Housing Preservation – Analysis and Modeling Assumptions

Introduction and Purpose

The *GO TO 2040* plan, due to be complete in 2010, will make recommendations for policies, strategies, and investments needed for northeastern Illinois to reach its potential. For the plan to be viable, it is critical that the *benefits* and *costs* of these recommendations be understood. This document is part of a series that begins to analyze potential plan recommendations in this context by developing "sample programs" for the implementation of potential plan recommendations.

In this case, a "sample program" for housing preservation was developed by combining existing preservation strategies under a broader umbrella with the ultimate goal of reducing overall housing costs; targeting those parts of the region that have the greatest need for these strategies; and estimating the public cost to increase the number of units preserved annually. The remainder of this document, and the accompanying presentation, describe how this "program" was developed.

Before reviewing the remainder of this document, please read the following notes, which explain its purpose and limitations.

- **Implementation:** This document does not address the responsibility for implementing the "sample program" described here. This is a very important consideration and will be addressed as a next step.
- **Scenario context:** Housing preservation will not be pursued in the absence of other strategies. CMAP recognizes that the benefits of the strategy are magnified when linked with such strategies as historic preservation, urban design, and the use of small-scale energy and water conservation measures. As a later step, housing preservation will be analyzed along with these other strategies; but for this series of documents, CMAP is attempting to isolate and examine the benefits of individual strategies.
- **Site specificity:** The results of this analysis are not accurate at the parcel level, and further geographic detail beyond what is shown in this document cannot be given.
- **Assumptions:** To perform the analysis of the "sample program" described here, assumptions were made for appropriate locations, unit costs, and others. The purpose of this document is to allow these assumptions to be discussed and questioned, but please note that *some* assumptions must be made for any analysis to be possible.

The purpose of the analysis and modeling exercise is to determine, on a regional scale the potential impacts and costs of implementing a targeted regional housing preservation strategy.

Key Assumptions

Any regional analysis and modeling process involves making generalities and assumptions. These assumptions were based on available literature and/or interviews with regional and national experts. Assumptions were a part of four stages in this analysis:

- Identifying areas that will receive public funding for housing preservation through the sample program;
- Determining the appropriate scale or size for the sample program;
- Determining how much it will cost to preserve the housing stock in targeted areas; and
- Determining the impact of preserving the housing stock in targeted areas.

The assumptions within each of these stages of analysis will be fleshed out in greater detail below.

1. Identifying areas that will receive public funding for housing preservation through the sample program.

Preservation strategies are most needed in areas where older or structurally deficient units make up a larger share of housing stock, and households are more likely to be cost burdened. To identify such areas, census data was compiled on two specific variables: year structure built (H34) and tenure by selected physical and financial conditions (HCT28). It is important to look at both variables because, in combination, they identify older neighborhoods with cost burdened households that are more likely to be dealing with structural issues. For the first dataset, the percent of housing units with structures built before 1950 was calculated by census block group. These units are identified in the accompanying strategy paper as older or historic[1]. As such they tend to be located closer to public transportation and contain a greater share of affordable housing units.
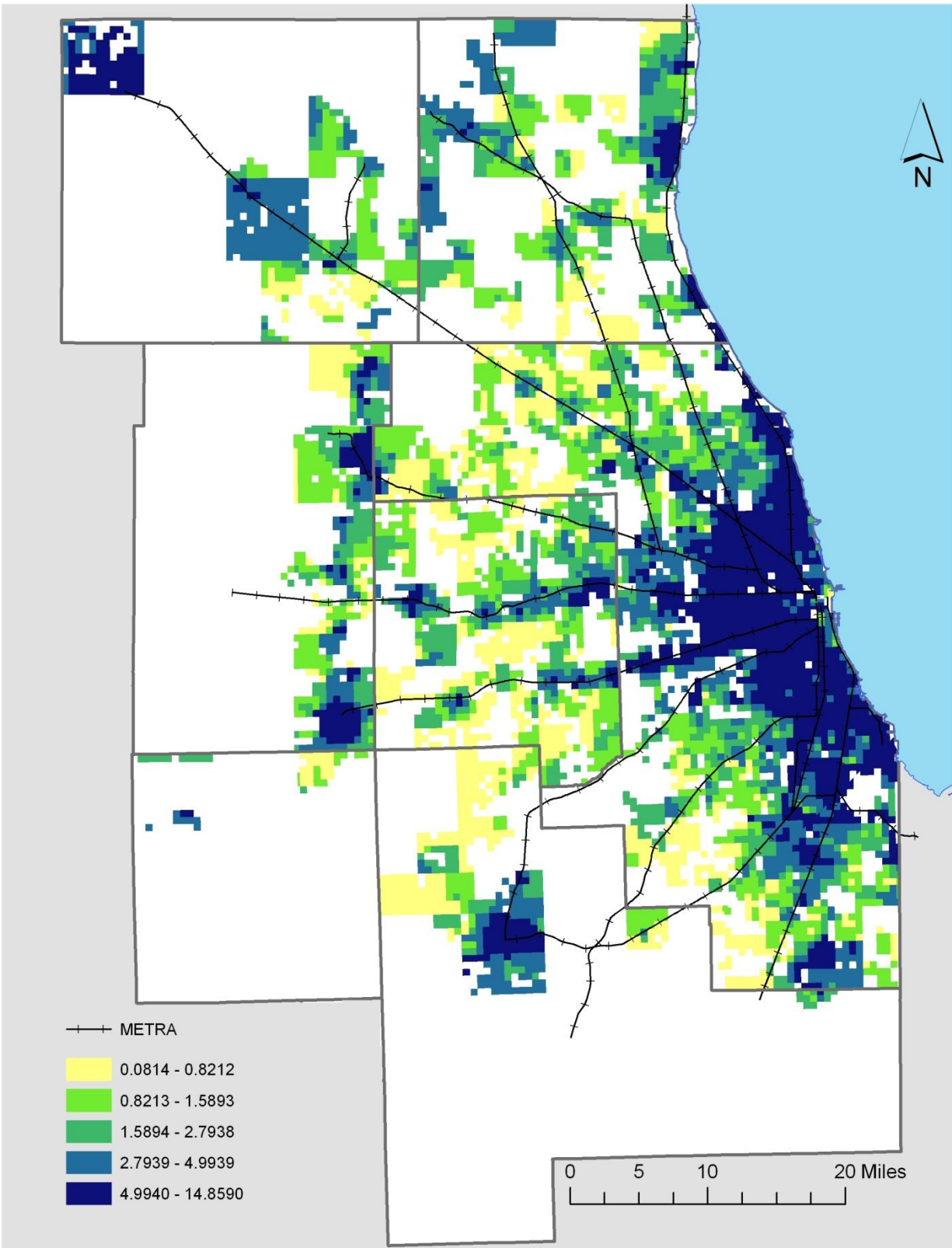
For the second variable (HCT28), an estimate of the physical and financial conditions was created. The census estimates the number of occupied housing units having one, two, three, or four of the following conditions: (1) lacking complete plumbing facilities, (2) lacking complete kitchen facilities, (3) with 1.01 or more occupants per room (over crowded), (4) selected monthly owner costs as a percentage of household income in 1999 greater than 30 percent (cost burdened), and (5) gross rent as a percentage of household income in 1999 greater than 30 percent (cost burdened). The percent of units with two or more conditions was calculated by census tract. In the absence of more comprehensive data on structural housing conditions, it is assumed that units with two or more conditions are both *either* cost burdened or over crowded *and* have some conditional issue.

For modeling purposes, CMAP uses a unique geography called subzones. Much like quarter sections, subzones evenly divide the region into squares, roughly one-half mile on a side. The following methodology was used to disaggregate the census block group and tract level data into subzones. The proportion of each block group or tract that fell within each subzone was calculated. Using these proportions of block group and tract area, the block group or tract data were divided accordingly. Both variables were then given equalized scores from 0-10 and added together to create an index of preservation need (least-greatest, 0-20). Map 1 shows how areas of higher preservation need are distributed throughout the region. The visual distortion or pixilation of certain areas can be attributed to the disaggregation of census tracts to subzones in areas where census tracts are larger (in the collar counties). Map 1 excludes all subzones that contained either no housing built before 1950 or no housing with two or more financial or structural conditions. The remaining subzones were symbolized using quantiles to clearly illustrate the unevenness of index distribution.

In the sample program, areas with higher index scores will receive higher priority for public funding for housing preservation through the sample program. The darkest blue subzones represent the top 20% in terms of the greatest need for preservation. As the sample program would focus most intensely on these areas, it is important to understand how they contrast the region as a whole. In 2000 there were a total of 1.18 million housing units within these subzones of greatest need. They had greater vacancy rate than the region as a whole (8.4% compared to 5.3% regionally). These subzones tended to be located in older, more urbanized areas of the region. Several of the region's Metra lines, and also the older communities in the Fox River corridor, are clearly visible.

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[1] Rypkema, Donovan. 2002. *Historic Preservation and Affordable Housing: The Missed Connection.* Washington, DC: National Trust for Historic Preservation. pp.5. http://www.placeeconomics.com/pub/PlaceEconomicsPUB2003b.pdf

Map 1: Index of Preservation Need

METRA

0.0814 - 0.8212
0.8213 - 1.5893
1.5894 - 2.7938
2.7939 - 4.9939
4.9940 - 14.8590

0   5   10   20 Miles

2. **Determining an appropriate scale for the sample housing preservation program**.

Research indicates that between 10,800 and 13,500 affordable units must be added or preserved each year[2] in order to meet regional housing demands by 2030. However, this research was based on the previous 6-county region (without Kendall). To compensate, it is assumed that the higher number (13,500 units) is more accurate. While it is impossible to determine how many of the units preserved with assistance from the Illinois Housing Development Authority (IHDA) might have become un-affordable without public investment, it is assumed that all of them contribute to the annual target. In 2007, IHDA contributed to the preservation of 1,950 housing units in Cook, DuPage, Lake, and Will Counties (see tables 1 and 2). They account for 14% of the annual need (see table 3). Meanwhile, The Preservation Compact of Cook County estimates that roughly 5,770 affordable rental units will need to be preserved annually through 2020 in Cook County alone[3]. Of those IHDA investment resulted in the preservation of 1,183 units, or roughly 20% of the annual target for Cook County in 2007.

It is assumed that this trajectory in terms of the need for affordable housing will continue through 2040. It is also assumed that it is possible to increase the share of affordable units added through IHDA preservation activities. However, it is recognized that, with a projected increase in funding activity there may be a limit to how many affordable units can be added through preservation. Therefore, the sample program proposes to increase the number of units preserved with assistance from IHDA to 3,375, or roughly 25% of the annual regional affordable housing development target. (In other words, it was assumed that the housing preservation program would not solve all of the region's affordable housing need by itself.) This means that the sample housing preservation program includes a marginal increase of 1,425 housing units per year over current IHDA activities.

3. **Determining how much it would cost to preserve an additional 1,425 units of housing per year.**

The housing preservation program laid out in this document is essentially a "scaled-up" version of IHDA's current programs. Therefore, these current programs will be described in some detail below.

IHDA assisted in the preservation of 1,950 units in 2007 using an assortment of financing tools. These included the Illinois Affordable Housing Trust Fund, HOME, Conduit Bond Issuances, Tax Exempt Bonds, Taxable Multi-Family Bonds, 4% Low Income Housing Tax Credits (LIHTCS) and 9% LIHTCs (see Tables 1 and 2). These work primarily by providing tax credits and loans at below-market interest rates to developers, non-profits and municipalities. Some also provide grants to non-profit organizations for projects that would otherwise not be viable. These loans and grants are used to rehabilitate and preserve the affordability of both subsidized and unsubsidized single and multifamily homes.

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[2] Chicago Metropolis 2020 and Metropolitan Mayors Council. 2005. *Homes for a Changing Region.* Chicago: Chicago Metropolis 2020 and Metropolitan Mayors Council. pp. 13.
http://www.chicagometropolis2020.org/documents/HCRReport.pdf
[3] The Preservation Compact. 2007. *Preserve Renew Rebuild: A Rental Housing Action Plan for Cook County.* The Preservation Compact. pp.

Table 1: IHDA Multi-Family Preservation Funding

IHDA-Funded Multi-Family Preservation Developments by County (1/1/07 - 12/31/07)									
County	Total Funding Amount (Preservation)	% of Total IHDA-Funded Multi-Family Developments#	Total Units (Preservation)	% of Total IHDA-Funded Multi-Family Units#	Under 30% AMI	31%-50% AMI	51%-60% AMI	61%-80% AMI	Greater Than 80% AMI	Market Rate
Cook	$46,266,595	23.86%	974	40.75%	18	573	159	224	0	0
DuPage	$25,617,506	100.00%	265	100.00%	0	0	106	0	0	159
Kane*	-	-	-	-	-	-	-	-	-	-
Kendall*	-	-	-	-	-	-	-	-	-	-
Lake	$5,247,361	30.36%	168	62.92%	0	50	110	0	0	8
McHenry*	-	-	-	-	-	-	-	-	-	-
Will*	-	-	-	-	-	-	-	-	-	-
Will/DuPage**	$12,520,000	100.00%	108	100.00%	0	108	0	0	0	0
Suburban Chicago ***	$750,000	100.00%	156	100.00%	0	66	90	0	0	0
TOTALS	**$90,401,462**	**32.54%**	**1,671**	**45.68%**	**18**	**797**	**465**	**224**	**0**	**167**

#percentages do not calculate vertically
*denotes no IHDA-funded multi-family preservation developments in county in 2007
**denotes IHDA-funded multi-family preservation developments that cross county boundaries
***not classified by county

Table 2: IHDA Single-Family Preservation Funding

IHDA-Funded Single-Family Preservation Developments by County (1/1/07 - 12/31/07)									
County	Total Funding Amount (Preservation)	% of Total IHDA-Funded Single-Family Developments#	Total Units (Preservation)	% of Total IHDA-Funded Single-Family Units#	Under 30% AMI	31%-50% AMI	51%-60% AMI	61%-80% AMI	Greater Than 80% AMI	Market Rate
Cook	$1,028,000	14.88%	209	67.42%	5	10	96	98	0	0
DuPage*	-	-	-	-	-	-	-	-	-	-
Kane*	-	-	-	-	-	-	-	-	-	-
Kendall*	-	-	-	-	-	-	-	-	-	-
Lake*	-	-	-	-	-	-	-	-	-	-
McHenry	$441,000	100.00%	54	100.00%	0	0	0	54	0	0
Will	$160,000	100.00%	16	100.00%	7	9	0	0	0	0
TOTALS	**$1,629,000**	**16.89%**	**279**	**62.00%**	**12**	**19**	**96**	**152**	**0**	**0**

#percentages do not calculate vertically
*denotes no IHDA-funded single-family preservation developments in county in 2007

Table 3: Sample Program Cost Accounting

2007	preservation target	13,500[2]
	units preserved with assistance from IHDA	1,950
	IHDA % of target	14.4%
	Cost	$92,000,000
Sample Program	annual preservation target	13,500[2]
	additional units preserved annually	1,425
	additional units preserved, 2010-2040	42,750
	additional % of target	10.6%
	additional annual cost	$67,000,000
	additional 2010-2040 cost	$2,010,000,000

The tables above show that IHDA invested a total of $92,030,462 in regional preservation initiatives in 2007 with about 98% of that for multi-family units and 2% for single family. Part of the reason for the discrepancy has to do with the fact that municipalities often have their own HOME or

CDBG funds to distribute for preservation, so fewer IHDA funds are needed. This investment contributed to the preservation of 1,671 multi-family and 279 single family units, or a total of 1,950 affordable units. Based on this accounting, the average cost to IHDA of preserving one multi-family unit was $54,100. The average cost of preserving one single-family unit was $5,839.

It is not assumed that this activity accounts for every preserved unit in the region, however it is assumed that these numbers provide an appropriate starting point for estimating the per-unit costs of implementing a sample housing preservation program. It is widely recognized that the majority of affordable housing development and preservation projects require multiple sources of financing, therefore the sample program will be based on an increase in total IHDA funding allocated to preservation activities. It is assumed that by increasing this investment, other public and private financing sources will similarly increase their investments.

Based on maintaining the current split between multi- and single-family preservation (86%:14% respectively), it would cost approximately $159.3 million annually to increase the share of preservation activities to 25% of the annual affordable housing target. Therefore, annual investment in IHDA preservation activities around the region would increase by $67.3 million.

4. Determining the impact of preserving housing stock in targeted areas.

A review of the literature and consultation with local housing experts informed the strategy report's assessment of the impacts of housing preservation. Among others, they include
- reduction in gross housing costs and aggregate spending on housing production
- preservation of community character; and
- reduction of construction and demolition waste.

While the latter two impacts are important, data to quantify their impacts was either not available or too limited for a modeling exercise. So, the sample program will focus on quantifying the regional impacts on housing cost.

CMAP is currently developing 2040 reference housing cost projections, which are based on "scaling up" the region's housing stock at the time of the 2000 Census. The sample program will distribute the additional 42,750 preserved units across the 40% of subzones scoring highest in the index of preservation need. These units will be shifted from "unaffordable" price categories to the highest price category considered "affordable" based on area median income (AMI)[4].

The underlying assumption of the sample program is that all preserved units would otherwise have become unaffordable or lost (in some cases, by being demolished and rebuilt as unaffordable units). An obvious impact of this strategy is that aggregate housing costs would decrease across the region. However, this would also lead to a decrease in aggregate equalized assessed value of housing and, therefore, property tax revenue. The full impacts of this program on local budgets have not yet been analyzed.

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[4] According to IHDA and industry standards, the methods for determining affordable owner-occupied and rental units are as follows (please note that all data is from 2000):
- Owner occupied housing is considered affordable if its cost is equal to or less than triple 80% of AMI. Therefore, the maximum price for owner- occupied affordable housing is $124,032.
- Renter occupied housing is considered affordable if it costs no more than 30% of $31,008 (60% of AMI), which is $9,302. Because rents are paid on a monthly basis this number is divided by 12 to get a maximum monthly rent of $775

Next Steps

Acknowledging several assumptions, the housing preservation sample program will cost an additional $2 billion ($67.3 million annually), but result in the preservation of an additional 42,750 units (1,425 annually) in targeted areas of the region by 2040. Understanding these benefits and costs is critical to developing viable plan recommendations for housing preservation.

However, this analysis is not complete, and there are several additional components which need to be considered:

- This analysis contains assumptions that stem from limited data describing the impacts of regional housing preservation activities. Since affordable housing finance has multiple layers, it will be important to inventory and track investment and outcomes at the project level.
- While the sample program calls for increased investment in IHDA preservation activities, supplementing current activities, this analysis has not yet considered all of the details of the program's implementation or the source of the additional needed funding.
- In addition to housing costs, there are other indicators to be modeled and measured, such as how the sample program impacts the environment in terms of construction and demolition waste, imperviousness and embodied energy. The fiscal impacts of the program also will need to be analyzed, as will its effect on household and job growth across the region.

These are all extremely important aspects of this strategy which need to be carefully explored and understood in the next steps of analysis.