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Real Estate Analysis as a Tool for Program Evaluation

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Abstract

This article describes the use of standard techniques of financial analysis—sources and uses statements and pro forma models—in the evaluation of the U.S. Department of Housing and Urban Development's (HUD's) new Rental Assistance Demonstration (RAD) program. Sources and uses statements provide a convenient framework for analyzing how a real estate development project is financed. Pro forma models are cashflow estimates of the performance of a real estate project over time under a set of assumptions. Lenders, developers, appraisers, brokers, and others involved in real estate transactions commonly use both tools to determine feasibility, structure financial transactions, establish property valuations, estimate investment returns, analyze risks, and make financial decisions. The RAD program expands financing options available to public housing authorities for making capital investments in affordable housing projects. A recent evaluation of RAD, funded and directed by HUD's Office of Policy Development and Research, used the models described in this article.

Introduction

The Rental Assistance Demonstration (RAD) enables public housing and Section 8 Moderate Rehabilitation, or Mod Rehab, properties to convert to project-based Section 8 Housing Assistance Payment contracts. The Section 8 subsidy that converted public housing receives under RAD is based on the total amount of the tenant rent and of operating and capital fund subsidies that a property receives under the public housing program, plus annual adjustments through the operating cost adjustment factor (OCAF). Public housing authorities (PHAs) can leverage a project's long-term cashflow to finance debt, because the Section 8 Housing Assistance Payment contract provides subsidies during the term of the contract, which can be 15 or 20 years plus automatic renewal. PHAs can use this debt, plus other sources of funds, to recapitalize and renovate or redevelop projects. PHAs can pursue different conversion strategies for projects depending on the amount of financing they can raise and the capital needs of projects.

We illustrate the use of standard tools of real estate analysis with an actual case study of a RAD conversion that uses conventional mortgage debt to finance substantial rehabilitation. We subject this case to the sort of hypothetical financial analysis in which PHAs engage when deciding whether to pursue RAD conversion. Our financial models compare the financial performance of the case study under two scenarios: (1) conversion under RAD and (2) status quo and use of other financing alternatives by comparing the differences in upfront capital structure and in long-run cashflows. The alternative mixed-finance scenario is designed to result in the same development program as proposed under RAD, but by its nature this approach does not provide sufficient reliable net operating income to support the debt available through a RAD conversion. This comparative financial model analysis provides researchers with insights into the sources and magnitudes of financial benefits that can be achieved with RAD compared with reasonable currently available options without RAD—principally by leveraging mortgage debt and improving project cashflow—and compared with PHAs' options without RAD.

Analytical Tools

We present two common tools used in housing and real estate analysis: (1) the development budget (sources and uses statement) and (2) the long-term operating pro forma. The development budget identifies the amount and sources of financing and how those funds will be deployed to complete the planned development. For the development budget to be in balance, total sources of funds should equal total uses of funds. If necessary project costs (uses) exceed identified sources, a gap exists that needs to be filled for the project to proceed.

Uses are usually determined first when putting together a development budget. Sources are then determined based on the debt capacity (if any) of the project, Low-Income Housing Tax Credit (LIHTC) equity (as appropriate), and all known soft sources of funding, from either the PHA or other sources. *Soft* funds—either grants that do not have to be repaid or loans that are payable subject to the project's generating sufficient net operating income—will usually have to fill any gap, because sources may already include the maximum potential debt the project can support. Changes to unit mix is one possible way to increase revenues to support added debt—such as

adding market rate units, or adding some project-based vouchers by using the agency's Housing Choice Voucher program. If sources exceed uses, it is possible for a PHA to receive a cash payment from the transaction. Those funds could be used to support other projects or for other purposes of the PHA. Any such payments to the PHA are indicated as uses in the development budget.

Sources of funds typically include the following categories.

- First mortgage debt, which may be commercial or Federal Housing Administration (FHA) insured, taxable or tax exempt. The amount of first mortgage debt a project can carry is limited by the maturity period, the interest rate, and the project's net operating income. This debt is fixed rate, permanent, and fully amortizing. A rise in interest rates reduces a project's debt capacity if all other factors are unchanged.
- Other types of third-party debt, such as secondary loans.
- Outside equity, such as 4-percent or 9-percent LIHTC equity.
- Contributions from the project sponsor, such as the PHA, including capital grants, operating reserves, cash on hand, Replacement Housing Factor (RHF)/Demolition and Disposition Transitional Funding (DDTF) monies, and soft loans.
- Sources from the project, such as rehabilitation assistance funds received during the construction phase, sometimes called "funding from operations."
- Gap financing, also known as "soft money," which is usually funding from public entities that may be in the form of grants or soft loans; that is, loans with flexible repayment terms such as loans subject to cashflow. Depending on the project, examples of other common sources may include reduced hookup and permit fees from the local jurisdiction, grants and soft loans from the Federal Home Loan Bank's Affordable Housing Program, state and federal Historic Tax Credits, energy conservation grants, and many others.
- Deferred developer fees, which may come from the PHA as developer and any third-party developer or codeveloper.

Uses of funds shows the development budget by line item, including the type and amount of expenditures that must be made to complete the development. Expenditures include—

- Acquisition costs, if the PHA plans to buy another building or parcel of land. Also, in all rehabilitation projects with tax credits, the PHA sells the property to a new for-profit entity at the appraised value, and the value of the improvements constitutes an acquisition cost that becomes part of the basis that earns tax credits at the 4- or 9-percent rate, depending on LIHTC program.
- Payoff of existing debt, such as any outstanding Capital Fund Financing Program or Energy Performance Contract loans.
- Construction and contingency costs and contractor's overhead and profit, also known as "hard costs."
- Cost of relocating tenants during rehabilitation or demolition, if necessary.

- Professional fees for outside consultants, advisers, attorneys, and architects, and for local permits and approvals.
- Financing fees and related costs; for example, application and underwriting fees and interest on construction loans during the construction period.
- Project reserves, which HUD and lenders require to ensure that the project can cover any losses until it achieves stabilized occupancy, which is typically cast as a percentage of occupancy (for example, 95 percent) over a number of months (typically 6 months). In a rehabilitation project, it is sometimes necessary to make an initial deposit to the reserve for replacement, so that the 20-year capital needs can be met.
- Developer fees, some or all which may go to the PHA as developer or codeveloper. Partial deferment of fees by the developer appears as deferred developer fees, an offsetting source of funds.

The long-term operating pro forma examines income and expenses during a 15- to 20-year period for a project after the development or conversion is complete. Common income sources include—

- Rental income, including tenant-paid and government-subsidized portions of rent, as determined by the contract rent in RAD conversions, and public housing operating and capital fund subsidies in non-RAD alternatives.
- Other income collected by the project; for example, late fees or onsite laundry facilities.

Rental and other income (gross income), less vacancy and bad debt expenses, equals effective gross income (EGI).

Project expenses include—

- Operating expenses, which cover insurance, utilities (except tenant-paid utilities), maintenance, asset management, tenant services, property taxes or payments in lieu of taxes (PILOT), administrative costs, security, and other project operating costs.
- Contributions to the project's reserves, which are the required annual deposits into controlled accounts to fund future nonroutine capital items, such as heating, ventilation, and air-conditioning replacement.[1]
- Debt service (payments on loans).

Net operating income (NOI) is calculated as EGI minus operating expenses and contributions to reserves but not debt service. The debt-service coverage ratio is calculated as the ratio of NOI to debt service payments. At application, RAD requires a debt-service coverage ratio of 1.2, which means that the project budget needs to show $1.20 of available NOI for every dollar of debt service, to provide an additional cushion above and beyond the various project reserves. A positive cashflow results when NOI exceeds debt service (NOI – debt service = cashflow). Cashflow is

[1] HUD determines the amount of the contribution to reserves at project underwriting for RAD projects over a 20-year period. In the case of tax credit projects, the investor or housing finance agency (HFA) may require a different amount. More typically, HUD requires a level higher than the amount the HFA and investor require. The higher of the two amounts is the amount that must be contributed.

negative when NOI is less than debt service, which indicates an infeasible plan if the negative cashflow occurs in the early years of the pro forma. After the initial-year operating budget is established, it is then trended for 20 years based on the lender, investor (if any), insurer such as FHA (if utilized), HUD, and RAD criteria. RAD requires trending income with a 2-percent increase, although expenses should be trended at 3 percent annually. As a result of trending assumptions, NOI, debt-service coverage ratio, and cashflow typically decline over time, although not in all cases.

These two tools—the development budget (sources and uses statement) and the operating pro forma—work in tandem. The development budget determines how much of a project's capital needs can be met upfront. Meeting a project's upfront capital needs may have an effect on out-year income, such as supporting higher rents due to upgrades, and lower expenses (for instance, by reducing maintenance and utilities with energy-saving investments), although the operating pro forma demonstrates a project's longer-term sustainability if it can meet all financial obligations and still generate positive cashflow. The operating pro forma is particularly important for projects requiring debt, because adequate debt service coverage during the term of the loan is essential for attracting lender support.

Certain assumptions are necessary for these analyses. For example, we had to make assumptions about the term and interest rate of the mortgage. Also, we assumed that operating expenses increase by 3 percent each year, consistent with HUD's underwriting guidelines. For the RAD scenario, we assumed that contract rents increase each year by a 2-percent OCAF, which is again consistent with HUD guidance. For non-RAD financing scenarios, we assumed that public housing funds (operating and capital funds) decline at 1 percent per year, which is a lower rate of decrease than during the past 15 years.[2] These two assumptions significantly affect the outcomes of our analysis. Therefore, we also include two sensitivity analyses for the non-RAD financing scenarios—one that assumes a 2-percent annual decline in public housing funds and a second that assumes public housing funds remain constant.[3]

It is possible to test other non-RAD scenarios for comparative purposes, such as a reduced level of upfront improvements, the status quo (few or no improvements), or the use of tax credits to support the funding of improvements. Each of these alternative scenarios requires detailed modeling and analysis of a project's physical condition, financial requirements, and operating costs over time and takes many more assumptions.[4]

[2] No set standard exists for projecting the future change to revenue in the non-RAD approach, because both the capital fund and operating fund grants to housing authorities are subject to congressional actions. The general consensus is that these revenues will not increase over time, but rather will trend downward. For example, public housing capital fund appropriations have declined from $2.9 billion in 2000 to $1.9 billion in 2015, or by 2.9 percent per year. However, in 2009, the program received $6.5 billion in appropriations, in part, due to one-time stimulus funding in the American Recovery and Reinvestment Act.

[3] Our analysis does not examine the impact of interest rate changes. All else equal, a mortgage interest rate increase reduces the amount of first mortgage debt that RAD projects carry. Our analysis also does not include future refinancing. Refinancing should not be necessary during the initial Housing Assistance Payment contract term of 15 to 20 years, based on the project underwriting standards that HUD, lenders for RAD projects, HFAs, and investors in tax credit projects use.

[4] For instance, if we modeled the impact of a reduced scope of development, we would have to make assumptions about what improvements would be made, what impact they would have on operating costs, and whether reserves would be sufficient to cover the 20-year capital needs. Similarly, if the PHA simply continued operating the property as public housing with current subsidies, we would need to make assumptions about obsolescence, the capital needs backlog, and the impact on future project performance. We would make assumptions about the competitiveness of the project if the PHA chose to apply for 9-percent LIHTC equity.

Case Study: RAD Conversion for Substantial Rehabilitation Using Conventional Mortgage Debt

This section describes the case study, summarizes the sources and uses development budget and operating pro forma as described in the PHA's RAD documentation, and presents the results (1) under RAD and (2) under the alternative mixed-finance assumption that the PHA could use financing sources other than through the RAD program to carry out its development plan.

This case involves a 198-unit project that primarily serves families and is converting to RAD to address significant repair needs. It illustrates a situation in which a PHA assumes significant project debt under RAD in order to finance major rehabilitation costs. This RAD financing strategy works, because the project has sufficient projected NOI under RAD. Without RAD, the project would have difficulty supporting this amount of project debt, if any at all. Most likely, it would have to resort to alternative financing sources, such as gap soft financing, to meet the capital needs for the project. Compared with the alternative scenario of using gap financing, the RAD scenario leaves the project far better off financially despite the repayment of debt.

Sources and Uses Development Budget

Exhibit 1 shows the development budget for this project. The middle column shows the sources and uses of funds for the RAD conversion, and the right-hand column shows the non-RAD alternative. The PHA proposes substantial rehabilitation for this project of approximately $31,400 per unit, or $6.2 million total, in hard costs. Total development cost is $44,300 per unit, or $8.8 million

Exhibit 1

Sources and Uses Development Budget for RAD Conversion and Non-RAD Alternative

Sources and Uses	RAD Conversion ($)	Non-RAD Alternative ($)
Sources of funds	8,769,685	8,173,235
First mortgage	5,965,000	—
9% LIHTC equity	—	—
PHA loan	2,388,369	2,388,369
Prior-year public housing capital fund	—	—
Gap or additional soft funding needed	—	5,368,550
RHF/DDTF	—	—
Funding from operations	116,316	116,316
Deferred developer fee	300,000	300,000
Uses of funds	8,769,685	8,173,235
Acquisition cost	—	—
Pay off existing debt	—	—
Construction costs	6,224,462	6,224,462
Relocation costs	50,000	50,000
Professional fees	398,390	398,390
Financing fees and related costs	806,365	209,915
Other	57,602	57,602
Reserves	632,866	632,866
Developer fees	600,000	600,000

DDTF = Demolition and Disposition Transitional Funding. LIHTC = Low-Income Housing Tax Credit. PHA = public housing agency. RAD = Rental Assistance Demonstration. RHF = Replacement Housing Factor.
Note: All figures in dollars.
Source: Project sources and uses data maintained by RAD program

total, under the RAD scenario. Total development cost is slightly less at $41,279 per unit, or $8.2 million total, under the non-RAD scenario due to the reduction in financing fees and related costs.[5] All other uses of funds are the same for both scenarios.

After contributing its own capital funds (in the form of a soft loan), contributing limited project funds from operations, and partially deferring its development fee, the PHA has a large financing shortfall of nearly $6.0 million, which is 68 percent of the project's financing requirement in this scenario. The PHA plans to fill this shortfall with conventional mortgage debt. Conventional mortgage debt carries a 4.23 percent rate of interest with a term of 40 years and requires a debt-service coverage ratio of 1.2. After determining the amount of debt a project can carry, developers then consider equity and soft sources, including PHA funds, and as a last resort, deferral of a portion of the developer fee (including the PHA's share of the fee, if any).

Without RAD, the PHA would need to replace the project's mortgage debt with another financing source to achieve the same scope of development for this project.[6] The PHA may be unable or disinclined to use more of its own resources, because the PHA already provides a soft loan of $2.4 million that usually comes out of the PHA's capital funds, RHF/DDTF funds, PHA reserves, or a combination of the three. Our analysis, therefore, assumes that the PHA uses outside gap financing, equal to the first mortgage amount under RAD, to replace the mortgage debt under RAD.[7] Under this scenario, gap financing would be in the form of grants or soft loans. Raising such a large amount of soft funds could be a challenge, however, and would compete with other uses for these limited funds. Without gap financing or RAD, the proposed development would be infeasible. Because the gap financing would reduce project borrowing, financing fees and related costs decline by nearly $600,000 (in this instance, mostly from the savings on interest during construction). Therefore, the amount of gap financing under the non-RAD alternative would be $5.4 million, which is $0.6 million less than the $6.0 million in project mortgage debt for the RAD scenario that was replaced.

Pro Forma Operating Budget

Exhibits 2 and 3 present two pro forma operating budgets of this rehabilitation project—one each for the RAD and non-RAD scenarios. The key to understanding how well the project performs with RAD is to compare cashflows in each scenario, keeping the level of improvements the same under

[5] We used the Loans and Fees section of the RAD application to complete the Financing Fees and Related Costs line item in the sources and uses development budget. The Loans and Fees section of the RAD application has about 14 separate items. Many of these items—such as organizational costs, recordation, title insurance, escrow agent fees, and other miscellaneous items that are part of any closing—are required regardless of the existence of a loan.

[6] Although RAD is a *no new money* program, the conversion of the capital fund subsidy into an operating subsidy and the application of the OCAF to future contract rents under RAD provides converted projects with the ability to support more debt than they could without RAD.

[7] Tax credits also could be used as a financing source for this project for both the RAD approach and the non-RAD alternative. PHAs may choose not to utilize tax credits due to the challenge of competing for 9-percent LIHTC, the desire to provide direct management services, or the lack of sufficient tax credit experience. The PHA might not meet its debt service requirement by year 9, although the project generates sufficient cashflow initially. Therefore, the project could not support debt at the same interest rate and repayment terms without RAD as under RAD.

Exhibit 2

20-Year Pro Forma for RAD Conversion

RAD Income and Expenses	Year 1 ($)	Year 10 ($)	Year 20 ($)	All Years ($)
Rental income at 2% p.a. OCAF	1,381,512	1,651,035	2,012,602	33,567,108
Less vacancy (5% rental income)	(69,076)	(82,552)	(100,630)	(1,678,355)
Effective gross income (EGI)	1,312,436	1,568,483	1,911,972	31,888,753
Operating expenses (OE) at 3% p.a.	(652,370)	(851,195)	(1,143,935)	(17,529,426)
Contributions to reserves (CR)	(99,000)	(99,000)	(99,000)	(1,980,000)
Net operating income (NOI) = EGI – OE – CR	561,066	618,288	669,037	12,379,326
Debt service payment (DSP)	(309,480)	(309,480)	(309,480)	(6,189,608)
Cashflow (CF) = NOI – DSP	251,586	308,808	359,557	6,189,719

OCAF = operating cost adjustment factor. p.a. = per annum. RAD = Rental Assistance Demonstration.
Note: All figures in dollars.

Exhibit 3

20-Year Pro Forma for Non-RAD Alternative

Non-RAD Income and Expenses	Year 1 ($)	Year 10 ($)	Year 20 ($)	All Years ($)
Rental income at – 1% p.a.	1,381,512	1,262,035	1,141,362	25,156,375
Less vacancy (5% rental income)	(69,076)	(63,102)	(57,068)	(1,257,819)
Effective gross income (EGI)	1,312,436	1,198,933	1,084,294	23,898,556
Operating expenses (OE) at 3% p.a.	(652,370)	(851,195)	(1,143,935)	(17,529,426)
Contributions to reserves (CR)	(99,000)	(99,000)	(99,000)	(1,980,000)
Net operating income (NOI) = EGI – OE – CR	561,066	248,738	(158,641)	4,389,130
Debt service payment (DSP)	—	—	—	—
Cashflow (CF) = NOI – DSP	561,066	248,738	(158,641)	4,389,130
Cashflow if rent increases at 0% p.a.	561,066	362,242	69,502	6,739,302
Cashflow if rent decreases at – 2% p.a.	561,066	144,046	(348,860)	2,302,744

p.a. = per annum. RAD = Rental Assistance Demonstration.
Note: All figures in dollars.
Source: Pro forma model developed by The Communities Group using RAD project data

both scenarios.[8] In both scenarios, the operating budgets start at the same level in the first year. Both budgets have the same income of $1.4 million, because we assume the project receives the same amount of capital funding in both scenarios.[9] They also have the same vacancies ($69,000) and expenses ($652,000) in the first year, because the project has the same level of investment in both scenarios. Finally, both operating budgets have the same level of contributions to the reserve for replacement ($99,000) in all years.[10]

[8] Although it is possible for a project to reduce the level of capital improvements under the non-RAD scenario, that strategy greatly complicates the analysis and introduces more assumptions. Therefore, this case study keeps improvements equal in both scenarios.

[9] In RAD, capital funding is part of the contract rent. To facilitate comparison and to not disadvantage the alternative approach, we assume that the PHA provides equivalent capital funding to the project in the non-RAD alternative scenario. More likely, this assumption may not hold, because capital funds are not easily obtainable, and the PHA may use them for another project or projects or another purpose.

[10] In many cases, PHAs retain capital funds, use a portion of funds to support operating costs (at the project level and central office), and then use the balance to provide improvements at needier projects. Our analysis probably significantly overstates the results for the non-RAD approach, because it treats the comparison the same as the RAD scenario.

Over time, however, annual EGI and NOI increase under RAD and decrease under the non-RAD alternative. The reason for this difference is that the RAD pro forma assumes an annual OCAF of 2 percent, and the non-RAD pro forma assumes revenue dropping by 1 percent per year. Both pro formas assume that expenses will increase 3 percent per annum, as required by the underwriting criteria in the RAD program.

The RAD pro forma shows that the project is able to cover its payments of $309,000 per year on the debt used to finance the rehabilitation under RAD and still generate substantial cashflow. Over 20 years, the project will make $6.2 million in loan payments on its original loan balance of $6 million under RAD. At the same time, the project will generate another $6.2 million in cashflow. This result illustrates how RAD conversion can help PHAs raise financing through project debt, although leaving the project in a financially strong position.

Even though the non-RAD alternative included no fixed-payment mortgage debt, it generates only $4.4 million in cashflow over 20 years—about $1.8 million less than under the RAD scenario—if income declines by 1 percent per year. Because our results are sensitive to this assumption, we also looked at the impact of using different income projections in the non-RAD scenario. If income is flat (0-percent change), the 20-year non-RAD cashflow improves to $6.7 million, which is slightly better than under RAD. If income falls by 2 percent per year, the 20-year non-RAD cashflow falls to $2.3 million, which is significantly worse than under RAD.

Comparing Results

Exhibit 4 summarizes and compares the results of our analysis of both the 20-year operating pro formas and the upfront development budgets for this project under the RAD and non-RAD scenarios. Both scenarios have significant variances in all items except for operating expenses and contributions to reserves. The RAD conversion has $8 million more than the non-RAD alternative for EGI and NOI. This advantage is partially offset by the $6.2 million in debt payments under RAD, leaving a net gain in cashflow of $1.8 million for the project under RAD as compared with

Exhibit 4

Comparison of 20-Year Cumulative Cashflow and Development Budget for RAD Conversion and Non-RAD Alternative

20-Year Cumulative Cashflow and Development Budget	With RAD ($)	Non-RAD Alternative ($)	Variance ($)
Effective gross income (EGI)	31,888,753	23,898,556	7,990,196
Operating expenses (OE)	(17,529,426)	(17,529,426)	—
Contributions to reserves (CR)	(1,980,000)	(1,980,000)	—
Net operating income (NOI) = EGI – OE – CR	12,379,326	4,389,130	7,990,196
Debt service payment (DSP)	(6,189,608)	—	(6,189,608)
Cashflow (CF) = NOI – DSP	6,189,719	4,389,130	1,800,588
Development budget (DB): Project debt under RAD less change in total use of funds under non-RAD = additional gap financing	5,965,000	596,450	5,368,550
Total resource variance (CF + DB)			**7,169,138**
Total resource variance per ACC unit			**36,208**

ACC = Annual Contributions Contract. RAD = Rental Assistance Demonstration.
Note: All figures in dollars.
Source: Pro forma model developed by The Communities Group using RAD project data

the non-RAD alternative. In addition, in the non-RAD alternative, the PHA has to cover a development shortfall of $6 million that was funded by project debt in the RAD scenario, less $600,000 in reduced loan costs. Without the advantage of RAD conversion, the PHA has to find an additional $5.4 million in gap financing to finance the substantial rehabilitation of this project, which fell from $8.8 million under RAD to $8.2 million in the non-RAD alternative.

Combining the development shortfall of $5.4 million with the pro forma 20-year results, the total variance between the RAD scenario and the non-RAD mixed-finance scenario, at 1-percent annual decline, is $7.2 million, or $36,208 per unit. The most important contributors to the positive outcome for this RAD conversion are the transformation of capital funding and operating funding into RAD contract rents and the stability and upward trend of those contract rents under the project-based Section 8 program. This long-term funding permits borrowing ($30,126 per unit) in lieu of the PHA using other sources of financing. It also results in positive cashflow over 20 years, improving the results for the RAD conversion compared with the non-RAD alternative by an additional $9,094 per unit.

Our approach to comparing this actual RAD project to an alternative non-RAD approach is as close as possible to comparing apples to apples, in that it assumes that—in the non-RAD alternative—the project initially receives capital funds equal to the level at the time of conversion and uses those funds to cover the capital needs of the project. Most likely, these funds will decline over time, as they have during the past decades. Also, few PHAs apply all available capital funds to capital needs; rather, a portion is used for operating costs, planning, central office cost center operations, and so on. Having the same level of capital improvements at the outset allows for operating costs to be treated as equal. With other changes to the assumptions, it becomes nearly impossible to control all the variables and provide a reasonable comparison. As presented, the assumption that the PHA uses reserves, capital funds, or HUD's Capital Fund Financing Program to close the financing gap likely would result in a disproportionate use of those resources to complete this project—at the expense of other projects in the PHA's portfolio.

Conclusions

The following discussion presents our conclusions and lessons learned from the use of standard tools of real estate analysis to examine the impact of RAD on a single project.

- RAD can provide development financing sources, such as conventional debt, that are not otherwise available to finance projects with large capital needs.
- RAD can provide more resources, including both upfront development sources and long-term operational sources.
- Achieving the same level of capital improvement using alternative non-RAD, mixed-finance approaches likely would come at the expense of other properties in PHAs' portfolios. The mixed-finance or alternative models that we compared with RAD have substantial funding gaps that need to be filled with soft funds, which are limited in amount and availability. Using soft funds for these alternatives means that they would not be available to meet the needs of other projects in a PHA's portfolio.

The major features of RAD that make it more effective than alternative mixed-finance options include (1) stabilizing and converting capital funding to an operating subsidy that supports debt financing; (2) locking in current subsidy levels, with future OCAF increases, over the long term; and (3) leveraging greater project resources to achieve more substantial capital improvements and investment, thereby reducing capital needs backlogs and future maintenance and utilities costs for converted projects.

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