

# HOPE VI and Neighborhood Economic Development: The Importance of Local Market Dynamics

Sean Zielenbach  
Woodstock Institute

Richard Voith  
Econsult Corporation

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## Abstract

*This study examines the extent to which HOPE VI redevelopments have had positive spillover effects on their surrounding neighborhoods. It examines four such redevelopments—two in Boston, Massachusetts, and two in Washington, D.C.—and documents the changes that have taken place in property values, violent crime patterns, and resident incomes in surrounding neighborhoods since the redevelopment began. The study assesses the extent to which those changes can be attributed to the public housing redevelopment.*

*The study finds that, for the most part, the HOPE VI redevelopments have had positive, statistically significant effects on economic conditions in their surrounding neighborhoods. The extent of the spillover neighborhood effects has depended, in part, on the location and market dynamics of the surrounding community. The economic effects of a HOPE VI redevelopment have tended to be greater in communities where there were other development pressures and existing, stable institutions. In the absence of these factors, the positive effects of HOPE VI have been less pronounced.*

## Introduction

This study examines the extent to which HOPE VI redevelopments have had positive spillover effects on their surrounding neighborhoods. An extensive literature documents the negative effects of many traditional public housing complexes on their surrounding neighborhoods, including low property values and high levels of crime (Massey and Kanaiaupuni, 1993). Research on the neighborhood effects of HOPE VI public housing redevelopment efforts, in contrast, frequently has shown much more positive effects.<sup>1</sup> These studies have shown that the neighborhoods surrounding HOPE VI properties are frequently characterized by lower crime, higher property values, and higher resident incomes than similar communities without such redevelopment. Yet none of the HOPE VI studies to date has comprehensively evaluated the extent to which the observed neighborhood improvements have resulted from the HOPE VI investment. Are the observed correlations the result of preexisting positive trends within the community, or was the HOPE VI investment a critical catalyst for change? What would have happened to the community in the absence of HOPE VI?

To address these questions, the study focuses on the economic spillover benefits of HOPE VI redevelopments in selected neighborhoods in Boston, Massachusetts, and in Washington, D.C.<sup>2</sup> It documents the changes that have taken place in local property values, violent crime patterns, and resident incomes before and after the redevelopments, and it assesses the extent to which the changes can be attributed to HOPE VI. It is important to note that the HOPE VI redevelopments do not take place in isolation. Most occur in conjunction with other efforts to improve the communities. It could easily be argued that existing neighborhood development activity drove the selection of certain HOPE VI sites and that the HOPE VI redevelopment in these cases has been more of an augmenting than a catalyzing factor for local change. The study does not attempt to distinguish the relative importance of each particular factor; rather, it assesses the role that HOPE VI and associated programs have played in bringing about local change.

The study finds that, for the most part, the HOPE VI redevelopments have had positive, statistically significant effects on economic conditions in their surrounding neighborhoods. The extent of the neighborhood spillover effects has depended, in part, on the location and market dynamics of the surrounding community. The economic effects of a HOPE VI redevelopment have tended to be greater in communities where there were other development pressures and existing, stable institutions. In the absence of these factors, the positive effects of HOPE VI are less pronounced.

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<sup>1</sup> Zielenbach (2003a, 2003b), Bair and Fitzgerald (2005), Turbov and Piper (2005), and Levy and Gallagher (2006) all provide evidence of positive neighborhood spillover benefits associated with HOPE VI developments.

<sup>2</sup> This article is based on a six-city HOPE VI economic cost-benefit analysis sponsored by the John D. and Catherine T. MacArthur Foundation and the Council of Large Public Housing Authorities. Parts of it are adapted from a forthcoming article in *Housing Policy Debate*.

## **Approach, Methods, and Site Selection**

Community development practitioners and policymakers have multiple reasons to expect HOPE VI redevelopments to have positive neighborhood effects. The sheer size of many of the targeted properties, along with the substantial amount of public and private money earmarked for their improvement, allow for creative, comprehensive planning and better integration with the surrounding areas. Redevelopment itself can lead to improved physical design of the properties, which can facilitate greater social interaction among residents of the properties and those in the surrounding neighborhood. Such interactions can help build greater trust and social capital, which contributes to greater collective action, reduced crime, and greater economic stability (Fukuyama, 1995; Morenoff, Sampson, and Raudenbush, 2001; Saegert, Winkel, and Swartz, 2002). HOPE VI communities are intended to be mixed-income developments, and the presence of higher income individuals tends to be associated with higher rates of homeownership, greater social organization, reduced crime, and general community stability (Joseph, 2006). The development and renovation of housing also tends to have positive effects on nearby property values.<sup>3</sup>

In examining neighborhood change, the study focuses on three key indicators: changes in residential property values, changes in crime rates, and changes in household incomes. Elements of the HOPE VI program are likely to affect each of these indicators. Although the price of a home reflects the characteristics of the property, it also partly reflects the value that individuals place on the surrounding neighborhood. To the extent that a neighborhood improves—or the perception of the neighborhood improves—that improvement should be reflected in higher sales prices for homes.

As noted previously, public housing developments have frequently been associated with high rates of crime and violence—problems that have frequently seeped into the surrounding neighborhoods, reduced the quality of life for local residents, and decreased the chance of additional investment in the area. In addition to redeveloping the properties in ways that are more conducive to public safety, the HOPE VI intervention provides an opportunity for local housing authorities to impose rigorous screening criteria on new or returning tenants. Such opportunities increase expectations for a noticeable reduction in violent crime in the areas surrounding the redeveloped properties. Finally, one goal of the original HOPE VI legislation was to reduce the concentrated poverty prevalent in most of the severely distressed public housing properties. Reducing the concentration of poverty, coupled with improving public safety, could attract more moderate- and middle-income residents to the surrounding neighborhoods. Such an income mix would be more likely to attract and sustain additional private investment and thus better integrate the neighborhood into the regional economy.

For each of the three key indicators (changes in residential property values, changes in crime rates, and changes in household incomes), we developed interrupted time series statistical models that allowed for changes in levels and trends in the outcome variables before and after the HOPE VI redevelopments. The models control for a variety of regional economic trends and thus measure how the HOPE VI neighborhoods performed relative to their surrounding communities both before

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<sup>3</sup> Goetz, Lam, and Heitlinger (1996); Ding, Simons, and Baku (2000); Schill et al. (2002); and Galster, Tatian, and Accordino (2006) all found positive neighborhood spillover effects associated with renovation investment.

and after redevelopment. If the neighborhood's relative performance improved after HOPE VI redevelopment compared with its relative performance before HOPE VI, the study suggests that the HOPE VI intervention was a significant contributor to that improvement.

The quantitative analyses help identify the relationships between the HOPE VI redevelopments and specific measures of local change, but they provide relatively little insight into the process by which change occurred or the role of other, less easily quantifiable factors in bringing about that change. Because quantitative measures can only hint at the changes in perceptions that typically precede investment decisions, we augmented the quantitative analyses with site visits to the different properties and their neighborhoods and with interviews with individuals knowledgeable about the HOPE VI properties and local community dynamics. Those interviewed included administrators at the respective housing authorities; police officers assigned to the neighborhoods; leaders of neighborhood-based organizations; lenders active in the sampled communities; citywide community development organizations; elected public officials; and heads of relevant city agencies, such as the housing, planning, and economic development departments. We selected the individuals based on recommendations from local housing authority officials and from our own community development contacts in Boston and Washington. Appendix C provides a list of those interviewed.

Although no formal interview protocol was in place, we asked all those whom we interviewed roughly the same questions. We probed their recollections of neighborhood conditions before the HOPE VI redevelopments and asked them to draw comparisons between the dynamics then and now. We asked them to document as best they could the changes that had occurred in the targeted communities and to identify the factors that they thought had contributed to those changes. We asked specifically about the role of the local public housing complex in catalyzing or retarding change. How much of the change might have occurred without any improvement in public housing? What role (if any) did particular organizations and institutions play in changing neighborhood conditions? We also asked certain people to estimate the effects that a similar HOPE VI intervention would have on specific traditional public housing properties located elsewhere in the city.

The analysis examined changes in neighborhoods surrounding four HOPE VI redevelopments—two each in Boston and Washington. In each case, the public housing property in question had become badly deteriorated and functionally obsolete. The two major options were to continue trying to maintain the flawed property as public housing or to embark on a major redevelopment of the site through the HOPE VI Program. Our analysis assumes one of these two options.<sup>4</sup>

We chose two sites in each city to ensure some diversity of neighborhoods. We selected HOPE VI sites based on the recommendations of the Boston Housing Authority (BHA) and the District of Columbia Housing Authority (DCHA), with the assistance of the Council of Large Public Housing Authorities. We required that sites be family developments with at least 100 units and whose redevelopment had been largely completed by 2004, in the interest of selecting large enough properties to have meaningful spillover effects and to have some post-completion data with which to measure those effects. Because few sites met these criteria, we did not have the opportunity

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<sup>4</sup> A third alternative might have been to sell the properties to private developers for them to use as they saw fit (with housing vouchers being given to the affected public housing residents). In light of the federal policy at the time to keep public housing units on the sites, this sale option was not realistic.

to try to control for neighborhood characteristics, except to avoid sites whose neighborhoods overlapped. We recognize the potential biases associated with this selection approach, but we note that the distribution of HOPE VI grants has itself often been biased in favor of communities whose characteristics enhance the likelihood of local revitalization.

The remainder of this article is structured as follows. The next section provides some background on each of the selected HOPE VI sites, situating them in their local context. The background is followed by more detailed discussions of our methodology and findings regarding effects on property values, crime rates, and resident incomes in the neighborhoods surrounding the HOPE VI sites. We seek to interpret the findings through more detailed contextual analyses and conclude with some recommendations for maximizing the neighborhood economic effects of future HOPE VI projects.

## **HOPE VI Sites**

The analysis in this study focuses on selected public housing sites in Boston and Washington (exhibits 1 and 2), two cities that have ranked statistically among the strongest economies and have endured some of the tightest real estate markets in the country throughout much of the past 15 years. Even historically distressed communities in these cities experienced multiple years of double-digit gains in property values.

### **Boston: Mission Main**

Built in 1940, Mission Main initially consisted of 1,023 units spread among 39 three-story buildings on 22 acres. By the early 1990s, Mission Main ranked as the most troubled property in the BHA portfolio. Fully 74 percent of people who were offered units in the complex refused them, and 93 percent of all new tenants moving into the property in 1992 were formerly homeless individuals. By 1993, only 680 of the complex's then 822 units were occupied, and 68 percent of resident households had no earned income. Drug dealers frequently operated out of the vacant units, and the property featured the largest open-air heroin market in New England. The BHA's 1993 property assessment found that 56 percent of the complex's buildings were in poor condition, and the site suffered from outdated drainage, sewer, plumbing, and electrical systems.<sup>5</sup>

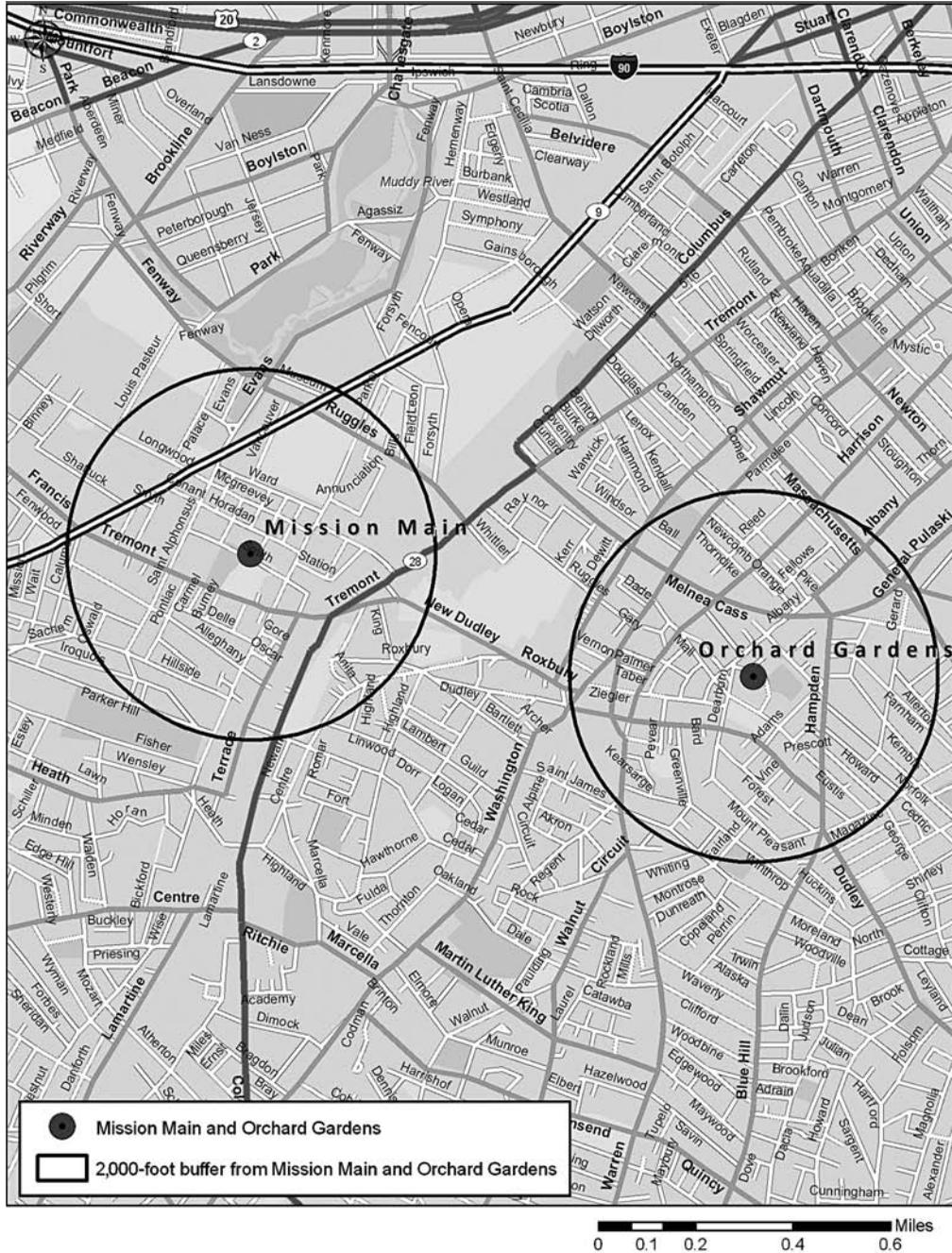
At the same time, Mission Main occupied increasingly choice real estate. The Northeastern University and Wentworth University campuses are in the immediate area, and the Longwood Medical Center sits a couple of blocks to the north. Two streetcar and subway lines are within easy walking distance. To the south lies Mission Hill, a historically stable, middle-class community. Mission Main was the only part of the community that had not seen notable development, and its problems were hindering the future growth of the area. In 1993, the BHA applied for and received a \$49.9 million HOPE VI grant to redevelop Mission Main in a way that would integrate it more with the surrounding area. By the time the three-stage project was finished in 2002, the site contained 535 apartments in a mix of midrise and garden-style apartments. Of these units, 444 (83 percent) are reserved for public housing residents. The BHA rents the remainder to the general public at market rates.

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<sup>5</sup> These data are from the BHA's 1993 HOPE VI application and from interviews with BHA staff members.

**Exhibit 1**

Location of Selected Boston HOPE VI Sites



### **Boston: Orchard Gardens (Formerly Orchard Park)**

The Orchard Park complex was located about 1 1/2 miles east of Mission Main, a few blocks from the once-thriving Dudley Square commercial center. Built in the 1940s, the property had been hit hard by the riots that followed the assassination of Martin Luther King, Jr. By the early 1990s, it was widely described as “God-awful,” and it was the second-worst property in the BHA’s portfolio. Darrell “God” Whiting, a vicious drug dealer, effectively controlled the complex. Conditions were so bad that 89 percent of the individuals offered a chance to move off the BHA waiting list, which then included 15,000 households, and into Orchard Park chose to move to the end of the waiting list rather than accept the Orchard Park placement.<sup>6</sup> BHA staff members noted that people preferred living in their cars to living in Orchard Park.

The Orchard Park Tenants Association had pressured the BHA for years to improve the complex, and the BHA finally began modernizing it in 1993. In 1996, the BHA received a \$30 million HOPE VI grant for more comprehensive site redevelopment. The BHA kept the renovated buildings, but it demolished the rest and built new units in a series of garden-style apartments and rowhouses, renaming the property Orchard Gardens. The process involved decreasing the site’s population density by reducing the total number of units from 711 to 446. All the onsite units are rentals, with 85 percent reserved for public housing tenants and the remainder designated as market-rate apartments. An additional 45 homeownership units have been completed off site, a few blocks away. The redevelopment also involved the construction of an elementary school at the edge of the property.

### **Washington: The Townhomes on Capitol Hill (Formerly Ellen Wilson Dwellings)**

The Ellen Wilson Dwellings complex was built in 1941 on 5.3 acres on the southeast edge of the Capitol Hill neighborhood in Washington, D.C. The site contained 134 public housing units in two- and three-story, walkup apartment buildings that contrasted sharply with the neighborhood’s brick townhouses. Conditions on the site deteriorated over time, and, by the mid-1980s, the area was distinctly separate—visually and economically—from the surrounding Capitol Hill community. Conditions at the Ellen Wilson were so bad that Don Denton, a local realtor, considered its residents “really hostages ... living in hell on earth.”

The District of Columbia Department of Public and Assisted Housing (DPAH), the predecessor of DCHA, designated the Ellen Wilson Dwellings for comprehensive modernization in the late 1980s and relocated all the residents in 1988. The estimated renovation costs exceeded available funding, however, and the city was unable to convince congressional appropriators to allocate the additional funds. As a result, the Ellen Wilson sat vacant for 8 years, attracting prostitutes, drug dealers, and squatters. Street robberies, car thefts, and panhandling became commonplace in the area surrounding the site (Wheeler, 1998). Exacerbating the problem was the deterioration of the Arthur Capper public housing complex across the nearby Southwest Freeway; by the early 1990s, that complex was about 60 percent vacant and largely boarded up. The reconstitution of DPAH as DCHA (under a court-appointed receiver), coupled with a \$25 million HOPE VI grant due to the intervention of then U.S. Housing and Urban Development (HUD) Secretary Henry Cisneros, finally resulted in the demolition of the Ellen Wilson Dwellings in 1996.

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<sup>6</sup> See the BHA’s HOPE VI application for Orchard Park.

**Exhibit 2**

Location of Selected Washington HOPE VI Sites



The entire redeveloped site, named the Townhomes on Capitol Hill, has housing for owner occupants. Of the 147 units on the site, 134 are affordable cooperatives and 13 are market-rate homes. About one-third of the cooperative units are reserved for public housing residents, another one-third are set aside as affordable units (for households making 80 percent or less of the metropolitan area median income [AMI]), and the remaining one-third are for moderate-income households (those earning up to 115 percent of the AMI). The goal of the redevelopment, unique among its HOPE VI contemporaries, was that resident ownership would result in better property maintenance and thus fewer problems for the neighborhood. The Townhomes complex is entirely self-sufficient and does not require any ongoing government subsidies.

### **Washington: Wheeler Creek Estates (Formerly Skytower and Valley Green)**

The Wheeler Creek Estates complex sits on the site of the former Skytower and Valley Green developments in the Washington Highlands neighborhood in southeast Washington. Both original properties consisted of three-story, walkup buildings that had been designed with the institutional starkness common in 1960s-era public facilities. The 312-unit Valley Green complex had been built in 1961 to house people displaced by slum clearance and highway construction projects elsewhere in the District of Columbia. Many of those individuals were then working at the nearby military installations but moved away when the bases closed later in the decade. With fewer working tenants, conditions at Valley Green began a steady decline. Vandalism plagued the site throughout the 1980s, and maintenance orders overwhelmed management. Eventually, DPAH decided to board up damaged units when tenants moved out. The vacancies offered havens for criminals, however; by the late 1980s, Valley Green had become a major drug market, riddled with violent crime. Conditions worsened so much that, by 1994, only eight families remained at the property (Loeb, 1997; Knox, 2007).

The adjacent Skytower property, developed at roughly the same time as Valley Green, was privately owned and managed. Containing 91 units, Skytower had received federal subsidies during its construction, housed only Section 8 voucher recipients, and continued to be insured by HUD. Unfortunately, the property suffered from very poor management. Property upkeep was minimal, at best. By 1994, the complex had widespread internal water damage, had no emergency lighting or fire extinguishing systems, and was infested with rats. Crime was as bad at Valley Green, if not worse. In a single month in 1993, 16 people were killed and 22 were assaulted in the immediate vicinity of Skytower. HUD foreclosed on the property a few years later, and DCHA acquired it as part of a broader strategy to redevelop Valley Green.

DCHA obtained a \$20.3 million HOPE VI grant in 1997, demolished both the Skytower and Valley Green complexes, and created the 314-unit Wheeler Creek Estates. The redeveloped site contains 148 public housing units (48 for families and 100 for seniors), 32 market-rate rental units, and 134 homeownership units. It also features a 13,000-square-foot community center and a daycare center. Of the 134 homeownership units, 30 were set up as lease-to-purchase homes for former public housing residents and 11 were purchased outright (for \$115,000 each) by other public housing households under an arrangement in which the household was responsible for a first mortgage of \$45,000 and DCHA paid a second mortgage of \$70,000 if the owner resided in the home for 20 years. The remaining 93 homes were sold at market rates to the general public. The development, which was completed in 2000 and fully occupied in 2001, earned HUD's Best Practices Award in 2000 and an award from the National Association of Home Builders in 2002.



**Exhibit 3**

HOPE VI Neighborhood Impact Areas (2 of 2)

Orchard Gardens



Townhomes on  
Capitol Hill



Wheeler Creek Estates



## Property Effects Estimation Methods

To measure the effects of HOPE VI redevelopment on neighborhood home prices, we employed a hedonic interrupted time series model similar to that used by Galster, Tatian, and Smith (1999). The empirical specification allows for identifying price levels and trends in the impact areas of both HOPE VI and traditional public housing, relative to those in areas with no public housing. The specification further allows the price levels and trends in HOPE VI neighborhoods to diverge before and after the HOPE VI investment. In this context, we assumed that the counterfactual—what would have happened with no HOPE VI redevelopment—is the continued deviation in price trends in the HOPE VI area from those in the overall sample.

Our multivariate regression model controls for the year a home was sold, its size, its distance to the central business district, its location relative to the HOPE VI site and to traditional public housing (within or outside of a 2,000-foot radius of each), and the housing price trends in the HOPE VI and surrounding ZIP Codes both before and after the HOPE VI intervention.<sup>7</sup> The specification included indicator variables for each year and year indicators that interacted with a variable indicating the presence of traditional public housing in the neighborhood. These variables allowed us to trace the overall house price trends and measure the difference between the overall price trend and the trend in areas with traditional public housing. We also included a variable that indicated whether the sale was in a HOPE VI neighborhood before redevelopment began, and its interaction with a linear time trend to trace pre-HOPE VI trends. Similarly, we included a post-HOPE VI variable and tracked its interaction with time to capture the changes in price levels and trend from the pre-HOPE VI period.

One challenge is determining the appropriate intervention point, the moment at which investors perceived a change in the neighborhood. In theory, that tipping point could be when the redevelopment was announced, when demolition of the former property began, when tenants began reoccupying the redeveloped site, or when the redevelopment was completed. Reasonable arguments can be made for choosing any of these times, and no moment stands out as the most likely tipping point. Thus for each development, we therefore assessed change in appreciation trends around each development, using as intervention points the years marking the start of demolition, first occupancy, and project completion, and then focused on the model that best fit the data.<sup>8</sup>

## Estimated Property Value Effects

Exhibit 4 shows the key estimated parameters for the four HOPE VI sites.<sup>9</sup> The dummy coefficients represent the Y-intercept for the trend lines before and after redevelopment, and the trend coefficients represent the slope of those lines. The neighborhoods encompassing both Mission Main and Orchard Gardens experienced positive, statistically significant differences in price trends subsequent to the HOPE VI redevelopment. Before the demolition of the former public housing

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<sup>7</sup> Appendix A includes the model and its empirical specifications.

<sup>8</sup> We explored, but generally were unable to distinguish, separate effects for the redevelopments' announcement, demolition, move-in, and completion dates.

<sup>9</sup> Appendix B shows full regressions.

**Exhibit 4**

**Estimated Pre- and Post-HOPE VI Property Value Coefficients**

	<b>Mission Main</b>	<b>Orchard Gardens</b>	<b>Townhomes on Capitol Hill</b>	<b>Wheeler Creek Estates</b>
Pre-HOPE VI dummy	- 0.005 (- 0.04)	- 0.313* (- 2.12)	0.243* (2.47)	0.145 (1.32)
Pre-HOPE VI trend	- 0.082* (- 3.10)	- 0.092* (- 2.52)	0.018 (0.64)	- 0.023 (- 0.91)
Post-HOPE VI dummy	- 0.64* (- 3.76)	- 1.278* (- 5.62)	0.184 (1.55)	0.512* (2.37)
Post-HOPE VI trend	0.054* (4.26)	0.062* (- 3.76)	0.016 (1.69)	- 0.037* (- 2.22)

\* Statistically significant at the .05 level.

Note: t-statistics are in parentheses.

properties, surrounding property values were decreasing at rates of 8.2 and 9.2 percent, respectively, relative to the whole sample. After demolition, values surrounding the two sites increased at rates of 5.4 and 6.2 percent, respectively.

The story in Washington is more complicated. Residential sales prices in the area surrounding the Townhomes on Capitol Hill rose continuously during the sample period, and home prices near the HOPE VI property tended to rise more quickly than prices elsewhere in the area. Yet the price trends showed neither a sustained difference before and after the HOPE VI investment (as evidenced by the similar pre- and post-HOPE VI trend coefficients) nor any significant change in the underlying price level.<sup>10</sup> In contrast, we found Wheeler Creek to have had a positive effect on neighborhood property prices, as evidenced by the post-HOPE VI dummy coefficient of 0.512—a statistically significant increase (at the .10 level) from the pre-HOPE VI level. No significant difference occurred in the price trends before and after redevelopment, however; both rates were slightly more negative after the HOPE VI investment. The increase in price levels in the Wheeler Creek neighborhood more than offset the slightly increased negative price trend.

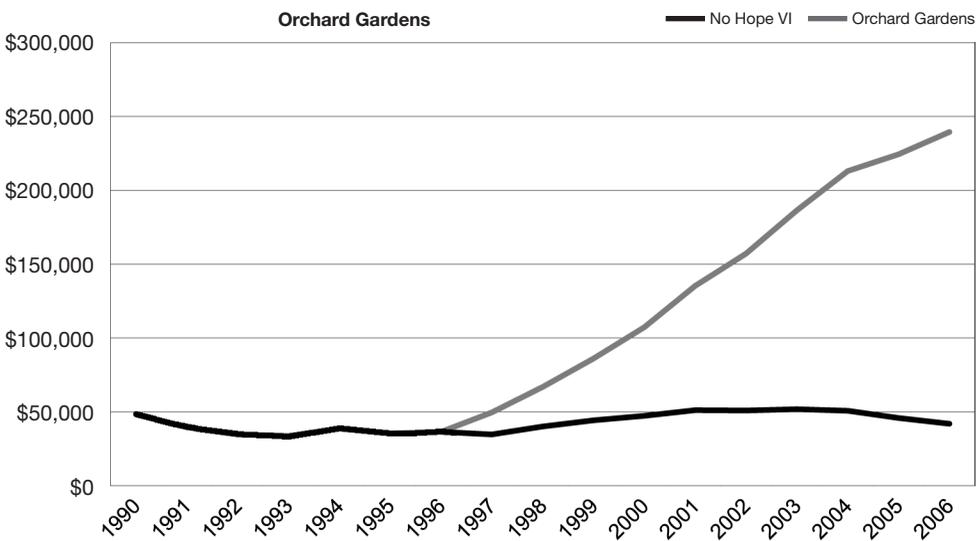
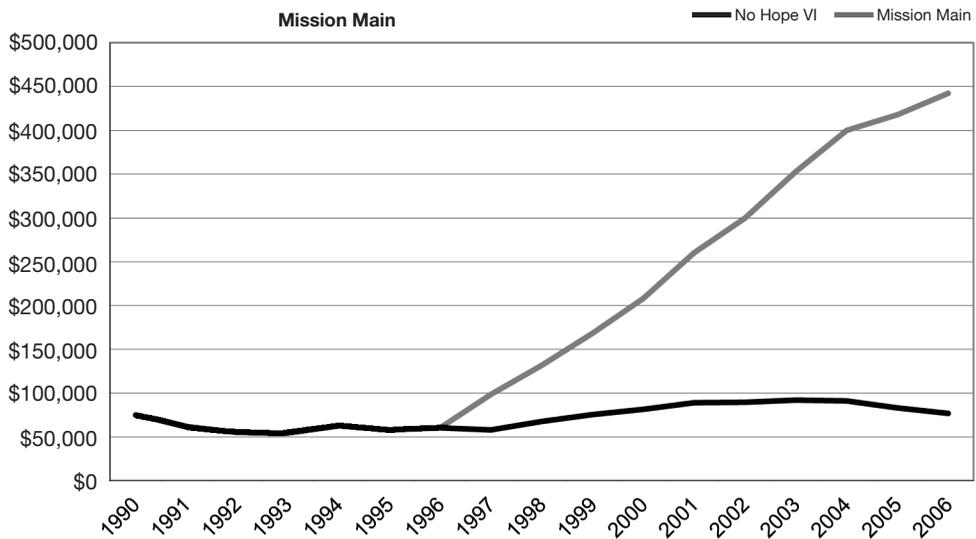
The coefficients displayed in exhibit 4 can be used to simulate the effects of the HOPE VI interventions and thus estimate the effects of the redevelopments on property values. Exhibit 5 shows the model's estimate of price trends in each of the four neighborhoods, with and without the redevelopment. The estimated trend without redevelopment assumes that the neighborhood's prices would have maintained their same rate of appreciation relative to the parts of the selected ZIP Codes with no public housing. We estimate that the HOPE VI interventions contributed to an average property appreciation of more than \$365,000 in the area surrounding Mission Main and of nearly \$198,000 in the Dudley Square area. These gains translated into aggregate property value increases of \$107 million and \$58 million, respectively. The initial jump in prices associated with Wheeler Creek's redevelopment translated into an average gain of slightly more than \$30,000 per

<sup>10</sup> We used demolition as the intervention point for the Townhomes redevelopment. The findings did not change when we used other intervention points or smaller radii to define the impact area.

home, as of 2006, relative to the estimated prices in the absence of redevelopment. The aggregate impact of the Wheeler Creek redevelopment on property values in the surrounding Washington Highlands area was \$14 million. Because there was no statistically significant difference in Capitol Hill price amounts or trends before and after the redevelopment of the Townhomes, we cannot attribute any property value changes to that HOPE VI intervention.

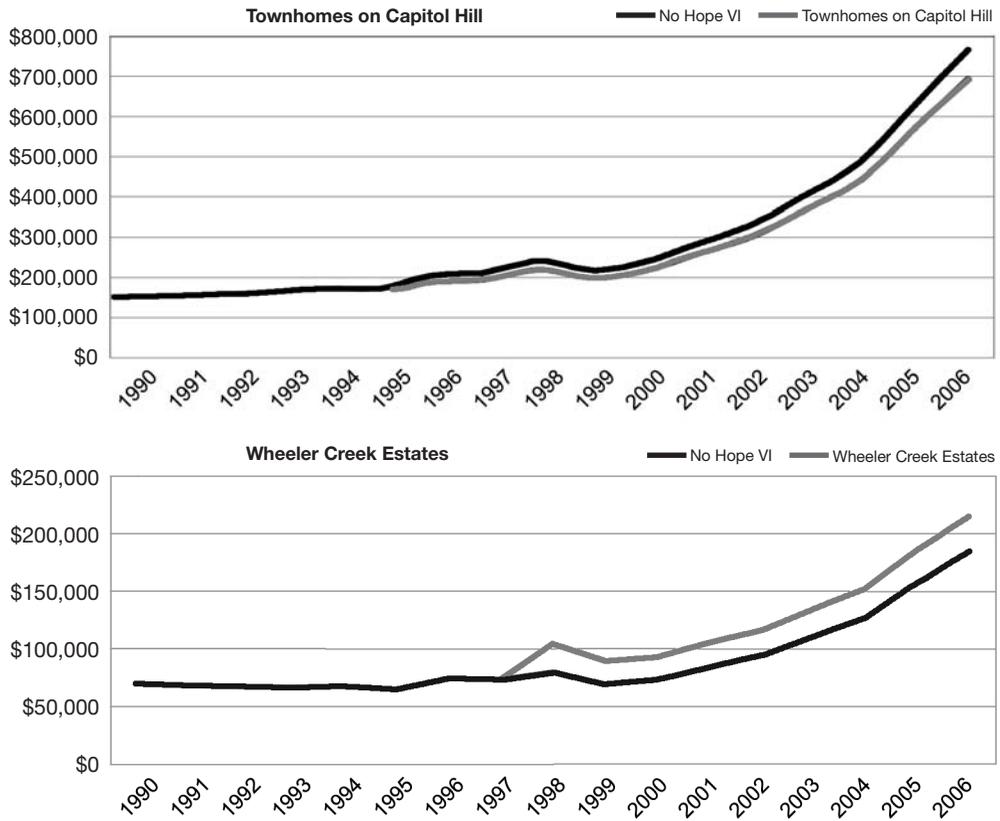
**Exhibit 5**

**Estimated Property Value Impacts of HOPE VI Redevelopments (1 of 2)**



## Exhibit 5

### Estimated Property Value Impacts of HOPE VI Redevelopments (2 of 2)



## HOPE VI Effects on Crime

The HOPE VI redevelopment process involved physically redesigning the properties to make them more conducive to public safety. The housing authorities also committed to improved policing of the sites and stricter screening of potential residents for past criminal behavior. We would expect these changes to contribute to reductions in crime rates both on site and in the surrounding neighborhoods. This section explores that hypothesis.

### Crime Data

We obtained data on Part I crimes (homicides, rapes, aggravated assaults, robberies, burglaries, larcenies, motor vehicle thefts, and arson) from the Boston and District of Columbia police departments. Boston's data were available at the police reporting area level back to 1990. We compared crime trends in the areas containing and closely surrounding the redeveloped sites with trends in the areas surrounding traditional public housing as well as in the city as a whole. The District of Columbia Metropolitan Police Department (MPD), however, had data going back only to 1998,

and it had changed the boundaries of crime-reporting districts in the early 2000s. We therefore relied on data from DCHA<sup>11</sup> specific to individual public housing complexes in the city, which we were able to piece together from 1995 to 2005. Although the data for Washington are not as complete as those for Boston, they nonetheless provide a reasonable sense of the extent of change that has taken place in the selected areas.

## **Crime Effect Estimation Methods**

As with the property value analysis, we are ultimately interested in the difference between the observed crime rates around the HOPE VI redevelopments and the rates that would have occurred in the absence of HOPE VI investment. In both cities, we estimated the counterfactual by assuming that violent crime rates in the HOPE VI areas would have tracked those in other traditional public housing neighborhoods had the redevelopments not taken place. We therefore calculated crime rates for traditional public housing areas before and after demolition of the HOPE VI sites and applied the post-demolition rate in those areas to the pre-development rate at the HOPE VI property to establish the counterfactual.

## **Estimated Crime Effects**

Exhibit 6 displays the actual numbers of Part I crimes committed near traditional public housing sites and at HOPE VI sites in Boston and Washington in the years before the HOPE VI interventions and also shows the actual numbers at the sites in the years following re-occupancy. It compares the actual figures with the estimated numbers of violent crimes that would have taken place at the HOPE VI sites in the absence of redevelopment.

Crime rates in three of the four HOPE VI sites declined. In Boston, violent crime in the Mission Main and Orchard Gardens neighborhoods declined by 51.5 and 66.2 percent, respectively. In Washington, violent crime in the Townhomes area fell by 75 percent. In each of these cases, the decline in the HOPE VI neighborhoods far exceeded the drop in violent crime in the neighborhoods with traditional public housing sites. Our interrupted time series model indicates that for these three areas a decline of at least 48 percent occurred in violent crime relative to the estimated crimes that would have occurred in the absence of the HOPE VI redevelopments. Only in the Wheeler Creek area did we observe higher crime rates after redevelopment than we would have expected in its absence. Although the number of crimes in the Wheeler area after redevelopment was lower than the number before, the decline was not as great as that for other public housing sites in the District of Columbia during the study period.

It is quite possible that larger declines in crimes occurred than we have estimated in the areas surrounding both Washington developments. Whereas the average pre-HOPE VI crime figures for Boston included figures from 1993 to the year of demolition, crime data for the Washington sites

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<sup>11</sup> Unfortunately, these data do not contain a breakdown of the types of crimes committed except at the aggregate level (all public housing sites); we therefore estimated the types of crime committed at the individual site level based on the proportion of those committed at the aggregate level.

**Exhibit 6**

**Expected and Actual Neighborhood Violent Crime Reductions**

	Average Annual Crimes in Years Before HOPE VI	Estimated Subsequent Average Annual Crimes in the Absence of HOPE VI	Actual Average Annual Crimes After Redevelopment	Percent Change Before and After Redevelopment	Estimated Percent Change Resulting From HOPE VI Redevelopment
Mission Main	441	414	214	-51.5	-48.3
Traditional public housing—Boston	66	NA	62	-6.1	NA
Orchard Gardens	287	265	97	-66.2	-63.4
Traditional public housing—Boston	67	NA	62	-7.5	NA
Townhomes on Capitol Hill	44	27	11	-75.0	-59.3
Traditional public housing—Washington	67	NA	41	-38.8	NA
Wheeler Creek Estates	27	19	20	-25.9	5.3
Traditional public housing—Washington	57	NA	40	-29.8	NA

NA = not applicable.

were available only back to 1997. We therefore averaged the number of crimes in the Townhomes and Wheeler Creek areas from 1997 to 1999 and from 1997 to 2000, respectively. These times coincided with the HOPE VI construction periods when few, if any, residents were on site. We would therefore expect the averages for these periods to be lower at the HOPE VI sites than at traditional public housing sites with large numbers of residents.

To what extent did the observed declines in Part I crimes around the selected HOPE VI sites simply reflect a displacement of crime from these areas to other parts of the cities? BHA Chief of Police Steve Melia recalled that some of the raids designed to clear what he called the “bad elements” out of the old Mission Main and Orchard Park projects led to complaints of vandalism and property damage from residents along different transit lines spreading out from the public housing sites. Yet the number of such complaints decreased with subsequent raids, and the police’s efforts received widespread public plaudits. DCHA officials could not remember any similarly localized complaints associated with the Ellen Wilson Dwellings or Skytower-Valley Green projects.

Short of comprehensive, in-depth analyses of police reports, arrest records, and crime patterns over time in communities throughout both the Boston and Washington areas, no good way has been found either to prove or to disprove the crime displacement hypothesis. Such analyses were beyond the scope of our study, but we welcome any followup examinations of these issues. The lack of ongoing complaints from particular Boston or Washington communities charging that such HOPE VI-related crime displacement had occurred, coupled with the general decline in crime in the HOPE VI areas and the two cities overall during our study period, leads us to infer that any such displacement was relatively minimal.

## **HOPE VI Effects on Neighborhood Income**

### **Neighborhood Income Data**

Data on resident incomes—particularly at the neighborhood level—are somewhat limited. As a proxy, we have used information on the incomes of individual mortgage applicants in the two cities. The federal Home Mortgage Disclosure Act (HMDA) requires such data to be reported, along with information on the date of the application, the race and ethnicity of the applicant, and the census tract of the subject property. Our analysis focused on applicants hoping to finance properties in the census tracts corresponding to the ZIP Codes for which we obtained property sales data.

From 1992 through 2006, there were 397,222 mortgage applications in the sampled Boston tracts. Of these applications, 84,280 were for properties in census tracts containing traditional public housing, and 686 were for homes in the census tract containing the Orchard Garden HOPE VI site. The limited number of owner-occupied homes in the census tract containing the Mission Main site resulted in very few mortgage applications from that area; we therefore have not attempted to evaluate income changes near that site. During the same period, homebuyers in the selected Washington tracts received 353,309 mortgages—including 55,922 for properties in neighborhoods with traditional public housing and 5,851 for homes in the tracts containing the Townhomes on Capitol Hill and Wheeler Creek Estates. In each of the sampled HOPE VI tracts, the aggregate number of mortgage applications in the study period equaled nearly three-fifths of the number of households

living in the area. Thus the changes in applicants' average incomes are reasonably good proxies for changes in the neighborhoods' average incomes overall.<sup>12</sup>

## Neighborhood Income Effects Estimation Methods

Our statistical analysis of HOPE VI impacts on neighborhood income closely mirrors that of our property value analysis, in that we have used interrupted time series methods to estimate trends in resident incomes in neighborhoods with and without HOPE VI redevelopments. The differences in income levels and trends before and after the HOPE VI investment represent the conceivable influence of HOPE VI.

## Estimated Neighborhood Income Effects

Exhibit 7 displays the key parameters of the neighborhood income models.<sup>13</sup> The estimated effects on income levels and trends are similar for the Boston and Washington sites, with both cities reporting significantly more favorable trends in income levels after redevelopment. The level coefficient was significantly higher for the period before redevelopment, but the trend coefficient was significantly lower. Thus the average mortgage applicant's income was declining before the HOPE VI intervention but rising afterward. As the trend increases over time, the positive effects on incomes could increase significantly.

Exhibits 8, 9, and 10 display the implied path of income change for the neighborhoods encompassing Orchard Gardens, the Townhomes on Capitol Hill, and Wheeler Creek Estates. We compared the implied path with the estimated income path in the absence of the HOPE VI redevelopments. Because the trend in the relative mortgage applicant's income was very negative before the HOPE VI

### Exhibit 7

Estimated Pre- and Post-HOPE VI Neighborhood Income Coefficients

	Orchard Gardens	Townhomes on Capitol Hill	Wheeler Creek Estates
Pre-HOPE VI dummy	-.05 (- .45)	0.087 (1.36)	0.055 (- .58)
Pre-HOPE VI trend	-.041 (- 1.47)	- 0.029 (- 1.36)	- 0.043* (- 2.10)
Post-HOPE VI dummy	- 0.42* (- 3.51)	- 0.89 (- 1.34)	- 0.60* (- 5.93)
Post-HOPE VI trend	.022* (- 2.32)	.013* (2.34)	.014** (1.87)

\*Significant at the .05 level. \*\*Significant at the .10 level.

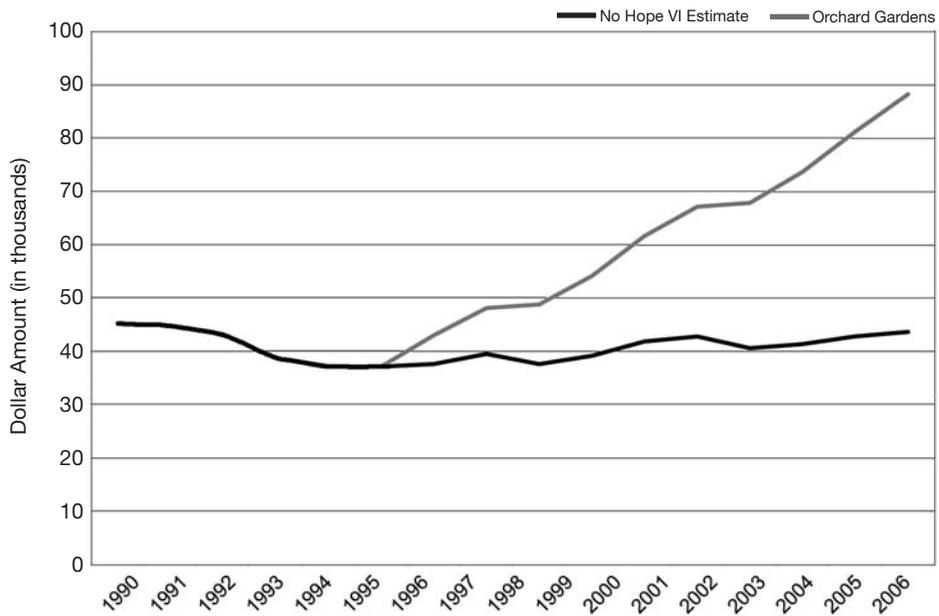
Note: t-statistics are in parentheses.

<sup>12</sup> In estimating the effects on aggregate income, we took into account the number of mortgage applications relative to the number of households. We assumed that the greater the number of loans, the greater the likelihood that the HMDA incomes reflected the broader socioeconomic character of the neighborhood.

<sup>13</sup> The dependent variable is the log of applicant income/1,000. Appendix B shows full regression estimates.

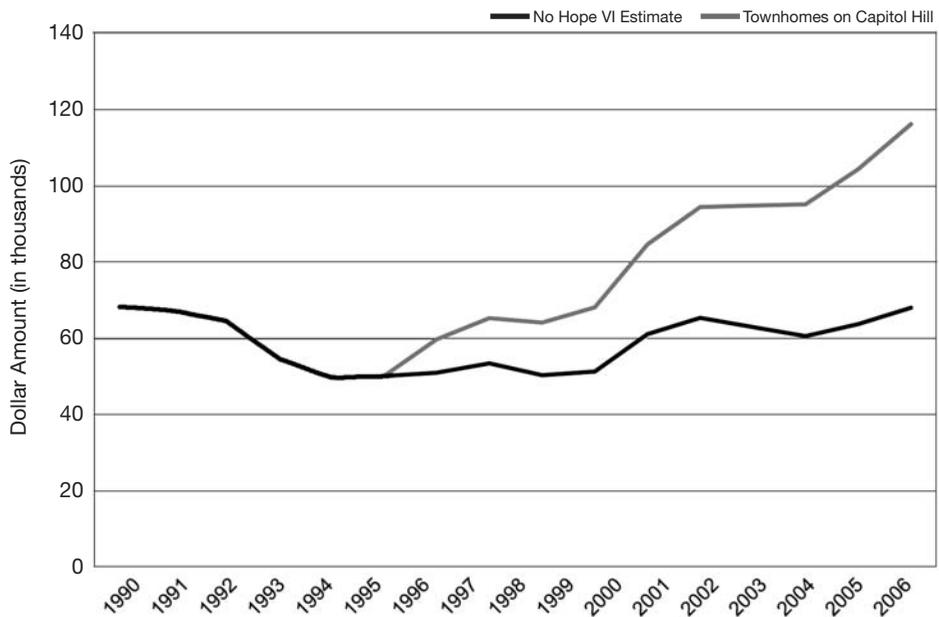
**Exhibit 8**

Estimated Mortgage Applicants' Incomes Before and After Redevelopment in the Orchard Gardens Area



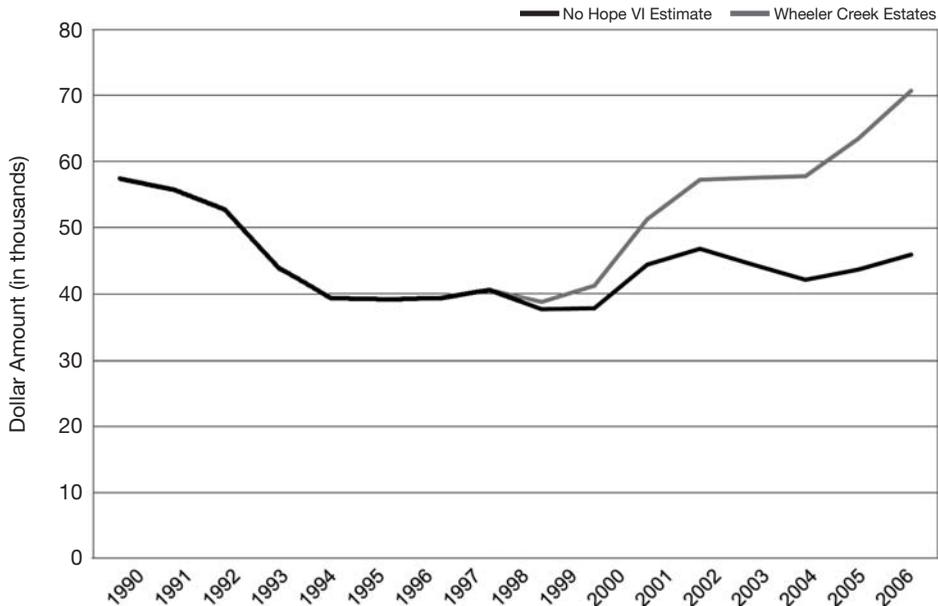
**Exhibit 9**

Estimated Mortgage Applicants' Incomes Before and After Redevelopment in the Area Surrounding the Townhomes on Capitol Hill



**Exhibit 10**

**Estimated Mortgage Applicants' Incomes Before and After Redevelopment in the Wheeler Creek Estates Area**



investments, the net effect on the applicant's income was very large following redevelopment. As of 2006, average annual incomes were estimated to be about \$40,000 higher in the Orchard Gardens area, \$48,000 higher in the Townhomes area, and about \$25,000 higher in the Wheeler Creek area than they would have been in the absence of the HOPE VI redevelopments.

The analyses of crime and neighborhood incomes provide evidence that is generally consistent with the finding that the HOPE VI redevelopments resulted in increased residential property values in three of the four sampled neighborhoods. These findings suggest that gentrification has been a factor in these communities, regardless of whether it was an outcome of the HOPE VI redevelopment. One criticism that has been leveled against HOPE VI is that its emphasis on reducing the concentration of poverty to create more mixed-income communities ultimately promotes gentrification and the displacement of poor people. Our study explicitly did not address those issues. It could easily be argued, at least in the selected Washington communities, that the HOPE VI investments actually resulted in a net increase of housing available to very low-income people, given that the HOPE VI properties were largely vacant before redevelopment. Even if HOPE VI did contribute to gentrification and displacement in the selected Boston communities, our qualitative analysis identified multiple factors independent of HOPE VI that contributed to the communities' economic improvement.

## Interpreting the Findings

It is important to keep in mind that the HOPE VI redevelopments did not take place in a vacuum; numerous other factors affected the surrounding neighborhoods before, during, and after the redevelopment process. This section adds a qualitative analysis to the quantitative findings in order to understand the relative importance of the HOPE VI interventions in catalyzing neighborhood change.

### Mission Main

The neighborhood encompassing Mission Main experienced dramatic increases in home sale prices, reductions in crime, and increases in average resident incomes almost immediately after the demolition of the distressed public housing property. The improvement is reflected by the fact that a waiting list exists for the market-rate apartments at Mission Main.<sup>14</sup> To what extent would this improvement have taken place without the overhaul of Mission Main?

Pam McKinney, a local real estate appraiser, contends that Mission Main's redevelopment has helped unlock the potential of the area. She thinks that Northeastern and Wentworth Universities would not have expanded across Huntington Avenue had Mission Main not been redeveloped, and that the HOPE VI project made it possible to think of the site as an extension of the Fenway and Longwood neighborhoods to the north and west. BHA officials disagree somewhat with her assessment, believing that the hospitals, universities, and medical centers in the area would have ultimately expanded anyway. Esther Schlorholtz, who worked for the city government before becoming senior vice president for Community Reinvestment at Boston Private Bank, emphasizes that, although the redevelopment of Mission Main was important to the community, it was one of multiple local revitalization efforts at the time. She notes that other subsidized housing properties in the area had expiring affordability restrictions and that developers were rehabilitating a number of them.

### Orchard Gardens

The Dudley Square area experienced significant increases in property values and reductions in crime after the demolition of Orchard Park and the development of Orchard Gardens. These positive changes were less substantial than those in the Mission Main area, however. Dudley Square also saw improvements in its commercial conditions. By 2007, local retail vacancies had fallen to less than 3 percent. New construction and major renovation projects were under way throughout the community. Commercial rents had increased from about \$15 per square foot to about \$24.50. Nightlife had started to return to the area, as evidenced by increased use of the ballroom at Hibernian Hall, a longstanding local landmark completely renovated by Madison Park Community Development Corporation (CDC), and by the creation of a 10,000-square-foot establishment that included a restaurant, sports bar, and jazz club. Although Dudley Square's economic and social conditions are far better than they were a decade ago, the community's real estate market remains weak. Many of the area's commercial tenants are social service agencies. Dudley Square has not

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<sup>14</sup> Although conditions are much better, Mission Main still has problems. A gang is based at the property, and the BHA is concerned about onsite security.

yet attracted a critical mass of middle-income tenants, in part because Section 8 voucher holders occupy most of the “market-rate rental” apartments in the area.

The importance of the Orchard Gardens redevelopment to Dudley Square’s improvement is somewhat unclear. Although the neighborhood does not have the large institutional presence of the Mission Main area, it has been a major focus of city revitalization efforts. As part of his initial mayoral campaign in 1993, Thomas Menino promised to restore Dudley Square as a major commercial area, and the city of Boston injected considerable public resources into the area in the mid-1990s. The area was designated as both a Boston Main Street district and a federal Enhanced Enterprise Community, and it was a centerpiece of the city’s Empowerment Zone application. Boston made major improvements to the area’s physical infrastructure, including upgrades to local streets, sidewalks, parks, and lighting. Some existing buildings were renovated, and city and state officials moved government agencies (the Boston Water and Sewer headquarters, for example) to the area. The various public incentives made possible the creation of a new post office, a major bus transfer center, and a local manufacturing plant, among other facilities. Area nonprofit organizations also embarked on revitalization projects. The Dudley Street Neighborhood Initiative developed a 30-acre plot to the southwest of Orchard Gardens into a mix of residential units. The local Madison Park CDC developed and rehabilitated several affordable housing properties in the area.

Patrick Lee, a for-profit developer who, along with the Madison Park CDC, redeveloped Orchard Gardens with HOPE VI funds, believes the project achieved its goal of getting people to think differently about housing in the area. He contends that retailers such as Payless and Footlocker would not have located in Dudley Square if Orchard Park had not been redeveloped. Madison Park’s General Counsel, David Price, contends that the development of Orchard Gardens made other investments in the area possible. He argues that it would have been very difficult to renovate Hibernian Hall without the improvements on the public housing site, and Next Street Financial (a for-profit financial firm) would not have located its offices in the Hall had the Orchard Park complex remained in its previous condition. Reggie Nunnally, a staff member at the Dudley-based Boston Connects (part of the city’s Department of Neighborhood Development), asserts that the area really had a different feel after the HOPE VI intervention. He believes that the property now has a much better mix of tenants, with many of the “undesirables” having been evicted: “It looks like a whole new development. . . . If Orchard Gardens had remained Orchard Park, [Dudley Square] would be a much tougher sell.” Dudley Square’s rebound “would have happened eventually—maybe—but Orchard’s redevelopment makes things a whole lot easier,” he claims. Pam McKinney reaches a similar conclusion: “Would [the area’s improvement] have happened without Orchard? Maybe—the Empowerment Zone incentives were huge.”

### **Townhomes on Capitol Hill**

The Townhomes on Capitol Hill development has received widespread praise throughout the District of Columbia and has been touted in Congress as proof of the success of the HOPE VI model. Minimal turnover has occurred since the property’s opening in 1999. The developer, Marilyn Melkonian, describes the site as “great housing in a great location, with very affordable costs.” Within a few blocks of the site, developers have converted abandoned schools into higher end condominiums. Just a block and a half to the east, 8th Street has become a vibrant commercial

and retail strip, with an abundance of restaurants that cater to the entire Capitol Hill area. The dilapidated Barracks Row area on the same street north of Interstate 295 has been renovated as an entertainment district. Townhouses in the area now routinely sell for up to \$1 million.

Our quantitative analysis indicates that the redevelopment of Ellen Wilson Dwellings had no statistically significant effects on surrounding property values, however. The explanation behind this seemingly incongruous finding lies in the fact that Ellen Wilson Dwellings was essentially a pocket of distress in an otherwise stable community that was beginning to experience gentrification even before the public housing redevelopment. In 1990, the census tract containing the public housing property had a median household income of \$74,381 (adjusted for inflation to 2006 dollars), an unemployment rate of only 1.5 percent, and a poverty rate of only 7 percent. Home values around Ellen Wilson Dwellings had been declining, but values to the north and west had generally held steady or increased slightly. The redevelopment of the Ellen Wilson Dwellings coincided with a significant expansion of the Capitol Hill neighborhood, as developers and homebuyers sought to take advantage of the underdeveloped areas to the north, east, and south. In effect, the public housing development was part of the overall gentrification of the area. Whereas Ellen Wilson Dwellings was initially at the edge of the neighborhood, the redeveloped Townhomes complex is now in the heart of the community. As Capitol Hill has become more desirable, it has attracted a greater number of higher income residents.

Those familiar with the area contend that the HOPE VI redevelopment certainly helped improve the southern part of Capitol Hill. The demolition of the Ellen Wilson Dwellings eliminated the primary source of blight in the area. Melkonian claims that its redevelopment led to improvements on the border streets, noting that every dilapidated building has been renovated. She credits the Townhomes with sparking the development of new market-rate townhouses a block away. The finished Townhomes complex, with its brick homes and connecting streets, blends easily into the existing neighborhood architecture. Don Denton, a local realtor, notes that “everything from the landscaping to the roofs is still in tip-top shape,” and the development is “a pleasure to look at.” He contrasts the redeveloped Ellen Wilson Dwellings site with the traditional Potomac Gardens public housing complex a few blocks away. Denton claims that he could take 200 buyers to see a good property across from the Townhomes on Capitol Hill, and all of them would be willing to buy it. Were he to take the same people to a similar property across from Potomac Gardens, “half wouldn’t even consider it, and the other half would likely say no.”

The redevelopment of Ellen Wilson Dwellings also had important political ramifications. According to Bob Moore, the executive director of the Development Corporation of Columbia Heights and a former director of housing for the District of Columbia, the HOPE VI project was “really important as a strategic move.” The redevelopment of the vacant public housing property proved not only that conditions in the surrounding residential area could improve, but also that very low-income people could be integrated into a gentrifying community. He contends that “Ellen Wilson changed the perception” of public housing in Washington.

### **Wheeler Creek Estates**

Wheeler Creek Estates experienced modest increases in property values and neighborhood income but no relative change in crime rates. The positive effects are impressive because Washington

Highlands, the neighborhood in which Wheeler Creek is located, has long been one of the city's poorest neighborhoods. According to the 1990 Census, the area had a poverty rate of 37 percent, an unemployment rate of 18.2 percent, and a median household income that was less than 40 percent of the metropolitan AMI. Nearly one-third of area residents received public assistance income, food stamps, or both. Section 8 properties were some of the few economically viable rental properties in the neighborhood. Because the prevailing Fair Market Rent (FMR) paid to landlords for the Section 8 units was about 43 percent higher than the rent that landlords could obtain for market-rate units in the area, the community had perhaps the largest concentration of subsidized housing in the District of Columbia, with roughly 700 public housing units and another 1,500 Section 8 apartments.<sup>15</sup>

Bob Moore contends that the razing of Valley Green signaled to people that something positive was happening in the neighborhood and that the area could be a potential destination for those looking for a place to live. Oramenta Newsome, the Washington program director for the Local Initiatives Support Corporation (LISC), believes that the blight of the Skytower-Valley Green site was “something that no developer could see past.” The William C. Smith Company has developed a series of townhouses along Mississippi Avenue, about one-fourth of a mile north of Wheeler Creek Estates, on the north side of Oxon Run Park. One set of homes sold for between \$99,000 and \$134,000 in the 1999-to-2000 period and is now reselling for between \$300,000 and \$325,000. Steve Green, a developer at the company, believes that they “probably couldn’t market [these and other nearby townhouses] at all without the clean-up of Valley Green. . . . There’s no question that Wheeler Creek was pretty bad and is now pretty successful. It was probably the worst property in a bad neighborhood.” The company’s chairman and CEO, Chris Smith, is even more laudatory: “I haven’t heard one negative thing from anybody about Wheeler Creek, and that’s unheard of.”

At the same time, the underlying economic dynamics of Washington Highlands have been slow to change. Newsome describes Wheeler Creek Estates as “an oasis in the desert, no question.” Smith acknowledges that the neighborhood is still pretty troubled, but he believes conditions are slowly improving. The deteriorated Highland Addition public housing complex is slowly being redeveloped, and the historically problematic Wheeler Terrace property and a few others in the neighborhood are now under the control of locally based owners.

## **Conclusions and Recommendations**

Since its inception, the HOPE VI Program has had multiple, sometimes conflicting, goals. Among them have been improving living conditions for very low-income individuals, facilitating tenant self-sufficiency, reducing the concentration of poverty, and sparking the revitalization of economically distressed neighborhoods. This study has focused solely on the last of these goals,

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<sup>15</sup> See Kovaleski (1994) and Dance (1993). FMRs traditionally have been set for a comparatively large region—frequently a metropolitan area—usually at the 40th percentile of rents in the area. Because of the variety of micromarkets within the area, gaps frequently exist between the FMR and the actual market rent in a community. Areas where the FMR significantly exceeds the market rate tend to attract large numbers of Section 8 properties. Without diligent enforcement of housing-quality standards, the properties can become increasingly deteriorated and contribute to neighborhood blight. See Zielenbach (2006).

documenting the economic effects that HOPE VI redevelopments have had in four different communities located within two economically strong cities. We have focused our attention principally at the community level, not at the individual one; we have not considered in this analysis the range of potential economic and social benefits accruing to the public housing tenants as a result of the HOPE VI redevelopment.

The HOPE VI redevelopments have had mostly positive, statistically significant effects on economic conditions in their surrounding neighborhoods. In three of the four cases we studied, the redevelopments contributed to substantial increases in residential property values and notable declines in rates of violent crime. In the other case, the effects were positive but not statistically significant. In the surrounding neighborhoods for which sufficient data were available, the public housing redevelopment resulted in an aggregate increase in residents' incomes.

The extent of the neighborhood spillover effects depended in large part on the location and market dynamics of the surrounding community. The economic effects of a HOPE VI redevelopment tended to be greater in communities where other development pressures and existing, stable institutions were in place. In this study, the redevelopment of Mission Main had the greatest local effects, in large part because of the presence of local universities, a stable residential neighborhood, and transportation lines in the area. Similarly, the Orchard Gardens redevelopment augmented existing redevelopment efforts and helped catalyze new ones in the Dudley Square area, but it had less significant spillover effect than Mission Main's redevelopment because of Dudley Square's relative economic weakness. In contrast, the relative dearth of development activity and institutional presence in the Washington Highlands area has limited the effects of the Wheeler Creek Estates development; while unquestionably positive and significant, the spillover effects of Wheeler Creek Estates have not been as great as those of the Boston HOPE VI sites. At the other extreme, the strength of the Capitol Hill market before the redevelopment of the Ellen Wilson Dwellings and the gentrification that was already taking place in the community minimized the spillover economic effect of the Townhomes on Capitol Hill. Ellen Wilson Dwellings was chosen for a HOPE VI grant in no small part because of the surrounding neighborhood's strength and the political desire to achieve high-profile redevelopment successes.

To the extent that practitioners and policymakers try to maximize the community economic development benefits of a HOPE VI or similar major housing redevelopment, we recommend focusing resources on the redevelopment of properties in neighborhoods with neither particularly strong nor particularly weak markets. Such communities should have certain features—such as a location near a job center, transportation infrastructure, and local retail or other amenities—that make them potentially desirable areas for moderate- and middle-income households. They should have some institutional or other organizational anchors that are committed to the area over the long term. They also should have some development and investment activities already in process, indicating that the neighborhood is a potentially profitable place in which to invest and would benefit from improvements associated with the major redevelopment of a public housing site. The market should not be too strong, however; low prices reduce the barriers to new development, which enables an investment such as HOPE VI to have large, positive spillover effects. Communities with already strong markets (Capitol Hill in Washington, for instance) tend to have enough of a development buzz to overcome any negative influences that might be associated with a traditional public housing site.

## Appendix A

### Interrupted Time Series Model for Residential Property Values

$$\ln(P_{ijt}) = XB + \sum_{t=1}^T \alpha_t Y_t + \sum_{t=1}^T \delta_t Y_t E_j + \gamma_1 \text{preH6} + \gamma_2 \text{preH6} * T + \gamma_3 \text{postH6} + \gamma_4 \text{postH6} * T + \varepsilon_{ijt}$$

Where:

- $\ln(P_{ijt})$  is the log of the price of house i in neighborhood j at time t
- B is a vector of coefficients reflecting the value of housing traits
- X is a vector of housing traits
- $Y_t$  is a vector of dummy variables for year
- $\alpha_t$  is a vector of parameters measuring sample yearly increases
- $E_j$  is a dummy variable for existing public housing development j
- T is a linear time trend
- $\delta_t$  is a vector of parameters measuring the difference in trend in house prices in traditional public housing from the whole sample
- preH6 is a dummy variable indicating a HOPE VI development area prior to completion
- postH6 is a dummy variable indicating a HOPE VI development area after completion
- $\gamma_1$  is a parameter measuring the price level in the HOPE VI development area prior to completion
- $\gamma_2$  is a parameter measuring the price trend relative to the sample prior to completion
- $\gamma_3$  is a parameter measuring the price level in the HOPE VI development area after completion
- $\gamma_4$  is a parameter measuring the price trend relative to the sample after completion

The  $\gamma$  parameters are the key parameters in evaluating the pre- and post-impacts of HOPE VI investments.

Where possible, similar specifications were estimated for crime changes.

#### Exhibit A-1

##### Regression for Property Value Calculations (1 of 2)

Variable	Boston		Washington	
	Estimate	Standard Error	Estimate	Standard Error
Intercept	12.84278	0.0271805	11.44865	0.020005
House square feet	0.00052	0.0000076	0.00025	0.000009
House square feet squared	0.00000	0.0000000	0.00000	0.000000
Lot square feet	NA	NA	0.00001	0.000001
Lot square feet squared	NA	NA	0.00000	0.000000
Miles to central business district	-0.00025	0.0000026	-0.00007	0.000001
Miles to central business district squared	0.00000	0.0000000	0.00000	0.000000
Spring seasonal dummy	NA	NA	0.04034	0.007597
Summer seasonal dummy	NA	NA	0.04595	0.007633
Autumn seasonal dummy	NA	NA	0.08222	0.008937
1991 year dummy	-0.10861	0.0301694	-0.00132	0.018857

**Exhibit A-1****Regression for Property Value Calculations (2 of 2)**

Variable	Boston		Washington	
	Estimate	Standard Error	Estimate	Standard Error
1992 year dummy	-0.14753	0.0275243	0.00855	0.019432
1993 year dummy	-0.08273	0.0275767	0.02439	0.019357
1994 year dummy	0.14493	0.0311009	0.06032	0.019272
1995 year dummy	0.14984	0.0350093	0.04290	0.019412
1996 year dummy	0.27133	0.0331294	0.19736	0.020016
1997 year dummy	0.31347	0.0324168	0.21326	0.020369
1998 year dummy	0.54994	0.0304002	0.31993	0.022248
1999 year dummy	0.74119	0.0299713	0.20313	0.019073
2000 year dummy	0.89965	0.0266247	0.27447	0.018249
2001 year dummy	1.06957	0.0280433	0.43726	0.018265
2002 year dummy	1.15716	0.0271698	0.57219	0.018005
2003 year dummy	1.26616	0.0286526	0.75591	0.017862
2004 year dummy	1.33762	0.0259279	0.91793	0.017145
2005 year dummy	1.32763	0.0258596	1.15499	0.017609
2006 year dummy	1.33081	0.0265896	1.33665	0.018808
1990 year dummy for traditional project home	-0.37832	0.0316321	-0.03757	0.030056
1991 year dummy for traditional project home	-0.31567	0.0334751	-0.02799	0.033723
1992 year dummy for traditional project home	-0.37355	0.0278977	-0.04837	0.036097
1993 year dummy for traditional project home	-0.36428	0.0285262	-0.13090	0.036061
1994 year dummy for traditional project home	-0.34346	0.0343460	-0.09565	0.033212
1995 year dummy for traditional project home	-0.23984	0.0405821	-0.06712	0.035141
1996 year dummy for traditional project home	-0.27698	0.0358782	-0.19329	0.036333
1997 year dummy for traditional project home	-0.26721	0.0338241	-0.22712	0.034412
1998 year dummy for traditional project home	-0.23242	0.0321911	-0.16814	0.044247
1999 year dummy for traditional project home	-0.25909	0.0306615	-0.02632	0.030605
2000 year dummy for traditional project home	-0.18088	0.0237687	-0.04102	0.027347
2001 year dummy for traditional project home	-0.18756	0.0261590	-0.04447	0.027116
2002 year dummy for traditional project home	-0.14063	0.0243304	0.01513	0.026086
2003 year dummy for traditional project home	-0.13893	0.0271879	0.01230	0.026739
2004 year dummy for traditional project home	-0.12702	0.0207549	0.07739	0.025797
2005 year dummy for traditional project home	-0.14472	0.0202123	0.11390	0.026305
2006 year dummy for traditional project home	-0.20261	0.0217626	0.10025	0.030941
Pre-HOPE VI dummy for Orchard Gardens or Townhomes	-0.31338	0.1478208	0.24322	0.098470
Pre-HOPE VI trend for Orchard Gardens or Townhomes	-0.09194	0.0364841	0.01765	0.027578
Post-HOPE VI dummy for Orchard Gardens or Townhomes	-1.27836	0.2274662	0.18449	0.119026
Post-HOPE VI trend for Orchard Gardens or Townhomes	0.06195	0.0164761	0.01640	0.009704
Pre-HOPE VI dummy for Mission Main or Wheeler Creek	-0.00457	0.1142500	0.14527	0.110053
Pre-HOPE VI trend for Mission Main or Wheeler Creek	-0.08171	0.0263581	-0.02292	0.025187
Post-HOPE VI dummy for Mission Main or Wheeler Creek	-0.63931	0.1700293	0.51536	0.217451
Post-HOPE VI trend for Mission Main or Wheeler Creek	0.05383	0.0126362	-0.03709	0.016707

NA = data are not available.

## Appendix B

### Exhibit B-1

Income Regression for Selected Boston and Washington Areas (1 of 2)

Variable	Boston		Washington	
	Estimate	Standard Error	Estimate	Standard Error
Asian	-0.0949746	0.0053148	-0.0449818	0.008584313
Black	-0.2563271	0.0028045	-0.4769017	0.002435284
Hispanic	-0.1208426	0.0053565	-0.280972	0.009257727
Native American	-0.0843469	0.0172842	-0.2297153	0.019255264
Traditional project home dummy	0.018265	0.0202944	-0.174086	0.025676401
Other HOPE VI development dummy	NA	NA	-0.387089	0.014723811
1991 year dummy	0.0021654	0.0127376	0.1686778	0.013229631
1992 year dummy	0.0347289	0.0112756	0.1831678	0.011894013
1993 year dummy	0.0394396	0.0104893	0.1702232	0.011370955
1994 year dummy	-0.0284158	0.0108457	0.0331242	0.01174617
1995 year dummy	-0.0262953	0.0111421	-0.0359553	0.011827401
1996 year dummy	0.0128637	0.010544	0.0020906	0.011614444
1997 year dummy	0.0676794	0.0104444	0.0480683	0.011417648
1998 year dummy	0.1582779	0.0098924	0.1239432	0.010900897
1999 year dummy	0.1505513	0.0099308	0.0924398	0.01092669
2000 year dummy	0.2325924	0.0100864	0.1397898	0.011138629
2001 year dummy	0.3408861	0.0096514	0.3439671	0.010860976
2002 year dummy	0.404479	0.0095441	0.4401673	0.010712273
2003 year dummy	0.3933559	0.0094127	0.4310633	0.010442425
2004 year dummy	0.4539948	0.0095962	0.4211173	0.010623544
2005 year dummy	0.5298981	0.0096118	0.5005478	0.010548953
2006 year dummy	0.5909303	0.009651	0.5943877	0.01059137
1991 year dummy for traditional project home	-0.0378343	0.0288811	0.0080374	0.036533636
1992 year dummy for traditional project home	-0.0406001	0.0263637	0.0057837	0.032131667
1993 year dummy for traditional project home	-0.0653758	0.024394	-0.0498621	0.030590245
1994 year dummy for traditional project home	-0.0400181	0.024856	-0.0056135	0.031186111
1995 year dummy for traditional project home	-0.0636263	0.0249515	0.0204143	0.030930758
1996 year dummy for traditional project home	-0.0435175	0.0239107	-0.0152161	0.0304322
1997 year dummy for traditional project home	-0.038595	0.0236779	0.0089934	0.029978
1998 year dummy for traditional project home	-0.0440033	0.0224507	-0.0358829	0.02870632
1999 year dummy for traditional project home	-0.0156908	0.0224154	-0.0011345	0.0283625
2000 year dummy for traditional project home	-0.0364011	0.0228938	0.0248098	0.028848605
2001 year dummy for traditional project home	0.005785	0.02225	0.0012433	0.0310825
2002 year dummy for traditional project home	-0.007231	0.0219121	-0.0146623	0.028196731
2003 year dummy for traditional project home	-0.008552	0.02138	0.0224125	0.027332317
2004 year dummy for traditional project home	-0.0269356	0.0215485	0.0524162	0.027443037
2005 year dummy for traditional project home	-0.0104374	0.0217446	0.0567468	0.027151579
2006 year dummy for traditional project home	-0.0203958	0.0214693	0.0295397	0.027351574
Pre-HOPE VI dummy for Mission Main or Wheeler Creek	-0.5648838	0.3508595	-0.0546095	0.09415431
Pre-HOPE VI trend for Mission Main or Wheeler Creek	0.1562071	0.107729	-0.0433571	0.020646238
Post-HOPE VI dummy for Mission Main or Wheeler Creek	0.2649572	0.4817404	-0.6018431	0.101491248

**Exhibit B-1**

**Income Regression for Selected Boston and Washington Areas (2 of 2)**

Variable	Boston		Washington	
	Estimate	Standard Error	Estimate	Standard Error
Post-HOPE VI trend for Mission Main or Wheeler Creek	-0.0294537	0.0398023	0.0142449	0.007617594
Pre-HOPE VI dummy for Orchard Gardens or Townhomes	-0.0496719	0.110382	0.0870702	0.064022206
Pre-HOPE VI trend for Orchard Gardens or Townhomes	-0.041651	0.028334	-0.0285971	0.021027279
Post-HOPE VI dummy for Orchard Gardens or Townhomes	-0.4229794	0.120507	-0.0891649	0.06654097
Post-HOPE VI trend for Orchard Gardens or Townhomes	0.0217218	0.0093628	0.0132929	0.005680726
Constant	3.988418	0.0089206	4.200086	0.009814661

NA = data are not available.

**Appendix C  
Individuals Interviewed**

**Boston**

- Kate Bennett Boston Housing Authority (BHA)
- Sandra Henriquez BHA
- Patrick Lee Trinity Financial LLC
- Bill McGonagle BHA
- Pam McKinney Byrne McKinney and Associates
- Steve Melia BHA
- Deb Morse BHA
- Reggie Nunnally Boston Department of Neighborhood Development
- Vince O'Donnell Local Initiatives Support Corporation (LISC)
- David Price Madison Park Community Development Corporation (CDC)
- Shirley Ransom BHA
- Esther Schlorholtz Boston Private Bank
- Peter Woodford South Boston CDC

**Washington**

- Don Denton Coldwell Banker
- Meghan Glasheen Reno and Cavanaugh
- Steve Green William C. Smith Company
- Michael Kelly District of Columbia Housing Authority (DCHA)
- Bill Knox DCHA
- Marilyn Melkonian Telesis Corporation

### Washington (continued)

Bob Moore	Development Corporation of Columbia Heights
Oramenta Newsome	Washington, DC LISC
William Pittman	DCHA
Laurie Putscher	DCHA
Chris Smith	William C. Smith Company
Bernie Tetrault	DCHA

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## Authors

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Richard Voith is a senior vice president and principal at Econsult Corporation.

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