36	9	3	73
$200 or More	0	18	48	36	18	120
No Contract Rent	0	0	0	0	0	0
Total	2	59	103	49	22	235

City of Houston - Office of the Mayor
Housing and Population Data

Rental Unit Cluster Construction Counts Assumption 5
Apr 12, 1979 11:50

Cluster Group 4

Rent	Unit Size 1 AND 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 OR MORE Rooms	Total
Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	1	16	11	2	0	30
$100 - $149	3	66	84	18	3	174
$150 - $199	3	103	164	38	12	320
$200 or More	0	73	197	147	74	491
No Contract Rent	0	0	0	0	0	0
Total	7	258	456	205	89	1015

Cluster Group 5

Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	18	487	321	45	0	871
$100 - $149	235	4579	5780	1191	235	12020
$150 - $199	189	6684	10652	2519	846	20890
$200 or More	0	6987	18632	13973	6987	46579
No Contract Rent	0	0	0	0	0	0
Total	442	18737	35385	17728	8068	80360

Cluster Group 6

Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	3	102	66	14	0	185
$100 - $149	52	1157	1460	305	52	3026
$150 - $199	49	1663	2655	621	209	5197
$200 or More	0	1666	4440	3329	1666	11101
No Contract Rent	0	0	0	0	0	0
Total	104	4588	8621	4269	1927	19509

City of Houston - Office of the Mayor
Housing and Population Data

Rental Unit Cluster Construction Counts Assumption 5
Apr 12, 1979 11:50

Cluster Group 7

Rent	Unit Size 1 AND 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 OR MORE Rooms	Total
Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	13	272	178	21	0	484
$100 - $149	86	1751	2209	463	84	4593
$150 - $199	57	1906	3051	714	228	5956
$200 or More	0	1298	3449	2582	1298	8627
No Contract Rent	0	0	0	0	0	0
Total	156	5227	8887	3780	1610	19660

Cluster Group 8

Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	4	71	48	7	0	130
$100 - $149	28	557	701	145	28	1459
$150 - $199	22	691	1103	257	86	2159
$200 or More	0	600	1600	1199	600	3999
No Contract Rent	0	0	0	0	0	0
Total	54	1919	3452	1608	714	7747

Cluster Group 9

Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	0	7	4	0	0	11
$100 - $149	1	71	90	19	1	182
$150 - $199	4	110	174	39	12	339
$200 or More	0	129	342	255	129	855
No Contract Rent	0	0	0	0	0	0
Total	5	317	610	313	142	1387

City of Houston - Office of the Mayor
Housing and Population Data

Rental Unit Cluster Construction Counts Assumption 5
Apr 12, 1979 11:50

Cluster Group 10

Rent	Unit Size 1 AND 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 OR MORE Rooms	Total
Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	0	25	16	0	0	41
$100 - $149	9	271	337	66	9	692
$150 - $199	9	303	479	117	35	943
$200 or More	0	202	531	397	202	1332
No Contract Rent	0	0	0	0	0	0
Total	18	801	1363	580	246	3003

Cluster Group 11

Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	0	0	0	0	0	0
$100 - $149	5	79	106	22	5	217
$150 - $199	5	202	319	74	24	624
$200 or More	0	297	796	595	297	1985
No Contract Rent	0	0	0	0	0	0
Total	10	578	1221	691	326	2826

Cluster Group 12

Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	5	41	27	5	0	78
$100 - $149	21	411	518	107	21	1078
$150 - $199	18	545	869	202	66	1700
$200 or More	0	479	1274	949	479	3181
No Contract Rent	0	0	0	0	0	0
Total	44	1476	2688	1263	566	6037

City of Houston - Office of the Mayor
Housing and Population Data

Rental Unit Cluster Construction Counts Assumption 5
Apr 12, 1979 11:50

Cluster Group 13

Unit Size

Rent	1 AND 2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 OR MORE Rooms	Total
Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	0	0	0	0	0	0
$100 - $149	0	0	0	0	0	0
$150 - $199	0	0	0	0	0	0
$200 or More	0	0	1	0	0	1
No Contract Rent	0	0	0	0	0	0
Total	0	0	1	0	0	1

Total

Less Than $40	0	0	0	0	0	0
$40 - $59	0	0	0	0	0	0
$60 - $79	0	0	0	0	0	0
$80 - $99	44	1063	699	98	0	1904
$100 - $149	458	9424	11894	2468	460	24704
$150 - $199	375	13098	20883	4919	1629	40904
$200 or More	0	12824	34183	25613	12825	85445
No Contract Rent	0	0	0	0	0	0
Total	877	36409	67659	33098	14914	152957

City of Houston - Office of the Mayor
Housing and Population Data

Owner Unit Tract Construction Counts Assumption 5
Apr 11, 1979 6:10

Tract	Units	Tract	Units	Tract	Units	Tract	Units	Tract	Units
121	2	239	252	326	45	420	221	511	47
122	11	240	721	327	35	421	14	512	58
123	12	241	78	328	96	422	816	513	21
124	33	242	34	329	78	423	445	514	44
125	2	243	46	330	27	424	32	515	41
126	8	244	803	331	18	425	114	516	57
201	71	245	309	332	283	426	117	517	45
202	36	246	409	333	6	427	199	518	45
203	68	247	891	334	203	428	8	519	72
204	26	248	1276	335	70	429	4	520	54
205	69	249	3201	336	361	430	47	521	83
206	41	250	189	337	12	431	11	522	67
207	52	251	416	338	93	432	245	523	61
208	65	253	959	339	30	433	1117	524	32
209	25	254	120	340	57	434	477	525	412
210	49	301	38	341	28	435	438	526	27
213	410	302	23	342	8	436	482	527	38
214	41	303	21	343	277	437	4099	528	73
215	157	304	61	344	0	438	4713	529	223
216	23	305	35	345	205	439	425	530	2049
217	75	306	28	346	40	442	61	531	595
218	72	307	45	347	37	443	328	532	229
219	21	308	37	359	1894	444	76	533	509
220	58	309	30	361	1223	445	274	534	460
221	5	310	20	367	205	446	395	535	51
222	171	311	45	370	977	447	558	536	574
223	188	312	39	371	2990	448	4	537	1560
224	357	313	25	401	32	449	3046	538	1294
225	118	314	21	402	118	450	263	539	1
226	447	315	26	403	81	451	1945	540	2220
227	24	316	38	404	107	501	2	541	2306
228	1621	317	65	405	63	502	18	542	1763
229	72	318	78	406	19	503	38	543	875
230	1994	319	71	407	71	504	15	544	64
231	32	320	56	412	44	505	21	545	2388
232	21	321	5	413	41	506	105	551	1819
233	61	322	37	414	7	507	124		
236	380	323	35	415	56	508	36		
237	132	324	42	416	8	509	79		
238	84	325	31	419	115	510	47		

Total Construction for the City: 69546 Units

City of Houston - Office of the Mayor
Housing and Population Data

Rental Unit Tract Construction Counts Assumption 4
Apr 11, 1979 6:10

Tract	Units	Tract	Units	Tract	Units	Tract	Units	Tract	Units
121	1	239	630	326	21	420	753	511	21
122	10	240	539	327	16	421	6	512	30
123	13	241	637	328	43	422	3241	513	9
124	20	242	16	329	58	423	11476	514	34
125	5	243	21	330	34	424	9083	515	18
126	29	244	366	331	1974	425	4100	516	26
201	55	245	1054	332	129	426	2877	517	4263
202	22	246	186	333	3	427	6013	518	101
203	183	247	478	334	582	428	3	519	41
204	16	248	581	335	32	429	2	520	54
205	48	249	1740	336	165	430	1059	521	46
206	25	250	86	337	6	431	5	522	35
207	40	251	189	338	42	432	840	523	358
208	29	253	445	339	14	433	3037	524	15
209	11	254	66	340	26	434	1875	525	188
210	22	301	20	341	13	435	10789	526	12
213	136	302	12	342	4	436	5382	527	1100
214	19	303	14	343	126	437	1867	528	34
215	77	304	89	344	137	438	11257	529	3471
216	11	305	20	345	93	439	1061	530	1163
217	43	306	48	346	418	442	32	531	271
218	33	307	29	347	1909	443	1204	532	107
219	21	308	23	359	2622	444	82	533	5961
220	23	309	14	361	4300	445	1013	534	741
221	3	310	9	367	156	446	419	535	3589
222	85	311	21	370	602	447	903	536	2576
223	86	312	18	371	1737	448	2	537	1806
224	162	313	12	401	38	449	1387	538	1539
225	360	314	10	402	671	450	120	539	736
226	204	315	24	403	367	451	886	540	1129
227	11	316	77	404	164	501	1	541	1244
228	1245	317	99	405	278	502	14	542	803
229	33	318	145	406	43	503	18	543	417
230	2364	319	64	407	550	504	7	544	29
231	14	320	75	412	76	505	10	545	1087
232	10	321	42	413	1441	506	87	551	886
233	28	322	17	414	747	507	84		
236	324	323	245	415	478	508	24		
237	60	324	1144	416	83	509	36		
238	38	325	14	419	2574	510	22		

Total Construction for the City: 152957 Units

City of Houston - Office of the Mayor
Housing and Population Data

Five Year Value Inflation Rate Assuaption 2
Apr 12, 1979 9:20

Cluster Group	Inflation Rate
1	1.6370
2	1.2970
3	1.8440
4	1.3880
5	1.4570
6	1.8150
7	1.8310
8	1.3530
9	1.9000
10	1.5860
11	1.3340
12	1.2040
13	1.2040

City of Houston - Office of the Mayor
Housing and Population Data

Five Year Rent Inflation Rate Assumption 7
Apr 12, 1979 2:00

Rent	Inflation Rate
Less Than $40	1.75
$40 - $59	1.80
$60 - $79	1.80
$80 - $99	1.85
$100 - $149	1.90
$150 - $199	1.90
$200 or More	1.95

City of Houston - Office of the Mayor
Housing and Population Data

Percent of Owner Units in Suitable Condition (Condition Scores 1-3) Assumption 2
Mar 31, 1979 1:15

Value	Unit Size (Rooms)	Age of Unit 0-5	6-10	11-15	16-20	21-25	26-30	31 or More
Less Than $5,000	1 and 2	.483	.483	.483	.483	.483	.483	.483
	3	.483	.483	.483	.483	.483	.483	.483
	4	.483	.483	.483	.483	.483	.483	.483
	5	.483	.483	.483	.483	.483	.483	.483
	6 or More	.483	.483	.483	.483	.483	.483	.483
$5,000 - $9,999	1 and 2	.593	.593	.593	.593	.593	.593	.593
	3	.593	.593	.593	.593	.593	.593	.593
	4	.593	.593	.593	.593	.593	.593	.593
	5	.593	.593	.593	.593	.593	.593	.593
	6 or More	.593	.593	.593	.593	.593	.593	.593
$10,000 - $14,999	1 and 2	.790	.790	.790	.790	.790	.790	.790
	3	.790	.790	.790	.790	.790	.790	.790
	4	.790	.790	.790	.790	.790	.790	.790
	5	.790	.790	.790	.790	.790	.790	.790
	6 or More	.790	.790	.790	.790	.790	.790	.790
$15,000 - 19,999	1 and 2	.935	.935	.935	.935	.935	.935	.935
	3	.935	.935	.935	.935	.935	.935	.935
	4	.935	.935	.935	.935	.935	.935	.935
	5	.935	.935	.935	.935	.935	.935	.935
	6 or More	.935	.935	.935	.935	.935	.935	.935
$20,000 - $24,999	1 and 2	.953	.953	.953	.953	.953	.953	.953
	3	.953	.953	.953	.953	.953	.953	.953
	4	.953	.953	.953	.953	.953	.953	.953
	5	.953	.953	.953	.953	.953	.953	.953
	6 or More	.953	.953	.953	.953	.953	.953	.953
$25,000 - $34,999	1 and 2	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	6 or More	1.000	1.000	1.000	1.000	1.000	1.000	1.000
$35,000 or More	1 and 2	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	6 or More	1.000	1.000	1.000	1.000	1.000	1.000	1.000

City of Houston - Office of the Mayor
Housing and Population Data

Percent of Owner Units in Suitable Condition (Condition Scores 1-3) Assumption 1
Mar 31, 1979 1:20

Value	Unit Size (Rooms)	Age of Unit 0-5	6-10	11-15	16-20	21-25	26-30	31 or More
Less Than $5,000	1 and 2	1.000	.882	.571	.636	.514	.500	.480
	3	.767	.778	.627	.620	.514	.496	.418
	4	.836	.753	.628	.631	.511	.510	.446
	5	.771	.683	.582	.594	.469	.462	.411
	6 or More	.800	.719	.608	.605	.447	.417	.417
$5,000 - $9,999	1 and 2	1.000	.824	.667	.629	.508	.440	.411
	3	.786	.775	.694	.697	.554	.545	.428
	4	.729	.741	.712	.714	.622	.624	.485
	5	.751	.765	.745	.745	.624	.625	.511
	6 or More	.695	.709	.678	.679	.567	.571	.494
$10,000 - $14,999	1 and 2	.667	.750	.806	.838	.667	1.000	.694
	3	.964	.918	.855	.833	.632	.684	.585
	4	.887	.843	.857	.854	.755	.745	.624
	5	.952	.928	.907	.907	.807	.805	.722
	6 or More	.937	.909	.894	.895	.789	.789	.716
$15,000 - 19,999	1 and 2	.800	.800	.857	.818	1.000	1.000	.750
	3	.944	.957	.833	.861	.550	1.000	.561
	4	.914	.906	.845	.838	.696	.857	.669
	5	.975	.970	.940	.939	.831	.798	.779
	6 or More	.975	.977	.954	.954	.887	.892	.844
$20,000 - $24,999	1 and 2	1.000	1.000	.333	1.000	.333	1.000	1.000
	3	1.000	.963	1.000	1.000	.500	1.000	.636
	4	.948	.933	.836	.769	.706	.800	.735
	5	.981	.970	.947	.944	.889	.917	.768
	6 or More	.992	.993	.982	.982	.932	.937	.894
$25,000 - $34,999	1 and 2	1.000	1.000	1.000	1.000	1.000	1.000	.933
	3	.933	1.000	.938	1.000	1.000	1.000	.667
	4	.977	.971	.939	1.000	.818	1.000	.800
	5	.976	.988	.973	.978	.855	1.000	.786
	6 or More	.999	.999	.994	.993	.945	.944	.956
$35,000 or More	1 and 2	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	4	1.000	.941	.842	.857	.667	1.000	.769
	5	1.000	.982	.927	.922	.854	1.000	.792
	6 or More	1.000	.999	.983	.982	.959	.967	.962

City of Houston - Office of the Mayor
Housing and Population Data

Percent of Rental Units in Suitable Condition (Condition Scores 1-3) Assumption 2
Mar 31, 1979 1:17

Rent	Unit Size (Rooms)	Age of Unit 0-5	6-10	11-15	16-20	21-25	26-30	31 or More
Less Than $40	1 and 2	.344	.344	.344	.344	.344	.344	.344
	3	.344	.344	.344	.344	.344	.344	.344
	4	.344	.344	.344	.344	.344	.344	.344
	5	.344	.344	.344	.344	.344	.344	.344
	6 or More	.344	.344	.344	.344	.344	.344	.344
$40 - $59	1 and 2	.347	.347	.347	.347	.347	.347	.347
	3	.347	.347	.347	.347	.347	.347	.347
	4	.347	.347	.347	.347	.347	.347	.347
	5	.347	.347	.347	.347	.347	.347	.347
	6 or More	.347	.347	.347	.347	.347	.347	.347
$60 - $79	1 and 2	.546	.546	.546	.546	.546	.546	.546
	3	.546	.546	.546	.546	.546	.546	.546
	4	.546	.546	.546	.546	.546	.546	.546
	5	.546	.546	.546	.546	.546	.546	.546
	6 or More	.546	.546	.546	.546	.546	.546	.546
$80 - $99	1 and 2	.769	.769	.769	.769	.769	.769	.769
	3	.769	.769	.769	.769	.769	.769	.769
	4	.769	.769	.769	.769	.769	.769	.769
	5	.769	.769	.769	.769	.769	.769	.769
	6 or More	.769	.769	.769	.769	.769	.769	.769
$100 - $149	1 and 2	.956	.956	.956	.956	.956	.956	.956
	3	.956	.956	.956	.956	.956	.956	.956
	4	.956	.956	.956	.956	.956	.956	.956
	5	.956	.956	.956	.956	.956	.956	.956
	6 or More	.956	.956	.956	.956	.956	.956	.956
$150 - $199	1 and 2	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	6 or More	1.000	1.000	1.000	1.000	1.000	1.000	1.000
$200 or More	1 and 2	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	5	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	6 or More	1.000	1.000	1.000	1.000	1.000	1.000	1.000
No Contract Rent	1 and 2	.697	.697	.697	.697	.697	.697	.697
	3	.697	.697	.697	.697	.697	.697	.697
	4	.697	.697	.697	.697	.697	.697	.697
	5	.697	.697	.697	.697	.697	.697	.697
	6 or More	.697	.697	.697	.697	.697	.697	.697

APPENDIX III:

Estimates of 1980 Needs for Assisted Housing Generated Through Use of the Housing Calculation Tool

City of Houston - Office of the Mayor
Housing and Population Data

Housing Assistance Plan
Survey of Housing Conditions
Printed Apr 18, 1979

Number of Housing Units

Status and Condition of All Housing Units	Year of Estimate	All Units Total	All Units Subtotal Suitable for Rehab	Owner Total	Owner Subtotal Suitable for Rehab	Rental Total	Rental Subtotal Suitable for Rehab
1. Occupied Units - Total	1980	639,564	142,426	264,775	61,071	374,789	81,355
A. Substandard	1980	102,370	142,426	39,033	61,071	63,345	81,355
B. Standard	1980	537,186		225,742		311,444	
2. Vacant Units - Total	1980	31,407	7,232	5,960	1,621	25,447	5,611
A. Substandard	1980	5,461	7,232	992	1,621	4,469	5,611
B. Standard	1980	25,947		4,968		20,979	
3. All Units - Total	1980	670,971	149,658	270,735	62,692	400,236	86,966
4. Vacancy Rate	1980	4.681	4.832	2.201	2.586	6.358	6.452

STEP2
OWNER UNITS BEFORE VACANCY REDUCTION: 270735
RENTER UNITS BEFORE VACANCY REDUCTION: 400236

OWNER UNITS AFTER VACANCY REDUCTION: 264775
RENTER UNITS AFTER VACANCY REDUCTION: 374789

City of Houston - Office of the Mayor
Housing and Population Data

Housing Assistance Plan
Housing Assistance Needs of Lower Income Households
Printed Apr 18, 1979

Nov 12

Number of Households

All Households	Total	Elderly	Family	Large Family
Owner Households	80,864	18,733	45,961	16,170
Rental Households	106,546	12,139	73,613	20,789
Total Housing Assistance Needs	187,410	30,872	119,579	36,959
Percent of Total	100.00	16.47	63.81	19.72

All Female Headed Households	Total	Elderly	Family	Large Family
Owner Households	37,709	9,078	22,178	6,453
Rental Households	60,933	7,883	42,227	10,823
Total Housing Assistance Needs	98,642	16,961	64,405	17,276
Percent of Total	52.63	9.05	34.37	9.22

All Minority Households	Total	Elderly	Family	Large Family
Owner Households	40,968	5,941	23,263	11,764
Rental Households	57,677	3,782	37,984	15,911
Total Housing Assistance Needs	98,645	9,723	61,247	27,675
Percent of Total	52.64	5.19	32.68	14.77

City of Houston - Office of the Mayor
Housing and Population Data

Housing Assistance Plan
Housing Assistance Needs of Lower Income Households
Printed Apr 13, 1979
KOU 12

Number of Households

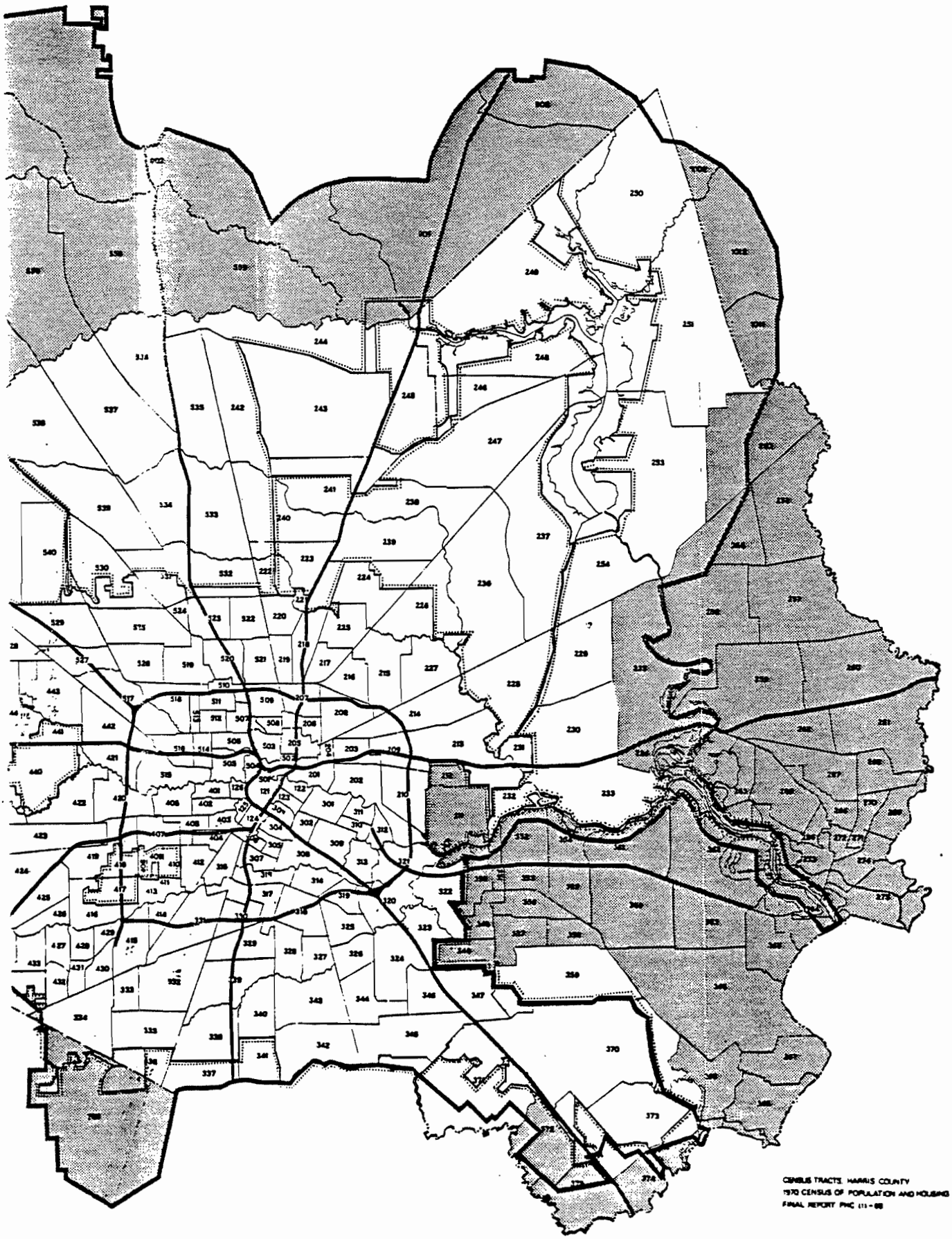
White Households	Total	Elderly	Family	Large Family
Owner Households	39,096	12,792	22,698	4,406
Rental Households	48,869	8,357	35,634	4,878
Total Housing Assistance Needs	88,765	21,149	58,332	9,284
Percent of Total	47.36	11.28	31.13	4.95

Black Households	Total	Elderly	Family	Large Family
Owner Households	31,358	5,133	18,209	8,011
Rental Households	45,012	3,283	30,586	11,143
Total Housing Assistance Needs	76,370	8,421	48,795	19,154
Percent of Total	40.75	4.49	26.04	10.22

Spanish American Households	Total	Elderly	Family	Large Family
Owner Households	9,610	803	5,054	3,753
Rental Households	12,665	499	7,393	4,768
Total Housing Assistance Needs	22,275	1,302	12,452	8,521
Percent of Total	11.89	.69	6.64	4.55

APPENDIX IV

Map of Study Area



CENSUS TRACTS, HARRIS COUNTY
1970 CENSUS OF POPULATION AND HOUSING
FINAL REPORT PHC (1)-68