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CONVERSION OF PUBLIC HOUSING TO PROJECT-BASED ASSISTANCEBROAD DATA ANALYSIS REPORT

Housing Authority Insurance Group
Council of Large Public Housing Authorities
Public Housing Authority Directors Association
National Association of Housing and Redevelopment Officials

Contents

Executive Summary

To create a quantitative exploration of the implications of changing the funding of our nation's public housing stock from the current Annual Contributions Contract ("ACC")[1] program to project-based Section 8 rental assistance or project-based vouchers ("Project-Based Assistance"), Recap Real Estate Advisors ("Recap" or "we") was engaged by the Council of Large Public Housing Authorities ("CLPHA"), the Public Housing Authorities Directors Association ("PHADA"), the National Association of Housing and Redevelopment Officials ("NAHRO"), and the Housing Authority Insurance Group ("HAI") to quantify the impact of a conversion of this type.

We analyzed fiscal year 2010 (FY2010) data from a sample of 123 public housing properties encompassing over 25,200 units from 29 housing authorities. We analyzed both a conversion to Project-Based Assistance at FY2010 funding levels ("FY2010 Funding Level(s)" or "FY2010") ($8,804 per unit per year, on average, based on the analyzed dataset) and at 100% Fair Market Rent ("FMR") ($12,290 per unit per year, on average, based on the analyzed dataset). It should be noted that funding levels (i.e. operating subsidy and modernization funds) have dropped since FY2010 and as a result, the findings associated with FY2010 Funding Levels in this report could be worse than presented. The properties were self-selected, and the data was self-reported by housing authorities who participated on a voluntary basis. We requested that the housing authorities submit properties that they believe are representative of their portfolio, not their best or worst properties. Ultimately, the analyzed dataset contained high percentages of large properties at large housing authorities in metropolitan areas, which is not indicative of the national public housing stock. As a result, readers should use caution if attempting to extrapolate the findings from this report to the entire public housing portfolio. However, it should be observed that conversion to Project-Based Assistance is voluntary, and the properties that self-select could be similar to the analyzed dataset. A complete description of relevant statistics pertaining to the analyzed dataset was provided by CLPHA for readers' edification and can be found in **Exhibit B**.

In this analysis, we examined the level of capital backlog ("Capital Backlog" or "Backlog") – capital repairs that are needed immediately – and compared it to how much debt could be raised through new private financing, on a property-by-property basis, if there is a conversion to Project-Based Assistance. It should be noted that additional Capital Backlog may have accumulated since the analyzed data was reported. Based upon the analysis of the compiled dataset provided by the housing authorities participating in this study and using the assumptions outlined in **Exhibit C** and methodologies described in **Exhibit D**, the following conclusions were reached:

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[1] A complete list of capitalized terms used in this report and their definitions can be found in **Exhibit E**.

- At FY2010 Funding Levels,[2] 39% of properties (37% of units) are categorized as "Current Rehab (or 'Current')" in that they can finance their entire Capital Backlog.
- If the properties were able to move their rents up to 100% FMR, the number of both Current Rehab properties and units increases to 70%.
- Within the Current Rehab category, 11% of properties (8% of units) are "Forward Rehab (or 'Forward')" properties in that they can finance their entire Capital Backlog and future capital needs ("Future Capital Needs" or "Future Needs") at FY2010 Funding Levels.
- If converted to 100% FMR, the number of Forward Rehab properties increases to 47% (56% of units).

Additionally:

- At FY2010 Funding Levels, 25% of properties (19% of units) are categorized as "Partial Rehab (or 'Partial')" in that they will generate positive Net Operating Income ("NOI") and can finance some, but not all, of their Capital Backlog.
- If converted to 100% FMR, 21% of properties (25% of units) fall into the Partial Rehab category.

Lastly:

- At FY2010 Funding Levels, 36% of properties (44% of units) are "Social Assets" in that they would generate negative NOI (operating costs are greater than effective gross income), have no excess cash flow to pay debt service, and could not finance any of their Capital Backlog.
- At 100% of FMR, 9% of properties (5% of units) are Social Assets.
- In order for all of the Social Assets in the analyzed dataset to generate positive NOI and thus convert, they would need rents above FMR ("Exception Rents"), up to approximately 113% of FMR.

The above information is presented in Table 2 (page 7).

The Current and Partial Rehab properties in the dataset can finance an average of $21,661 per-unit at FY2010 Funding Levels. If increased to 100% FMR, they can finance an average of $54,138 per-unit. The average per-unit Capital Backlog in the dataset is $22,115. Table 1 illustrates the amount of total debt that could be raised by Current and Partial Rehab properties in the dataset. A property's financing amount is based on a 1.15 debt service coverage ratio, not its amount of Capital Backlog.

Table 1

	FY2010	100% FMR
Average per-unit Capital Backlog financed by participants (Current and Partial categories)[3]	$21,661	$54,138

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[2] Data points regarding the number of units converting are for illustrative purposes as an entire property either converts or does not convert.
[3] Number 6 in **Exhibit C** explains the financing assumptions.

Total debt raised by dataset properties able to generate positive Net Operating Income (NOI) (Current and Partial categories)	$300 million	$1.3 billion

Within the dataset studied, the difference in rents at 100% FMR and the FY2010 Funding Level is an average of $3,486 per unit per year, with a median of $2,611. It is important to note here the very high percentage of large properties at large housing authorities in metropolitan areas included in the dataset, which traditionally correspond with greater gaps between ACC allocations and FMR. If rents for studied properties were increased to 100% FMR and given annual rent increases to adequately fund increases in operating expenses, then approximately 91% of properties (95% of units) submitted as part of the study would generate positive NOI and could exit from public housing appropriations dependency by raising $1.3 billion in capital.

It should be noted that the ability to finance properties is not a one-time opportunity. If converted to Project-Based Assistance, properties would have the ability to refinance in the future, subject to improved cash flow and any prepayment or programmatic restrictions. Any additional proceeds could be used to fund additional capital repairs. A property's ability to refinance at a later date is outside of the scope of this study.

Background on This Study

As part of this effort, CLPHA, PHADA, NAHRO, and HAI convened a working group from among its members, and engaged a nationally recognized affordable housing expert, Recap Real Estate Advisors, to assist in quantifying the impact of converting public housing to Project-Based Assistance at both FY2010 Funding Levels and rents at 100% FMR. Recap, with assistance from the working group participants and many innovative housing authorities across the nation, devised a standardized data collection tool to aggregate and analyze relevant property-level information (**see Exhibit A**). Once finalized, this data collection instrument was disseminated to the housing authority members of CLPHA, PHADA and NAHRO. Participants were encouraged to make as many submissions as feasible during the collection period to ensure a deeper pool of data points for analysis. The properties were self-selected, and the data was self-reported. Our survey sample encompassed 123 properties, totaling approximately 25,200 units from 29 housing authorities located throughout the nation in both major cities and rural locations. The housing authorities were directed to submit properties that were neither the best or worst performing properties in the housing authorities' portfolio, but representative of their portfolio.

For each submitted property, the participants provided general property information. The income and expense line items mirrored HUD's standard Financial Data Schedule ("FDS") categories established by the Real Estate Assessment Center in order to improve data integrity by eliminating computational errors or improper categorization. Participants also provided estimates – some internal and some from third party consultants – of their properties' capital needs, both Capital Backlog and Future Capital Needs.

In this analysis we identify how much private capital the public housing authorities could draw if their funding structure was changed to Project-Based Assistance at the FY2010 Funding Level and at 100% FMR. This analysis also shows the amount of Capital Backlog that could be cured if properties were allowed to raise debt

through new private financing, as well as the amount of Future Capital Needs that could take place if housing authorities began making replacement reserve deposits, as a lender would require. We here report our findings in the interests of furthering the discussion.

Principles of Transforming the Funding Structure of Public Housing Rental Assistance

At the core of transforming the funding structure of rental assistance for public housing properties are three ideas worth highlighting:

1. Housing authorities should be treated as social entrepreneurs like any other form of owner, and given the same flexibility, resources, responsibilities, and public accountability as other mission-oriented entities like non-profits.

2. Housing authority rents should be pegged to market, as part of leveling the playing field among the Department of Housing and Urban Development's ("HUD") programs so as to permit streamlining and consistency.

3. Before housing authority properties can be put into market competition, they need a one-time major capital injection to enable them to correct years, if not decades, of chronic underfunding through the current system of operating subsidy and modernization funds. This could be achieved by tapping loan programs provided by Fannie, Freddie, or the Federal Housing Administration ("FHA"), amongst others.

Results of Dataset Analysis

Using the baseline assumptions identified in **Exhibit C**, the conclusions for the inventory in the dataset are as follows:

The inventory divides into three groups: Current Rehab, Partial Rehab, and Social Assets
Current Rehab properties/units can generate new debt sufficient to cover at least their own Capital Backlog. Additionally, Partial Rehab properties/units can generate new debt sufficient to cover some of their Capital Backlog, but not all. Lastly, units are Social Assets if they cannot generate any new debt due to negative NOI. Using this methodology, and based on our analyzed dataset, we find a portfolio distribution as follows:

Table 2

Groups	FY2010 (properties)	FY2010 (units)	100% FMR (properties)	100% FMR (units)
CURRENT REHAB GROUP				
Forward Rehab - properties with positive NOI that can fund all capital needs (Backlog + Future Needs) for the next 20 years solely using proceeds from the new debt[4]	11%	8%	47%	56%
Current Rehab - properties with positive NOI that can fund all their Capital Backlog plus some percentage of their Future Capital Needs solely using proceeds from the new debt	28%	29%	23%	14%
Total Current Rehab:	**39%**	**37%**	**70%**	**70%**
PARTIAL REHAB GROUP				
Partial Rehab - properties with positive NOI that can repair some, but not all, Capital Backlog needs solely using proceeds from the new debt	25%	19%	21%	25%
Total Partial Rehab:	**25%**	**19%**	**21%**	**25%**
SOCIAL ASSETS GROUP				
Social Assets - properties with negative NOI, are deemed Social Assets, and will need funding up to 113% FMR in order to convert	36%	44%	9%	5%
Total Social Asset Units:	**36%**	**44%**	**9%**	**5%**
TOTAL:	**100%**	**100%**	**100%**	**100%**

Under the current funding structure, only Current and Partial Rehab properties/units would have any incentive or ability to participate in conversion. Since Social Asset properties generate negative NOI, they cannot support taking on new debt and would either require Exception Rents, an additional infusion of capital such as Low Income Housing Tax Credits ("LIHTC"), or another program entirely (e.g. the Choice Neighborhoods Initiative or a demolition/disposition program).

Social Asset properties
A property is a Social Asset if it is both serving the cause of quality affordable housing, yet has negative NOI if rented at post-conversion rents. These properties are not necessarily badly managed, and in fact most are

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[4] This calculation is for illustrative purposes only – any lender, regardless of whether a property needs a replacement reserve, will require a housing authority to make ongoing deposits to a replacement reserve.

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well-managed; rather, they operate under handicaps (e.g. security services, social programs or other tenant resources) that the market competition does not.

No capital subsidy alone can make a Social Asset property move into the Current or Partial Rehab categories; an Exception Rent sufficient to cover expenses in perpetuity can assure a property's financial health. These Exception Rents were an important feature in HUD's mark-to-market initiative and should be incorporated in the proposed funding structure. For the properties deemed Social Assets within our dataset, rents up to approximately 113% of FMR would be needed to allow all properties to generate positive NOI and thus be eligible for conversion.

Replacement reserve deposits may need to be higher than the $500 per unit per year used in this analysis for some properties to fund all Future Capital Needs under FY2010 Funding Levels.
Under FY2010 Funding Levels, 20% of properties (or 16% of units) can satisfy both Capital Backlog and Future Capital Needs from debt proceeds and ongoing replacement reserve deposits of $500 per unit per year, an ordinary amount required by the lender for 223(f) loans. It is important to note here that if housing authorities seek additional capital sources (e.g. LIHTC) they could potentially fund some, if not all, Future Capital Needs not funded by the new debt and replacement reserve contributions. Housing authorities may also choose to refinance upon completion of an initial contract for any accrued capital needs not addressed during the contract period.

Allowing properties to convert by replacing ACC with FY2010 levels of Project-Based Assistance funding will allow 64% of properties (79 properties), or 56% of units (14,169 units) - which are illustrated as the Current and Partial Rehab categories in Table 2 - from the dataset to access private capital sources.
The FY2010 average effective gross income ("EGI") for the studied dataset is equal to $8,804 per unit per year, roughly 72% of applicable FMR. Under this scenario and within the studied dataset, 79 out of the 123 properties (or 56% of units, totaling 14,169) could convert and generate $21,661 of financeable value per unit, totaling $300 million in aggregate debt to be used toward funding Capital Backlog.

Alternatively, allowing properties to convert to Project-Based Assistance rents at 100% of FMR will result in 91% of properties (112 properties), or 95% of units (23,878 units) - which are illustrated as the Current and Partial Rehab categories in Table 2 - from the dataset being able to access private capital sources.
We presume that this increase is intended to be a repeated annual subsidy increase, since if it were a one-time payment it would be woefully inadequate to induce housing authorities and owners to participate as rising expenses and stagnant rents would ultimately result in properties reverting back to the current situation. 91% of properties (95% of units) in the dataset would be able to convert (generate positive NOI) at an average cost to HUD of $9,709 per unit in rent subsidy – an increase of $3,486 in subsidy over the FY2010 average per unit in operating subsidy and modernization funds of $6,223. An increase in funding to 100% of FMR could translate into, on average, $54,138 of financeable value per unit, and lead to $1.3 billion of renovations within the studied dataset.

No discussion of LIHTC contemplated.
This report did not assume an infusion of LIHTC, the proceeds of which could be used to fund both Capital Backlog and Future Capital Needs. Should individual properties be successful in being allocated LIHTC, a significant amount of additional capital repairs could be performed, especially in the cases where proceeds from new debt and replacement reserve deposits are not enough to satisfy the Capital Backlog and Future Capital Needs.

Exhibits

A. Data Collection Instrument

B. Description of the Analyzed Dataset

C. Property-Level Projection Assumptions

D. Methodologies

E. Definitions of Terms Used

Exhibit B
Description of the Analyzed Dataset

CLPHA has provided a complete description of relevant statistics pertaining to the analyzed dataset for readers' edification:

As stated earlier, our survey sample encompassed 123 properties, totaling approximately 25,200 units from 29 housing authorities located throughout the nation in both major cities and rural locations. The properties were self-selected, and the data was self-reported by housing authorities who participated on a voluntary basis. We utilized self-reported ACC data from FY2010 and FMR data from 2011. In the descriptive tables below, national data is provided, where available, to give a comparative reference to the studied dataset.

Location (metropolitan v. non-metropolitan)

Table B1 summarizes the metropolitan vs. non-metropolitan, as determined by HUD[5], distribution of units (as well as properties) in the dataset. Table B2 includes national numbers for property and unit distribution for comparative reference. The analyzed dataset sample contains higher percentages of both properties and units in metropolitan areas than the national average.

Table B1

	Analyzed dataset			
	Properties	Percent of Properties	Units	Percent of Units
Metro-area	117	95%	24,659	98%
Non-Metro area	6	5%	545	2%
Distinction unavailable	n/a	n/a	n/a	n/a
TOTAL	**123**	**100%**	**25,204**	**100%**

Table B2

	National statistics			
	# of Properties	% of Properties	# of Units	Percent of Units
Metro-area	3,833	53%	573,476	50%
Non-Metro area	2,405	33%	499,371	43%
Distinction unavailable	1,053	14%	82,710	7%
TOTAL	**7,291**	**100%**	**1,155,557**	**100%**

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[5] http://www.huduser.org/portal/datasets/fmr/fmr2012f/FY2012F_SCHEDULE%20B_922.pdf

Housing Authority Size

Table B3 summarizes the distribution of participating housing authorities, properties and units based upon the size of the housing authority for the dataset. Table B4 summarizes the national distribution of properties and units based upon the size of the housing authority, for comparative reference. In both tables, the size of the housing authority includes <u>both</u> public housing and Housing Choice Voucher units. Larger housing authorities are disproportionately represented in the sample dataset.

Table B3

Analyzed dataset distribution of properties and units, based upon housing authorities' total number of units (public housing and vouchers)

size of housing authority	# HAs	% HAs in dataset	# properties in dataset	% properties in dataset	# of units in dataset	% units in dataset
250 and fewer total units	2	7%	2	2%	289	1%
251 to 1000 total units	6	21%	11	9%	1,534	6%
1001 to 5000 total units	9	31%	21	17%	3,821	15%
5001 to 10,000 total units	6	21%	45	37%	7,985	32%
more than 10,000 total units	6	21%	44	36%	11,575	46%
TOTAL	**29**	**100%**	**123**	**100%**	**25,204**	**100%**

Table B4

National distribution of properties and units, based upon housing authorities' total number of units (public housing and vouchers)

size of housing authority	# of HAs*	% of HAs*	# of properties	% prop	# of units	% units
250 and fewer total units	1,834	59%	1,881	26%	137,417	12%
251 to 1,000 total units	809	26%	1,473	20%	202,018	17%
1,001 to 5,000 total units	394	13%	1,792	25%	273,658	24%
5,001 to 10,000 total units	54	2%	749	10%	125,120	11%
more than 10,000 total units	35	1%	1,396	19%	417,344	36%
TOTAL	**3,126**	**100%**	**7,291**	**100%**	**1,155,557**	**100%**

*Housing Authorities that have public housing projects, as of the 2008 Picture of Subsidized Households.

Tables B5 and B6 below show the same distribution of properties and units, but based upon the size of a housing authorities' public housing stock only (no Housing Choice Voucher units included). Using this perspective, larger housing authorities remain disproportionally represented in the analyzed dataset. We include all four tables to give the reader an understanding of property and unit distribution in the sample set based upon both the full picture of a housing authorities' entire affordable housing portfolio, as well as just their public housing stock.

Table B5

Analyzed dataset distribution of properties and units, based upon size of participating housing authorities' public housing stock

size of housing authority	# HAs	% HAs in dataset	# properties in dataset	% properties in dataset	# of units in dataset	% units in dataset
250 and fewer PH units	5	17%	7	6%	655	3%
251 to 1000 PH units	9	31%	23	19%	3,901	15%
1001 to 5000 PH units	12	41%	61	50%	11,121	44%
5001 to 10,000 PH units	2	7%	5	4%	748	3%
more than 10,000 PH units	1	3%	27	22%	8,779	35%
TOTAL	**29**	**100%**	**123**	**100%**	**25,204**	**100%**

Table B6

National distribution of properties and units, based upon size of housing authorities'
public housing stock

size of housing authority	# of HAs*	% of HAs*	# of properties	% properties	# of units	% units
250 and fewer PH units	2,351	75%	2,498	34%	209,156	18%
251 to 1000 PH units	608	19%	1,946	27%	275,552	24%
1001 to 5000 PH units	147	5%	1,717	24%	287,332	25%
5001 to 10,000 PH units	13	0%	358	5%	83,353	7%
More than 10,000 PH units	7	0%	772	11%	300,164	26%
TOTAL	**3,126**	**100%**	**7,291**	**100%**	**1,155,557**	**100%**

*Housing Authorities that have public housing projects, as of the 2008 Picture of Subsidized Households.

Project Size

Table B7 summarizes the average and median project size of the dataset compared with the national average. The analyzed dataset skews towards larger project sizes than the national average.

Table B7

Project size data

	average project size	median project size
Recap dataset	205	164
National Public Housing Portfolio	158	110

Age

Table B8 summarizes the distribution of age of properties by the number of units in the analyzed dataset. There was no national data readily available for comparative reference.

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Table B8

Analyzed dataset

Property Age	Number of Units	Percent of Units	Number of Properties	Percent of Properties
< 15 years	184	1%	2	2%
15-30 years	5,358	21%	33	27%
30-50 years	11,889	47%	63	51%
50+ years	7,051	28%	22	18%
no data given	722	3%	3	2%
TOTAL	**25,204**	**100%**	**123**	**100%**

Additionally, the average age of properties in the analyzed dataset is 39 years old, with the median at 38 years old.

Tenancy distribution
Of the 123 properties in the dataset, 57 are family (46%), 22 are elderly (18%), 40 are mixed (33%), and 4 have no data (3%).

ACC / FMR averages
Within the dataset studied, the difference in rents at 100% FMR and the FY2010 funding structure is an average of $3,486 per unit per year. The median difference in rents at 100% FMR and the FY2010 funding structure is $2,611, which indicates that extremely large gaps are skewing the average higher. For example, 8 of the 123 properties (or 7%) in the dataset have FMRs that are at least twice the amount of their ACC allocations. It is important to note that ACC funding is based on formulas and proration levels rather than market conditions. The large differentials demonstrate one reason that housing authorities' need to convert their properties so that they can function in their market.

It is important to note here the very high percentage of properties at large housing authorities in metropolitan areas that are included in the dataset. These characteristics traditionally correspond with larger gaps between ACC allocations and FMR.

Caution
Given the picture of the analyzed dataset above, readers should use caution if attempting to extrapolate the findings from this report to the entire public housing portfolio. The sample contains high percentages of large properties at large housing authorities in metropolitan areas, which is not indicative of the national public housing stock. However, it should be observed that conversion to Project-Based Assistance is voluntary, and the properties that self-select could be similar to the analyzed dataset.

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Exhibit C
Property-Level Projection Assumptions

In our projections, we have made the following assumptions:

1. ***Properties retain their 'Other Income'*****,** which is outside the ACC funding.

2. ***Vacancy stabilizes at 5%***, a figure based upon standard lender underwriting.

3. ***No change in use or tenancy***. The properties will operate under Section 8 rental assistance (Project-Based Assistance), with use and tenancy similar to public housing and income levels dependent upon whether we are analyzing properties under FY2010 Funding Levels or 100% FMR.

4. ***A one-time 10% increase in operating expenses***, even if there is rehab, to account for marketing and competitiveness. This is conservative but appropriate in light of the unknowns associated with a conversion.

5. ***All existing social programs continue***. Implied by keeping operating expenses structurally unchanged.

6. ***New financing available on FHA-insured market terms,*** which are presumed to be 4.5% (includes mortgage insurance premium), 35 years, 115% debt service coverage under the 223(f) program. The 223(f) program is a standardized loan program specifically for multifamily properties, which could possibly be used to finance the properties in the analyzed dataset.

7. ***No restrictions on refinancing***, so that post-conversion public housing authorities are placed in an equal position with their affordable and market competitors.

8. ***Annual new replacement reserve funding of $500 per unit per year***, a figure based on standard lender underwriting and on the presumption that the new financing will deal with the Capital Backlog, returning the property into sound and market-competitive condition. However, in addition to a large Capital Backlog, many properties have large capital needs going forward, therefore, the annual replacement reserve contribution may not be able to fund these needs in full. It is important to note here that other financing programs, such as LIHTC, may be available for some properties, as well as the ability to refinance after the completion of the initial contract.

9. ***Transaction costs of 4.5% of the new loan***, based upon 223(f) execution. If a Fannie Mae or Freddie Mac execution were elected, then transaction costs would be closer to 3.0% of the new loan.

No LIHTC transaction was contemplated. We did not contemplate a LIHTC transaction, the proceeds of which could be used to fund both Capital Backlog and Future Capital Needs. Should individual properties be successful in being allocated LIHTC, a significant amount of additional capital repairs could be performed.

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Exhibit D
Methodologies

The following methodologies were used in our analysis:

1. ***Capital Backlog.*** Immediate capital needs as determined by the housing authorities or 3rd party capital needs assessors and provided to Recap by the housing authorities.

2. ***FY2010 NOI.***

+ FDS line item 70000 Total Revenue (provided by housing authorities)

- FDS line item 70610 Capital Grants (provided by housing authorities)

+ Modernization funds (provided by CLPHA)[6]

    = Effective gross income

- Expenses (provided by housing authorities)

- 10% increase in expenses (calculated by Recap as explained in 4. of Exhibit C)

- $500 per unit, per year replacement reserve deposit (calculated by Recap as explained in 8. of Exhibit C)

    = Total expenses

+ Effective gross income

- Total expenses

= FY2010 NOI

3. ***FMR.*** HUD's published Fair Market Rent, as corresponding to unit's bedroom size.

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[6] Rather than use the capital fund number reported by housing authorities on FDS line item 70610, Recap worked with CLPHA to create and utilize a pro-rata share of housing authorities' capital fund allocation by unit, which we then converted into a property allocation based upon the number of units. Given the fact that capital funding for properties can change dramatically from year to year, a pro-rata share is a more realistic estimate (for the purposes of this study) of capital funding an ACC property receives annually.

4. **_100% FMR NOI._**

\+ FMR (calculated by Recap as explained in 3. of this exhibit)

- 5% vacancy (calculated by Recap as explained in 2. of Exhibit C)

+ Other income (provided by housing authorities)

= Effective gross income

- Expenses (provided by housing authorities)

- 10% increase in expenses (calculated by Recap as explained in 4. of Exhibit C)

- $500 per unit, per year replacement reserve deposit (calculated by Recap as explained in 8. of Exhibit C)

= Total expenses

\+ Effective gross income
- Total expenses

= 100% FMR NOI

5. **_Mortgage constant._** A ratio between the annual amount of debt servicing to the total value of the loan. This constant is used to calculate the highest loan value that could be received by an income producing property.

6. **_Available loan proceeds._**

\+ NOI

x Mortgage constant

- Transaction costs

= Available loan proceeds

7. **_Determination of category._** Although the dataset's Capital Backlog is discussed in several places as an average aggregate figure (i.e. $22,115 per unit, or total data set Capital Backlog divided by total data set units), a property's categorization was determined on a property by property basis.

   For **each** submitted property:
   a. We determined whether NOI is greater than zero:
      i. If NOI > 0, then the property is either in the Current or Partial Rehab category
      ii. If NOI ≤ 0, then the property is a Social Asset and the property's units were allocated to the Social Asset category
   For properties with NOI > 0:
   a. Per unit Capital Backlog was determined
   b. Per unit available loan proceeds were determined
   c. Per unit loan proceeds was compared to per unit Capital Backlog
      i. If per unit available loan proceeds ≥ per unit Capital Backlog, then Current Rehab
      ii. If per unit available loan proceeds < per unit Capital Backlog, then Partial Rehab
Allocated property's units to either Current or Partial Rehab category

Exhibit E
Definitions of Terms Used

1. ACC — Annual Contributions Contract

2. Capital Backlog or Backlog — Capital repairs that are needed immediately according to estimates provided by the housing authorities.

3. CLPHA — Council of Large Public Housing Authorities

4. Current Rehab or Current — Property or unit that can generate enough new debt to cover its entire Capital Backlog.

5. EGI — Effective gross income, which is calculated as gross potential revenue minus vacancy/concessions plus income from sources other than unit rent. A more detailed description of EGI calculation can be seen in Exhibit D.

6. Exception Rent(s) — HUD policy that allows Section 8 rents to exceed published area FMR.

7. FDS — Financial Data Schedule

8. FHA — Federal Housing Administration

9. FMR — Fair Market Rent

10. Forward Rehab or Forward — Property or unit that can generate enough new debt to cover its entire Capital Backlog and Future Capital Needs.

11. Future Capital Needs or Future Needs — Capital repairs needed in future years (not immediately) according to estimates provided by the housing authorities.

12. FY2010 Funding Level(s) or FY2010 — FY2010 operating fund, modernization fund and tenant rent levels. As mentioned in the report, operating subsidy and modernization funding has dropped since FY2010, therefore, the findings surrounding FY2010 Funding Levels in this report could be worse than presented.

13. HAI — Housing Authority Insurance Group

14. HUD — Housing and Urban Development

15. LIHTC — Low-Income Housing Tax Credits

16. NAHRO   National Association of Housing and Redevelopment Officials

17. NOI   Net operating income, which is calculated as EGI minus total expenses. A more detailed description of NOI calculation can be seen in Exhibit D.

18. Partial Rehab or Partial   Property or unit that can generate enough new debt to cover some of its Capital Backlog.

19. PHADA   Public Housing Authority Directors Association

20. Project-Based Assistance   Project-based Section 8 rental assistance or project-based vouchers.

21. Recap or we   Recap Real Estate Advisors

22. Social Asset   Property that produces negative NOI.