research works

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A bridge linking housing research and practice

volume 1, number 1

The PATH to Innovation

How did PATH help launch a sustainable community in the historic inner city of Tucson, Arizona? The story of Armory Park del Sol demonstrates how PATH technical support can play a role in transforming communities, while respecting the architectural character of the surrounding area. Working with innovative builder John Wesley Miller and with additional resources from the Department of Energy, what began as a PATH field evaluation gave rise to a unique development of solar homes, including a 'zero-energy home.' Now a PATH demonstration site, the first house in the Tucson development has attracted national attention as a model for sustainable housing and advanced building technologies.

Photovoltaic panels on the rooftops in Armory Park del Sol soak up the Arizona sun in the PATH Zero Energy Home.

The Anatomy of Innovation

Innovative builders come in many shapes and sizes. While large national and regional builders may have the resources to be leaders in innovation, small builders with a clear sense of purpose — and help from resources such as PATH — can be just as effective as early adopters of new housing technologies. Indeed, Miller may be one of the best examples we've seen in the 'small but progressive' category so far.

His homes tell the story best. A typical Armory Park del Sol home has a one kilowatt photovoltaic (PV) system affixed to the roof of the garage, which provides about half the electricity used by a typical American home. Miller has learned that the secret to success with solar is control, which he achieves through each home's thermal mass construction. The floor slab is a minimum of ten inches thick — six inches more than standard. Masonry walls are well insulated and covered with three coats of stucco cladding. Energy is stored at night in the thermal mass of the floor slab and walls, and gradually released during the day when needed most. In effect, the walls and floor become part of the home's heating and cooling system.

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HUD USER

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PD&R U.S. Department of Housing and Urban Development
Office of Policy Development and Research

Groundbreaking Study Tracks the Impact of Economic Development Lending

Communities throughout America use HUD economic development funding to support third-party lending programs. In turn, these programs provide local businesses and entrepreneurs with access to the financing they need to do business in troubled communities, and to create jobs in the neighborhoods that need them most.

L&A Oak Designs, which manufactures oak furniture in Bakersfield, California, is one of hundreds of businesses that are thriving, thanks in part to HUD economic development funds. In the late 1990s, the company was saddled with a manufacturing facility that was too big and expensive to be supportable. As L&A struggled to retain its 61 employees, a downturn in sales made it impossible for the company to cover the costs of moving to a new facility. Borrowing from future Community Development Block Grant (CDBG) funds, the City of Bakersfield offered L&A a short-term, low-interest loan to make the move to a new facility. Today, L&A enjoys a healthier bottom line, and the company has kept all of its 61 employees on the payroll.

Public-Sector Loans to Private-Sector Businesses: An Assessment of HUD-Supported Local Economic Development Lending Activities, published in July 2003, is the first formal study of the impact of HUD's economic development lending. Using telephone and in-person interviews with state and local economic development staff and in-depth analyses of financial data, the study investigates the characteristics of HUD-supported economic development loans and tracks their performance over time.

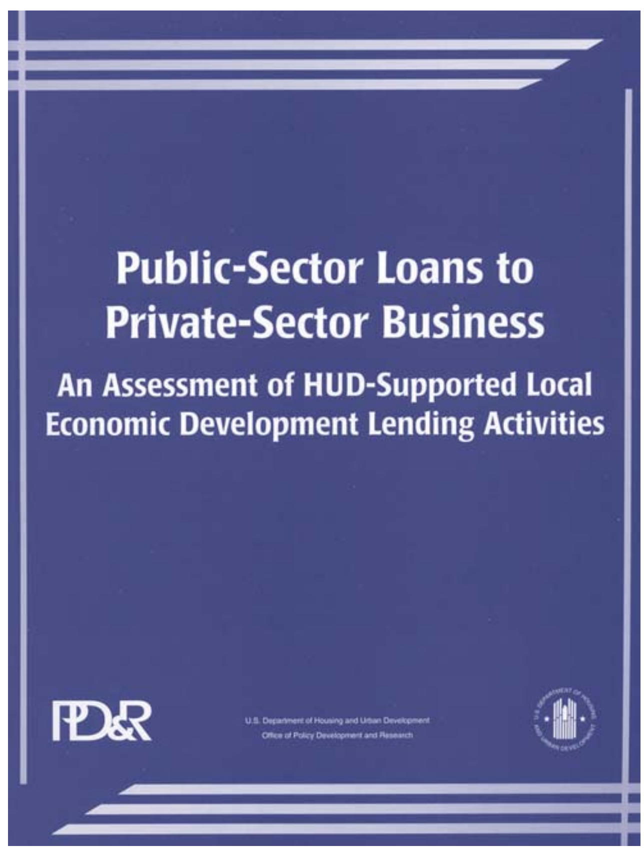
According to the study, state and local governments lent more than $2.2 billion in HUD funds in the second half of the 1990s to private businesses — like L&A — to bolster economic development. HUD funds economic development loan programs through the Community Development Block Grant (CDBG) program, the Economic Development Initiative (EDI), and the Brownfields Economic Development Initiative (BEDI), and offers loan guarantees through the Section 108 Program.

The study finds that the nation's most populated and most distressed cities and urban counties account for the preponderance of HUD-supported economic development lending. Although firms doing business in poor neighborhoods might be expected to fail at higher rates than others, the survival rate of CDBG- and Section 108-assisted businesses is about the same as the national average for all businesses. More than 30 percent of borrowers taking part in CDBG and Section 108 indicated that their projects would not have gone forward without these HUD funds.

In addition to issues of targeting and economic development objectives such as job creation, the report also examines the historic performance of economic development loans. Finding a historical default rate of 23 percent for CDBG loans and 42 percent for Section 108-funded loans, researchers investigated factors that impact the likelihood of default. Local, state, and federal policymakers may find these loan performance considerations useful in making the most of economic development lending funds.

Public-Sector Loans to Private-Sector Businesses also assesses the feasibility of constructing a secondary market for economic development loans. Having a secondary market in place would further leverage the funding available for economic development lending.

Public-Sector Loans to Private-Sector Businesses is available as a free download on HUD USER at http://www.huduser.org/publications/econdev/pubsec_loans.html or for a nominal fee by calling 1-800-245-2691.



UCSD Creates Bridge Between Research and Practice Through Community/University Partnerships

The Community Outreach Partnership Center New Directions at the University of California, San Diego (UCSD), the San Diego Housing Commission (SDHC) and San Diego State University (SDSU) Educational Technology Department provide opportunities for graduate students to design and implement a range of applied research projects in the Housing Commission's "Moving To Work" (MTW) Demonstration Program.

The MTW program is a five-year Housing and Urban Development designation that came to a close in December 2003. Underlying the program is the hypothesis that locally designed programs which provide housing assistance as well as support services are more effective and cost efficient because they promote family self-sufficiency at a pace faster than standard programs. The MTW complex includes a Learning Opportunity Center (LOC), which serves as a resource room for adults engaged in job search and training activities, as well as for students after school.

As part of the requirements for a Master's Degree in Educational Technology at San Diego State University, students are required to take a practicum course in lieu of a thesis and to work on a semester-long project with a "client" from the community. Over the last five years, the SDHC and UCSD Community Outreach Partnership Center enlisted the assistance of five students who conducted evaluations on the Moving to Work Program.

Student Research Projects

In 1999, a student intern from the SDSU Educational Technology Program designed and implemented a front-end analysis to identify the barriers faced by MTW program participants that might prevent them from achieving self-sufficiency within the designated timeframe. The research also includes development of an interview instrument specifically for use with MTW participants for the purpose of conducting the front-end analysis.

In 2000, another graduate student undertook a formative evaluation of the MTW program using Jacobs' (1998) Five-Tiered approach. The evaluation concentrated on the first two tiers: (a) the preimplementation tier, where the evaluability of the program is determined; and (b) the accountability tier, where the program's utilization, entrenchment, and penetration into the target population are determined.

In 2001, a third graduate student continued the formative evaluation of the MTW program. At this stage, the evaluation concentrated on the effectiveness of the program and whether any modifications were necessary. The student: (a) examined program goals and objectives and looked at ways in which program staff can better serve clients; (b) continued to assess utilization of program services and; (c) prepared to assess program outcomes.

In 2002, the graduate student determined if there had been a change in the level of earned income for the MTW participants and if that change was statistically significant. It included analyzing these changes within the context of the San Diego economy and comparing participant incomes with other indicators of self-sufficiency. The student also described the current education level of the residents, the degree to which these residents have pursued education and training while in the program, and any educational barriers that they encountered. It also included describing the progress these adults have made in reaching their career goals.

In September of 2002, the San Diego Housing Commission subcontracted with the Barrio Logan Institute to provide after-school activities for children at the Learning Opportunity Center located in the MTW complex. The primary goal of the program was to improve academic and social behavior and to provide children with a safe place to be after school. In 2002-2003, a graduate student conducted a descriptive evaluation of this program. The student described the program, reviewed the literature for characteristics of successful programs, and determined the extent to which, in the perceptions of the director and the

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Two New Studies Examine Impact of Voucher Homeownership Program

Homeownership has long been central to the American Dream. Homeownership provides families with a stable environment to live and raise their children, contributes to community pride, and adds fuel to the national economy by increasing families' purchasing power while aiding in the accumulation of wealth. Since September 2000, HUD's Voucher Homeownership Program has offered public housing agencies (PHAs) the administrative flexibility to promote homeownership within their communities. Through the program, participants eligible to receive rent subsidies can instead choose to direct those funds toward monthly homeownership expenses. In its first two years, HUD estimates that the Voucher Homeownership Program has helped approximately 500 low-income families become homeowners.

Two newly-released HUD research reports offer a first look at the effects of the Voucher Homeownership Program, and provide valuable insights on how to maximize program resources.

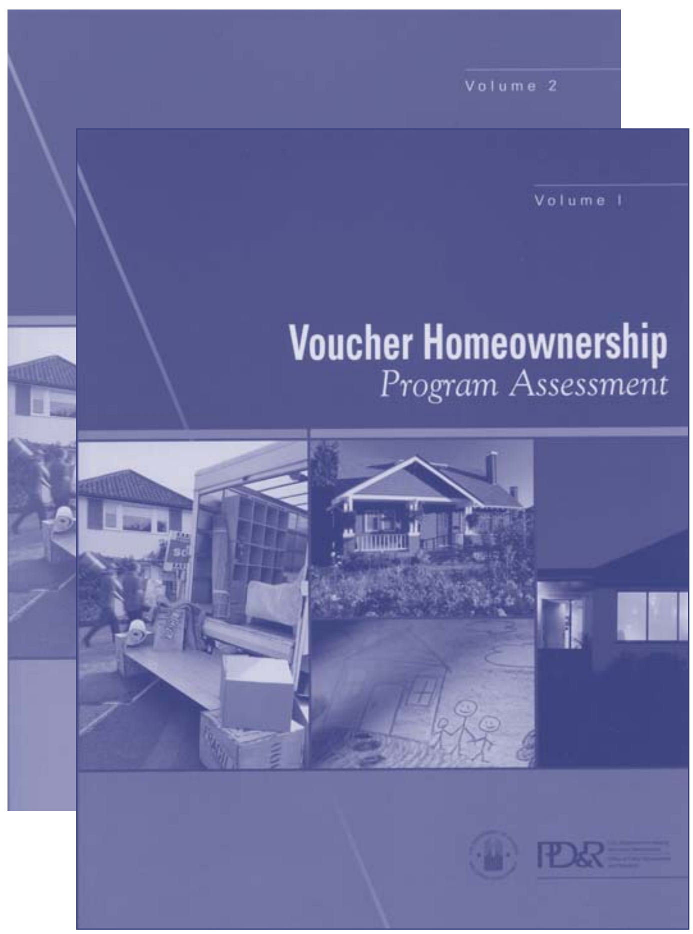
The first of these, *Voucher Homeownership Assessment: Volumes 1 and 2* (July 2003), focuses on Program implementation in a geographically diverse sample of 12 study sites. *Volume 1 – Cross-Site Analysis* highlights common themes and patterns across these sites, including lessons learned. *Volume 2 – Case Studies* offers a detailed examination of how the program was implemented at each study site, including the perspectives of local program staff, partners, and participants.

The overall results of this early study are encouraging. More than three-quarters of the new homeowners are female heads of household and almost half are minorities. The study also suggests that the program is helping participants relocate to better neighborhoods: the majority of Voucher Homeownership Program participants in the sample purchased two- or three-bedroom single-family detached houses in neighborhoods with slightly higher incomes and greater residential stability than the neighborhoods where they had been renting. *Volume 2 – Case Studies* provides a more detailed picture of how program design — including eligibility and recruitment, financing arrangements, and counseling — affected program outcomes in each of the 12 study sites.

The second report, *Costs and Utilization in the Housing Choice Voucher Program,* investigates the amount of government funds spent on vouchers and identifies ways to increase program participation. Through an analysis of data from 48 PHAs, the study finds that program operators generally pay insufficient attention to subsidy costs and the factors that affect those costs — enforcement of rent reasonableness, standards for assigning bedrooms, and other elements that are within the PHA's control. Regarding utilization, the study explores the effects of both external, market-related factors and internal, management-related functions. Finally, the report explores the interrelation of subsidy costs and utilization.

This early research will be important in shaping the future of the Housing Homeownership Program as it continues to bring the American Dream within reach for low-income families.

Voucher Homeownership Assessment: Volumes 1 and 2 is available online from HUD USER, at http://www.huduser.org/publications/hsgfin/msd_vol1_vol2.html. *Costs and Utilization in the Housing Choice Voucher Program* is also available, at http://www.huduser.org/publications/pubasst/cost_util_voucher.html. The downloadable PDF files are free; printed copies are available for a nominal charge by calling 1-800-245-2691, or through the HUD USER Web store at www.HUDUSER.org



The PATH to Innovation *cont. from page 1*

A solar water heater, looking a bit like a skylight, sits on the roof of the house facing south, as close as it can be positioned to a back-up on-demand tankless water heater. Thanks to more than six months of PATH-funded data collection conducted by the NAHB Research Center in one of his Armory Park homes, the builder has discovered that a tankless water heater (one that heats water only as it is needed), in combination with the solar water heater, uses just half the energy of a conventional water heater in the same environment.

The entire infill project paints a picture of minimal environmental impact. Homes are designed to meet strict energy efficiency requirements, with thick ceiling insulation and high performance windows that minimize heat loss and gain. The heating and air conditioning systems are ENERGY STAR® qualified. Each home is equipped with the latest water-saving technologies, including an ENERGY STAR qualified dishwasher, range, and microwave, and a dual-flush system toilet. Xeriscaping, a landscaping technique that relies on native plants, further enhances water conservation.

The net result? Homes that use roughly 50% less energy in comparison to other area homes. Miller's homes range from 1,100 to 2,400 square feet, at a cost of about $175,000 - $385,000, and cost about $1 a day for heating and cooling — all electric. While payback on the PV system is in the 20- to 30-year range, Miller finds this doesn't limit the homes' appeal. Rather than focusing on the up-front cost, his buyers are innovators in their own right: educated on environmental issues and eager to align their lifestyles with their values. They want to feel good about doing their part to protect the environment, and they know their investment increases in value every time heating and cooling rates rise. Said Miller, "To put all these ideas together in one place, in a nicely sized development of 99 homes — in the inner city! — and to be part of the redevelopment of my hometown, doing quality-of-life building..." His words trail off, but the point is clear: he's passionate about his work, and committed to making a difference.

For small builders especially, Miller believes, building with solar is an opportunity to do something good for the environment while also turning a profit. He's bothered by the developer/environmentalist divide. "We builders are environmentalists," he insists. "We're concerned with how we develop land, how we build the house. How can we give away that word — that credit — to people who don't do that? By utilizing renewable resources such as solar, we emphasize the fact that we care about the world we live in, and we're providing a better quality of life for the citizenry of our country."

The Zero Energy Home

The crown jewel of Armory Park del Sol is the Zero Energy Home (ZEH). Funded by the U.S. Department of Energy to introduce the "zero energy" concept into the mainstream homebuilding market, the ZEH gave Miller a chance to build on his PATH-funded work and to find out exactly what he could accomplish. A zero energy home is designed to produce as much energy as it consumes, resulting in a net zero energy bill over the course of a year. Just like a typical home, the ZEH is connected to the utility grid, but whenever the sun shines and the homeowners aren't using much power, it will supply energy to the grid. DOE, through the National Renewable Energy Laboratory, funded the engineering development of the home as part of its Zero Energy Buildings program. The finished home, with just over 1,700 square feet of living area, is powered by a 3.5 kilowatt PV system, plus a solar hot water and space heating system. With the super-efficient design of the ZEH, the home's own energy generation is expected to equal its consumption at year's end, resulting in a net zero energy cost.

Loaded with upgrades and premium landscaping, the ZEH is priced at $380,000, but Miller says he could build a basic net zero energy home for $314,000.

Like other builders who have leveraged PATH technical support to launch innovative homebuilding projects, Miller is a committed spokesperson for advanced technologies. "In most markets, an average builder could create a demand for solar by building one model home," he says. He advises other builders who experiment with solar technologies to make them standard features, rather than optional. "People just need to see it, feel it, and become comfortable with the technology."

The example that Miller and PATH are setting with Armory Park del Sol is teaching other builders across the nation about what is possible when individual commitment and federal resources are harnessed to serve the common cause of better housing.

HUD Loan Programs Allow for Silver Spring Revitalization

One of the ways that state and local governments have stimulated more investment and employment is through direct assistance to private-sector businesses that promise to start up or expand their economic activities in exchange for public-sector help. By entering into partnerships with the private sector, state and local governments have used HUD funding to create low-income jobs, serve low-income areas, or make physical improvements in economically distressed communities. Three HUD programs have been specifically tasked with providing this kind of assistance: the Community Development Block Grant (CDBG) program, the Section 108 guarantee program, and the Economic Development Initiative (EDI).

In the past four years, Maryland's Montgomery County has relied on the CDBG program as a key element in the County's efforts to revitalize South Silver Spring. In the 1930s, Silver Spring's central business district (CBD) was a premier location for retail activity in Montgomery County. Through the '40s and '50s, the area buzzed with activity, attracting thousands of shoppers every day from surrounding communities — including the nation's capital. South Silver Spring was home to several large industries and high-rise office buildings. Hundreds of workers walked the few blocks to the CBD every day.

Beginning in the 1960s, however, Silver Spring slowly fell victim to the growing migration to suburbia. Large attractive regional malls popped up in suburbs throughout the region, outshining Silver Spring's small retailers or single department stores. Along with the decline of the CBD, South Silver Spring experienced a steady disinvestment, which ultimately left behind large city blocks of abandoned buildings and vacant lots.

If at First You Don't Succeed...

Triangular in shape, South Silver Spring is bordered by two streets, the Baltimore & Ohio Railroad, and the District of Columbia. In recent years, its abandoned high-rises, 450,000[1] square feet of vacated office and industrial space, and large vacant city blocks have served as daily reminders of the urban decay that community leaders and county officials have struggled to rectify. Declared an Enterprise Zone in 1996 by the State of Maryland, county leaders have twice attempted to revitalize the area, but failed to find the strong private sector commitment needed to ensure success.

Finally, in 1998, Discovery Communications Inc. agreed to locate its new corporate headquarters in the CBD. With the revitalization of the area's core, South Silver Spring is finally getting the boost it so desperately needs. Within a five-year period, about 1,000 new residential units will be developed, either on vacant property or through office building conversions. Many of the units will be affordable to those with low and moderate incomes, but developers are planning projects for mixed income families as well.

Several new businesses have also recently moved to South Silver Spring or are currently in the planning stages. Within the past 18 months, two new restaurants have opened and Discovery has moved its Creative Technology Center into an old vacant department store. Small businesses are springing up around the corner from a new coffee shop.

Adding to the impetus, the County is using its Façade Easement Program as a form of incentive financing. The Program is funded through the County's CDBG entitlement, a process that's fairly straightforward. A private developer or business applies to the County for a grant to help pay for renovation or preservation costs to the building's front. After the redevelopment has been

New construction in the heart of Silver Spring has helped build momentum for other new development in the area.

As part of the new Silver Spring development, vacant office buildings have also been renovated for future use.

completed, the County buys back a controlling façade easement from the property owner.

Partnerships such as these help retailers and developers bring down their redevelopment costs, making costs comparable to development in the suburbs. The Façade Easement Program has invested $538,000 over the past five years in South Silver Spring, and in the process, has leveraged more than $6,297,000 in new investments from businesses and developers.

The County is also using CDBG funds to 'streetscape' the area, enhancing the pedestrian experience for both customers and residents, and serving as yet another incentive to new business development. In addition, the County recently won an EDI grant for a pedestrian linkage program as a way to shrink the area's large city blocks. The program will put into place pleasant walkways that cut through the blocks, connecting residential complexes, shops, and businesses.

While there is no quick-fix, one-size-fits-all approach to urban redevelopment, when public-sector efforts such as HUD's Community Development Block Grant program are augmented by resourceful, committed partners in the private sector, the resulting momentum can revitalize a community that many in the region had all but given up on. In South Silver Spring, the puzzle pieces that have proven elusive for so long are finally all falling into place.

[1] Based on a survey of vacancies by the County's Department of Housing and Community Affairs, conducted before 1995.

Creating a Bridge *cont. from page 3*

staff, there is evidence that the program matches these characteristics.

Benefits and Challenges of the Partnership

The benefits of the Community/University Partnerships include:

- UCSD/SDSU faculty and students provide direct service to community members;
- UCSD/SDSU faculty evaluate programs and provide feedback to community partners about strategies that work;
- Community members get to know the university culture by connecting with UCSD/SDSU faculty, students and staff;
- UCSD/SDSU students participate in experiential learning, applying lessons learned in the classroom to real situations; and
- UCSD/SDSU research becomes more relevant by addressing real challenges with direct input from the community.

The Challenges* faced by the Partnership include:

- Constant communication between staff members of partners agencies is required to maintain partnership;
- Top-level commitment is required in order to facilitate sharing resources, addressing problems, and implementing solutions; and
- Capturing the learning from front-line staff and student workers is difficult but necessary to inform future program design and action-based research.

* Challenges of Community/University Partnership were published by Drs. Reznik and Daley in the Journal Metropolitan Universities, Volume 13, 2002.

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From the Editor's Desk

Welcome to the premiere issue of Research*Works*, the new publication from HUD's Office of Policy Development & Research. As many of our readers are former subscribers to *Recent Research Results*, *Fieldworks*, and/or *Urban Research Monitor*, we know that we're going to have to work hard to earn both your attention and your trust. With this first issue and those which follow, our mission is not only to edify and inform, but to surpass your expectations.

As many of you know, funding constraints brought about the temporary cessation of our newsletter publishing efforts last summer. The time has now come to renew our commitment to keeping you informed on new developments in housing research and practice, and thanks to the hard work and commitment of PD&R management and our talented staff, the result is now in your hands.

As the name implies, Research*Works* represents a new approach to the subject of housing and community development. Our underlying theme is elegant in its simplicity: to build a bridge between the housing research and practitioner communities, to strengthen it through the reciprocity of 'common ground' concepts and ideas, and to demonstrate how each of these important groups in our constituency can benefit from one another's work, and guide one another's choices as we face the challenges of a new century and a changing world.

In the months and years ahead, we look forward to bringing you news of the latest research, the practical application of good ideas, and recognition of those who, regardless of title or affiliation, are making a real difference in the field of housing and community development. And while the players may change, our commitment remains constant: to inform, challenge, and enlighten our readers, and to build bridges that bring us all... closer to home.

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