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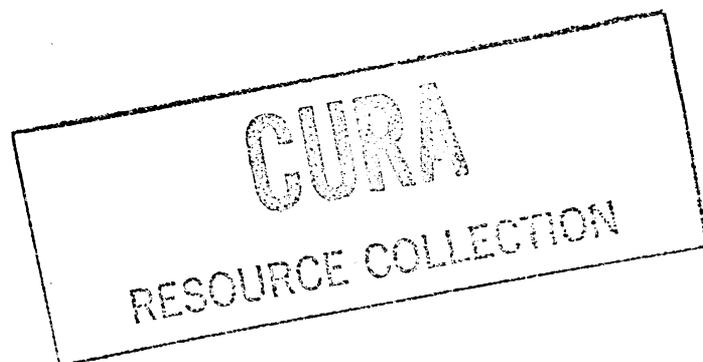


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CENTER FOR URBAN AND REGIONAL AFFAIRS  
Office of Planned Residential Development  
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University of Minnesota

# New Homes, Vacancy Chains, and Housing Submarkets in the Twin City Area

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## Introduction

In the winter and spring quarters of 1972, Professor John S. Adams taught a geography course at the University of Minnesota titled: Metropolitan Analysis. The course presented a variety of quantitative techniques and ways that could be used to study metropolitan structure, urban processes, and the spatial behavior of people within urban areas as they shop, visit, travel to and from work, and search for and move to new residences.

Each of the 60 undergraduate and graduate students in the class was required to undertake a field project in addition to his normal class work of readings, exams, and class participation. One of the five field projects, and by far the most popular, was a study of the location of the impacts of a sample of the new housing that was constructed in the Twin City area between 1969 and 1971. The results of that study are reported here.

Twenty-four students worked in ten teams of one to four members. Eight were graduate students from geography, management and transportation, and engineering. The rest were undergraduates in liberal arts, business, engineering, and architecture. The teams studied the impacts of 755 new housing units built at 14 central city and suburban locations. Each team was charged with tracking down the locations from which the new housing drew its occupants, then the origins of households who moved in to replace those occupants, and so on until the move chains or vacancy chains ended.

The project served two important purposes. First, it was an extremely successful teaching device because it exposed all 24 students to a wide range of people, housing units, and neighborhoods as they verified classroom notions about intra-urban migration, housing search and choice, trickle-down theories of housing, and socioeconomic mobility of households at different stages of the family life cycle. Secondly, the project produced some hard data to answer the questions: What geographical locations absorb the impact of new housing construction? Are the effects highly localized so that, for instance, subsidized housing for the elderly spreads its effects over a confined area of just a few blocks? Or do the consequences quickly spread over the city, the metropolitan area and even the State of Minnesota? No one seems to know the answers; indeed, these questions seem not to have been raised before.

Each student team designed and administered its own questionnaire, but each team was required to trace the move or vacancy chains regardless of the other data they collected. This report presents the comparable vacancy chain data assembled in the same format by all teams. The data vary in quality because of differences in the skill, ingenuity, and persistence of the student teams while in the field. Nevertheless, remarkably clear patterns emerge.

Vacancy Chains: What They Are and What They Show

A newly constructed housing unit within a metropolitan housing market comprises a vacancy as soon as it is available for occupancy. A family that moves into the unit transmits the vacancy to the family's previous address. The family and the vacancy move simultaneously and in opposite directions.

One way to study the housing process is to describe and analyze the careers of families as they form, grow older, change their incomes, their size, status aspirations, and tastes. In most families, changes in income or social status, or the transition from one stage to another in the family life cycle trigger corresponding adjustments in housing requirements.

Mobile families moving through a geographically fixed local housing stock is one view of the housing process. Yet the view is complicated by the special preferences of many families. Some couples will move to a larger apartment or to a house when their first child is born, yet others will stay in a small apartment. Some households will translate a job promotion and salary raise into a fancier house, while others will increase outlays for entertainment, clothing, or cars. A widow or widower may or may not choose to vacate a large empty house when left to live in it alone.

Another view of the local housing process traces the flow of vacancies. Vacancies are created when a new housing unit is built, when an old unit is subdivided, when a family dies, or when a household leaves the local market. When a vacancy at address A is filled by a family moving in from B, the

vacancy is transmitted from A to the family's previous address B. The two addresses, A and B, form the first link in the vacancy chain. Address B is vacant until a family moves in from address C. Addresses B and C form the second link in the chain, and so on.

The vacancy chain grows outward from the original vacancy, link by link, until the chain ends. A vacancy chain ends when a housing unit is demolished, consolidated into another unit, stands permanently vacant or leaves the local housing market area.

The length of a vacancy chain, measured by the number of links, determines the amount of local impact created by a new housing unit. If a chain has seven links, seven households were able to acquire housing more preferable than what they previously occupied.

The location of the links in the chain and the location of the vacancy chain end reveal the extent to which housing construction and other vacancy-creating activities at one location affect housing opportunities for people elsewhere in the local housing market.

In the research reported here we asked several specific questions about new housing construction and vacancy chains in the Twin City metropolitan area:

- (1) How long are the vacancy chains that were created by new high rise public housing for the elderly in Minneapolis and St. Paul?
- (2) What parts of the Twin Cities housing market are affected by new public housing? Do vacancy chains end in the projects' immediate neighborhoods? Are the chain ends scattered throughout the central cities? Or do the benefits of central city public housing, as measured by the location of vacancy chain ends, spill out into the suburbs?

- (3) How long are the vacancy chains that come from privately constructed housing of different kinds?
- (4) Where do the chains end that were created by new private housing constructed in various suburban areas?

Two high rise public housing projects for the low income elderly in St. Paul were selected for study, one in the northeastern corner of the city and the other in the southwest. Projects near the center of the city in several heavily studied areas were ignored to avoid further intrusions on residents (Figure 1):

- (1) Highland Apartments, 899 Cleveland Avenue; and
- (2) Hillcrest Apartments, 1743 East Iowa Avenue.

We studied vacancy chains from three high rise public housing projects for the low-income elderly in Minneapolis (Figure 2):

- (3) Twin Towers, East 24th Street at 5th Avenue South;
- (4) 630 Cedar Avenue South; and
- (5) Charles L. Horn Towers, West 31st Street at Blaisdell Avenue South.

Projects in the private housing sector were all located in the suburbs. The first pair of projects contained virtually identical housing but at widely separated sites (Figure 3):

- (6) Orrin Thompson single detached houses at Riverview in Coon Rapids;  
and
- (7) Orrin Thompson single detached houses at Green Leaf in Apple Valley.

The fourth group of new housing units contains a variety of housing styles at widely dispersed locations (Figure 4):

- (8) New single family homes in Mounds View,
- (9) Shelter Corporation Patio Homes at Lakebridge Estates, Inver Grove Heights; and

(10) Orrin Thompson Town Houses, Apple Valley.

In three supplementary studies a public housing project for the elderly in Hopkins was also surveyed, along with two suburban apartment projects.

#### Procedures

Research was carried out between January and June, 1972. We consulted officials in public housing authorities and private industry in the Twin Cities and selected projects for study that had opened for occupancy between 1969 and 1971. Each student team worked with one or two projects. Teams selected a sample of addresses within a project and then contacted the occupants. After confirming that the occupant was the first occupant of the housing unit, the interviewer asked for the household's previous address and the date on which that address was vacated. If the previous address was in the Twin City area, the interviewer visited or contacted the previous address to locate the household that had filled the vacancy created by the departure of the former household for the new housing unit. When the right household was contacted, the interviewer asked for its previous address and the date it was vacated, then visited that address, and so on until the chain ended.

Each vacancy chain was described in a set of one to seven questionnaires. Each household supplied one questionnaire and each questionnaire supplied two addresses: its current address, and its former address.

#### Findings

1. The 303 public housing vacancy chains studied had an average length of only 1.6 links. The 116 chains traced to valid ends (demolition, permanent vacancy, incorporation into another unit, or move to another city) averaged only 2.0 links (Table 1).

TABLE 1.--VACANCY CHAIN LENGTHS FOR SELECTED PUBLIC AND PRIVATE HOUSING PROJECTS OPENED FOR OCCUPANCY 1969 TO 1971

Project	# of Chains Studied	Average Length	# of Chains Traced to Valid Ends	Average Length
Public Housing--St. Paul				
Highland	50	1.6	18	1.9
Hillcrest	47	1.9	29	2.1
Public Housing--Minneapolis				
Twin Towers	72	1.7	22	2.0
630 Cedar Avenue	88	1.6	34	2.0
Horn Towers	46	1.4	13	1.5
Private Housing: Identical Houses at Different Locations <sup>a</sup>				
Riverview in Coon Rapids	25	2.1	25	2.1
Green Leaf in Apple Valley	25	2.1	25	2.1
Other Private Housing				
Mounds View--New Singles	15	2.5	8	2.9
Shelter Corp. Patio Homes	28	2.1	25	2.2
Orrin Thompson Town Houses	22	1.6	10	2.0
All Public Housing	303	1.6	116	2.0
All Private Housing	115	2.1	93	2.2

<sup>a</sup>Only 4 of 50 chains reach invalid ends because of incorrect information or non-cooperation. Average lengths are unaffected.

2. Vacancy chains from public projects ended in the vicinity of the project. Most chains ended before they could spread much throughout the city and suburbs.

3. The principal effect of the public housing, as measured by the structure of the vacancy chains, is to upgrade the average quality of the housing used by the elderly poor (and the young poor who seem to compete for the same housing) in the neighborhoods where the projects are built.

4. Private housing that is built for middle and upper middle incomes transmits its vacancies (a) throughout the urban area, or (b) outside the urban area by capturing newcomers to the area, and (c) among a certain age class of buyers. The destination of the vacancies seems to depend more on location of the new housing than on price or style of home.

5. Vacancy chains are very easy to trace from middle and upper priced housing. Elderly residents of public housing were suspicious, fearful, forgetful, lonely, and often unable to supply the details needed to trace the chains, thus accounting for a large share of the chains which terminated with invalid ends.

6. The 115 private chains that were studied and mapped had average lengths of 2.1 links. In 93 cases the chains were traced to valid ends and averaged 2.2 links.

7. A survey of two publicly subsidized housing projects in Hopkins disclosed that a majority of the direct beneficiaries, the first occupants of the new housing, were persons previously living outside Hopkins. Metropolitan and statewide benefits of suburban efforts in publicly-assisted housing suggest a need for broader metropolitan coordination and assistance for publicly-assisted housing throughout the metropolitan area.

8. New housing in the south and southwest suburbs, whether houses for sale or apartments for rent, is disproportionately attractive for newcomers to the metropolitan area. Such geographical segmentation of the metropolitan housing market mutes the effects of surpluses or shortages in one area on the operation of the housing markets in adjacent areas.

Twin City Housing Markets  
and Chains of Housing Opportunity

In the sprawling Twin City metropolitan area there are several housing submarkets whose interrelations are only dimly understood. On the supply

side we know in a general way that construction, demolition, subdividing, and consolidation of housing units in one submarket will affect other submarkets, just as we know that on the demand side, immigration, outmigration, births, deaths, family formation rates, and changes in disposable incomes raise or lower the need for different kinds of housing. Yet it is unclear how to partition a metropolitan market in order to monitor the effects of supply and demand changes.

We could subdivide the housing inventory in terms of population density and classify houses or neighborhoods according to the amount of private open space available per person. Another classification could be made according to the size and quality of the housing units themselves, from spacious and expensive to cramped and cheap. Still another approach -- perhaps the most promising -- would be to partition the housing market geographically according to location or subareas like North Oaks, Crocus Hill, St. Anthony Park, or Richfield.

It is necessary to subdivide the metropolitan housing market in order to analyze interactions between demand and supply. An especially important interaction is the effect of new public and private housing construction at one location on the operations of the housing markets at other locations. For example, construction of new housing in part of one municipality affects supply and demand patterns elsewhere in that municipality and still other effects spill over into nearby municipalities. The way in which housing change in one area affects housing opportunities in other areas underlies a central question of the extent to which housing questions are inherently metropolitan instead of local concerns.

Take the example of public housing for the elderly which typically has been constructed at center city locations by municipal authorities. Does the

construction of public housing for the elderly really increase the supply of housing for the elderly, or does it merely raise its average quality? It is possible that housing programs for the elderly provide a convenient rationale for demolishing dilapidated structures and redeveloping the sites. Alternatively, it is possible that public housing for the elderly, by its very visibility and popularity, encourages outstate elderly to migrate to the Twin Cities and increases the demand for low rent housing for the elderly. The public housing programs may reduce crowding in homes where families have doubled up to make room for grandparents, and they may also encourage low income elderly to release large underused houses for use by larger younger families. Another genuine possibility is that when central city housing authorities build public housing for the elderly, they take some demand pressure off suburban municipalities and indirectly perform an essential metropolitan function which should be directly coordinated by the Metropolitan Council. Yet it is equally probable that publicly assisted housing in the central parts of the core cities is too remote from peripheral and from suburban locations to be attractive to low income elderly who may otherwise qualify for it. Each is a possibility, but no one currently knows for sure the market consequences of this specific public housing program, of other public housing programs, or of the private programs underway at diverse locations throughout the metropolitan area.

In the private sector, where do new suburban home buyers and renters come from? Do they move out from central city areas and release housing there? Or do they merely move in from nearby used housing so that a suburban municipality which directly encourages rapid development, indirectly promotes rapid housing turnover and high average vacancy rates? Which of the sub-