THE IMPACT OF HIGHWAY RELOCATION UPON THE HOUSING MARKET OF LANSING MICHIGAN

THESIS FOR THE DEGREE OF
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ABSTRACT

THE IMPACT OF HIGHWAY RELOCATION
UPON THE HOUSING MARKET
OF LANSING, MICHIGAN

By

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Relocation is a societal problem involving the participation of both individuals, families, and public agencies. Numerous interests are concerned with relocation with respect to costs and benefits. One must recognize as Jack Meltzer states, that relocation must inevitably accelerate competition for an already inadequate supply of housing, particularly for housing at levels that the bulk of relocatees can afford. The problem is the inequitable impact upon the nonwhite families concerning demand for and supply of dwelling units. This hypothesis is explored in relation to the State of Michigan legislation pertaining to highway relocation allowances, the Michigan State Department of Highways Urban Programs Relocation Plan, Public Law 90-495 or the Federal Aid Highway Act, and the Department of Transportation's Operating Procedures for the administration of highway relocation programs on the local level.

Methodology is introduced from the data base which examines first of all, the corridor in the years 1950 and 1960, for selected housing demand and supply characteristics to ascertain the wisdom of route selection.

In this manner, sufficient time perspective is developed into the changing housing market. Next the dispersion of relocatees is indicated and is followed by a comparative analysis of the census tracts given the pattern of dispersion for the following variables:

1. distance relocated from the right of way
2. potential housing demand characteristics

2a. race, income, cost of housing, density, tenure

3. supply of dwelling units

3a. number of households, condition of unit, age, vacancy rate.

4. percentage of tract household increases attributed to relocation.

The study bears out the hypothesis through the above data interpretation. Nonwhite units disproportionately received the impact of relocation. All density indices reflect nonwhite growth exceeding white areas. Many of the relocatees moved to nonwhite areas. This was caused to some degree by the cost of housing and vacancy availability. In sum, nonwhite areas were the recipient of relocation problems of housing need.

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INTRODUCTION

Realizing that a sizable number of dwelling units are withdrawn from the housing market due to highway relocation, need for additional units is created which must give consideration to spatial location, price structure and type of structure. Data must be accumulated, therefore, as to the number of dwelling units, type, condition and age as well as the vacancy rate in the housing market within the area where a substantial number of units will be relocated. In addition, the potential demand or number of various types of dwelling units that the relocatees can command given family size, income, and tenure must be determined in order that the effect of redistributing these relocatees into the market spatially can be estimated. The number of relocated families, size of family, income of family and tenure status will require a specific number of units, size and type of unit of satisfactory quality.

> "Of the variety of elements of housing that are largely social in nature, some relate to the process of change in which poor people are so often and unwillingly caught up... the failings of relocation efforts are a recurring reminder... problems of relocation threaten the success of programs to which the cities and the nation are committed. Whether as owners or renters, it is the poor families that tend to occupy the nation's substandard housing."[1]

Highway I-496 relocation had an inequitable impact within the Lansing housing market upon the nonwhite with respect to the supply of and the demand for

[1] Alvin L. Schorr, "Housing the Poor," in Power, Poverty, and Urban Policy, ed. by Henry J. Schmandt and Warner Bloomberg, (Sage Publications, Beverly Hills, California, 1968). p. 118.

dwelling units.

This paper will proceed to discuss the Highway Relocation Assistance legislation of the Michigan legislature, the Department of Transportation operating procedures and the State of Michigan Department of State Highways Relocation Plan thereby outlining the data considerations and replacement housing assurances which these authorities require to be fulfilled prior to right of way clearance. It will then statistically reproduce the pattern of relocation stemming from the Main-St. Joseph highway corridor, I-496 Lansing, Michigan, which forced removal of approximately 960 families. Population, income, tenure, and cost of housing data for these units prior and subsequent to their relocation will be indicated. This procedure will finally assess the effect upon the potential demand characteristics of the market in the areas or census tracts where relocation occurred. The impact of relocation upon supply of housing will also be determined as to a) the creation of the need for 960 housing units in the city's market supply, and b) the need for units of status of tenure, within certain price levels to meet the income limitations of the relocatees. Census tracts where the units were relocated will then be analyzed and compared to determine to what extent the following variables were comparatively effected due to the relocative process:

1. distance relocated from the right of way
2. potential housing demand characteristics
    a. race
    b. income and percentage of income allotted to the cost of housing
    c. population density
        1) per household
        2) per acre of residential land

d. contract rent
e. value of house
f. tenure

3. Supply of housing characteristics
   a. number of households
   b. condition of unit
   c. dwelling unit age
   d. vacancy rate
4. percentage of census tract population increase attributed to relocation

These variables were chosen on the basis of the availability of information which describes housing market characteristics over time. No specific weighting is given to any variable. Each constitutes an incidence or condition of the housing market. Together they reflect demand and supply attributes of a living unit.

On the basis of the above information, conclusions will then be reached as to the impact, if any, of the relocation of families for the construction of I-496 in Lansing upon, a) the potential demand for housing in the Lansing housing market; b) the ability of the market to satisfy this potential demand with its supply of dwelling units. Conclusions then will be drawn concerning the impact upon the housing market created by highway relocation. In particular, the effect upon the nonwhite of Lansing will be assessed.

CHAPTER I

BUREAU OF PUBLIC ROADS DIRECTIVES AND TRANSPORTATION PLANNING

> "Large-scale relocation of families and individuals, such as that occasioned by highway construction, necessarily raises basic questions of social welfare and public policy. Among the more important issues are: How relocation affects the family's ability to meet the society's minimum standards for quality and quantity of living space; the extent to which the family can fulfill its needs and desires in terms of housing and neighborhood characteristics and convenience to employment, community facilities, family, and friends; the costs - financial, social, and emotional involved in experiencing forced change; and the unintended consequences of such changes; the differential incidence of benefits and costs on various subgroups within the relocation population; the effect of population redistribution on the city's ecological patterns, particularly with respect to racial segregation, and how these more general effects influence the individual family's housing experience."[2]

The responsibility for taking cognizance of these issues is the relocation policy making set of agencies. It is evident that relocation presents serious problems for these public bodies. On the one hand, they

[2]Chester Hartman, "The Housing of Relocated Families," The American Institute of Planners", XXX (November, 1964), 266.

are statutorially obligated to satisfy the wants of the relocatees with respect to housing condition, type of structure and proximity to services, employment and social facilities etc., at a price within the income range of the family. On the other hand, operational parameters often do not allow for suitable housing for the dislocatee.

> "The conflict between demands and resources becomes evident when one considers the magnitude of family displacement, the fact that displaced families for the most part have the double disadvantage of being both poor and nonwhite, the shortage of low-rent standard vacancies in most cities, the limited usefulness of public housing as a relocation resource, and the competition for relocation housing from families displaced by other forms of public and private construction."[3]

> "In the final analysis, the agent or document that speaks to the reconciliation of demands and resources is the relocation plan which is dependent on an available supply of housing, both public and private. To recognize the fact that relocation must inevitably accelerate competition for an already inadequate supply of housing, particularly for housing at levels that the bulk of relocatees can afford, and then to proceed with the relocation of families without providing for meeting this need is to fly in the face of reason and reality. This becomes doubly serious when Blacks are being relocated, since the competition for housing is most serious for the Black, and further, a situation is created largely by public action that results in pressures upon the social fabric without an assumption of responsibility for coping with the effects of these pressures."[4]

The relocation plan must consider numerous factors such as... "investment in land and improvements, production costs, market characteristics, accessibility, land prices and quality, site location, highway costs

[3] Ibid.

[4] Jack Meltzer, "Relocation of Families Displaced in Urban Redevelopment: Experience in Chicago," Urban Redevelopment, Problems and Practices; ed. by Coleman Woodbury (Chicago: University of Chicago Press, 1953), p.452

and local economic conditions"[5]...in attempting to order activities to gain satisfaction of economic, political and social costs and benefits. Highway relocation is a process of determining priorities based upon both institutional and individual needs and objectives. This process, undertaken by all the agencies concerned with relocation, represents an assessment of vested interests which in turn is formulated into guidelines for administering the relocation experience. Highway aid program requirements, as administered by the Bureau of Public Roads within the Department of Commerce, serves as the focal point for demonstrating cost-benefit - priority decision making in the form of relocation requirements and assurances. The several principle guidelines for the proper use of highway funds in the construction of the Interstate Highway System are listed below:

1. Proposed highway facilities must, a) adequately meet the existing and probable future traffic needs in a manner conducive to safety, durability and economy of maintenance; b) be designed and constructed in accordance with standards best suited to accomplish the foregoing objectives and to conform to the particular needs of each locality.
2. State Highway Department must give assurance that relocation

[5] A.S. Lang and Martin Wohl, "Evaluation of Highway Impacts", National Research Council Highway Research Board, XXVIII-268 (January 1960) p.107

advisory assistance will be provided for persons displaced by the highway.

3. In urban areas of more than 50,000 population, highway projects must be based on a continuing comprehensive transportation planning process, with all local governments in the urban area.

4. Every project application from a State Highway Department must include a certification that public hearings have been held or offered when a highway is to pass through or bypass an incorporated city, town or village and that the Department has considered the economic effect of its proposed route on the affected community.[6]

The first point is related directly to the incidence of cost benefit analysis. In general, the objectives and impact anticipated are economic and physical in nature. In particular, the emphasis upon economy of maintenance relates to expenditures for land and improvements, production costs, and incidence of highway costs. Charges are assessed to the federal government in the form of payments to the State Highway Department to be paid out over a two year period from the date of agreement. The time factor also becomes critical in light of Congress's emphasis on early completion of the interstate system which, according to Tippy, eliminates the consideration of non-economic costs, "The unfortunate outcome is that highway engineers frequently propose

[6]Roger Tippy, "Review of Route Selections for the Federal Aid Highway Systems", XXVII-2 (1966), P. 136

routing an interstate along the cheapest and straightest of alternate routes. They are under pressure from the Bureau of Public Roads to complete the Interstate System by 1972, (the period of availability of the fifteen years appropriations) the Bureau is under fiscal pressure to prefer the cheapest route, and the federal law contains no mandate to spend extra money to preserve amenities or to seek the greatest public good and lease private injury."[7]

Benefits derived from the first point (design and construction in accord with the needs of the individual locality) are frequently directed toward the user. User benefits take the form of a) vehicle operating cost savings; b) time savings; c) a reduction in accident costs; and/or d) an increase in comfort and convenience. These benefits will accrue principally to: 1. Those who used older roads if any; 2. Those who previously used other roads; and 3. Those who did not use any road; a) for more frequent trips between previously existing origins and destinations; b) trips previously made by other modes of transportation; and c) new trips which the facility has now made worthwhile.[8]

The wording of this aid requirement guideline is broadly structured thereby overlooking any definitive analysis of needs as interpreted by the Bureau of Public Roads or the community. This task is then relegated to the State Highway Department which may favorably compare the concept need with the principle of financial practicality.

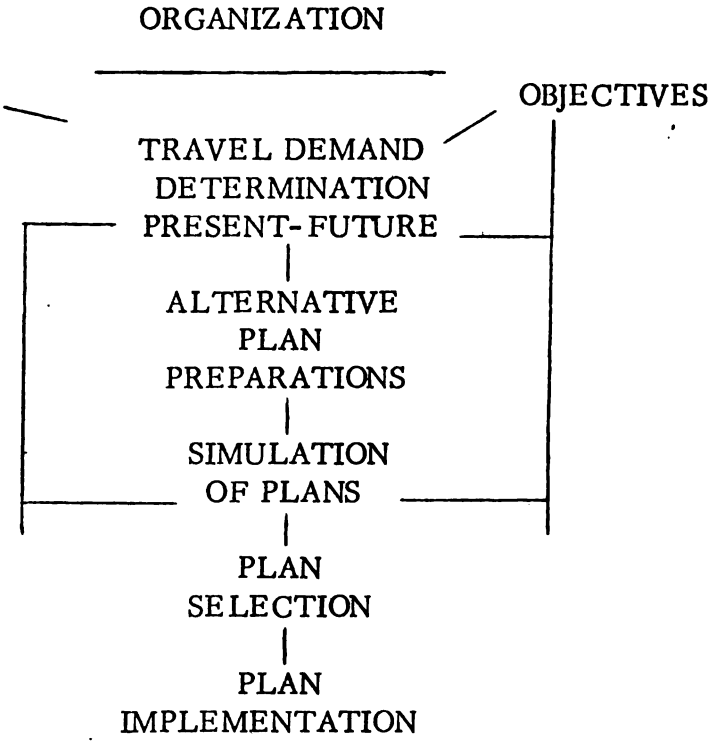
[7]Ibid

[8]Martin Wohl and A.S. Lang, "Evaluation of Highway Impacts", National Research Council Highway Research Board, XXVIII-268 (January 1960) p. 111

The second point, or the assurance of relocation advisory assistance, is provided for in the Michigan State Highway Department's Urban Program Relocation Plan as specified in section one of the Enrolled House Bill #3781 of the Regular session of he seventy-third legislature as well as sections 501 to 509, chapter five, Public Law, 90-495, the Federal Aid Highway Act and the instructional memorandum 80-1-68 of the Department of Transportation, Federal Highway Administration. All of the documents will be discussed at length in chapter two.

The third provision set down by the Bureau of Public Roads requires the integration of the Interstate link into the transportation planning process, with all local governments participating. This requirement is somewhat more difficult to implement than the Relocation Plan, an accounting procedure of housing stock and demographic information. It (the planning process) assumes an operational system that contains objectives, machinery for the collection and analysis of data, the preparation and evaluation of alternative land use and transportation plans, (within the framework of the objectives) criteria for selecting one plan as opposed to others, and some scheme for implementation of the selected plan. Goodman, in his discussion of this sequential process (as depicted in the following chart) again reveals the process of assessing costs and benefits in making decisions.

Chart 1 - TRANSPORTATION PLANNING[9]



Although there exists a great variety of organizational structures among groups engaged in transportation planning, two objectives must be attained by the participants; a) support by area policy makers and; b) a staff capable of accomplishing the planning task. The support function can be attained by including elected public officials in the organization which determines the planning objectives, approves the final plan, aids its implementation and studies any proposal revisions. In this manner the representatives of the people who are bearing the cost of the project both financially and socially have an input through the democratic

[9]William Goodman, ed. International City Managers' Association, Principles and Practice of Urban Planning (Washington D.C.: Institute for Training in Municipal Administration, 1968) p.154

system of government into the decision making process.

This function becomes articulated in the establishment of objectives phase of the planning process. Here two classes of values are introduced and, as Goodman states, can become competitive. User objectives contain the desires and wants of individuals as they realize speed, convenience and reduced cost of transportation while increasing the safety factor of travel through reduced congestion. Community objectives, on the other hand, deal with more general concepts - both economic and socio-aesthetic in nature. This includes a minimization of taxes which corrolates closely with increased economic activity resulting from construction of the highway (which will bear a good deal of the tax burden). The measurement of costs and benefits at the stage of establishing objectives is critical to the evaluation of objectives as economically and socially relevant to the needs of the community. "Reduction of total transportation costs within a rigid set of land development constraints is a favored procedure. The costs to be minimized include the capital costs of the facility, the operating cost, the cost of accidents and the travel time cost."[10]

In determining location, the point where investment reduces the cost to travel just before reaching the point of decreasing or diminishing return is reached, is most economically desirable (usually highly urbanized areas).

[10]William Goodman, ed. International City Managers Association, Principles and Practice of Urban Planning (Washington D.C.: Institute for Training in Municipal Administration, 1968) p.155.

This cost criteria is then frequently applied to a minimum service constraint, that is; assuring a certain level of service or accessibility to all persons, and, overcapacity facility areas requiring traffic reduction through new facilities.

The transportation planning process was operationalized for the city of Lansing by the Tri-County Regional Planning Commission. The I-496 east - west link was incorporated into the Commission's transportation studies in its inventory of January, 1962 which specified capacity volume relationships of all major regional arterials. Here the capacity rating, or practical capacity of the link divided by the design hour volume and then multiplied by a constant was conceptualized.

The practical capacity is the maximum number of vehicles that can pass a given point on a lane or roadway during one hour under the prevailing roadway and traffic conditions, without unreasonable delay or restriction to the drivers freedom to maneuver. This capacity is determined from the following factors: the number of lanes, pavement width, sight distance, width of lane, percentage of commercial vehicles and percentage of green time at signals.[11]

Given the regional setting in 1962, all regional links were judged to be adequate by this set of criteria except the I-96 - M-43 northwest, southeast link and U.S. 27 south of Charlotte. Intra-city links running south; Cedar Street and M-99 were judged inadequate however, and Saginaw or M-43 traversing Lansing from west to east was deemed sufficient. The already programmed

[11]Tri-County Regional Planning Commission Transportation Directory, (January, 1962) p.21

I-496 axis was given credence in accord with the above standards by the inventory.

Inventory or data collection represents only one activity which the I-496 corridor selection eluded. The Planning Commission in 1962 initiated policy for future transportation activity by formulating a study design and the organizational structure of a policy committee as a basis for determining specific goals and objectives concerning developmental policies within the region. Next data collection or inventories were to be undertaken in the areas of soils inventory, ground water and the river basin or natural resources; land use, or population - land use and employment; transportation, or screenlines, home interviews, external surveys, truck-taxi surveys, street and highway survey, travel times, and state and local transportation programs. These inventories, as Goodman stresses, result in a better understanding of existing routes, reveal trouble spots and places where improvements are needed, and lend insight into the ability of the facilities to render service given their carrying capacity under varying conditions of speed, cost and convenience.[12]

The information collected in the preceding stage was then to be analyzed by the Regional Planning Commission for accuracy and relevance, as indicators of the characteristics and dimensions of travel, land usage, trip generation, trip distribution, transportation facilities, modal split and natural resources, and as the basis for model development which would incorporate

[12]William Goodman, ed., International City Managers Association, Principles and Practice of Urban Planning (Washington D.C.: Institute for Training in Municipal Administration, 1968) p. 156

trends and problems and land use-traffic relationships for the forecasting of the following data subjects: land use distribution, population by age and sex, labor force by type of industry, employment by type of industry, economic activity by dollar output of industry and business activities, utility services, households, median income, recreational demand, vehicle registration and person trips by mode.

In the succeeding stage or plan preparation phase, these models were to be utilized along with the expressions of developmental goals in the preparation of alternative regional short and long range developmental and transportation plans.

This stage is the most critical due to the balancing of costs and benefits and the determination of priorities. Locational decisions, anticipated in the beginning of the process, must be finalized. Optimum spacing formulas such as that developed in the Chicago Area Transportation Study have to express location as a function of trip density, construction cost, relative speeds and land use density.[13] They must also express the diseconomies of relocation and weigh them against the benefits to be realized from fulfilling the highway construction objective as a long run contributor to the economy of the affected area.

The final stage of the transportation planning process, the implementation, then would assume satisfactory completion of the preceding phases and

[13]Chicago Area Transportation Study, "Derivation of Formula For Optimum Spacing," TRANSPORTATION PLAN FINAL REPORT, Volume III (Chicago: Chicago Area Transportation Study, 1962), pp. 121-123.

requires only a final sales campaign. The most frequently utilized technique is a comparative study indicating the difference between implementation of the final plan and making no improvements. Measures of benefits derived from accepting the Plan are conveyed such as number of lives saved, accidents prevented, dollars saved in operational expenses, hours saved in travel time, improved access, and stimulus to the regional economy.

In sum, a transportation link is a function of the need to attain regional goals specified at the beginning of the process, or, as the Bureau of Public Roads states, it conforms to the needs of the locality. The I-496 link unfortunately escaped the scrutiny of this process.

The fourth and final point specified by the Bureau necessitates consideration of the impact of highway construction upon the affected community. This specifically relates to the point mentioned above, assessing the needs of the affected locality. Guaranteeing public hearings it is assumed provides and outlet for individuals and/or groups to express both economic and non-economic effects upon the residential community.

It must be noted, however, that such considerations are limited to economic impact in the Bureau's statement as well as the issues stressed above in the public relations or sales efforts to implement the Transportation Plan.

Economic interests are expressed by the costs and benefits accrued to different community interests. They can be summarized briefly as follows: a) local governments; the most immediate impact felt by a local government is the loss of revenue resulting from the acquisition of privately owned properties

for the right of way of the proposed highway. Another cost may be incurred in relocating the displaced families. If low income families are displaced by relocation, indirect costs may be felt in the form of welfare expenditures. Community operational costs are also increased during the construction period as traffic movement, police, fire and school services are affected by the rerouting. Local governments can realize benefits, however, in slum clearance both socially and economically, through separation of incompatible land uses and through tax revenued from increased property values; (given type of land use and stage of urban development) "constructing a new highway on.....land near a grwoing urban area may result in changes in the trend of land utilization for the area. The new highway may..... be responsible for an acceleration in the conversion of land."[14] b) business and consumer services; althrough physical destruction, short term economic or financial hardship take place during the excavation and construction period, advantages in terms of locational accessibility can overcome these financial problems and result in long range gains. Aesthetically, the highway adds little to the utilization of public space and of course disrupts the use of private space. c) Retail trade; service areas are modified as a result of highway construction as those retailers located adjacent to the right of way benefit from sight advertising and accessibility. d) Real estate; both property owners and realtors are affected by construction of a roadway. Given time distance and type of land use, the

[14]Eugene C. Holshouser, "An Investigation of Some Economic Effects of Two Kentucky Bypasses", National Research Council Highway Research Board, XXVIII-268 (January, 1960), p.77

the value of property will be affected as well as the supply-demand equilibrium of the market. e) Displaced residents; directly related to the disruption of real estate is the economic and socio-psychological disruption of the relocatees.[15] In sum, "the process of selecting specific route locations highway designs and relocating residents is extremely complex because many diverse considerations must be weighed. Some of these considerations can be directly translated into dollar costs or benefits. However, many important factors such as the social, economic and esthetic cost and benefit effects of a highway cannot be translated into dollars. In attempting to weigh these less tangible factors against the traditional Hard dollar costs of, for example, land acquisition and highway construction, there is a tendency for the latter to predominate. When this happens, the broad values of the community are often sacrificed."[16] This substitutive process is to be expected because the public agencies charged with construction are staffed primarily with personnel untrained in planning, sociology and urban design. In addition, the interaction of agency and community is formalized, scheduled, and timewise, a short lived experience in the entire process.

Given the widespread physical change, human dislocation and community disruption which accompany highway construction, the need to reassess the priorities, costs and benefits seems evident from the sweeping guidelines

[15]William W. Nash and Jerrold R. Voss, "Analyzing the Socio-Economic Impacts of Urban Highways", National Research Council Highway Research Board, XXVIII-268 (January 1960) p.84

[16]Bureau of Governmental Research. Technical report of the Bureau, Effects of the Proposed Expressway on the Vieux Carre, (New Orleans, Louisiana: Bureau of Governmental Research, 1968) p.19

of the Bureau of Public Roads. This cannot, however, be accomplished without first carefully examining all the pertinent guidelines applicable to the relocation experience which is the subject matter of the following chapter.

CHAPTER II

RELOCATION LEGISLATION AND GUIDELINES

The remainder of the procedural requirements relating to relocation assistance assurances and the preparation and content of state highway relocation plans including state legislation will be scrutinized in this chapter for the purpose of focusing upon the type of community values specified in the procedural documents, data directed to be collected, methods of data analysis, and intergovernmental linkages required. This subject matter will then be evaluated in order to better understand which segments of the community are identified as being assessed with costs generated by highway relocation.

Proceeding from relevant legislation of the State of Michigan to the State of Michigan, Department of State Highways Urban Programs Relocation Plan, to Public Law 90-495, the Federal Aid Highway Act, to the Department of Transportation's Operating Procedures; substantive content will be summarized and will then be followed by an analysis with respect to the above stated subject matter and criteria for each document.

Michigan legislation dealing with highway created relocation is composed of Enrolled House Bill No. 2113, 3781 and 2602 as well as Enrolled

Senate Bill 51. These four pieces of legislation cover the period 1965-69 and have been selected on the basis of their relationship - timewise to the I-496 project. Given the relocation programs' span from 1965-69, the legislation encompasses pertinent data prior and during right of way construction and includes a sufficient amount of time to shore up ill effects as the result of the highway relocation program in Lansing. This linkage to the continued updating phase of the transportation planning process as well as the treatment of follow through requirements within the legislative and/or agency guidelines will be discussed later in this chapter as well as in the concluding chapter.

During the regular session of the seventy third legislature of the State of Michigan, May 1965, the House authorized and required public agencies to pay allowances for the expanse of moving personal property from real property acquired for "public purposes." Given the legality of forced housing withdrawal from the market for purpose of public "improvement' projects, compensation was determined to be not in excess of two hundred dollars to a family or individual, three thousand dollars to a business (due to sunken capital investments). Moving allowances, it was added, are independent of and in addition to compensation for land, buildings or property rights and are so affixed because highway projects are deemed to be a highway purpose and a cost of highway construction.[17]

[17]Act of May 19, 1965, 73rd legis. regular session M.C.L.A., 1948, section one, (May 1965).

In keeping with the compensation theme, House Bill No.2602 was passed four years later to amend the title of Act No.40 of the Public Acts of 1965 and Bill 2113. This act requires public agencies to pay allowances for adequate housing for displaced persons in addition to amount otherwise authorized. Here the owner of real property, which is improved by a one, two or three family dwelling, owned and occupied by the owner for not less than one year immediately prior to the initiation of negotiations for the acquisition of such property, is payed a sum not to exceed five thousand dollars. It shall be the amount which, when added to the acquisition payment, equals the average price established by the agency on a class, group or individual basis, to obtain a comparable replacement dwelling that is decent, safe, sanitary and adequate to accommodate the displaced occupant. In addition, it must be reasonably accessible to public services and places of employment and available on the private market. The act goes on to add that owners displaced from substandard dwellings shall be relocated in a dwelling with the above characteristics. Finally, additional payments shall be made, according to the act, if the average price of a comparable replacement dwelling unit exceeds the fair market value of the property to be acquired.[18]

These compensatory provisions raise several questions concerning the basis of intent and meaning of the legislation. a) No stipulation is provided for owners who rent their improved property prior to the initiation of negotia-

[18]H.B. 2602, 75th Legis. regular session, sec.1-5 (1969).

tions; b) the act fails to define a comparable replacement dwelling except for cost and the conceptualization of decency, safety and sanitary conditions. Minimum standards as provided for in building and health codes are usually deemed to be sufficient and are subject to local jurisdictional standards uniformally applied within the particular jurisdiction. It is quite possible, therefore, for owners to be relocated into units they cannot afford to maintain due to the lack of housing cost vs. income limitation considerations in establishing prevailing standards and face later possible eviction under code enforcement; c) tenants, comprising the majority of low-income residents to be relocated, also are not included in the legislation; d) no standards are elaborated as to the intent of the phrase 'adequate accommodation'. This problem in turn must be linked to questions of accessibility. Are two family dwellings to be secured as replacement for two family dwellings? How will doubling up and conversions be alleviated? Does the adaptation of the reasonably accessible criteria provide families without private transportation proximity to their needs? Does availability on the private market include open housing provisions so that locational choice is included in the relocation package? Answering these questions necessitates a study of the relocation plan provisions and the remaining relevant legislation as to the type of housing market data to be collected and analyzed.

Enrolled House Bill 3781 of the Regular Session of 1966 and Senate Bill 51 (which contain the same requirements) discuss the preparation of plans relative to the displacement of persons due to highway construction.

Also included in both bills is mandatory intergovernmental cooperation in relocating such persons. Given the involvement of fifteen or more dwelling units, an unexplained figure, the state department of highways with the assistance of the governing body of the city or incorporated village must submit to the state administrative board a written relocation plan. As specified in the legislation, an estimate of total persons to be displaced and a summary of suitable housing 'reasonably' expected to be available to house relocatees must be accomplished. The plan, prior to the board's approval, must be deemed satisfactory to the board as to its feasibility in relocating all displaced persons. A second requirement is written certification of completed relocation by the governing body of the city or incorporate d village.

Before discussing the content of the Department of State Highways relocation plan, it must be noted that individual citizen participation is permitted (according to the legislation) only in the form of voluntary attendance at board meetings prior to plan approval. The burden of feeding the citizen's point of view into the decision making process with respect to location and design of the right of way falls upon a citizen's advisory council chosen by the city's chief executive officer from the dislocatees. Acquisition procedures extablished by the state highway department are to be related to this council for 'consultation'.

The input of reasonableness as the major criteria in satisfying housing supply and demand generated by relocation is hardput to reconcile with the concept of public improvement under which highway construction is legitimized given the citizen's lack of role and the impact of relocation upon

lower income families. "Far from assisting low income families and enlarging their opportunities to find decent housing and satisfactory neighborhoods in which to live, the rebuilding of cities is a threat to their welfare."[19]

The Relocation Plan of the Urban Programs Division, Department of State Highways, clarifies to some extent the indecisiveness of the legislation regarding relocation housing. It is divided into two sections; one on displacee demand traits, one on supply availability.

Section one is structured so that the number of family units to be displaced, number or percentage of units according to tenure and number or percentage of families in the following income ranges are estimated: 0-$3,000 - $3,001 to $6,000 - $6,001 to $9,000 - $9,001 to $12,000 and $12,001 and up. The purpose of collecting this data, even if it is only estimated, is to comply with the legislative inference of need for demographic date to be gathered. Income and tenancy characteristics end some degree of insight into potential demand for housing generated by relocation. The scope of this information, however, must be questioned given the optional status of income breakdown data gathering (hinging upon the motivation of the present administrative officer).

The State Highway Department assumes a high proportion of tenancy will then correlate with similar numbers of lower income earners. It does not request, however, that other potential demand indices be consulted prior to analyzing housing supply for the relocatees. Race, percentage of

[19]Bernard J. Frieden and Robert Morris ed., "Toward Equality of Urban Opportunity", Urban Planning and Social Policy (New York: Basic Books, Inc., 1968) p.323

income allocated to the cost of housing, population density per room, household or tract, and the cost of housing are all ignored.

Supply availability, or section two, is required to be narratively described as to overall number of standard and substandard rental and sales housing units, number of public rental housing units, annual turnover rate in standard rental and sales housing units and in public housing units, and number of private and public residential units constructured during the previous two years including price ranges for all rental and sales units. Assuming that such a wealth of data can be accumulated and narrated without, as the Plan states, surveys undertaken, and relying solely upon existing date for housing in the localities effected, (a methodologically unsound effort given the five year period of growth since the housing census of 1960) and further assuming that income and tenancy data alone will suffice as to public housing needs; the matter of the private market supply which can reasonably be expected to fulfill the demand for housing created by the relocation project remains unfulfilled in the areas of types of units required (according to family size) and the relationship between access to employment and public services, types of units required and price structure availability. How can proposals by which "supply will be increased in order to fill the need" be offered in the absence of an adequate housing supply if the need in terms of potential demand variables and demand supply relationships have not been assessed?[20]

[20]"Written Plan For Relocation", State Department of Highways, section 2.

In addition, the Plan is inconsistent with legislative requirements in that data on tenure is required to be estimated, but non-occupant owners and renters are not eligible for relocation compensation.

Finally, the question of choice in relocation housing is entirely omitted from all legislative requirements and the relocation plan in the form of second move compensation. Legislative time consideration from negotiation to demolition requires only that the governing body of the city or incorporated village must certify in writing that all occupants have been relocated or at least been offered suitable housing.

Any dissatisfaction with the initial relocation dwelling, which could be termed a form of interim housing, leading to a move which affords greater choice and time to consider a permanent dwelling is in no way brought under consideration for compensation.

In sum, the review and guarantees of the legislature, the State Administrative Board, the 'cooperating' city or incorporated village and the State Highway Departme nt create a plethora of problems. Although the concepts of public improvement, highway relocation created costs and compensation are recognized, the values of the community have been catagorically structured in economic terms in these documents. Compensatory needs are not absolutely of a fiscal nature. In addition, the yardstick for quantifying anticipated highway impact is at best partial. At no point is data interpretation of price, condition access to employment etc. related to locational characteristics of density, proximity to pre-relocation dwelling land use and environmental conditions. Lastly, intergovernmental relationships are

addressed only in the necessity of cooperation in the preparation of the relocation plan. A probe into proposed public and private projects which might effect suggested relocation housing is not required. The questions of priority, clientele analysis and the public interest lead one to ponder over the number of route selections cancelled by the Board for reason of hardship to the residential community.

The Federal Highway Aid Act's relocation assistance provisions add little to the assurances expressed by Michigan public officials. Programmed to insure that a few individuals do not suffer disproportionate costs as a result of programs designed for the benefit of the public as a whole, they uphold the undefined criteria of reasonableness as to time alloted prior to displacement to make housing available, extent of accomplishments expected and access to places of employment. The same level of generalization is continued in the remaining assurance; housing equal in number to the number displaced will be provided in areas not generally less desirable in regard to utilities, facilities and at prices within the financial means of the families.[21] Condition of replacement dwellings are the same as called for by Michigan law - decent, safe and sanitary.

In the area of compensation, a dislocation allowance of one hundred dollars is authorized in addition to two hundred dollars for moving expenses by the state for the relocatee, provided that he rejects the provision of reimburse-

[21]Federal Aid Highway Act, section 501-509, 23 U.S.C. section 30 (1969)

ment for actual 'reasonable' expenses. The basis for such figures is excluded in the Statute and left to the relocatee to accept as determinate governmental wisdom.

Replacement housing provisions amount to that specified by Michigan law with respect to monetary compensation, replacement housing condition, accessibility, subject of course to the condition of tenure. For those failing to meet eligibility due to the condition of residency, payment not to exceed fifteen hundred dollars is authorized (given 90 days prior occupancy) for a rental period not to exceed two years (sixty-two dollars and fifty cents per month) or for a downpayment on the purchase of a satisfactory home. This addition, which neglects to mention any applicability as to tenure, is considered sufficient - without regard to the relocatee's income or previous housing expenditures. It is assumed to be exhaustive (in the area of compensation) when combined with the relocation services assurances.

Relocation assurances, "which shall include measure, facilities or services as may be necessary,"[22] are to determine the relocatees needs, assure the housing provisions already stated, assist business owners in relocating, and supply information concerning the 221 (d) home acquisition and small disaster loan program.

The value of this piece of legislation as a guideline in structuring a State Relocation Assistance Program is doubtful in several respects. Nothing save a one hundred dollar dislocation allowance, a fifteen hundred dollar maximum moving allowance for short term residents and 90 day notification of im-

[22] Ibid

pending acquisition is new to relocation legislation for the construction of satisfactory relocation programs. In addition, the sufficiency of the guarantees coupled with the assurances has been subject to considerable criticism.

> "Relocation aid...will consist mainly of assistance of finding vacancies in private housing and reimbursement for moving expenses...yet the Advisory Commission on Intergovernmental Relations in its report on the national relocation experience concludes unequivocally, the worst problem in relocating families and individuals is the shortage of standard housing for low income groups. What is needed most is not counseling but an expansion of the supply of low cost housing."[23]

Here the failure to procure adequate data about the household characteristics of the relocatees by the legislation clearly questions the social worth of the program. "Relocation has often created additional slums and brought blight into new areas."[24] "It is now conceded that relocation... often failed to improve housing conditions for the families affected."[25]

Finally, the entire question of specificity of governmental directives has to be analyzed. Rigidity in direction can easily stifle local creativity, yet too much flexibility can result in a negligible degree of effectiveness.

[23]U.S. Advisory Commission on Intergovernmental Relations, "Unequal Treatment of People and Businesses Displaced by Governments", Advisory Commission on Intergovernmental Relations (Washington D.C. January 1965), p. 12 in Urban Planning and Social Policy (New York: Basic Books, Inc., 1968) p.323.

[24]Robert C. Weaver, The Urban Complex (New York: Anchor Books, 1964) pp. 53-54.

[25]Chester Hartman, "The Housing of Relocated Families", American Institute of Planners XXX (November 1964), p.268.

The Department of Transportation's interim operating procedures represent the most comprehensive effort in the area of relocation guarantees. It, to some extent, however, is worded in the same generalistic vein as the Federal Aid Act and the Michigan legislation. In addition, it often places the burden of performance upon the State program to discuss the housing assurances program in a satisfactory fashion. Section 5.5 exemplifies such procedure; "The states' relocation program must be realistic and adequate to provide orderly, timely and efficient relocation of displaced individuals andfamilies to decent, safe and sanitary housing with minimum hardship on those affected."[26]

Deviating from this usage of verbiage to definitive statements concerning data, are the following requirements to be provided by the local relocation office.

a) Lists of replacement dwellings drawn from various sources, suitable in price, size, and condition for displaced persons to the extent they are available;

b) current data for such costs as security deposits for utilities, damages, and leases, closing costs, typical down payments and interest rates and terms;

c) maps showing the location of schools, parks, playgrounds, shopping and public transportation routes in the area;

[26]U.S. Department of Transportation, Federal Highway Administration, Interim Operating Procedures Relocation Assistance and Payments, 23 U.S.C. 5.5 1969 p.3

d) schedules and costs of transportation.

This data is to be used in conjunction with the information below prior to a final locational decision:

1. approximate number of individuals, families and businesses that would displaced;

2. the probable availability of decent, safe and sanitary replacement housing within the financial means of those displaced.

Next, the methods by which the needs of all relocatees are evaluated and correlated with available satisfactory housing as reasonable prices and accessible, are included along with an inventory of available comparable housing with the following elements: type of building, state of repair, number of rooms, needs of the relocatee, type of neighborhood, proximity of public transportation, distance to social institutions. All this data is then translated into an outline of relocation problems, local - state - and federal programs affecting housing availability, other private and public displacement programs, relocation methods, amount of lead time required to complete the program and a list of contributing agencies involved in relocation.

Given the completion of the above requirements, State Relocation programs should adequately cover any data and intergovernmental cooperative problems. This judgement should hold true particularly given the elaborate specification of what constitutes a comparable dwelling and safe, sanitary and decent housing.

A comparable dwelling is one which, when compared to the dwelling being taken, is equal regarding the number of rooms, the area of living space,

the type of construction, age, state of repair, the type of neighborhood, and equally accessible to services and places of employment.[27]

A decent, safe and sanitary dwelling is one that meets all the following minimum requirements:

1. conforms with all provisions for existing structures that have been established under State or local building, plumbing, electrical, housing and occupancy codes and ordinances.

2. has a continuing and adequate supply of potable, safe water.

3. has a kitchen area set aside with a sink in good working condition, and a sewage disposal system, a stove and refrigerator and hot and cold water.

4. an adequate heating system.

5. has a bathroom well lit and ventilated.

6. has provision for artificial lighting.

7. is structurally sound, in good repair and adequately maintained.[28]

The structures, comparable, safe, decent and sanitary are then developed into a list of available dwellings according to average market value for sale purposes and then by the accessibility factor. At least three comparables are selected for each dwelling to be acquired.

It can be assumed readily by this abundance of data required by the Department of Transportation, that most of the objections concerning inter-

[27] Ibid
[28] Ibid

governmental contributions, methodology and lack of needed data have been alleviated. It must be, however, noted that two major areas have been overlooked and perhaps, as the study will explore in chapter three, are contributors to the failure of relocation programs in the area of satisfying housing needs.

The first and less serious problem is the failure to link guidelines with the continued updating phase of the transportation planning process. It is assumed that the compensatory provisions of the regulations will adequately reimburse the relocatees given the quality, location, proximity and monetary assurances granted. Although this study is not directed to the plight of the relocatees, as will be pointed out below, the guidelines at the federal and state level should be consistent with the Bureau of Public Road's statement concerning the incorporation of highway projects into a continuing planning process.

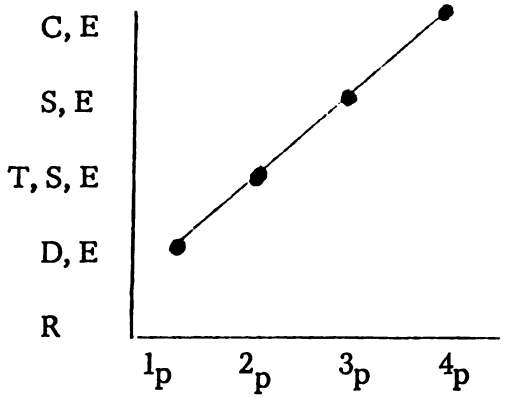
The second failing of the set of guidelines is the lack of consideration of the effect of relocation upon the housing market demand - supply equilibrium. Up to this point this paper has geared itself to a discussion of the intent and content of the various regulations, withholding comment upon the exclusion of the housing market variable in the public agency assessment of relocation costs as well as their development of priorities for problem solving. It is heartening to the relocatee to realize the emphasis upon the human element in the developmental stages of highway project planning as structured by the Federal Government. The variables, aggregated below to represent the public agency conception of relocation, nevertheless, are totally unbalanced due to

the ommission of the housing market as a recipient of relocation costs. That is to say, relocation is to a great extent a function of the state of the market which is the supply of units and the people inhabiting such dwellings which potentially demand units with certain characteristics. The conglomeration of data required to be collected points out that such characteristics exist and should be noted, but fails to follow through the process and anticipate the effect of relocation movement upon the market.

According to the State and Federal requirements, relocation can be expressed as follows: relocation R is a function of time, suitability, efficiency, compensation and date or Rf- T, S, E, C, D. If the relocation process were to be programmed, then according to the guidelines and legislation, phase one would be a date collection process whereby the required information concerning the families and units to be relocated would be accumulated along with the structuring of the relocation procedure (which reflects the entire process). Phase two would then be the notification to the relocatee of the intent to acquire his property or else the intent to evict the tenant. This would simultaneously occur along with the initial comparability surveys to determine relocation housing needs. In phase three, comparable housing would have been found for the relocatee based upon the date previously acquired. Finally, in phase four, compensation would be applied.

Graphically the process can be depicted as seen on the following page:

Chart 2 - RELOCATION PROCESS



R - relocation
D - data, tenure and income
T - time, 90-day notice
S - suitability, safe, decent, sanitary, accessible, and size.
C - compensation, moving property and dislocation.
E - efficiency, method of relocation.

It is the contention of this paper that this relocation procedure when it is applied to the housing market as in the Lansing community results in inequitable housing for the nonwhite dislocatees.

Initiation of the relocation experience; the withdrawal of units, creates locational supply needs which have cumulative effects upon the housing stock. These needs must be satisfied either through vacancies, new construction or doubling up, thereby generating residual problems. In generalized form, the segments of the stock captured by the relocatees becomes nonexistent from market availability thereby tightening the supply of units with particular characterisitics. In keeping with the relocation assurances, housing of a given quality (depending upon the relocatees characteristics) with a given proximity facotr, within a given price structure (according to the relocatees income) with certain other amenties, equal to the number of units to be displaced must be identified and combined with a choice factor for the displacees. Granting this accomplishment, which assumes both economic and socio-psychological satisfaction, the pressure upon the market's ability to supply such units is increased and the burden falls upon the relocatee who is in competition with the normal

market turnover to obtain shelter.

In sum, unless a thorough understanding of the nature of the market is acquired prior to route selection, the impact upon the market can be severe. Between the date of the Department of Transportation, the relocation plan and the legislation, most of this information is supposedly gathered. Expanding upon this base, so that potential demand and supply availability over time is acknowledged; relocation could be confined to a minimum amount of disruption.

The following chapter will statistically trace the relocation experience of Lansing, Michigan from the construction of I-496. The affect of relocation will be analyzed as to its effect on the Lansing city housing market (that part of the market within the cities boundaries). In particular, its capacity to absorb relocation will be analyzed to find if relocation engendered differential effects upon the nonwhite housing in Lansing.

CHAPTER III

HIGHWAY RELOCATION

As a first step towards calculating the impact of relocation upon the Lansing housing market's supply-demand relationship 1950 to 1960, changes will be introduced from the Census of Housing. The following information indicates data that will be presented in that section and the rest of this chapter. This data is divided into two catagories; demand for dwelling units and supply of units. Family characteristics and their potential for capturing dwelling units within the market are expressed as well as the availability and suitability of units as a function of housing need. Available information concerning such indices utilized are:

1950 corridor

number of units
units by race
tenure occupied
vacancies
persons per room
monthly rent
value of unit owned

1960 corridor

number of units
units by race
tenure occupied
vacancies
persons per room
monthly rent
value of unit owned
population per household

corridor vs. city-1960	relocated units
number of units	number of units
tenure occupied	tenure occupied
monthly rent	monthly rent
value of unit owned	value of unit owned
population per household	population per household
persons per room	racial percentages
units per acre	units per acre
vacancies	vacancies
median family income	location
age of unit	age of unit
condition of unit	condition of unit
	acreage of relocatees[29]

Although 1950 data gathering was minimal, it nevertheless affords an opportunity to partially examine racial patterns of settlement, tenure and vacancies, the cost structure of dwelling units for tenants as well as home owners and population density per room. This data is examined for the purpose of identifying available housing supply and potential demand indices over time. An initial understanding of the state of the housing market within the proposed right of way is created from this data prior to final route selection.

The date will be analyzed below for each of the applicable census tracts, the east and west corridor, or units on either side of the river, and for wards, beginning in 1950. Nineteen sixty data will then also be established within the same areas of study followed by a comparison of change within

[29]Data used in this chapter has been extracted from: 1950 Census of Housing, 1960 Census of Housing, State Department of Highways Relocation Files, City of Lansing C.R.P. data, State Department of Health Statistics Center, Tri-County Regional Planning Commission Growth Model Data, Tri-County R.P.C. Home Interview Survey, Polk Directory for Lansing

given blocks, census tracts, wards and each corridor. In this manner, given available information concerning market characteristics, some assumptions may be formulated as to the changing orientation of the market within the Main-St. Joe corridor.

According to the 1950 Census of Housing, the corridor was comprised of sever. hundred and seven dwelling units, six hundred and seven of which were occupied by whites or 87% of the total. The remaining 13% or non whites were located, save one family, in what was to become census tract 18, the then ward 3 of the western corridor between Chestnut and Middle streets. With regard to the racial composition of their respective blocks, nonwhite households averaged 38.62% with a range of 83% to 5%. This compared heavily to the 17.7% nonwhite percentage of the households in ward three or 15.7% of the nonwhite households in the ward within a seven block area which is only 6.7% of the blocks in number.

Tenure patterns of the corridor in 1950 were 61% owner occupied and 39% renter occupied with 53% owner, 45% renter in ward-3, 61%-owner, 38%-renter in ward five, and 74%-owner, 25%-renter in ward six given that wester corridor households comprised 15% of the ward three total dwelling units and 19% of the units in ward six, and that the eastern corridor households comprised 7% of ward five units. Converting to a tract basis, tenure in the corridor was divided accordingly:

Table 1 - CORRIDOR TENURE

CT	owner	Occ.	renter	Occ.	tract h.h. as a % of the corridor
12	90	86.5	12	11.5	14.6
13	10	30	10	50	2.8
16	49	79	13	21	8.9
18	163	59.5	109	40	39.1
19	41	30	92	66	19.1
21	74	68.5	32	29.4	15.2

As established in the above table, owner occupied units as a percent of units occupied per tract, ranged from 87 to 30%. Renter occupied units ranged from 66 to 11.5% of total tract units. Census tract 19 had both the lowest percentage of owner occupied units as well as the highest number of renter occupied households for tracts with 100 or more units within the corridor and did not have any nonwhite units. This observation, however, must be modified considering the number of units within the tract as compared to the total corridor. Census tract 18, therefore, with twice as many units as CT19 must be considered as the high rental area given its 40% renter occupied units. This figure then can be correlated to nonwhite occupancy, which was 12.67% of the total corridor area and 17% of the area which was designated CT 18 by the 1960 census.

Adding the vacancy to give a partial picture of housing supply it must be noted that only 10 vacancies existed within the area that was converted to the right of way or 1.4% of the housing units within the corridor. Of these units, 8 were in the western corridor; 4 in ward 3, 4 in ward 6, 2 in ward 5.

Two were in the eastern corridor; 6 in what was to become census tract 19, 2 in tract 18 and the remaining 2 in tract 12. These figures made up 9.3% of the vacancies in wards 3 and 5 and .19% of ward 6. On what would have been a tract basis, CT18 had 12 vacancies, CT19 had 22 and CT 12 had 9; 17%, 27% and 22% of the vacancies within each tract respectively. Correlating with racial composition, blocks with 87 nonwhite units or 98% of nonwhite corridor units had 2 vacancies or units for 2.3% of nonwhite families, 0.8% for the entire number of racially mixed families. White only occupied units had 8 vacancies or enough units for 1.6% of the families indicating that there were fewer vacancies within the corridor in nonwhite areas.

As a final indicator of housing comparability, population density as expressed by number of persons per room can be introduced to demonstrate that as of 1950, overcrowding correlated with race the vacancy level. The existance of 1.51 persons per room occurred in 4 blocks within the Main St. Joe corridor, a total of 8 units; 6 occupied by nonwhite families within a two block area that became designated as part of census tract 18. The remaining two were located one each in tracts 19, ward 3 and 21, ward 5. Imposing a census tract analysis, #18 had 42 overcrowded units, CT 19 had 21 and CT 21 had 10. Fourteen percent of the overcrowdings, therefore, in tract 18 went into the corridor as compared to 4.8% of tract 19 and 10% of tract 21. Another method of establishing overcrowding as a strong correlate of race can be seen by the number of overcrowded units as a percentage of total block units given race. In ward 3 CT 18, 22% of the units in one block, 28.6% of the units in the block were overcrowded. These same blocks had non white occupants in 83.3%

and 42.9% of the units. In completely white blocks, 4% of the units in ward 3 tract 19 and 2.38% of the units in ward 5 tract 21 were overcrowded.

The existance of vacancies, one means by which to relocate units and/or alleviate overcrowding also points out that non-white families were at a disadvantage to white in terms of comparable housing opportunity. For the six overcrowded units in overwhelmingly nonwhite blocks (76.7%) one vacancy as reported existed. For the other two units in all white areas, there were 3 vacancies, a difference of possible availability of 1.50 to .1667.

As a final index of the operation of the housing market within the Main-St. Joe corridor as of 1950, the cost of housing is examined according to rents and housing value.

The average monthly rental structure for the corridor for 1950 was $42.60 for all block units reporting and $46.03 for white only units, $40.47 for racially mixed units. These figures compare to $46.77 for ward 3 with 17.7% non white units, $43.58 for ward 5 with .0012 non white units and $44.92 for ward 6 with .0015 non whites. Taken by themselves, the figures indicate that non-white units payed less than whites for housing. They must, however, be tempered by the fact that blocks of homes with nonwhite units were valued at $5,274 as compared to $8,736 for all white occupied units. The difference is $3,462 or 166% within the corridor and differences of $2,643, 3622, 1678 and 2921 for the three wards combined and separately (wards 3, 5, 6); 50%, 69%, 32% and 54% differentials. Comparing the east and west corridors, the price differentials vary with blocks within the western corridor averaging $44.61 and the east, $43.74. Similarly, the west corridor containing all the nonwhite

owner occupied units had housing valued at $8,729 as compared to the east's $6,844. This last figure is subject, however, to a consideration of the number of nonwhite owners. While exact numbers are not included in the 1950 census, an assumption as to tenure patterns based upon the percentage of nonwhite units within each block of the total block units would reveal nonwhite owner occupants to be only 27% as compared to 38% nonwhite renter occupants. A final input into housing cost differentials is the imposed census tract boundaries for 2 east and west corridor tracts as indicated below:

Table 2 - HOUSING COSTS

CT	Average Mo. Rent R	Housing value V	Tract V	Pieces R	Corridor E	Corridor W
12	$43.81	$6,838	6,421	41.83	46.15	44.28
18	42.26	6,883	7,597	40.95	E vs.	W
19	47.16	11,047	13,940	49.04		
21	45.46	6,541	7,478	50.46	6945	9976

This table coincides with preciding data concerning the Main St. Joe corridor given the expansion to census tract level. Here census tract 18, the area with the overwhelming majority of the nonwhite units(98%) in the four tract area, pays the lowest average monthly rent, but at the same time, contains housing valued above all but tract 19's owner occupied stock. This fact perhaps can be attributed to the fact that the nonwhite units in CT 18 making up 37.1% of the total reporting stock, live in blocks where owners outnumber renters by 30% in total and 2.15 to 1.0 in number of blocks with more owners than renters. Tract piece data reaffirms these points as west corridor renter occupied units are fewer than those in the eastern portion and yet housing value is higher.

In sum, the 1950 data, although sketchy as a significant indicator of supply and demand for housing, does indicate that race may be a strong correlate with housing shortages thereby beginning a tight or sellers market cycle. In addition, the value of the stock, which on a large area basis of imposed census tracts was in the midst of an ownership cycle, was inferior for nonwhite areas as compared to all-white areas. This points out the need to identify housing age and condition in areas with large quantities of nonwhite units. Reinforcement of this thought is provided by the low amount of vacancies, particularly in areas with nonwhite units. The possibility of substandard stock which would lend itself to relocation, with adequate replacement units to supply the created vacuum putting the burden upon relocation agencies to find adequate replacement units is hereby introduced. Personal disposable income and percent of income allocated for housing will also become extremely important given this situation during the relocation period.

By the 1960 census, the Main St.Joe corridor had expanded to 863 units, an increase of 156 units or 22% over the 1950 level distributed 62.8% in the western portion of the corridor and 37.2% east of the river. Of this number, 233 or 27% of the households were occupied by nonwhite families, an increase of 145 units or 60.7%. Spatially, nonwhite unit location dispersed from 98% as of 1950 in census tract 18, to 4.7% in CT12, 17.7% in tract 16, .50% in tract 19 and the remaining 87.1% in CT 18 (which numerically increased 116 nonwhite units or 33.3%). Dividing by corridor, the west had 64.4% and the east the other 35.6%. On an aggregate block basis, nonwhite units in tracts 16 and 18 averaged 53% of the units (44.8% all blocks with nonwhite units)

with a range of 100% to 49%. This figure is considerably higher than the 38.62% from 1950 and also points out the introduction of nonwhite households to previously all white areas, particularly tract 16.

Population figures, while not available in the 1950 census of housing, reveal that population per household for blocks with nonwhite residents in the corridor averaging 53% of the units had 3.3 each as compared to 2.44 persons per white only households. Person per room data, an index of overcrowding correlating positively with race in 1950, increased sharply given the revised index of 1960-1.01 persons per room. It rose from 8 to 78, a jump of 875% which was racially distributed as follows: 76% in areas with nonwhite units or racially mixed areas, 24% in all white areas. On an individual tract basis or tract piece units within each census area in the corridor, census tract 12 had 26.9% of the cases, an increase in its number of cases from 1950 of 1800%; tract 16 had 7.7%, up 600%; CT 21 had 5.2%, an increase of 300%; and tract 18 had 60.3%, a percentage decrease of 21.6 but a numerical increase of 683%. On a corridor basis, 53 cases or 679% occurred in the west with the remaining 32.1% in the eastern portion.

Taken together, this information indicates a growing market for both white and nonwhite families but continued relative spatial segregation on tract piece and corridor levels. In addition, indices of overcrowding partially introduced in 1950 as well as racial concentration, (key housing supply elements) have been confirmed by the increase in nonwhite units as a percent of total block units, comparative unit population density for nonwhites as opposed to white occupied households, and growth in the number of persons per room, (particularly

for blocks with nonwhite units). Racial distribution, correlates strongly with the above factors thereby signaling the magnification of trends established in 1950.

Another indicator of racial comparability in housing supply as expressed in 1950 is the vacancy level. From 1950 to 1960 it increased from 10 to 60 dwelling units or 500% which represents 6.9% of the units in the corridor, an increase of 5.5%. Spatially they were divided, 60% in the western corridor and 40% in the east - a percentage decrease from the 80-20 split in 1950, but numerically a change in number from 8 to 36 and 2 to 24 (up 1100% in the east, 286% in the west). On a tract piece basis, the breakdown for 1960 was CT 12 - 20 units, CT 13 - 3 units, CT 16 - 3 units, CT 18 - 22 units, CT 19 - 11 units, and CT 21 - 1 unit.

The significance of this data lies in the continued positive correlation from the 1950 census in the vacancy level, location and race. In the eastern corridor where the percentage of vacancies rose 3.53 as much as the percentage increase in the west, two of the three census tract pieces contained no nonwhite units as of 1960. The other, tract piece 12, had nonwhite units amounting to 8.5% of the total units on blocks containing racially mixed households. In the western portion of the corridor, CT 16 had 67.8% of the units on blocks with a racial mixture, tract 18 had 68.2% and tract piece 16 69.4%. In relation to conditions of heavy density, the eastern corridor had 24 vacancies for 22 overcrowded units or 1.08 available units. The western corridor, however, had only 36 vacancies for 53 units or .679 available units, a difference of 59% for largely all-white areas. Excluding tract piece 19 with only one nonwhite

family, tract pieces 16 and 18 with 94.8% of all nonwhite units had only 26 vacancies for 53 overcrowded units or .491 units for every overcrowded family.

In order to ascertain types of housing need as well as type and amount of relocation compensation, it is necessary to update 1950 tenure patterns. The corridor, as of 1960 had 486 owner occupied reporting units or 61.4%, 316 renter occupied units or 38.6%, a percentage shift change of .5% from 1950. On a tract basis, the breakdown was as follows:

Table 3 - CORRIDOR TENURE

CT	# owner occupied	%	# renter occupied	%
12	181	74.1	39	15.9
13	9	52.9	5	29.4
16	61	77	66	23
18	141	48.1	130	44.3
19	35	23	106	69.7
21	71	73.9	24	25

These figures average out to 49.3% owner occupants and 45.7% renter occupants for the western corridor, 67% owner occupants and 23.8% renter occupants for the eastern corridor. Racially, the tenure differentials markedly favored white ownership and similarly nonwhite renter occupants on the corridor level. Tract piece analysis, as seen in the following table, by in large reinforce this point.

Table 4 - CHANGES IN TENURE 1950-60

CT	#	% tract piece	#	% tract piece	% tract piece of corridor units
12	+91	-13	+27	+4.5	+ 9.5
13	- 1	+ 3	- 5	-21	- 1.3
16	- 2	- 2	- 1	+ 2	- 3.4
18	-22	-11.5	+21	+ 4	- 4.4
19	- 6	- 7	+14	+ 4	- 3.7
21	- 3	+ 5.5	- 8	-4.4	- 4.8
TOTAL	+69	-25	+48	-10.9	-13.1
west corridor	-30	-19.5	+34	+10	-16.5
east corridor	+87	- 4.5	+14	-20.9	+ 3.4

The above data clearly points out the initiation of a change in western corridor owner-renter cycle to greater tenancy. This is particularly true in tract piece 18, the area of continued nonwhite household concentration. Inversely, the eastern corridor became further entrenched in owner occupied units as it gained a majority of additional owner occupied units (76.3%), but only 13.7% of the new rental units. Growth in the corridor itself was directed to the east, up 3.4% as opposed to the west's losing 16.5% of corridor housing units which again correlates positively with the growth of racial concentration in the western portion of the corridor. Tract piece changes were most sharp in tract 12, increasing 91 owner occupied units or 79.8% of all Main St. Joe corridor owner occupied units. Tract 18 lost 22 owners which was 11% of all western corridor units and gained 21 rental units or 8.5%. Tract piece 12 had no nonwhite units in 1950, 11 in 1960, a gain of 4.5%. Tract 18 had 87 units in 1950, 203 in 1960 up 87%.

Adding the vacancy level change for the ten year period 1950-1960 enables some estimate of migrational pattern influence, accounting to some extent for changes in tenure.

Table 5 - VACANCY RATES 1950-60

1950

CT	Tract piece	Tract	Tract piece % of tract
12	2	8	22.20
13	-	27	----
16	-	8	----
18	2	12	16.67
19	6	22	27.20
21	-	11	----

1960

12	20	56	35.7
13	3	85	3.5
16	3	27	11.1
18	22	86	25.5
19	11	76	14.4
21	1	54	1.8

Change

	1960 tract piece from 1950 tract	tract to tract	Tract piece to tract piece	%
12	+11	+47	+18.0	+13.5
13	-24	+58	+ 3	+ 3.5
16	- 5	+19	+ 3	+11.1
18	+10	+74	+20	+ 8.9
19	-11	+54	+ 5	-12.8
21	-10	+43	+ 1	+ 1.8

Vacancies can be correlated for the tract pieces in 1960 from full tracts in 1950 in order to 1) utilize a statistically larger number set; 2) show the relationship as to migration from the corridor given a full range of tract vacancies with changes in tenure, race and areas of growth for the tract pieces. Three tract pieces, all of which were devoid of nonwhite units as of 1960 (.03% of total units) lost more vacancies than owner occupied units indicating a relatively stable level of ownership and little owner migration. Tract pieces 13 and 21 in the eastern corridor lost renter occupied units at rates of 4 to 1 and 2.67 to 1 of renters to owners indicating that most out migrations were of families renting units in these all-white areas. CT 16 for the same period of time, the tract piece with losses in owner occupied units of 4% and renter occupied units of 7.7% over 1950, simultaneously increased in nonwhite units 1800%, and had 62.5% fewer vacancies. CT 18, the other predominantly nonwhite area, lost one eighth of its previous owners, yet gained 15.3% more renter occupied units. CT 18 had an increase of 120 nonwhite units or 138% above 1950 and simultaneously had 10 more vacancies bringing the number of vacancies as of 1960 equal to the number of owner occupied units departing the tract piece. Tract piece to full tract relationships in general backup the tract to tract piece observations. In tracts 13, 19 and 21, where the largest losses occurred in vacancies; piece vacancies as a percent of full tract vacancies were either negligible or extremely slight. CT 12 and 18, which gained in the number of vacancies, had large percentage increases in piece vacancies as a percent of the tract.

The significance of these bits of data lies in the general shift of owners away from the predominantly nonwhite blocks along with an exodus of white units from such areas and the solidification of ownership in blocks without any nonwhite units. These facts coincide with slight growth in the eastern corridor and a loss of units in the west (especially tract piece 16 which had the influx of nonwhite units). There was, therefore, little if any nonwhite outmigration. Inmigration, particularly for rental units and fewer available vacancies which had undergone owner occupied outmigration, rental unit increases and large nonwhite unit increases predominated.

As a final measure of interrelating demographic data about the households in order to assess the changing types of units and their characteristics prior to relocation in the corridor; cost of housing data must be updated from 1950. As of 1950, the most significant characteristic of housing costs from a racial standpoint was the high value of nonwhite owner occupied units in relation to blocks with all white units. In addition, the higher rents were payed by units on blocks occupied by only white units as opposed to blocks with nonwhite units. Neither situation changed perceptibly by 1960 as demonstrated in the table below:

Table 6 - HOUSING COST CHANGES

CT	1960 tract piece value	rent	change	%	#	%
12	6666	104.33	+255	3.9	+62.50	149
16	11333	68.00	+2943	35.1	+25.15	58.7
18	10250	69.00	+2662	35	+28.05	68.4
19	8000	64.25	-5940	42.6	+15.21	31
21	10833	66.67	+1355	18.1	+16.21	32.1

The rental structure for 1960 indicates across the board higher rents, particularly for tract 12 followed by tracts 18, 16 and 21, 19. Although eastern corridor rents remained above those of western corridor units -- $81.33 to 67.89, rents of blocks with nonwhite units or tract pieces 18 and 16 were up 63.5% as compared to 32% for tract piece 21 and 31% for piece 19. As a further indicator of nonwhite areas rapidly increasing their rental prices, the average monthly rent of corridor blocks with nonwhite units was $69.50 as compared to blocks with white occupied rental units only - $65.90.

Housing value for the ten year period also retained 1950 comparative relationships as heavily concentrated nonwhite area increased 35.05% versus tract piece areas without nonwhite units, up 11%. On a corridor basis, the western portion averaged $10, 805 and the east's $8,200. This reinforcing type data, however, is subject to modification given a comparison of corridor blocks with nonwhite units versus white only units, $8, 812 and $9,286 respectively. The value of this last statistical input lies in its ability to forecast a change in the cost of owner occupied units, particularly in light of similar signals in the rental structure.

A brief summary of corridor development from 1950 to 1960 reveals a growth rate of 22% in total units, particularly for nonwhite occupied units in tract pieces 16 and 18. Such racial concentration is accompanied by intra-block nonwhite increases in proportion to total block units (up 15%) as well as in greater nonwhite occupant units population density expressed by per household and per room figures. This data holds constant over the ten year period for the western corridor (tract pieces west of the river as opposed

to the eastern portion) as well as on tract piece and individual block bases.

Another indicator of housing supply characteristics is the vacancy rate which again is a constant in terms of racial comparability. Available units for overcrowded white occupied households as compared to blocks with nonwhite households were 1.5 to .1667 in 1950, and narrowed only slightly given the increase in units in 1960, 1.08 to .491.

Patterns of tenure and migrational influences, important prognosticators of housing need or potential demand, showed signs of a shift in the owner-renter cycle with respect to racial location within the corridor and correlateds positively with household flow. Owner occupied units increased throughout the corridor by only 3.1%, with 11.7% of the owner occupied unit losses occurring in the western corridor, 54.5% of these in tract pieces 16 and 18. Similarly, rental units increased 5.5%, with 34% in the western corridor, 34% in tract piece 18. Correspondingly, losses in all-white occupied unit areas coincided with losses in owner occupied units and gains in heavily populated nonwhite occupied units coincided with rental occupant increases.

A final measure of housing potential demand which also follows the tenure, vacancy rate and density patterns, is the hint of cost reversals along racially concentrated areas. As the value of the home seemed to begin a downward trend for nonwhite occupied units, rental prices began to rise over 1950 levels. Tied into these above indices of housing demanders and elements of supply is the housing condition. Dwelling unit blocks with nonwhite units as of 1960 were 58.2% sound, 25.2% deteriorated and 16.1%

dilapidated. Blocks lacking nonwhite units were 91.6% sound, 7.1% deteriorated and only 1.3% dilapidated.

The picture during the 1950's a partial yet important guide to understanding the development and change of the corridor can be depicted as becoming a sellers market. Although income figures are not available on a block basis to determine ability to afford housing, an indication of need can be developed in the density statistics. Again, housing type is unavailable for exact size of units required, but cost of housing, condition and tenure patterns indicate widened separation of the races as to quality of structure and ability to own. When added to the vacancy rate, this sharply points out discrepancy in number and type of possible alternative dwelling sites within the immediate neighborhood which in turn can be related to migrational characteristics of owners and tenants. The overall utility of the data should be borne out later in the chapter as these assumptions can be verified given the disruptional affect of the right of way per these elements as well as other potential supply - demand characteristics.

THREE A CORRIDOR VERSUS CITY-WIDE CHARACTERISTICS

The second phase in the process of determining highway created relocation's effect upon the housing market's supply demand equilibrium entails a comparative analysis of corridor findings to census tracts on a city wide scale prior to right of way acquisition. The indices of housing demand and supply will be noted to assess pre-relocation housing conditions. Data concentrated upon as supplied by the Census of Housing includes; total housing units, occupied white and nonwhite units, number of occupied units according

to tenure, average rent and housing value, the vacancy rate, income, overcrowding on a room basis, dwelling units per acre, housing age and condition and population per household.

During the decade of the 50's, nonwhite households increased from 12.67% of the total units within the corridor to 35.5%. This figure compares to 28.1% in tract 15, 25.6% in tract 16 and 70.2% of tract 18 combining for a nonwhite average of 41.3%. Only one other tract had more than 3.5% nonwhite units. Tenure patterns, expressing a decline in number of owner occupied units and therefore an increase in rentals for the corridor 55.5% owner to 44.5% rental over the ten year period culminating in 1960 indicates that the corridor doesn't represent the overall balance of owner renter occupied dwelling units (see appendix A). Twenty-six of the 36 tracts have more than the corridor average of 55.5% owner occupied units. Six tracts with renter occupied unit averages, on the other hand, exceed 44.5%. Racial averages do not entirely conform with this finding. Tract 15, with 39.8% ownership, 52.2% renters, tract 18 with 52.8% owners and 40% renters indicate relatively high rental averages. Tract 16, the other nonwhite tract had 84% owners, but only 25.9% of these were nonwhite. Outside of these major nonwhite areas, a high number of renters does not correlate with race, due to the absence of nonwhites in other than centrally located tracts. In sum, tenure in tracts with nonwhite units reflects a greater degree of compatibility with corridor findings i.e.: fewer nonwhite owners and more nonwhite renters in the right of way and adjacent racts (an average of 39% renters in the 7 abutting tracts versus 21.8% in other tracts, 21.83%

nonwhite renters in these tracts versus 1.3% nonwhite renters in the other tracts, an average of 58% owners in the 7 tracts, 70.1% in the other areas, 19.2% nonwhite owners in the central 7 tracts (79.4% white owners in these same tracts) and an average of 18.6% nonwhite owners in the other tracts.

Housing costs or rent and value increased almost uniformly across the board from 1950 to 1960. Rents climbed particularly in areas with nonwhite units as did home values subject, however to the influence of white owned units in such blocks. Tract rents and values as compared to corridor tract pieces follow:

Table 7 - TRACT PIECE vs. CITY COST OF HOUSING

Tract Piece 1960	rent $	value $	% Nonwhite units
12	104.33	6,666	3.10
16	64.38	10,666	37.60
18	69.00	10,250	58.80
19	64.25	8,000	.30
21	66.67	10,833	--

Tracts	$	$	%	Tract	$	$	%
1	66	9,500	--	18	71	9,500	70.18
2	62	10,500	.56	19	61	14,500	3.37
3	71	10,500	.66	20	65	9,000	.15
4	87	15,000	.35	21	69	9,500	2.22
5	68	11,000	7.90	22	97	16,000	--
6	73	14,500	.28	23	78	13,000	.06
7	72	11.500	.58	24	78	12,500	.64
8	63	9,000	3.43	25	92	16,500	.09
29	68	12,000	.42	26	66	11,000	--
10	75	12,500	.09	27	70	12,500	.078
11	68	11,500	.25	28	84	13,000	.35
12	71	8,500	2.82	29	--	15,000	--
13	62	9,000	1.03	30	68	13,000	3.57
14	61	---	2.68	31	56	7,000	2.35
15	70	11,000	28.10	32	76	9,500	2.04
16	86	18,500	25.61	33	77	17,500	--
17	92	29,000	.96	34	--	12,000	--
				35	--	---	--
				36	67	10,500	2.60
				37	72	11,500	.46

The above data racially confirms corridor findings given the percentage of nonwhite owners and units occupied. Although tracts 15, 16 and 18 averaged, $13,000, 15 and 18 were valued at $10,250 while the other relatively all white tracts averaged $12,714. Locational values confirm the superior value of basically white areas given the average value of the adjacent to the right of way tracts at $11,500 as compared to the $12,422 of the outer tracts. The rent structure for tracts with nonwhite again show nonwhite tract inferiority given the $75.67 average rent versus the $72.09 for high percentage white tracts. Interestingly, the addition of high white occupied unit tracts adjacent to the corridor brings down the central tract's average to $70.00 thereby increasing the other tracts to $73.09 thereby perhaps indicating discrepencies in rents along racial lines given distance from the highway.

A final potential demand element is the tract population per household figure or housing units minus vacancies divided into total population per tract. Noting the difference between corridor blocks with nonwhite units to all white units for 1960, the 3.23 for tracts with nonwhites to 3.28 for whites only is somewhat surprising, particularly when the 7 tract area average adjacent to the right of way is calculated - 3.04. These figures can somewhat be explained in light of the 2.89 average of the 4 mostly white occupied unit areas next to the right of way. Complete tract per household figures follow:

Table 8 - POPULATION PER HOUSEHOLD

	Population per household			Population per household	
CT	White	Nonwhite	CT	White	Nonwhite
1	3.57	--	19	1.90	2.89
2	3.16	2.0	20		
3	3.44	4.86	21	3.21	5.04
4	3.13	4.20	22	3.16	--
5	3.81	4.16	23	3.01	3
6	2.35	3.25	24	3.13	4.4
7	2.74	4.56	25	3.46	5
8	3.27	4.63	26	3.38	--
9	3.22	6.00	27	3.73	7
10	3.21	6.00	28	3.76	2.33
11	3.12	--	29	3.63	--
12	3.35	5.16	30	3.77	3
13	2.85	6.00	31	3.91	5.5
14	2.18	4.00	32	3.68	3.5
15	2.34	3.71	33	3.64	--
16	3.27	4.29	34	4.22	--
17	3.27	4.25	35	--	--
18	2.75	3.70	36	4.01	7
			37	3.88	3.67

The data clearly indicates the almost uniform greater density among nonwhite units as compared to white occupied units in central city tracts as well as most out-city census tract areas, erasing the combined race tract averages which were quite similar. A supplementary variable or index of population density (expressed to much higher proportions for blocks with nonwhite units than white only blocks in the corridor) for tracts with 100 or more housing units is the 1.01 persons per room data. It indicates 8.8% of the units in tracts with large numbers of nonwhite (8% or more) had overcrowded units as opposed to 6.8% of tracts with less than 8% nonwhite units. Locationally, the figures were 8.2% for central tracts which abut the right of way and 7.9% for all other tracts. Together, these two elements suggest the possibility of some overcrowding, though no where near the corridor levels. This point holds true particularly given the median number of rooms per tract unit

for the median number of persons per tract unit for tracts with 100 units as indicated below:

Table 9 - PERSONS PER ROOM

CT	Persons	CT	Persons	CT	Persons
1	1.5	13	1.74	25	1.47
2	2.0	14	2.66	26	1.58
3	1.53	15	2.0	27	1.35
4	2.2	16	2.0	28	1.35
5	1.93	17	1.93	29	
6	2.3	18	1.93	30	
7	2.3	19	2.21	31	
8	1.9	20	2.13	32	
9	1.9	21	1.76	33	1.42
10	1.93	22	1.80	34	
11	2.21	23	1.88	35	
12	1.83	24	1.96	36	1.23
				37	1.29

Tracts 15, 16 and 18 average 1.98 as compared to 1.81 for the remaining tracts. Similarly, the 7 central tracts averaged 1.92 vs. 1.80 for the other tracts. As a final index of comparable tract density, housing units per acre of residential land is identified below:

Table 10 - UNITS PER ACRE

CT	Acre	CT	Acre	CT	Acre
1	6.73	13	17.1	25	7.31
2	10.2	14	87	26	5.75
3	7.45	15	14.2	27	5.67
4	8.98	16	6.4	28	5.1
5	9.69	17	2.73	29	.16
6	15.5	18	14.1	30	1.54
7	13.7	19	27.7	31	.49
8	10.4	20	14.2	32	.51
9	9.2	21	9.7	33	3.9
10	8.78	22	6.75	34	.50
11	14	23	7.75	35	--
12	9.33	24	9.20	36	3.5
				37	4.8

The three nonwhite unit tracts averaged 11.6 units per acre as compared to 10.1 for the other 33 tracts. Similarly, the tracts abutting the right of way averaged 14.6 as compared to 9.71 for the other tracts. It must be noted, however, that six other tracts averaged above 12 units per acre.

The significance of all these density indices appears to be a greater degree of overcrowding within the corridor as opposed to the rest of the city which indicates a comparatively favorable racial density condition on a tract basis (as opposed to the Main St. Joe dwelling area) indicating the need for examination of another more equitable corridor with tract density levels.

Closely related to the preceding measures of potential demand with regard to population and unit density is the supply element of the vacancy rate. In determining possible available alternative dwellings (excluding the locational price structure and other market characteristics of these units), some approximation of unit substitutability to be considered for comparable relocative housing units can be formulated. The following table indicates vacancies available as a percentage of the total vacancies on a tract basis.

Table 11 - VACANCIES AVAILABLE PERCENTAGES

1	61.3	13	81.2	25	64.4
2	74	14	38.8	26	71.9
3	39.1	15	80.8	27	64.3
4	67.6	16	81.4	28	27.1
5	64.6	17	72.4	29	
6	74.3	18	70.9	30	
7	82.6	19	68.4	31	11.3
8	75	20	76.6	32	
9	52.4	21	83.3	33	78.8
10	62.6	22	50	34	
11	81.4	23	72.8	35	
12	34.1	24	64.6	36	68.1
				37	68.9

This table does not indicate any comparative difference in either percentage of units available or available vacancies form the total number of vacancies for the tracts with nonwhite units or the central tracts. In addition, corridor vacancies as a percentage of total corridor units for the nonwhite areas were quite consistent with total tract figures, 4.74 and 7.08 to 4.9 and 7.5 given availability percentages of 81.4 and 70.9. The vacancy element therefore appeared to be favorable in light of relocation - subject to the number of available vacancies 22 and 61 for 61 and 293 units (again subject to housing cost and income levels).

Median family income for the census tracts for 1960 is introduced below and then correlated with housing costs in order to ascertain a coefficient of ability to afford dwelling units in tract & other tracts as a percentage of income so that the level of vacancies can become more meaningful in terms of substitutability given possible financial inability to obtain housing outside of the residents census tract.

Table 12 - MEDIAN INCOME

CT	Median income 1960	CT	Median income 1960	CT	Median income 1960
1	6364	13	4786	25	8170
2	4844	14		26	6417
3	6226	15	5334	27	6810
4	7985	16	9400	28	7082
5	6381	17	9572	29	6304
6	5944	18	5042	30	4314
7	6182	19	5422	31	7775
8	5690	20	5507	32	5861
9	6799	21	6300	33	7871
10	7110	22	8101	34	7988
11	6295	23	7273	35	6112
12	5875	24	6988	36	6408
				37	6315

Median income, in relation to housing value, expressed as a coefficient ranging from 0 to 1 with higher numbers indicating greater ability to afford housing given percentage of income allocated for housing costs or income as a percentage of housing value, follows for each tract:

Table 13 - INCOME AS A PERCENT OF HOUSING VALUE

CT		CT		CT	
1	.6698	13	.5317	25	.4952
2	.4613	14	--	26	.5834
3	.5929	15	.4849	27	.5448
4	.5323	16	.5081	28	.5448
5	.5800	17	.3303	29	.4203
6	.4099	18	.5307	30	.3318
7	.5375	19	.3739	31	1.111
8	.6322	20	.6118	32	.6169
9	.5665	21	.6632	33	.4498
10	.5688	22	.5063	34	.6657
11	.5474	23	.5595	35	--
12	.6912	24	.5590	36	.6103
				37	.5491

Rental prices are similarly expressed as percentage of income or amount allocated for rent below:

Table 14 - RENT AS A PERCENT OF INCOME

CT		CT		CT	
1	12.45	13	15.54	25	13.51
2	15.36	14	--	26	12.84
3	13.68	15	15.75	27	12.34
4	13.08	16	11	28	14.23
5	12.78	17	11.53	29	--
6	14.14	18	16.90	30	18.92
7	13.98	19	13.50	31	8.64
8	13.28	20	14.17	32	15.56
9	12.00	21	13.14	33	11.74
10	12.66	22	14.36	34	--
11	12.96	23	12.87	35	--
12	14.50	24	13.40	36	12.54
				37	13.68

The above data indicates by in large that nonwhite unit areas rated below largely white areas both in rent .1455 vs. 1304 and home value .508 vs. .558 with the higher home value figure and lower rental figure indicating a disadvantageous nonwhite position or an advantageous white position (nonwhite figures are higher in rent and lower in home value).

On an expanded basis, the following data set shows for each corridor tract the ability given their respective incomes to afford housing in all city tracts given their housing costs for 1960. Nineteen sixty-five data will follow later in the chapter for all tracts given 2.4% of total city relocatees (or 15 families) indicating ability to afford housing both before and during relocation. The corridor residents ability to pay for shelter can be demonstrated in the corridor and after relocation has gotton underway thereby complementing the previously introduced data on vacancies as available substitutes for dwelling units.

Appendix B further substantiates relative inequity on the part of nonwhite units as exemplified by census tract 18 with little financial mobility.

Rental values also bear similar results and are layed out in Appendix C.

Linking the price structure to the vacancy rate, the total average cost percentages and number of vacancies for each tract (given a .5000 home value coefficient and a .'539 rental coefficient average of ability to afford housing) and the number of total units and available vacancies as a percent of total units are listed with the number of relocatees for eact tract's corridor piece.

Table 15 - VACANCY AVAILABILITY

CT 12	13	16	18	19	20	
3.73	3.56	2.97	3.51	3.12	3.19	% available vacancies in where could afford to move.
1101	422	1346	509	697	1189	# available vacancies same situation.
23938	9221	35468	9869	15482	29036	total units
2.174	2.185	2.635	1.939	2.221	2.442	% available vacancies of total # available.
3.173	9.378	2.293	.5392	2.446	4.404	# relocatees - total
27.5	22.2	33.7	18.6	46.5	34	same, city relocatees

The combined vacancy availability factor and the ability to move index demonstrates that tract 18, the heavily populated relatively low income area, was at the greatest disadvantage of all the tracts, particularly in light of its larger percentage of relocatees; CT 12, 14%, CT 13, .90%, CT 16, 23.7%, CT 18, 40%, CT 19, 11.5%, CT 21, 10.9%.

As final indices of housing supply characteristics throughout the city as compared to the corridor are the dwelling age and condition fre-

quencies. As of 1960, the city tract dwelling units were divided by percent according to age and then condition for tracts with 100 units as set forth below and indicate no particular location or racially concentrated areas of older units. Tracts 2 and 19 do, however, have the poorest stock with respect to plumbing and other sanitary facilities and also have predominantly older units (20 years and above). Tracts 15 and 18, the nonwhite areas do have older units 97.5% and 95.4% 20 years or older, but have few dilapidated units as of 1960 according to the Census of Housing system of rating unit condition (Appendix D).

The situation prior to relocation as analytically interpreted with respect to corridor demand and supply elements as opposed to the entire city, indicates the corridor faring badly as compared to total tract housing both in the fields of supply and demand. In particular, potential housing demand indices of tenure, cost of shelter and population density per unit indicate severity along racial lines in terms of greater numbers of tenants, higher rents and relatively more overcrowding in the person per room, per household and units per residential acerage catagories. Linking potential demand to supply given number of relocatees, racial disadvantage is again clearcut in the relationship of ability to afford the cost structure in other tracts at the vacancy level. This in turn reflects comparative earning power and turnover in rental and owned units.

In sum, the corridor, which could be characterized as an older section of somewhat sound units, had been changing as to racial composition, type of tenure arrangement, cost of shelter and number of housing units.

The need for some ameliorative measures could easily be justified in the field of housing. Instituting highway relocation in an east-west axis with its marked effect on total supply and individual unit characteristics only can be measured somewhat grossly given data availability. The preceding analysis of the corridor and the tract picture of housing characteristics nevertheless clearly indicates the need for a well planned program of housing substitutability, well idspersed, and to a good extent subsidized to justify the forced withdrawal of units from highway building.

THREE B - RELOCATION

As a third step in calculating the effect of Lansing highway created relocation experience on the city housing market's ability to satisfy created demand for dwelling units, the dislocation or dispersion pattern is introduced through the following set of tables. The block location to which residents removed from the corridor settled is traced and comparatively analyzed for race, location adn pre-relocation tenure on a census tract basis through the 37 tract area within the Lansing city limits.

As reported by the Michigan State Department of Highways Urban Program Division Relocation Office, 940 dwelling units were dislocated by the construction of Interstate 496. Of this number, 668 or 71% were occupied by whites, 272 or 28.9% by nonwhites. According to status of tenure, 295 of the white occupied units dislocated were owned, (44.1% of the white units, 31.3% of the total relocated units) 373 tenant occupied (55.8% of white relocated units, 39.6% of the total). Nonwhite owner occupied units totaled 94, or 34.5% of total nonwhite units, 10% total relocatees. Nonwhite tenants were 65.4% of all

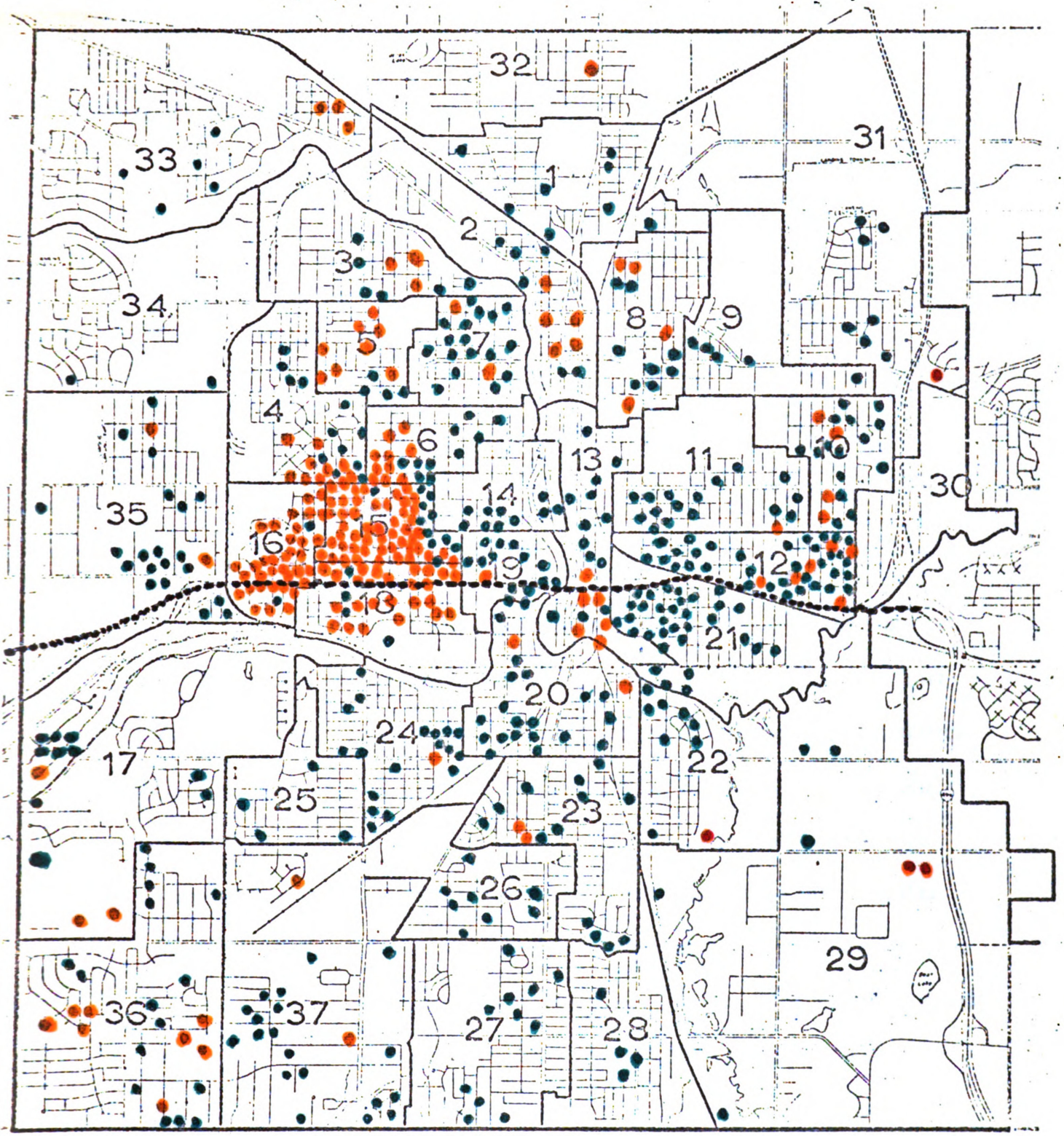
nonwhite relocatees, 18.9% of the total. In terms of spatial relocation, 208 or 22.1% of total relocated units moved outside of the city limits. Fifty-six of these located outside of the Tri-County Region, 7 outside of the state of Michigan. Racially the break-down was as follows: no nonwhite units outside the state, 5 nonwhite tenants outside the region, 11 nonwhite tenants and 2 owners outside the city ; 5 white owners and two tenants outside the state, 25 white owners and 26 tenants outside the region, 63 white owners and 127 tenants outside the city. In addition, 107 units listed no forwarding address thereby cutting down the list of relocatees another 11.2% leaving 66.4% of the relocatees to utilize as the data base.[30] Of the charted relocatees, 233 or 24.7% of the original universe were nonwhite. They consisted of 76 previous owners or 32.6% of total city relocated nonwhite units, 12.1% of total city relocated units and 8% of the original universe.

There were in addition 157 nonwhite tenants or 67.3% of nonwhite city units, 25.1% of total city units (bringing total city relocated nonwhite units to 37.2% of the original relocatees) and 16.7% of the original universe. The remaining 392 units comprising the second level data universe was white occupied or 41.7% of the original universe, 62.7% of the second level group. Of this number, 185 were owners which was 47.1% of all city relocated units and 19.6% of total relocated units. The final group was 207 white tenants or 52.8% of all white city market units, 33.1% of all city

[30]Relocation movement analyzed from the State Department of Highway Relocation Files.

market units and 22% of all relocated units. A further breakdown indicates that the number of units owned and rented as a percentage of total relocated units owned and rented according to race was 80.8% nonwhite owners, 88.3% nonwhite tenants, 62.7% white owners and 57.7% white tenants. This data corresponds to the number of units relocated as a percentage of total units relocated according to race or 27.9% nonwhite owners, 57.7% nonwhite tenants of the total nonwhite relocated units; 27.6% white owners and 30.9% white tenants. (See Map 1)

The import of this information lies in the fact that a much greater number of nonwhite units remained within the city market and according to tenure, nonwhite renters became more permanent city residents at a number of 11 to 1 greater than white tenants. In addition, 10.1% of white owners left as compared to 2.1% nonwhite owners indicating perhaps that income could not overcome any racial barriers to relocate, despite the high value of units of nonwhite owned housing as of 1950 and again as of 1960. In sum, the effect of relocation along racial lines was heavier on nonwhite units regardless of tenure. To further substantiate this point, a tract layout of the dispersion pattern follows according to the percentage of total relocated units within the city market per tracts 1 to 37.



Relocation Distribution I-496

- White
- Non-White

Table 16 - DISPERSION OF RELOCATEES

CT	% of city relocated units	CT	% of city relocated units	CT	% of city relocated units
1	1.28	13	3.04	25	0.64
2	1.76	14	1.60	26	1.28
3	1.44	15	11.60	27	1.76
4	3.68	16	6.40	28	0.64
5	1.92	17	2.08	29	1.12
6	3.26	18	4.48	30	0.80
7	3.04	19	2.40	31	1.28
8	1.92	20	3.36	32	0.16
9	0.96	21	7.20	33	1.28
10	3.04	22	1.44	34	1.32
11	2.40	23	2.40	35	3.52
12	6.40	24	3.04	36	3.84
				37	3.20

Tracts 16 and 18 bearing the nonwhite units from the 1950 and 1960 tract pieces which, in addition to tract piece 15, (8.1% of the tract pieces in number) comprise 83.1% of the nonwhite units together and make up 22.48% of the relocated units. These three tracts have 16 wh ite relocated units, 125 nonwhite units. In terms of tenure, tract breakdown by race as a percentage of city relocated units and total relocated units has a similar grouping for nonwhite units, dispersion for white owners and tenants (App.E).

As a final comparative measure to demonstrate frequency distribution by location, race and tenure as of the dislocation period, 1963-68; each tract according to percentage of race by race and tenure, percentage of race and same tenure status, all relocated units and percent of race and same tenure, city relocated units is indicated by percentages below:

Table 17 - RELOCATION DISTRIBUTION BY TENURE

CT	White owner		White tenant		N.W. Owner		N.W. Tenant	
	%of race	% all city relocated units	%of race	% all city relocated units	%of race	%all city relocated units	%of race	% all city relocated units
1	.30	1.12	.90	2.88	--	--	--	--
2	.45	1.68	.45	1.44	.39	1.30	1.20	2.40
3	.30	1.12	.60	1.92	.39	1.30	.60	1.20
4	.45	1.68	1.35	4.32	2.34	7.80	1.50	3.00
5	.15	.56	.45	1.44	1.46	5.20	1.20	2.40
6	.45	1.68	1.05	3.36	1.17	3.90	2.10	4.20
7	.60	2.24	1.95	6.24	--	--	.60	1.20
8	.30	1.12	.90	2.88	--	--	1.20	2.40
9	.45	1.68	.45	1.44	--	--	--	--
10	.90	3.36	1.35	4.32	--	--	1.20	2.40
11	.75	2.80	1.35	.432	--	--	.30	.60
12	3.75	14	1.35	.432	.39	1.30	1.50	3.00
13	.75	2.80	1.20	3.84	--	--	.80	3.60
14	.75	2.80	.75	2.40	--	--	--	--
15	.30	1.12	1.35	9.32	5.07	16.90	14.70	29.40
16	.15	.56	.15	.48	11.31	37.70	2.70	5.40
17	.30	1.12	1.20	3.84	1.17	3.90	--	--
18	--	--	.45	1.44	1.56	5.20	6.30	12.60
19	.75	2.80	1.35	3.42	--	--	.30	.60
20	1.80	6.72	1.05	3.36	.39	1.30	.30	.60
21	2.10	7.84	1.95	6.25	.78	2.60	4.80	9.60
22	.60	2.24	.60	1.92	.39	1.30	--	--
23	1.50	5.60	.45	1.44	--	--	.60	1.20
24	1.80	6.72	.90	2.88	--	--	.30	.60
25	.45	1.68	.15	.48	--	--	--	--
26	.90	3.36	.30	.96	--	--	--	--
27	.75	2.80	.90	2.88	--	--	--	--
28	.60	2.24	--	--	--	--	--	--
29	.30	1.12	.45	1.44	.78	2.60	--	--
30	--	--	.45	1.44	--	--	.60	1.20
31	.45	1.68	.60	1.92	--	--	.30	.60
32	--	--	--	--	--	--	.30	.60
33	.30	1.12	.45	1.44	--	--	.90	1.80
34	.15	.54	.15	.48	--	--	--	--
35	1.65	6.16	1.35	4.32	--	--	.60	1.20
36	1.50	5.60	.90	2.88	1.56	5.20	1.20	2.40
37	1.05	3.92	1.80	5.76	.39	1.30	--	--

The overriding conclusion to be drawn from the above table points to strong positive correlation between race, locational distribution and tenure status. In all cases, nonwhite tenancy is identified with proximity to the right of way suggesting only minimal relocation distance. The same principle is applicable to nonwhite ownership, again particularly evident in tracts 15, 16, 18 and 21. This does not overlook the existance of nonwhite tenants moving into 25 of the 37 tracts or nonwhite owners moving into 16 tracts. Sixty-one point six percent of the nonwhite relocated city tenants and 63.1% of nonwhite relocated city owners moved into four census tracts, nevertheless at the center of the city.

This spatial concentration finding remains valid for nonwhite tenants and owners as to percentage of racial units relocated, and percentage of same racial tenure status for all relocated units and city relocated units. White unit spatial distribution on the other hand clearly reflected dispersion from the right of way, notwithstanding the fact that 41.6% of all city relocated units were within the seven tracts adjacent to the right of way. For all these specified catagories, individual tract domination was a rarity. Only tract 12 had over 2.25% of white owned units as a percentage of all the relocated units or 13.5% of all white owned units relocated in the city. Similarly, only tracts 7 and 21 had over 2.00% of white rental units as a percentage of total city relocated units or 6.2% each. By contrast, census tract's 15, 16 and 18, the heavily populated nonwhite areas, had 60.5% of city relocated nonwhite owners and 50.3% of city relocated rental units.

In addition, only tracts 12 and 21 had over 2% white owned units

as a percent of white relocatees, tracts 12, 20, 21 and 24 had 4% of all white owned relocated units and only tracts 12 and 21 above 7% of all white owned city relocated units. In like manner, no tract had 2% of white tenants as a percent of white units relocated, only tracts 7 and 21 had 3.25% white rented relocated units and 6% of white rental city relocated units. By comparison, tracts 15 and 16 had 5 and 11% of the nonwhite owned units as a percentage of all nonwhite units, an average of 12.6% of all nonwhite owned relocated units each, and 26.9% average of nonwhite owned relocated units in the city.

Nonwhite tenants were similarly concentrated as evidenced by the 10.5% average percentage of all nonwhite relocated units which were nonwhite rental units in tracts 15 and 18. The same two tracts averaged 19.6% and 21% of all nonwhite rental relocated units in total and in the city respectively.

Another locational indice is the number of units according to race is listed below as a percentage of total tract units for 1966.

Table 18 - Racial Percentages

CT	% WH.H.	% NWH.H.	% Total H.H.
1	.948	--	.88
2	.962	23.81	1.7
3	.615	5	.87
4	.866	53.38	1.63
5	.548	10.67	1.49
6	.929	25	1.79
7	1.270	1.16	1.35
8	.652	2.86	.87
9	.858	--	.85
10	1.390	4.00	1.76
11	.749	1.67	.76
12	3.720	4.62	3.74
13	1.350	25	2.04
14	3.970	--	3.96
15	1.780	82.7	3.34
16	.851	12.4	7.19
17	1.220	16.67	1.54
181	2.560	2.63	2.63
19	3.10	100	3.31
20	.974	3.23	1.01
21	.276	32.8	1.91
22	1.13	100	1.17
23	.837	12.30	.94
24	1.22	16.67	1.25
25	.370	--	.35
26	.937	--	.93
27	.994	--	.95
28	.411	--	.38
29	1.15	40	1.38
30	1.14	5.26	1.66
31	.506	2.50	.35
32	--	5	.12
33	.357	200	.48
34	.210	--	.20
35	1.68	200	1.84
36	.860	8.60	1.21
37	1.44	2.63	1.45

The significance of the data on dislocatee distribution is found in its mobility range according to race. Data previously introduced elucidated racial differences in movement outside of the city

which also ties into the 50 mile limit relocation assistance requirement as to number of units granted assistance and those not inhibited by a locational funding stipulation. The above data indicates nonwhites moving into previously all but segregated tracts or tracts where nonwhites have left (tracts 10, 22, 33, and 35) but also notes 8 tracts not containing nonwhite relocatees (tracts 1, 9, 14, 25, 26, 27, 28, and 34). By comparison, white relocatees were distributed in all but one tract (already 96% white). Even more important is the rather uniformly large addition to each tract's nonwhite knits and nonwhite population from nonwhite relocatees, an average of 16.49% of units excluding new tracts and tracts where nonwhites had left, and an average of 16.38 of nonwhite population in similar tracts. A second major point is the heavy influx of nonwhite units in centrally located, close to the right of way census tract areas (512 people, 155 units into tracts 12, 13, 15, 16, 18, and 21 or 3.30 people per household or 66.8% of nonwhite units and 68.6% of nonwhite city relocatees.

All this statistical supportive data demonstrating that the nonwhite centrally located tracts were heavily converged upon by the relocation process as opposed to relatively all white outer city tracts, gains added significance given the linkage to the information concerning relocatee settlement outside of the city, region, and state. Combining this information with the forecasts provided by the 1950 and 60 Census of Housing, the effect of relocation appears to incorporate serious racial implications given its implications given its implementation. Adding the indices of overcrowding, low vacancy rate, change in housing costs, outmigration of home owners

among nonwhite units in conjunction with the relationship of nonwhite to white tenants and owners (75.8% as many nonwhite tenants as white tenants but only 41% as many owners relocated in the city with only 29% nonwhite relocatees), the continued racial dwelling concentration as well as difference in housing condition; the market spatially appeared to suffer disproportionately in its ability to absorb the relocatees' needs for new housing.

Having established a numerical locational differentiation of relocation impact, the housing elements of potential demand and then supply are explored in the succeeding pages in order to follow through on the prognostications already established concerning dwelling unit number and the characteristics of the highway displacement. The first measurement of change as expressed on a tract basis is that of tenure status. The tables in Appendices F and G indicate percentage of tract total units according to race and tenure, change from 1960-66 in each catagory and percentage of total units according to race and tenure attributed to relocation.

These tables indicate substantial losses in white ownership given an inner city location as opposed to more outlying census tract areas which are not necessarily offset by gains in a few tracts in white rental units. Nonwhite units during the same period of time are not, however, subject to such a degree of change in the owner renter cycle. Given the Tri-County growth model data output, ownership continues to lead number of rental units per tract subject to a negative correlation with centrality. As a percentage of tenure, racially concentrated areas and nonwhite occupied units in general have become occupied by much larger percentages of units in accord with

already existing racial settlement from relocation subject to the white-nonwhite balance of units. Included in this limitation is the differentiation in distribution of households between the races. Larger percentages reflect small incremental increase but a large absolute change. This fact is reflected in the weighting of relocatees given their pre-relocation tenure, as a percent of tenure change by race. Among nonwhite occupied units, it must be noted, several overruns or additions to previously segregated tracts occured.

The cost of housing element, resulting from a great number of forces adds substantially to the knowledge of relocation impact as each tract containing 2.4% or 15 families relocated by the highway is expressed in terms of percentage of income allocated for rent and income as a percentage of housing value. Appendices H and I are introduced in conjunction with similar data concerning corridor unit ability to afford the cost structure in order that an index of financial satisfaction may be proposed for post relocation units given respective tract incomes and dwelling unit pricing.

For rental units both racial composition and proximity to the right of way correlate strongly with relative ability to afford housing. This situation also extends to income in relation to the cost of home ownership thereby decisively contributing to what should constitute satisfactory relocation units. This cost mechanism closely relates to the above data on tenure, particularly for areas with nonwhite units. Utilizing tract 15 as an example, 38% of the home owners in 1960 left the tract as well as 44% of all white units. Nonwhite units during the same 6 year period increased

35%. Tract 18 lost 284 owners during this period of time, or 44%, but nonwhite renters increased 42%. Units within these two tracts for this time period would have allocated greater than 15% of their income for rent in all but one tract containing 2.4% of the relocatees while their income was worth only 50% of the value of home owned units in only two tracts. Only 11% of all the other tracts with relocatees had a relatively more difficult financial situation and in both cases percentage of tract rental units was high, the average gain in nonwhite rental units was 13.75% and gain in nonwhite units from relocation with 2.8 times as many rental unit gains than owner units from relocation 21.45%.

As final potential demand indicators, density indices updated from 1960 in the areas of population per household, square footage per dwelling unit, units per acre and acreage taken by relocatees almost uniformly reflect a disadvantageous housing situation for centrally located and especially nonwhite area units. As revealed in Appendices J, K and L, nonwhite areas, with 20.23% of the change in individual tract population nevertheless had .1612 population per total tract households affected by relocation-in both cases, significantly departing from a great number of tracts (12 other tracts had greater than 20.23% of population changes attributed to relocation and all the other 34 tracts had a lower household population changed by the relocation. In addition, the 4.08 population per household of tracts 15, 16 and 18 was higher than 33 of the other 34 tract totals.

Square footage per unit for the nonwhite tracts increased an average of 197 feet from 1960 to 1965, matched only by 7 other tracts.

Yet all but two of the 14 tracts losing square footage per unit had fewer feet per unit than tracts 15 and 18 and averaged 120% more land than these two nonwhite tracts. Housing unit per acre data conforms to these findings given the 13.35 units per acre of residential land in these tracts. Only five other tracts had more units. More conclusively, absolute residential acreage taken by relocated units, percentage of residential acreage taken and relocated units per acre all indicate gaps between land obtained for relocatees in white and nonwhite tracts - most definitely concurring with population per household findings. A relocation density impact index or relocatee population per tract household times total acreage clearly substantiates these findings.

Table 19 - DENSITY IMPACT INDEX

CT		CT	
1	.01019040	19	2.567898
2	.00704385	20	.0765356
3	.01383922	21	1.9702673
4	.01295560	22	.02095200
5	.0566771	23	.0258884
6	.2348556	24	.0667717
7	.0994842	25	.00081848
8	.02342520	26	.00967416
9	.0239010	27	.01194270
10	.1328432	28	.00088464
11	.0289170	29	.00783216
12	1.3067984	30	.03151075
13	.3675280	31	.00212624
14	.2856000	32	.00001900
15	72.928575	33	.00178605
16	4.1522880	34	.0009180
17	.0239796	35	.0251338
18	.9322040	36	.0357623
		37	.0439110

A key supply indice of relocation's effect upon the housing market is the vacancy level, both total and available to potential residents. In accord with data provided by the Polk Directory and the Lansing Community Renewal Program directory of statistics, total vacancies as a percent of housing units rose in the period 1960-66, yet the availability of such units for residential purpose dropped almost uniformly. In particular percentage of availability of total vacant units dropped sharply - especially in the centrally located tracts as well as the nonwhite tracts (a 55% decrease for both categories). In conjunction with other density data, cost and tenure patterns, the problem of availability became critical.

Table 20 - CHANGE IN VACANCIES

CT	Available 1960-65 change	Total 1960-65 change	% Avail. of total	1965 Change
1	-1.40	+1.26	19.78	-41.52
2	+ .16	+8.57	10.71	-63.29
3	-86	-1.12	27.01	-12.09
4	-1.60	- .89	33.33	-34.27
5	-1.55	+2.10	16.16	-48.44
6	-5.45	-1.16	12.90	-61.40
7	-3.91	+ .71	16.16	-66.44
8	-4.92	+ .37	18.95	-56.04
9	-1.13	+ .12	13.39	-39.01
10	- .75	- .42	42.91	-19.69
11	-3.46	+2.39	12.27	-69.13
12	- .77	+2.74	12.27	-21.83
13	-6.35	+1.04	747	-73.73
14	-1.72	+ .54	12.90	-15.90
15	-3.93	+1.84	25.38	-55.42
16	-2.99	-1.23	24.85	-56.44
17	-2.75	-2.08	76.59	+ 4.10
18	-2.54	+2.69	25.38	-55.52
19	-6.15	-2.96	12.90	-55.50
20	-5.31	+ .42	10.04	-66.56
21	-3.12	+ .43	16.82	-66.48
22	+ .10	+ .09	52.87	+ 2.87
23	- .90	+1.09	23.16	-99.64

Table 20 continued

CT	Available 1960-65 change	Total 1960-65 change	% Avail of total	1965 change
24	-1.12	- .91	42.19	-22.21
25	- .59	- .10	42.19	-22.21
26	-2.44	-1.08	23.16	-48.74
27	-1.24	+1.17	21.91	-42.39
28	+ .33	+2.12	21.91	- 5.19
29	+1.16	+1.16	100	+100
30	+1.06	-1.10	42.91	+42.19
31				
32				
33	-2.30	+ .28	22.70	-56.10
34				
35				
36	-3.72	-1.23	19.76	-48.34
37	-1.17	+2.07	21.69	-47.21

Final measures of relocation impact upon the supply of housing lie in the areas of condition and age of dwelling units. In the year 1960, general aging patterns reflected a younger stock in the outlying areas of the city, extreme weighting toward older units in the centrally located tracts 15, 18, 19, and 20. The balance was not altered by the mid sixties, however, with new construction as seen by 1965 age tables and the number of new units 1960-67 for selected tracts (1-25) as compared to number of units 20 years and above plus given the change from 1960.

Table 21 - NEW UNITS

CT	New Units	#20+	change 20+
1	12	443	-214
2	38	388	-436
3	6	478	-117
4	5	1022	- 75
5	1	429	-309
6	541	467	-914
7	143	636	-882
8	82	245	-1178
9	--	479	- 21
10	32	595	-243
11	367	888	-1016

Table 21 continued

CT	New Units	#20+	change 20+
12	11	624	-317
13	274	317	-643
14	--	36	-225
15	338	719	-947
16	6	256	-67
17	687	36	- 32
18	--	260	-898
19	326	106	-711
20	289	1053	-925
21	2	537	-364
22	7	576	+243
23	113	931	+ 33
24	26	738	-381
25	67	182	+ 71

TABLE 22 - AGE OF UNITS

	Age percent total units, 1965			Change from 1960		
CT	1-10yrs.	10-20	20+	1-10	10-20	20+
1	--	31.2	68.8	-16.2	+18.6	- 3.4
2	--	--	100	- 3.27	- 4.1	+ 7.3
3	13.08	34.78	52.14	+10.45	+17.28	- 4.06
4	--	22.63	77.37	-8.98	+ 7.23	+ 1.77
5	6.19	21.9	71.9	-3.51	+16.3	-12.8
6	--	8.1	91.9	-1.7	+ 6.7	- 5
7	--	--	100	-.51	- 2.1	+26
8	6.15	18.7	75.15	+1.25	+14.4	-15.64
9	3	18.1	78.9	-4.8	- 4.1	+ 8.9
10	12.1	32.7	55.2	1.9	+2.25	-20.6
11	2	7.5	90.5	+.30	+ 5.8	- 6.1
12	--	9.7	90.3	-6.8	+ 2	+ 4.8
13	--	--	100	-.72	- .82	+ 1.5
14	--	--	100	same	same	same
15	--	--	100	-1.1	- 1.75	+ 2.85
16	8.9	36.5	54.6	-21.5	+23.5	- 2
17	71.1	24.4	5.6	-5.1	+13.7	- 7.5
18	16.7	--	83.3	+14	- 1.9	-12.1
19	--	--	100	-.36	- 1.2	+ 1.55
20	--	--	100	-.20	- 1.6	+ 1.8
21	5.4	18.9	75.7	-4.8	+ 9.3	- 4.5
22	2.7	18.4	78.9	-16.8	-18.8	+35.6
23	6.0	22.4	71.6	-14	-1.4	+15.4
24	5.2	24.1	90.7	-6.2	+ 7.5	- 1.3
25	1.9	79.7	18.4	-56.4	+47.8	+ 8.6
26	16.8	26.6	56.6	-9.9	+10.5	- .60

Table 22 continued

27	50	15.9	34.1	- 1.7	- 3.5	+ 5.2
28	31.9	38.2	29.9	-26.6	+15.5	+11.1
29	25.1	16.6	48.3	-24.9	- .10	+25
30	--	--	100	same	-25	+25
31	65.8	22.9	11.3	+49.3	+ 8.8	-58.1
32	3.1	19.2	77.7	-14.2	-30.8	+45
33	51.6	33.3	15.1	-16.5	+21.1	-4.6
34	49.1	45.8	5.1	+49.1	+45.8	-94.4
35	7.2	30.9	61.9	+ 7.2	+30.9	+61.9
36	87.1	5.5	7.4	+25.6	-11.1	-13.5
37	38.8	31.3	29.8	-20.1	+13.4	+ 6.6

Housing condition for the city of Lansing has been measured both by the Center for Health Statistics and the Community Renewal Division of the City Planning Department. (See Appendix M)

The importance of the data at hand lies in its relationship to data pointing out racial block differences in the 1950's and its comparative analysis along post relocation racial lines-CRP white vs. nonwhite blocks for census tract 15, the distribution of tract 18 and their aggregate distribution as opposed to the average (12.65% good, 41.2% fair, and 46.15% poor). All other nonwhite or integrated tract blocks save one indicate fewer 'poor' units as defined by the CRP and that block has more good units than CT 15 and 18 blocks. Only two tracts had overall fewer good units than these nonwhite areas and both had more fair units and consequently fewer poor units indicating that no tracts had more poorly rated housing units than the tracts predominantly nonwhite.

A brief descriptive summation of the data presented in this chapter lies in the files of the Center of Health Statistics. On a block basis

where residents, displaced from the highway finally relocated as of 1968, are the following statistics based on a survey of 225 households:

percent ownership		percentage renters		tenure as % of total			
				WR	WO	NWO	NWR
white	56.3	white	43.7				
nonwhite	51.9	nonwhite	48.1	42.9	33.3	12.3	11.5

number of rooms per person

nonwhite renters	nonwhite owners	white renters	white owners
1.500	1.808	1.946	2.251

These bits of information are indicative of all the information presented in this paper. Extremely strong correlations exist between location and race, and supply-demand equilibrium. Although, as the final chapter will relate, the indices and the accuracy of the data are not exhaustive, the comparative effect of relocation is unmistakably clear.

CHAPTER IV

CONCLUDING REMARKS

The utility of examining the impact or effect of relocation created by highway land, housing clearance and redistribution lies in its involvement in the regulatory aspect of financial distribution, the calculation of physio-psychological disruption or cost upon the environmental base and the overall social and economic costs and benefit to particular interests within the community.

The dependent variable or potential subsidiary beneficiary in the experience is the housing market structure, the relationship or equilibrium between the demand and the supply for dwelling units. Given relocations' forced determination or change upon this balance, these two areas must be examined for "the potential for change....in a given residential submarket arises when the supply of housing increases or decreases relative to demand. Most commonly, this situation is brought about by absolute change in the number of units in the standing stock and by changes in the characteristics and preferences of the population."[31]

[31]William Grigsby, Housing Markets and Public Policy; (Philidelphia, University of Pennsylvania Press, 1967) p.285

Having acknowledged that the frame of reference is altered due to highway created relocation, it becomes the task of the agencies charged with operationalizing the relocation program to ascertain both qualitative and quantitative proportions of the housing market to be effected. Of especial import are the social implications involved both in the nature of the relocation assistance program and its resultant comparative costs and benefits. Within the confines of the available data for the city of Lansing, characteristics of housing demand and supply almost uniformly reveal substantial differences correlating heavily with location and race given relocatee distribution. In particular, serious inroads are made therby complicating the posture of the market as to its ability to meet the need for units thereby resulting in hardship for those forced to move and the available supply of certain types of units. These findings are quite consistent with Grigsby's study of the Philidelphia residential renewal program and relocation in general, "Relocation studies have shown that displaced families do indeed tend to favor adjacent districts."[32] He goes on to note, "undesirable consequences can result from clearance projects of quite modest dimension since the displacement on only a few thousand families could....seriously reduce the vacancy rate among low cost standard dwelling units....the total stock after reconstruction would be improved and along with it the housing conditions of the lower income families. Such a result, however, could be expected only if.... 1. the demand for the

[32]William Grigsby, Housing Markets and Public Policy; (Philidelphia, University of Pennsylvania Press, 1967) p.284

new units came from families who would not have other wise have vacated their current residences rather than from expansion in the number of households or from families who would have moved in any event. 2. the dwelling units released....became available to lower income households."[33] In relocation, however, no new units are created or become available for usage, the vacancy rate and supply of units are greatly effected and the standing stock must incorporate the displacees despite legislative assurances of the contrary. Data in chapter three clearly indicates that the market was not prepared for the highway corridor at the selected right of way location because tenure, the price structure, density indices, the vacancy level as well as housing condition and size all were prohibitive. The consistency of the decision then to implement the project with the conceptual base of social-benefit programs must not only be questioned but entail two areas of consideration; 1. the setting of priorities with respect to criteria for justifying the right of way construction and 2. methods and type of data consulted in fulfilling legislative and programmatic requirements.

The first consideration was summarized in chapter one with vested interests and some of the factors stressed in the relocative process duly noted including the transportation planning stages and indicators for establishing new road for expanded lane additiona to the transportation system network. The second area, or focus of the Lansing study, centers

[33]ibid p.384

around the assurances and requirements offered by the several agencies invested with relocation. In chapter two many of their limitations were outlined as a backdrop for the statistical exploration into the effect of relocation upon the housing units within the city. In order to best evaluate their cumulative worth, the Department of Transportation Operating Procedures and the Michigan Department of State Highway's Relocation Plan will be reviewed in brief below and related to the data findings within chapter three accepting the comprehensiveness of the mentioned documents. A determination then will be reached as to its ability to prepare the market for the alterations in housing demand and supply.

Demand elements	Supply elements
value and rent of replacement dwellings	# of replacements needed
income of displacees	rooms per person
tenure	condition of units
size of family or population per household	type of units, s.f. and m.f.
total # displaced, units and persons	square footage or living space
	age of units

These catagories of data, required to be gathered under the auspices of comparability, decency and safety in replacement dwellings must minimally match pre-relocation levels or conditions. For each of the aforementioned housing variables of supply and demand, corridor levels are indicated below and compared to areas of post relocation settlement:

Corridor

Displaced units

	Total	average
1950	707	116
1960	863	144

Tenure %

	own	rent
1950	60%	40%
1960	50%	47%

Coat of housing

1950	$45.57,	$8,859
1960	$74.47,	$9416

Income 1960 only
$6,138

Pop. per household 1960 only
2.78

Population density - person per room
rooms per person

1950
8 total 1.5 per tract piece
1.01 rooms per person
1960
88 total

Condition average %, 1960 corridor tracts

Good	Fair	Poor
82.5	15	2.3

Age average %, 1960 corridor tracts

0-10	10-20	20+ years
8.5	5.7	85.8

Square feet average corridor tracts
3,846

All tracts 1965-68 as compared to corridor

Own	Rent
72%	28%

Rent	high	low	value
$82.67	3,300	5,200	14,869

Income
$5,016

Population per household
3.70

1.98 average all tracts
1.63 N.W. 2.09

Good	Fair	Poor
48.9	36.3	14.8

0-10	10-20	20+
19%	15.8%	65.2%

6608 average 19964 high
505 low

The statistics comparing corridor levels prior to relocation with post relocation tracts by in large indicate a failure to meet satisfactory relocation regulatory levels. Income, population per household, rooms per person and housing condition particularly verify this statement. In sum, data requirements, indicate a failing on the part of those who construct the guidelines anticipating the demands placed upon the housing by highway relocation. A process therefore should be initiated that would require both housing supply and demand variables to be woven into a market analysis that would account for new unit construction, vacancies and overcrowding, site availability and utility and market aggregation. In this manner, the effect of relocation upon the market or the absorption capacity within various potential demand strata could be anticipated given the accumulation of adequate data. The function of relocation then could be more validly legitimized as a time-distance and economic mechanism benefiting the user as well as economic and to some extent residential values, not a generator of costs, with especial impact upon certain peoples within the market. Collection of the data also would ease intergovernmental problems of data coordinative requirements due to the existance of needed information on hand to satisfy even the most rigorous guidelines. This does not preclude however, the need for uniform data gathering requirements. The dictates of the D.O.T. Operating Procedures and the Relocation Plan catagories must be made mandatory for minimal coverage (this would, of course, eliminate any use of discretion in extending data coverage) to ascertain a picture of demand and supply. Such a framework would also be consistent with the transportation planning process which coordinates land use development with the

reservation of the right of way space based upon growth projections of population and economic etc. concerns.

A second needed input is the inclusion of data dating back far enough to reflect upon community growth patterns. Consulting census information from 1950 and then continuing to the present allows (as in this study) a more accurate analysis of many housing market indicators. This statement touches upon the concept of supply-demand equilibrium frequently mentioned throughout the study. Although a precise balance or effect cannot be structured statistically indicating effect of variable upon variable, the study has however, related many such indices of supply and demand to show interrelatedness as to effect such as housing cost and level of vacancies as a available replacement index. The relationship between the two areas of supply and demand is a continuous one due to the fact each unit is constructed to house a family of a certain size, at a certain cost and, therefore, is single or multiple in nature with a certain living area. The usage of relationship or equilibrium then is implied throughout the interpretation of the data in the study.

A third point speculates as to the feasibility of qualitatively meeting relocation objectives. This study has indicated that the present compensatory system of weighing certain cost, speed, access factors balanced by monetary payment and decent, safe and sanitary housing is totally inconsistent and impractical. Many immediate and latent effects of relocation cannot be programmed and bought off. It is seldom possible to replace qualitative aspects of the home and neighborhood environment through forced withdrawal and change.

Residential unit and site limitations negate accessibility to the work place social institutions and facilities, public concerns etc. in good housing equal to the previous dwelling unit particularly in light of the available vacancy level, housing age, condition of units and quantity of new construction in Lansing. These factors are subject of course to the price structure and resident earning power within the market. Accepting all these guarantees and provisions and applying the limitations of the market, an analysis of a large area is vital within which to redistribute in this case 940 units or 2.9% of the city market. This point emphasizes then the consideration of the entire city for relocation, not a few comparables or only the adjacent neighborhoods. Given the large number of units with similar potential demand characteristics, the units wi thin a neighborhood or even a census tract cannot absorb the additions. Choice of units within the economic confines of the family budget should be a prerequisite.

A final point questions the need for private transportation to dictate the settlement of man, i.e.: the role of the auto industry and individual transportation in our lives. This reflects heavily upon priorities. Will the auto remain thereby necessitating acreage for right of way and parking facilities, or be replaced by mass transit? The social costs of present transportation as evidenced in particular with respect to highway created relocation is alarming. In assessing causation for nonwhite citizen unrest, lack of adequate housing is merely a symptom; relocation a major cause.

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APPENDICES

APPENDIX A

TENURE BY RACE

	White		Non White		
CT	owned	rented	owned		rented
1	100	--	75	*	20.1
2	99	.27	42.5		45.7
3	99.40	.70	78.5	*	16.8
4	100	.40	81.5	*	14.8
5	93.60	8.80	74.4	*	21.7
6	99.50	--	33.5		57.9
7	99.50	.70	43.3		50.8
8	96	3.60	67.3	*	25.6
9	98.70	.30	86.4	*	10.6
10	99.40	--	81.7	*	15.4
11	99.20	--	55.3		39.3
12	95.40	2.50	75.3	*	19.6
13	98.50	.30	30.2		61.10
14	96.80	--	9.2		83.9
15	73.80	36.20	39.8		52.2
16	65.60	25.90	84	*	11.2
17	100	1.10	90	*	4.4
18	21	62.90	52.8		40
19	96.50	4.70	20.6		69
20	99.70	10	53.4		38.6
21	96.40	2	75.3	*	19.9
22	100	--	89.8	*	8.3
23	100	.10	85	*	12.6
24	99.60	.70	80.5	*	16.3
25	98.60	--	91	*	6.5
26	100	--	79.5	*	16
27	100	.10	84	*	12,5
28	100	.40	90.5	*	6.9
29	100	--	81.5	*	12.5
30	85.70	--	71.9	*	25
31	93.80	1.70	70.6	*	18.8
32	100	2.50	80.6	*	17.3
33	100	--	88.8	*	6.7
34	100	--	88.9	*	11.2
35	--	--	--		--
36	100	.30	85.4	*	7.3
37	100	.50	87	*	9.5

APPENDIX B

INCOME AS A PERCENT OF VALUE 1960

	I 5875	4786	9400	5042	5422	6300
CT	V 12	13	16	18	19	21
1	.6184	.5038	.9895	.5307	.5707	.6632
2	.5595	.4558	.9852	.4802	.5164	.6000
3	.3595	.4558	.9852	.4802	.5164	.6000
4	.3917	.3191	.6267	.3361	.3615	.4200
5	.5341	.4351	.8545	.4584	.4929	.5727
6	.4052	.3301	.6483	.3473	.3739	.4354
7	.5109	.4162	.8174	.4384	.4715	.5478
8	.6528	.3318	1.0444	.5602	.6024	.7000
9	.4896	.3988	.7833	.4202	.4518	.5250
10	.4700	.3829	.7520	.4034	.4338	.5040
11	.5109	.5162	.8174	.4384	.4715	.4378
12	--	.5631	1.0588	.5932	.6379	.7412
13	.6528	--	1.0444	.5602	.6024	.7000
14	--	--	--	--	--	--
15	.5340	.4351	.8434	.4584	.4929	.8727
16	.3176	.2587	--	.2725	.2931	.3405
17	.2026	.1650	.3241	.1730	.1870	.2172
18	.6184	.5038	.9895	--	.3707	.6632
19	.4052	.3301	.6483	.3477	--	.4345
20	.6528	.5318	1.0444	.5602	.6024	.7000
21	.6184	.5038	.9895	.5307	.5707	--
22	.3672	.2991	.5875	.3151	.3389	.2928
23	.4519	.3682	.7231	.3878	.4171	.4846
24	.4700	.3829	.7520	.4034	.4338	.5040
25	.3561	.2901	.5697	.3056	.3286	.3818
26	.5341	.4351	.8545	.4584	.4929	.5727
27	.4700	.3829	7520	.4034	.4338	.5040
28	.4519	.3682	.7231	.3878	.4171	.4846
29	.3917	.2191	.6267	.3361	.3615	.4200
30	.4519	.3682	.7231	.3878	.4171	.4846
31	.8393	.6827	1.3429	.7203	.7746	.9000
32	.6184	.5038	.9894	.5307	.3707	.6632
33	.3357	.2735	.4371	.2281	.3089	.3600
34	.4896	.3988	.7833	.4202	.4518	.5250
35	--	--	--	--	--	--
36	.4494	.4558	.8952	.4802	.5164	.6000
37	.5109	.4162	.8174	.4384	.4715	.5478

APPENDIX C

RENT-PERCENT OF INCOME 1960

% income allocated to rent $\frac{R}{I}$

CT	12	13	16	18	19	21
1	13.48	16.55	8.43	15.71	14.61	12.57
2	12.66	15.55	7.91	14.76	13.72	11.81
3	14.50	17.80	9.06	16.90	15.71	13.52
4	17.77	21.81	11.11	20.71	19.25	16.57
5	13.89	17.05	8.68	16.18	15.05	12.95
6	14.91	18.30	9.32	17.37	16.16	13.90
7	14.71	18.05	9.19	17.14	15.94	13.71
8	12.87	15.80	8.04	14.99	13.94	12.00
9	13.89	12.05	8.68	16.18	15.05	12.95
10	15.32	18.80	9.57	17.85	16.60	14.29
11	13.89	17.05	8.68	16.18	15.05	12.95
12	--	17.80	9.06	16.90	15.71	13.52
13	12.76	--	7.91	14.76	13.72	11.81
14	12.46	15.29	7.79	14.52	13.50	11.62
15	14.30	17.55	8.94	16.66	15.49	13.33
16	17.57	21.56	--	20.47	19.03	16.38
17	18.79	23.07	11.74	21.90	20.36	17.52
18	14.50	17.80	9.06	--	15.71	13.52
19	12.56	15.29	7.79	14.52	--	11.62
20	13.28	16.30	8.30	15.47	14.39	12.38
21	12.09	17.20	8.81	16.42	15.27	--
22	19.81	24.32	12.38	23.09	21.47	18.48
23	15.93	19.56	9.96	18.56	17.26	19.86
24	15.93	19.56	9.96	18.56	17.26	14.86
25	18.79	23.07	11.74	21.90	20.36	17.52
26	13.48	16.55	8.43	15.71	14.61	12.57
27	13.30	17.55	8.94	16.66	15.49	13.33
28	17.16	21.06	10.72	19.99	18.59	16.00
29	--	--	--	--	--	--
30	13.89	17.05	8.68	16.18	15.05	12.95
31	11.44	14.04	7.15	13.33	12.39	10.67
32	15.52	19.06	9.70	18.09	16.82	14.48
33	15.73	19.31	9.83	18.33	17.04	14.67
34	--	--	--	--	--	--
35	--	--	--	--	--	--
36	13.69	16.80	8.55	15.95	14.83	12.76
37	14.71	18.05	9.19	17.14	15.94	13.71

APPENDIX D

AGE AND CONDITION OF UNITS

D.U. Age

CT	1-10yrs	10-20yrs.	20+
1	16.2	12.6	71.2
2	3.3	4.1	92.7
3	2.6	17.5	56.2
4	9	15.4	75.6
5	9.7	5.6	84.7
6	1.7	1.4	96.9
7	.50	2.1	97.4
8	4.9	4.3	90.8
9	7.8	22.2	70
10	14	10.2	75.8
11	1.7	1.7	96.6
12	6.8	7.7	85.5
13	.70	.80	98.5
14	--	--	100
15	1.1	1.75	97.15
16	30.4	13	56.6
17	76.2	10.7	13.1
18	2.7	1.9	95.4
19	.40	1.2	98.45
20	.20	1.6	98.2
21	10.2	9.6	80.2
22	19.5	37.2	43.3
23	20	23.8	56.2
24	11.4	16.6	72
25	58.3	31.9	9.8
26	28.7	16.1	55.2
27	51.7	19.4	28.9
28	58.5	22.7	18.8
29	30	16.7	33.3
30	--	23	75
31	16.5	14.1	69.4
32	17.3	50	32.7
33	68.1	12.2	29.7
34	--	--	100
35	--	--	--
36	62.5	16.6	20.9
37	58.9	17.9	23.2

CT	Sound	Deteri-orating	Dilapi-dated
1	77.1	15.8	7
2	55.2	38.1	6.7
3	94.8	5.1	.10
4	94.4	5	.60
5	79.5	17.7	2.8
6	82.7	16.8	.50
7	81.6	18	.40
8	84.4	13.9	1.7
9	85.7	11.6	2.7
10	89.1	10.6	.30
11	85.9	13	1.1
12	91.3	6.4	2.3
13	70.9	22.7	6.4
14	82.8	16.5	.70
15	87.3	12.2	.50
16	88.9	10	1.1
17	98.5	1.3	.10
18	81.8	16.1	2.1
19	73.9	24.5	1.6
20	85.9	12.4	1.7
21	88.1	11.4	.30
22	94.7	4.9	.40
23	95.4	4.6	--
24	95.1	4.6	.30
25	96.6	3.4	--
26	80.6	18	1.4
27	88.3	9.9	1.8
28	93.2	6.2	.50
29	--	--	--
30	--	--	--
31	--	--	--
32	--	--	--
33	--	--	--
34	--	--	--
35	--	--	--
36	87	10	3
37	91.4	7.1	1.5

APPENDIX E

RACE AND TENURE-NONWHITE

	owner		rental		owner		rental	
CT	#	% city	#	% city	#	% city	#	% city
1	2	.32	6	.96	--	--	--	--
2	3	.48	3	.48	1	.16	4	.64
3	2	.32	4	.64	1	.16	2	.32
4	3	.48	9	1.44	6	.96	5	.80
5	1	.16	3	.48	4	.64	4	.64
6	3	.48	7	1.12	3	.48	7	1.12
7	4	.64	13	2.08	--	--	2	.32
8	2	.32	6	.96	--	--	4	.64
9	3	.48	3	.48	--	--	-	--
10	6	.96	9	1.44	--	--	4	.64
11	5	.80	9	1.44	--	--	1	.16
12	25	4.00	9	1.44	1	.16	5	.80
13	5	.80	8	1.28	--	--	6	.96
14	5	.80	5	.80	--	--	-	--
15	2	.32	9	1.44	13	2.08	49	7.84
16	1	.16	1	.16	29	4.64	9	1.44
17	2	.32	8	1.28	3	.48	--	--
18	--	--	3	.48	4	.64	21	3.36
19	5	.80	9	1.44	--	--	1	.16
20	12	1.92	7	1.12	1	.16	1	.16
21	14	2.24	13	2.08	2	.32	16	2.56
22	4	.64	4	.64	1	.16	--	--
23	10	1.60	3	.48	--	--	2	.32
24	12	1.92	6	.96	--	--	1	.16
25	3	.48	1	.-6	--	--	--	--
26	6	.96	2	.32	--	--	--	--
27	5	.80	6	.96	--	--	--	--
28	4	.64	--	--	--	--	--	--
29	2	.32	3	.48	2	.32	2	.32
30	--	--	3	.48	--	--	1	.16
31	3	.48	4	.64	--	--	1	.16
32	--	--	--	==	--	--	2	.32
33	2	.32	3	.48	--	--	--	--
34	1	.16	1	.16	--	--	2	.32
35	11	1.76	9	1.44	--	--	4	.64
36	10	1.60	6	.96	4	.64	--	--
37	7	1.12	12	1.92	1	.16		

APPENDIX F

CHANGE IN TENURE

1965 tenure % of total, change from 1960

CT	W.O.	W.R.	N.W.O.	N.W.R.
1	-1	-19.3	+1	+12.3
2	-4.63	-1	+4.63	+1
3	-3.6	-24.4	+3.6	+24.4
4	- .40	same	- .40	same
5	- .80	-2.8	+ .60	+2.6
6		-6.2	same	+6.2
7	-2.4	-5.2	+2.4	+5.2
8	-5.0	-11.8	+5.0	+11.8
9	+ .30	+1.3	- .30	-1.30
10	same	+ .60	same	- .60
11	same	-1.4	same	-1.4
12	-9.2	-4.4	+9.20	-4.4
13	+ .30	-2.4	- .30	-2.4
14	same	-3.2	same	-3.2
15	-28.8	-14.7	+29.2	+14.7
16	-30.6	-34.4	+30.7	-34.4
17	-1.2	same	+1.1	same
18	-14.6	-8	+24.6	+8
19	-4.7	-3.5	-4.7	-3.5
20	-2	- .30	+2	- .30
21	- .50	-4	+ .50	+4
22	same	same	same	same
23	- .10	-6	-.10	+6
24	- .70	-1.2	- .70	+1.2
25	same	-6.2	same	+6.2
26	same	same	same	same
27	- .10	-5.6	- .10	+5.6
28	-1.8	same	+1.8	same
29	same	same	same	same
30	-10	-3.5	+10	+2.44
31	- .90	+3.5	+ .90	-4.5
32	- .50	same	+ .50	same
33	same	same	same	same
34	same	-100	same	+100
35	+100	+100	same	same
36	-3	-15.3	+2.7	+15.3
37	-2.5	same	+2.5	same

APPENDIX G

RELOCATEES PERCENT OF TENURE CHANGE

	Relocatees % of change 1960-65				Relocatees% of tenure status			
CT	WO	WR	NWO	NWR	WO	WR	NWO	NWR
1	40	12	--	--	.29	3.97	--	10
2	5.5	1.4	4.7	50	.69	1.54	4.54	--
3	2.8	3.3	2.9	10.6	.22	6.66	2.50	15
4	1.9	5.7	5.5	X	.22	14.06	--	--
5	2	30	80	56.6	.18	1.60	7.14	21.05
6	9.6	2.7	X	19	.59	1.23	--	17.07
7	15	11.7	--	5.2	.61	1.88	--	4.76
8	1.5	9.1	--	9.0	.22	1.84	--	6.55
9	10.7	13	--	--	.46	5.45	--	--
10	35.3	53	--	80	.67	4.83	--	--
11	6.6	14	--	2.9	.49	1.08	--	2.50
12	15.2	53	1.5	43.3	3.73	4.03	1.13	22.72
13	20.5	88.9	--	40	1.57	1.36	--	25
14	62.5	12.5	--	--	13.88	2.31	--	--
15	1.2	2.8	12.7	81.7	.74	2.58	2.55	20.33
16	.70	4.5	18.8	29	.46	4.76	10.43	--
17	.62	6.1	23.	--	.25	22.22	16.67	--
18	--	5.7	2.4	13	--	13.63	1.09	3.84
19	3.9	4.1	--	4.8	4.71	2.60	--	--
20	21	5.8	4.8	50	1.16	.78	4.54	--
21	12.4	50	50	9.1	1.88	5.65	10.52	84.21
22	25.3	44.4	X	--	.56	6.77	--	--
23	14.7	4.8	--	10.5	.76	1.15	--	10.52
24	7.7	4.8	--	20	1.09	1.58	--	16.67
25	4.7	2.7	--	--	.30	.90	--	--
26	35.3	12.5	--	--	.88	1.60	--	--
27	4.4	2.3	--	--	.55	3.24	--	--
28	4.4	--	--	--	6.77	--	--	--
29	.42	8.7	X	--	.45	6.79	--	--
30	--	3.4	--	11.1	--	3.19	--	10.52
31	.45	.61	--	5.5	.42	.59	--	5.26
32	--	--	--	X	--	--	--	--
33	1.5	4.4	--	X	.16	1.85	--	--
34	.13	.75	--	--	.12	.61	--	--
35	1.2	3.3	--	X	1.19	.33	--	--
36	2.0	4.1	7.4	10.8	.60	2.92	--	10.81
37	58.3	41.4	3.3	--	.58	11.11	--	--

APPENDIX H

PERCENT INCOME ALLOTTED FOR RENT

CT	4	6	7	10	11	12	13	15	16	18	19	20	21	23	24	35	36	37
4	12	15	15	15	19	17	30	18	9.9	18	18	18	18	16	15	17	13	13
6	13	15	16	16	20	18	31	19	10	19	18	19	19	16	15	18	14	14
7	12	14	14	14	18	16	28	17	9.3	17	17	17	17	15	14	17	12	13
10	10	12	13	13	16	14	25	15	8.3	15	15	15	15	13	12	14	11	11
11	11	13	14	14	18	15	27	17	9.0	16	16	17	16	14	14	15	12	12
12	11	14	14	14	18	15	27	17	9.0	16	16	17	16	14	14	15	12	12
13	10	12	12	13	15	14	24	15	9.0	15	15	15	15	13	12	14	11	11
15	11	14	14	14	18	15	27	17	10	16	16	17	16	14	14	16	12	12
16	11	13	14	14	17	15	27	17	9.0	16	16	17	16	14	13	15	12	12
18	10	13	13	13	16	14	25	17	8.5	15	15	15	14	13	13	15	11	11
19	12	14	14	15	18	16	28	17	9.5	17	17	17	17	15	14	16	13	12
20	12	14	14	14	18	15	27	17	9.1	16	16	17	16	14	14	16	12	12
21	10	12	13	13	16	14	25	15	8.3	15	15	15	15	13	13	14	11	11
23	14	16	16	17	21	18	33	20	9.0	19	20	20	19	17	16	19	14	14
24	12	14	13	15	18	16	29	18	9.5	17	17	17	17	15	14	16	13	13
35	11	13	13	14	17	15	27	16	8.9	16	16	16	16	13	13	15	11	12
36	13	16	17	17	21	19	33	20	11	20	20	20	20	17	17	19	15	15
37	13	15	15	15	20	17	30	19	10	18	18	19	18	16	15	17	13	12

APPENDIX I

INCOME AS PERCENT OF HOUSING VALUE

4	6	7	10	11	12	13	15	16	18	19	20	21	23	24	35	36	37
54	45	45	43	35	40	22	37	67	37	38	37	38	43	45	39	51	51
49	41	41	39	32	36	20	33	61	34	34	33	34	39	41	36	46	47
62	51	51	49	40	45	26	42	77	43	43	32	43	49	51	45	58	58
41	34	34	33	26	30	17	28	41	28	29	28	29	32	34	30	39	39
67	45	55	53	43	49	28	45	83	46	47	45	47	53	55	48	63	63
70	59	58	56	45	52	29	47	87	48	39	47	49	55	58	51	66	66
69	58	57	55	45	51	29	47	87	48	49	47	48	55	38	50	64	66
65	54	54	52	42	48	27	33	81	45	46	44	47	51	54	47	61	62
41	34	34	33	26	30	17	28	51	28	29	28	29	32	34	30	39	39
63	53	52	61	41	47	26	43	79	44	44	43	44	50	53	46	60	60
54	45	44	43	34	40	22	36	67	37	37	36	37	42	45	39	50	51
78	65	64	62	50	57	32	53	97	54	54	53	54	61	65	56	73	74
75	63	62	60	48	56	21	51	93	52	43	51	52	40	63	54	70	71
42	35	33	33	27	31	17	28	52	29	29	28	29	33	35	30	39	40
60	50	49	48	39	44	25	41	75	42	42	41	42	47	50	43	56	57
52	44	43	42	34	39	22	35	65	36	37	36	27	41	44	38	49	50
61	51	51	49	40	45	26	41	77	42	43	42	43	48	61	44	58	58
61	51	51	49	40	45	26	42	77	42	43	42	43	48	61	45	58	58

APPENDIX J

POPULATION PER HOUSEHOLD

CT	1965	Change	% rel. of change	Population per tract H.H.
1	3.8	+.24	9.19	.0220
2	3.3	+.23	21.53	.0495
3	3.17	-.25	9.67	.0241
4	3.35	+.21	18.66	.0342
5	3.12	-.1-	44.7	.0447
6	2.73	-.54	9.47	.0511
7	2.65	-.06	57.1	.0342
8	3.54	+.24	10.07	.0241
9	3.26	+.03	71.63	.0186
10	2.83	-.36	12.89	.0464
11	2.90	-.02	94.62	.0189
12	3.33	+.03	321.87	.0964
13	2.63	-.23	24.39	.0560
14	2.46	+.01	9.60	.0952
15	3.74	+.99	17.14	.1657
16	3.62	+1.08	21.66	.2338
17	3.62	+.33	12.25	.0409
18	3.80	+.39	21.68	.0834
19	2.41	+.52	6.38	.0331
20	2.84	-.01	257.28	.0257
21	2.96	-.56	20.35	.1139
22	3.19	+.01	300.65	.0300
23	2.98	-.04	53.29	.0244
24	2.96	-.17	18.29	.0311
25	3.33	-.13	6.89	.0089
26	2.95	-.33	7.09	.0233
27	3.98	+.26	9.40	.0234
28	3.69	-.07	13.9	.0097
29	3.92	+.29	13.04	.0378
30	3.67	-.07	60.67	.0465
31	3.01	-.94	1.48	.0097
32	3.39	-.36	1.07	.0038
33	3.51	-.13	1.04	.0135
34	3.69	+.52	.98	.0051
35	3.44	+.27	17.39	.0469
36	4.42	+.40	8.23	.0329
37	3.69	-.15	23.82	.0357

APPENDIX K

ACRES PER UNIT
SQUARE FEET PER UNIT

CT	Acres Per Household		Square feet Per Unit	
	1960	1965	1960	1965
1	.1485	.1484	6464	6464
2	.0980	.1282	4269	5584
3	.1342	.1328	5836	5785
4	.1113	.1111	4848	4840
5	.1032	.1028	4495	4478
6	.0645	.0760	2810	3311
7	.0731	.0772	3184	3362
8	.0970	.1056	4182	4599
9	.1090	.1088	4748	4739
10	.1139	.1130	4961	4961
11	.0730	.0698	3180	3036
12	.1071	.1076	5665	4687
13	.0564	.0578	2457	2491
14	.0114	.0116	497	505
15	.0705	.0883	3071	3846
16	.1561	.1576	6800	6865
17	.3441	.3337	14989	14536
181	.0708	.0651	3084	2836
19	.0361	.0625	1573	2723
20	.0705	.0700	3071	3049
21	.1032	.1039	5595	4526
22	.1482	.1478	6456	6438
23	.1289	.1332	5615	5802
24	.1086	.1083	4731	4718
25	.1368	.1354	5959	5898
26	.1739	.1754	7575	7640
27	.1764	.2010	7684	8795
28	.1969	.1662	8577	7240
29	.3000	.4583	13068	19964
30	.1155	.1197	5031	5214
31	.3003	.1973	13081	8594
32	.2474	.2529	10777	10929
33	.2564	.2566	11109	10177
34	.2341	.2208	10147	9618
35	.2432	.2463	10594	10729
36	.2860	.2611	12458	11374
37	.2083	.2308	9074	19954

APPENDIX L

RELOCATION ACREAGE AND UNITS

CT	Acreage	Change from 1960	Units per acre	Change from 1960	Relocation Acreage	% of total acrg.	Relocation units per acre
1	138	+1	6.74	-.01	.4632	.30	.0579
2	85	-2	7.80	-2.40	1.432	1.67	.1295
3	141	+1	7.53	+.08	.4732	.35	.0638
4	160	same	9.00	-.02	3.305	2.06	.1437
5	85	-5	9.73	-.04	1.693	1.98	.1411
6	87	-5	13.15	-2.35	4.596	5.28	.2298
7	111	-3	12.95	-.75	3.251	2.92	.1711
8	148	-3	9.47	-.73	.9720	.65	.0810
9	26	same	9.19	-.01	1.285	4.60	.2142
101	126	same	8.78	same	2.863	2.26	.1507
11	147	+3	13.07	-.33	1.530	1.02	.1020
12	118	same	9.30	-.03	13.556	11.52	.3389
13	55	same	19.31	-.39	6.503	12	.3454
14	3	same	86.33	-.78	3.000	100	.3000
15	124	+3	11.32	-3.12	42.975	34.66	.3887
16	90	+1	7.34	-.06	17.760	19.77	.4440
17	288	+97	3.00	-.27	.4863	.20	.0451
18	71	-15	15.38	+1.28	11.032	12.49	.3940
19	29	-1	16.00	-11.7	7.758	26.75	.5172
20	148	+6	14.28	+.08	2.978	2.02	.1418
21	117	+1	9.62	-.08	17.307	5.90	.3846
22	116	+2	6.77	+.02	.6984	.60	.0776
23	212	+12	7.72	-.03	1.061	.51	.0707
24	168	+1	9.23	+.03	2.147	1.27	.1130
25	155	same	7.39	+.08	.1032	.06	.0258
26	154	+3	5.70	-.05	.5152	..25	.0519
27	238	+13	9.95	-.72	.5082	.21	.0462
28	175	+7	6.02	+.92	.0912	.05	.0228
29	236	+89	2.18	+2.02	.2072	.08	.0296
30	37	-6	8.35	+6.81	.6755	1.83	.1351
31	291	+118	5.07	+4.58	.2192	.06	.0274
32	200	+8	3.99	+3.48	.0050	--	.0050
33	369	+51	3.90	same	.1323	.002	.0189
34	221	+40	4.53	+4.03	.0180	--	.0090
35	302	+14	3.06	+4.06	1.602	.52	.0728
36	529	+307	3.87	+.37	1.087	.18	.0453
37	325	+52	4.33	-.47	1.230	.36	.0615

APPENDIX M

HOUSING CONDITION

CT	Environmental Appraisal**			*CRP White			CRP Nonwhite		
	good	fair	poor	good	fair	poor	good	fair	poor
1	76.1	17.3	6.3	90.3	25.4	34.3	--	--	--
2	38.5	45.4	16	4.9	75.4	19.7	14	37	49
3	--	--	--	13.3	62.2	24.5	--	--	--
4	93	6.7	.30	17.6	48.8	.236	15.3	64.4	20.3
5	84.8	14.8	.40	31.1	60	28.9	20.8	65	14.2
6	79.6	14	6.4	13.5	50.2	36.3	28.6	57	14.4
7	50.7	48.1	1.2	3.9	67.4	28.7	18.8	57.4	23.8
8	63.4	34	2.6	32.3	44.5	23.2	14.7	52.4	32.9
9	--	--	--	44.7	44.7	10.6	--	--	--
10	95.6	4.4	--	55.5	33	11.5	55.8	30.9	13.3
11	81.5	18.5	--	26.2	59.3	14.5	25	42.5	32.5
12	--	--	--	25.3	63.9	10.8	10.3	92.9	16.8
13	--	--	--	30.8	36.3	32.9	28	40	32
14	--	--	--	92.9	7.1	--	--	--	--
15	66.6	32.6	.76	34.8	30.4	34.8	1.6	45.	39
16	94.9	5.1	--	32.4	42.6	25	88.6	9.4	2
17	97.5	1.4	1.1	100	--	--	100	--	--
18	47.6	48.3	4.1	--	--	--	9.3	37.4	53.3
19	73.5	20.4	6.1	69.4	13.7	16.9	16.7	50	33.3
20	70.1	28.3	1.6	18.9	52.8	28.3	50	7.1	42.9
21	94.6	5.1	--	24.1	69	6.9	32	63.1	4.9
22	98.2	1.8	--	87.4	7	5.6	57.5	32.5	10
23	95.9	4.1	--	52.2	41.4	6.4	7.1	92.9	--
24	89.1	10.9	--	46.2	49.8	4	63.8	36.2	--
25	95.3	4.7	--	95.6	3.3	1.1	--	--	--
26	--	--	--	26.2	64.2	9.6	--	--	--
27	91.1	7.9	1	62.6	29.5	7.9	--	--	--
28	98.3	1.7	--	82.4	11.7	5.9	--	--	--
29	--	--	--	--	--	--	--	--	--
30	--	--	--	--	--	--	--	--	--
31	99.2	--	.80	100	--	--	--	--	--
32	80.4	17.6	2	6.1	48.5	45.5	--	--	--
33	--	--	--	--	--	--	--	--	--
34	--	--	--	--	--	--	--	--	--
35	--	--	--	--	--	--	--	--	--
36	84.1	15.9	--	98.25	1.4	.35	87.5	12.5	6.25
37	91.4	7.5	1.1	74.1	17.5	8.4	100	--	--

*Community renewal program
**Health Statistics Center