Social Impact Study

Habitat for Humanity of Greater Indianapolis

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About the Public Policy Institute

The Indiana University (IU) Public Policy Institute is a collaborative, multidisciplinary research institute within the Indiana University School of Public and Environmental Affairs (SPEA), Indianapolis. The Institute serves as an umbrella organization for research centers affiliated with SPEA, including the Center for Urban Policy and the Environment and the Center for Criminal Justice Research. The Institute also supports the Indiana Advisory Commission on Intergovernmental Relations (IACIR) and the Center for Civic Literacy.

List of Tables

Executive Summary

In preparation for celebrating its 25th year of operation in Central Indiana, Habitat for Humanity of Greater Indianapolis (HFHGI or Habitat) utilized a gift from the Indianapolis Foundation, a Central Indiana Community Foundation affiliate, to partner with the Indiana University Public Policy Institute (PPI) to examine its programs' positive impact and establish a baseline for tracking its outcomes in the future. PPI utilized primary data as well as national academic and practitioner research to examine the social value created by HFHGI's program-related investments and to estimate the monetary value of the organization's impact.

After a quarter century of operation, HFHGI remains committed to advancing the mission that was stated upon its founding: "Uniting the community with people in need to provide the life-changing opportunity to purchase and own quality, affordable homes." In practice, HFHGI leverages volunteerism, donations, and contributions from the community at large to place low-income families in safe, decent, and affordable homes. In so doing, research suggests that HFHGI's activities have benefits beyond housing; HFHGI's activities also create benefits resulting from the value of its no-interest loans to partner families, increased tax base for local government, and averted costs attributable to foreclosure prevention. Depending on the household composition of the partner family, HFHGI's activities may create additional benefits resulting from the asset-building habits of its partner families, the positive health and youth outcomes experienced by partner families, and their increased civic engagement. Examining each of these areas in turn, PPI found the following:

- HFHGI effectively mobilizes community support—through volunteerism, financial contributions, and in-kind donations—to advance its mission. Throughout its history, HFHGI has provided a venue within which volunteers have contributed 501,300 hours of labor, valued at more than $9 million (2011 dollars). HFHGI also successfully leverages contributions and in-kind donations from the community; in placing 172 families since 2005, HFHGI has leveraged nearly $10.4 million in contributions and $634,537 in in-kind donations.

- When the value of all benefits realized as a result of HFHGI's activities is considered, the benefits of HFHGI's activities are estimated to substantially outweigh HFHGI's costs.

    - The value of HFHGI's direct impacts is estimated to be between $170,210 and $197,485 for each family it places; however, such is variable based upon prevailing interest rates. This translates to HFHGI realizing between $0.99 and $1.15 of direct benefit for each dollar it spends in serving partner families. While this figure is substantial in its own right, it does not consider induced or indirect jobs created by HFHGI's economic activity, nor does it consider potential secondary benefits that may also be created when a Habitat partner family is successfully placed.

    - HFHGI's successful placement of a family may result in additional, indirect benefits contingent, at least in part, on the partner family's household composition. PPI estimates that the successful placement of a Habitat partner family may create between $159,844 and $249,864 in additional benefit resulting from improved academic achievement and reduced risky behavior among youth in households, improved mental health of homeowners, and increased participation in the broader community, among other areas.

- For each family it places, HFHGI potentially creates an estimated $330,054 to $447,349 in total benefits (see Table 1). Put another way, for each dollar HFHGI spends in placing its families, it potentially creates between $1.92 and $2.61 in benefits.

Clearly, the value of HFHGI successfully placing a partner family is considerable; further, there may be additional benefits not necessarily captured in the estimates above. Because PPI relied on primary data sources as well as existing academic and practitioner research, estimates are based only on those areas where research was sufficient enough for PPI to infer reasonable estimates. The list of potential benefits for which estimates are given should not be considered exhaustive.

Table 1: Total Estimated Impact Per HFHGI Family Served

Item	Low Estimate	High Estimate
Direct Impacts		
Increase in property value	$68,348	$68,348
Interest subsidy*	$84,747	$102,132
Foreclosure prevention: Averted costs to the family	$956	$1,509
Foreclosure prevention: Averted neighborhood spillover costs	$7,550	$11,912
Foreclosure prevention: Averted local government costs	$1,993	$3,145
Foreclosure prevention: Averted financial sector losses	$6,616	$10,439
Potential Health Benefits		
Improved mental health	$219	$219
Averted environmental health costs	$75,844	$89,704
Decreased reliance on social services	$547	$547
Potential Youth Benefits		
Improved academic achievement	$67,519	$118,261
Averted societal costs due to high school dropouts	$11,378	$36,477
Annual averted societal costs due to risky teen behavior	$319	$638
Potential Impact on Civic Engagement	**$4,018**	**$4,018**
Total	**$330,054**	**$447,349**

*Variable based on interest rates. The high estimate here assumes the average rate over HFHGI's 25 year history; the low estimate assumes the average rate since 2005.

Introduction

Habitat for Humanity of Greater Indianapolis (HFHGI) was founded in July 1987 with the mission of "uniting the community with people in need to provide the life-changing opportunity to purchase and own quality, affordable homes." In its first 18 months, while building the systems of governance and operations for the new nonprofit organization, the volunteer-driven effort constructed three homes. At the time of its 25th anniversary in 2012, HFHGI has served more than 400 partner families in Central Indiana—including 25 in 2012 alone—and raised more than $1 million to help roughly 300 families outside the United States move from substandard housing to safe, decent, and affordable homes.

While HFHGI has professionalized its operations through hiring staff, harnessing the energy of volunteers remains at its core. During its 25-year history, HFHGI has leveraged an estimated 501,300 hours of volunteer labor in support of its mission, resulting in the mobilization of more than $9 million[1] of volunteer labor to support transitioning people in need to homeownership.

HFHGI's approach is filling a local need in a time where the responsibility for addressing poverty in local communities is shifting from top-down publicly-driven approaches to locally-oriented nonprofit-driven approaches. In addressing the concerns of poverty in local communities, a robust and innovative local nonprofit sector is perhaps more important now than ever before (Bratt & Keyes, 1998). HFHGI's approach of marshaling community resources through volunteerism, monetary donations, and in-kind support to assist individuals in need and bolster neighborhood development is the type of approach that is becoming increasingly important in the public sector's current fiscal environment.

HFHGI has historically tracked its outputs in terms of number of units constructed and partner families served. As part of HFHGI's maturation into a more intentional and impactful nonprofit, it is seeking to build its capacity to better quantify its impact in terms of improving the quality of life of its partner families and the value it adds to the neighborhoods within which it works. In preparation for the celebration of its 25th year of operation, HFHGI, utilizing a gift from the Indianapolis Foundation, a Central Indiana Community Foundation affiliate, approached the Indiana University Public Policy Institute (PPI) to examine the positive impact that HFHGI has on Central Indiana and its partner families currently, to assess the impact it has had on Central Indiana throughout its history, and to establish a baseline for measuring impact into the future.

Methodology

HFHGI engaged PPI to elicit an estimate of the value created by Habitat's program-related activities in housing and neighborhood development, and in serving its partner families. Within that broad research question, PPI sought to establish estimates of the value created by, or potential value creation of, Habitat's work in the following areas:

[1] All values throughout the report are reported in 2011 dollars unless otherwise noted. According to *Independent Sector*, a general hour of volunteer labor within Indiana is valued at $18.04/hour (Independent Sector, 2012).

- the value of volunteer labor in support of Habitat's mission,
- the value of sweat equity contributed by Habitat partners,
- the value realized through features of Habitat's programs, such as its no-interest loan structure and its homeownership education requirements,
- Habitat's fiscal impact for neighborhoods and local tax base through its construction and property rehabilitation efforts, and
- the potential value resulting from moving families to homeownership in terms of improved mental health, decreased reliance on social services, improved educational outcomes for children within the household, and reduced risky teen behavior.

To establish these estimates, PPI worked collaboratively with HFHGI's staff to examine and organize the data HFHGI currently tracks relevant to the research areas outlined above. PPI supplemented HFHGI's records with property tax records from the Marion County Assessor to establish a third-party valuation of properties before and after Habitat's activity. In addition to its use of primary data, PPI also conducted an extensive literature review of relevant academic and practitioner research to establish estimates of the potential secondary benefits created by moving low-income families into affordable, quality owner-occupied housing.

It should be noted that this study does not provide an exhaustive list of all potential benefits that could be realized through the successful placement of a Habitat partner family; it merely seeks to provide estimates in areas in which the impacts have been directly observed as a result of HFHGI's activities or can reasonably be inferred given existing research on the benefits of homeownership. Secondly, while PPI made use of the latest research available, some research upon which the findings are based predates the nation's current housing crisis. Given that constraint, some caution should be exercised in applying the conclusions of this research. Nevertheless, many of PPI's findings would not be influenced by the housing crisis (e.g., that children in owner-occupied homes are less likely to be exposed to environmental hazards). Findings that would be susceptible to the impact of the housing crisis would likely be mitigated as long as the homeowners remain current on their mortgages.[2]

The following report of PPI's findings is organized into three sections. In the first, *The Habitat Model*, PPI examines the comprehensive approach that HFHGI takes in serving its partner families, discusses the way in which it leverages community resources to support its programs, and seeks to establish a cost-basis for HFHGI's investments in advancing its mission. The second section, *Direct Impacts*, examines the benefits realized by Habitat partners or neighborhoods as a result of Habitat's investments, regardless of the composition of these households. The report concludes with *Potential Secondary Benefits*, which details benefits that could accrue to Habitat partners depending on their household composition (e.g., increased scholastic achievement for the children of a Habitat household only occurs if children are in the household). This final section draws heavily from academic and practitioner research throughout the nation and as such assumes the nuances and caveats contained in those studies. Throughout this report, PPI discusses these nuances as they are relevant to eliciting the potential value creation resulting from Habitat's activities.

[2] Habitat owners have had lower rates of mortgage delinquency and foreclosure than similarly situated borrowers throughout the housing crisis.

The Habitat Model

As its mission statement suggests, HFHGI seeks to build partnerships that will enable it to leverage community resources for positive impact on the lives of low-income families seeking to transition to homeownership. Through its partnerships, HFHGI serves as an intermediary between those with a desire to help and those in need of help. In practical terms, HFHGI provides a venue for individuals to volunteer their time and talents as well as donate resources and materials to help transition Habitat's partner families to affordable homeownership.

As it was at HFHGI's founding in 1987, volunteerism remains the cornerstone of HFHGI's model of service delivery. According to HFHGI's records, 350 volunteers are involved in building new homes and 60 volunteers involved in preparing previously-owned homes for new families. While the total number of volunteer hours may vary slightly among projects, volunteers provide an average of $21,648 of volunteer labor on new builds and $4,510 on rehabilitations. In addition to volunteer labor supporting the construction and preparation of homes for Habitat partner families, HFHGI also leverages a considerable amount of volunteer support elsewhere in its organization: Volunteers support HFHGI's mission by volunteering at its ReStore (HFHGI's discount home improvement outlet that sells donated building materials and furniture), assisting in administrative functions, serving as mentors to Habitat partners, providing skilled services, and in myriad other ways. In 2011 alone, HFHGI benefited from 37,371 volunteer hours—the total monetary value of which was more than $674,172. Clearly, harnessing the energies of volunteers remains at the core of HFHGI's mission and operations; Habitat is only able to operate at its present level of capacity by mobilizing the time and talents of its volunteers.

The second way in which HFHGI is able to leverage community resources in support of its mission is through the donation of resources and materials that support HFHGI programs. Historically, HFHGI has sought out sponsors to cover the hard costs of its construction programs; since 2005, HFHGI has garnered nearly $9.4 million in sponsorships. HFHGI also benefits from a considerable amount of in-kind contributions in the form of donated goods and services: Since 2005, Habitat has received $634,537 in in-kind donations. As with marshaling the energy of its volunteers, donations and contributions play a critical role in HFHGI's service delivery; contributions (which include sponsorships) are consistently the largest source of HFHGI's revenue, averaging $1.48 million annually since 2005.

The families served by HFHGI are essential partners in Habitat's service-delivery model, as well. As part of their partnership agreement, partner families agree to provide 450 hours of "sweat equity" through which they earn the down payment on their home. While HFHGI's sweat equity requirements have changed over time, the 450 hours presently required represent a value of $8,118 in sweat equity provided by each HFHGI-partner family. Through this program, partner families help with construction or rehabilitation of their future home, engage in homeownership education courses, work with Habitat staff and mentor families, and otherwise participate in activities that will improve their likelihood of being a successful homeowner. This partnership is critical for both the partner family and HFHGI; as the partner family succeeds in homeownership and repays its mortgage, its mortgage payments provide a stream of revenue that funds future HFHGI service delivery. In that manner, HFHGI's relationship with the families it serves truly is an ongoing partnership through which both parties benefit.

On average since 2005, the total expense for Habitat to place a partner family in a home is $171,576.[3] This figure captures all of Habitat's program- and administrative-related expenses on a per-placement basis. Due

[3] This figure is derived from adding all HFHGI organizational expenses between 2005 and 2011 ($29,511,150) and dividing by the number of families served over the same time (172). This figure does not capture the value of volunteerism or sweat equity—although those inputs represent considerable value. The primary beneficiary of the sweat equity requirement is clearly the Habitat partner family; therefore, that cost should not be allocated to Habitat (except for the costs it incurs in managing its sweat equity requirements). Likewise, while HFHGI benefits from the time and talent of its volunteers, there is an economic argument that suggests the primary benefits of volunteerism are intrinsic and therefore accrue to the volunteers themselves rather than HFHGI.

to the unique nature of Habitat's programs—specifically that it seeks to broadly engage the community in its efforts while serving partner families holistically—this figure is higher than that of for-profit developers and may exceed those of an otherwise similarly-situated nonprofit service provider. However, some benefits realized through HFHGI's approach are unique to Habitat programs, resulting in additional value creation that is not necessarily replicated by other providers.

Direct Impacts

In estimating the total impact created by HFHGI's service delivery, PPI examined impacts directly resulting from HFHGI's intervention, regardless of the composition of the partner household. These impacts represent the value of program-related benefits directly realized by Habitat's clients OR the value of real estate, including:

- increases in assessed property value and the city's tax base,
- the aggregate value of the no-interest loans provided to Habitat clients, and
- the value of averted costs attributable to Habitat's homeownership education requirements.

Increase in Property Valuation

Using data from the Marion County Assessors' Office, PPI reviewed pre- and post-intervention assessed valuations for 90 Habitat properties between November 2004 and 2011; PPI also examined 36 additional properties where Habitat had its own information regarding both pre- and post-intervention valuations. On those 126 properties, PPI found that Habitat's involvement with a property increases the assessed value of each property by a considerable amount. On average, prior to Habitat's intervention, the properties on which it works are valued at $5,619; when its intervention is completed, the properties are worth an average of $73,967. Therefore, the direct impact of Habitat's involvement is a $68,348 increase in each property's assessed valuation. In other words, Habitat's investments increase the value of the properties in which it invests by an average of 13.1 times over the pre-intervention assessed value.

Using the same data set, PPI examined the fiscal benefit to local government derived from increased tax base resulting from Habitat's efforts. Doing so, we assumed a one percent tax rate (the property tax cap for owner-occupied residences established by Indiana statute in 2008) and aggregated the value of that subset of properties over the last seven years.[4] Doing so, PPI found that HFHGI's activities created more than $310,215 in additional tax base on this subset of properties since 2005. This figure is undoubtedly conservative as it only considers a subset of Habitat properties (those for which pre- and post-assessed valuations are available). Absent data for each individual property impacted throughout HFHGI's history, PPI was unable to provide an estimate of total increase in property valuation attributable to HFHGI over 25 years; nevertheless, HFHGI's total impact is no doubt considerably larger than the figure stated here.

To derive a per-unit value of the fiscal benefit, PPI calculated the aggregate value of increased property tax base realized over seven years (slightly less than the average tenure of a homeowner, but the extent of our data set). Local government receives an average of $4,836 in fiscal benefit reflected in increased tax base as a result of each property Habitat rehabilitates. It is worth noting that the average fiscal benefit created by Habitat's activities exceeds the average amount of public subsidy it receives per property; in other words, given its current funding model, HFHGI creates more direct benefit for local government than it receives

In other words, if the volunteers value their time, they must receive an intrinsic benefit equal to the value of the amount of time they donate (Brown E. , 1999).

[4] PPI recognizes that tax caps have not been in effect for the entire time of our sample; nevertheless, taxes paid likely exceeded one percent prior to the enactment of tax caps.

from local government for the purposes of advancing affordable housing.[5] This figure of fiscal benefit only examines increased tax base; it does not consider additional costs associated with vacant, abandoned, or substandard properties that likely would have otherwise been borne by local government had these properties not been rehabilitated.

Finally, research suggests that housing units proximate to a rehabbed unit increase in value as well. Housing units within 150 feet of a rehab appreciate by about 13 cents per rehab dollar after an intervention is made (Simons, Magner, & Baku, 2003) and homes within 500 feet of a rehab realized a four percent greater annual rate of appreciation relative to those outside of 500 feet from a rehab unit (Edmiston, 2012). Additional research suggests that every percentage increase in the homeownership rate of a census tract increases the median housing value of all homes in the tract by $2,294 (Rohe & Stewart, 1996). While it is not possible to fully assess Habitat's impact on neighboring properties throughout Marion County without constructing a sophisticated economic model that would isolate these impacts (i.e., a hedonic model), HFHGI's investments almost certainly result in additional economic benefit for owners of nearby properties, as well as increased tax revenue derived from those properties, neither of which are captured in PPI's estimates.

Value of No-interest Loans

One way HFHGI ensures its housing remains affordable to its partners is through the provision of no-interest mortgages. The monetary value of the Habitat-subsidized mortgage to Habitat partners is tremendous.

Assuming Habitat partner families would have needed to finance their mortgages through a standard 30-year fixed prime rate mortgage if not for the interest-free Habitat mortgage, PPI calculated the value of the interest subsidy by comparing the typical financing costs of a 30-year fixed prime rate mortgage.[6] Doing so results in a benefit, provided by HFHGI to its partner families, of nearly $38 million over HFHGI's 25-year history (see Table 2); on average over that time, the no-interest loans represent a benefit of $102,132 per family placed.[7]

While the benefit of the foregone interest is considerable, the value varies with prevailing interest rates. When interest rates are low relative to historic trends, the value of this benefit is not as great as it is in times when interest rates are relatively high. Since 2005, the average per-placement benefit has totaled $84,747.

In calculating this figure, PPI assumed that Habitat partners would make all payments on time but would not pay off their mortgages early. If owners were to pay

Table 2. Aggregate Value of No-interest Loans

Year	Annual Interest Rates	Aggregate Value of Properties Completed, by Year (in 2011$)	Aggregate Value of No-interest Loans
1988	10.34%	$ 57,043	$ 126,767
1989	10.32%	$ 108,841	$ 241,307
1990	10.13%	$ 221,798	$ 480,672
1991	9.25%	$ 362,586	$ 703,046
1992	8.39%	$ 419,036	$ 721,181
1993	7.31%	$ 696,610	$ 1,013,947
1994	8.38%	$ 404,875	$ 695,796
1995	7.93%	$ 1,063,442	$ 1,708,717
1996	7.81%	$ 752,664	$ 1,187,141
1997	7.60%	$ 461,090	$ 703,564
1998	6.94%	$ 1,248,261	$ 1,706,262
1999	7.44%	$ 1,671,515	$ 2,485,508
2000	8.05%	$ 2,421,164	$ 3,962,054
2001	6.97%	$ 2,267,426	$ 3,115,558
2002	6.54%	$ 1,464,167	$ 1,863,208
2003	5.83%	$ 583,130	$ 646,660
2004	5.84%	$ 1,757,596	$ 1,953,068
2005	5.87%	$ 1,618,225	$ 1,809,216
2006	6.41%	$ 2,481,470	$ 3,082,487
2007	6.34%	$ 1,315,947	$ 1,613,267
2008	6.03%	$ 1,631,908	$ 1,884,044
2009	5.04%	$ 2,888,578	$ 2,695,761
2010	4.69%	$ 2,210,644	$ 1,896,009
2011	4.45%	$ 1,978,000	$ 1,595,628
	Total	$30,086,017	$37,890,870

NOTE: Totals assume a comparison with a 30-year fixed prime rate mortgage in which borrowers make all payments on time and do not pay off mortgages (or sell properties) prior to the end of the loan period.

[5] A subset of HFHGI properties receive public subsidies through the federal Home Investment Partnerships Program (HOME) or other sources; the total amount of subsidy received by Habitat since 2005 averages slightly more than $2,300 per family served.

[6] Derived from data publicly available through the Federal Home Loan Mortgage Corporation (Freddie Mac, 2012).

[7] Based on the 371 units for which data are available.

off their mortgages early, the actual value of the interest subsidy would be less than the figure above.

This figure also assumes that an amount equal to the entire value of the home would have been financed. Such a loan—particularly a prime rate loan—would not be possible on the private mortgage market; nevertheless, because Habitat's no-interest loans finance an amount equal to the value of the home, PPI used that value as the basis for its determination of the value of Habitat's no-interest loan program.

Even in considering the total assessed valuation of the home as the basis for the loan, the figure stated above may be somewhat conservative, as the lending industry would view the typical Habitat partner as a risky borrower. Such a designation would require these borrowers to pay higher interest rates or enter into nonstandard (primarily subprime) mortgage products that would result in higher costs and increase the likelihood of foreclosure (Agarwal, Amromin, Ben-David, Chomsisengphet, & Evanoff, 2009; Apgar, 2004).

Value of Homeownership Education

Part of the sweat equity responsibility of a Habitat partner is agreeing to engage in Habitat's homeownership education classes. These courses are meant to enhance the financial literacy of Habitat partners–providing guidance on developing household budgets, managing finances, and building creditworthiness over time. From a societal perspective, these courses are intended to reduce the risk of default and foreclosure among at-risk borrowers and manage the broader social costs associated with foreclosure (Quercia & Wachter, 1996; Habitat for Humanity of Greater Indianapolis, 2012).

Recent research suggests that quality homeownership counseling programs are effective at reducing the likelihood of default and foreclosure among at-risk borrowers; the evidence suggests graduates of homeownership counseling programs are 9 to 14.2 percent (in absolute terms) less likely to default on mortgages than similarly situated borrowers (Agarwal, Amromin, Ben-David, Chomsisengphet, & Evanoff, 2009) over an 18-month period.[8] A 1995 report of the Family Housing Fund in Minneapolis found the typical cost of a foreclosure event upon a household to be $10,627 (Moreno, 1995).[9] The value of homeownership education in terms of reduced risk of foreclosure can be calculated by multiplying the cost of foreclosure to a homeowner by the reduced likelihood of foreclosure; doing so results in a direct impact of $956 to $1,509 per household in reduced likelihood of foreclosure. This figure likely underrepresents the actual value realized by individuals; there is a value associated with increased financial literacy skills that has broader applicability than foreclosure prevention, with benefits beyond what is examined here. Furthermore, this figure may not consider the full cost of a foreclosure event in that there is an opportunity cost associated with resources expended by a family experiencing a foreclosure event (Apgar, 2004).

A considerable amount of research has examined the spillover effects of foreclosures on neighborhood property values, local government, loan servicers, and other parties. Research on the spillover effects experienced by property owners near a foreclosed unit estimates the cost of those spillover effects to be anywhere from $3,474 (Joint Economic Committee, 2007) to $14,760 (Moreno, 1995) to as much as

[8] Because of our interest in isolating the value associated with homeownership education, PPI chose to use research rather than actual comparisons between Habitat borrowers and typical borrowers. Habitat borrowers benefit from the interest subsidy described above, which would likely act as a confounding factor in assessing why Habitat-originated mortgagees perform better than the typical at-risk borrower. So, while PPI relied on outside research to determine the value of homeownership education, it is also important to note that the impact on foreclosures noted above may be understated for Habitat-borrowers, given the interest rate subsidy they also receive.

[9] This figure is updated to 2011 dollars. While this figure is somewhat dated, it is still routinely cited in the academic and practitioner research as the basis for calculating the personal costs of foreclosure (Green, 2004; Immergluck & Smith, 2006; Lee, 2008; Lin, Rosenblatt, & Yao, 2009; Kingsley, Smith, & Price, 2009; Agarwal, Ambrose, Chomsisengphet, & Sanders, 2012).

more than $400,000 (Immergluck & Smith, 2006).[10] Using the Joint Economic Committee's (2007) methodology and census data for Center Township to derive a value specific to the typical density and housing values in the areas where HFHGI does most of its work, one foreclosure would result in negative neighborhood spillover effects of $83,890.[11] Applying the estimates of the effectiveness of homeownership education programs (9 to 14.2 percent), the averted neighborhood foreclosure-related spillover effects prevented by Habitat's homeownership education requirements are between $7,550 and $11,912 per partner family.

Research suggests that foreclosures and abandoned properties induce considerable fiscal stress on local government as well. At the very least, abandoned properties reduce the local tax base as the legal owners of the properties are unlikely to pay property taxes on properties they have abandoned. Furthermore, the presence of foreclosed or abandoned properties may result in more criminal activity and social disorder while requiring a disproportionate amount of services (especially police and fire services) relative to similar properties that remain occupied (Mallach, 2006). The total costs to local government vary by study depending on the unique methodologies and locations of each study; a national estimate prepared by the Joint Economic Committee study of 2007 found that these costs totaled $22,147. Once again, applying the estimate of the effectiveness of foreclosure prevention programs, the averted costs to local government through effective foreclosure prevention programs are between $1,993 and $3,145 per placement.

Finally, foreclosures represent a considerable cost to the financial sector. The originator of a loan, the party responsible for bundling and securing the loan, and any third parties with an interest in the performance of a particular loan may realize a loss when a homeowner forecloses. As with other figures, estimates of the amount lost by the financial sector per foreclosure differ depending on each study's methodology; nevertheless, an oft-cited figure is a $73,511 cost imposed by a loan that goes through the full formal foreclosure process,[12] a process that takes 18 months from initiation through the disposition of property. Applying the same rate of foreclosure prevention program effectiveness to this figure, each Habitat partner's sweat equity requirement of homeowner education likely averts between $6,616 and $10,439 in losses to the financial sector.

In total, HFHGI's proactive approach to ensuring its partners have adequate financial skills to manage their homes and thereby prevent foreclosure results in a considerable amount of additional value creation that would not occur but for HFHGI's homeownership counseling requirements. PPI estimates the total value of Habitat's homeownership counseling requirements to be between $17,115 and $27,005 per partner family served.

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[10] The same study also examined a more conservative approach revealing that homes within 1/8 mile of a foreclosed unit lost an average of 0.9 percent in value. This research informs many of the additional studies of loss in property values resulting from foreclosures, including the Joint Economic Committee (2007) research cited above; this study applies the Immergluck & Smith (2006) findings to an estimate based on national median home prices and a predetermined density.

[11] This methodology assumes the Center Township median housing value of $69,800 as reported by the 2010 American Community Survey (ACS) 1-year estimates and the 0.9 percent decrease in housing value within a 1/8-mile radius found by Immergluck & Smith (2006) and used in the Joint Economic Committee's report of 2007. To determine the number of housing units in Center Township within a 1/8-mile radius of any given home, PPI used the 2010 ACS number of single-family detached housing units (46,181 total in Marion County) per 1/16 square mile (an average 67.6 occupied single-family detached homes within 1/16 square mile–an area where a home in the middle would be within 1/8 mile of most other homes within the same area). Of those 67.6 homes in the 1/16 square mile, 12 homes would actually fall outside the 1/8-mile radius from the home in the center; therefore, we use a figure of 55.6 homes on average falling within a 1/8-mile radius of any other given home in Marion County. This measure assumes the work of HFHGI occurs within Center Township—which is not necessarily always the case—however, activity occurring outside Center Township would likely find similar results because the housing would be valued greater but the area would be less dense. (Such a calculation using the averages for Marion County in its entirety yields negative spillover effect of $83,003 per foreclosure, a modest difference of $887.)

[12] It is worth noting that the figure cited may be slightly higher than actual values observed in Marion County, as median housing values in Marion County are lower than the nation as a whole. At the same time, the foreclosing entity recoups some of the cost of the property through its disposition, therefore PPI does not assume this figure to be considerably high. Other costs to the financial sector associated with foreclosing on a property—namely legal costs and staff time—would still be incurred regardless of the location of the foreclosure.

Aggregate Value of Direct Impacts

The total value of direct impacts resulting from HFHGI's program-related investments is considerable (see Table 3). For every dollar HFHGI spends in advancing its mission, PPI estimates that between $0.99 and $1.15 in direct benefits are created. In the aggregate since 2005, PPI estimates that HFHGI has created between $32.3 million and $34.0 million in benefits while incurring $29.5 million in expenses.

Table 3. Per-Placement Value of Direct Impacts

Item	Low Estimate	High Estimate
Increase in property value	$68,348	$68,348
Interest subsidy*	$84,747	$102,132
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Total	**$170,210**	**$197,485**

*Variable based on interest rates. The high estimate here assumes the average rate over HFHGI's 25 year history; the low estimate assumes the average rate since 2005.

These ranges likely underrepresent the true value of HFHGI's total direct impacts as it does not consider job creation resulting from Habitat housing developments or the local benefit derived from the salaries earned and spent by Habitat employees.[13] While caution should be used in applying similar studies from other geographies, researchers found that each unit developed by Habitat for Humanity of Tennessee returned $230,000 in earnings to that state's economy and created 6.24 jobs for each Habitat home (Bruce, Murray, & Sowell, 2011), suggesting that Habitat programs have additional positive economic impact on local communities. Additionally, these figures do not consider secondary impacts, to which we now turn our attention.

Potential Secondary Benefits

Potential secondary impacts are those that accrue to Habitat partners as a result of being sufficiently housed (Rohe, VanZandt, & McCarthy, 2002); however, these depend at least in part on the partner family's household composition. In eliciting the value potential of these impacts, PPI performed a wide-ranging literature review of practitioner and academic research and sought to apply relevant findings to the outcomes that would be expected from Habitat's programming.

While the literature review provides guidance on what additional benefits could be expected from HFHGI's program-related activities, actual results will be sensitive to the composition of Habitat's partner families and their experiences. As the number of families that Habitat serves increases, the actual outcomes realized in the aggregate should reflect the research findings.

Much of the research PPI reviewed sought to isolate homeownership from potential confounding factors in order to isolate and elicit the value of "the homeownership effect" on the areas discussed below. However, because it would be unethical to deny someone qualified for homeownership access to ownership opportunities for the purpose of advancing research, research pertaining to the secondary benefits of homeownership often suffers from a lack of a control group. Furthermore, in many ways, the

[13] Such a study would require input-output modeling.

connections between observed positive outcomes are interrelated in such a way that makes isolated study of any one effect—or set of effects—quite difficult. For example, an individual with sufficient savings may have improved psychological health and, in turn, be more engaged in his or her child's academic life. In such a case it is difficult to isolate the impact of each individual effect separately (Rohe, VanZandt, & McCarthy, 2002). Much of the literature examines correlational relationships but does not attempt to attribute the entirety of the examined benefit to homeownership itself (Apgar, 2004; Bratt, 2002; Rohe, VanZandt, & McCarthy, 2002; Dietz & Haurin, 2003; Evans, Wells, Chan, & Saltzman, 2000).

As a result, it is difficult to assess whether the benefits of homeownership identified through research are a result of homeownership *per se* or if they are a result of some unobserved or uncontrolled variable creating positive outcomes that are being attributed to homeownership. In keeping with the caveats provided by the authors of the various studies that PPI reviewed, it should be recognized that these benefits cannot be definitively attributed to homeownership. Some authors note that it may be the stability caused by homeownership—as it is more difficult for homeowners to relocate than renters—that may be the cause of the positive outcomes often attributed to homeownership; nevertheless, they argue, to the degree that homeownership causes residential stability and residential stability is responsible for numerous positive outcomes, homeownership can be credited with causing the benefits provided by residential stability (Dietz & Haurin, 2003). In other words, even if there are confounding factors that are not easily separable from homeownership, because homeownership provides a stable environment within which positive outcomes can occur, homeownership is responsible for those benefits.

Research suggests that numerous positive outcomes result from moving families into affordable homeownership (Bratt, 2002; Rohe, VanZandt, & McCarthy, 2002; Dietz & Haurin, 2003; Evans, Wells, Chan, & Saltzman, 2000); these effects may be even greater when it is a low-income family that is moved to affordable homeownership (Green & White, 1997). To that end, PPI sought to elicit values resulting from "the homeownership effect" in the areas identified by Rohe, VanZandt and McCarthy (2002):

- improved wealth and stability for homeowning families,
- improved health and wellbeing of partner families, specifically examining the mental health of homeowners, the elimination of environmental hazards that inhibit childhood development, and averted social costs due to end-of-life care,
- improved youth outcomes, including improved scholastic achievement, improved graduation rates and reduced risky teen behavior, and
- increased volunteerism among homeowners.

PPI also examined other areas widely discussed in the literature, but did not attempt to elicit values due to limited research that would provide a basis upon which to craft estimates. To that end, it should be noted that there may be numerous additional benefits when a low-income family is placed in safe, decent, and affordable housing; those additional benefits may not be examined here. The list above and discussion below should not be construed to be exhaustive; they are the areas where research is developed enough to serve as a basis for estimating potential value creation from HFHGI's program-related activities.

The Effect of Homeownership on Wealth and Stability

Individual wealth building is the first categorical area of benefits that accrue to homeowners noted by Rohe, VanZandt, & McCarthy (2002). These benefits are highly unique to each individual homeowner; it is difficult to generalize to the larger population from individual experiences through research. Nevertheless, the individual wealth building opportunities provided by responsible and affordable homeownership underpin many other benefits of homeownership that are measurable. Therefore, PPI did not attempt to elicit a value pertaining to the way in which Habitat partners will build wealth and change

their savings habits; rather, asset-building is discussed as the foundation upon which other potential secondary benefits of homeownership are based.

First, especially as it relates to Habitat homeowners, affordable homeownership is the basis of a homeowner being able to accumulate wealth and savings. If any purchaser buys a home that he or she later finds unaffordable, the financial, educational, and emotional effects are likely to be negative for that individual and his or her family (Tighe, 2010). Because housing is the largest expense for most families, reducing the cost of housing provides additional revenue that can be allocated elsewhere (Bratt & Keyes, 1998)—toward one's wellbeing, health, education, leisure, or other areas. Habitat's program of developing housing through the use of volunteer labor, sweat equity requirements, and sponsorships of builds—as well as its no-interest mortgages—enable it to keep housing costs affordable for its partners. As a result, these partners should be better able to save money, invest in their own or their children's futures, and eventually accumulate wealth to a greater degree than they might otherwise have been able to if not for their partnership with Habitat. Furthermore, while not specific to Habitat homeowners, homeowners may also benefit from being able to deduct their property taxes from their annual income tax liability and may receive additional tax benefits as a result of homeownership—benefits that do not accrue to renters (Apgar, 2004; Mallach, 2009).[14]

Aside from these pathways to wealth building that do not necessarily exist for renters, homeowners may also change their behavior in ways that improve the financial health of their household. Typically, becoming a homeowner requires the homebuyer to overcome numerous financial constraints—such as strengthening credit scores, building savings, and maintaining steady participation in the labor force—that renters do not necessarily have to do in any categorical sense (Dietz & Haurin, 2003). While Habitat partners provide their down payment in the form of sweat equity, these owners almost certainly will still need to accrue savings to address periodic maintenance of their new home and its appliances. This behavior, over time, can help to build the wealth of the family. Further, this behavior can help position the family to responsibly borrow for their children's educations, make retirement contributions, or make other investments in their future (Vandivere, Hair, Theokas, Cleveland, McNamara, & Atienza, 2006).[15]

Finally, while the connections between homeownership and employment are quite complex, there is some evidence that homeowners—most likely due to their length of time in a neighborhood, the greater likelihood of their participation in their local community, and the relationships they typically form with neighbors—are more likely than renters to be aware of and successfully compete for job opportunities. Regardless of the reason why, there is evidence that once a person becomes a homeowner, they tend to be more successful in the labor market (Dietz & Haurin, 2003).

Clearly, responsible and affordable homeownership can have a positive impact on an individual or family's wealth; in many ways, homeownership can be the bedrock of a family's asset building strategy. Because the manner in which homeownership impacts wealth and stability varies widely from family to family, PPI did not attempt to elicit any estimates on how the balance sheets of Habitat's partner families might change as a result of their transitioning to homeownership. Nevertheless, affordable homeownership is a pathway to many opportunities that—in the case of HFHGI's partner families—might not be possible otherwise.

[14] This benefit would only accrue to homeowners who itemize their taxes and have an aggregate value of itemized deductions exceeding the value provided through the standard deduction; Habitat partners are less likely to reach this threshold than typical borrowers because they have no mortgage interest to deduct. Nevertheless, Habitat partners may realize these tax benefits in the future as their economic situation becomes more stable and they have more deductible expenses.

[15] While this is effect is possible, research suggests that very few families actually use home equity loans to make investments in their futures; rather home equity loans are far more often used to fund consumption of goods and services (Rohe, VanZandt, & McCarthy, 2002).

The Effect of Homeownership on Health and Wellbeing

The second categorical area of benefits noted by Rohe, VanZandt, & McCarthy (2002) is positive impacts on homeowners' health and wellbeing. Research suggests that after controlling for other factors, homeowners may experience better mental and physical health than non-homeowners. More specifically, the provision of affordable housing indirectly benefits the mental health of low-income householders by easing budget constraints and providing residential stability in high-quality housing (Vandivere, Hair, Theokas, Cleveland, McNamara, & Atienza, 2006). In that way, the development of affordable housing directly combats numerous negative financial and emotional effects of unaffordable, unhealthy, or overcrowded households (Tighe, 2010). Such housing also promotes children's wellbeing by supporting head-of-household wellbeing and by providing a safe environment within which children may mature (Vandivere, Hair, Theokas, Cleveland, McNamara, & Atienza, 2006). Finally, homeownership may have lifetime health benefits as heads of households age with a sense of attachment to their living environment (Dietz & Haurin, 2003).

Mental Health

Many researchers have examined the relationship between homeownership and the health of housing inhabitants; a number of these studies examine the householder's mental health and wellbeing relative to similarly-situated individuals who are not homeowners. Studies that directly examine the relationship of homeownership and mental health have found mixed results: Some suggest a positive relationship between homeownership and mental health (Rohe & Stegman, 1994; Rohe & Basolo, 1997), while others attribute increases in health and wellbeing to housing condition rather than homeownership (Rohe, VanZandt, & McCarthy, 2001). Because HFHGI's programs transition families to affordable homeownership *and* HFHGI ensures the homes it constructs are safe, its partner families receive the resulting mental health benefits, regardless of whether that improvement is attributable to homeownership or to improved living conditions.

Researchers examining a Habitat for Humanity program in rural and urban areas of New York State examined the quality of housing relative to householders' levels of psychological distress before and after moving into a new residence. In rural and urban areas, the researchers found that higher-quality housing lowered levels of psychological distress in non-clinical populations. In this research, the degree of housing improvement successfully predicted the degree of improvement in psychological distress levels (Evans, Wells, Chan, & Saltzman, 2000; Bratt, 2002), and that improvement lasts over time (Rohe, VanZandt, & McCarthy, 2001). The study found an average nine percent increase in an individual's perception of their wellbeing across the areas measured,[16] with the highest improvements attributed to higher perceived privacy in the new homes and better indoor climatic conditions.

To the degree that the nine percent improvement in levels of psychological distress correlates to a nine percent decrease in the likelihood an individual will experience a psychiatric disorder in a given year, we can estimate the value of the improved mental health of individuals who are sufficiently housed in owner-occupied units. The value of the intervention would be equal to nine percent of the cost of the treatment for a single psychiatric episode multiplied by the rate of prevalence of psychiatric episodes among American adults.[17] There are multiple types of psychiatric episodes listed in the *DSM-III-R* and discussed in academic and practitioner literature; in constructing its estimate, PPI considered the treatment for generalized depression because of its prevalence and available research. In so doing, PPI assumed that the cost of treating depression is a reasonable and conservative proxy for the cost of treating other psychiatric disorders. Research suggests the average incremental cost of treating an individual with depression

[16] Housing quality, Cleanliness/Clutter, Indoor Climatic Conditions, Privacy, Hazards, Structural Quality, and Child Resources (Child Resources was not found to be statistically significant, so it is omitted from the results reported above).

[17] There is a 30 percent annual prevalence of psychiatric episodes (as defined by the *DSM-III-R*) among American adults (Kessler, et al., 1994).

(including the costs borne by an individual and the healthcare system at large) is $8,119. This suggests the decreasing of psychological distress associated with moving householders into homeownership in safe housing is valued at more than $219 per placement.

While this estimate is reasonable given the available research, the actual benefit realized will be dependent upon the nature of an individual's disorder, its degree of severity as well as when and whether that individual seeks treatment. This figure may understate the value in that it only considers the head of household; in homes where two adults are moved to higher-quality, more secure housing, the benefit may increase accordingly. Furthermore, the estimate only considers the savings in terms of healthcare; it does not measure the value of improved quality of life experienced by individuals with better psychological dispositions.

Finally, the relationship between homeownership and positive mental health outcomes is contingent on the homeowner's mortgage being current; falling into various states of mortgage delinquency has been identified to have a negative effect on the health of a homeowner (Rohe, VanZandt, & McCarthy, 2001; Apgar, 2004)

Environmental Health

Low-income families are at much greater risk of living in substandard housing than families with greater means: Their homes are more likely to have inadequate heating and cooling systems, be infested with bugs or rodents, and expose inhabitants to toxic materials. Any inhabitant of dilapidated, overcrowded, or substandard housing is at increased risk of negative health outcomes relating to their environment; however, because their bodies are still developing, children are more susceptible to these environmental hazards. Many environmental hazards have been shown to have significant and lasting negative impacts on the health of children; chief among these risks is the presence of lead-based paints (Bratt, 2002).

A 2002 study found that homes with low-income inhabitants were 72 percent more likely to have lead-based paint hazards relative to those that housed individuals not in poverty, suggesting low-income families have a much greater risk of lead poisoning than other families (Jacobs, et al., 2002). According to a report by the U.S. General Accounting Office, children in or targeted by federal healthcare programs (a function of the economic situation of their households) are five times more likely to have elevated lead levels relative to other children (United States General Accounting Office, 1999). A study of statewide lead screening data from the Rhode Island State Department of Health found that 31 percent of children in poverty had elevated lead levels (Vivier, Hauptman, Weitzen, Bell, Quiliam, & Logan, 2011). A longitudinal study that followed toddlers through age five found that just having relatively modest elevated lead levels reduced IQ test results in children by 7.4 points (Pocock, Smith, & Baghurst, 1994; Lane, et al., 2008). Research suggests a decline in one IQ point leads to a loss in lifetime earnings ranging from $18,470 (regardless of sex) to $23,085 for men and $20,606 for women (Muir & Zegarac, 2001).

While the negative health outcomes associated with elevated lead levels are numerous,[18] given the considerable difficulties with disentangling these negative outcomes, PPI used the IQ measure proposed by Muir and Zegarac as a reasonable measure to assess the costs associated with more direct consequences of environmental hazards. Using a midpoint of the upper bound of their findings (assuming half of those exposed would be male and the other half female), one case of elevated lead exposure that resulted in a 7.4 point decrease in a child's IQ would lead to lifetime earning losses between $136,681 and $161,659. If a Habitat-partner had one child and moved into a unit where there were no possibility of lead poisoning related to the housing unit (i.e., the 31 percent chance of lead poisoning was reduced to no chance), the value of the move would equal between $42,371 and $50,114. Assuming the Habitat partner had the

[18] These include, but are not restricted to, neurodevelopmental disorders and complications from hypothyroidism, including most learning, developmental, and/or behavioral disabilities.

Marion County norm for number of children in low-income households (1.79) (US Census Bureau, 2012), the per-placement value of that intervention would be between $75,844 and $89,704.[19] Clearly, the value attributable to Habitat's work in placing families in homes free of environmental hazards is substantial. At the same time, the predicted amount should be viewed with caution as it is sensitive to the number of children in the household, the time in a child's life when the removal of hazards occur (this figure assumes the removal of the hazard before the child's conception), and the presence of other hazards in the child's daily environment.

Note that only certain Habitat partners realize the benefits outlined above—those who would have been exposed to lead-based paint had they not moved into housing free of environmental hazards. There may be additional social benefits not captured in the above analysis if, through the process of rehabilitating existing housing, Habitat removes a unit of housing with environmental hazards from the housing supply. In other words, if Habitat builds a new home on a vacant lot and relocates a family from contaminated housing into its unit, but another family moves into the previously occupied unit, the Habitat partner family benefits but subsequent tenants of their previous residence may suffer. In that case, there would be no net benefit from a societal perspective. On the other hand, when Habitat rehabilitates a home and contains or abates existing environmental hazards, a contaminated unit has been removed from the housing supply and no subsequent families will be exposed to hazards in that unit of housing. In short, there may be additional benefits that are not accounted for in these estimates when Habitat supports its families and addresses environmental hazards in housing at the same time.

Finally, research suggests that in addition to foregone lifetime earnings due to lead poisoning, significant social costs accompany societal declines in IQ scores. These include social costs attributable to increased poverty, increased likelihood of out-of-wedlock births, increased prevalence of low birth weight, increased likelihood of welfare recipiency, and increased likelihood of serving jail time (Muir & Zegarac, 2001).[20] Limiting estimates to foregone earnings alone likely undervalues the benefit of remedying lead-based paint hazards.

Decreased Reliance on Social Services

As noted above, there are a number of consequences related to negative environmental health outcomes associated with substandard housing, and preventing these negative health outcomes has considerable economic benefits over time. One such negative consequence noted by Muir and Zegarac (2001) is increased recipiency of welfare and other social services. Given the difficulties with disentangling the consequences of substandard housing from confounding factors (Muir & Zegarac, 2001), PPI did not attempt to estimate the aggregate costs averted from decreased reliance on social services here. Furthermore, econometricians recognize the purpose of the welfare system to be the redistribution of resources—serving as transfer payments rather than value created through averted costs or realized benefits. As a result, the only savings realized from removing an individual from the welfare system is the administrative cost of processing that individual's benefits (Brown, Frates, Rudge, & Tradewell, 2002), which are likely to be modest on a per-placement basis.

Nevertheless, there are areas in which the data on decreased reliance on social services are available and measurable. To that end, research has examined the effect of homeownership on the likelihood of entering a nursing home facility in the homeowners' lifetime or exiting such a facility in the event that they do

[19] This finding warrants some additional explication: 31 percent of families that Habitat serves will realize this benefit (the 31 percent that we assume would have experienced negative outcomes attributable to their exposure to environmental hazards). Those who would have had these outcomes but for their partnership with Habitat would receive the full benefit ($46,300 per child); those who would not have experienced negative outcomes attributable to exposure to environmental hazards would not receive any benefit. Nevertheless in the aggregate, we can assume 31 percent of partner families would receive this benefit; therefore, the reported figure is relevant in the aggregate sense. The experience of individual partner families will differ based on their prior living conditions.

[20] Some of these costs are considered in the section below within the context of the societal cost of high school dropouts.

enter one. Research examining risk factors for nursing home entrances and exits found that housing tenure was a strong predisposing factor in determining the likelihood that one would enter a nursing home; homeowners are only 70 percent as likely as those who do not own homes to enter a nursing facility in their lifetime. Additionally, homeowners who do enter a nursing facility are 1.3 times more likely to exit that facility than those who do not own homes (Greene & Ondrich, 1990; Dietz & Haurin, 2003).

Researchers in the medical field have estimated the total costs associated with nursing home care relative to the costs of formal in-home care and informal home care following hip fractures among senior citizens. While hip fractures are not necessarily representative of all maladies that might place someone in a nursing facility, most nursing home admittances follow some sort of precipitating event that would impose one set of costs, but the costs of treatment in a nursing facility would encompass many additional costs not necessarily directly related to the precipitating event. This research presents an aggregate cost of treating the person, of which the complications from hip fractures are less than half the total costs reported. The researchers find a range of total lifetime costs associated with nursing home stays to be between $88,782 and $112,025; whereas home care costs between $72,016 and $117,232. The midpoints for nursing home stays and home care (a weighted midpoint considering formal care and informal care) are $100,403 and $96,163, respectively (Braithwaite, Col, & Wong, 2003). Therefore, in keeping with the research that housing tenure prevents 30 percent of nursing home entrances and that 43 percent of all seniors will someday enter a nursing facility, a value of $547 results from each HFHGI placement.

While this is a relatively modest benefit, the high cost of home care is due in part to increased life expectancy of the seniors who never enter nursing facilities. In examining the monthly costs associated with each form of care, the researchers suggested an upper range estimate of $5,000 per month for nursing home care, $150 monthly cost of formal home care, and informal home care costs of $500 per month.[21] From a medical cost-effectiveness perspective, given the increased life expectancy associated with returning home after an event that might otherwise precipitate a nursing home stay, homeownership may provide additional benefits to the homeowner and his or her loved ones—value that is not captured in monetary terms. Finally, as noted above, there is also a greater likelihood of homeowners returning home from a nursing facility than non-homeowners; while we recognize that there is a cost savings associated with that, PPI did not attempt to estimate an actual value due the lack of estimates of those values in the academic literature.

Aggregating Health-Related Benefits

Research suggests that there may be numerous health and wellness benefits derived from homeownership, housing condition, or a combination of both (Rohe, VanZandt, & McCarthy, 2001; Dietz & Haurin, 2003). PPI estimates the potential secondary benefits that could be derived from these health and wellness measures to be between $76,610 and $90,470, with the overwhelming majority of those benefits derived from the averted costs of children suffering from environmental health hazards (see Table 4). PPI presents this figure with some caution: It is highly sensitive to the number of children in the partner family's household as well as the age of the children at the time when the family partners with Habitat. At the same time, these estimates only examine averted healthcare costs and foregone earning potential in areas where there is sufficient research. These figures should not be construed as all-encompassing as they only represent findings where existing research provides sufficient

Table 4. Per-Placement Value of Health Benefits

Item	Low Estimate	High Estimate
Improved mental health		$219
Averted environmental health costs	$75,844	$89,704
Decreased reliance on social services		$547
Total	**$76,610**	**$90,470**

[21] Monthly costs are shown in 2001 dollars. Informal costs are those borne by caregivers who do not necessarily receive financial compensation for the services they provide.

guidance on the value of these benefits. Further, these estimates do not account for the value of increased life expectancy or improved quality of life, benefits that likely have considerable value to the individuals realizing them.

The Effect of Homeownership on Youth Outcomes

The final categorical area noted by Rohe, VanZandt, & McCarthy (2002) in which homeownership can have a considerable positive impact is youth-related outcomes. Because these benefits will play out over the years of a child's future life, the value potential of positively impacting youth is considerable.

Researchers consistently recognize that there are innumerable influences upon children shaping what they become as adults and what opportunity sets will be presented to them during their lifetimes. Disaggregating these influences is difficult in the absence of studies with control groups (as it would be unethical to deny an individual the right to purchase a house for research purposes). Nevertheless, there are a number of studies that seek to isolate the effect of homeownership on child-related outcomes; these studies often find that homeownership can have a significant and lasting impact in these individuals' lives (Green & White, 1997; Rossi & Weber, 1996). Researchers propose many reasons for this positive effect, including the following:

- Homeownership offers children a more stimulating home environment (Haurin, Parcel, & Haurin, 2000; Green & White, 1997).
- Homeownership increases the stability of a child's living situation (Scanlon & Devine, 2001; Vandivere, Hair, Theokas, Cleveland, McNamara, & Atienza, 2006; Dietz & Haurin, 2003; Rohe, VanZandt, & McCarthy, 2001; Haurin, Parcel, & Haurin, 2000).
- Improved housing conditions create a safer environment (Bratt, 2002).
- Homeowners are more likely to monitor and control social deviance within their neighborhoods (Dietz & Haurin, 2003; Vandivere, Hair, Theokas, Cleveland, McNamara, & Atienza, 2006; Green & White, 1997).

The positive effects on child-related outcomes associated with homeownership tend to be greatest in low-income households (Green & White, 1997).

Homeowners tend to have much longer stays in one place than renters (a median of 8.2 years for homeowners relative to a 2.1-year median for renters) (Rohe, VanZandt, & McCarthy, 2001; Rohe, VanZandt, & McCarthy, 2002; Vandivere, Hair, Theokas, Cleveland, McNamara, & Atienza, 2006); much of the research attributes this longevity in one place as a key factor in why children in owner-occupied units typically fare better than their renting counterparts. While stability may be the causal factor in improved outcomes for homeowners relative to renters, to the degree that homeownership causes stability, the benefits derived from that stability could be attributed to homeownership (Dietz & Haurin, 2003). Researchers have also found that it is not necessarily one move that is destabilizing for children; rather, serial moves (multiple moves within a two or three year period) and moves that occur as a result of a negative situation, such as a foreclosure or eviction, have an adverse impact in the life of a child (Scanlon & Devine, 2001). To that end, promoting affordable homeownership among low-income families—those most likely to be hyper-mobile or lose their homes through negative circumstances—may result in greater returns than investments in homeownership generally (Green & White, 1997), so long as that homeownership does not represent an unmanageable financial burden (Tighe, 2010).

Academic Achievement

Children of homeowners primarily benefit from their parent(s) being homeowners through increased academic performance and higher graduation rates. Research finds that a one standard deviation increase in

standardized test scores could translate into an increase in one's lifetime compensation of $110,000 to $256,000 (2002 dollars) depending upon the methodology (Kane & Staiger, 2002). Research also reports that children of homeowning households achieve nine percent higher math scores and seven percent higher reading scores than children in renting households (Dietz & Haurin, 2003); earlier studies found a similar, yet slightly smaller positive effect on test scores (seven percent increase in math and six percent increase in reading) (Haurin, Parcel, & Haurin, 2000).[22]

Assuming a midpoint between math and reading scores and the figures suggested by Kane and Staiger (2002) and updating those figures to 2011 dollars, PPI estimates that homeownership benefits each child within a household by increasing his or her lifetime earnings between $28,388 and $66,068. Green and White (1996) offer a conservative estimate of $47,052 ($31,000 in 1994 dollars). Using a midpoint between Green and White's finding and the lower-bound suggested by Kane and Staiger (2002) and maintaining Kane and Staiger's upper-bound estimate suggests a range of benefit between $37,720 and $66,068 per child. Adjusting these measures for the typical family size of low-income families in Marion County (1.79 children), PPI estimates the per-placement benefit derived from HFHGI placing one typical low-income family into homeownership to be between $67,519 and $118,261 in increased lifetime earnings for the children of those households.[23]

This finding is sensitive to the actual size of the family served, the age of the children when the family moves into homeownership, as well as other potentially confounding factors. Furthermore, the studies eliciting improved academic performance do not necessarily control for the environmental health benefits of improved housing condition, so it is possible that there could be some double-counting of a benefit derived from improved earnings potential and averted consequences resulting from environmental health conditions. However, if double-counting is occurring, it should not substantially alter the findings above as these findings pertain to children in homeownership generally as opposed to isolating children of low-income homeowners (those more likely at risk of being exposed to environmental hazards).

The Societal Value of Improved Graduation Rates

Aaronson (2000) shows that children in owner-occupied housing not only have higher levels of academic achievement in school, they are more likely to graduate as well. While graduation rates are influenced by a number of variables, research isolating homeownership's impact on graduation rates in low-income communities found that residing in an owner-occupied unit increased the likelihood of high school graduation by 12 percent in absolute terms generally or by 6.7 percent when residential mobility is controlled (Aaronson, 2000). The relationship between individual lifetime earnings due to increased academic achievement and increased lifetime earnings due to graduation are inextricable; as a result, PPI did not attempt to elicit an estimate of the benefit that accrues to the individual from graduating outside that which accrues as a result of higher levels of scholastic achievement. Nevertheless, research suggests that considerable costs are borne by society when children fail to graduate from high school. When monetary and intangible costs are considered, these costs are estimated to be as high as $543,778 per dropout;[24] in order to be somewhat conservative with its estimates and in keeping with the methodologies of similar studies, PPI only considered the actual monetary costs of $169,821 per dropout (Brown, Frates, Rudge, & Tradewell, 2002). Assuming the 6.7 to 12 percent decrease in likelihood of dropping out, the societal cost of a dropout, and Marion County's rate of 1.79 children per low-income household; PPI estimates the societal benefit of dropout prevention to be between $11,378 and $36,477 per placement. As with other

[22] As well as three percent lower scores on the behavioral problems index.

[23] Other studies have found a positive relationship between homeownership and graduation rates (from which benefit can be derived as well), but we do not seek to disentangle individual benefits derived from scholastic performance (grades) from scholastic achievement (level of education). We examine the averted societal costs of preventing high school dropouts below.

[24] Intangible costs include those costs that are not directly borne by the individual who drops out of school but costs borne by society or other individuals (i.e., the pain, suffering, and loss of quality of life by a victim of a crime is an example of an intangible cost) (Cohen, 1998).

child-related benefits, this figure is sensitive to the actual size of the family and the age of its children upon moving into the owner-occupied unit.

Reduced Risky Teen Behavior

Research suggests that residing in an owner-occupied unit can reduce the likelihood that teenagers will engage in deviant behavior (e.g., drug use, criminal mischief, gang activity, etc.). Numerous studies suggest that children of homeowners as well as children in areas with higher levels of homeownership are less likely to engage in this type of behavior. However, no studies found by PPI actually sought to establish a causal relationship between homeownership and mischievous behavior, nor did any research attempt to quantify the degree to which tenure decisions of one's parent(s) reduce the likelihood of teenage deviance relative to myriad other influences on teenage behavior.

Researchers have, however, sought to establish a causal relationship between homeownership and the reduced likelihood of a daughter within the household becoming pregnant as a teenager: Homeownership reduces the likelihood that a teenage daughter will become pregnant by two to four percent (Green & White, 1997). Other researchers have calculated the annual societal cost of one teenage pregnancy to be $17,828 (Rosenthal, Ross, Bilodeau, Richter, Palley, & Bradley, 2009). Assuming the decrease in likelihood of teenage pregnancy (two to four percent), the societal cost of one teenage pregnancy, Marion County's rate of 1.79 children per low-income household—and assuming half of those children will be daughters—PPI estimates a per-placement benefit between $319 and $638.

As with other child-related benefits, this figure is sensitive to the actual size of the family (and in this case the sex of the child) and the age of the child upon moving into the owner-occupied unit. This figure is conservative as the benefit reported is an annual cost that is averted rather than a total cost; in other words, a teenager who has a child at age 14 will realize these costs for four years, whereas one who is 17 would only realize these costs for one year. To the degree that homeownership prevents teen childbearing among younger teenagers, the benefit will be higher than that considered here. Further, there are likely to be additional lifetime costs—and perhaps generational costs associated with reduced opportunity—resulting from teenage pregnancy that are not necessarily accounted for here.

Aggregating Child-Related Benefits

Table 5. Per-Placement Value of Youth Outcomes

Item	Low Estimate	High Estimate
Improved academic achievement	$67,519	$118,261
Averted societal costs due to high school dropouts	$11,378	$36,477
Annual averted societal costs due to risky teen behavior	$319	$638
Total	**$79,216**	**$155,376**

There may be numerous beneficial child-related outcomes derived from homeownership and the stability that homeownership provides, including improved scholastic performance of children living within the house, social benefits from improved graduation rates, and reduced risky teen behavior (Dietz & Haurin, 2003; Green & White, 1997; Haurin, Parcel, & Haurin, 2000; Rohe, VanZandt, & McCarthy, 2001). Examining these three areas, PPI finds a per-placement benefit of between $67,519 and $118,261 on increased lifetime earnings due to higher academic achievement, between $11,378 and $36,477 benefit associated with averted societal costs attributable to high school dropouts, and between $319 and $638 annual benefit from averting costs associated with teenage pregnancy (see Table 5). Given that, the potential secondary benefits derived from child-related outcomes associated with each partner family served on the measures examined are valued at an estimated $79,216 to $155,376. As noted above, this benefit is sensitive to the number of children in the household, the age of the child when the family enters into homeownership, and—in the case of teenage pregnancy—the sex of the children in the family. Additionally, while PPI did not attempt to quantify its impact, research notes that perhaps the greatest benefit that homeowning households provide to their children is that their children are more likely

to become homeowners themselves, creating an intergenerational virtuous cycle of positive benefits and outcomes (Rohe, VanZandt, & McCarthy, 2001; Boehm & Schlottmann, 1999; Vandivere, Hair, Theokas, Cleveland, McNamara, & Atienza, 2006).

Finally, because control variables in the various studies mentioned above were not necessarily consistent across studies, PPI did not attempt to assess the above benefits for low-income householders relative to all householders. Nevertheless, research suggests that the outcomes suggested above may be more beneficial to low-income households than households generally. If these benefits do indeed accrue to low-income households to a greater degree than to households in general, the estimates noted above may be conservative (Rohe, VanZandt, & McCarthy, 2001; Green & White, 1997).

Civic Engagement

An additional area where research has found that the homeownership effect has the potential to create value is through increased civic engagement. Research suggests homeowners are more likely than similarly situated renters to engage in political and social activities. These individuals are more likely to belong to a civic organization, vote, know the names of public officials, and volunteer than their renting counterparts. While the reason for homeowning individuals being more active than renters is not well studied, research suggests that lower mobility rates may lead to greater involvement in one's community and its social happenings. On average, homeowners belong to 0.22 more organizations than renters (DiPasquale & Glaeser, 1999; Rohe, VanZandt, & McCarthy, 2001).

Benefits accrue to the individual and to society at large from participation in the civic life of a community. Chief among these benefits for low-income households is the development of social capital—the ability and opportunity to participate more fully in one's community—that would be less likely to be developed but for their civic engagement. Developing social capital, in turn, improves individuals' cognitive capacities while advancing an individual's ability to function well in society, and may increase the opportunity sets available to the individual and his or her children (Scanlon & Devine, 2001; Coleman, 1988). Because poorer households have less economic capital, social capital is disproportionately important to the welfare of the individuals residing within these households (Putnam, 2000; Frisch & Servon, 2006). Developing and strengthening these capacities can have a tangible economic benefit to these families in that they may be more likely to know of and compete for job opportunities than those who do not have the same level of civic engagement (Dietz & Haurin, 2003).

In addition to individual economic benefits derived from increased human capital and job opportunities that might not happen but for homeownership, there are societal benefits to the civic engagement of individuals. The typical American volunteer provides 51 hours of volunteer labor in a typical year (US Bureau of Labor Statistics, 2012); as noted above, homeowners belong to 0.22 more volunteer organizations than do their renting counterparts. While more data would be necessary to fully estimate the monetary value of homeownership's effect on volunteerism, we can make a rough, yet conservative, estimate by calculating the value of a 22 percent increase in the median hours of a typical volunteer. Assuming an hour of volunteer labor in Indiana is valued at $18.04 (Independent Sector, 2012) and estimating the increase in volunteer hours attributable to homeownership at 11.22 hours;[25] PPI estimates the value of volunteerism created by moving families from renting to homeownership to be $202 per individual in the household. Adjusting for the average household size in Marion County of 2.42 (US Census Bureau, 2010), the annual per-placement value attributable to homeownership is nearly $490. Multiplying the annual value by the median number of years a homeowner remains in his or her home (8.2 years, as noted above) results in a per-placement benefit of $4,018.

[25] Median of 51 hours multiplied by the homeownership effect of 0.22.

This value is sensitive to the number of individuals in the household, those individuals' ages (individuals over age 35 tend to volunteer more hours than those under 35), the educational attainment of those individuals, the length of time those individuals have lived in a particular community, and myriad other factors. At the same time, this figure is likely conservative because there is a considerable segment of the volunteering population who volunteer far more than 51 hours (34.4 percent of the national volunteering population volunteers more than 100 hours), and it is likely that some households would volunteer more than the median. Furthermore, individuals who are successful homeowners—as most Habitat partners will be—generally do not return to a lifetime of renting after a period of time in which they are successful homeowners. To the degree that one's tenure as a homeowner results in an increase in volunteerism and individuals remain homeowners into the future, it is reasonable to assume that they would also continue their volunteerism. Older Americans tend to volunteer much more of their time than younger Americans; if Habitat is creating additional volunteer labor among its current partners, those partners may be more likely than similarly-situated renters to eventually donate a considerable amount of additional volunteer labor as older adults.

Neighborhood Conditions

One final area where increased homeownership could have additional societal benefit is in improving neighborhood conditions. A considerable body of research suggests that higher rates of homeownership may improve the physical and social conditions of neighborhoods (Rohe, VanZandt, & McCarthy, 2001; Bratt, 2002). The reasons for the positive impact of homeownership on neighborhood conditions are widely debated, but most explanations center on two things: 1) neighborhood stability resulting from the length of a homeowner's stay relative to that of renters; and 2) the vested financial interest those owners have in preserving and improving the social and physical conditions of the neighborhood. Homeowners have a financial stake in maintaining their own properties, a factor that contributes to the improvement of the physical condition of the neighborhood; likewise, homeowners may be less tolerant of deviant social behavior than renters due to their financial stake in the neighborhood (Dietz & Haurin, 2003; Haurin, Dietz, & Weinberg, 2003; Bratt, 2002; Rohe & Stewart, 1996; Edmiston, 2012). Furthermore, the actions of existing homeowners in improving neighborhood conditions (e.g., fixing up one's property) may attract prospective homeowners to the neighborhood and result in housing value appreciation and other benefits for the neighborhood (Edmiston, 2012). If these benefits result in additional positive effects, investment in neighborhoods may result in social multipliers—positive social outcomes for the families of Habitat partners as well as their neighbors—beyond the initial investment in housing development or other immediate benefits noted throughout this report (Haurin, Dietz, & Weinberg, 2003).

As noted above, there are numerous confounding factors in eliciting an actual estimate of the impact of HFHGI's investments in Indianapolis neighborhoods absent a sophisticated economic modeling exercise. Such an exercise is made even more difficult by the possibility of social multipliers. For those reasons, PPI did not attempt to estimate the value of the benefits of improved neighborhood conditions; we only call attention to the idea that HFHGI's efforts may have additional positive social and physical benefits when considered from a broader neighborhood's perspective.

Conclusion

In aggregating the areas of impact examined by PPI throughout this report, we find that the successful placement of one Habitat partner family results in an estimated $330,054 to $447,349 in total benefits. As noted above, between $170,210 and $197,485 of the total benefit is directly attributable to the Habitat model regardless of the household composition of the partner family. An additional $159,844 and $249,864 in benefits may be realized when a partner family is successfully placed, but the realization of those benefits is contingent—at least in part—on the composition of those households. Another way of examining the

impact of HFHGI's program-related investments is its return on investment: For every dollar HFHGI spends placing its families, a total of between $1.92 and $2.61 in benefit may be realized.

Table 6. Total Benefits Per Placement

Item	Low Estimate	High Estimate
Direct impacts	$170,210	$197,485
Potential health benefits	$76,610	$90,470
Potential youth benefits	$79,216	$155,376
Potential civic engagement	$4,018	$4,018
Total	**$330,054**	**$447,349**

Clearly, the direct benefits potentially realized when HFHGI successfully places a family are substantial. It should also be noted that the estimates outlined throughout the report are often conservative, and the actual benefits realized may exceed the estimates noted here. For example, these estimates fully consider the fiscal benefit to local government in terms of increased tax base but do not capture those costs that are likely averted (e.g., costs associated with public safety) by HFHGI's activities. Additionally, research suggests that HFHGI's activities have direct positive impacts upon the value of properties that are proximate to the properties HFHGI rehabilitates and on the local economy; however, absent sophisticated economic modeling exercises, PPI cannot quantify the total benefit realized. As a result, the direct benefits of HFHGI's activities likely exceed those estimates noted throughout this report.

Furthermore, because the list of secondary potential benefits may not be exhaustive—PPI only sought to elicit estimates in areas where corresponding research was sufficient to inform such estimates—these estimates may not consider the full range of benefits realized by a family successfully placed in a Habitat home or the communities within which they are placed. Finally, in constructing its estimates, PPI followed the methodologies of similar studies and those studies are often conservative in their own estimates. As PPI's estimates reflect the conservative methodologies and findings of similar studies, its estimates are likely to be conservative as well.

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