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Relationships between Affordable Housing Developments and Neighboring Property Values

Paul M. Cummings with John D. Landis

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Relationships between Affordable Housing Developments and Neighboring Property Values

An Analysis of BRIDGE Housing Corporation Developments in the San Francisco Bay Area

Paul M. Cummings
with
John D. Landis

University of California at Berkeley
Institute of Urban and Regional Development
I. INTRODUCTION

Affordable housing, a term that once defined housing for the poor, is now a precious commodity. The acute affordable housing shortage this country is experiencing is especially evident in the San Francisco Bay Area. In the last two decades, the Bay Area realized dramatic land appreciation which, combined with a dwindling supply of available land, constraints on existing infrastructure, and a continued demand to live in the Bay Area, have significantly increased the cost of housing. In addition, new affordable housing development in the Bay Area faces tremendous Not In My Back Yard (NIMBY) sentiment in many communities, a sentiment that has been described as a desire to preserve the existing neighborhood because of a fear of change in the physical environment or composition of the community.

One of the most persuasive arguments used by residents opposing new affordable housing developments has been that the proposed development will cause neighboring property values to decline. Without any real data to support this claim, this argument is based primarily on negative preconceptions of "affordable housing" as it has been historically defined. Many people are still familiar with the massive public housing projects constructed in the late 1960s and early 1970s. And, unfortunately, it is powerful images such as the violent destruction of a vacant and run-down Pruitt-Igore apartment building in St. Louis that people recall today when talk of affordable housing development enters a community.

In response to community concerns, developers of the affordable housing industry have tried to change their ways. Throughout the 1980s and into the early 1990s, providers of affordable housing have made significant improvements in the design quality of affordable housing developments. Amenities such as decks, wood siding, and well-kept open space areas, for example, are predominant new themes in recent affordable housing developments. The BRIDGE Housing Corporation (henceforth to be referred to as BRIDGE) is a good example of an affordable housing developer who is committed to working with the community to build lower-cost housing that is also an attractive physical and social asset in the community. Yet even with these positive changes, many communities are still unwilling to accept new affordable housing projects in their neighborhoods.

This study considers the validity of the most common NIMBY argument, the claim that proximity to affordable housing is highly correlated with low property values, by considering the property values of thousands of single-family homes as a function of their proximity to six BRIDGE affordable housing developments. In doing so, the same methodology is used that academics and housing advocates have been using for years—building statistical models to identify factors that predict variation in housing prices. These models are often referred to as hedonic price models. Traditionally, most of these models have focused on variables internal to the housing unit such as age, size, and price. It is only recently that models have been created that consider such external variables as neighborhood quality.
II. METHODOLOGY

This study examines whether there is a systematic relationship between single-family home values (as measured from transaction prices) and proximity to affordable housing. As previously stated, the presumed existence of such a relationship is the core of the NIMBY argument against affordable housing projects. To determine whether such a relationship exists, a regression analysis is used to compare transaction prices across hundreds of single-family homes at various distances from six BRIDGE affordable housing developments in different parts of the San Francisco Bay Area.

Regression analysis has two advantages over traditional "comparables analysis." First, it can be used to compare a much larger set of properties, in this case nearly 3,000 single-family homes. Second, it can be used to isolate the price effects of proximity to affordable housing, holding constant the characteristics of the home itself (e.g., square footage, or the number of bathrooms). The tested regression model takes the following general form:

\[ CPRICE90 = f(SQFT, LOTSIZE, BATHS, BDRMS, AGE, HMile, QMile, EMile) \]

The dependent variable in this model is \( CPRICE90 \), the sales price of selected single-family housing units in the vicinity of BRIDGE projects that sold between 1985 and 1992. All transaction prices were converted into 1990 dollars using the Consumer Price Index (CPI).

The model includes five separate independent variables that describe each single-family home. \( SQFT \) is the square footage of the home. All else being equal, I would expect the relationship between \( SQFT \) and \( CPRICE90 \) to be a positive one: the larger the home, the higher the sales price. \( BATHS \) and \( BDRMS \) are the number of bedrooms and bathrooms in each home. As with square footage, I would expect the relationship between sales price and the number of bedrooms and baths to be positive. \( LOTSIZE \) is the size of the lot in square feet; this too should be positively related to price. \( AGE \) is the final independent variable describing each home. The relationship between unit age and price is not so straightforward. In some communities, for example San Francisco, older homes might be favored for their unique design, and hence be more valuable. In other communities, age might be a measure of obsolescence, leading to lower home values for older homes.

The three most important independent variables for the purposes of this study are \( HMile \), \( QMile \), and \( EMile \). \( HMile \) is a "dummy variable" indicating whether a single-family home is located within a half-mile of a BRIDGE project. If it is, \( HMile \) takes the value of 1. If it is not, \( HMile \) takes the value of 0. \( QMile \) and \( EMile \) are dummy variables indicating whether a home is located within a quarter-mile or eighth-mile, respectively, of a BRIDGE project. If those who oppose affordable housing projects are correct in asserting that such projects lower property values, than the relationships between \( HMile \), \( QMile \), and \( EMile \) and home sales prices should all be negative. That is, the closer a home is located to a BRIDGE project, the lower its value will be. If those who oppose afford-
able housing projects are incorrect, then there should be no relationship between home values and proximity to a BRIDGE project, as measured using the HMile, QMile, and EMile dummy variables.

The database upon which the model was tested was obtained from TRW, a company that purchases records of home sales from county assessors' offices throughout the state. Sales records were selected according to whether they were located within a mile of a BRIDGE project, and for those years subsequent to the opening of each project.

In addition to including information on the characteristics of each home (e.g., number of bedrooms and bathrooms, square footage and lot size, age), each sales record includes the address of the home. Using MapInfo, a geographic information system (GIS), each sales record was "address-matched" to a city street map. Address-matching is a process by which the street number and name are used to precisely locate a home to a map.

The locations of the six BRIDGE projects were also address-matched. MapInfo was then used to generate circles with radii of an eighth-mile, a quarter-mile, and a half-mile around each BRIDGE project (these circles are commonly known as "buffers"). If a particular home fell within the half-mile buffer of a BRIDGE project, the HMile, QMile, and EMile dummy variables were all assigned a value of 1. If a home fell within the quarter-mile buffer of a BRIDGE project, the EMile and EMile dummy variables were set to 1, while the HMile dummy variable was set to 0. If a home fell within the eighth-mile buffer of a BRIDGE project, the EMile dummy variable was set to 1 while the QMile and HMile dummy variables were set to 0. All three dummy variables were set to 0 for those homes falling outside the half-mile buffer.

III. SIX BRIDGE PROJECTS

Six BRIDGE Housing affordable developments were analyzed in this study—two in San Francisco County, three in San Mateo County, and one in Alameda County (Figure 1). The projects range in size from 42 to 167 units, and include designs that are aboth urban and suburban in character. Four of the projects are rentals; the other two are condominiums. BRIDGE and its architects try to design projects that match their neighborhoods in terms of size, scale, design, and amenities. BRIDGE's goal, in the words of president Don Terner, "is to build affordable housing that the neighbors would feel lucky to be able to buy or rent." The following profiles offer a brief survey of the six BRIDGE projects analyzed in this study.
Coleridge Park Homes

Coleridge Park Homes (Figure 2), a 49-unit project for the elderly, was built entirely above an existing retail store in San Francisco. The project was made possible through a donation of air rights by the Standard Brands Paint Company. Coleridge Park Homes was developed as a partnership between BRIDGE and the Bernal Heights Community Foundation, a local community-based non-profit organization. Designed by George Miers and Associates, Coleridge Park Homes was constructed in 1989 and includes a neighborhood park, a large landscaped interior courtyard, and a community room/recreation center. The regression analysis considered 394 single-family home sales in the neighborhood that occurred between 1989 and 1992: 100 homes were located within a half-mile of Coleridge Park Homes, 40 homes were located within a quarter-mile, and 11 homes were located within an eighth-mile.

Holloway Terrace

Holloway Terrace (Figure 3), a 42-unit condominium project for families and the elderly in San Francisco, was constructed in 1985. This project, which also includes a community center, was built on the site of the former Farragut School in San Francisco's Ingleside neighborhood. It is one of two ownership (condominium) projects considered in this analysis. The two- and three-bedroom townhomes included in the project were initially sold for under $100,000—well below neighboring sales prices. This project was designed by David Baker + Associates and features two-bathroom units, patios, fireplaces, and attached garages. Combined with low-interest bond financing and first-time home buyer assistance from the city of San Francisco, all of the townhomes were affordable to families with annual incomes of $23,000 or less. The regression analysis considered 612 single-family home sales between 1985 and 1992: 150 were located within a half-mile of the project, 61 were located within a quarter-mile, and nine were located within an eighth-mile of Holloway Terrace.

Pacific Oaks

Pacific Oaks (Figure 4), a 104-unit apartment project for the elderly, was built in 1988 in Pacifica, a small seaside city in San Mateo County. The project, designed by Treffinger, Walz & MacLeod, is located on a four-acre lot, and is convenient to neighboring retail services. Pacific Oaks is located in a high-income community, and required voter approval for construction. The project was financed through tax-exempt mortgage revenue bonds and the sale of federal tax credits. The regression analysis considered 295 single-family home sales that occurred between 1988 and 1992: 45 homes were located within a half-mile of Pacific Oaks, 18 homes were located within a quarter-mile, but only two homes were located within an eighth-mile.
Figure 2
Coleridge Park Homes
Figure 4
Pacific Oaks
Magnolia Plaza

Magnolia Plaza (Figure 5), a 125-unit housing development for the elderly, was constructed in 1988 in South San Francisco. The project was built on a three-acre site, and is the second-largest of the projects analyzed in this study. The construction of this development was combined with the renovation of an adjacent building as a Senior Center for Magnolia Plaza residents and seniors in the community. The project, designed by Treffinger, Walz & MacLeod, includes a historic reconstruction of the city's original one-room school house as a project office and community room. The regression analysis considered 137 neighborhood home sales between 1988 and 1992: 31 homes sales were located within a half-mile of Magnolia Plaza, seven sales were located within a quarter-mile, and four sales were located within an eighth-mile.

Gateway Commons

Gateway Commons (Figure 6), a 96-unit family ownership (condominium) project in the City of San Mateo, was built in 1989. Gateway Commons was designed by Columbus Architects, and, like Holloway Terrace, was built on a surplus school site. The project includes a creekside public park, four stories of elevator-served wood frame construction, exterior walkways and bridges, and a concrete parking garage located a half level below grade. It also features a swimming pool, spa, and club house. The project was financed through the issue of Mortgage Credit Certificates and administering a mortgage assistance program. The regression analysis considered 480 neighborhood home sales between 1988 (one year prior to the date of finished construction) and 1992, only one of which was located within a quarter-mile of Gateway Commons.

Heritage Park

Heritage Park (Figure 7) is a 167-unit apartment project for the elderly in Livermore. Built in 1988, it is the largest of all the developments analyzed in this study. The project was made possible by an eight-acre land donation from the City of Livermore, speedy approvals, and significant "up-zoning." Designed by Hardison, Komatsu, Ivelich & Tucker and Kermit Dorius Architects, Heritage Park features a swimming pool and a large community room. The regression analysis considered single-home home sales in the neighborhood that occurred between 1984 and 1992. This sample, unlike those for the five BRDIGE projects profiled above, included homes sold prior to construction of the affordable housing project. The sample includes 900 homes, 121 of which were located within a half-mile of Heritage Park.
Figure 5
Magnolia Plaza
Figure 6
Gateway Commons
Figure 7
Heritage Park
IV. MODEL RESULTS

Table 1 summarizes the total number of single-family sales associated with each BRIDGE project. In addition, two separate regression models were tested for each BRIDGE Project. The first model, summarized in Table 2, tests all eight independent variables: SQFT, BDRMS, BATHS, LOTSIZE, AGE, HMile, QMile, and EMile. The second model, summarized in Table 3, includes only those independent variables previously found to be statistically significant.

Model Set 1: All Independent Variables Included

Table 2 summarizes the results of Model Set 1, in which coefficient estimates are reported for all eight independent variables, regardless of their statistical significance. The coefficient estimates indicate the contribution of the independent variable to the home sales price. For example, a coefficient estimate of 100 for the SQFT variable would indicate that each additional square foot of living area (above the mean) would add $100 to the sale price of a home. T-statistics are also reported for each independent variable. The t-statistics indicate the level of statistical significance of the coefficient estimate, or the degree to which the coefficient estimate is significantly different from zero. A t-statistic larger than 1.96 or smaller than -1.96 indicates that the analyst can be 95 percent sure that the coefficient estimate is truly different from zero. Variables with t-statistics between 1.96 and -1.96 are said to be insignificant; that is, they do not contribute statistically to explaining variations in home prices.

The ability of the eight independent variables to explain local variations in home sales prices varies by project. The "best-fitting" model overall is for Heritage Park, in which only two independent variables, AGE and SQFT, explain 78 percent ($R^2 = .776$) of the variation in the prices of nearby single-family homes. The other best-fitting model is for Magnolia Plaza, in which four independent variables — SQFT, LOTSIZE, BATHS, ROOMS, AGE, and HMile — explain 62 percent of the variation in nearby home sales prices. Model fits for the remaining four projects vary from a high of 47 percent (Pacific Oaks) to a low of 33 percent (Gateway Commons). The only independent variable that is statistically significant across all six BRIDGE projects is SQFT, or home square footage. BATHS — the number of baths in each home — and LOTSIZE — the size of the home — are statistically significant in four models.

Generally speaking, the three affordable housing proximity variables, HMile, QMile, and EMile, are not significant determinants of single-family home prices. EMile was found to be significant for the Pacific Oaks project, but is of the wrong sign (that is, the closer a home is to the Pacific Oaks project, the higher its value). HMile is significant for the Magnolia Plaza and Gateway Commons projects; however, the two nearer-proximity variables, QMile and EMile, are not significant. As noted above, if a BRIDGE project were actually to have a negative effect on home prices, the effect
# Table 1
Number of Single-Family Sales by Distance from a BRIDGE Project

<table>
<thead>
<tr>
<th></th>
<th>Coleridge Park Homes</th>
<th>Holloway Terrace</th>
<th>Pacific Oaks</th>
<th>Magnolia Plaza</th>
<th>Gateway Commons</th>
<th>Heritage Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 mile</td>
<td>11 Sales</td>
<td>9 Sales</td>
<td>2 Sales</td>
<td>4 Sales</td>
<td>1 Sale</td>
<td>0 Sales</td>
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<tr>
<td>1/4 mile</td>
<td>40 Sales</td>
<td>61 Sales</td>
<td>18 Sales</td>
<td>7 Sales</td>
<td>5 Sales</td>
<td>14 Sales</td>
</tr>
<tr>
<td>1/2 mile</td>
<td>100 Sales</td>
<td>150 Sales</td>
<td>45 Sales</td>
<td>31 Sales</td>
<td>17 Sales</td>
<td>121 Sales</td>
</tr>
<tr>
<td><strong>Total Sales</strong></td>
<td>394 Sales</td>
<td>612 Sales</td>
<td>295 Sales</td>
<td>137 Sales</td>
<td>480 Sales</td>
<td>900 Sales</td>
</tr>
</tbody>
</table>
Table 2
Summary of Regression Results with Dependent Variable CPRICE90
Estimated Coefficient (statistic in parenthesis)

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Coleridge Park Homes</th>
<th>Holloway Terrace</th>
<th>Pacific Oaks</th>
<th>Magnolia Plaza</th>
<th>Gateway Commons</th>
<th>Heritage Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMile</td>
<td>-5954.30 (-0.238)</td>
<td>8713.29 (0.413)</td>
<td>78717.79 (2.526)</td>
<td>-11556.49 (-0.410)</td>
<td>-101891.32 (-1.441)</td>
<td>0 Sales</td>
</tr>
<tr>
<td>QMile</td>
<td>18680.42 (1.187)</td>
<td>-10256.32 (-1.079)</td>
<td>5884.75 (0.442)</td>
<td>4312.34 (0.192)</td>
<td>21377.10 (0.583)</td>
<td>-11983.91 (-1.404)</td>
</tr>
<tr>
<td>HMile</td>
<td>-1763.35 (-0.170)</td>
<td>4876.01 (0.878)</td>
<td>-10667.89 (-1.246)</td>
<td>23401.78 (2.774)</td>
<td>-47393.88 (-2.554)</td>
<td>-5847.21 (-1.730)</td>
</tr>
<tr>
<td>AGE</td>
<td>-196.68 (-1.214)</td>
<td>-266.06 (-1.930)</td>
<td>-151.80 (-1.209)</td>
<td>-544.44 (-2.808)</td>
<td>558.34 (2.640)</td>
<td>-889.90 (-11.613)</td>
</tr>
<tr>
<td>BEDROOMS</td>
<td>2188.09 (0.324)</td>
<td>-8820.96 (-2.268)</td>
<td>8345.25 (1.889)</td>
<td>-4260.58 (-0.773)</td>
<td>-22960.73 (-4.115)</td>
<td>-1287.07 (-0.672)</td>
</tr>
<tr>
<td>BATHS</td>
<td>14693.15 (2.044)</td>
<td>11959.40 (2.220)</td>
<td>20497.73 (3.646)</td>
<td>18920.11 (2.037)</td>
<td>12821.96 (1.718)</td>
<td>-4549.27 (-1.793)</td>
</tr>
<tr>
<td>LOTSIZE</td>
<td>27.48 (6.051)</td>
<td>13.23 (5.608)</td>
<td>-0.89 (-5.219)</td>
<td>5.21 (4.227)</td>
<td>0.44 (1.696)</td>
<td>2.98E-05 (0.506)</td>
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<tr>
<td>SQFT</td>
<td>100.45 (7.623)</td>
<td>92.92 (9.982)</td>
<td>54.68 (6.306)</td>
<td>62.80 (4.757)</td>
<td>124.31 (11.699)</td>
<td>97.33 (31.992)</td>
</tr>
</tbody>
</table>

Adjusted R² Value

|          | R² = .464 | R² = .427 | R² = .471 | R² = .616 | R² = .331 | R² = .776 |

Highlighted box denotes significant variable.
### Table 3
Summary of Second Run Regression Results - Significant Variables Only

*Estimated Coefficient (statistic in parenthesis)*

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Coleridge Park Homes</th>
<th>Holloway Terrace</th>
<th>Pacific Oaks</th>
<th>Magnolia Plaza</th>
<th>Gateway Commons</th>
<th>Heritage Park</th>
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</thead>
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<tr>
<td>EMile</td>
<td></td>
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<td>75149.71</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QMile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>HMile</td>
<td></td>
<td></td>
<td></td>
<td>22534.88</td>
<td>-49519.09</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2.971)</td>
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<tr>
<td>AGE</td>
<td></td>
<td></td>
<td></td>
<td>-506.40</td>
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<td>(-2.744)</td>
<td>(2.202)</td>
<td>(-11.435)</td>
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<tr>
<td>BEDROOMS</td>
<td>-8698.09</td>
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<td></td>
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<td>-20507.46</td>
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<tr>
<td></td>
<td>(-2.249)</td>
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<td>(-3.805)</td>
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<tr>
<td>BATHS</td>
<td>17911.45</td>
<td>16394.34</td>
<td>24434.63</td>
<td>19296.98</td>
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<td></td>
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<tr>
<td></td>
<td>(2.649)</td>
<td>(3.282)</td>
<td>(4.583)</td>
<td>(2.101)</td>
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<tr>
<td>lotsize</td>
<td>26.55</td>
<td>11.48</td>
<td>-0.92</td>
<td>5.15</td>
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<tr>
<td></td>
<td>(6.323)</td>
<td>(5.280)</td>
<td>(-5.421)</td>
<td>(4.228)</td>
<td></td>
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<td>SQFT</td>
<td>103.09</td>
<td>94.43</td>
<td>60.86</td>
<td>58.90</td>
<td>132.72</td>
<td>94.25</td>
</tr>
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</table>

| Adjusted R² Value    | R² = .467            | R² = .426        | R² = .466    | R² = .623      | R² = .325      | R² = .775    |

These variables were not shown to be significant in the first regression run and thus were not considered in this second analysis.
should be stronger for homes nearer the project. Clearly this is not the case for either Magnolia Plaza or Gateway Commons.

Model Set 2: Insignificant Variables Excluded

The second set of regression models (shown in Table 3) includes only those independent variables found to be statistically significant in the first set of regression runs. Coleridge Park Homes shows a final $R^2$ value of .47; however, none of the variation in home sales price ($CPRICE90$) is related to proximity to a BRIDGE project. Holloway Terrace shows a final $R^2$ value of .43; as with Coleridge Park Homes, proximity to a BRIDGE affordable housing development is not related to home sales price fluctuations. For Pacific Oaks ($R^2 = .47$), the distance variable $EMile$ does explain some of the variation in $CPRICE90$. However, the estimated coefficient is positive ($75,149.71$), not negative as perceived by many homeowners. Analysis of Magnolia Plaza ($R^2 = .62$) and Gateway Commons ($R^2 = .33$) also shows that the variation in $CPRICE90$ can be partially explained by one of the location variables ($HMile$). In the case of Magnolia Plaza, the estimated coefficient was positive ($22,534.88$), suggesting that proximity to a BRIDGE project may actually raise property value. In the case of Gateway Commons, however, the estimated coefficient was a negative value ($-49,519.71$). It is difficult to state that this one instance of a negative relationship between distance and price supports the perception that proximity to an affordable housing development leads to declining property values, as the two more proximate distance variables, $QMile$ and $EMile$, were not significant. The final development, Heritage Park, showed an $R^2$ value of .77541 with no variation in $CPRICE90$ explained by the three distance variables.

CONCLUSIONS and POLICY IMPLICATIONS

The results of the foregoing regressions indicate that single-family home values in the neighborhood of BRIDGE Housing are not adversely affected by their proximity to those projects. Indeed, in some cases, home values are actually higher the nearer a home is to a BRIDGE project.

This study demonstrates that well-designed, affordable housing projects need not adversely affect neighboring property values. Does this mean that property values are never impacted by neighboring projects? Not at all. Rather, this study suggests that the income characteristics of the residents of such projects are far less important than the characteristics of the projects themselves. Poorly designed, poorly maintained, and poorly managed projects can affect neighborhood property values—regardless of whether they are affordable or market-rate. Conversely, well-designed, well-managed, and well-maintained projects should not affect neighborhood property values, regardless of whether they are affordable or market-rate. The results of this study are necessarily limited to the six BRIDGE projects. Nevertheless, this study will hopefully encourage local governments and housing advocates to undertake similar analyses.
with the ultimate goal of providing a comprehensive picture of the relationships between affordable housing and property values.

For many people, buying a home is the largest investment they will make, and the last thing they want is a neighboring project to devalue their investment. This analysis has provided strong evidence that residential neighborhoods need not suffer from the development of well-designed and well-maintained affordable housing projects. A more difficult task will be in convincing communities of this conclusion. Solving the affordable housing project will require time and money. It will also require ongoing out-reach efforts to convince neighborhoods that residents of affordable housing can be good neighbors.
NOTES

1 Affordable housing is defined by the U.S. Government (HUD) as housing (rental or ownership) which requires 30 percent or less of annual household income. The San Francisco Bay Area is typically rated by the National Association of Realtors and other national housing associations as the least affordable housing market in the country based on the increasing gap between income levels and housing costs.

2 I assume that the design quality of the six BRIDGE affordable housing developments analyzed in this study is equivalent. All six developments are affordable to low-income persons — those persons with household incomes equal to 60-80 percent of median family income.

3 Li and Brown, "Micro-Neighborhood Externalities and Hedonic Housing Prices." In this article, Li and Brown considered the influence of micro-neighborhood factors such as visual quality, noise pollution, or proximity to industries, thruways, and commercial establishments, on housing prices to show that a bias is created by these externalities that can be shown in lower house prices.

4 For more information relating to all BRIDGE Housing Corporation affordable development characteristics, please see the 1990-1991 BRIDGE Annual Report.
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The Institute of Urban and Regional Development (URD) serves faculty and students of the University of California at Berkeley, conducting research into processes of urban and regional growth and decline, and effects of governing policies on patterns of development. Institute research is supported by federal and state government agencies and by private foundations. Current research is directed to simulation of urban growth and land use; sustainable development; information technology; disaster preparedness; social and economic impacts on urban life, including defense conversion in California, evolving patterns using Geographic Information Systems; social policy and urban poverty; transportation alternatives, including high-speed rail and transit-based land development; and improvements in methods of analysis, evaluation, and planning.

The Institute maintains Berkeley's Environmental Simulation Laboratory (ESL), where potential effects of major urban development projects are assessed using computer-aided design and three-dimensional models to project environmental impacts of development scenarios. Research into international economic policy issues takes place at the Berkeley Roundtable on the International Economy (BRIFE). The National Transit Access Center (NTRAC) evaluates impacts of transit usage of residential, mixed-use, and joint development around urban rail transit stations throughout the country. The University-Oakland Metropolitan Forum brings together local community and business leaders in a partnership with the University to improve the quality of life in the Oakland area.

The Institute publishes working papers describing current research projects and other topics of interest to faculty associates and visiting scholars. A catalog of publications, a newsletter, and an annual report are available on request.

Institute of Urban and Regional Development
316 Wurster Hall
University of California
Berkeley, California 94720
(510) 642-4874; (510) 643-9556 FAX