Feasibility Study of Targeted Insurer Investments in Hail Resistant Roofs in Texas

A Report to the Foundation for Insurance Regulatory Studies in Texas

> By the Center for Economic Justice

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1. Background and Purpose of Study

Consumers insure their homes against damage and theft by purchasing residential property insurance policies. The most common type of residential property insurance policy is a *homeowners* policy. The homeowners policy is a *multi-peril* policy because, generally, it provides protection against property damage to the property and its contents and against bodily injury to people who are injured on the property. In contrast, a *dwelling fire* policy provides protection only against damage to the insured property. In Texas, there are several forms of the homeowners and fire policies, varying by the number of specific perils (e.g., events) insured against.

In the 1990's, the Texas insurance industry experienced dramatic insured losses on homeowners' policies as a result of hail storms in central and north Texas. The 1995 hail storm in the Dallas/Fort Worth area alone caused over a billion dollars of insured losses and was one of the ten biggest catastrophes, in terms of insured losses, of all time. The principal damage caused by hail storms is damage to roofs. When a hail storm occurs, insurers have historically paid to replace roofs damaged by hail because the vast majority of residential property insurance policies provided for *replacement cost* coverage – the policy paid an amount to replace the damaged property, which, in this case, was the roof.

Following the 1995 hail storms in North Texas, insurers sought to lessen their exposure to hail losses by severely limiting their writing of homeowners policies in hailprone areas. Some insurers stopped writing new residential property policies and actively sought to reduce the number of policies in force. The problem of very high costs for residential property insurance was exacerbated by a reluctance of many insurers to write these policies at any price.¹ In response to *availability* problems, Commissioner of Insurance Elton Bomer took three major actions.

¹ According to a compilation by the National Association of Insurance Commissioners, the 1995 average homeowners premium in Texas was \$711 compared to only \$592 dollars for the second most expensive state, Louisiana. By 1996, the Texas average homeowners premium had jumped to \$742 compared to \$592

<u>First, he allowed insurers to require higher deductibles.</u> The deductible is the amount of the claim that the policyholder must pay.² Thus, if the claim on the homeowners policy was \$3,000 and the deductible was \$1,000, then the insurance company would pay \$2,000 of the claim. A principal purpose of the deductible is to discourage consumers from making small claims on their homeowners or fire policies. Prior to 1995, the typical deductible was \$500. Following the 1995 hail storm, insurers started moving their customers to 1% or higher deductibles. Percentage deductibles are based upon the coverage amount of the policy. If the deductible were 1% and the policy provided \$85,000 of coverage for the property, then the deductible would be \$850. Higher deductibles result in more of the claim being paid by the consumer. As a result, the higher the deductible, the greater the discount (and the lower the total premium) on the residential property insurance policy.

In the aftermath of the 1995 hail storms, insurers also raised rates for property insurance. The discounts for higher deductibles partially offset the rate increases instituted by insurers, but required consumers to pay more out of pocket in the event of a loss. While many consumers are able to assume a greater out-of-pocket expense, those lower-income consumers most in need of the rate discount are also likely the consumers least able to meet the higher deductible amount in the event of a loss.

Second, the Commissioner allowed insurers to change the homeowners policy from replacement cost coverage for roofs to actual cash value coverage for roofs. Under replacement cost, if a roof is damaged by a hail storm, the coverage provides for replacement of the roof so the home is habitable. Under actual cash value coverage, the coverage pays only the difference between replacement cost and depreciation of the roof. Thus, for a roof that is a few years old and that has depreciated to some extent, the coverage pays only a fraction of the replacement cost.

For example, if the cost to replace the roof is \$3,000, there is a 1% deductible on a \$65,000 policy and the insurer determines that the roof had depreciated 40% at the time of the hail storm, then the insurer would pay only \$1,150. The \$1,150 is calculated by reducing the \$3,000 cost of replacing the roof by \$650 for the deductible and by another \$1,200 for depreciation. And in many cases, the insurer will not even pay the \$1,150 until the consumer completes the roof replacement. Thus, the consumer not only has to come up with \$1,850 to get the roof replaced, but will not get the \$1,150 from the insurer until he or she comes up her portion of the cost of repair.

As with the higher deductibles, the use of an actual cash value loss settlement provision shifts the cost of a claim from the insurer to the consumer. Insurers provide a discount for actual cash value coverage compared to replacement cost coverage. Again,

for number two Louisiana. The national average homeowner premiums for 1995 and 1996 were \$356 and \$359 respectively.

² The deductible is different from depreciation, which is the amount a consumer must pay when the policy provides for actual cash value loss settlement instead of replacement cost loss settlement. Actual cash value is discussed below.

as with higher deductibles, the actual cash value coverage – and its associated discount – may be a good deal for those consumers able to come up with cash on their own to cover the difference between the actual cash value payout and the cost to replace the roof. Unfortunately, the consumers most in need of the discount are also the consumers least likely to have the cash necessary to supplement the actual cash value payout in the event of a loss. Under these circumstances, the consumer may only be able to afford a substandard roof repair – both increasing the potential for loss in the future and reducing the value of the consumer's primary asset – the home.

<u>Third, the Commissioner required insurers to offer significant discounts for</u> <u>consumers who install hail resistant roofs.</u> This action is the only one that encourages actual loss prevention. With hail resistant roofs, hail storms do not damage roofs. With higher deductibles or actual cash value, the hail storm causes the same (or more damage), but consumers are simply bearing more of the costs.

In theory, insurers who want to minimize their exposure to hail losses should be indifferent to how the loss in minimized – each of the three approaches lowers the insurers' payouts from hail storms. From a public policy perspective, the choice between increasing the number of homes with hail resistant roofs or increasing the number of homes with high deductibles and actual cash value is easy. Hail resistant roofs lower the damage caused by hail storms and increase the value of consumers' principal asset – their homes. The impediment to greater use of hail resistant roofs is the relatively high cost of these roofs – a particular problem for lower-income consumers most in need of rate relief.

The purpose of this study is to examine the feasibility of a targeted loan program to enable consumers to purchase and install hail resistant roofs and pay for these roofs with the insurance premiums savings generated by the hail resistant roof discounts.

2. Research Activities

We conducted interviews with representatives from insurance companies, roofing contractors, lenders, community development organizations, Texas Department of Insurance and others:

Allstate Insurance Company, Sharon Cooper, Community Relations

Allstate Insurance Company, Tom Caunitz, Regional Underwriting Manager

Allstate Insurance Company, Mike Ruckman, Territorial Risk Manager

Nationwide Insurance, Lorraine Brock, Vice President Urban Market Development

Progressive Insurance Company, Bob Williams, Product Research / Development

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California Earthquake Authority, Mark Leonard, Manager of Loss Mitigation

Institute for Business and Home Safety, Paul Devlin, Loss Mitigation

Impact Community Capital, Daniel Sheehy, President

Chase Bank (Dallas), Henry Nelson, Community Outreach Officer

Lon Smith Roofing, Scott Hamilton, Vice President

Lone Star Roofing, Gary Loyd, Vice President

Inner City Development Corporation, Linda Jordan, President

Davis Community Consultants, Carolyn Davis

Texas Association of Community Development Corporations, J. Reymundo Ocanas, Executive Director

Neighborhood Reinvestment Corporation, Todd Pittman, Insurance Coordinator

Insurance Commissioner Jose Montemayor and members of his senior staff

We also attended conferences and meetings to present and discuss the targeted loan concept:

Presentation (speech) about project to insurers at conference of the National Association of Independent Insurers

Presentation (speech) about project to insurers at conference of the Southwest Insurance Information Services

Presentation about project to insurers and community development organizations at conference of National Insurance Task Force of the Neighborhood Reinvestment Coalition

Attended National Conference on Property Insurance and Loss Mitigation, which included representatives from insurance companies and trade associations involved in property insurance loss mitigation.

Presentation to Center for Community Change Seminar on Insurance Issues, including representatives from the Massachusetts Association of Community Development Corporations, the Massachusetts Affordable Housing Alliance, Neighborhood Economic Development Advocacy Project of New York City, California Reinvestment Committee and other organizations involved in community development, community reinvestment and fair housing activities.

3. Basic Economics of Hail Resistant Roofs

The costs of roofs are typically priced on a per *square* basis. A square is 100 square feet of roof. The number of squares depends upon the size of the roof, which is a function of the size of the house and the pitch or slope of the roof. Installation of a roof may require may require 15 to 20 squares on a small house and 25 to 35 squares on a medium sized house.³

By far, the most common type of roofing material is the asphalt shingle. With asphalt shingles, the shingles are typically nailed onto a plywood base that has been covered with tar paper. The shingles are overlapped and nailed down to prevent water from being blown under the shingles. The asphalt shingle is generally composed of a somewhat flexible base and covered with colored granules. The purpose of the granule covering is not only to provide color for the roof, but also to prevent degradation of the shingle from constant exposure to sunlight. Ultra violet rays decompose the asphalt shingle, causing it to become brittle. Brittle shingles are a problem because they are more susceptible to damage from objects hitting the roof or simply to cracking and leaks.

Asphalt shingles are the most widely used roofing material because it is far less costly than alternatives – less costly in terms of material and installation costs.⁴ Other roofing materials include metal, rubber, concrete, tile, plastic, resin and wood. Attachment 1 provides a list of roofing materials eligible for hail-resistance discount.

Impact Resistance

To qualify for an insurance discount, the roofing material must be tested by an approved laboratory. Attachment 1 lists testing laboratories approved by the Texas Department of Insurance for evaluating impact resistance of roofing materials. The approved testers include the well-known Underwriters Laboratories, Inc, purveyors of the "U.L." standards. Roof coverings are tested and classified as either Class 1, 2, 3 or 4 for impact resistance. Class 4 roof coverings have the highest impact resistance and receive the highest insurance discount. Attachment 2 provides a brochure for the Atlas Stormaster shingles.

³ Interviews with roofers Hamilton and Loyd

⁴ It may be that some other roofing materials have a lower lifetime cost based upon the time frame analyzed.

Cost of Different Roof Coverings

Rough estimates of the cost of installing a roof are:⁵

\$50
\$75
\$115 to \$150
\$425
\$435
\$425
\$400
\$325

The incremental cost to upgrade to the least expensive hail resistant roof is about 40 per square.⁶ Our analysis focuses on the least expensive Class 4 roofing materials – modified asphalt shingles – because the cost of the other roofing materials is far too high for a feasible targeted-loan program.

Texas Premium Discount for Hail Resistant Roofs

Attachment 3 shows the Class 4 discounts by rating territory in Texas. Rating territories, for residential property insurance, are individual counties or groups of counties for which insurance rates differ. Rates vary by rating territory because some areas are more subject to certain types of losses, such as hurricane exposure along the coast versus tornado and hail exposure in north and west Texas. Attachment 4 provides a list of rating territories and the county or counties within comprising those territories. Attachment 5 is a map of Texas showing the location of residential property insurance rating territories. The largest hail-resistant roof discounts for homeowners policies are 34% and 35% -- in the Panhandle, West Texas and Tarrant County. Homeowners policy discounts in Dallas, Collin and Denton counties are 23% and discounts in Travis County are 17%.

Attachment 6 shows representative premiums for homeowners policies in Tarrant, Dallas and Harris Counties from Allstate. The amount of the premium varies with the amount of coverage, the size of the deductible and the type of construction. Homes that cost more to replace require greater coverage amounts. The "Value" column shows different amounts of coverage. Two deductibles are shown -- \$500 and 1%. When the value (e.g., amount of coverage) is \$50,000, the 1% deductible equals \$500. As the value of the coverage increases, the amount of the deductible also increases – resulting in a lower premium for equal value homes for the policy with the 1% deductible. Finally, brick veneer (BV) homes are less susceptible to certain types of damage than wood frame (FR) home.

⁵ Provided by Scott Hamilton

⁶ Atlas Stormaster LM, Class 4 or Malarky Alasken and Hurricane, Class 4

Because the premiums are large, the hail resistant roof discounts are also large. For example, the homeowners premium for a 50,000 policy would drop from 624 per year to 412 - a reduction of 212 in Tarrant County.

Financial Analysis of Payback Periods for Hail Resistant Roofs

Attachments 7 and 8 show how long it would take to pay for the installation of a hail-resistant roof using the money saved on insurance premiums from the hail-resistant roof discount for homeowners and dwelling fire policies, respectively. The results in the tables should be viewed as approximate for at least two reasons. First, the amount of the insurance premium will vary based upon a number of factors - including replacement value of home, type of construction, size of deductible, and the nature and size of discounts and surcharges (for additional coverages). Our analysis assumes that the amount of premium is directly proportional to the size of the roof. This assumption itself is based upon an assumption that the size of the roof is directly proportional to the value of the home. Second, we have assumed that premiums will escalate at 3% annually. In our financial analysis model, the greater the annual increase in premiums, the faster the payback period because the dollar amount of the discount increases with increasing annual premiums. The analysis of the incremental cost payback is not sensitive to the assumption about average annual percentage premium increases because the payback period is relatively short. On the other hand, the analysis of the full replacement cost payback is more sensitive because of the longer payback periods.

Our financial analysis evaluates two other variables – the amount of the discount and the interest cost for financing either the replacement or incremental cost. We chose two discount levels – 34% for homeowners and 48% for dwelling fire in Tarrant County and 34% for homeowners and 23% for dwelling fire in Dallas County. We also chose interest rates of 9% to represent a market rate and 5% to represent a subsidized rate. As the table shows, the size of the discount has a dramatic impact on the payback period, while the choice of interest rates has relatively little impact.

Factors that affect the payback period include the amount of the premium before the hail-resistant roof discount, the amount of the hail-resistant roof discount, the average annual increase in residential property insurance premiums and the interest rate for financing either full or incremental cost of the hail-resistant roof. The higher the premium before the discount, the greater the dollar amount of the hail-resistant roof discount and the shorter the period to pay back the cost of the hail resistant roof. The payback period decreases as the amount of the hail resistant roof discount increases. The payback period decreases as the average annual increases in premium increases because the increasing dollar amount of the discount value is applied to the fixed installation cost. Finally, the payback period increases as the cost of financing – higher interest rates – the installation cost increases.

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The principal results of the financial analysis are that the payback periods for the incremental cost of a hail-resistant roof are relatively short in those parts of Texas with a substantial hail-resistant roof discount, but the payback periods for full replacement cost of hail resistant roofs is relatively long. The payback period for full replacement cost of hail resistant roofs is particularly long in all areas other than those with the highest discount percentages.

Attachment 7 shows that for homeowners policies in Tarrant County and Dallas County, a consumer could pay back in about three years and five years, respectively, the incremental cost of installing a hail-resistant roof. In contrast, the payback period for full replacement cost of a hail-resistant roof is nine to eleven years in Tarrant County and 13 to 21 years in Dallas County.

Although the size of the hail-resistant roof premium discount is typically greater for a dwelling fire policy than for a homeowners policy – 46% versus 34% in Tarrant County and 38% versus 23% in Dallas County – the payback periods for consumers with dwelling fire policies will be at least as long or longer than for consumers with homeowners policies. This occurs because the typical dwelling fire premium is significantly lower than the typical homeowners premium. Therefore, the larger discount percentage is applied to a smaller premium. Because the dollar value of the discount is smaller but the dollar cost of the roof replacement is the same, the payback period increases. In addition, the percentage difference in premiums between a brick veneer and a frame home are significantly greater for a dwelling fire policy than for a homeowners policy because the percentage of fire losses to all losses is far greater for a dwelling fire policy than for a homeowners policy. The dwelling fire payback periods are about four and six years, respectively, for the incremental cost of installing hail-resistant roofs in Tarrant and Dallas counties, respectively. The payback periods for full replacement costs are 18 years or more.

4. Existing Consumer Incentives and Insurer Investment Options

This discussion is based purely on a financial analysis of installing hail resistant roofs and does not include, or try to assign a value to, other benefits of hail resistant roofs, such as the greater likelihood of avoiding damage to the roof and home from hail storms. These benefits could include, at a minimum, the amount of the deductible on the homeowners' policy.

As Attachments 7 and 8 show, in certain parts of Texas, consumers have a very good investment opportunity at the time they are replacing the roof on their house or installing a roof on a new home construction. In many parts of the state, consumers can recoup the additional cost of installing a hail resistant roof in just 3 to 6 years. After this payback period, consumers will continue to receive substantial financial benefits from the discounts on their residential property insurance premiums.

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However, Attachments 7 and 8 also show that the payback period, as well as the out-of-pocket costs, for a replacement hail resistant roof is substantial. Most consumers would likely not pay for a home investment that has a ten-year payback, let alone an 18-year payback. Absent a major hail storm that destroys roofs, the homeowners will have little financial incentive to replace a sound, existing roof with a hail resistant roof. The problem is even more severe for our target group of low-income consumers because this group is the least able to afford the investment cost of either the incremental for full replacement cost of hail resistant roofs.

Our financial analysis shows that the installation of a hail resistant roof is an excellent investment when the cost of such installation is the incremental cost of the hail resistant roof beyond the cost of a standard roof covering. That situation occurs generally in two instances – new home construction and at the time a homeowner is replacing an existing roof. Given that our target population of low-income consumers is rarely building new homes, the opportunities for investing in hail-resistant roofs is limited to those occasions where the homeowner is already replacing an existing roof. However, these occasions are generally limited to those times when the roof has been damaged and requires replacement.

In summary, based upon current financial incentives, investments in hail resistant roofs are limited to those instances where homes are being newly built or roofs are otherwise being replaced. Opportunities exist to promote the installation of hail resistant roof on new construction. Such opportunities include:

- Education of home builders of hail resistant roofs as a sales feature for consumers
- Development of building codes that require hail resistant roofing materials in hailprone communities
- Grants and low-interest loans to builders and homeowners by insurers to encourage use of hail-resistant roofing materials
- Requirement by secondary mortgage market of hail resistant roofs for new home mortgages

Since our target population is rarely building a new home, the feasible opportunities for an investment in a hail-resistant roof is at the time of replacing an existing roof. Such an occasions are realistically limited to those times when an existing roof is damaged and must be replaced, e.g., after a hail storm. We conclude two opportunities exist to promote hail-resistant roof investments for low-income consumers:

- Insurers provide a grant to offset some of the cost of the hail-resistant roof
- Insurers provide a loan to finance the incremental cost of the hail-resistant roof

Insurers raise major concerns with each of these approaches, as discussed in the next section.

5. Barriers to Insurer Investments in Hail Resistant Roofs

In this section, we discuss insurer concerns about their investing in hail resistant roofs. The two approaches we have identified, generally, are insurers providing a grant for all or part of the incremental cost of the hail resistant roof and insurers providing a loan for all or part of the incremental cost of the hail resistant roof.

Insurers benefit from the installation of hail resistant roofs because it can dramatically reduce their catastrophe loss exposure. Unlike other causes of loss – fire, theft, vandalism – whose occurrence from year to year is relatively stable, losses due to major weather events occur infrequently and can be very large – that is, catastrophic. By eliminating, or moderating the catastrophe element in expected losses, insurers can write more business in a particular area without risking a huge loss payout due to a catastrophic event. For example, in recent years, Allstate has implemented a policy of managing its property exposure to avoid a catastrophe loss of greater than \$1 billion due to a single weather event. By mitigating the expected loss payouts of a severe hail storm or a hurricane, Allstate could write more policies in certain parts of Texas.

Hail Resistance Over Time

Although insurers recognize the benefits of hail resistant roofs to consumers, our research has identified several concerns of insurers to not only investing in hail resistant roofs, but also in providing discounts for hail resistant roofs. One of insurers' general concerns is the performance of hail resistance roofs initially and over time. Stated differently, are the current credits, which were established by the Texas Insurance Commissioner, too high? Of even greater concern to insurers is how much the discount percentage should be over time. With certain types of roofing, such as asphalt shingles, the roofing material breaks down over time and becomes less resistant to wind or impact damage over time. Insurers are reticent to provide a fixed discount indefinitely for hail resistant roofs when the ability of the roofing material to resist hail damage declines over time and, at some point, ceases to be any different from standard roofing material.

It is useful to explain that hail-resistant asphalt shingles differ from standard asphalt shingles in two major ways. The hail-resistant shingles generally contain more material and are fastened to the roof with more nails than standard asphalt shingles. There may be other differences, such as variation in the asphalt content. But both types of shingles are subject to deterioration from exposure to sunlight over time. Consequently, insurers believe, but have no data yet to confirm, that the difference in hail resistance between hail resistant and standard asphalt shingles declines over time. Insurers do not know how hail resistant any of the Class 4 asphalt shingles will be after three, five, seven or more years exposure to the Texas sunshine. Insurers are therefore concerned about providing a hail resistant roof discount in perpetuity for certain roof coverings.⁷ Currently, there is no provision for ending or decreasing the hail resistant roof discount for certain roof coverings.

⁷ There is generally little concern over decreasing hail resistance to metal, tile, steel and some other roofing materials. However, these materials are too expensive for use by our target population.

Loss Mitigation As An Investment

Insurers generally do not view loss mitigation as a strategic investment, i.e., the company would invest a certain amount of money with the expectation of a particular rate of return on that investment. This differs, of course, from insurer investments in technology, advertising or acquisitions. Insurer spending in loss prevention is generally part of a corporate relations or public affairs effort. For example, many insurers provide grants and loans to community organizations for demonstration projects aimed at community revitalization. Attachment 9 provides materials from the Loss Prevention Partnerships program of the National Insurance Task Force of the Neighborhood Reinvestment Corporation. Although these efforts are very meaningful to the communities and community organizations involved, the amount of money contributed by insurers is a very small portion of the dollars that insurers spend either paying claims or buying advertising. The efforts are seen as community relations and not as strategic investments in loss mitigation.⁸

Insurers do make investments lowering their claim payouts or better ensuring that claim payments are consistent with coverages provided. The choice of characterization depends upon whether you are a consumer (the first description) or an insurer (the second description). Insurers invest, for example, in third party computer programs and services to ensure that claim settlement are consistent across similar claims and are not excessive. These efforts are better characterized as claim settlement efficiencies than loss prevention investments.

Another area where insurer investments might be characterized as both claim settlement efficiencies and loss prevention is fraud prevention. Insurers spend money on special investigative units to identify and prevent fraud.

Insurers also contribute to a variety or organizations that engage in research on auto and home safety including the Insurance Institute for Highway Safety and the Institute for Home and Business Safety. Insurers also contribute their own research into the safety of autos and homes. Again, these investments are generally considered public affair activities and not strategic investments with an anticipated rate of return.

In contrast, for example, the electric utility industry has for decades invested in energy conservation just as it would invest in new electric generation facilities. In theory, loss mitigation as a strategic investment should be feasible for insurers. For example, if by paying a certain amount of money to cause consumers to install hail resistant roofs, insurers should be able to calculate a return on that investment from lower claim costs.

⁸ It is important to distinguish between loss mitigation as a strategic investment by insurers and loss prevention to become eligible for insurance coverage. The former is the basis for our analysis and recommendations. The latter is sometimes referred to as a new form of redlining because it is predicated on the idea that insurers have failed to write business in certain neighborhoods because the homes were uninsurable for some reason. Some of the National Insurance Task Force projects appear to be grounded in this latter concept. We disagree with the premise because it results in a different standard for access to insurance for different neighborhoods depending upon their relative incomes.

This approach, however, leads to other concerns by insurers about investing in hail resistant roofs, described below.

How Does An Insurer Guarantee the Business Relationship?

Suppose that an insurer were to give a consumer a grant for the amount of the incremental cost of installing a hail resistant roof. In theory, the insurer should be able to recoup that investment over time – whether the payback is three, four or five years. But, what happens if the consumer decides to shop around for insurance coverage and purchase a policy from another insurer? In the case of electric utilities (before deregulation), the utility did not have to worry about losing the business of the consumer to whom it had just given a conservation grant.

Insurers Not in the Lending Business

The original premise behind this project was that an insurer would loan a lowincome consumer the money necessary to install a hail-resistant roof and the consumer would pay off the loan with savings from the insurance discount. In addition to the problem of the insurer maintaining the business relationship with the consumer, insurers also cite the problem that they are not in the lending business. As a result, the insurers do not have a mechanism to issue a loan and receive payments on the loan.

This concern has been overtaken in large part by the passage of the Gramm-Leach-Bliley Financial Modernization Act, which breaks down some of the barriers between insurers and banks. Several insurers have obtained charters for a bank or thrift institution. Thus, several insurers have affiliated institutions that can be lenders.

Another response to this concern is the use of community development organizations as intermediaries. Many of the demonstration projects of the National Insurance Task Force rely upon community organizations as initiators and processors of consumer loans with the insurer providing only either the money directly for the loan or indirectly to a bank which makes the loan. While these activities are standard methods of large financial institutions investing in community development finance initiatives, these methods do involve investments in the millions of dollars and not the billions of dollars of loss mitigation investment opportunity in Texas.

6. Conclusions and Recommendations

Our analysis has shown that currently investments by consumers or insurers in hail resistant roofs are feasible for those instances where the cost of the hail resistant roof represents only the difference between the cost of installing a new standard roof and installing a new hail resistant roof. These instances are limited to new home construction and when an existing roof is otherwise being replaced. Because our target population is low-income consumers, the instance of new home construction is generally not applicable. While not the purpose of this project, opportunities to promote hail resistant roofs in new home construction exist:

- Education of home builders of hail resistant roofs as a sales feature for consumers
- Development of building codes that require hail resistant roofing materials in hailprone communities
- Grants and low-interest loans to builders and homeowners by insurers to encourage use of hail-resistant roofing materials
- Requirement by secondary mortgage market of hail resistant roofs for new home mortgages

For the second set of opportunities – installing a hail resistant roof when the existing roof is otherwise being replaced – we have identified the following two general approaches:

- Insurers provide a grant to offset some of the cost of the hail-resistant roof
- Insurers provide a loan to finance the incremental cost of the hail-resistant roof

We found major impediments to these general approaches. First, insurers generally do not view loss prevention as a strategic investment and are therefore unable to evaluate whether a grant or loan for a hail resistant roof is a good investment. Second, insurers have no ability to maintain a business relationship with a consumer and are therefore unable to guarantee they will insure the property for a sufficient time to recoup the grant investment or repay the loan. Third, insurers lack sufficient data to evaluate the performance of certain hail-resistant roofing materials over time and are, therefore, unable to measure the benefits of particular investments or loans.

Although substantial opportunities exist to work with builders, local government officials, insurance regulators and insurers regarding the promotion of hail-resistant roofs in new construction, such efforts are beyond the scope of our project because they generally do not affect our target population of low-income consumers.

We see three possible future activities to promote the installation of hail-resistant roofs after the next major hail storm. First, work with insurers to develop the concept of hail resistant roofs as a strategic investment, while addressing the problem of maintaining the business relationship with the consumer. Second, work with insurance regulators and local government officials to develop an infrastructure to promote installation of hail resistant roofs after the next major hail storm. These infrastructure activities could include developing necessary legal and zoning provisions as well as the capacity of local roofers and shingle manufacturers to provide the product when necessary. Third, distribute this analysis and continue to work with local community development organizations to encourage existing community development finance infrastructure to include hail resistant roof investments where appropriate.