Raise the Roof: Can Location Efficient Mortgages Increase Social Equity, Compact Development, and Transit Ridership?

by

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ABSTRACT

The American Dream has long been founded on obtaining homeownership. As Berkeley scholar Edward Blakely eloquently stated, “Americans define themselves by the place, style or social status which their living patterns confer. The ownership of land, usually in the form of home or business, is the universal American symbol of inclusion.”

However, this Dream and the financiers who lent money to build that Dream have neglected to acknowledge that housing is but one component of the urban system. Today, our nation’s cities are coping with the consequences of that Dream in the form of social inequity, sprawl, and asphyxiating levels of congestion. To thwart the rise in these urban ailments, three organizations collaborated to formulate a new mortgage product that encouraged transit use by providing monetary incentives to participants who lived in neighborhoods rich in transit, employment, and commercial access. Whereas traditional mortgages treated automobile ownership as an asset, the Location Efficient Mortgage (LEM) was the first homeownership product that rewarded accessibility over mobility.

After three years of implementation, this thesis analyzes the initial limited success of LEM, its potential to increase social equity, compact development, and transit ridership, and then presents recommendations to three institutions that may be integral in expanding the market share of this progressive mortgage product. Ultimately, this thesis contends that the key to the success of LEM lies in strategic partnerships with local transit agencies. These institutions include the Center for Neighborhood Technology (who administers the LEM in Chicago), the Chicago Transit Authority, and Tren Urbano (a new heavy-rail system in Puerto Rico). This thesis concludes with a discussion on LEM and its relationship to urban design standards and land use policy.

Thesis Supervisor: Fred P. Salvucci

Title: Senior Lecturer, Center for Transportation and Logistics
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Introduction

Homeownership has long been the centerpiece of U.S. housing policy. As a society, the government has created many policies to promote homeownership, such as the mortgage interest deduction for federal income tax, mortgage insurance, and direct subsidies for lower income households. As U.S. Congress stated in 1938, "...The genuine development of quarters for people of low-income...will remove one of the serious forces now operating against complete economic recovery, and will introduce into that economic recovery a truly stabilizing influence."\(^1\) Within this centerpiece, many policymakers believe that homeowners have a larger stake in their communities and encourage better citizenship than renters.\(^2\)

Following World War II, the federal government enacted legislation designed to redefine the American Dream. The old Dream depicted "rags to riches" tales of immigrant families leaving their native lands for the promise of a better life. Literature, films, and art illustrated the dense cramped tenement apartment where men would slave to put food on a table and feed a multitude of generations under one roof. Streets were robust with trolleys, vendors, and pedestrians – all the electricity that defined life in the big city – with an underlying message that America was the land of opportunity. The American Dream was alive, and its pulse beat firmly from the heart of the metropolis.

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Once the Baby Boom began, the American Dream began to change. No longer steeped in urbanism, the federal government instead pushed forth legislation that provided incentives for citizens and lenders alike to escape the cramped apartment and hectic city life for a more peaceful dream in the suburbs. The new Dream was simpler and cleaner, with room to breathe for everyone; the cramped apartment became a spacious three-bedroom home, and the trolley became a Ford. Cities and suburbs were designed and expanded to be automobile efficient first. Public transportation became an afterthought. Policymakers and mortgage lenders only linked homeownership and mobility, subdivision-by-subdivision, off-ramp by off-ramp.

What is a Location Efficient Mortgage?

In 1999, a collaborative effort from the Center for Neighborhood Technology (CNT), the Surface Transportation Policy Project (STPP) and the National Resource Defense Council (NRDC) attempted to rewrite American Dream through the creation of the Location Efficient Mortgage (LEM). Rather than becoming another chapter of housing policies promoting suburbanization and sprawl, LEM was created to provide new incentives linking affordable housing with compact development and transit ridership.

The LEM achieves this goal by providing higher loan ceilings for moderate-income earning households who have stretched their income too far on depreciating assets such as car payments and rent – and are looking to own a home and live transit-oriented lifestyles. For those households, the LEM could be the difference between staying in the city and moving out to the suburbs, or maintaining a life without equity altogether. Compact development is a by-product of the LEM, as developers and lenders would be interested in maximizing dwelling units per acre near transit in

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3 Many urban planners and designers have a myriad of definitions of compact development, but I assume the Local Government Coalition's definition of 7 to 30 dwelling units per acre: http://www.lgc.org/freepub/PDF/Land_Use/focus/compact_development.pdf, May 12, 2003.
neighborhoods that do not require building costly parking structures. These links exemplify the foundation of urban design and development by promoting homeownership as an essential component of the mosaic within our nation's cities.

**Why the LEM is Different**

<table>
<thead>
<tr>
<th></th>
<th>LOCATION EFFICIENT MORTGAGE</th>
<th>CONVENTIONAL MORTGAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOWN PAYMENT</strong></td>
<td>3%</td>
<td>&gt;10%</td>
</tr>
<tr>
<td><strong>INTEREST RATE</strong></td>
<td>Prime - .5%</td>
<td>Prime Rate</td>
</tr>
<tr>
<td><strong>LOAN ELIGIBILITY INCREASE</strong></td>
<td>Up to $90,000</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Transit Discount</strong></td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

CNT introduced LEM to the marketplace through the support of FannieMae's $127 million program to improve affordable housing. FannieMae provided necessary insurance that allowed the LEM to be implemented in Chicago, Seattle, Los Angeles, and most recently, San Francisco. FannieMae's support allowed the LEM to offer another unique amenity besides the increased loan ceiling. Whereas conventional mortgages require a minimum of 10% down payment on a home purchase, FannieMae was able to offer 3% down to allow moderate-income earning households to afford a home.

The Location Efficient Mortgage has encourages lenders and policymakers to change their perception about the urban environment and view housing, transportation, and economics as an integrated symbiotic system. Unlike conventional mortgages that considered car ownership as a measure of creditworthiness because it proved an applicant was able to maintain the fiscal responsibility for debt. Conventional mortgages usually require excellent credit and a large down payment of home loan

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4 FannieMae, also known as the Federal Home Mortgage Association, was created in 1934 to encourage homeownership by providing insurance against default during the Great Depression. Today, FannieMae is the nation's largest mortgage insurer and has sponsored the LEM since 2000.
applicants to qualify. These requirements help to minimize the lender’s risk of non-repayment, or default, of the loan. They also make it difficult for moderate-income families to qualify, as these households have stretched their income to afford life’s necessities.

To expand homeownership to these households, the LEM rewards those who live in dense neighborhoods where transit and employment accessibility is prevalent and the need for automobiles are reduced. Location Efficient Mortgages consider homeownership and simultaneously incorporate the movement of people as to how and where they are moving.

The incentive lies in the inherent value of living in neighborhoods exhibiting higher levels of location efficiency where there is less need for automobiles. Location efficiency is defined as the level of pedestrian accessibility to public transit and commercial amenities. A location efficient value (LEV) is associated with this efficiency and applied to every census block within four participating cities – Chicago, Los Angeles, San Francisco, and Seattle.

To calculate this value, CNT developed a formula that computed a number of factors and arrived at an LEV in the form of transportation savings that an individual would accrue by using transit and/or walking rather than driving an automobile. That LEV is then added to a home loan applicant’s total eligibility ceiling and expands his/her opportunity to own a home in a more accessible neighborhood rather than rent in a more auto-dependent one.

**Who Benefits?**

Compounding the benefit of transportation savings with other benefits such as low down payments and transit pass discounts. Therefore, the Location Efficient Mortgage has the potential to expand homeownership to lower-income earning households and create transit-oriented neighborhoods with less congestion and mixed-use compact development in our nation’s cities. In Chicago, over 300,000 households do not own,
nor have access to an automobile. Yet, many of them continue to pay inflated rents and higher insurance rates because the automobile has been a deciding driver of real estate value. I contend that the LEM has the potential to strengthen the market power of transit patrons for transit-accessible housing.

This thesis contends that the Location Efficient Mortgage has profound potential to transform the urban landscape for participants and greater society by maximizing the relationship between homeownership and efficient public transit. The LEM program has struggled to make a significant impact in the housing market in the above cities. In Chicago, this struggle could be attributed to a number of factors including:

1. Confusing marketing campaign that generated numerous misconceptions in the lending industry.
2. An city-wide implementation, rather than a more strategic plan which offered the LEM only in neighborhoods with the highest levels of transit ridership and lowest levels of car ownership
3. No marketing partnership with local transit agencies

To overcome these setbacks, the Center for Neighborhood Technology must reformulate existing strategies and form partnerships with key institutions such as transit agencies, lenders, and developers.

Such partnerships could transform the mortgage industry by bridging housing, transportation, and job growth into one system. As real estate values are higher in transit-accessible neighborhoods, providing lower-income families with the opportunity to invest more in an appreciating asset (such as homeownership) rather than a depreciating one (such as an automobile) increases social equity and transit ridership. Encouraging developers and mortgage lenders to promote this transit-based housing initiative will advance the cause of transit-oriented development through encouraging more people to pursue housing in denser neighborhoods to minimize commute times and reduce auto pollution.

Although LEM’s success to date has been limited, its potential has yet to be realized. It

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is imperative to our society that this progressive mortgage product be further investigated, as the potential social, environmental and economic consequences are far too viable. Over the past 15 years, the planning paradigm has begun to shift from mobility to accessibility. The Location Efficient Mortgage could catalyze this shift and create provide a successful example of pairing homeownership with public transit in our nation's cities.
SUMMARY OF RECOMMENDATIONS

This thesis will analyze LEM’s limited success and provide recommendations of strategies to improve the impact of this home mortgage product in areas of social equity, compact development and transit ridership. As a component of the Chicago Transit Authority/Tren Urbano Research Project in conjunction with M.I.T.’s Center for Transportation Logistics, this thesis will focus on and present recommendations for the CTA and Puerto Rico’s Tren Urbano. I will also present recommendations to the transit agencies of two distinct regions: Chicago, which boasts a successful century-old transit system and implemented Location Efficient Mortgages in 2000. While San Juan, Puerto Rico, a region gripped by sprawl, congestion, and exorbitant commutes is now attempting to transform public transportation through the creation of Tren Urbano – a 16 km heavy-rail project scheduled to commence operations in September 2003.

In Chapter 2, I present my motivations for conducting this research through a detailed overview of prevailing theory in transportation planning and regional economics. This theoretical framework supports my findings that the LEM is an effective, long-sought tool that may connect housing, employment, and transportation and achieve the three larger societal goals mentioned above.

I then apply these findings in Chapter 3 to analyze the initial implementation strategy and how the LEM failed to make a significant impact on the mortgage industry.

Chapter 4 presents recommendations to the Center for Neighborhood Technology (CNT) suggesting how the organization can build upon its limited progress with LEM thus far and improve its marketability through strategic partnerships with local banks, transit agencies and developers.

Chapter 5 concentrates specifically on the Chicago Transit Authority (CTA) and its potential role as the primary marketing conduit of Location Efficient Mortgage. The CTA carries over 1.5 million riders per day and generates over $18 million in advertising
revenue.\textsuperscript{5} Thus great potential exists for to expose LEM to moderate-income transit riders while simultaneously tying homeownership to public transit. CTA stands to benefit from public relations and community exposure in the short run, and increased ridership and farebox revenue in the long run through partnering with CNT and local banks to promote LEM.

In Chapter 6, recommendations focus on the Tren Urbano project and how Tren Urbano could bundle marketing strategies aimed at building ridership for the nascent project with those that promote homeownership near transit stations.

Finally, Chapter 7 illustrates the connection between Location Efficient Mortgages and urban design of cities within the United States. A discussion is raised as to the potential of this link to transform the urban streetscape through land use policies and methods of transit-oriented development.

\textsuperscript{5} Interview with Cindy Kaitcer, Marketing General Manager, CTA, May 2, 2003.
METHODOLOGY

With only three years of implementation, the primary challenge in conducting this research was a dearth of publications focusing specifically on the overall impact of Location Efficient Mortgages. The few that do exist played a vital role in this research. I relied heavily on Location Efficient Mortgages Qualitative Research: Key Findings, a report conducted by The Blackstone Group\(^6\), as well as Location Efficiency: Neighborhood and Socio-Economic Characteristics Determine Auto Ownership – Studies in Chicago, Los Angeles, and San Francisco, by John Holtzclaw, et al.\(^7\) These publications were instrumental in explaining the value of LEM and its initial reaction among lending professionals and homeowners around Chicago.

I then expanded my research to various journals of transportation planning, regional economics, and real estate to gain a deeper understanding of how transit-based housing initiatives have impacted surrounding communities in areas of social equity, compact development, and transit ridership. In particular, I found that Robert Cervero and his cadre of co-authors provided a valuable analysis of the relationship between homeownership and transit ridership, the integral role transit agencies play in improving the connection between housing and employment, and finally, the quantitative and qualitative benefits of transit-oriented development.\(^8\) These articles built a theoretical

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\(^6\) Rose, Kathi, Location Efficient Mortgages Qualitative Research: Key Findings. The Blackstone Group, Chicago, IL, July 25, 2002, pp.1-17.


\(^8\) Transit-oriented development is defined as the merging of land-use policy and development that combines high density near transit stations, active retail streetscapes with housing above, interconnected street grids that invite transit use and walkable destinations, narrower streets, and strategic parking management.
framework of which to analyze my initial findings and better inform my recommendations to CNT, CTA, and Tren Urbano.

In addition, I routinely used numerous on-line databases such as the 2000 U.S. Census, Transportation Research Information Service (TRIS), Bureau of Transportation Statistics (BTS), the ABI Index, Lexis-Nexis Academic Universe, and the Urban Land Institute to discover precedents of demographic trends, transit-based housing initiatives and media articles. Finally, I utilized on-line reports and marketing strategies from the Institute for Location Efficiency, NRDC, Banco Popular and Home Street Bank.

Critical to this analysis was a series of invaluable interviews. Through interviews of professionals working within CNT, CTA, Tren Urbano, loan officers, developers, transportation planners, housing authorities, and FannieMae, I gained keen insight on the operational and institutional component and served as a reality check to some of my more progressive brainstorming.

Last but not least, my survey of LEM participants in Chicago added the essential personal element to my thesis. Within these surveys, as well as those from CNT, I determined behavioral trends in transit use, community revitalization, and commute times. These surveys also aided my ability to recommend new initiatives by fielding their reactions to such initiatives.
2 Motivations

The Holtzclaw report, which crafted the Location Efficient Mortgage, pioneered a new method of mortgage lending. The report concluded that neighborhoods rich in transit and commercial accessibility could be quantified into transportation savings based on the number of non-auto trips generated. This calculation has the potential to change the mortgage lending industry if it proves to minimize car use and maximize home investment and real estate values. Location Efficient Mortgage is the first mortgage initiative to link housing with public transportation and, if implemented correctly may force the industry to incorporate location efficiency into a wide array of conventional mortgages.

The connection to transit agencies lies in the target demographics where LEM would be best suited. Namely, in populations with some debt, moderate income, and frequent transit use. With the median income of CTA frequent riders hovering around $43,000, there is an excellent opportunity to market homeownership products that give incentives for people who use transit and are interested in moving from renters to owners. Transit agencies and specifically CTA and Tren Urbano, would benefit through harnessing a number of funding sources specifically established for transit-based housing initiatives.

Further, the CTA currently yields about 75% of all revenues from ridership and ridership-based initiatives. CTA can apply this success to the type of program like LEM, which promotes customer loyalty and in time, create new riders based on the success of being the primary marketing conduit of Location Efficient Mortgage. Less money spent

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on automobiles equals more money spent on transit while having a significant impact on fuel prices and insurance rates. In the future, this transit-oriented lifestyle could lead to less traffic accidents and thus less money spent on health insurance and highway improvement programs. It behooves transit agencies to play this critical role in advancing this lifestyle through marketing housing programs that remove cars from our nation’s roads, places riders on more cost-effective and efficient transportation systems, and encourages ownership of transit-accessible housing to actually use transit as opposed to valuing transit for its resale value from using the automobile.

LEM also expands the supply of affordable housing by giving loan applicants more money to apply to the purchase of a home. This allows moderate income-earning families to either remain in their current neighborhoods as homeowners – thus countervailing gentrification, or supports them moving into a neighborhood that would otherwise be outside of their financial radius that is more transit accessible – thus promoting mixed-income neighborhoods. In either case, the LEM could be an integral tool in advancing social equity in our nation’s inner city.

The Location Efficient Mortgage is a prime example of the success and potential of transit-oriented development. By encouraging prospective homebuyers to consider moving into denser transit-accessible neighborhoods instead of outlying suburbs away from transit, the LEM provides incentives for developers to build more compact housing stock. The consequences of this are profound as more transit-based housing will fuel more transit-based jobs and transform the urban landscape into more walkable and congestion-free communities.

But, how does it come together? The answer lies in multi-jurisdictional partnerships between the Institute for Location Efficiency, transit agencies, major banks, developers, and policy makers. For transit-oriented lifestyles to be advanced, transit agencies must serve as the primary marketing conduit because of their invaluable exposure. Banks would provide necessary mortgage underwriting and brokerage promotion to ensure the LEM is properly advertised within proper distribution channels and deliver discounted transit passes with mortgage statements. Developers would then partner with banks in
Chapter 2

Motivations

Chicago and Puerto Rico to build on existing vacant lots near transit stations and allocate a certain percentage to Location Efficient Mortgage participants. Finally, policy makers would cater to this powerful network of urban development by promoting land use policies which support transit-oriented development. This system is easier said than done, but my thesis hopes to at minimum bring these stakeholders closer to the table to transform our urban environment, and one step closer to help families achieve their dreams of homeownership.
Theoretical Framework

To explain the benefits of Location Efficient Mortgage, a discussion of underlying transportation and regional economic theory is necessary to convey why this program is worth investigating. The LEM attempts to resolve two powerful conundrums that exist in our nation’s cities by encouraging mortgage lenders to allow lower-income families to stay in the inner city and reap the benefits of home-ownership without compromising those families’ job accessibility. LEM has the potential to stimulate compact development – bringing jobs (especially back-office) back to the city and catalyze a car-minimized society.

The first conundrum is that residential development and job opportunities are increasing in the suburbs, yet lower-income families have little means of access either because of social barriers to entry inherent to suburbia as well as little to no means of efficient transportation.

This theoretical framework attempts to explain prevailing ideas on solving these conundrums and simultaneously supports the need for transit-based housing initiatives such as the Location Efficient Mortgage. In order to assign location efficient values to specific neighborhoods, an understanding as to how the Holtzclaw team quantified accessibility is essential. Hess and Ong further this research by investigating the ties between traditional neighborhoods and auto ownership rates.

An overview of prevailing transportation theory supporting LEM is then provided by Horner and Murray and followed by Robert Cervero’s findings on topics ranging from transit use and automobile ownership rates in transit-based housing in California to an analysis of density and real estate values. This section concludes with an analysis by Clark, Huang, and Withers on the role of commute distance in shaping housing change behavior.

The last component of the theoretical section focuses on regional economics. Partridge and Rickman provide insight on the balance between jobs and housing. In particular
they attempt a chicken-egg analysis as to which element is a more influential factor in the development of the other. Following that discussion, Cervero, Reid, and Applewood’s work on spatial and occupational mismatch is explained to cite further support of initiatives linking housing with efficient transportation. This section then leads directly into my initial findings of the Location Efficient Mortgage.

**Quantifying Accessibility**

John Holtzclaw et al., confirm the view that urban design and transportation infrastructure have a highly significance influence on auto ownership and distance driven for neighborhoods in three large U.S. cities, even after correcting for household size and income effects. His observed differences in density and transit explained *three times* the variation in vehicle miles driven per household for a constant level of income and household size.¹⁰

In the Holtzclaw team report, a formula was derived that weighed all factors of neighborhood accessibility. This formula was used as the mathematical foundation to Location Efficient Values – which attempted to place a value of transportation savings incurred by participants living in specific neighborhoods. This value is added to the participant’s loan eligibility equation and raises the applicant’s loan ceiling.

The underlying goal within the formula was to explore indicators which reduced Vehicles Miles Traveled per Household (VMT/Hh). According to the report, the best equations to predict VMT/Hh were factors depicting area density and pedestrian/bicycle friendliness. These indictors included were: Households per Residential Acre (H/RA), Households per Total Acre (H/TA), Income per capita ($/P), Persons/Hh (P/H), Zonal Transit Density (Tr), $exp(x)$ which is e$^{(x)}$, a Pedestrian/Bicycle friendliness surrogate (Ped), and the

Vehicles/Hh = A • ((B/(C+H/RA))^D) • (1-exp(-[E•$/P]^F)/G) • ((1+H•P/H)/I) • ((J/(Tr+K))^L)

VMT/vehicle = M • ((N/(O+H/TA))^P) • (1+Q•P/H)/R) • ((1-S•Ped)/T)-(U•($/P-V))

VMT/Hh = Vehicle/Hh • VMT/vehicle

Table 2.1: The Location Efficiency Value (LEV) Equation

The square root of that surrogate (√Ped). Combining these indicators, the team arrived at the following summary equations to calculate VMT/Hh:\(^{11}\):

In Table 2.1, the letters A through V are the parameters that vary from region to region and the bold symbols are the independent variables. Note that variables B, G, I, J, N, R, T and U are normalization parameters, while the rest are varied in the fit to maximize $R^2$, thus maximizing the fit to the data.\(^{12}\)

The Holtzclaw report further addresses the impact of zonal transit density (Tr) and households per residential acre.

|----------------------------------------|

\(^{11}\) Holtzclaw, et al., p. 17.

\(^{12}\) Correspondence with Peter Haas, Center for Neighborhood Technology, April 10, 2003.
Chapter 2

Motivations

H/RA on VMT/Hh and concludes that as Tr and H/RA decrease, VMT/Hh increases exponentially. Policy questions are raised as to how to increase both transit and household densities, with recommendations arriving at the importance of Location Efficient Mortgages as the answer to this policy problem. In Chicago, this equation would resemble the above in Table 2.2.

Hess and Ong pose an essential question in the analysis of urban design and transit-based housing initiatives: “Do certain groups of people locate their households in high-density mixed-use neighborhoods because they do not own autos, or because they do not want to own autos?” This question stems from their assumption that households factor transportation trends, modal split, and auto-ownership rate and call upon Kevin Krizek’s analysis that concluded that people who moved to higher-density locations both generated less VMT and person miles traveled (PMT), as well as reduced travel distance but increased total number of trips. Herein lies the revenue and ridership potential for transit agencies in partnering with housing initiatives that support compact development such as the LEM.

According to Hess and Ong, land use mix, pedestrian environment factor (PEF), transit accessibility, and proximity to light rail all were positive coefficients within their analysis—indicating that they have a positive effect on the probability of owning zero autos. Policies must then be written to promote this behavior where it is most feasible—within the ¼ mile catchment area of transit stations. Households in Portland, Oregon


14 Developed by Portland Metro to construct a measure of pedestrian environment based on topography, sidewalk continuity, local street pattern, and ease of crossing streets within each Transit-Accessible Zone (TAZ), as found in Hess and Ong.

neighborhoods with mixed-land uses were 31 percentage points more likely to be carless than households in homogeneous neighborhoods. Land use mix was statistically significant in their study, suggesting that it has a dramatic effect on auto ownership behavior.

Hess and Ong conclude that lower auto ownership rates lie in higher density neighborhoods, but refute the Holtzclaw team's findings in stating that the key factors are not income or density. Rather, they argue that attractiveness of other modes such as walking or public transit and the higher costs associated with auto ownership are the primary drivers of lower auto ownership rates in these locations.\(^\text{16}\)

**Transportation**

*Improving Jobs-Housing Balance*

Horner and Murray investigate the "jobs-housing balance" and how commuting patterns and congestion are functions of spatial distribution of land uses.\(^\text{17}\) The term, jobs-housing balance refers to the level of heterogeneity among workers' residences and employment locations in a given area, where a balance of jobs and housing is perceived to be positive.\(^\text{18}\) Indeed it is an imbalance of jobs-housing that some have argued to be the root of many urban problems, thus leading to proposed policies that will help to better distribute employment centers and housing districts to reducing excessive commuting.

Numerous respected articles on the link between jobs-housing and commute times all concur that land use policies and development practices that encourage minimal travel

\(^{16}\) Hess and Ong, p. 18.


between work and home would lead to a more viable and clean urban environment. Robert Cervero found that places of high employment generally drew commuters from long distances to an area with little to no land zoned for residential development.

Had there been, Cervero exclaims, more mixed-use zones and consequential development near the employment center, more people would have had shorter commutes. Giuliano and Small’s research supported Cervero’s findings in 1993, with results showing that as the ratio of jobs to housing became more balanced in an area, corresponding commute lengths generally decreased. These findings laid the basis for Horner and Murray’s analysis on Atlanta.

Horner and Murray ultimately conclude that regional policy in Atlanta would be more effective focusing on directing the relocation of employees towards employment centers, rather than the opposite. Ultimately, data showed that the jobs-housing balance would be most affected by higher-density, compact development in areas close to employers. Further, their data illustrated that a relatively small percentage of workers need relocating to exhibit a significant reduction in minimum commuting times. Most notably, if 6.5% of workers were relocated there would be a 35% reduction in minimum commute times without relocating a single job.

**Commuting Tolerance and Residential Change**

Addressing the increasing trend of job decentralization and the proliferation of edge cities, Clark, Huang, and Withers conducted a longitudinal study to test the nature and strength of association between residential change and employment location. Their hypothesis tests the question of whether households seek to minimize commuting distances when they change residences amongst one- and two-wage earning families.

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19 Cervero, Robert, 1989; Found in: Horner and Murray, p. 137.

20 Giuliano and Small, 1993

and analyzes for gender differences within each family.\textsuperscript{22}

Their hypothesis is three-fold. First, that "households who move will choose residences that are closer to their workplace. The larger their initial separation between residence and workplace, the greater the likelihood of moving closer (and decreasing commute time) to the workplace."\textsuperscript{23} Second, that "individuals in dual-earner households that move are likely to have higher average commutes both before and after a move than single earner households due to the additional spatial constraints of the second earner's place of employment and labor force attachment."\textsuperscript{24} Third, "in two-worker households, women will have shorter commutes but (for women who remain in the workforce) commutes will, on average increase with residential changes."\textsuperscript{25} Should these three hypotheses hold, they would show a number of relationships between commuting and residential mobility choices, particularly within two wage-earning households where the primary worker likely has more pressure to change residential location due to employment factors.

The Clark team found that indeed, people in one- or two-wage earning households generally reduced their commute times with changes in residences. On average, one-worker residences with relatively short commutes (< 8 miles) tended to increase their commuting distance with moves. Households with larger commutes (> 8 miles) tended to decrease their commuting distances. The Clark team admits that 8 miles is a loose threshold, but it does show how commuting intolerance grows beyond that threshold and increases the likeliness that households will look to move to mitigate this


\textsuperscript{23} Clark, William A.V., et al., p. 205.

\textsuperscript{24} Ibid, p. 205

\textsuperscript{25} Ibid, p. 206
Motivations

intolerance. In reference to the gender hypothesis, women tended to increase their commutes when living in a two-wage earning households and changing jobs as well as residence.

A prime example of this can be found in the results of my LEM survey. In one case, one income earner had a sharp decrease in commute time with the move, but his partner experienced a significant increase. The policy implications of this research are vast. Like the work of Hoover and Murray, the Clark team has found more data asserting that more compact, mixed-use development would attract more households living on the urban fringe. Zax and Kain further assert this point on an economic perspective, as they suggest that job changes and quit propensities tend to increase with longer commutes.\textsuperscript{26} Land-use policies need to reflect this pressing issue of job decentralization. Commercial and residential lenders must come collaborate to ease lending barriers to mixed-use, compact development.

Ultimately, the intersection of policy-makers, lenders, and developers must be considered at the transportation agency. It is this agency that serves as the administrator of public opportunity. Its service not only has a profound affect on job and housing accessibility, but also positively impacts real estate values and pollution. Even with the dawning age of low- to no-emission vehicles, congestion and commuting by car still pose a serious threat to urban society in the form of increased social stratification, community homogeneity, xenophobia, and the increased risk of auto accidents – the latter being the number one cause of death in the United States.

The transportation agency can address these issues through new partnerships with the private sector that encourage compact development, transit use, and community revitalization. It is also in the agency's best interest to address these issues, as it would ultimately lead to increased ridership and revenue; thus installing a self-sustaining

system of implementing programs through partnerships that ultimately fund themselves.

Regional Economics

Jobs Versus People

Partridge and Rickman explore "the chicken-egg question of jobs versus people" in their most recent article in the Journal of Urban Economics. Succinctly, cities and city managers must continually explore the dilemma of bringing jobs to people, or people to jobs. The team questions this dilemma in terms of who follows whom – do people follow newly created jobs, or do jobs follow recently arrived migrants?27

This question's relevancy to Location Efficient Mortgage falls within the consequences of compact development. If a mortgage provides incentives for living in "location efficient" neighborhoods, then a premium will be placed on mixed-use development that provides jobs to these types of neighborhoods. Or, will the mortgage incite development first in the hopes of bringing in waves of new residents who participate in LEM? Partridge and Rickman's analysis of this question is highlighted below.

In terms of regional economics, policymakers routinely look to job creation as a sign of regional health. Job growth allows them to assert that their commercial and industrial marketing strategies have succeeded. However, as Partridge and Rickman assert, this job growth may be due to favorable population inflows which in turn stimulated employment. These inflows may have been caused by poorer economic conditions in neighboring regions, or some other factors exogenous to the efforts of local policymakers.

Further, job growth strategies routinely ignore the stress imposed on local infrastructure systems, such as public transit. These stresses, sometimes although usually

ineffectively resolved through impact fees – exactions charged to developers to offset such stresses, can actually result in further damage to the city as tax watersheds from job creation may go directly into the infrastructure which supports them.

Partridge and Rickman explore the importance of their research, citing the lack of resolution on the chicken-egg debate, stating that regions experiencing rapid job creation likely attract new residents, while regions experiencing an influx of new migrants likely experience an increase in jobs.28 This assumes that labor-demand shocks to a region are absorbed with equivalent shocks in labor supply and vice-versa. But this assumption, stated in the article, leads to different conclusion. First, increased labor demand leads to increased employment and higher wages, while labor supply increases employment but a decline in wages. The pair ultimately concludes that on average, labor demand shocks are found to be more important in determining state employment fluctuations. But on the whole, labor supply shocks comprise a majority of employment fluctuation.29

**Spatial and Occupational Mismatch**

The lack of even distribution of affordable housing only exacerbates the issue. With employers moving out to the suburbs, many inner-city families lack the access to reach employment. This dilemma is known as spatial mismatch.30,31 Without this access, these inner-city families risk unemployment, and possibly eviction. Transportation planners must address this growing concern by planning for reverse commutes and

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28 Ibid, p. 77.

29 Ibid, p. 96.


administering transit routes in timely manner so as not to force these inner-city residents into exorbitant commute times.

The LEM can attend to some of these families’ needs, as the down payment requirement is low enough to allow them to keep most of their savings, yet simultaneously qualify for a mortgage that keeps them closer to their jobs. The fourth article is Cervero, Rood, and Appleyard’s research on jobs accessibility as a performance indicator. Accessibility, the team argues, has been gravely overlooked in transportation planning while most policies have instead focused on improving mobility. In placing more attention on improving accessibility, “alternative strategies for reducing traffic congestion and coping with environmental problems such as promoting efficient patterns of land use development and transit demand management” come to the forefront. The team also advocates for compact and mixed-use development to mitigate physical movements. The Cervero team argues that inattention to the social equity implications of prior transportation decisions is particularly troubling.

The Cervero team then conducts a thorough analysis of “occupational matching”. Here, they create a model that enhances the accessibility indicator by findings consistencies between employed residents’ skills and employment roles within specific neighborhoods and labor force occupational characteristics in employment zones. More simply, they are trying to account for the match between employee skills and employment opportunities within accessible range for these employees. The Location Efficient Mortgage could lead to more jobs and more housing, especially in areas such as Chicago’s south and west side where retail spending is high, transit is accessible, and

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33 Ibid., p. 2.

34 Ibid., p. 2.
land is relatively inexpensive and available.\textsuperscript{35}

Location Efficient Mortgages offer a multitude of advantages to the consumer, lender, developer, and society as a whole. Whereas previously lenders would perceive automobile ownership as an asset when assessing home loan applications, Location Efficient Mortgages open a new paradigm of home mortgages that rewards the loan applicant for driving less. LEM is the first home-ownership initiative that links housing with efficient public transportation and commercial amenities. This program can be used as a tool for community revitalization by recognizing homebuyer savings resulting from the purchase of a home located in a densely populated community.

While these aims do not explicitly prohibit automobile ownership, the intent of the product’s designer, John Holtzclaw, is that higher residential density coupled with efficient transportation, and commercial amenities would encourage LEM participants to leave the car at home. Holtzclaw states, “neighborhood characteristics like density, transit service and pedestrian and bicycle friendliness – characteristics that can be influenced by public policy – truly influence auto ownership and driving.” Thus, metropolitan areas with high amounts of the above indicators will lead to people spending less time and less money on automobile use. The LEM goes one step further by rewarding car-minimizing behavior by providing financial incentives to those who would like to adapt to that lifestyle without giving up their life savings. The following section will outline some of the major benefits to the participant.

Participant Benefits

As stated above, the Location Efficient Mortgage rewards individuals and families who choose to live in a higher-density, community convenient neighborhood. These benefits are intended to bring lower-income residents in to the forum of home equity in higherdensity developments. The list below details some of the major participant benefits:

36 Holtzclaw, John, et al., p. 3.
Chapter 2  
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Transportation Savings = Raised Loan Ceilings

In Table 2.3 residents are compared by number of automobiles owned and mortgage type. This illustrates the costs and benefits of each asset combination. The Center for Neighborhood Technology uses comparisons like these to help formulate the Location Efficient Value (LEV) for each neighborhood of a participating city. As described earlier in this chapter, LEV is a monthly bonus added to a LEM applicant’s loan eligibility and is comprised of numerous attributes including transit accessibility, auto dependency, and proximity to commercial amenities. Lenders recognize income saved from not using a car as income earned towards the purchase of a home in a densely populated community served by efficient public transportation.

<table>
<thead>
<tr>
<th></th>
<th>LEM with No Car</th>
<th>LEM with 1 Car</th>
<th>LEM with 2 Cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortgage</td>
<td>$150,000</td>
<td>$150,000</td>
<td>$150,000</td>
</tr>
<tr>
<td>Monthly Household Income ($50,000 post-tax annually)</td>
<td>$2,600</td>
<td>$2,600</td>
<td>$2,600</td>
</tr>
<tr>
<td>Monthly Payments (Home + Car, Insurance, Gas, etc.)</td>
<td>$900</td>
<td>$1,510</td>
<td>$2,120</td>
</tr>
<tr>
<td>Other Monthly Expenses</td>
<td>$450</td>
<td>$550</td>
<td>$650</td>
</tr>
<tr>
<td>Remaining Monthly Income</td>
<td>$1,250</td>
<td>$990</td>
<td>($170)</td>
</tr>
<tr>
<td>Transportation Savings</td>
<td>$610</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

Table 2.3: Monthly Auto and Housing Costs by Vehicle Owned

These savings are the primary benefit to participating in Location Efficient Mortgages.

Although it is clear that car ownership reduces a family’s disposable income by more than $600 per month, surveys conducted by The Blackstone Group indicate that people feel that requirements against car ownership would be an invasion of their personal freedom. One of the interviewed members of the focus group stated what embodies

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37 www.zipcar.com

38 Rose, Kathi, Location Efficient Mortgages (LEM) Qualitative Research: Key Findings, The Blackstone
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the mindset of today's urban citizen, "I'm looking for a house. I'm not thinking if I'm going to be using the public transportation or not. It's in the area where I want to live." While these findings represent a portion of Chicagoland residents, there are people who believe that this is not a sacrifice. It is this demographic that would be best applicable for the Location Efficient Mortgage, as it will have less of a behavioral impact on households who do not own a vehicle.

Levels playing field for low-income residents

The LEM allows participants to leverage the transportation savings listed above and make it easier to move into a more transit-accessible neighborhood. By allowing lower-income families such as those of police officers, schoolteachers, and public employees to achieve home equity in more transit-accessible locations, the LEM countervails gentrification by increasing the affordable range of transit patrons for transit-accessible locations. This allows for more owner-occupied housing to benefit those who need homes more than those who need tax shelters.

In the case of transit, the opening (or existence) of rail station benefits nearby properties since they become more accessible to more places (served by rail transit) within a region. With property values shown to increase with accessibility and proximity to rail transit, LEM spreads this home value appreciation to these lower-income families. Chapter 7, which describes the urban design ramifications of LEM, further explains how the LEM encourages mixed-income development.

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Group, Chicago, IL, July 25, 2002.

39 Ibid, pg. 10.

Chapter 2  

Motivations

Low Down Payment

With interest rates at their lowest levels in decades, one may question the competitive advantage that LEMs provide. Currently, most lending institutions require between 10 and 20% down payment (equity) on a new home purchase. The LEM allows individuals with lower incomes can lower savings to compete for homeownership by requiring only a 3% down payment on their home. Participants indicate that the low down payment has “allowed them to enjoy flexibility that they never would have associated with home ownership.”

Transit-Oriented Incentives

One essential and rewarding facet of the LEM is its mandatory counseling sessions offered by the mortgage lenders. These sessions advise participants on the benefits of home ownership and the dangers of taking on excessive debt (such as car loans) that may place the participant at risk of defaulting on their mortgage and ultimately losing their home. Counseling sessions are designed to educate the buyer as they move from renter to homeowner and offer other benefits such as financial planning and tax advisory. According to The Blackstone Group survey, homebuyers found these counseling sessions to be an important and compelling element of the LEM.

Transit passes are a key element to linking homeownership with increasing ridership and encouraging transit use. Should transit authorities embrace this idea, such as with Seattle’s Metro System and Chicago’s Pace Bus system, it would provide the ideal marketing conduit for local lenders to reach those potential customers who would qualify and benefit from a location efficient mortgage. Seattle’s transit-complementing amenities, including vouchers for bicycle purchases and discounts on car-sharing programs have been well received by local LEM participants and should be

41 Interview with a LEM Participant in Chicago, March 27, 2003.

42 Rose, Kathi, Location Efficient Mortgages (LEM) Qualitative Research: Key Findings, The Blackstone Group, Chicago, IL, July 25, 2002, pg. 9.
Societal Benefits

Regional Equity

The Location Efficient Mortgage is a progressive tool used to build regional equity because it brings together a coalition of mortgage-lenders, developers, brokers, and transportation agencies who are driven to mitigate the effects of sprawl on our nation’s people and environment. In the sections below, portions of recommendations made by PolicyLink (a non-profit think-tank in Oakland, CA) and the Funders Network for Smart Growth and Livable Communities (a Miami-based organization dedicated to educating philanthropies on social equity) are highlighted to better illustrate the goals and benefits of regional equity.

The concept of regional equity is one that continues to grow in popularity and importance to those shaping the built environment in today’s urban landscapes. Now, more than ever, people’s lives and opportunities are founded by their place of residence. Regional equity is composed of three principals:

1. Regional health depends on the health of all the region’s sectors – public, economic, and civic;
2. Central cities and declining suburbs cannot successfully confront the problems of concentrated poverty independently; that is, without a regional focus;
3. A regional approach to equity supports rather than undermines political power, social cohesion, and sense of place of all residents of the region, but particularly those communities who have long been denied an effective voice as a result of regional forces.  

With current developing trends in metropolitan areas, people interested in home-

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43 Adapted from the Institute of Race and Poverty’s Regional Equity Project at the University of Minnesota. Please see http://www.instituteonraceandpoverty.org/rirewhtatis.html
ownership earning low- to moderate-incomes\textsuperscript{44} are faced with a difficult decision: To leave the city center in pursuit of inexpensive homes on the urban fringe (and the consequential elongated commutes), or to remain a renter in the city center and sacrifice home equity and its numerous financial benefits for increased access to jobs and transit. Most likely, these families will choose the latter option because home ownership in the urban fringe still requires a substantial down payment with conventional mortgages.

The problem today is that for most families this is not a choice at all. In fact, these families have little choice in deciding where to live and certainly where if at all to relocate. Unfortunately, employers do have this choice. In a growing age of horizontal growth in our nation's cities and inevitable sprawl resulting from decentralization, employers are fleeing to the suburbs and displacing many of the jobs out of the urban core. Consequently, the outer edges enjoy growth and prosperity, while central cities and inner suburbs experience overall population loss, a declining tax base, and increased concentrated poverty.\textsuperscript{45} Residents of inner-city neighborhoods, for instance, are more than twice as likely to live in poverty than their suburban counterparts.\textsuperscript{46}

Home mortgage lenders, transportation planners, developers, and policy makers must all do their part to assuage the growing trend of sprawl, inequity, and decline in our nation's central cities. Regional equity is a bold philosophy that attempts to educate and encourage those professionals who shape the built environment to think beyond

\textsuperscript{44} At or below 80\% of a Metropolitan Statistical Area's (MSA) median income


town boundaries and instead focus on improving the health, diversity, and equity in a metropolitan region.

**Reduced Pollution**

In a study conducted by the Northeastern Illinois Planning Commission, a demonstration program was established to analyze the effect of sidewalk availability on walking patterns near a Chicago transit station. In the study, subjects were asked about trip purpose and how frequently they used the sidewalk. 77% of all subjects use the sidewalk on average of .75 miles per direction, and 26% of the subjects previously drove to the station. This behavior led the Commission to conclude that over 6,000 VMT would be reduced with a continual high percentage of sidewalk use, resulting the reduction of over 364 pounds of hydrocarbon and 72 pounds of nitrogen oxide emissions. The Institute of Location Efficiency factors sidewalk use and widths in determining LEV for specific neighborhoods.

**Housing**

There is currently a severe affordable housing shortage in the U.S. for low- to moderate-income households which is fueling homelessness, insurmountable debt, crime, and desperation in our nation’s cities. For many families, rents have become so un-affordable, that many of them are forced to take on extra employment to maintain minimum levels of disposable income. According to the National Housing Conference, approximately 13 million families nationwide spend more than half of their income on housing or live in “severely substandard” conditions.

The Location Efficient Mortgage is an effective tool to spur housing development. In the

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47 PolicyLink, et al. Pg. 12. Affordable Housing is defined as housing which costs no more than 30% of gross household income.

south and west sides of Chicago, where vacant lots pepper the landscape, developers and banks are hesitant to commit to constructing new homes in blighted areas. With LEM comes the support of FannieMae, which gives banks the insurance and security to lend in marginal areas. Chicago developers have expressed interest in developing these vacant lots as long as the financial support from area lenders exists. These developers could then leverage the LEM as a tool for providing affordable housing and in turn, receive additional public incentives to develop more units.

Most recently in Hayward, CA the Location Efficient Mortgage was used as an affordable housing incentive for a mixed-income residential development. In this instance, LEM was used to create density bonuses for developers in exchange for some percentage of homes being allocated specifically for LEM participants. This successful implementation in Hayward may pave the way for similar partnerships in Chicago and Puerto Rico.

**Community Revitalization**

Research has shown that owner-occupied dominated communities tend to exhibit higher qualities of life, property values, increased investment in local initiatives, and higher rates of local politics. Location Efficient Mortgages convert households from renters to homeowners thereby contributing to revitalizing efforts in our nation’s cities. In a study by Cummings, DiPasquale, and Kahn, it was found noted that homeownership tends to increase resident’s participation rates in volunteering for local non-profit organizations or being more involved in local politics.

**Increased Tax Base**

As residential lots remain vacant, millions of tax dollars elude city budgets. The LEM would transform these vacant lots into owner-occupied homes and increase local tax

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49 Developer wished to remain anonymous, Phone Interview, January 24, 2003.

Motivations

rolls. In the south and west side of Chicago, and along strategic axes near Tren Urbano stations in Puerto Rico, there lays a vast amount of vacant land. In the current economic climate where many municipal governments have been forced to freeze hiring processes and slash budgets, both regions would benefit from housing development on these vacant parcels.

Increased housing density also fuels the economy. As more people inhabit these once-vacant sites, more commercial amenities will arise and invite new business to invest in many of these half-abandoned communities. Once again, the housing development will stimulate the tax rolls with resulting increases in property, sales, and local taxes. This planning strategy goes against the prevailing grain of suburban development which swallows up new land on the urban fringe, increases dependency on automobiles, and only benefits major cities during work hours. Instead, by investing in vacant areas within the urban core, public transportation infrastructure already exists. Thus, new development with an LEM component will not compromise residential accessibility but will offer a financial boon to the transportation system and city as a whole.
DANGERS

While the benefits of location efficient mortgage are plentiful, it is important to acknowledge some inherent pitfalls. There are a number of dangers that must be considered in formulating a new strategy on implementing location-efficient mortgages. While most of these dangers lie with the homebuyer, some of them pertain to the real estate market and larger community. This section will examine these dangers and prescribe guidelines for mitigating their impact on all stakeholders in the market.

**Eligibility versus Affordability**

The greatest concern amongst lenders and interested skeptics is the notion that an applicant can only afford a certain mortgage amount. While transportation savings are lauded as “additional income to an applicant’s loan ceiling”, this money is only expressed in real rather than nominal dollars. It is their chief concern that a household’s nominal income qualifies them for one mortgage, and the LEM gives them a ballooned mortgage that may inevitably stretch their income regardless.

**Losing Accessibility to Jobs**

Without an efficient and comprehensive transit system or a “walk-to-work” neighborhood, the participant may compromise his or her accessibility to the job market. Should the homeowner choose to sell his/her car to afford the higher mortgage payments associated with LEM, this may in fact impede his/her opportunity to pursue employment that adequately supports the mortgage payment. The LEM’s goals are to increase equity and wealth amongst its participants, but it should not come at the price of accessibility. Robert Cervero’s findings on spatial and occupational mismatch mentioned earlier in this chapter further illustrate this possible threat.

Yet, the affordability versus accessibility issue remains paramount to middle-class homeowners earning between $30,000 and $70,000 in household income. If these homeowners move into a neighborhood that offers a multitude of commercial amenities but lacks in transit and/or employment accessibility, the homeowner could be forced into
an inevitable dilemma that his or her automobile is hindering the ability to pay the mortgage. At this point, the homeowner would choose between keeping her home and car – thereby putting her at tremendous risk of defaulting, or selling the car. The former will likely lead to a declining credit rating and force the individual into obtaining a second job in order to afford both assets, while the latter may detrimentally compromise her accessibility to punctually arrive at her first job – thus risking unemployment or termination which would again lead to default.

Indeed, the algorithm used to calculate the location efficient value of each neighborhood does reflect transit accessibility in some fashion, and employment accessibility to a lesser extent. While this danger presents a strong argument for the participant to purge their vehicle to afford a location efficient home (and thus fulfilling the unspoken goal of the LEM program), it is an argument that is valid only in those neighborhoods that are rich in transit and employment opportunities.

**Chutes and Ladders**

Furthering this argument is the danger that some families may give up a safer inner city neighborhood in which they are renting, for a more dangerous inner city neighborhood that threatens their quality of life even while providing tax benefits for home-ownership. Should this behavior occur, there is little empirical evidence that these new residents will contribute to the overall community, even though prevailing rationale in U.S. Housing policy suggests that homeownership builds better citizens and communities by giving homeowners more of a stake in their community. However, researchers have shown some connection between home-ownership and participation in local politics and non-profit organizations.

In Puerto Rico, these contours would provide the Tren Urbano team with the same

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51 Cummings, Jean L., et al., p. 331

marketing opportunities as Chicago, and on the Banco Popular side, provide key focus neighborhoods to introduce the LEM to the Puerto Rican community. This strategy would behoove the lending industry in Puerto Rico, as targeting neighborhoods with inherently high accessibility to transit and employment would alleviate the potential danger listed above. Transcending from location efficiency to location specificity is one of my leading recommendations in Chapter 4.

**Investor-occupation**

In both Chicago and Puerto Rico, lenders have stated their interest in applying LEM to neighborhoods that are accessible to transit, and also contain a number of units of second-rate housing with frequent turnover rates. These housing units are not only more affordable (and thus more accessible to low- to moderate-income earning parties), but their quality may have deteriorated because of renter occupation and disinvestments over time.

By programming a requirement that the mortgagor must occupy the home, three fundamental goals are directly achieved:

1. LEM will help the schoolteacher, police officer, or administrative assistant gain equity in homeownership rather than help the lawyer or doctor with his/her investment portfolio
2. Appreciation in land value goes into the pockets of the moderate-income earning homeowner, not the investor
3. Reduces the possibility for gentrification in older neighborhoods by attracting homeowners who maintain a similar level of wealth

These requirements will maintain the beneficial effects of the LEM program by increasing inhabitant utilization of the housing unit and will likely spawn further investment into the home to stimulate land appreciation.

Chapter 3 incorporates the theoretical framework as well as the inherent advantages and disadvantages into a detailed analysis as to why the product did not achieve its goals in the first three years of implementation.
"The LEM will give more choices to home buyers, allowing them to live in neighborhoods of their choice while reducing reliance on cars." - Jacky Grimshaw, CNT

3 Findings

In 2000, the Location Efficient Mortgage was introduced in Chicago to test Holtzclaw and Hoeveler's theory that mortgages which returned transportation savings (inherent to "location efficient" neighborhoods) to home-owners that would allow lower-income families to reap the benefits of home ownership. Chicago is also the home to the Center for Neighborhood Technology (CNT), a non-profit think-tank dedicated to inventing and implementing new tools and methods that create livable urban communities for everyone. CNT currently manages the Location Efficient Mortgage product nationwide as well as the Location Efficient Value (LEV) software package that calculates transportation savings for specific neighborhoods within LEM-participating cities. With transit ridership approaching 1.5 million per day, and a mix of high-density housing with the constant threat of sprawl, Chicago was the ideal testing ground for this progressive idea in mortgage lending and community revitalization.

Although Chicago was the ideal testing ground for Location Efficient Mortgage, after three years of implementation the participation rate struggled to get above 40. Before asserting recommendations to the Chicago Transit Authority and Tren Urbano, I must first analyze why LEM did not achieve its desired goals. Following this Chapter, I will present recommendations to the Center for Neighborhood Technology on how to achieve better results for a mortgage that has the potential to change the way mortgages impact one's life.

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54 Center for Neighborhood Technology website, www.cnt.org/about
THE INITIAL STRATEGY

CNT believed that the correct way to reach commuters who actively used public transit and/or did not own a car was through partnering with Chicago-area transit agencies. The initial strategy was to use these transit agencies as the marketing and educational conduit from which participating mortgage lenders would advertise the location efficient mortgage to transit riders through brochures and placards. Out of the three major transit agencies, only the Pace bus system, agreed to serve as that conduit.

While contracting with Pace was an achievement for CNT and the location efficient mortgage, it was not the ideal partnership because of the suburban demographic served by the Pace system. Another failure was neglecting to require that participants sell at least one vehicle or remain car-free. This requirement is the key to establishing a predetermined level of transportation savings, without which the owner will commit to a mortgage she cannot afford. Other drawbacks to the initial strategy include disinterest from lenders, costly software, poor marketing material, and counter-productive mortgage purchasing structure. These failures led to the LEM sluggish exposure to the residential marketplace.

CTA's Unwillingness

The Chicago Transit Authority balked at partnering with CNT because they were concerned that the LEM was only subsidizing white upper-middle class families and individuals. By losing the CTA as a partner, the location efficient mortgage concept was not reaching its target audience – lower-income families who are avid transit riders, or those who are forced with the decision to move from the city into the suburbs in exchange for lower mortgages. Consequently, reaching potential LEM participants through marketing on CTA (which transports 75% of the region's transit riders) was lost, albeit temporarily.

With the Pace partnership, brochures were placed inside Pace buses and advertisements were mantled in bus shelters. Pace also agreed to offer a $150
discount on the price of an annual pass to all Location Efficient Mortgage participants as well as market LEM on the company website. This marketing strategy proved effective, as more Pace riders became aware of LEM and its benefits to the homeowner. However, the Pace demographic – suburban and likely not moving into the city, showed little interest in the LEM.

Neglecting a “no-car” requirement

As discussed in Chapter 2, one of the inherent dangers of this product is that participants will be awarded “transportation savings” to qualify for a higher mortgage, yet will maintain ownership of their vehicle. The danger is three-fold. First, participants who commit to a higher Location Efficient Mortgage than with a conventional mortgage and own a vehicle put themselves at risk for stretching their income. This danger is exacerbated in multiple car-owning homes. This behavior could lead to defaulting on their Location Efficient Mortgage, thus negatively impacting their credit rating and forcing them to return to the renter’s market.

Second, by not requiring participants to decrease car ownership, the entire logic behind “transportation savings” is undermined. In such case, the LEM does not succeed in reducing congestion, encouraging neither transit use nor the development of walkable neighborhoods. There are no transportation savings incurred if the participant is still using the automobile as his/her primary mode of transportation. No justification exists to reward applicants with extra mortgage eligibility if they are not creating an increase in disposable income through the selling one of their cars.

Third, without a car ownership requirement, the LEM is only providing home ownership tools to people who have more disposable income and can afford to maintain both the mortgage and car payments. Unless an alternative requirement is conceived that specifically targets the reduction of auto vehicle miles traveled per household, the

55 Please see: www.pacebus.com and click on the New Programs subtopic
Location Efficient Mortgage will never achieve its goals and ultimately subsidize households who have more income and more mortgage options.

**Lack of LEM distribution through mortgage brokerage networks**

Once the CTA refused to partner, LEM may have been perceived as too impractical, too complex, or overtly progressive. This perception triggered disinterest from most of the mortgage lenders throughout Chicago. Since lenders primarily get mortgage leads through their respective brokerage networks (over 5,000 in Chicago), it was difficult to market a new, more complicated mortgage product.

Just as the pharmaceutical industry has succeeded in inducing patients to ask their physicians to prescribe specific products, some providers have found value in direct-to-consumer marketing of mortgage products. With a large number of existing mortgage products flooding the marketplace, brokers had little motivation to seek out—or even become attuned to—new mortgage products. Many brokers instead opted to push “easier” conventional mortgages and leave LEM on the shelf.

**Counterproductive loan consolidation structure**

The lack of distribution amongst large brokerage networks is exacerbated by the current structure of mortgage ownership in the lending industry. As stated before, one of the key advantages to the location efficient mortgage is FannieMae’s $120 million commitment to insure all LEM with no risk to mortgage lenders. This structure dictates that larger banks will buy mortgages from smaller banks, consolidate those mortgages, and then sell mortgage bundles to FannieMae.

In return, larger banks get more favorable interest rates and no risk insurance from FannieMae, as FannieMae will only buy mortgages from larger banks. This

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56 Rose, Kathi, op. cit. pg. 5.
monopolistic/monopsonistic behavior leaves no room for the smaller community banks – forcing them to sell their profitable mortgages to gain status with their larger competitors.

Ultimately, this structure is counter-productive to FannieMae, as the smaller banks are more likely to lend home loans in lower-income communities and thus attract potential LEM participants, but are unable to offer the risk-free mortgage because FannieMae refuses to insure them. 57

Un-orthodox underwriting processes

Large banks are run through large-scale information systems. These systems not only connect to databases which house their customer’s financial information, they also manage the calculation, amortization, and underwriting of mortgage products. Because the LEM requires independent and uniform calculating software (managed by CNT), these large banks must pay for the reprogramming of their vast computer networks that

57 Interview with Darlene Dugo, Senior Deputy Director, FannieMae, January 21, 2003: Ms. Dugo specified that FannieMae only works with banks that hold over a certain minimum of assets.
communicate the above underwriting information from brokers to lenders and vice versa.

Once the software is reprogrammed, institutions must then train their employees to learn the LEM and the new software. The cost of this underwriting reprogramming effort could approach $1 million per institution. Thus, banks are weary to implement such an expensive effort for a mortgage product that has yet to establish its own footing in the lending marketplace.

Costly Calculating Software

The Location Efficient Value (LEV) calculating software contains algorithms used to weigh various amenities inherent to a neighborhood such as access to transit, and proximity to grocery stores, pharmacies, cleaners, and restaurants. This software was developed and copy written by the Center for Neighborhood Technology. In order to offer the LEM, mortgage lenders such as HomeStreet Bank in Seattle must purchase this software for $50,000. The cost of the software is then attached to the price of the loan procedure, which is usually deducted from broker’s commissions. Ultimately, brokers have little incentive to market the LEM when most other conventional mortgages will not take such a deduction.

With the current level of participation in the LEM program, the fixed software cost per participant averages to $2,500. Banks offer a multitude of conventional mortgages that charge no fix costs, and thus offer a more attractive alternative to the LEM from a brokerage perspective. The LEM Manager from HomeStreet Bank, indicated that the high fixed cost was forcing her employer to reassess the benefits of offering the LEM. Thus the mortgage may be at risk of losing its sole lender in Seattle.

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58 Interview with LEM Manager, HomeStreet Bank, January 22, 2003.
Market Misconceptions

Another reason why the Location Efficient Mortgage has not reached its potential is that most potential buyers, mortgage lenders, and brokers did not fully understand the product’s goals and requirements. As stated in The Blackstone Group survey, misconceptions of the product inversely led to respondents’ unwillingness to choose LEM over other mortgages.59 Of all misconceptions, car ownership proved to evoke the most negative response. Professionals perceived the mortgage to be anti-car ownership, and would require participants to either not own cars, or give up their cars in order to qualify for LEM. This misconception influenced their rating of the

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<thead>
<tr>
<th>Common Misconceptions of Location Efficient Mortgages</th>
<th>Facts</th>
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<tbody>
<tr>
<td>Car ownership is prohibited</td>
<td>Decreased car use is encouraged</td>
</tr>
<tr>
<td>It is only for first-time buyers</td>
<td>Previous home-ownership is not a factor in LEM eligibility</td>
</tr>
<tr>
<td>Participants must use transit</td>
<td>LEM encourages transit use, but does not require it</td>
</tr>
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</table>

Table 3.1 Common Misconceptions and Facts of LEM

Consumers, according to the study, did not exhibit the same level of confusion as their professional counterparts. They read that LEM borrowers were “encouraged but not required to use public transportation” and took the statement to heart.61 Consumers and

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59 Rose, Kathi, op. cit.

60 Ibid., pg. 8.

61 Ibid.
professionals differed on their perception and comprehension of a number of other descriptors of LEM, including: LEM had a low interest rate, would save borrowers' money and the statement, "Let's me purchase a more expensive home than I could otherwise afford". This is a lose-lose situation. In this study, the LEM is perceived as anti-car where it actually does not mandate the purging of one's automobile; rather its logic depends softly on placing fear of overextending one's finances by maintaining car and house payments.

Ultimately, the Center for Neighborhood Technology must address these issues for the LEM to capture the attention of real estate brokers and mortgage lenders, or the product will suffer untimely disinvestments in favor of simplified mortgages with less paperwork. By working with the Chicago Transit Authority, the LEM could reach the ideal residents – who take transit and are interested in reaping the benefits of home-ownership. The most recent brochure published by CNT has done just that, with simple guidelines, and benefits clearly stated in an attractive, user-friendly format.

While this section focused on the drawbacks of the first four years of location efficient mortgage implementation in Chicago, a number of surveys such as The Blackstone Group survey, have prescribed specific measures for CNT to improve the market share of this mortgage product. A more detailed examination of these recommendations is addressed in the following chapter.
"The LEM offers great benefits for the people of Chicago while helping to eliminate traffic congestion and increase affordable housing opportunities."
- Richard M. Daley, Mayor of Chicago

4 The Role of CNT

The Center for Neighborhood Technology must take a proactive stance to assuage the early setbacks and misconceptions following the LEM's introduction into the marketplace. While participation remains low, numerous personal and societal benefits warrant the investigations of new strategies that will help LEM capture more market share. These benefits are supported by scholarly work that calls for the promotion of compact development to minimize commute times and congestion from our nations streets and highways. Other bodies of research concluded that providing jobs on a regional level encourages residential development as people are more likely to follow jobs then vice versa.

Research focusing on transportation, regional economics, and job-housing accessibility all intersect at the need for a more efficient and responsive transportation system that adjusts to the trends of present-day urban growth patterns. The Location Efficient Mortgage effectively addresses these needs by promoting compact, mixed-use development while maintaining a lifestyle that depends less on the automobile. The potential effects of this mortgage product are numerous. To reach this potential, the Center for Neighborhood Technology must reexamine all existing strategies and better define its target markets. Then, through incremental neighborhood-specific implementation, CNT can begin to cast its net wider into the larger Chicago populace. Listed below are a number of strategies, which may address the obstacles illustrated in Chapter 3.

Car Keys for House Keys

With approximately 100 Location Efficient Mortgage participants in three years, CNT must revisit the founding principles that created LEM and work to retool the product to
better achieve these principles. Of these principles, the goal of reducing auto
dependency and use are the most salient. The LEV is derived directly from this
principle, by providing additional real income to the participant which increases his/her
loan eligibility.

However, one major flaw in the calculus of Location Efficient Value is that CNT is
rewarding transportation changes in average cost (total cost per mile) rather than
marginal cost (additional $1 per mile). To reward transportation savings through the
LEV, CNT must mandate that LEM participants reduce their overall car ownership by at
least one. This requirement would generate increases in participant’s nominal income
and further justify the increased loan eligibility that defines the Location Efficient
Mortgage.

This recommendation contradicts The Blackstone Group’s findings, which states that
residents feel that their freedom would be compromised by the requirement to reduce
their car ownership and thus find the LEM unattractive and too restrictive.62 But these
residents represent only one element of Chicago commuter. According to the 2000
Census, over 306,000 Cook County households do not have a vehicle available for
private use.63 Thus, there is an abundant supply of consumers who believe that a car-
reduced lifestyle is not a restriction on their freedom.

Since it would be more challenging to restrict car-owners into changing their behavior,
CNT should first look to car-free households because they are justified to receive a
“transportation savings” increase in their loan eligibility. Car free households do not
contribute to the congestion, higher insurance rates, and increased accident rates that
are plaguing today’s cities. Yet they pay for them nonetheless through inflated rents,
property values, and taxes. These households would benefit directly from the Location

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Chapter 4  

The Role of CNT

Efficient Values placed on transportation savings.

For households with at least one automobile, financial counseling will only bring the facts of simultaneous mortgage and auto affordability to light. However, should car-owning households apply for the Location Efficient Mortgage, CNT must provide additional information as to the level of accessibility for employment and transit to ensure that:

1. Car-owning participants are aware of transit accessibility
2. By taking the LEM, they are not putting themselves in financial hardship by moving to a location that puts their employment at risk.

This education is essential to attracting car-owning households, and future research should be conducted as to the feasibility of acquiring that information. What CNT must hold paramount, is that a household must garner its own nominal transportation savings through the sale of at least one car, or they will not qualify. Alternative strategies that may incorporate some flexibility into LEM could include a time-qualifying exemption to the car-reduction requirement. This may entail the combination of timely payments over a prescribed number of years and/or the tenure of participation in LEM. However, these alternatives should be examined by CNT staff as well as lending professionals to determine their applicability and effectiveness.

Although CNT has followed The Blackstone Group’s recommendations, the LEM has attracted minimal participants since its inception in 1999. Part of this limited success lies in the widespread misconceptions (see Misconceptions, Chapter 3) that LEM is somewhat anti-car or somewhat pro-transit. CNT should make a clear statement that they are indeed promoting an auto-independent, pro-transit neighborhood landscape. Otherwise, the entire underlying logic is completely valueless.

Transit Pass

In order to make this statement clearer while simultaneously creating a competitive advantage over conventional mortgages, the Location Efficient Mortgage (through the CTA) should provide each household with one discounted transit pass per licensed
driver. CTA is capable of offering this benefit as discount transit passes are mailed out to new Chicago residents as part of the CTA's New Resident Program. With LEM, the CTA would partner with participating lending institutions to bundle the participant's mortgage statement with a discount transit pass. This partnership will reinforce the LEM's commitment to transit use, but will hopefully provide the participant with yet another reason to use transit more frequently.

**Location Efficiency Begins with Location Specificity**

CNT must buttress their requirement that participants are car free or sell at least one car by initially targeting communities that have copious amounts of transit and employment accessibility. This strategy, as opposed to the initial citywide implementation of LEM, will focus on these neighborhoods first. In doing so, interested parties will be more inclined to pursue the LEM in neighborhoods that do not compromise their employment status or opportunity for future employment and improved quality of life.

Figure 4.1 depicts specific Chicago neighborhoods that are rich in accessibility and thus facilitate car-free or car-minimized lifestyles without cutting residents off from the rest of the city. The circles represent ideal locations to initially implement LEM because of those neighborhood's high share of non-auto use. Enormous potential exists with this strategy as all stakeholders stand to benefit from this incremental approach. Since the area is rich in transit accessibility, CTA already has a
vested interest in neighborhood development and will focus more resources on increasing ridership in such efficient and likely higher-density neighborhoods. Likewise, local banks will also benefit from increased lending opportunities afforded to them by the LEM through more home loans and transit savings accounts.

**LEM Must be Simplified to Consumers**

*Define Target Market*

Whereas The Blackstone Group concluded that the LEM should exclusively target higher-income residents, this thesis contends that those parties already have mortgage alternatives at their disposal.\(^{64}\) Higher-income households have increased ability to maintain good credit, and garner enough savings to afford a down payment to decrease monthly payment responsibilities. Instead, the LEM must target two primary demographics:

1. Recent advanced-degree graduates
2. Households earning between 80% and 135% of the area median income

The first group is ideal in that the demographic is in their mid- to late-20s, with some debt, but old enough to be probing the housing market within two years of graduation. These recent students may feel burdened by their student loan and credit card debt – the latter that comprises a significant portion of all debt in the nation. Both demographics are also buying homes, or are highly interested in buying homes, at encouraging rates. 246,000 homebuyers were between the ages of 25-34 in 1999, which is roughly 23% of all homes purchased in Chicago.\(^{65}\) Of this demographic, over 46,000 earn between 80% and 135% of the Chicago-area median income.\(^{66}\) This

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\(^{64}\) Rose, Kathi, The Blackstone Group, July 25, 2002.


\(^{66}\) Ibid. Chicago area median income in 1999 was approximately $32,500 amongst sampled male and female workers over the age of 16.
suggests that these target groups would respond positively to mortgages that considered their current financial situation and strove to meet their long-term homeownership objectives.

Another facet of these target markets is their choice of transportation. Amongst the two target markets listed above, the split between dependent and choice riders should form the foundation for initial LEM implementation strategies. These two groups are:

1. Dependent riders – those who do not own or cannot drive a car
2. Choice riders – those who have a car and ride CTA for at least some purposes

39% of all CTA riders are dependent. This is a significant market share that LEM could first focus its marketing campaign because these households would have no significant change to their transportation pattern.

A considerable portion of Chicago households own at least one automobile per household. The Chicago Transit Authority estimates that choice riders represent over 61% of total ridership\(^6^7\). Therein lies tremendous potential in partnering with the CTA, as this audience is frequently exposed to marketing on the transit authority’s vehicles and has more disposable income to commit to a Location Efficient Mortgage.\(^6^8\)

Finally, these demographics are amongst those groups most likely to live near transit stations and have fewer automobiles available, thus more apt to ride transit. In the San Francisco Bay Area, 90.3% of all surveyed households had two or less inhabitants in rail-based housing projects near BART stations (compared to 58.3% in the surrounding

\(^6^7\) Chicago Transit Authority, *Traveler Behavior and Attitudes Study*, 2000, p. 38.

\(^6^8\) Ibid, p. 39. CTA estimates that choice riders are more affluent than transit-dependent riders. While 49% of all choice riders have household incomes above $50,000 compared with 49% of all dependent riders make incomes under $30,000.
Auto ownership on average was lower amongst rail-based housing projects as well – 1.26 cars per household compared to 1.76 in surrounding cities.\(^7^0\)

**Interest Rates that Attract Interest**

Interest rates and down payment requirements are prospective homebuyer’s most pressing concerns. Thus, they are also key factors in differentiating between mortgage products. Since the LEM’s development in 1998, the mortgage marketplace has undergone dramatic changes with both elements. During that time, interest rates ranged from 6.74 to 7.14% reflecting a strong economy and high demand for home mortgages.\(^7^1\) In 2003, the marketplace looks entirely different. Although the economy has stagnated, prospective homebuyers are encouraged by mortgage rates in 5.75% range – the lowest interest rates in over 30 years.\(^7^2\) This is good news for any company in the mortgage underwriting business, but bad news for CNT because there is little room for LEM to create a competitive advantage over other mortgage products besides the higher loan ceilings for lower-income households.

In Chicago, FannieMae supports one mortgage that offers below market interest rates for qualified buyers through the Chicago Mortgage Revenue Bond Program. This program is offered in conjunction with the city’s Community Home Buyer’s Program and is the ideal precedent for offering lower interest rates to LEM participants.

One recommendation would be to offer a marginally discounted interest rate of no more than 10 - 25 basis points (bps) to LEM participants for a fixed-term (i.e. five years). As

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\(^{70}\) Ibid.

\(^{71}\) Federal Reserve Board of St. Louis, [http://research.stlouisfed.org/fred/data/irates/mortg](http://research.stlouisfed.org/fred/data/irates/mortg), April 24, 2003.

\(^{72}\) Ibid.
of December 2002, the Federal Discount rate (the rate at which banks borrow money from the Federal Government) was 0.75%. With the current 30-year fixed mortgage rate standing at 5.75%, this represents a 5% profit spread for mortgage lenders. Losing .10 to .25% on that margin, would do little to affect the financial health of the mortgage lender as they would receive more interest off the higher principal that is amortized with a 3% down payment. However, it would place the LEM at the forefront of interest rate incentives, and send a message to interested applicants that their mortgage has their financial interest in mind.

**Back-end Ratios and Lower Down Payments**

The second major factor in mortgage selection is the down payment. This was one of the most attractive features of the product, as it offered only 3% down for qualified buyers. Most conventional mortgages require 10% at minimum, thus LEM succeeded in keeping buyer's money in their pockets. However, conventional mortgage lenders have responded by offering 0% down (100% financing) for buyers who meet the same credit thresholds as LEM. In conventional mortgage lending, the applicant's "back-end ratio" determines the amount of down payment, or equity that is required for the lender to approve the loan.

During the eligibility analysis of a candidate's application, lenders first calculate the back-end ratio, which encompasses all of the applicant's current debts (car payments, student loans, credit cards, etc.) and divides that sum by the applicant's pre-tax monthly income. Traditionally, conventional mortgage lenders would not consider an applicant if their back-end ratio exceeded 36%. In cases where the ratio exceeded this amount, the lender would usually require more substantial down payments.

Today, in a sluggish economy, lenders are increasingly willing to accept candidates with back-end ratios in the 60s. Whereas one would assume these candidates would be forced to pay lofty down payments, the opposite holds true. In one case, a home loan
applicant with a 66% back-end ratio was approved and the lender only asked for 1% down.\textsuperscript{73} These cases are more of an anomaly, but may signal a new trend in mortgage lending that does not conform to traditional lending practices.

The LEM needs to respond to this growing trend. Currently, the LEM will approve an application if the back-end ratio falls below 39%. Without the flexibility to approve loans with higher ratios, the LEM will lose another integral element of its competitive advantage. The Center for Neighborhood Technology must be willing to either a) build in more flexibility to its back-end ratio thresholds, or b) offer lower down payments for qualified buyers.

These strategies would attract those people who are interested in LEM who may not have perfect credit because they have stretched their income to the limit. In a memo written by CNT’s David Chandler, it states that lenders are now routinely making loans to applicants with over 50% back-end ratios.\textsuperscript{74} It is recommended that CNT adjust its lending practices to allow more residents who may have less-than-perfect credit rating but are still considered worthy borrowers. These people are the ones who will show the most interest in the LEM, and simultaneously are the ones who will benefit the most from this product.

50% back-end ratios are acceptable in this market. Countrywide HomeLoans indicates that a higher back-end would convince hesitant applicants to pursue the Location Efficient Mortgage. More importantly, the resulting lower down payment would put more money back in the pockets of these consumers. In Massachusetts, the MassHousing Authority sponsors three programs that offer down payments of 3% or less and the response rate has been tremendous.\textsuperscript{75}

\textsuperscript{73} Chandler, David, \textit{Memorandum of Market Research on Location Efficient Mortgages}, October 17, 2002.

\textsuperscript{74} Ibid.

\textsuperscript{75} Ruzzo, Robert, Presentation on MassHousing programs, September 23, 2002. The three programs
Lower Qualifying Credit Scores

If the target market will encompass recent graduates of advanced degree programs and people making less than 135% of the area’s median income, they are unlikely to have excellent credit. Currently, the minimum credit score required to qualify for the Location Efficient Mortgage is 660 points out of 800. A large number of conventional mortgage products have minimum scores in the high 500s to mid-600s for applicants with similar income levels. Understandably, a higher credit score is a strong indicator of lower default risk. However, mandatory credit counseling combined with lower-than-market interest rates and decreased down payment requirements should offset this risk. With lower minimum qualifying credit scores, LEM will attract a wider market – increasing market share and exposure to deserving households who may have a few blemishes on their record.

Clarify Marketing Material

As described earlier in this chapter, one main reason why the LEM has yet to flourish in the mortgage lending industry is that its marketing material initially fostered some misconceptions amongst lending professionals and homebuyers. CNT has responded admirably by retooling brochures and designing them with simpler messages and more comfortable images. The current brochure clearly outlines the aims of LEM, while addressing some of the misconceptions generated by the initial marketing campaign. However, the brochure is simply too static to depend on as the primary marketing tool. Prospective homebuyers are now relying heavily on the Internet for mortgage research and lending. CNT must be at the forefront, not only by developing a more informative, user-friendly website, but also one that is linked through those of banks, transit agencies, developers, mortgage information services, and large search engines. This strategy will propel the once-obscure LEM into the mainstream lending community.

are: Take the T to Work, MassAdvantage 100, and Municipal Mortgage. Please see www.masshousing.com
Chapter 4

Additionally, advertisements on radio, buses, and bus shelters would greatly expand LEMs exposure to its target market. To date, the marketing partnership between CNT and Pace Bus Lines has yielded some significant LEM exposure, but these achievements are a microcosm of what could be attained. Through a concerted marketing campaign coordinated with Pace, the CTA, RTA, and LEM lenders, the potential exists not only for free advertising, but also advertising that directly reaches LEM's target market described above. Discussion of these partnerships will begin in the following section.

CNT must also remember that some percentages of interested LEM applicants are self-selecting households who view this mortgage as a progressive tool towards car-minimized and transit-encouraged lifestyles. These households are likely to have achieved higher levels of education and are seeking products and services that align with their environmental, political, or social values. This market should not be underserved, as LEM address these concerns through its pursuit of compact, mixed-use development that holds the environment as a high priority.

Offer Discounts on Complementing Services

Seattle-based HomeStreet Bank has pioneered the strategy of bundling LEM with other complementary services. These complementary services include: 50% discounts on monthly transit passes, $250 voucher plus 10% discounts on new bike purchases, free membership to the local shared-car network – Flexcar, and vouchers for gas and mileage on the Flexcar system. CNT can apply these benefits throughout the other cities using LEM; especially in Chicago where they administer the I-Go shared car system. Regarding the transit discount benefit, this thesis explicitly analyzes the value of a discount pass in the following chapter. The above benefits are effective incentives for people who may not want to give up their car for a larger mortgage, yet would now have affordable transit alternatives to costly car-ownership.

LEM Must Benefit Lending Professionals

The marketing efforts on the participant side should work symbiotically with those efforts
that attract institutions. Numerous institutional obstacles exist in moving Location Efficient Mortgages from the obscure to the mainstream. Instead, by partnering with key institutions, these obstacles could become open doors of market penetration. This section will explore such partnerships and the benefits each organization would gain from promoting the Location Efficient Mortgage.

Turning to Transit

The Blackstone Group's report recommended that the Location Efficient Mortgage distance itself from public transportation and instead focus more on affluent communities. Moreover, the report asserts that the LEM will have little impact on transit ridership and, by encouraging transit use, this will discourage those prospective homebuyers from investing in LEM because they feel that "driving a nice car is a part of 'making it.'"76 This, as they argue, will shift the focus to providing housing to people who can afford transportation alternatives and are looking for a second home as an asset in their investment portfolio. This strategy is understood to be the "highest and best use" of LEM, since it allows wealthier households to enjoy the transportation savings while owning a home in traditionally appreciating neighborhoods. This new mortgage product would redirect incentives to the affluent who are trying to pad their portfolios rather than improving the lives of those who need it.

This strategy has a number of flaws. First, by separating from transit, the LEM would not be reaching those households who use transit. Thus, the mortgage would alienate those riders who can afford a home, but use public transportation because they are strapped by rent payments and limited income. Whereas people who do not ride the CTA system likely drive more and would not be willing to pursue mortgages that encourage transit use and walkable neighborhoods.

Contrary to the Blackstone report, transit could be the essential conduit to effectively

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76 Rose, Kathi, pg. 15.
marketing and implementing Location Efficient Mortgages. Viacom, CTA's advertising sub-contractor, estimates over $18,000,000 in revenues from advertising on CTA vehicles. Further, transit agencies are required by state law to dedicate a portion of advertising space to public services – thereby providing a no-cost marketing solution for LEM. The LEM encourages transit use, why not market it towards people who already take transit rather than try to convince auto-dependent households to change their travel behavior? Although it is a shared goal to transform auto-dependent behavior into one that incorporates public transit, as a product being sold in the residential market, it is advised to begin marketing to households who already use transit and are pondering the transition from renter to homeowner.

Second, people who feel that "making it" means driving a nice car will have little interest in the LEM unless they are using is at an investment tool. However, to succeed, this product must have more impact on owner-occupied homes since they will be more influenced by their surrounding location efficiency while simultaneously controlling the values of their homes. There are many families who define "making it" entirely different. These households strive to make ends meet and may be unable to drive a nice car and pay for rent with the same paycheck. Thus, they are forced to use transit and transfer the money that would go to an extra car into the accounts which pay for food, shelter, and utilities.

Households routinely view the cost of owning automobiles as dollar per mile. Location Efficient Mortgages not only decrease the mileage per trip, but also the cost per mile by providing housing that is closer to transit, and thus closer to transit-accessible jobs. The LEM purports that locating people in access-rich areas will make them drive less. Partnering with CTA to provide discount transit passes would support this assumption, especially if CTA distributed these passes via mail accompanying a participant's monthly mortgage statement. It is the discipline of the individual homebuyer to change his/her behavior that makes this product so robust. Marketing discounted transit access is the key to this behavioral change.
Third, Lower-income families have less transit and residential alternatives and usually no means of affording a home. The LEM gives these families a chance to reap the benefits of homeownership and equity, and in turn, encourage more community investment by easing restrictions to create more owner-occupied homes. Housing policy suggests that homeownership builds better citizens and communities by giving homeowners more of a stake in their community.\textsuperscript{77} Transit is the link between affordability and accessibility. Those households who cannot afford to compromise either urban element should be rewarded with homeownership in neighborhoods that prevent such a compromise to occur.

\textit{The Chicago Transit Authority}

CTA would also benefit from promoting Location Efficient Mortgage. CTA needs to learn more about the mortgage and its inherent benefits to the transit agency. While this thesis attempts to explain the societal and community revitalization benefits that would be attained through partnering with the Chicago Transit Authority, The Center for Neighborhood Technology must develop a business model that succinctly addresses CTA's concerns of ridership and revenue. This may be difficult with the current level of participation in the LEM, but a study should be conducted nonetheless to quantify what future value exists for CTA in promoting transit-based community revitalization improvements.

Following the strategies used in securing the partnership with Pace, and Pace's success in marketing the product, CTA would likely offer the Location Efficient Mortgage as part of its commitment to providing 10% of advertising to public and non-profit organizations. Further, CNT must assert the revenue and ridership benefits that LEM will bring by enticing households to live closer to transit. This product could potentially

have a ripple effect as mixed-use developers would be more inclined to build in neighborhoods that offer transportation savings to homeowners and encourage local economic development. Additionally, by promoting a car-minimizing society, developers would be able to allocate more resources towards capital improvements instead of costly parking which could equal $20,000 per space. CNT should illustrate that the CTA's benefit could expand by partnering with these developers and becoming an influential player in transit-oriented development. In the following chapter, this thesis will address these and other potential benefits for the CTA, should they choose to market this product on a pilot basis.

**Partner with Developers**

Another angle not yet explored by CNT is partnering with developers in all sectors. Developers have shown interest in building residential units with an LEM component. One prominent Chicago-area developer described his profound interest in LEMs, but he too held misconceptions on the program's motives and benefits. Additionally, he was unaware of whom to contact regarding possible partnerships with participating lenders.  

The developer's quandary is a microcosm of the larger challenges of mis- and non-information in the residential lending and development marketplace.

As in Boston and other major cities, regulations require developers to provide a certain percentage of affordable housing in new developments. Since LEM focuses on households which fall within the affordable housing income requirements, developers in Chicago could be given subsidies by FannieMae and other public funding sources to build Location Efficient Developments.

Land use regulations could then adjust to these developments by requiring less parking per unit\(^79\) to promote transit use wherever feasible. Developers (and ultimately

\(^{78}\) Interview with Bob Horner Development, Chicago, IL, January 28, 2003.

\(^{79}\) City of Chicago Zoning Ordinance, §7.12-1-4. To date, Chicago zoning requires a minimum of 1
homeowners) would save $10,000 per at-grade spot, and $25,000 per structured parking spot. Thus, developers would have more money to develop more units, and consequently have incentives to build dense, compact environments.

In fact, parking maximums would be an effective tool towards promoting this practice, as developers would no longer be forced to build costly parking to respond to market and regulatory forces. This practice would be antithetical to current planning trends which mandate parking minimums on new development. Parking policies will be discussed later in this thesis, and are a crucial land use tool that would encourage the proliferation of compact development that supports such pro-transit initiatives as Location Efficient Mortgages.

**Partner with Local CDCs**

One potentially successful strategy would be to market LEM loans to developers to give them additional incentives to build on vacant lots in the west and south sides of Chicago. Developing vacant land not only provides housing but also increases the area tax base for economic development. This would be an excellent opportunity for public/private development as Community Development Corporations could also benefit from joining this partnership. CDC’s are fluent in affordable housing and economic development, having built over 575,000 affordable units, generated over $2 billion in loans to 60,000 businesses, and helped to create 250,000 private sector jobs.\(^8^\) All of which paints a successful canvas for Location Efficient Mortgages.

A precedent for this partnership is found at the Lake Park Pointe Shopping Center on Chicago’s south side. Completed in 1999 in the North Kenwood/Hyde Park

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\(^8^\) Urban Land Institute, *Community Development Corporations Working with For-Profit Developers*, Washington, DC, October 3-4, 2002. pp. 3-4.
neighborhood adjacent to the University of Chicago, this development pioneered a unique partnership between a private developer (Tikla, Pettigrew, Allen and Payne, Inc.) and the neighborhood Community Development Corporation (Fund for Community Redevelopment and Revitalization). Tikla Pettigrew awarded 67% of all construction contracts to minority workers, and the CDC was instrumental in garnering local support for the project.

The CDC’s participation helped secure $1.5 million from Chicago Local Initiatives Support Corporation (LISC), and another $2 million in grants from HUD Empowerment Zone and City funding sources. 4th Ward Alderman Toni Preckwinkle noted, “There was a dearth of commercial development...and many felt the Lake Park project was premature. It was only when the CDC came in with the for-profit partner that the project was possible.”

LEM would serve as the affordable housing proxy, and thus leverage public tax incentives with private transportation savings to create communities of transit-oriented housing and retail that would benefit both developer and community.

Dollars and Sense for Banks

FannieMae’s $127 million investment in this program has provided risk-free lending to participating banks. To date, only two lenders are offering Location Efficient Mortgage in Chicago, which is contributing to lack of interest in the product. Large banks, being the only ones that FannieMae will underwrite, usually behave conservatively towards new mortgage products. CNT must illustrate the “institutional memory” of the LEM by producing marketing material with heartfelt stories from participants, lenders, and underwriters. CNT must also promote the risk-free lending being insured by FannieMae as an added bonus.

81 Ibid. p. 3.
To reduce costs, CNT could leverage a new partnership with CTA that provides free advertising on vehicles and shelters. Additionally, the LEM would enhance the large bank's investment in Chicago-area communities and would receive free marketing of their own through the CTA partnership.

Another concern submitted by current participating lenders is the high cost of software and training that is mandatory for employee education and manual underwriting. CNT is only hindering LEM's growth by charging a lofty fee for its Location Efficient Value calculating software. One participatory bank mentioned that the fixed costs associated with LEM have dissuaded executives from supporting this endeavor and, combined with minimal interest in the mortgage, may lead to the lender's disinvestments of the product altogether. 82

Beyond the $50,000 fixed cost to construct the Location Efficient Value database, banks must incur the costs of employee education and computer programming to conform to their specific computing systems. With brokers working off commissions, these fixed costs would likely come out of their pockets – providing enough incentive to promote other mortgages than the LEM. Compounding this issue, only recently has FannieMae allowed LEM lenders to use its Direct Underwriting (DU) software.

Previously, lenders were forced to perform manual underwriting that was both costly and time-consuming to complete LEM applications. If CNT's chief complaint lies with the major lenders unwillingness to market the Location Efficient Mortgage to their brokerage network, the above reasons may be the sources of this unwillingness. There are plenty of mortgages that offer no fixed cost in software or education, and CNT should find a way to finance this venture without exorbitantly charging its distribution network.

In summary, lower fixed costs with software, education, marketing, and underwriting

82 This interview is kept anonymous at the interviewee's request.
should make LEMs more favorable to bank executives. This would directly affect which mortgage products that are offered in those bank’s brokerage networks, and thus expand LEM’s exposure in the lending marketplace. Further, clarifying marketing material will mitigate the negative impacts of lender and broker misconception. The benefits must be explained to these professionals in clear and simple language that is attuned to their interest.

**Create new supply of LEM applicants**

The above recommendations focus on stimulating demand for the Location Efficient Mortgage, but it is also important to focus on fostering supply. One way to ensure the continual supply of LEM applicants is to encourage banks to create transit-savings accounts. These accounts would go directly towards building an applicant’s down payment pool while simultaneously encouraging transit use through discount passes, special transit offers, higher interest rates, etc.

For those who cannot qualify because of credit discrepancies or are unable to meet the 3% down payment, banks would establish a “Pathway to home ownership” that places participants on the fast track to LEM approval if they follow guidelines within the transit savings account program. By tying discount transit passes to the savings account, participants will pursue a shift in modal choice as a condition of the fast track agreement. Hopefully, this shift will divert more funds to the appreciating savings account and away from deprecating assets such as automobiles. Banks would then benefit from increased community investment as well as the incentive of becoming the participant’s mortgage lender and long-term customer. CTA benefits through the incentive of frequent ridership attached to the savings account as well as improved relations with local banks to assist in distributing transit passes with mortgage statements. CNT would enjoy the advance of supply side participation to further the success of Location Efficient Mortgages.

**Mortgage-Backed Securities**

Time will tell if FannieMae considers the Location Efficient Mortgage an effective
The Role of CNT

community investment tool, or will simply disassociate itself from the mortgage product. CNT must work with FannieMae, FreddieMac, or Private Mortgage Insurers to protect this progressive idea in mortgage lending. Currently, the LEM is still living off FannieMae’s subsidy and protection with mortgage-backed securities supporting the necessary capital investment. But to become a more integral player in the mortgage lending industry, CNT must look forward to determine how the Location Efficient Mortgage will operate should it achieve its primary objectives. In working with these mortgage insurers, CNT must establish strategies that encourage private investors to purchase these securities.

To minimize the general risk-aversion that is prevalent in the bond markets, CNT must ensure that risks in pre-payment and default are virtually non-existent. Both risk categories present different obstacles to cajoling more capital investment, but are equally important in securing the LEM’s future position in the mortgage-lending industry. Minimizing these risks will encourage such investment and possibly move the product out of “subsidy junkie” status. CNT can pursue various strategies regarding both types of risks; however, this thesis will not explore these strategies but will explain the risks that CNT must consider when formulating its visions for the future of LEM.

Pre-Payment Risk

This risk category focuses on the likeliness that the homeowner will sell the mortgage before it reaches maturity. With 30-year mortgage lives currently averaging about 5 years, pre-payment risk remains high. This average is already incorporated in the demand for mortgage-backed securities. However, if the LEM is exhibiting mortgage lives below this average, pre-payment risk will rise to levels that may scare potential investors. Credit counseling, mailed discount transit passes, and transit savings accounts within more transit-saturated neighborhoods will help mitigate the pre-payment risk.

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83 Interview with David Geltner, April 23, 2003.
Default Risk

Like Pre-Payment risk, the risk of default is directly related to the term of habitation with the mortgage. Default risk is expressed by the Hazard function, which calculates risk based on the year of the term of the loan. For example, a Hazard function of 2% in year 3 shows that of loans which survive to year 3, 2% will default. In order for LEM to exist outside of subsidy junkie status, it should offer a competitive default rate to encourage investment.

Unfortunately, the program is still in its infancy with only three years of history and no defaults. If this behavior continues for another decade, then the Hazard function would be quite low and attract investors to support the mortgages long-term viability. The future will tell whether the higher loan ceilings associated with the Location Efficient Mortgage will yield a higher Hazard function, as predicted by some lending professionals, or will transform participant's spending behavior as willed by LEM supporters.
With LEM, my commute was cut by 20 minutes and I now ride CTA more than 12 times per week.”

- LEM Participant

5

Recommendations to CTA

Urbanization has become the top priority for officials shaping the built environment in our nation's cities. Declining job opportunities, traffic gridlock, sprawl, and pollution are but some of the consequences of urbanization occurring today. Chicago is no exception, where the rate of land consumption is outpacing the growth of population more than three-fold.84

The Chicago Transit Authority has a vested interest in supporting programs that not only support transit-oriented development, but development that empowers communities with a tool for equity and wealth in neighborhoods close to CTA access points. That tool is the Location Efficient Mortgage.

LEM could be the catalyst to bringing people back into the city and choosing transit over excessive and expensive private car ownership. The CTA would clearly benefit from a mortgage product that encourages compact development throughout Chicago, and rewards homeowners who live in transit-accessible neighborhoods. More than 95% of Chicago’s 2.8 million people live within a 5-minute walk of a CTA service.85

As mentioned in Chapter 2, Krizek found that people who moved into high-density neighborhoods not only reduced VMT and distance per trip, but increased total number of trips per day. It is here that CTA stands to benefit the most financially – as

84 The rate of land consumption in Chicago is 123.9% compared to a population growth rate of 38.0% as of the 2000 census, Robert Liberty, Harvard University Loeb Fellow Lecture, Cambridge, MA, April 1, 2003.

increased trip generation leads not only to increased ridership, but increased farebox revenue as well.\textsuperscript{86}

According to the 2000 CTA ridership survey, CTA is losing market share relative to automobiles. Overall daily market share for auto travel was 81\% of all trips made, higher than in either of the two previous surveys – 74\% in 1993, and 71\% in 1990.\textsuperscript{87} Total CTA system ridership was essentially the same in 1993 and 2000. This decline in CTA market share of all household auto/CTA trips, therefore, reflects a major growth in automobile travel, especially by single-occupant drivers.\textsuperscript{88}

The CTA must focus its marketing efforts on re-capturing these auto-dependent users to continue growth. One approach to achieve this important goal would have the CTA establish an “Institutional Services” office that would be modeled after similar offices in investment banks and broker-dealers that offer unique services to large institutional partners and clients.

The CTA could then establish a pilot program that deals directly with FannieMae, local participating mortgage lenders, public and private developers, and large employers to become the primary marketing conduit of Location Efficient Mortgages. This office would consolidate other community programs such as the TransitCheck and U-Pass program to more effectively reach target institutions that would benefit from discount pass partnerships. This strategy would lay the foundation of inter-agency and public/private partnerships to achieve the ultimate goal of community revitalization through increased transit access for more Chicagoland residents.

\textsuperscript{86} Krizek, Kevin (2000): Found in Hess and Ong, p.18.


\textsuperscript{88} Ibid, pg. 6.
Case Studies

CTA U-Pass Program - Chicago

By looking to its continued success with the U-Pass program as a precedent, as well as adapting lessons from other transit agencies, the CTA could not only increase ridership numbers, but also make a bold statement of CTA's commitment to community investment to the residents of Chicago. The precedents listed below outline the costs and benefits of discount programs, and successful initiatives that have brought transit agencies, large employers, and the real estate industry together around the nation.

In 1997, the CTA introduced a new initiative which pioneered the public transit industry. By partnering with Chicago-area colleges and universities, CTA offered discounts on monthly transit passes to college students. CTA also marketed the partnership on its buses, trains, and train stations. This effort led to a watershed in transit ridership – as college students happily turned to transit as an inexpensive alternative to the hefty cost of car ownership and parking fees.

Amongst all U-Pass participants, 25-40% of those surveyed had never used the CTA on a frequent basis, and 40% of all U-Pass alumni have become frequent riders on the CTA.

<table>
<thead>
<tr>
<th>U-Pass Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>In addition to unlimited rides anytime, anywhere, any reason, the U-Pass has many benefits for the students, campuses and communities:</td>
</tr>
<tr>
<td><strong>To the Students</strong></td>
</tr>
<tr>
<td>• Provides simple, low cost transportation.</td>
</tr>
<tr>
<td>• Provides unlimited rides on the CTA, all day, everyday!</td>
</tr>
<tr>
<td>• Saves on gas and parking costs.</td>
</tr>
<tr>
<td>• Increases access to metropolitan attractions.</td>
</tr>
<tr>
<td><strong>To the Campus</strong></td>
</tr>
<tr>
<td>• Reduces demand for on-campus parking.</td>
</tr>
<tr>
<td>• Saves cost on building new garage structures.</td>
</tr>
<tr>
<td>• A tool for student recruitment.</td>
</tr>
<tr>
<td>• Reduces traffic congestion and pollution.</td>
</tr>
<tr>
<td><strong>To the Community</strong></td>
</tr>
<tr>
<td>• Alleviates parking demands in adjacent areas.</td>
</tr>
<tr>
<td>• Reduces traffic congestion and pollution.</td>
</tr>
<tr>
<td>• Strengthens partnerships between school, communities, and the CTA.</td>
</tr>
</tbody>
</table>

Figure 5.1: Advertised U-Pass Benefits
system.\textsuperscript{89}

Today, the U-Pass program generates more than 15.3 million rides annually and is viewed as a model partnership for other transit agencies around the nation. The CTA’s success is founded on its ability to market the program to a fixed audience – college students. The same could be said for CTA’s efforts to expand services to hospital workers around the city. In both cases, CTA used its vehicles and stations to advertise these valuable programs which led to significant gains in ridership and community presence.

\textbf{RTA/CTA Transit Benefit Program – Chicago}

In June 1998, an amendment enacted under the Transportation Equity Act for the 21\textsuperscript{st} Century (TEA-21) expanded the definition of the “Qualified Transportation Fringe” provision of the Internal Revenue Code, Section 132 (f). This amendment allowed employers the option of subsidizing their employees’ transit costs at their discretion without having to pay for the benefit. Under previous law, employers could give their employees up to $100 a month for incurred transit costs. The employer would pay the full cost of the benefit, and then received a tax deduction in return.\textsuperscript{90}

The Transit Benefit Program is a microcosm of the ridership, environmental, and tax-savings potential available through partnerships between the Chicago Transit Authority and Chicago employers. Figure 5.2 illustrates these important benefits offered on the Transit Benefit website:

\textsuperscript{89} Interview with David Urbanczyk, General Manager of Strategic Planning, Chicago Transit Authority, Chicago, IL, January 28, 2003.

What if there were a benefit out there that could, for little or no cost:

- Provide tax savings for Employers
- Serve as a unique recruiting tool
- Improve morale and reduce absenteeism
- Provide tax savings for Employees
- Reduce employee commuting costs
- Increase free time and productivity
- Deliver CTA Transit Cards and RTA Transit Checks directly to your company

Now there is!

Location Efficient Mortgages could be marketed in the same fashion. The numerous employee and employer benefits (including reduced car costs, positive environmental impact, and increased productivity and morale) touted on the CTA Transit Benefit website are practically identical to those of Location Efficient Mortgage. RTA would also benefit from increased market exposure within the loop.

Consequently, CTA is already in the business of employer relations, increased ridership, and environmental benefits. Marketing LEM would only expand their investment into improving lives and communities throughout Chicago. LEMs not only offer similar benefits such as tax-savings for employees and reduce employee commuting costs, but also a better mortgage to allow workers to live closer to their employers.

CTA could go one step further by offering discount CTA Transit Cards and RTA Transit Checks through its Institutional Services Office to be delivered to LEM participant's homes. Since this delivery method is already in practice with area employers, it would be of little cost to extend this delivery to the homes of LEM
participants and give them one more reason to use the Chicago Transit Authority system. The only difference would lie in partnering with participating LEM lenders and then require these banks to include the transit pass with the mortgage statement.

**Smart Commute**

Another FannieMae-backed mortgage product, Smart Commute builds into its eligibility requirements that applicants must prove they are avid transit users. Unlike LEM which can provide up to $450 per month in transportation savings, Smart Commute's provision is capped at $200 per month. This allows more people to borrow as lenders are willing to loan to households with marginal credit, etc. Also, Smart Commute enables lenders to use FannieMae's Direct Underwriting software, which makes loans easier to originate themselves.

Location efficiency in this case is defined by a strict radius from train alignments and major transit intersections. Unlike the LEM, Smart Commute cities must partner with the transit agency which usually provides discount passes.

**MassHousing's Take the T to Work Program - Boston**

In June 2000, the Massachusetts Housing Authority (MassHousing) implemented a program that was similar to both the Location Efficient Mortgage and Smart Commute program. Both programs offer loan eligibility increases due to transportation savings, favorable interest rates, credit counseling, and targeted lower-income earning residents. However, the major difference between the two programs lies in their overarching mission.

Whereas Location Efficient Mortgages rewarded participants for living in more efficient neighborhoods, the MassHousing program was geared towards transit ridership. "It will be a relatively low cost to government but it will provide a leg up for many individuals or families who have the dream of home ownership, but might not otherwise have the means to achieve that goal," said [then] Acting Secretary of Transportation James H. Scanlan. Both goals complement one another and

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certainly could help achieve one another’s goals had they been offered in the same city.

But MassHousing focuses on those individuals who already use transit, and are looking to buy a home in an area that is more transit-accessible. The Take the T to Work program requires not only a minimum credit score (as it’s LEM counterpart), but also proof that the individual (or participating employer) has used the MBTA system over 11 months prior to applying to the program. This requirement limits the type of applicant to solely avid transit riders. According to Deputy Director Robert Ruzzo, it is these riders that drive less that MassHousing and the MBTA want to assist in achieving home ownership.92

Another element that differentiates the two “location efficient” programs is in their respective mortgage insurer or guarantor. The Location Efficient Mortgage is backed by the Federal Home Mortgage Association (FannieMae) – an independent federal mortgage insurer that was created as part of President Roosevelt’s New Deal in 1934 to ease mortgage lender’s fears during the Great Depression, when the risk of mortgage default was high.

Almost 70 years later, FannieMae continues to support initiatives that encourage home ownership within lower-income families. As described in the “complicated loan consolidation structure” sub-section, FannieMae does allow banks to promote LEM’s with risk-free money that is insured through FannieMae’s new $127 million initiative, but it’s mortgage consolidation structure prohibits smaller, community-invested banks to reap the same rewards.

Alternatively, MassHousing benefits from an independent mortgage insurance fund. Massachusetts is one of six states to have enacted such a fund through its state legislative bodies. Not only does this free MassHousing from some federal bureaucracies and complicated loan consolidation structures, it allows smaller local

92 Interview with Robert Ruzzo, Deputy Director, MassHousing, Boston, MA, January 19, 2003
banks to offer the Take the T to Work program to their communities.

The difference in the two mortgage insurers is clear: In Chicago under FannieMae, only two large lenders offer LEMs: Countrywide Home Loans and Draper & Kramer, with minimal community interaction after 3 years in the marketplace. In Boston under the mortgage insurance fund, 22 community banks offer the Take the T to Work package within their neighborhoods after just 10 months.93

Finally, the MassHousing program limits eligibility by placing caps on household income and real estate value. Currently, applicants must not earn more than 135% of the Boston (or Worcester, if applicable) median income; translating into a household income maximum of $109,080. This income cap is high for the program to be considered a strong proponent of low-moderate income housing, but it does prevent wealthier classes from using the program strictly for investment purposes. Thus, it is likely that participants will occupy the home and theoretically guaranteeing more investment and maintenance into the home and the surrounding communities. The real estate value cap reflects the income cap and further supports this conclusion.

While it is unlikely that Illinois will pursue the passage of such mortgage insurance legislation, it is worth analyzing various facets of the MassHousing program. The Center for Neighborhood Technology is currently reviewing numerous strategies to make the LEM more successful in the marketplace, and could apply some of the benefits gained from the Take the T to Work program. Further, the Chicago Transit Authority could learn from the mutual benefits from the partnership between MassHousing and the MBTA.

Although the MBTA does not provide discount passes, it is a partnership that both agencies are actively supporting and reinventing through new initiatives such as the Municipal Mortgage Program - which allows local public servants to live near their

place of employment and groups MassHousing and MBTA with FannieMae.\textsuperscript{94}

\textsuperscript{94} Ibid, April 9, 2003.


Research shows that while participation in the program as climbed, MBTA ridership has decreased since last June, when the Take the T to Work program began. However, this limited success should be perceived as a long-range tool to stabilize any increase in car ownership through encouraging transit-oriented housing. It is not a “quick fix” that can heal with a down economy where interest rates are historically low. The CTA would benefit from pursuing a similar partnership with FannieMae and local banks to increase ridership and community investment. According to Ike Papadapolous of the MBTA, community relations and public image have increased with the MassHousing partnership. That gain alone has driven the MBTA to maintain
its relationship with the Housing Authority and continue to promote the transit-oriented housing program.\textsuperscript{95}

\textsuperscript{95} Interview with Ike Papadopolous, MBTA, April 30, 2003.
Become the Primary Marketing Conduit of LEM

One way to impact transit ridership is by advertising community-based transit initiatives on CTA vehicles and stations. 1.5 million people view CTA advertisements per day generating over $18 million in advertising revenue per year. This type of exposure practically guarantees interest, and banks that lend Location Efficient Mortgages would welcome the opportunity to advertise the program in conjunction with the CTA.

Marketing and Planning

On the operational side, CTA would have to coordinate marketing and planning to devise a co-managed pilot program. This program could be implemented in two ways:

1. Co-sponsor the LEM by partnering with the Center for Neighborhood Technology.
2. CTA manages an LEM program that is independent of CNT.

Alternative 1 would transpire in the following: In order to facilitate and fund advertising on all CTA vehicles, CNT would conduct an advertising “trade”. This trade would involve CNT committing to match the value of an LEM ad on CTA

96 Interview with Cindy Kaitcer, May 2, 2003.
97 Interview with Melissa Stubbe, Washington Mutual Bank, Chicago, IL, April 14, 2003.
($50,000 per month) with an equal dollar amount of advertising for CTA in other high-exposure media such as the Chicago Tribune, etc. This allows CNT to exert some influence over the management and marketing materials of LEM, while minimizing costs incurred through pursuing normal advertising rates. In this partnership, CNT would develop the advertising material and CTA would distribute them on all vehicles for a specific length of time.

Alternative 2 poses that CTA develop their own pilot program that is independent of CNT. In this scenario, at least one full-time employee would manage the program and the CTA would have to develop a Request for Proposal for firms interested in producing the marketing material. This scenario would require more research from CTA regarding the feasibility, but may be the better option in the long run for all organizations. Staff could be hired through a number of funding sources that are outlined in the “Financing” section below.

The following are recommended strategies to be explored to enhance CTA’s interest in marketing Location Efficient Mortgages:

*Allow banks and developers to advertise Location Efficient Mortgages on CTA vehicles and stations for free.*

This strategy would likely catalyze an increase in Location Efficient Mortgages more than ridership, but would be a major victory in the CTA’s continuing effort to use transit to help riders do more than get from point A to point B. One problem identified above was the lack of understanding as to how one obtains a Location Efficient Mortgage. Marketing the LEM with new, simplified material on CTA vehicles would provide sufficient education to potential LEM participants.

*Offer Discount Passes to LEM Participants*

The current partnership between the Center for Neighborhood Technology and the PACE bus system led to PACE offering $150 off its annual pass. This resulted in a savings of 16% for LEM participants. CTA offers up to 40% off the price of monthly transit passes to Transit Benefit Program participants, and through the partnering
schools, up to 100% to U-Pass students. Thus it is within the CTA’s capacity to offer discounts to people who are on the cusp of transit ridership and automobile ownership and are moving into more transit accessible neighborhoods.

In Seattle, the second city to introduce Location Efficient Mortgages, King County Metro Transit recently doubled discounts from 25% to 50% for LEM Participants. Although LEM participation has been slowed by the economy, King County Metro believed the transit discount was a key element to providing affordable transportation alternatives to the automobile for these individuals and families. Currently, Seattle LEM participants rate the transit discount as one of the most attractive incentives to the mortgage product.

If CTA were to at least match the PACE discount, LEM would achieve its goal of linking housing with efficient transportation. It would also make a strong statement that the LEM will benefit the lower-income earning individuals and families of Chicago proper, rather than solely serve the suburban population – and CTA is taking an active role in that pursuit. In exchange, the bank could be the purchaser and distributor of discount transit passes for LEM participants. The participants would then pay the price of these passes to the mortgage lender and create a more streamlined system to promote transit ridership.

**Delivery of Transit Passes to LEM Participants**

An alternative method that would likely induce more transit use would be to mail discount transit passes to LEM participants to their home or office. As CTA currently mails all transit passes to employers in the Transit Benefit Program, mail delivery to LEM participants is well within its operational capacity.

Unlike the Take the T to Work system in Boston, transit use is not a requisite for LEM eligibility in Chicago. However, since transit accessibility is built in to the Location Efficient Value algorithm, CTA need only to focus marketing strategies on these participants, as they will likely live closer to CTA services but may not be exposed to marketing on CTA vehicles, stations or shelters. Mailing discount transit passes to LEM participants would eliminate a major hurdle towards transit ridership. Through
partnerships with participating lenders, CTA transit passes could be mailed to LEM households with monthly mortgage statements.

The costs of this program would be minimal, yet combining a discount pass with home/office delivery of that pass would encourage LEM participants to use transit more frequently and augment the benefits of marketing the Location Efficient Mortgages through the CTA.

**Engage in Joint Development Partnerships that tie transit to home ownership**

Using the success of the BART joint development partnerships in the San Francisco Bay Area as a model, the CTA could exert significant influence on land use and real estate development around Chicago. CTA could partner with developers who are interested in transit-oriented development, and are willing to set aside some homes to location efficient mortgages. By partnering with developers, CTA could influence the built environment's relation to public transit, and encourage other developers to advance the goals of providing more transit accessibility to more Chicago-area residents and employees.

With the amount of vacant lots in the South and West sides of Chicago, CTA could partner with local developers to build affordable housing with Location Efficient Mortgage participants. These areas, while in decline, hold tremendous potential for the city in tax revenues, and to CTA in ridership revenues. Both districts actually generate generous levels of economic development, and surveys reveal that CTA riders spend more than non-users in two of three regional malls.

**Financing**

While this marketing program will exist initially as a pilot, there are a number of financing options exogenous to the CTA's operating budget that may expedite the LEM Marketing initiative change into a more permanent fixture within CTA marketing.
Grants are available through CMAC, Illinois Department of Transportation (IDOT), and the Regional Transit Authority. Because the promoting of LEM could be viewed as an initiative to comply with the Clean Air recommendations for 2007, CMAC may be an ideal initial funding source for this pilot program.

Establish CTA Institutional Services

This office would serve as the Institutional arm of the Chicago Transit Authority. There are a number of large organizations including hospitals, corporate headquarters, and public agencies that would benefit from partnering with the CTA. In turn, CTA’s partnerships with these large-scale organizations could lead to significant increases in transit ridership and revenue. Having one office that deals exclusively with large clients would minimize labor and capital costs in customer service by dedicating an office to servicing a large pool of CTA customers with unique benefits.

Many transit agencies nationwide partner with local institutions, but those institutions rarely feel like a unique client even though, as in one case involving M.I.T. and the Massachusetts Bay Transportation Authority (The T), M.I.T. provides The T with thousands of university riders. M.I.T. lobbied The T on several occasions to increase bus service on the numbers 1, CT1, and CT2 lines along Massachusetts Avenue to better serve its students.

Whereas the school believed its good relationship with The T would have produced even a marginal change in service, The T refused to answer M.I.T.’s calls. In this case, the Boston transit agency failed to recognize one of its large-scale clients and “personally” address M.I.T.’s concerns. Had this happened in the business world, M.I.T. may have looked to another competitor. In reality, M.I.T. was left powerless against a powerful transit monopoly, but the lack of service by the MBTA undoubtedly soured the two institutions relationship.

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While there are no precedents for transit agencies that have established offices strictly serving large-scale institutions, CTA could look instead to the financial sector for appropriate "best practices" models. For example, Charles Schwab & Co., an investment broker-dealer from San Francisco, benefits greatly from its Institutional enterprise. By serving larger companies through offering unique personalized services such as discounts on transaction commissions, Schwab has provided a one-stop location for its institutional clients and their employees.

This personalized level of service and, consequently, improved partnerships between Schwab Institutional and its large-scale investors, has led to that enterprise's capture of 13% of company-wide clientele and 33% of Schwab's total assets. 99

CTA Institutional Services could achieve the same success with the same strategy used by Charles Schwab & Co., and other financial services firms. Through offering tailored group discount transit passes and personalized transit pass delivery (among other services), CTA Institutional Services would pioneer public/public and public/private partnerships.

Such large-scale organizations such as Nordstrom's, Accenture, and other public agencies could turn thousands of Chicago employees into frequent CTA riders. These, and other organizations that are shirking at higher developer costs for parking in a weak economy, would look to CTA Institutional Services to negotiate a transit pass program that would benefit both parties.

For example, Cook County Hospital may be looking to expand, but city-zoning laws may require a certain number of parking spaces to be constructed with the hospital expansion. Rather than pay for costly parking, Cook County could negotiate for an equivalent number of transit passes with CTA Institutional Services. This agreement would eliminate unnecessary and unhealthful parking lots and simultaneously allow the hospital to earmark those parking dollars towards more pressing needs such as

lab space and hospital beds.

A CTA Institutional Services Office could provide the ideal conduit to market community-based ridership initiatives such as the Location Efficient Mortgage. This new CTA enterprise would become a beacon for large-scale institutions that are looking to partner with the CTA to improve the lives of CTA riders. With LEM, Chicago-area banks such as Countrywide Home Loans and Draper & Kramer could meet with area developers and employers to form an ideal partnership with CTA to market LEM and other community-based ridership initiatives.

By servicing large-scale banks, CTA Institutional would have more leverage with CTA to increase marketing exposure of LEM, and other transit-based initiatives. Through consolidating the LEM, U-Pass and Transit Benefit programs into one office, CTA could pave a new road in efficiency and effectiveness in partnering with large-scale Chicago-area institutions and ultimately serving transit solutions to more Chicago-area employees and residents. CTA Institutional Services would be the turnkey solution to community revitalization around Chicago.

Certain developers, such as Bob Horner, a major developer of condominiums, would like to build location efficient homes, yet have little understanding as to where or who to talk to. CTA Institutional could become that point office.

**Land Use Implications – Transit-Oriented Development**

Many books, articles, and theses preceding this one have articulated the benefits of transit-oriented development (TOD). This thesis will not attempt to re-invent the wheel nor re-spin it, as many of the sources sighted within this research are highlights of this exciting field in transportation planning and urban development. Transit agencies are aware, and city managers are becoming more aware, that transit-oriented development is a vital component for successful, accessible cities.

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100 Interview via telephone, January 29, 2003.
TOD may also be a primary catalyst of the new design of the city as it is certainly shaping the ideals and pedagogies within American and international planning schools.

What this thesis will argue is that transit agencies must be leaders in this transit-oriented evolution of planning. The Chicago Transit Authority has succeeded in transforming the current ideal that car ownership is the only means of accessibility. However, more work needs to be done. Promoting transit use to Chicago college students through the U-Pass program was the first, bold step in this transformation. Now CTA has a unique opportunity to go one step further in shaping the built environment, and in particular with Location Efficient Mortgages, to use transit to assist more Chicago residents in attaining the American dream of home-ownership. This thesis will present recommendations on what land-use policies can be implemented to further this essential cause.

“Transit investments that fail to lure motorists out of cars and into trains and buses will do little to conserve energy, reduce pollution, or relieve congestion.”

Robert Cervero was correct in this assertion; however, he was also incomplete. The author would add that transit investment that fails to create an environment fostering increased residential and employment access, and social equity will do little for the city or citizen that the investment intends to serve.

Supporting housing near transit stations leads to dramatic increases in ridership while increasing essential home supply with improved social equity and access to jobs via transit. In the San Francisco Bay Area, Cervero observed that, of current rail commuters residing near rail stations, 28.8% usually drove alone to work at their previous residence. Cervero asserts that these trips “represent real societal benefits accruing from the changeover to a cleaner, more energy-efficient from of

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transportation. These numbers may be self-selecting, however, as people likely to move near transit stations were inclined to do so because of the inherent benefits of transit use (free time during commute, less expensive mode, etc.). These people are also ones who would benefit the most from Location Efficient Mortgages. However, this self-selection of transit-oriented people moving into transit-oriented housing is itself functional, and the fact that LEM strengthens the market power of the

<table>
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<tr>
<th>Usual Mode for Prior Residence</th>
<th>Drive Car</th>
<th>Ride Car</th>
<th>Rail</th>
<th>Bus</th>
<th>Walk</th>
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</thead>
<tbody>
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<td>Drove Car</td>
<td>82.0%</td>
<td>65.5%</td>
<td>28.8%</td>
<td>23.5%</td>
<td>40.0%</td>
<td>20.0%</td>
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<td>2.0%</td>
<td>10.3%</td>
<td>3.9%</td>
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<td>42.5%</td>
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</tr>
<tr>
<td>Bus</td>
<td>2.6%</td>
<td>10.3%</td>
<td>13.7%</td>
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<td>20.0%</td>
<td>30.0%</td>
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<tr>
<td>Walk</td>
<td>3.2%</td>
<td>6.9%</td>
<td>4.6%</td>
<td>5.0%</td>
<td>20.0%</td>
<td>15.4%</td>
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<tr>
<td>Other</td>
<td>0.9%</td>
<td>0.0%</td>
<td>6.5%</td>
<td>0.0%</td>
<td>6.7%</td>
<td>34.6%</td>
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<tr>
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Table 5.4: Modal Split in California

transit-oriented is useful. The mere existence of transit access increases the real estate value of housing, capitalizing as a re-sellable asset without necessarily indicating that the occupant will actually use transit. If the LEM is adjusted to target car-free households first and require the monthly transit pass purchase as part of the mortgage payment, the resultant self-selection of transit-oriented people into transit-oriented housing will provide stable increasing revenues.

The table comparing current modes for work trip and usual mode at prior residence is listed in Table 5.4.

To engage in joint development, CTA must take an active role in lobbying to amend existing zoning standards that are anathema to transit-oriented development.

The City of Chicago outlines a number of zoning visions to enhance transportation options for city riders and employees. Amongst the seven recommendations by the City, only one hints at the city's willingness to become more transit-oriented. The seventh recommendation is for the city to establish a new transportation-zoning district.103 Yet even with this zoning recommendation, there is no mention of how this new transportation will exist or be implemented in the future in the Mayor's Progress Report. The CTA must exert its influence to lobby the city to form these transportation districts if Chicago can truly be seen as "a model of how transit-oriented development actually works".104

Cervero posits the following on transit-based housing initiatives105:

Clearly, if [they] are to yield significant environmental and mobility benefits, they must be accompanied by other land-use measures which attract employment growth to rail stations as well as transportation demand management programs, like mandatory parking charges...For transit-based housing to win over many former motorists, the metropolitan structures of regions will need to more closely resemble those places...which will have high shares of rail commuting and significant concentrations of population and employment within walking distances of rail stations.

Surely, the aim of the location efficient mortgage is not to displace new homeowners from adequately accessing employment. With the wealth of access Chicago already


104 Ibid. pg. 36.

105 Cervero, Robert, op. cit., pg. 74.
provides in both transit and employment, the area is ripe for investment into transit-based initiatives which link loan eligibility to location efficiency. Chicago reflects the city Cervero describes in the above assertion, and the CTA stands to benefit greatly from supporting transit-based housing programs such as Location Efficient Mortgages.

As a strategy to enhance both affordability and amenity, allow parking-free options and require no structured parking in zones that are well served by public infrastructure. Surface lots can double as basketball courts, roller hockey space, or even hopscotch – or be redeveloped in the future with minimal impact. Structured parking spaces are expensive and physically inflexible.

This strategy would involve revisiting the local land-use law and lobbying for inclusionary zoning to be passed, as it is in Boston. Inclusionary zoning requires all new development projects to set aside a certain percentage of residential units to affordable housing (80% or lower of area median income). A majority of all current LEM participants in Chicago live at or below this level, and rely heavily on transit for commuting and non-work trips.

Since the passage of inclusionary zoning measures in Boston, the city has provided a number of affordable units to area residents. The MBTA has benefited from the legislation by serving these residents, who otherwise would have been displaced to out-lying neighborhoods with minimal access to transit – a necessary lifeline for those individuals and families who cannot afford both automobiles and larger down payments.
SUMMARY

The Chicago Transit Authority would benefit greatly by investing in the Location Efficient Mortgage campaign. By establishing CTA Institutional Services, the transit agency could consolidate all discount-pass ridership programs, including location efficient mortgages, U-Pass, and the Transit Benefit Program. The Institutional Services enterprise would become the exclusive point-office for community-based transit programs that exclusively target large-scale employers in the Chicago area.

This idea would be modeled after similar Institutional service enterprises in the financial services industry – which cater to large-scale individual investors and institutions by providing personalized customer care through unique service offerings. These enterprises have garnered significant share within the company's client base, and has improved the company's image as one that values its more sizeable clientele. CTA Institutional Services would emulate this organizational structure and provide discount passes and other unique services to clients who bring in large numbers of employees and/or community importance such as hospitals, banks, corporate headquarters and other public agencies.

Ultimately, CTA would leverage this institutional enterprise to coordinate its efforts in partnering with mortgage lenders and public/private developers to better market Location Efficient Mortgages on CTA vehicles, stations, and bus shelters. The marketing campaign would also include the provision of discount passes to LEM participants, as is practiced in Seattle's LEM through King County Metro Transit. The third facet of the Institutional marketing campaign would entail CTA's partnering with local mortgage lenders that sponsor LEM to distribute monthly discounted transit passes with the participant's monthly mortgage statement. This third component would eliminate a major barrier to transit use, as passes would be mailed to LEM homeowners and place transit access in the palm of their hand – without spending their valuable time on acquiring one conventionally.

CTA could also become a major player in the urban landscape around Chicago by engaging in joint development partnerships with public and private developers.
Transit-oriented development has proven to raise real estate values around transit stations and CTA would benefit from promoting TOD through harnessing land value appreciation. This practice would, in turn, lead to communities that are designed with higher densities and closer proximities to transit stations. By its capacity for transit accessibility and commuter mobility, CTA could exert significant influence within the Chicago City Council to revise existing land-use policies which currently work against transit-oriented development. It is in CTA’s best interest to pursue this lobbying strategy to expand access and market penetration in neighborhoods currently underserved by public transit. The CTA’s investment in Location Efficient Mortgages could help leverage this influence within city politics to effectively shape the built environment in a more pro-transit, car minimizing urban experience for the residents and employees of Chicago.
"The LEM addresses [sic] the issue of escalating housing prices and increased traffic congestion by making mortgages more affordable and promoting the use of public transportation."

- U.S. Representative Jan Schakowsky (D-IL)

6

LEM and Puerto Rico

At 4,300 cars per square mile, Puerto Rico has the highest density of automobile use in the world. In the city of San Juan, the density skyrockets to 8,500 cars per square mile generating 2.2 million trips per day.\textsuperscript{106} At that rate, the road network has reached its capacity. Yet, due to space limitations, the capacity cannot be expanded.

In 1998, the Puerto Rican government aggressively pursued the implementation of Location Efficient Mortgages in an attempt to entice residents to leave their cars by living closer to the Tren Urbano alignment. At that time, LEM had yet to be implemented in a mainland city, but research had concluded that this progressive tool would help solve the region’s burgeoning transportation problems. Supporters of the idea agreed - hailing it as a visionary step in reducing the asphyxiating congestion plaguing the island’s highways and arteries.

Puerto Rico’s largest bank, Banco Popular, which agreed to lend Location Efficient Mortgages as a pilot program. Banco Popular was swayed by the then-recently approved (Community Investment) plan through FannieMae. This plan dedicated $127 million towards the guarantee of new community revitalization programs, such as the Location Efficient Mortgage. Because of its size, Banco Popular was able to secure mortgage insurance from the FannieMae plan. Thus, all of the bank’s loans for LEM were insured risk-free by the federal government. With this insurance, the government, Banco Popular, and PRHTA (The Puerto Rican Highway and

\textsuperscript{106} Fagundo, Francisco, Secretary of Transportation for the Commonwealth of Puerto Rico, Tren Urbano Encuentro presentation, January 7, 2003.
Transportation Authority) believed LEM would be the ideal housing component to transit-oriented development being spurred by the Tren Urbano project. The latter two organizations formed a partnership that would administer the LEM package once Tren Urbano commenced operation.

Indeed, the benefits inherent to LEM spoke volumes to Puerto Ricans who had grown tired of traffic. LEM was planned to be co-sponsored by Banco Popular and Tren Urbano; a partnership both organizations felt was useful to the program’s success in an automobile-dependent society. With this partnership in place, momentum for LEM implementation into the Tren Urbano plan was rapidly gaining pace. It seemed as if nothing could stop San Juan from becoming the first city to introduce Location Efficient Mortgages.

Challenges – Institutional

Although the partnership between Banco Popular and Tren Urbano seemed ideal, the organizations failed to recognize those interests from the Commonwealth’s Department of Housing. The Housing Department’s Secretary, disagreed with the deal reached between the Transportation Department and Banco Popular. Disagreements ensued over who would ultimately own the land that would be developed through Tren Urbano’s Joint Development office.

The Housing Department had a legitimate gripe, as approval for such transit-based affordable housing ultimately rested with them. Location Efficient Mortgages, as the Housing Department argued, was a housing program – regardless of its ties to transit. As the ownership debate progressed, most of the momentum gained before the Housing Department’s whistle-blowing was lost.

The debate reached no acceptable conclusion, and both parties began to feel that the LEM ownership debate had drawn their focus away from the bigger picture. Location Efficient Mortgages became more of a distraction than a hallmark of the Tren Urbano plan.
Land Use Policy

Currently, Tren Urbano only owns the rights to areas that encroach within 50 feet of the rail alignment, having taken that area by eminent domain. This area is of prime interest to Tren Urbano’s Joint Development Office, but little is said about the railway’s plan to influence land use. Tren Urbano must utilize its lobbying power to enact land use that supports development along the alignment.

Challenges – Societal

Automobile Dependent

Puerto Ricans love their cars. The proliferation and dependency of the automobile is dizzying on an island the size of Delaware. Automobile ownership rates in Puerto Rico total approximately 620 cars per 1000 people. Of these, 64% of all Puerto Rican households own one car or more. While this statistic is less than the national car-ownership rate (89.7%), it is dramatic in the light that Puerto Rico’s per capita income is 50% of that of Mississippi which is by far the lowest in the U.S. This comparison does reflect the need for programs which encourage people to drive less.

Lack of Programs Encouraging Home-ownership

These programs must also focus on encouraging home ownership. Homeownership builds wealth while auto ownership depreciates it. Homeownership also carries valuable tax benefits to those who could not attain such benefits as renters. 67.9% of all homeowners pay mortgages comprising of less than 24% of their gross monthly income, while only 45.2% of renters have the same ratio. Renters are also paying more than twice as much in monthly rent as their homeownering counterparts. In Puerto Rico, the difference is even more telling: 58.8% of homeowners pay less than

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24% of their monthly income for shelter compared to 37.3% for renters with the same percentage. Renters also bear more of the housing costs – paying 80% more for shelter than their home-owning counterparts.¹⁰⁹

Of the programs that do encourage home ownership, none of them compare to LEM’s low rates and low down payment option. Banco Popular does make an attempt to reach out to first-time buyers with its Facil 97 mortgage, but it requires extremely good credit¹¹⁰ – something most renters who make modest salaries are unable to maintain as their income is stretched to the limit.

¹⁰⁹ Ibid.

CASE STUDIES - JOINT DEVELOPMENT AND LEM

Two case studies were selected based on their recent construction and completion of heavy rail systems as well as relative size compared to San Juan. In both Houston and Los Angeles, major political lobbying was performed to convince local governing bodies and federal transportation funding sources that rail would succeed in these automobile-dominated metropolises. Research has proven that lobbying efforts in both cities were not made in vain as rail systems in each city have dramatically shaped the built environment and made significant strides in succeeding against their respective car cultures. The successes of heavy rail in Houston and Los Angeles should serve as models for the Tren Urbano project in Puerto Rico.

Houston, Texas – Houston METRORail

With 4.5 million people, Houston is the fourth-largest city in the U.S. Houston is also home to dangerous levels of smog, sprawl, and traffic congestion as automobiles dominate the landscape and mindset of most Houston residents. The challenge in Houston was to implement a mass transit system in a car-dominated sprawling city. The Houston MetroRail was supposed to be the answer to these development trends – boldly envisioning a new rail system for the city while simultaneously harkening back to Houston’s past.

Like Puerto Rico, Houston was once connected through streetcars and trains. Lasting from 1891 to 1940, the Houston City Railway Company transformed the city by moving from mule car to the more efficient streetcar. This was the primary mode of transportation until 1914, when the Houston Electric Company introduced the jitney system to offer competing service that harnessed new automotive technologies. By 1924, buses were prevalent throughout the urban core and began to spur growth in the city’s outlying developments, as bus service became the accepted mode of
transportation in the 1930’s and 40’s.\textsuperscript{111}

Originally, supporters hoped to finance the system via bonds; however, the 18-mile heavy rail plan was defeated because the bus system had not gained the confidence of a skeptical public. The Houston Transit Authority was forced to rethink its strategies. Ultimately, the Transit Authority decided to cater more to the four-wheeled populace and instead implemented a High-Occupancy Vehicle initiative.

The HOV lane was the right move, as it evoked more confidence in the new transit authority. Research proved that the HOV lanes were cutting commute times by one minute per mile HOV lane. This initiative thus succeeded on two fronts: First, it cut down on commute times. Second, and more importantly, the HOV lane changed the way Houston residents thought about transit. Locals were once again drawn to transit as their ancestors had done in earlier part of the 20\textsuperscript{th} century.

With this newfound support, the Metropolitan Transit Authority shifted more of its funding from a 1-cent sales tax into new bus programs and rail studies. The funding allowed the authority pursued new initiatives such as integrating commuter buses with local buses in the outer nodes. Transit-oriented development was reborn in Houston. Sidewalks were widened to accommodate a more active pedestrian experience, and highway lanes were reduced from six to five to accommodate the increasingly popular HOV network.

\textit{METRORail Arrives}

\textsuperscript{111} Author unknown, "Houston Transit Routes", \url{http://members.aol.com/chirailtwo/houdate.html}, April 16, 2003.
The Houston Transit Authority had finally gained its credibility. In 1996, the Houston METRORail gained authorization for construction. The 7.5-mile light rail plan will be the first streetcar system since 1940 – running from downtown Houston to just south of Reliant Park and transporting almost 8,000 riders per day.

**METRORail Catalyzes TOD**

The new rail linkages will likely lead to a transformation of the Houston landscape. John Sedlak, Vice President of Planning, Engineering, and Construction for the MTA says that over 15,000 new residential units are planned for construction along the new rail corridor. Housing development is only one of a number of projects scheduled to go on-line following the light rail's commencement. Mr. Sedlak estimates around $500 million to $1 billion in new development will occur around the alignment. And, with light rail replacing 1,200 bus trips per day, the amount of investment and cleaner environment create the ideal formula for new housing programs which encourage and support living more transit-oriented lifestyles. The Location Efficient Mortgage is one of those programs, and could have a significant impact on the train alignment to provide necessary transit riders to a neophyte light-rail system.

**A Model for Institutional Transit Services**

METRO has extended new partnership opportunities with local businesses in an effort to educate more area-employees and residents on issues of diversity and equality.

**Los Angeles – LA County MTA**

The unique relationship between Los Angeles and Puerto Rico can be found in the

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overall strategies formulated in bringing the Tren Urbano project to reality. The Tren Urbano team relied heavily on lessons learned from the Los Angeles Metro’s Red-Line system and built upon those lessons in implementing the Puerto Rican heavy rail network. Like Puerto Rico, trains and streetcars once dominated the landscape in the early 20th century. Today, the Los Angeles County Metropolitan Transportation Authority (LAMTA) is once again inviting L.A. motorists to leave their cars for public transit.

Over the last 12 years, the Metro has succeeded in doing just that. Average weekday ridership has increased to 231,000 with another 120,000 riders on weekends on its 59-mile heavy rail network. MetroRail’s success has fueled the creation of the system’s newest service, the Gold Line, which will run from Downtown LA’s Union Station to Pasadena. Expected weekday ridership is in the low-100,000s.¹¹³

**Joint Development Achievements**

The success of the Metro Rail has led to major achievements in joint development. Los Angeles MTA has begun a large-scale effort to attract office, commercial, and residential development near its transit stations. This effort reflects the commitment of area politicians and citizens to transit-oriented development in one of the most notoriously car-dependent metropolises in the world. These developments have become significant employment, street life, and tax-base generators for the city.

- Hollywood-Highland

A $323 million, 8.7-acre mixed-use development with numerous access points to the Red Line. Currently

the site offers a wide-range of amenities including 75 shops and restaurants, as well as a luxury hotel, Grand Ballroom, and the Kodak Theater – home to the Academy Awards. This project was built in conjunction with the MTA and is viewed as the anchor to Hollywood Boulevard's long-awaited revitalization.

- Union Station Gateway

Completed in 1995, this intermodal transit center in downtown Los Angeles created 2 million square feet of office and retail space. The LA MTA further supported this transit-oriented development by moving its headquarters to the site. Likely the first of many tenants who will be attracted to the Gateway's location as the centerpiece of the revived transit movement occurring in Los Angeles.

- Hollywood/Western Housing

Completed in 2000, this affordable housing project created 130 new affordable units with direct transit access. This two-phase project also features 10,000 square feet of retail space and a child-care center. The Hollywood/Western project is a prime example of how joint development could work for the people of Puerto Rico. Through a joint development partnership with a private developer, the City of Los Angeles Community Redevelopment Agency (CRA) and the Hollywood Community Housing Corporation, LA MTA advanced the aims of transit by providing homes for lower-income families who use transit everyday. This site would be an ideal candidate for Location Efficient Mortgage participants to live, as it would likely have a high LEV based on its proximity to transit and its nearby retail amenities.

TREN URBANO’S ROLE IN PROMOTING LEM

Unlike its mainland predecessors, Tren Urbano and the financial partners in its Joint Development Program must concentrate the offering of Location Efficient Mortgage in hopes of improving transit ridership. Tren Urbano must target specific neighborhoods where density is high and the necessity for using a car to reach job opportunities is low.

As discussed earlier, one of the flaws in the initial implementation in Chicago, was that the LEM net was cast too wide. Wide enough that some of those interested in LEM became entranced by the higher loan eligibility without considering whether job opportunities would change in a more car-minimized lifestyle. In fact, some Chicago residents did not choose the LEM because a) there was a misconception that one must sell all cars to be eligible for the mortgage program; and b) lower-income individuals needed their car to access job opportunities and could not give up the auto for a more expensive home because it would jeopardize their current way of living.

Instead, Tren Urbano must apply a new, more incremental approach to marketing the LEM as recommended in Chapter 4. This strategy will recognize one of the inherent dangers of the program and focus the implementation in higher density neighborhoods with existing transit access. By building on existing conditions considered ideal by the Holtzclaw Team research – higher density, income per capita, and transit access\(^{115}\) – the LEM may get the head start it needs to gain acceptance with large mortgage lenders and ultimately, with Puerto Rican homebuyers. In the following section, specific neighborhoods will be presented as potential locations to implement the LEM pilot program based on their residential density, proximity to Tren Urbano, and proximity to other commercial amenities.

\(^{115}\) Holtzclaw, et al., p.17.
Jardines and Torrimar Stations

Figure 6.4: Jardines Land Use Map. Source: Tren Urbano

Utilizing the findings from Holtzclaw, et al., which state that dense housing is a key element to the success of an urban transportation system, Jardines and Torrimar are ideal target stations. As an outlying station on the Tren Urbano alignment, and one that is situated in a mixed-income, higher density neighborhood, it offers the right components for LEM implementation.\textsuperscript{116} Within 500 meters of the station lies over 700 dwelling units, equating to a density of 3.5 dwelling units per acre. With the passage of Law 207, Tren Urbano has the authority to exert a “zone of influence” within this 500 meter radius. Additionally, new developments such as Rio Bayamon and the high-density Urbano Villas de Torrimar development along the hillsides

\textsuperscript{116} Holtzclaw, et al., p.17. The Holtzclaw team mentions households/residential acre, income per capita, and zonal transit density as three indicators that affect vehicles per household – an integral component to calculating Location Efficient Value.
above Torrimar station provide the necessary density for LEM implementation.

Existing Housing

With higher incomes, however, come increased rates of car ownership. Jardines is no exception. Car dependency is so high, even in lower income units along the southeastern artery, some renters have converted enclosed patios into second garages. As stated previously, usurping the dependency on automobiles is the biggest challenge, but other challenges exist as well. When interviewed, some Jardines residents exclaimed their skepticism over Tren Urbano; with most primarily concerned about passenger safety. Regarding the latter challenge, the Tren Urbano Office of Public Education must take a proactive position to encourage more than skeptical interest in the project.

New Developments

The plan for Rio Bayamon calls for arterial roads to lead to the Torrimar station – a progressive shift in planning and design for the Commonwealth. The Rio Bayamon project lies between the head houses of two Tren Urbano stations and has long been seen as the test canvas for a new transit-promoting development. Many of Tren Urbano’s supporters are looking to Rio Bayamon has an essential first step in urban transportation in Puerto Rico.

Rio Bayamon presents an ideal opportunity for the Puerto Rican Highway and Transportation Authority to exert influence granted to them by Law 207, and by the Federal Transportation Authority. The latter which “gave transit agencies the right to lease or sell land to private developers if it can be demonstrated that the resulting
development will be transit-supportive, generating enough riders and fare box receipts to make up for the value of the foregone property. Location Efficient Mortgages would help promote transit by giving lower-income households a chance to own a home within walking distance of the new Tren Urbano.

The land currently is wedged between two residential areas as well. I picked this development because its design has been so controversial, and its final design actually implemented elements of transit-orientation. This project also represents the future of joint development in Puerto Rico – where the transit agency is not just pursuing to maximize real estate value, but also views transit-oriented properties as the catalyst for future transit-oriented growth.

This land is also appropriate because of the social equity benefits provided by Location Efficient Mortgages. With Torrimar becoming increasingly more encroached by gated communities for Puerto Rico’s upper-class, LEM homes near Tren Urbano would allow moderate-income families to live in upscale Guaynabo, thus integrating a town that seems to be focused on gating the rest of Puerto Rico out.

To support this venture, land use must be transformed within these 500 meter “zones of influence”, as dictated in Law 207, to promote density, transit use, and a car-independent lifestyle. Tren Urbano and PRHTA must lobby the government to enact these changes or be forced to deal with low ridership and greater congestion as housing development continues.

Domenech

Unlike Jardines and Torrimar where the land use is primarily residential, Domenech presents the ideal mix of housing density, transit proximity, and employment. Location Efficient Mortgages would flourish near Domenech station, as transit and employment accessibility would be minimally compromised with such diverse uses and proximity to Tren Urbano.

Like Jardines and Torrimar, Tren Urbano could use its “zone of influence” to redevelop the parking lots around the station into transit-supportive uses. According to Al Reine, Domenech will likely undergo little zoning changes, yet what exists is still an appropriate foundation for joint development between Tren Urbano and private developers.  

118 In doing so, Tren Urbano could work with developers to provide

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zoning for higher densities and compact development from LEM houses. This would bring in more tenants and thus more riders into the Hato Rey area, and with compact development, have little space for even one automobile per household – the norm throughout San Juan.

**Sagrado Corazon**

Sagrado Corazon station, in the Santurce neighborhood of San Juan, presents interesting challenges to joint development of LEM housing. Applying the lessons learned from Jardines and Domenech, it would promote social equity and property values in a neighborhood that is one of San Juan's poorest. Thus, LEM could be used as an agent for change, by imploring the benefits of homeownership and non-auto use into a lower-income community and providing homeownership as a tool for neighborhood revitalization. There lies a danger of promoting gentrification, but if planned by stakeholders, this neighborhood could also be a prime candidate for LEM
implementation in the initial stages. Future research is recommended as to whether the LEM is an appropriate tool for such revitalization.

**Airport Extension**

As Clayton Lane suggests, Tren Urbano should consider where lower-wage job competition surpluses and shortages lie in the San Juan Metropolitan area. Currently, major retail centers such as Plaza Las Americas generate numerous low-wage jobs, yet have little connection to the bus network and no connection to Tren Urbano. Tren Urbano would better serve these communities by linking transit between the two. As Lane notes, “not a single AMA route and only one público route crosses Muñoz Rivera Avenue (the major North-South axis in Hato Rey, and serves as San Juan’s central spine)...and such separation reinforces the area as a destination, but likewise reduces traveler’s ability to cross town easily.”

Lane continues by arguing that the second phase of Tren Urbano should run to the airport, and not through Carolina. The airport provides a plethora of low-income jobs and is adjacent to an area with a deficit in these job categories. Thus, while job competitiveness will increase for wealthier outlying neighborhoods because of Tren Urbano, lower-income households stand to benefit only marginally as the system does little to help their economic growth and reduce congestion. Instead, by extending to the airport, these demographics are able to use transit and save their money that would have normally been used to purchase an automobile. That money could be placed in a transportation savings account (see Chapter 4) that could be used to secure a Location Efficient Mortgage in the future. More research should be conducted on this fascinating topic.

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Land Use Process

Currently, the San Juan zoning plan has yet to be approved by the Governor, although the city’s planning board has signed off on the master plan. Since this is the first master plan for San Juan following legislation which allowed municipal master plans to be recognized, the Commonwealth must approve it before giving full signatory powers back to the municipalities. Bayamon and Guaynabo have already gained approval for their zoning plan.

Regardless of the new zoning code, there are always “trade-offs” that can be negotiated on a site-specific basis that emulate variances in the mainland. Unfortunately, the new zoning code does not prescribe tougher stances on parking such as moratoria on structured parking or parking maximums (see Chapter 4 and 5). However, these trade-offs can be completed without a public hearing, so San Juan has incredible power in deciding what level of transit-oriented development should exist near its transit stations.\textsuperscript{120}

Conclusion

Ultimately, Puerto Rico provides an exciting opportunity for Location Efficient Mortgages to be implemented and tested on a population that loves their cars. While aware that Tren Urbano will not solve the transportation problems in the Commonwealth, it is the first step in expanding alternatives for many Puerto Ricans who have little money, but even fewer barriers towards car ownership. The LEM and Tren Urbano together may be an effective tool in encouraging Puerto Ricans to reconsider the value of accessibility and asset appreciation over mobility and asset depreciation.

To make this work, Tren Urbano must implement the LEM in strategic locations with

\textsuperscript{120} Interview with Al Reine, March 14, 2003.
high residential density, proximity to transit, and employment opportunities. This thesis contends that ideal locations would exist near the Jardines/Torrimar stations, as well as Domenech, and Sagrado Corazon. Further, this thesis must, in the words of Esteban Sennyey, "look to the second phase of Tren Urbano" and predict where housing would help the next demographic who will benefit from the heavy rail extensions.

To achieve these goals, Tren Urbano must exert its power dictated in Law 207 to influence land use decisions near the alignment and at major intersections of bus and público routes. Without the ability to zone for greater density, Tren Urbano will have a difficult task in gaining ridership and achieving the initial goal of the project of reducing car dependency and congestion on the Puerto Rican highways.
"The Location Efficient Mortgage is very unique in that it recognizes the benefits to our environment along with the benefits to the homeowner."

- Kerri McClimen, Fannie Mae

7 LEM and Urban Design

The Northeastern Illinois Planning Commission states that by 2007, their region must adopt specific measures to reduce air emissions in order to attain national air quality standards prescribed by the Clean Air Act of 1990. Should the region not comply with mandated ozone-producing reductions, over $710 million in federal transportation funds will be in jeopardy.

To achieve this goal, the Planning Commission believed that focusing on transportation initiatives that promoted non-auto use was the key. Six initiatives are recommended by the Commission that spans all forms of transit-oriented development. Among these initiatives, three apply specifically to the potential that exists for Location Efficient Mortgages to impact the built environment.

**Land Use Regulations and Transfer of Development Rights**

The key policy tool for protecting transit-oriented development such as those for Location Efficient Mortgages lie in land use regulations. Heavy transit use corridors should be integrated with supporting land uses. Such land uses include high-density mixed-use residential, retail, and office development which provide the transit system with sufficient ridership revenue to justify the higher level of service. Local politicians and city planners must advocate for land use law that protects high-density areas from

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“transit-ignorant development”\(^{122}\) that promotes automobile use and discourages public transportation.

Transfer of Development Rights (TDRs) could also be a powerful land use tool in shaping urban design. Especially in Puerto Rico where air rights over highways could present new housing and employment opportunities without consuming additional land. The key issue is that fewer cars per household will allow greater density without adding congestion on the highway networks.

**Density Bonuses**

Density bonuses should be distributed to developers who build retail on the first floor along all major streets within 500 meters of a transit station. This is an efficient and effective means of encouraging compact development to complement transit-based housing programs such as the Location Efficient Mortgage.

![Cross-section of compact transit-oriented development](image)

Figure 7.1: Cross-section of compact transit-oriented development\(^{123}\)

Density bonuses in Puerto Rico would transform the urban landscape by creating more

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\(^{122}\) Interview with Jordan Karp, M.I.T. Urban Planning Researcher, September 6, 2002.

demand for the Tren Urbano system through increased housing and retail space per acre. This land use tool has proven to create lifestyles which are less dependent on private automobiles and more focused on transit. Bonuses are attractive to developers because they increase the total amount of rentable space per parcel, thereby increasing their net operating income. By applying density bonuses for allocating Location Efficient Mortgages as is done with affordable housing, more developers will be attracted to partnering with banks to supply more transit-based housing for those who use transit.

Easier Permitting Procedures

Acquiring construction permits is a necessary element of urban development. However, as cities apply more requirements and amendments to various projects, more time is added to the developer’s completion schedule. Developers tend to avoid these types of cities, as permitting delays lead to costly overruns and postpone revenue-earning opportunities.

Another land use mechanism that will encourage development interest in Location Efficient Mortgages involves the easing of usually arduous permitting procedures. Although the legality of such practice is open to further research, developers who agree to supply LEM housing would be awarded preferential status within the city permitting process and thus expedite the construction of such transit-based housing developments.

Mixed-Income Development

Location Efficient Mortgages provide a unique opportunity to lower-income households who are looking to invest in appreciating assets. By allowing these households a chance of homeownership, LEM could have a profound effect on the urban landscape in terms of ethnic diversity and socio-economic harmony.

Parking Maximums

Most American city land use laws mandate parking minimums on new development which range from 3.5 to 4.5 parking spaces per 1000 square feet in commercial zones
and one space per residential unit. With design standards calling for 300 square feet per space, some developers are forced to build more total parking square footage than the actual development. Thus, parking minimums are having a profound effect on the built environment as developers are forced to either pave over large swatches of land (as seen at most big-box retail centers), build structured parking (regional malls), or burrow underground (downtown office buildings).

<table>
<thead>
<tr>
<th>Parking Type</th>
<th>Cost/Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Lot</td>
<td>$2,500</td>
</tr>
<tr>
<td>Structured</td>
<td>$20,000</td>
</tr>
<tr>
<td>Underground</td>
<td>$45,000</td>
</tr>
</tbody>
</table>

Figure 7.2: Costs of Various Parking Types

With each level of complexity in parking provision comes exponentially higher fixed cost, and these costs are usually passed on to owners of surrounding properties. Table 7.2 illustrates these costs for various parking types. Developers transfer these hefty costs to property owners to maintain their bottom line, but these property owners cannot afford the “parking tax” they are forced to pay above their mortgage and/or to stay in business. Ultimately, these minimums drive out the lower-income residents and local business owners who cannot afford the parking costs – leaving the land available to be redeveloped for households with larger incomes and businesses with deeper pockets.

Thus, parking minimums also impact the economic development of our nation’s neighborhoods by displacing long-term residents to make space for the automobile. Gentrification, sprawl, congestion, and traffic accidents are recurring consequences of this land use policy. Location Efficient Mortgages turn this policy on its ear by offering homeownership to these once displaced households in exchange for lifestyles based more on walking, bicycling, and public transit. This mortgage product has the potential to transform the demand for automobile use in our nation’s neighborhood and completely redesign the urban and possibly, suburban communities in the urban landscape.

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Accessibility over Mobility

Pedestrians and mass transit are receiving more consideration in city planning rather than previous emphasis on cars and highways. The above recommendations are echoed in the City of Chicago’s Principles of New Zoning Ordinance. Drafters of this document treat transit-oriented development as a special circumstance in their recommending of new parking ratios. Unlike their pro-auto stance which promotes parking ratios becoming proportional to building size as opposed to current 1:1 zoning laws, the report suggests “lower parking requirements for residential developments near a CTA rail station or intersection of major bus routes.” The report goes further into its pro-TOD stance by recommending a 10-25 percent reduction for non-residential developments near transit nodes, especially employers. While these recommendations would support TOD, they would also allow the city to expand transit services appropriately without forcing gentrifying displacement amongst specific communities targeted for revitalization. Although the report highlights an ideological transformation in metropolitan city planning, it does little to address the long-term impact that parking requirements are imposing on the urban landscape.

Moratoria on Structured Parking

In transit-oriented neighborhoods, intelligently planned surface parking lots placed behind buildings or screen interventions are an essential component. Small surface lots also wield relatively minimal financial impact compared to structured and underground parking lots. They also provide the least amount of parking spaces in space that is often amenable to duel uses such as basketball courts. As stated above, parking costs are routinely passed on to property owners with underground parking coming with the highest costs.

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While underground lots do hide parking lots fairly well and provide ample parking spaces, the cost burden placed on surrounding property owners can debilitate an entire district. Policy makers should consider measures to protect these property owners and the transit-supportive neighborhood of which they live and work. One measure policymakers can take is to pass a zoning ordinance that prohibits the construction of expensive parking structures. By doing so, policymakers would keep cars out of transit-oriented neighborhoods and simultaneously keeping selling prices lower. Thus, a moratoria on structured parking will inhibit gentrification in transit accessible neighborhoods and allow lower-income, locally owned properties to also benefit from the inherent boon in property values from transit-accessible districts.
SITE PLANNING

Building Orientation

Urban designers must ensure that buildings are oriented toward the street. Streetfront orientation is more conducive to successful human-scale developments, as it is shown that more pedestrian activity is prevalent within this building strategy than built environments characterized by streetfront parking lots and large front yards.

The streetfront orientation strategy offers greater potential to create continuous retail and mixed uses. As continuity of pedestrian uses grows, the more convenient and compact the commercial district becomes. Increased convenience only supports transit and pedestrian lifestyle. As the district becomes more convenient to transit use, transit service will increase. More consumers from neighboring regions will also patronize the district with increased transit access. Consequently, streetfront orientation could become a vital tool in economic revitalization for residential and commercial uses.

Location Efficient Mortgages would drive this architectural strategy as LEM participants will receive more transportation savings in areas with greater commercial and transit amenities. In other words, as stakeholders invest in transit-oriented development and transit-based community revitalization initiatives, the greater the economic and quality-of-life rewards. In this light, stakeholders should advocate for lower setback requirements in city zoning laws and increased incentives for streetfront building orientation.

Off-street Parking

Although planners and politicians are encouraged to design neighborhoods to be transit supportive, they must yield to the reality that for some Location Efficient Mortgage participants, automobiles are a necessity. In Chicago, current zoning for residential
areas mandate one parking space per residential unit. Parking should still be provided at a lower ratio than current residential zoning requires to ensure that more transit supportive development occurs and the neighborhood remains protected from a deluge of automobiles, and to allow greater housing density without causing congestion.

The location of this off-street parking is also critical. In transit-oriented development, driveways are removed from the streetfront to allow for constructing higher housing densities. Parking is then placed in the back of the development and connected by a common alleyway. The size of parking lots depend on the surrounding uses such as single- and multi-family housing. In either case, these lots should be constructed with minimal size impact – both to increase building or expansion opportunities for the housing stock and minimize walking distance between car and home.

\[127\] City of Chicago Zoning Law
The Location Efficient Mortgage has the potential to transform the mortgage industry and the built environment in numerous ways. Unlike conventional mortgages, which in most cases, mandate 10% down payment at minimum, view automobile ownership as an asset rather than a financial and societal liability, and lack any incentives for people to use transit, LEM focuses on providing affordable homeownership alternatives with low down payments for people who live transit-friendly lifestyles.

Through this thesis, I have attempted to illustrate how LEM could be an effective tool to increase social equity, compact development, and transit ridership in metropolitan areas. Prevailing theories presented do support the claim that Location Efficient Mortgages are a progressive solution to pressing issues in our nation’s cities such as sprawl, pollution, and job decentralization, and a divergence of socio-economic classes.

Social Equity

My findings support these prevailing theories as well as my hypothesis that LEM could be an effective tool in increasing such important goals. With regards to social equity, Location Efficient Mortgages promote this cause by encouraging developers and policy makers to pre-determine an appropriate percentage of LEM housing within every new development in Chicago and Puerto Rico. This recommendation mirrors similar inclusionary zoning by-laws which exist in other metropolitan areas around the U.S. to ensure that an adequate supply of affordable housing is maintained with every market-rate residential development. By pursuing these integral land-use policies, those in control of the built environment will catalyze more integrated, mixed-income communities throughout their metropolises.

Furthering the assertion that LEM promote social equity in urban neighborhoods is the finding that homeowners are more likely to invest in community revitalization projects than renters. According to my survey, 100% of all LEM participants have become
involved in local organizations and political movements.\textsuperscript{128} This data supports the claims made by Cummings, et al, which concluded that community investment is significantly higher in owner-occupied dominated neighborhoods. With increased investment comes a stronger sense of place and neighborhood pride. This could lead directly to increased social equity as homeowners have a shared quality-of-life and financial interest in maintaining the health and safety of their neighborhoods.

Finally, LEM advances social equity by promoting the aims of the Regional Equity movement that is gaining momentum in our nation’s communities. One notion of regional equity lies with providing residential choices for households that would otherwise never have alternatives. The LEM provides such alternatives to those households who are making at or near the area’s median income and have stretched that income too far with necessities, car payments, and rent.

As witnessed with the growing trend of decentralized employment centers, many households are unable to make the same move to follow the exodus of these employment centers as many employers have found cheaper rents in the suburbs. The Location Efficient Mortgage provides these once-cemented households with additional buying power so that they can reap the benefits of homeownership while simultaneously maintaining their accessibility to jobs. Because of the brief history of LEM implementation, there is a lack of more specific data on this topic but, nonetheless warrants a deeper investigation as the LEM becomes more widespread and larger societal goals can be better observed.

**Compact Development**

My thesis contends that Location Efficient Mortgages could fill an essential gap in transit-oriented development (TOD). Sprawl has wiped out many of our nation’s ecosystems at a considerable cost to society – bore only in part to the suburbanites

\textsuperscript{128} Koffman, Aaron P., *Survey of Location Efficient Mortgage Participants in Chicago, IL*, 2003.
through mortgages and property taxes. Many New Urbanists such as Peter Calthorpe have suggested urban design strategies to better incorporate housing within \( \frac{1}{4} \) mile of transit stations, but few have discussed how or who will inhabitant these dense urban habitats.

Location Efficient Mortgage is a strategic solution to the question of how and who live near transit stations. The LEM rewards households for committing to a transit-oriented, non-auto lifestyle by providing additional funding for them to live closer to neighborhoods that offer these amenities. Allowing more people from various incomes to live near transit has numerous spillover effects in the built environment.

First, the LEM offers an affordable mortgage to lower-income households which then increase demand for housing in transit-oriented neighborhoods. With increased supply, developers and policy makers respond by allowing and creating higher-density residential units near transit stations through land use policies and development incentives. With increased density in a given area comes increased demand for retail amenities within walking distance, thus providing more municipal tax revenues. More walkable residential and commercial districts lead to safer streets and improved street environments. All of which increase the values for mixed-income property owners. Increased density also has proven to be the essential component to transit use and the success of transit agencies by generating boons to revenues through increased ridership.

**Transit Ridership**

Tying it all together is the LEM and its partnership with local transit agencies to provide the necessary transportation alternatives to automobiles. Cervero, et al, stated that housing proximate to transit stations led to an increase in transit use and a decrease in automobile ownership. The LEM incorporates these findings by attaching the benefits of homeownership to a neighborhood’s proximity to transit stations and increased accessibility.
Transit brings this transformation all together. By pioneering the link between affordable homeownership and public transit, the LEM could be a powerful tool to enticing people away from the suburbs and away from their cars. The cost differences are significant in terms of the price of car ownership and that of public transit patronage. The LEM supports transit use and encourages walkable communities – both of which are hallmarks of transit-oriented development. Ultimately, the transit station becomes the centerpoint destination of TOD neighborhoods, benefiting the transit agency and society.

The FTA and ISTEA now offer a wide array of funding opportunities for transit agencies to sponsor initiatives which increase joint residential development that ultimately promotes transit ridership and discourages automobile ownership. This funding mechanism paved the way for transit agencies to guide the development process, and the LEM should be harnessed to diversify the demographic of homeowners in these efficient and value-appreciating neighborhoods.

Center for Neighborhood Technology

As the managing arm of Location Efficient Mortgages, CNT must revisit the strategies that led to LEM’s limited success. If LEM is to have a viable future, it must remain competitive with conventional mortgages. Currently, CNT has gained the competitive advantage in the field of Location Efficient Value (LEV) database development. While this is laudable, its fee for mapping all LEV’s within a metropolitan region has hindered LEM’s marketability. The key to increasing market penetration is to convince mortgage lenders to push LEM to their brokerage distribution channels. Lenders are forced to pay this fee which then leads to higher fixed costs and lower commissions for their brokers. Many conventional mortgages have little to no cost (usually in the form of points) and thus are more attractive and yield higher returns for mortgage brokers.

Another finding indicates that lending professionals and potential loan applicants have harbor significant misconceptions about the LEM. CNT must address this important issue by simplifying marketing material and clarifying the mission of the Mortgage. They
have partly achieved this goal through the redesign of LEM brochures, however, more outreach must occur on transit vehicles, radio, and the internet for the LEM to truly achieve its potential.

Among these misconception is that people are turned off by the fact that LEM requires that its participants purge themselves of all automobile ownerships. Currently, this idea is not an element of LEM, but I argue it should be. Since current campaigns have only yielded less than 100 mortgages nationwide in over 3 years, I contend that making this misconception a reality may actually yield more participation. With 308,000 households without a car, and another 460,000 with one car\(^{129}\), there is an enormous supply of households who can achieve a bigger mortgage, promote transit, and all without a significant change in their behavior.

To ensure that Location Efficient Mortgage participants are not depriving themselves of flexible access to jobs, the LEM should be limited and focused on sites that are rich in transit and employment accessibility, not marginal suburbs or exurban sites. Thus, my recommendations are that CNT target the most accessible areas within a metropolis first, and then move citywide as the LEM grows in popularity and effectiveness.

This outreach can only occur with strategic partnerships throughout the Chicago and San Juan metropolitan region. CNT and the Institute for Location Efficiency should pursue partnerships with major FannieMae eligible banks and transit agencies to formulate a joint effort of placing people in new transit-based housing stock. Transit agencies could help this process by offering discount passes to LEM participants and partner with local banks to distribute these passes with mortgage statements by mail as a bundled package. These types of amenities would encourage more ridership while strengthening customer loyalty.

Chapter 8

Conclusion

Chicago Transit Authority

The Chicago Transit Authority has succeeded in providing discount passes to demographics in financial need with programs such as the U-Pass and New Residents Program. While acknowledging that CTA cannot possibly provide to every deserving individual discount passes, it is in CTA’s best interest to offer discounts to a growing number of people who are choosing to live in transit-accessible neighborhoods.

This thesis has attempted to provide CTA with convincing rationales to consider commencing a pilot program serving as the primary marketing conduit for Location Efficient Mortgages. Some of these arguments include:
Numerous state and federal funding sources available for transit agencies to promote transit-based housing initiatives

Supports a mortgage program that encourages median-income households such as schoolteachers, police officers, and transit agency employees to choose homeownership in accessible neighborhoods over ones in suburbia that require a car

Discount passes would be an effective tool in achieving larger goals, such as encouraging LEM households to sell their car and turn to a transit-friendly lifestyle

74% of all operating revenue comes from the farebox. Partnering with Location Efficient Mortgage would focus marketing on new ridership initiatives that will increase revenue with minimal cost to CTA

As stated in Chapter 5, Krizek found that people who chose high-density neighborhoods over suburbs not only reduced VMT and distance per trip, but increased number of transit rides per day

CTA could utilize partnerships formed with large banks to wield greater influence in land use policy decisions, such as transportation overlay zones, which would buttress transit-oriented development and increase overall ridership

Promotes CTA as an agency committed to community improvements and revitalization

Partner with banks to provide “Transit Savings Accounts” and allow them to sell monthly discount passes to LEM participants in addition to their monthly mortgage

Operationally, the CTA would coordinate efforts between its marketing and planning departments to create a new institutional wing that focused specifically on forming relationships with large institutions that are committed to transit. CTA Institutional would become a one-stop client based enterprise of CTA that would offer discount passes and distribution programs for its current initiatives such as U-Pass and Transit Benefit, as well as new initiatives such as Location Efficient Mortgages.

To do this, CTA has several options. First, CTA could partner with CNT to negotiate an advertising contract at a reduced non-profit rate, or in a “trade” where CNT provides a level of value equal to that rate in the form of CTA promotions and advertising in local papers, etc. To advertise on all CTA vehicles would cost CNT roughly $50,000 per
month – well beyond the scope of the organization. Second, CTA could mirror itself after another FannieMae program, SmartCommute. This program has a set limit as to its amount of transportation savings allotted to homeowners, but requires that participants live within a certain radius of transit stations.

Although FannieMae would not be interested in having competing mortgage products in the same region, CTA could ingest LEM in Chicago and make it a pilot program funded as an entity of the transit agency. This alternative would still have CNT play a role, albeit more ancillary, but would allow the LEM to be promoted on CTA vehicles without fees and contracts. Granted, the scope of these alternatives should be analyzed if CTA were to pursue either alternative.

Alternatively, CTA could pursue more partnerships with housing developers who have expressed interest in developing vacant lots in the south and west sides of the city. CTA would be able to exert its influence on the built environment by developing housing that incorporated LEM to allow a mix of incomes to live in and own new homes within neighborhoods that are already rich in transit.

**Tren Urbano**

Similarly to CTA, Tren Urbano would also benefit from promoting Location Efficient Mortgages. Unlike CTA however, Tren Urbano has already begun a comprehensive joint development initiative. With the passage of Law 207, Tren Urbano will have increased eminent domain power over land adjacent to their right-of-way. This zoning change could greatly expand the Puerto Rico Highway and Transportation Authority's ability to promote transit use. This is especially resonant in a commonwealth which carries the largest automobile density in the world at 620 cars per 1000 people.

Tren Urbano will not be the panacea to these congestion problems, only the first major shift in planning paradigms that may one day yield a significant change in transformation behavior from car to transit. In the meantime, Tren Urbano has a unique opportunity to coordinate the commencement of its service with the promotion of
homeownership that rewards households for using transit.

Through its joint development efforts, Tren Urbano can influence development and urban design on the construction of new homes, such as those at Rio Bayamon, near the Jardines and Torrimar stations or those near the Carolina extension. The winning proposal did incorporate the transit station as the focal point, but even then suggested a number of roads and highway accessibility that practically turned its back to Tren Urbano. Since real estate values have proven to appreciate over time near transit stations, this would be an excellent opportunity to show potential homeowners that they can utilize the money saved from not owning a car and apply to owning an appreciating asset such as a home. The Location Efficient Mortgage is an efficient tool to achieve this goal and hopefully assist in building ridership in the expanding transit system.

Design Considerations

Incorporating the recommendations of planners in transit-oriented development, Location Efficient Mortgages could transform the built environment by linking financial incentives to transit-station development. As discussed earlier, LEM encourages compact development, which can be achieved through the provision of density bonuses, air rights, and inclusionary zoning practices. Numerous funding sources exist on state and federal levels to provide affordable housing.

Site planning would also change as demand would increase for neighborhoods built without setbacks and oriented to promote non-auto use. To achieve these goals, policy makers and planners must promote changes in parking regulations within transit-oriented residential and commercial zones to discourage auto use. Parking maximums, or caps could be an effective tool in transforming the built environment in areas dominated by transit.

Questions for Research

In time, we will know exactly what impact the Location Efficient Mortgage will have on social equity, compact development, and transit ridership. I encourage the next
Chapter 8

interested person(s) to further pursue research in this field should the LEM gain a foothold in the mortgage lending market. Ultimately, it would be a true achievement if location efficiency were incorporated into conventional mortgages. Before these dreams are achieved I do propose some investigation into the following areas of study:

1) Will a requirement mandating that those who own cars sell at least one car be effective in attracting the target market proposed by this thesis?

2) Could transit agencies benefit from broadening their scope of business and become a major player in residential and commercial development?

3) Are default rates higher with Location Efficient Mortgage participants?

4) If so, does this prove that loan affordability (LEM loan ceiling) is too much of a financial burden for those who would have qualified for less with a conventional mortgage?

5) Could location efficiency be applied on a larger scale to conventional mortgages?

Is it my hope that transit-oriented development becomes more than a planning tool or trend in urban design. The Location Efficient Mortgage is a progressive step towards shaping our communities in ways that will ultimately protect the urban and rural landscapes within our nation’s cities for generations to come. The current trend in urban development illustrates the common American viewpoint that bigger is better. Land consumption has outpaced population growth in every major city in the U.S. in the last 50 years and this behavior will have disastrous social, environmental, and economic consequences. It is time to reverse the trend. I hope this thesis has illustrated one solution to this urgent problem, and I hope more ideas will be born in future generations which value quality of community with the same standard as quality of life. To future planners I close with Gandhi’s prophetic words:

"What you do in this world may seem insignificant. But it is not. Be the change you wish to see in the world.”
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