Minnesota Community Land Trust Analysis
Prepared for the Minnesota Housing Finance Agency

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October 2009
Revised: April 2010

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Executive Summary

A Community Land Trust is a framework for affordable housing where the land is removed from the purchase price to increase the affordability of the home. The CLT buys the land, while the homeowner only needs to buy the structure. In addition, long-term affordability is enhanced by restricting the amount of appreciation the homeowner can take out of the property at resale. The remaining appreciation is retained by the CLT and used to subsidize the next homeowner. (See Chart 1 on page 5)

Community Land Trusts are increasingly being used to provide affordable homeownership in Minnesota, growing from 3 to 8 organizations between 2001 and 2008. The eight organizations have provided about 600 affordable housing units from 1994 to 2009. In recent years, Minnesota Housing has received numerous applications for funding from Community Land Trusts (CLTs) for homeownership programs and more recently applications for multifamily housing. On average, 16.6% of the Community Revitalization (CRV) Challenge Funds were awarded to CLTs between 2002 and 2008, with an average allocation of $804,677 per funding cycle, totaling $10,460,803 over six years. In the CRV program, 50.7% of the CLT applications received their maximum funds requested, compared with 33.4% for all other developers receiving CRV Challenge Funds. Additionally, homeowners purchasing units within the CLTs often use Minnesota Housing's Community Activity Set-Aside (CASA) program for their mortgage and the Housing Assistance Fund (HAF) entry cost assistance program. In 2008, $4,444,696 in CASA and $159,600 in HAF were dispersed among 41 properties to CLT first-time homeowners.

Because of the growing role that CLTs play in providing affordable housing, Minnesota Housing hired a graduate student intern to examine the CLT framework, its application in Minnesota, and potential benefits and costs associated with funding CLTs. Specifically, Minnesota Housing wants the follow questions addressed:

- In what markets do CLTs work most effectively?
- What is the trade-off between wealth accumulation and long-term affordability?
- Can Minnesota Housing partially fund CLTs with a deferred loan?
- Compared with traditional funding options, what are the advantages and disadvantages to providing a large subsidy to individual homeowners through the CLT framework?

The assessment used three types of analysis: a review of the literature, the creation of a theoretical model to assess the performance of CLTs under various program structures and market conditions, and an analysis of administrative data on actual Minnesota CLT program operations. These analyses allowed Minnesota Housing to understand the actual application of CLTs in Minnesota and contrast it with the application in theory.

The CLT framework's appreciation restrictions and separation of land and structure raise the issue of who should receive what share of property appreciation at resale: the first homeowner, future homeowners, or the funders of the CLT unit. These tradeoffs are best illustrated through an example. Suppose a CLT home appreciated by $50,000 between initial purchase and resale.

What proportion of that appreciation should be captured by the initial low-income homeowner as wealth accumulation? What proportion should be retained by the CLT to lower the price of the home for the next homebuyer? What proportion should be captured by the CLT funders as a deferred loan repayment so that additional units can be funded in the future? There is a fixed pot of money. Shifting funds to one objective reduces funds for the other objectives.

In this report, we found that when CLT homeowners are only allowed to keep 25% of the structure's appreciation, wealth accumulation is limited, and the long-term affordability is not only maintained but increases. Even lower-income households are able to afford the home when it is resold. In contrast, when CLT homeowners are allowed to keep 50% of the structure appreciation, long-term affordability is maintained under most market conditions, and the amount of wealth accumulation is greater than provided under the 25% appreciation restriction.

The main body of the report analyses these and other tradeoffs and raises some key policy questions for Minnesota Housing:

- Should Minnesota Housing only fund CLT homes in specific housing markets, such as where land accounts for a large share of the overall property values, where land is expected to appreciate at a rapid rate, or for the purpose of targeted community stabilization in specific neighborhoods?
- For CLT homes that Minnesota Housing funds, should the agency require that a minimum percentage (such as 50%) of the structure appreciation go to the homeowner?
- Should Minnesota Housing fund CLTs with a mix of grants and deferred loans (rather than just grants) so that it can recapture some of its funds, especially for CLTs with appreciation restrictions that lead to increased affordability?

While this report cannot answer these questions, it provides a solid foundation of information and analysis for future discussion and research. Based on the information in this report, Minnesota Housing needs to have an internal and external discussion about the goals and objectives of the CLT homes it finances and how the agency's funds can be used most effectively.

The CLTs and their statewide association should be an integral part of this ongoing discussion. Their expertise, knowledge, and data were critical in putting this report together, and Minnesota Housing should continue to use their resources.

Background: The CLT Framework for Homeownership

CLTs have a complex organizational design and operate a complex housing model. Thus, it is necessary to explain how they operate. CLTs differ from other homeownership programs due to land tenure, deed and resale restrictions, and organizational structure. The land is owned and held in trust by the CLT with the homeowner separately owning the structure on the land. The homeowner signs a long term (often 99 years) renewable ground lease as a condition of the owning the structure. The provisions of the ground lease: (1) prohibit absentee ownership, (2) limit homeowners' equity gain by restricting their share of appreciation at resale, and (3) grant the CLT the first right of refusal to purchase the structure at resale or in foreclosure.

In addition to the terms associated with the long-term lease, the CLTs' differentiate themselves from conventional homeownership models through their organizational structure. CLTs are community based non-profit organizations that either exist as a standalone organization or an arm of existing organizations, such as a CDC, HRA, or affordable housing developer. A majority of CLTs operate under a tripartite board structure, where one third of the board seats are held by CLT homeowners, one third by other community members, and one third by other CLT stakeholders. (Letofsky 2002) The presence of the board ensures that decisions regarding the development of CLT properties are in the interest of invested parties, including the residents and community.

The organizational structure of CLTs, as well as the joint ownership of the property, allow CLTs to be actively involved in the homeownership of their residents, depending on how actively the organization pursues civic involvement. For example, they can intervene during periods of economic hardship through financial monitoring. Because CLTs own the land, the organization is allowed to monitor the performance of residents' mortgages and receive notification if the mortgagee becomes delinquent. By having advanced and timely notification of any delinquency, the CLT can seek financial assistance for the resident, conduct financial counseling, or mediate a resolution that would avoid foreclosure. Within Minnesota, the City of Lakes CLT in Minneapolis has been involved with its residents and has created a foreclosure prevention and assistance program.

Background: CLTs and Home Appreciation

Similar to other homeownership models of affordable housing, CLTs allow households to capture equity and potentially improve household wealth through property value appreciation. However, unlike conventional affordable homeownership models that rely on down payment or closing cost assistance, CLTs utilize a shared equity approach where re-sale price and appreciation restrictions exist to pass affordability onto the next homeowner. The CLT framework maintains affordability through two provisions on appreciation. First, in many cases, residents can only capture the appreciation of the structure; and second, the amount of appreciation is restricted. (See Chart 1. on page 5)

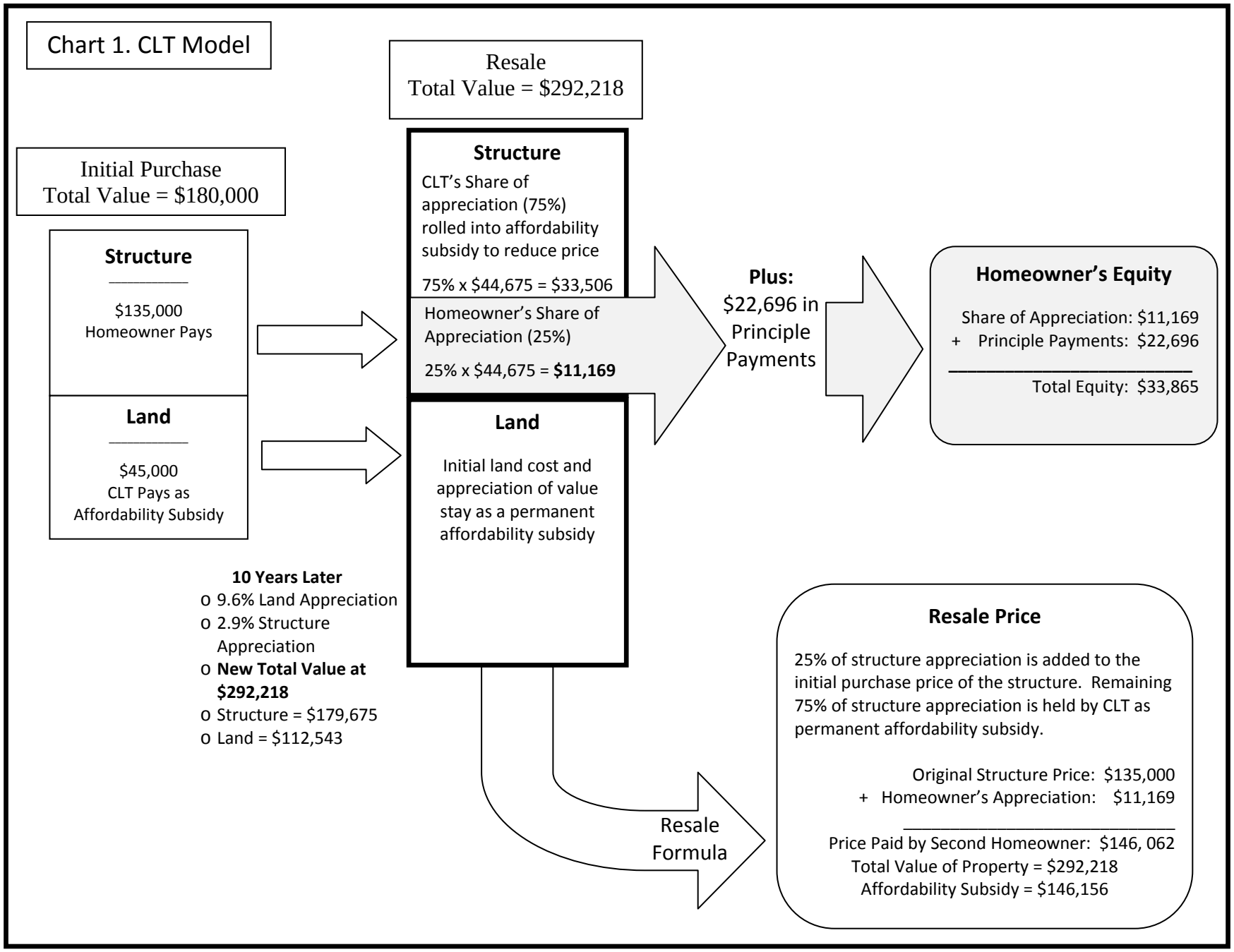


Chart 1. CLT Model
Resale
Total Value = $292,218
Initial Purchase
Total Value = $180,000
Structure
$135,000
Homeowner Pays
Land
$45,000
CLT Pays as
Affordability Subsidy
Structure
CLT's Share of appreciation (75%) rolled into affordability subsidy to reduce price
75% x $44,675 = $33,506
Homeowner's Share of Appreciation (25%)
25% x $44,675 = $11,169
Land
Initial land cost and appreciation of value stay as a permanent affordability subsidy
Plus:
$22,696 in Principle Payments
Homeowner's Equity
Share of Appreciation: $11,169
+ Principle Payments: $22,696
Total Equity: $33,865
10 Years Later
o 9.6% Land Appreciation
o 2.9% Structure Appreciation
o New Total Value at $292,218
o Structure = $179,675
o Land = $112,543
Resale Formula
Resale Price
25% of structure appreciation is added to the initial purchase price of the structure. Remaining 75% of structure appreciation is held by CLT as permanent affordability subsidy.
Original Structure Price: $135,000
+ Homeowner's Appreciation: $11,169
Price Paid by Second Homeowner: $146, 062
Total Value of Property = $292,218
Affordability Subsidy = $146,156

Within some CLTs, the homeowner is only allowed to receive appreciation on the structure at resale. The others allow the homeowner appreciation on the land and structure. As shown in Table 1, three-quarters of CLTs in Minnesota limit appreciation to the structure. Limiting the homeowner to the appreciation of the structure diminishes the potential for equity and wealth accumulation because of the difference in appreciation rates of the land and structure. Typically, land appreciates at a greater rate than the structure. Land is a fixed good with a fixed supply. Thus, its value (and appreciation) is highly sensitive to changes in demand.

Metropolitan areas with large amounts of growth (and increasing demand) experience escalating land values more than other regions. In contrast, structures are manufactured goods and can be duplicated. Thus the value (and appreciation) of structures is less sensitive to demand, and structures typically appreciate at a lower rate than land and can even depreciate as the structure ages. (Davis and Palumbo 2006, Davis et. all 2007)

Urban appreciation rates also differ on a neighborhood level. Neighborhoods with a high proportion of certain characteristics, such as high poverty or foreclosures, can have reduced (or negative) appreciation rates compared with alternative neighborhoods that have better socioeconomic or housing market characteristics. (Flippen 2004) The reduction of equity gained due to negative neighborhood characteristics can hinder low and moderate income households from achieving the wealth benefits of homeownership.

Table 1. Minnesota CLT Resale Restrictions

CLT	Homeowner's Share of Appreciation	Appreciation on Land and/or Structure?
City of Lakes CLT (Minneapolis)	25%	Land and Structure
Central Minnesota CLT	25%	Structure
Rhondo CLT (St. Paul)	25%	Structure
Carver County CLT	25%	Land and Structure
West Hennepin Area Housing Land Trust	35%	Structure
Two Rivers CLT (Washington County)	25%	Structure
First Homes CLT (Rochester)	50%	Structure
Northern Communities CLT (Duluth)	30%	Structure

The second equity provision is a restriction on the amount of appreciation gain the lessee can obtain at resale. This is calculated in a resale formula. The resale formula allows for the CLT to minimize the resale price for the subsequent buyers, and maintain affordability in the long-term for a target population. A variety of resale formulas exist across CLTs, depending on the goal of the CLT and target affordability gap. Common resale formulas include: (1) a specific resale price that is set at the time of the original purchase, (2) restrictions on the resale price so that the home is affordable at the time of resale to a household with a specified income level, (3) the homeowner receiving a fixed proportion of the appreciation, and (4). shared equity loans. (Jacobis, 2007) In a 2002 survey of 12 CLTs across the nation, 9 variations of resale formulas existed targeting similar populations. (Girga et al. 2002) A shown in Table 1, all CLTs in Minnesota use a version of the fixed proportion of appreciation restriction. First Homes in

Rochester, which uses the CLT model as a means to transition low-moderate income families into conventional homeownership caps the share of structure appreciation at 50%. In contrast, Northern Community Land Trust in Duluth, whose goal is long term affordability for the homeowner, restricts equity to 30% of the appreciation of the structure. (See Table 1)

Research Question 1: In what type of housing markets is the CLT model most appropriate?

Key Findings:

- **CLTs are commonly used in appreciating or booming housing markets, where the affordability of market rate housing, especially for low to moderate income households is limited.**
- **CLTs have the greatest financial impact when land values: (1) are high, (2) represent a large share of a properties total value, and (3) appreciate at a rapid rate.**
- **There are differences between theory and practice in how land and structure are valued, which can affect the performance of CLTs and homeowner equity accumulation.**

Housing Market Effects on CLTs

Housing market conditions can affect how much equity is split between a homeowner and the CLT under a fixed proportion of appreciation restriction. To assess these market effects, we created a theoretical model that examines how CLTs would operate under various scenarios and examined administrative data from Minnesota CLTs that show how CLTs actually operated.

Because the CLT buys the land, the initial affordability subsidy for a CLT home is linked to the cost of the land. Consequently, the price of land and the regional real estate market can dramatically affect the size of the affordability subsidy. In Minnesota, CLT operate in three distinct real estate markets: the Twin Cities, Rochester and Duluth. CLT units in the Twin Cities metro area have a combined median land value of $60,000 (representing 31.1% of the total fee simple value) compared with a median land value of $21,106.80 (15% of total value) in Rochester and $12,000 (11.4% of total value) in Duluth. (See Table 2)

Table 2. MN CLT Land Values	Median Land Value	Percentage Land is of Total Value
West Hennepin CLT, Hennepin County	$71,500.00	37%
Two Rivers CLT, Washington County	$55,000.00	28.6%
City of Lakes CLT, Minneapolis	$40,000.00	23%
First Homes CLT, Rochester	$21,206.80	15%
Northern Communities CLT, Duluth	$12,000.00	11.4%

The values of CLT land as a percentage of the properties total value is consistent with other properties in each market. The Minnesota Department of Revenue tracks land and structure values for all residential properties in Minnesota. (See Table 3)

Table 3. Department of Revenue - Minnesota Land Values by Market	**Median Land Value**	**Percentage Land is of Total Value**
West Hennepin (Minnetonka, MN)	$150,000.00	40.09%
Washington County	$80,900.00	32.26%
Minneapolis	$43,100.00	24.16%
Rochester	$21,000.00	14.78%
Duluth	$10,000.00	15.54%

Housing markets with minimal land costs may need additional subsidy to fill an affordability gap for a target population. Although the CLT framework provides affordability subsidy through the removal of the land, some CLT s have provided additional subsidy to reduce the price of the structure for the first homebuyer. On paper, the CLT will add the additional subsidy to the cost of the land, artificially increasing the value of the land which reduces the selling price of the structure.

In theory, differences in the economic characteristics of structures and land should result in different appreciation rates. Structures, as a manufactured good, have a significantly smaller (or negative) appreciation rate compared with land, which will appreciate more closely with the demand of a geographic area. An analysis of land and structure prices in the United States shows that the price of land is more than three times as volatile as the price of structures. (Davis and Heathcote, P. 5) Land prices will appreciate in fast growing areas with a limited supply of land, such as the Twin Cities. The difference in appreciation rates for structure and land can have a disadvantageous effect for current CLT homeowners because in theory they do not capture appreciation on the land as it becomes more desirable. The CLTs keep the land and its appreciation, which is passed onto future CLT homeowners in a resale price that is less than it would have been. For most Minnesota CLTs, the homeowner equity is limited to structure appreciation, which is less than land appreciation.

Appraisal practices have a significant impact on CLT operations. Current appraisal practices have difficulty separating the value (and appreciation) of land from the structure. Within the housing market, land and the structure are treated as a single bundle instead of treated as separate goods, regardless of differing appreciation rates. (Davis and Heathcote, 2007) Thus appraisers often apply the same appreciation rate to the land and structure. The differentiation between current and theoretical appraisal practice for the valuation of land and structure, raises concerns about CLT transactions, although it currently does not jeopardize the CLT model. A reconciliation of actual appraisal practices with the theoretical measurement of land and structure value impacts the potential appreciation gained by CLT homeowners. If a CLT homeowner only receives a portion of the structure's appreciation and none of the land appreciation, his or her equity from appreciation will be very different depending on how the value of the land and structure are appraised. For example, if a home's overall value

appreciates at 5% (with land appreciation at 9% and the structure at 2%), the homeowner's equity will be much lower if the land and structure are appraised separately (with the structure appreciating at 2%) than if the land and structure are appraised together (with the structure appreciating at 5%). In fact, the differential is about $7,000 if the homeowner received 25% of the structure appreciation after 10 years of homeownership (using assumptions as outlined on page 12)

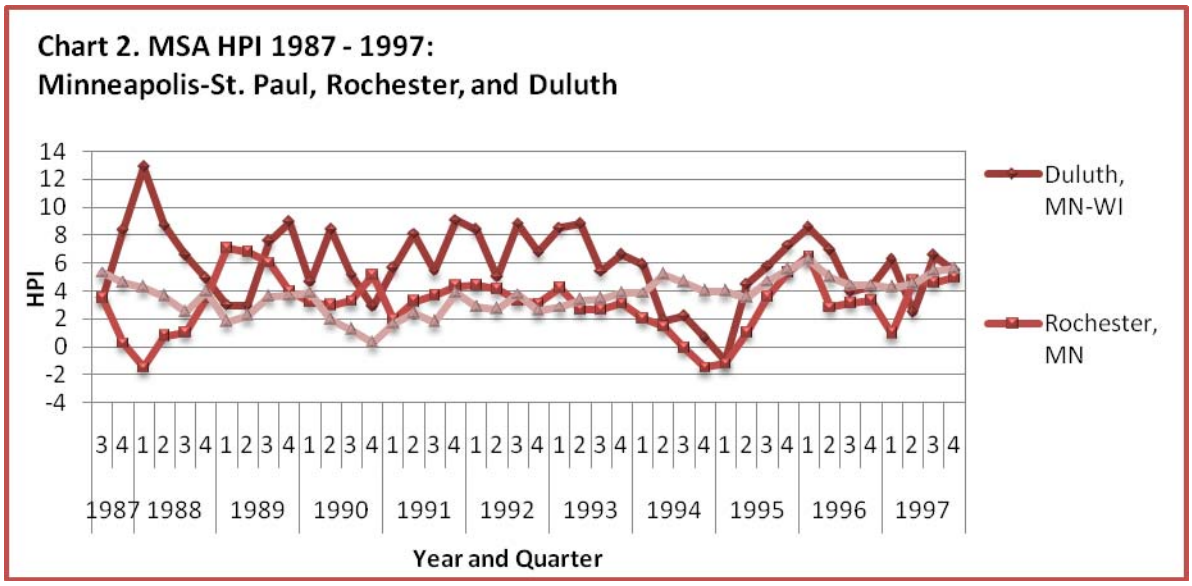
An additional concern about the appraisal and valuation of CLT units is the unique classification of appraisals conducted for CLTs called "leasehold value appraisal". Because CLTs separate the ownership of land and structure, Fannie Mae requires that the loan-to-value ratio for mortgages for CLT structures to be calculated on the leasehold value, not the fee simple value (standard appraisal value), for the loan to be sold on the secondary market. In concept, the leasehold value of the structure is the value of leasehold property (CLT structure) to loan investors, if the property were to be recaptured and held on the conventional market with a leasehold restriction on the structure.[1] However, Fannie Mae's formula for calculating the leasehold value has received criticism because it appears to overestimate the market value of the unit. In less active housing markets with large amounts of land and/or reduced property values for conventional housing, leasehold properties may be less desirable, increasing the difference in the appraised value between a leasehold unit and conventional unit. Currently, of the 430 Minnesota CLT units, where the leasehold value and the fee-simple value were provided by the Minnesota CLT Coalition, the average difference between the fee-simple value of the land and structure and the leasehold value of the land and structure is only $4,062.

Market Volatility

Because the majority of CLTs in Minnesota operate in three MSAs, Minneapolis-St. Paul-Bloomington, Duluth, and Rochester, with different characteristics, an analysis of the effect of market conditions on the CLT framework should examine the three separate housing markets. We examined the housing markets for the three MSAs using the Housing Price Index (HPI) as recorded by the Federal Housing Finance Agency. The HPI is a weighted, repeat-sales index that measures average price changes for all mortgages purchased by Fannie Mae and Freddie Mac. The index provides the percent change in housing prices for multiple geographic areas.[2] We examined data for each MSA's housing market from 1987 (the first year where data was collected from all three MSAs) to 1997 (the start of the late 1990s and early 2000s housing price boom). (Davis and Heathcote, 2007) Even though this period excludes the housing boom and bust of the last 12 years, there is still housing price volatility in the three markets.

[1] For more information on the leasehold value calculation, see the Fannie Mae Selling Guide at https://www.efanniemae.com/sf/guides/ssg/sg/pdf/sg0309.pdf

[2] For more information on the Housing Price Index, see *OFHEO House Price Indexes: HPI Technical Description*, at http://www.fhfa.gov/webfiles/896/hpi_tech.pdf.



The volatility of the MSA housing markets is reflected in the range and fluctuation of the HPI. (See Chart 2) The Duluth housing market has experienced the most volatility in price changes under the normal housing market from 1987 to 1997, yet still maintained an average change of 5.64%. The Minneapolis-St. Paul- Bloomington MSA, and the Rochester MSA, had much more modest HPIs, with an average of 3.57%, and 3.12% respectively (See Table 4). After 1997, the housing market became even more volatile. Table 5 shows the average annual percentage change in housing prices during three distinct periods: (1) the normal market of 1987 to 1997, (2) the boom market of 1997 to 2007, and (3) the bust market from 2007 to 2009. We used this data to develop the various scenarios outlined in the next section of the report.

Table 4. CLT Region Percent Change in Housing Prices 1987-1997[3]	Average Annual Percent Change	Minimum Percent Change	Maximum Percent Change
Minneapolis-St. Paul-Bloomington, MN – WI	3.57	.29	6.27
Duluth, MN – WI	5.64	-1.04	12.88
Rochester, MN	3.12	-1.5	7.07

Table 5. CLT Region Average Percent Change in Housing Prices: 1987-1997, 1998 – 2006, 2007 - 2009	Average Annual Percent Change: 1987 - 1997	Average Annual Percent Change: 1998 - 2006	Average Annual Percent Change: 2007 - 2009
Minneapolis-St. Paul-Bloomington, MN – WI	3.57	8.32	-2.76
Duluth, MN – WI	5.64	8.02	1.88
Rochester, MN	3.12	5.87	.39

[3] Average Annual Percent Change was calculated using the average of the 2nd and 3rd quarter annual growth from the Housing Price Index, calculated by the Federal Housing Finance Agency. We used the 2nd and 3rd quarter figure because most sales occur in these two quarters. The 2nd quarter figure shows the price increase from the 2nd quarter of one year to the 2nd quarter of the next.

CLTs are financially most effective were land is expensive and/or appreciating rapidly. In markets that are not financially conducive to the CLT framework, CLTs should provide social or community benefits. The CLTs involvement with their homeowners, from the homebuyer education courses through the residency of the home and eventual resale, offers continual consultative support that has the potential to increase the long-term success of a CLT homeowner. Additionally, through increasing access to homeownership for low income households, CLTs provide increased household stability that positively affects the homeowner, their family, and the community. Housing stability can affect employment stability (people can focus on work rather than searching for affordable housing) and school performance (children's' educational experience is not disrupted).

Markets and CLTs

CLTs are financially most effective were land is expensive and/or appreciating rapidly. When land is a large share of a property's total value, CLT's provide a proportionally large affordability subsidy. When property values, especially land, are appreciating rapidly, CLTs are effective in preserving long-term affordability by taking land and its appreciation out of the purchase price. In fact, according to the Center for Housing Policy "shared equity approaches are most effective in (a) markets in which home prices are rising faster than incomes, or are expected to do so; and (b) neighborhoods near public transit and job centers, or other areas likely to experience gentrification pressure, where the community seeks to preserve homeownership opportunities for families with a mix of incomes."[4] For example, CLTs could help maintain the affordability of housing along University Avenue when the Central Corridor light rail line is installed.

CLTs can also provide social and community benefits. CLTs often provide continual support to their homeowners, which can range from homebuyer education courses to financial and foreclosure counseling. By supporting successful homeownership for low-income families that may have otherwise had to remain in rental housing, CLTs provide housing stability. According to the literature, homeownership and housing stability supports employment stability, school performance, civic engagement, and positive youth behaviors. (Saunders 1990, Retsinas and Belsky 2002)

[4] http://www.housingpolicy.org/toolbox/strategy/policies/shared_equity.html

Research Question 2: What is the trade-off between household wealth accumulation vs. long-term affordability?

Key Findings:

- **Wealth accumulation and long-term affordability have an inverse relationship.**
- **Increasing the share of appreciation gained for the homeowner will decrease the affordability of the unit at resale for the second homeowner.**
- **Under a wide range of market conditions, a 25% restriction on structure appreciation, not only maintains the affordability over time, it also increases it. However, wealth accumulation is limited.**

CLTs and Wealth Accumulation

Within the spectrum of long-term affordability (subsidy retention) versus wealth accumulation, CLTs place greater weight on subsidy retention and long-term affordability.[5] The resale formulas used by CLTs lower the price of the home for the next homeowner, but restrict the growth in household wealth of the first homeowner. Currently, as shown earlier in Table 1, three-quarters of the CLTs in Minnesota only allow homeowners to earn appreciation on the structure. Appreciation on the land stays with the property as permanent subsidy for the next homeowner. Furthermore, half of those CLTs also restrict the homeowner's share of the structure appreciation to 25%. The other 75% of the structure appreciation stays with the property as permanent subsidy for the next homeowner. Two Minnesota CLTs allow homeowners to earn appreciation on both the land and structure, and both restrict the homeowner's share of the land and structure appreciation to 25%. The allowance of either a greater percentage of the structure appreciation to be awarded to the homeowner or the appreciation of both the land and structure results in greater household wealth during an appreciating housing market. The gain in household wealth may allow the homeowner to secure housing in market rate homeownership. However, at resale, the concession of additional appreciation to the homeowner reduces the ability of the CLT to serve populations with particular low incomes when the next homeowner moves in.

To examine the issue of wealth accumulation versus long-term affordability, we first examined administrative data on actual Minnesota CLT operations. However, because of the limited amount of data on existing CLT resales (70 resales) and the short period of time between homeowners (3.1 years), the results were not very meaningful.

[5] Minnesota statute 462A.06, which details funding priorities for Challenge Funds, stipulates that long-term affordability is a priority for CRV funds.

Table 6. CLT Theoretical Model Assumptions[6]	
Total Appraised Value	$180,000
Land	$45,000
Structure	$135,000
Land Appreciation Rate	*(See Table 7)*
Structure Appreciation Rate	*(See Table 7)*
CLT Affordability Gap Subsidy	$45,000
Mortgage Under CLT Options	$130,305
Down Payment Assistance Under Alternative Option	$5,000
Mortgage Interest Rate	5.75%
Annual Property Tax (% of Home Value)	1.25%
Annual Mortgage Insurance (% of Mortgage)	1.00%
Annual Hazard Insurance	$450
Annual Home Maintenance Costs (% of Home Value)	1.00%
Annual Rate of Inflation	3.00%
Discount rate for Net Present Value Calculations	3.00%
Closing Costs	$3,000
Tenure in Home in Years[7]	10
Income of First Homeowner[8]	$44,452 (55% Twin Cities MFI)
Annual Income Inflation Rate	3.00%
Monthly Rent	$1,000
Mortgage Principle, Interest, Taxes, Insurance, and maintenance/repairs	$1145.25
Monthly Long-Term Lease Fee	$15

To fill this analysis gap, we calculated the wealth accumulation that would occur under various program structures and market conditions using a theoretical model (referred to as the CLT Model). As shown in the Table 6, the factors included in the CLT Model were the cost of CLT homeownership, structure appreciation restrictions set at 25%, 50% and 100%, and various appreciation rates for the structure and land (See Table 7), and a comparison with down payment assistance programs. The term of homeownership examined was ten years. The model uses a net present value calculation of monthly cash flows for the hypothetical homeowner, over the course of the 10 years, adjusted by a 3% discount rate. The income of the initial homeowner is 55% of the Twin Cities Metro Area's median family income.[9]

[6] Assumptions originate from a CLT application for CRV funding

[7] A length of occupancy for CLT homeowners at 10 years was used because it is estimated that the average CLT homeowner will stay in their home slightly longer than the conventional homeowner (who has and average occupancy of 7 years). The period of 10 years was also used in similar models examining wealth accumulation under the CLT framework. (Jacobus, 2006). Of the 70 CLT resales that have occurred in Minnesota, the average tenure is only 3.1 years. However, with CLTs being new in Minnesota, the 70 resales only capture the homes that have turned over quickly. The longer tenure homeowners are still in their homes.

[8] Income of home owner is the annual total minimum income for the PITI to be 30% of monthly income

[9] Income level determined by calculating the annual income where 30% of the households monthly income is equal to the PITI

The model has three cash flow components: (1) initial closing costs, (2) the cost difference between owning versus renting, and (3) equity building (paying off principal and value appreciation), which is captured at resale. To reflect the full benefits of CLTs, we included in the model the costs of owning versus renting. In the model, monthly homeownership payments are initially higher than what the household would have otherwise paid in rent. However, as rent rises with inflation over time and monthly homeownership payments remain relatively stable, homeownership becomes the less expensive option, which builds wealth for the homeowner. Thus, the homeowner builds wealth three ways: (1) value appreciation, (2) paying off principle, and (3) reducing housing costs over the long run by owning rather than renting. A net present value calculation was conducted to capture and aggregate the cash flows over time.

Table 7. Appreciation Rates for CLT Model Assumptions

	Split Appreciation Rates		Same Appreciation Rates	
	Structure	**Land**	**Structure**	**Land**
Depreciating	-2.09%	-21.0%	-4.50%	-4.50%
Static (Same as Inflation)	1.39%	6.81%	3.00%	3.00%
Appreciating (Normal)	2.90%	9.60%	5.00%	5.00%
Boom	4.18%	17.35%	9.00%	9.00%

Using the assumption that property appraisers measure appreciation for land and structure as separate goods, various market conditions impact the household wealth accumulation differently under the three CLT structures. As shown in Table 8, as the homeowner's share of appreciation decreases, the amount of wealth accumulation decreases from $48,775 at 100% of structure appreciation, to $23,844 at 25% of structure appreciation in a normal housing market. Even with a depreciating market, CLT homeowners can gain wealth. The principle payments and reduced housing costs over time out weigh the value depreciation.

Table 8. CLT Wealth Accumulation Model: Appreciation Rate Split

	Overall Appreciation Rate	Structure Appreciation Rate	Land Appreciation Rate	25% Appreciation Allocation	50% Appreciation Allocation	100% Appreciation Allocation
Depreciating Market	-4.5%	-2.09%	-21.0%	$13,446	$8,668	-$887
Static Market (Same as Inflation)	3.0%	1.39%	6.81%	$20,665	$24,382	$31,817
Appreciating Market (Normal)	5.0%	2.90%	9.60%	$23,844	$40,176	$48,775
Boom Market	9.0%	4.18%	17.35%	$26,891	$39,585	$64,974

To compare with the CLT model, a similar analysis was conducted for down payment assistance, a form of affordability gap assistance that Minnesota Housing provides through its Mortgage Revenue Bond Program. In appreciating markets, down payment assistance programs produce substantial amounts of wealth accumulation. Under a down payment assistance program, the homeowner is able to gain increased wealth from the higher appreciation rate of the land, as

well as the appreciation from the structure. The differences in amounts of down payment offered have minimal impact on the amount of wealth accumulated in all markets. (See Table 9)

Table 9. Down Payment Assistance Wealth Accumulation Model: Appreciation Rate Split						
	Overall Appreciation	**Structure Appreciation**	**Land Appreciation**	**$3,500 DPA**	**$5,000 DPA**	**$10,000 DPA**
Depreciating Market	-4.5%	-2.09%	-21.0%	-$61,160	-$61,893	-$61,968
Static Market (Same as Inflation)	3.0%	1.39%	6.81%	$34,657	$33,925	$35,477
Appreciating Market (Normal)	5.0%	2.90%	9.60%	$71,194	$70,462	$71,888
Boom Market	9.0%	4.18%	17.35%	$165,942	$165,210	$166,507

Additionally, as the proportion of appreciation received by the homeowner increases, changes in market conditions have a greater impact on wealth accumulation. The down payment assistance programs (under which homeowners receive all the appreciation or depreciation) have the greatest variation in wealth accumulation. In contrast, the 25% appreciation allocation (the smallest appreciation for the homeowner) has the smallest variation in wealth accumulation.

Because of the complexity of measuring the value of land and structure separately, appraisers often apply the same appreciation rate to both. Using the assumption of equal appreciation rates for the structure and land, the amount of potential wealth gained during appreciating markets increases for CLT homeowners, as well as the risk for loss of wealth during depreciating markets. This occurs because some of the land appreciation (or depreciation) is attributed to the structure. Within the depreciating market, CLTs insulate homeowners from wealth loss under the split land/structure; however when land and structure have the same appreciation rate, the loss insulation is reduced, and losses occur under the 100% appreciation restriction. (See Table 10)

Table 10. CLT Wealth Accumulation Model: Appreciation Rate Same						
	Overall Appreciation	**Structure Appreciation**	**Land Appreciation**	**25% Appreciation Allocation**	**50% Appreciation Allocation**	**100% Appreciation Allocation**
Depreciating Market	-4.5%	-4.5%	-4.5%	$10,528	$1,262	-$17,272
Static Market (Same as Inflation)	3.0%	3.0%	3.0%	$24,070	$32,707	$49,981
Appreciating Market (Normal)	5.0%	5.0%	5.0%	$29,051	$54,662	$76,432
Boom Market	9.0%	9.0%	9.0%	$42,065	$76,404	$145,082

Other CLT Wealth Accumulation Issues

CLT officials in Minnesota have expressed concerns that capitalizing on wealth accumulation can be difficult with CLT homeownership. Home equity loans or lines of credit are difficult to obtain from banks due to the separation of the land and structure. With limited access to equity loans and lines of credit, the liquidity of homeowners' accumulated equity may be significantly reduced, which could impair the use of their household wealth without selling their home.

CLT's Preservation of Long-Term Affordability

Although the CLT framework limits household wealth accumulation, it creates permanent affordability subsidy that can be transferred to subsequent homeowners. The sustainability of affordability subsidy in the CLT model can be examined by assessing the initial subsidy and any additional subsidy needed to achieve a targeted income at resale. Administrative data from CLTs indicate that additional affordability subsidy is provided when the CLTs home is resold, conflicting with the model as described in the literature and the results of the CLT theoretical model. For the 70 resales of Minnesota CLT properties, the second homeowner received a median affordability infusion of $5,241.[10] In theory, CLTs are supposed to maintain the initial affordability gap subsidy and not require additional subsidy for future homeowners.

Administrative data from CLTs suggest that they are maintaining long-term affordability. As Table 11 shows, the second CLT homeowners have a similar income as a percentage of area median income (AMI) as the first homeowners had, 43.97% compared with 44.81%.[11] In addition, they are spending a similar percentage of their income on housing. Because the average time between original purchase and resale is only 3.1 years, it is hard to draw many conclusions from this data. In addition, about half of the sales occurred during the housing boom of the early 2000s, and the other half occurred during the housing bust of the late 2000s.

Table 11. Minnesota CLT Median Income as Percentage of AMI and Housing to Income Ratio

	1st Homeowner Income as a Percentage of AMI	2nd Homeowner Income as a Percentage of AMI	1st Homeowner Housing Cost to Income Ratio	2nd Homeowner Housing Cost to Income Ratio	Number of Resales
CLTs State of MN	43.97%	44.81%	27.94%	29.58%	70
NCCLT	48.20%	46.79%	26.85%	27.93%	37
First Homes	37.58%	42.99%	28.81%	29.62%	29
CLCLT	38.57%	30.70%	33.68%	34.31%	3
Two Rivers	53.28%	NA	26.83%	NA	0
WHAHLT	52.63%	57.64%	26.24%	30.88%	1

[10] 43 of the 70 resales received a positive affordability subsidy infusion. The median for these 43 resales was $13,141. We calculated the additional subsidy by taking the difference between the resale price based on the resale formula, and the price actually paid by the second homeowner.

[11] Income as a percentage of area median income adjusted for year of sale, and city that the sale was located in.

Our CLT Theoretical Model that forecasts future resale prices and homebuyer incomes indicates that additional affordability subsidy is not needed. Although different appreciation rates for land and structure create slightly different results than using the same rate for land and structure, both models indicate that even lower income households can afford a CLT home at resale under most market conditions when the initial homeowner keeps 25% of the structure appreciation. As shown in Table 12, while a household with an income that is 55% of the area median income can initially afford the home, households with incomes between 36% and 54% of the area median income (AMI) can afford it at resale. If the appreciation is split 50/50, the projected income of the second homeowner is maintained in all markets, excluding a boom market when the same appreciation rate is applied to land and structure. In contrast, a $5,000 down payment assistance program leads to a higher income for the second homebuyer under three out of four market conditions. In a market with normal or larger appreciation, the down payment assistance home would no longer be affordable to a moderate income family (80% AMI).

Across down payment amounts, there is little effect on the income of the second homeowner as a percentage of AMI from $3,500 to $10,000 for all market conditions. (See Table 13) Additionally, some of the non-CLT CRV projects have substantial affordability gap financed ($20,000) by Minnesota Housing, typically as a deferred loan. The additional affordability provided by CRV would have a similar effect as the increase in down payment, with a minimal decease in the second homeowners' income as a percent of AMI.

Table 12. CLT Model (Split Appreciation): Income of Second Homeowner as a percentage of AMI (First Homeowner at 55% AMI)

	Overall Appreciation	Structure Appreciation	Land Appreciation	25% Appreciation Allocation	50% Appreciation Allocation	100% Appreciation Allocation
Depreciating Market	-4.5%	-2.09%	-21.0%	36.18%	34.66%	31.62%
Static Market (Same as Inflation)	3.0%	1.39%	6.81%	43.08%	44.98%	47.35%
Appreciating Market (Normal)	5.0%	2.90%	9.60%	47.19%	49.83%	55.12%
Boom Market	9.0%	4.18%	17.35%	53.71%	57.75%	65.83%

Table 13. Down Payment Assistance (Split Appreciation): Income of Second Homeowner as a percentage of AMI (First Homeowner at 55% AMI)

	Overall Appreciation	Structure Appreciation	Land Appreciation	$3,500 DPA	$5,000 DPA	$10,000 DPA
Depreciating Market	-4.5%	-2.09%	-21.0%	41.19%	41.19%	39.10%
Static Market (Same as Inflation)	3.0%	1.39%	6.81%	67.93%	67.93%	67.55%
Appreciating Market (Normal)	5.0%	2.90%	9.60%	81.77%	81.77%	81.82%
Boom Market	9.0%	4.18%	17.35%	118.61%	118.61%	119.81%

Table 14. CLT Model (Same Appreciation): Income of Second Homeowner as a percentage of AMI (First Homeowner at 55% AMI)						
	Overall Appreciation	**Structure Appreciation**	**Land Appreciation**	**25% Appreciation Allocation**	**50% Appreciation Allocation**	**100% Appreciation Allocation**
Depreciating Market	-4.5%	-4.5%	-4.5%	34.75%	31.80%	26.90%
Static Market (Same as Inflation)	3.0%	3.0%	3.0%	45.36%	48.11%	53.61%
Appreciating Market (Normal)	5.0%	5.0%	5.0%	49.61%	54.63%	64.68%
Boom Market	9.0%	9.0%	9.0%	60.60%	71.53%	93.38%

Subsidy sustainability occurs when the price of the unit remains affordable over time for the same income group without additional affordability gap subsidy being added. Under most market conditions, the income (as a percentage of AMI) needed to purchase a CLT home, with an appreciation restriction of 50% or less, remains constant or decreases. This allows the unit to remain affordable with no additional subsidy. However, this conflicts with the practice of CLTs in Minnesota seeking additional affordability gap subsidy at resale. Although there is little evidence that the funding for the additional affordability gap subsidy comes from the Minnesota Housing.

The combination of our wealth accumulation and long-term affordability analysis raises questions about the ideal appreciation restriction. A 25% restriction on the structure limits wealth accumulation, and the home becomes affordable to even lower income households. In contrast, 50% restriction not only allows for more wealth accumulation but also maintains long term affordability under most market conditions.

Research Question 3: Can Minnesota Housing partially fund CLTs with a deferred loan instead of grants?

Key Findings:

- **Current CLT models exist where the funders or investors are able to recapture subsidy at resale through a loan repayment.**
- **With the 25% appreciation restriction, the increase in the affordability of a CLT home provides an opportunity for a portion of the subsidy to be repaid without the home losing affordability.**

Using a CLT to provide affordable housing allows for a permanent affordability subsidy to be passed from the original homeowner to every subsequent purchaser of the structure. To finance this type of subsidy, CLTs usually receive a grant that does not need to be repaid. However, Minnesota Housing's supply of grant funds is limited, and its supply of loan funds is more substantial. A key policy question then becomes: Can a portion of a CLTs subsidy be a loan rather than a grant?

The analysis from the CLT Theoretical Model has shown that under all but one of the assessed market conditions, the use of a 25% appreciation restriction in the resale formula results in an increase in the affordability of the unit at 10 years, without additional subsidy. An even lower-income household can buy the home after 10 years. Thus, at the time of resale, a portion of the equity could be captured and returned to Minnesota Housing as a loan repayment without compromising long-term affordability. For example, in a normal appreciating market, with an appreciation restriction of 25% for the homeowner, affordability of the unit will be maintained at resale even if Minnesota Housing recaptures 25% of appreciation through a deferred loan repayment. (See Tables 15 and 16) At initial sale, the homeowners income is 55% of the AMI, while at resale, it would be between 50% and 55% even with the recapture provision. Long-term affordability would still be maintained

Table 15. 25% Appreciation Restriction, 25% Appreciation Recapture, $45,000 initial subsidy, 55% AMI First Homeowner, Normal Market (Split Appreciation for Land and Structure)

	Percentage of Appreciation	Appreciation Captured	Income of Second Homeowner as a percent of AMI
Homeowner	25%	$11,169	49.83%
Minnesota Housing	25%	$11,169	
Remain in Home	50%	$22,338	

Table 16. 25% Appreciation Restriction, 25% Appreciation Recapture $45,000 initial subsidy, Normal Market (Same Appreciation for Land and Structure)

	Percentage of Appreciation	Appreciation Captured	Income of Second Homeowner as a percent of AMI
Homeowner	25%	$21,225	54.63%
Minnesota Housing	25%	$21,225	
Remain in Home	50%	$42,450	

If provisions for a loan repayment and subsidy recapture are to be considered, Minnesota Housing needs to weigh issues concerning sustained versus increased affordability, wealth accumulation, and the proportion of subsidy to be recovered. At the time of resale, there is a fixed amount of appreciation to: (1) distribute to the initial homeowner as wealth accumulation, (2) retain in the home as permanent affordability subsidy, and (3) return to a lender as a loan repayment. By partially funding a CLT through a loan rather than a grant, Minnesota Housing would be decreasing the initial homeowner's wealth accumulation and/or decreasing the level of permanent affordability gap staying with the property.

Like all affordable housing models, the CLT framework is susceptible to changes in the local housing market. Changes in market conditions and appreciation can affect the affordability of the unit at resale, regardless of the use of an appreciation restriction. Under all but one of the market conditions analyzed, the use of a 25% appreciation restriction at resale allows for an increase in the affordability of the unit, allowing even lower income households to buy the home. Depending on the market condition, instituting a subsidy recapture provision would allow Minnesota Housing to recapture part of its initial investment for future allocation without decreasing the initial affordability of the unit. Similar to a shared appreciation loan, Minnesota Housing would receive a percentage of the appreciation gained at resale.

Research Question 4: What are the advantages and disadvantages to providing a large subsidy to individual households?

Key Findings:

- **There is a significant trade-off in the number of units that can be funded between CLTs and down payment assistance programs.**

In most markets, the affordability subsidy needed by CLTs to serve their target market is substantially larger than down payment and closing cost assistance programs offered by Minnesota Housing. The increased affordability subsidies provided by CLTs allow them to increase the affordability of homes in housing markets that otherwise would be unobtainable to low income households. However, the size of the subsidy and the lack of a subsidy recapture provision limits the number of households that would receive state subsidized affordability assistance.

Table 17. Households Served per $1 million of Minnesota Housing funding

	Affordability Assistance per Unit	Units Assisted per $1 million of Funding
CLT Median	$15,450	64.72
CRV 2008 Median	$13,799	72.47
Down Payment 1	$3,000	333.33
Down Payment 2	$5,000	200
Down Payment 3	$10,000	100

With $1 million, Minnesota Housing would be able to finance the affordability subsidy for 64.72 CLT homes. Assuming the CLT would be able to maintain the affordability of the unit for all future resales, and applying the median length of time in a CLT unit is 3.1 years (MN CLT median), the total number of households assisted over a 50 year period per $1 million of initial investment would be approximately 1,043. Although the median per unit Community Revitalization (CRV) Challenge Funds allocation for CLTs is $15,450, 20% of CLT allocations exceed $30,000 per unit. In addition, the current median is heavily impacted by the large number of CLT homes in Duluth. As more CLT homes are constructed in the Twin Cities Metropolitan Area, the per unit affordability subsidy will likely increase. The cost of land in the Twin Cities metropolitan area for CLTs has been 3.62 times more than CLT land in Greater Minnesota. (See Table 2)

The smaller subsidy that Minnesota Housing provides through its closing cost assistance programs (HAF and Home Help) allows for a greater number of households to be served per initial investment, but with a smaller impact on the affordability gap of the unit, which limits Minnesota Housing's ability to serve lower income households. With $1 million, Minnesota Housing could assist 135 additional homebuyers with $ 5,000 of down payment assistance rather than $15,450 of CLT assistance. (See Table 17) Additionally, because Minnesota Housing issues down payment and closing cost assistance as a deferred loan, the affordability subsidy does not stay with the unit at resale, but is collected by Minnesota Housing to be reallocated to

another homebuyer. However, due to inflationary pressures, the value of the initial $5,000 would decrease over time. After 50 years, the value of the recaptured down payment assistance would equal approximately 22% of its original value, adjusted for an inflation rate of 3%, either reducing the number of households served, or the amount of assistance Minnesota would be able to provide. Total over 50 years and assumer a similar length of residency as the CLTs (3 years), a $5,000 down payment assistance program would provide affordability assistance to 1,805 households per $1 million of original investment.

Conclusion:

This report has raised several key policy questions

- Should Minnesota Housing only fund CLT homes in specific housing markets, such as markets where land accounts for a large share of the overall property value, where land is expected to appreciate at a rapid rate, or for the purpose of targeted community stabilization in specific neighborhoods?
- For the CLT homes that Minnesota Housing funds, should the agency require a minimum percentage (such as 50%) of the structure appreciation go to the homeowner?
- Should Minnesota Housing fund CLTs with a mix of grants and deferred loans (rather than just grants) so that it can recapture some of its funding, especially for CLTs with appreciation restrictions that lead to increased affordability?
- Why are CLTs injecting additional affordability subsidy into a CLT home at resale? Why are the initial subsidy provisions inadequate?

While the report cannot answer these questions, it provides a solid foundation of information and analysis for future discussions and research. Based on the information in this report, Minnesota Housing needs to have internal and external discussions about the goals and objectives of the CLT homes it finances and how the agency's funds can be used most effectively.

Appendix A: Community Land Trusts and Multifamily Housing

Although most CLT literature focuses on single family homeownership, CLTs are potentially an important multi-family program tool for very-low income populations that are not eligible for homeownership. Potential benefits are long-term affordability and housing stock retention, community investment, and neighborhood stabilization. However, to be successful, the CLT must address concerns over property management capacity and subsidy efficiency.

Neighborhood Stabilization

By having an affordable housing mission, and non-profit status, CLTs are able to gain access to a variety of rehabilitation funds for affordable housing. Furthermore, unlike some private gentrification programs, the CLTs maintain unit affordability for low-income and very-low income populations. Affordability is sustained through the lease agreement and deed restrictions as values and housing costs increase in the area of redevelopment. A successful example is the Community Land Trust of Cape Ann in Gloucester Massachusetts.

Subsidy Diversification and Community Investment

The ability of CLTs to provide a variety of units within a structure (rental units, co-op housing, and single-family homeownership) increases their eligibility to seek subsidies from a variety of sources on the local, state, and national level. By receiving subsidy a wide range of sources for rehabilitation projects, CLTs are able to increase the number of local and community stakeholders. Community investment is furthered by the structure of Community Land Trusts, where 30-60% of the CLT board is composed of CLT residents, and the remainder of the seats is held by community leaders, CLT staff and business/community stakeholders.

Subsidy Retention and Preservation of Affordable Rental Housing Stock

CLTs have the potential to offer provide greater long-term affordability. By owning the land, CLTs are allowed to control the use of the unit on the land through deed restrictions and the long-term lease agreement. The deed restrictions and lease agreements will dictate limited equity gain at sales for the unit owner and long-term affordability for future owners and/or renters. Equity restrictions cap the maximum equity gains to be made when the unit is sold. A common limitation is 25%. The remaining equity is rolled back into the home as a reduced resale price. Additionally, through the deed restriction and lease agreement, the CLT can enforce income requirements for renters or incoming homeowners, such as 80% of the median household income.

Multifamily CLT Concerns

Like other organizations that embark in the development of multifamily units, the limitation of the CLT's capacity to manage the property is a concern. If the CLT does not have the experience or capacity to manage the property: (1) the property could fall into disrepair, (2) there could be insufficient community investment, or (3) the organization could abandon its affordable housing mission to compensate for the increase in operational costs associated with multifamily housing. To address these concerns, some multifamily CLTs utilize local and

experienced mutual housing associations or CDCs to manage the multifamily housing units within the CLT.

Additionally, there is some concern about the over subsidization of CLT properties in certain markets. In distressed real-estate markets, the cost of the land may not equal the cost of the affordability gap, requiring additional subsidies to reduce the per unit cost to an affordable level for the target population.

Examples of Multifamily CLTs

Cooper Square CLT (New York, NY), only provides multifamily housing with 303 units within a three-block area. The units are owned and operated by a mutual housing association.

Burlington Community Land Trust/Champlain Community Land Trust (Burlington, VT), contains both homeownership and multifamily rental housing stock, totaling over 1,450 units. Of the 1450, approximately 1,300 are rentals.

Northern California Land Trust (Berkeley, CA), provides a mix of ownership and multifamily units in scattered locations. There are 94 housing units, 13 of which are rentals. There are five commercial units in the NCLT, which is rented at below-market rates to local businesses and service providers.

Appendix B: Methodology

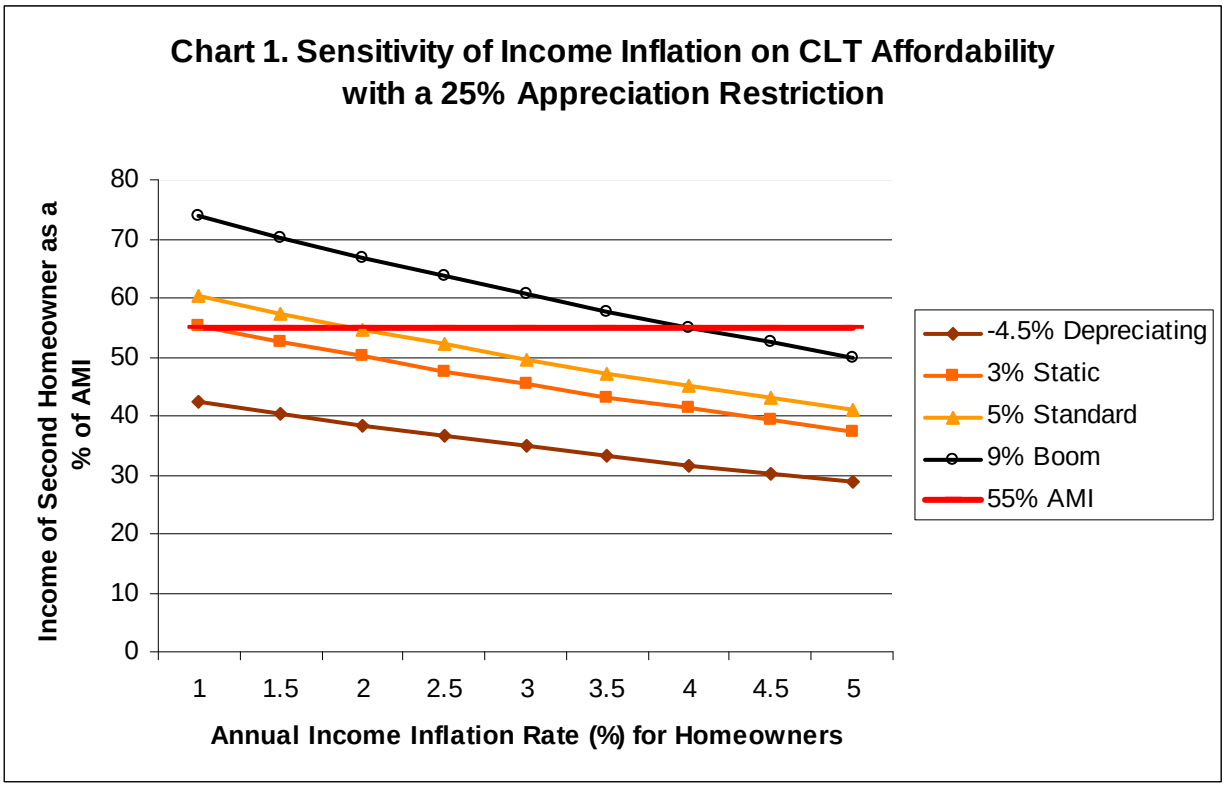
CLT Analysis Model Calculations

To fill gaps in available data on community land trusts in Minnesota and to project the impacts of the CLT homeownership framework, a model was developed to compare the potential gains and restrictions in wealth accumulation and subsidy retention. To formulate the model, a review of CLT literature and other comparable homeownership models was carried out to compile a list of assumptions on wealth accumulation and savings, housing markets, real-estate appreciation rates, costs of homeownership, government subsidy discount rates, and single family housing finance. (See Table 1 for list of assumptions)

Table 1. CLT Theoretical Model Assumptions[12]	
Total Appraised Value	$180,000
Land	$45,000
Structure	$135,000
Land Appreciation Rate	*(See Table 2)*
Structure Appreciation Rate	*(See Table 2)*
CLT Affordability Gap Subsidy	$45,000
Mortgage Under CLT Options	$130,275 (Structure Cost less Down payment)
Mortgage Interest Rate	5.75%
Annual Property Tax (% of Home Value)	1.25%
Annual Mortgage Insurance (% of Mortgage)	1.00%
Annual Hazard Insurance	$450
Annual Home Maintenance Costs (% of Home Value)	1.00%
Annual Rate of Inflation	3.00%
Discount rate for Net Present Value Calculations	3.00%
Closing Costs	$3,000
Realtor Fees at Resale	6% of the sale price
Land Lease Costs	$15
Tenure in Home in Years	10
Income of First Homeowner	$44,479 (55% Twin Cities MFI)
Annual Income Inflation Rate	3.00%
Monthly Rent (Alternative to Homeownership	$1,000

Income Inflation: Income inflation used for the CLT Analysis Model was held constant at consumer inflation. In inflation adjusted dollars, incomes are assumed to not increase. A sensitivity analysis was conducted to see how change in income inflation would affect the affordability of CLT units over 10 years. Under most market conditions (except "boom") and income inflation scenarios, affordability increased with a 25% structure appreciation restriction.

[12] Assumptions originate from a CLT application for CRV funding



Income for First Homeowner: The income of the first homeowner was calculated by examining the monthly principle, interest, taxes and insurance (PITI) of the mortgage for the first homeowner ($PITI_1$) and calculating the income so that the homeowner is spending no more than 30% of income on housing.

$$Income = \frac{PITI \bullet Months}{\%\_of\_Monthly\_Income}$$

Using the calculated PITI for the first mortgage to be $1,093.81 and 12 months of earned income, and then dividing by the 30% housing to income ratio, the annual income is:

$$Income_1 = \$44{,}479 = \frac{\$1{,}093.81 \bullet 12}{.3}$$

The income is then converted to a percent of the area median income, by dividing the calculated annual income by the 2008 median family income for the Minneapolis-St. Paul MSA ($80,900).

Income for Second Homeowner: The income of the second homeowner was calculated in a similar fashion based on the size of the second homeowner's mortgage.

$$Income_2 = \frac{PITI_2 \bullet 12}{.3}$$

Because the PITI for the second homeowner is dependent upon the model scenarios, the income of the second homeowner will vary.

Wealth Accumulation- Net Present Value: For the purpose of measuring wealth accumulation, a *net present value* of cash flow was used. Using a *net present value* allows for the measurement of monthly cash flow over a period of time while accounting for the time value of money.

$$NPV = \sum_t \frac{R_t}{(1+i)^t}$$

t = the time of the cash flow (months)
R_t = The net cash flow at time *t*.
i = the discount rate

The monthly cash flow factors included:

- Home purchase transaction costs
  - Closing Costs
  - Down Payment
- Differences in monthly homeownership versus rental costs
  - Homeownership Costs
    - Mortgage Principle
    - Mortgage Interest
    - Taxes
    - Insurance
    - Homeowners Insurance
    - Land Lease Payment
    - Home Maintenance
  - Rental Costs
    - Monthly Rent Payment

  (Utility costs are assumed to be the same under ownership and rental)
- Resale Gains (Equity)
  - Homeowner's share of appreciation
  - Homeowner's principle payments
  - Return of down payment
- Home sale transaction costs
  - Realtors Fee

Discount Rate: The *discount rate* used for the net present value was cited from the Office of Management and Budget "Circular No. A-94: Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs, Revised", www.whitehouse.gov/omb/circulars/a094/a094.html.

Rate of Inflation: The rate of inflation used was the commonly held assumption of 3%, annually. This assumption was reinforced in a similar model that examines shared equity homeownership (Jacobus 2007).

Appreciation Rate: Land and Structure

Table 2. Appreciation Rates for CLT Model Assumptions				
	Split Appreciation Rates		Same Appreciation Rates	
	Structure	Land	Structure	Land
Depreciating	-2.09%	-21.0%	-4.50%	-4.50%
Static (Same as Inflation)	1.39%	6.81%	3.00%	3.00%
Appreciating (Normal)	2.90%	9.60%	5.00%	5.00%
Boom	4.18%	17.35%	9.00%	9.00%

Appreciation rates were calculated by taking the structure's share of appreciation (23.2%), as determined by the split of land and appreciation from Davis and Palumbo (2006), of the targeted overall appreciation rate. The land appreciation rate was adjusted so that the long-term appreciation rate reflected the target overall appreciation rate.

Annual Mortgage Insurance Rate: Annual Mortgage Rate was taken from the *Loan Estimator, Detailed Calculations* at www.ginniemae.gov, for a home with a sale price of $180,000.

Length of Time in Unit: A length of occupancy for CLT homeowners at 10 years was used because it is estimated that the average CLT homeowner will stay in their home slightly longer than the conventional homeowner (who has and average occupancy of 7 years). The period of 10 years was also used in similar models examining wealth accumulation under the CLT framework. (Jacobus, 2006) Of the 70 CLT resales that have occurred in Minnesota, the average tenure is only 3.1 years. However, with CLTs being new in Minnesota, the 70 resales only capture the homes that have turned over quickly. The longer tenure homeowners are still in their homes.

Monthly Rent: Monthly rent was determined by using the approximate median of HUD fair market rents for a three bedroom apartment in the Minneapolis-St. Paul MSA: $1,000.

Minnesota CLT Data Calculations

Criteria for Excluding/Including Variables in Resale Data: Because we were concerned about the quality and completeness of the data from the CLTs, we excluded some data. Upon reviewing the data on existing CLT units, we established criteria for including and excluding

cases for the whole data set as well as on a case-by-case basis for each calculation. The following criterion for excluding data was applied consistently across all cases examined:

- Over 50% of the primary data fields were missing.
- Missing data where no logical proxy could be determined.
- Sufficient evidence of a duplicate entry of the case.
- Substantial question as to the accuracy of data entered in a particular field required for a calculation.
- Data suspect to data entry errors (such as typos)

All cases that were not excluded based on the above criteria were included in the analysis.

Rochester Land Value Calculation:
Data provided by the Minnesota Community Land Trust Coalition contained missing data concerning the value of structures and land within the First Homes Community Land Trust in Rochester, Minnesota.

Leasehold Value of Land and Structure: Due to missing variables for the total leasehold value and the need to measure structure and land value as a leasehold estate, the structure and land leasehold value was calculated for all cases. Using cases that report a total leasehold value data entered, the ratio of the leasehold value to fee-simple value was calculated. (Total Leasehold Value/Total Fee-Simple Value) A ratio of .961 was determined and then applied to the fee-simple structure value and the fee-simple land value for cases missing leasehold value.

Land to Total Value Calculation: The land to total value calculation is computed as:

Land Value/Total Value

In some cases, where a land value may be missing, we calculated a proxy land value by taking the ratio of the land value to the total value for the city of the home (as indicated in the Department of Revenue, 2008 Parcel Data) and then applying this ratio to the units overall value. For example for First Homes' units, a proxy value of land values was used because there was a high number of missing land values.

Income as a Percent of Area Median Income: The income as a percent of area median income was calculated by dividing the income of the homeowner entering the CLT home by the area median income of the MSA where the CLT resides for the year that the homeowner moved into the unit. This was computed for each case.

Median Length of Time Homeowner Lived in CLT Home: The median length of time that the homeowner lived in the CLT home was calculated by taking the difference between either July 1st, 2009 or the date that another household moved out of the unit, whichever occurred first, and the date that the household moved into the CLT unit.

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