Presentations from the Town Hall Membership Meeting  
Sunday, March 2, 2014

Some of the charts used in the Power Point presentation at the Town Hall meeting were taken from the GHI Budget, Replacement Reserves Report, and reports developed for the Pilot Program, and are available for viewing on GHI’s website.

SUE READY, GHI BOARD PRESIDENT

I would like to provide a few brief updates regarding the state of the co-op.

- The co-op remains in a strong financial position.
- Our newly re-formed Marketing Committee and staff have been hard at work marketing our community and our homes. Two community-wide open houses were held last year.
  - Over the past year 96 members sold the occupancy rights and equity in their homes to new members.
  - Sales prices are recovering.
  - Those members who are underwater on their share loans are less so.
  - There were no lender foreclosures in GHI in the past year.
  - Currently, 18 GHI members have authorization to sublet their homes.
- At last year’s annual meeting in May, the membership approved the proposal that members residing in the same building could, by unanimous agreement, choose to create a smoke-free building by signing an addendum to their Mutual Ownership Contracts. One row of eight homes has done so.
- GHI’s wholly-owned subsidiary Greenbelt Development Corporation continues to negotiate with the owner of Strathcona Apartments for the purchase of those apartments. Strathcona consists of 42 one-bedroom apartments in two original Greenbelt buildings located at the corner of Crescent Road and Southway.
- Pepco completed its upgrade project in GHI last month. GHI staff worked with City and Pepco staff to ensure this undertaking went smoothly with a minimum amount of disruption to all. We are no longer experiencing widespread and prolonged loss of power during high wind and snow. I, for one, have been particularly grateful for this during the polar vortexes that we have experienced this winter.
- The Pilot Program is entering its final stage and we are preparing for the upcoming Homes Improvement Program. You will be hearing much more about these two programs later in the agenda.
- The Maryland Legislature has passed new a Smoke Alarm Law requiring that before January, 2018:
  - All battery-operated smoke alarms must be sealed, tamper resistant units incorporating a silence-hush button and using long-life batteries.
  - There must be a smoke alarm on each level of multi-leveled homes.
  - All smoke alarms must be replaced when they are ten years old.

Starting in 2015, the co-op will be replacing your smoke alarms with new, sealed lithium ion-powered smoke alarms. This project will be completed in 2017.

- The Architectural Review Committee held a highly successful Garden Tour in September. Some of our members have created amazingly beautiful and interesting gardens—a source of inspiration to all seasoned and aspiring gardeners. Stay tuned for announcements of the next garden tour.
- ARC also sponsored a kitchen renovation contest. For the benefit of anyone needing inspiration, photos, descriptions and lessons learned are posted online, as well as compiled in a notebook which is available at the GHI administration building.
Currently, ARC is sponsoring a bathroom renovation contest. The results will be available soon.

A big thank you to all of you folks who serve on GHI’s committees or volunteer in other capacities. Our co-op is richer for your involvement.

AARON MARCAVITCH, GHI BOARD MEMBER

Understanding the Pilot Program

In 2008, the Buildings Committee was formed – a committee created by the Board of Directors to assist on “matters related to maintenance, repair, and improvement programs for existing GHI buildings and acquisition of new buildings.”

The Board also directed the committee to develop a “Pilot Program” to improve energy efficiency and comfort in the homes.

Soon many of the major components of our homes, such as doors and windows, will be at the end of their useful life and in need of replacement. Basic component replacement may not be enough, however.

According to a member survey, many of us are uncomfortable in our homes in the summer and winter, and we are not happy about the costs for heating and cooling our homes.

Goals for pilot project

The goals for such capital improvements are the following:

• reduce overall energy consumption and costs in the dwelling units;
• improve member comfort and “livability”;
• emphasize use of sustainable, environmentally friendly energy sources, technologies, and products where economically feasible;
• reduce overall life cycle costs, including preventive and corrective maintenance, for heating, cooling and domestic hot water systems;
• minimize disruption to households as improvements are being made; and
• implement the program while maintaining the unique and historic character of the GHI homes.
We Need the Pilot Program to Learn
In 2010, the Pilot Project was conceived to provide information about the actual costs for upgrades, energy savings produced, payback periods, impact on members for work. This work will help GHI – both the board and the membership – make the best choices for upgrades.

Why a Pilot Program?
The Pilot Program is vital to helping GHI in making the best choices for energy efficiency upgrades, because computer models and expert reports cannot tell us the whole story. They are vital starting points, but as we know, GHI is a unique community with unique set of challenges. With 28 units (or 7 rows) of units – a mixture of blocks, frames, and brick veneer units – this program seeks to have a holistic understanding of the issues related to energy efficiency.

The program is made up of three phases, each one supported by Home Innovation Research Labs and a grant from the Department of Energy.

In the past three and half years, GHI (through the Buildings Committee) has been working with experts to determine what other improvements would be recommended to members, in order to reduce energy costs and increase comfort.

So, let's look at what has been accomplished in Phases 1 and 2.

STEVE SKOLNIK, GHI BOARD VICE PRESIDENT

GHI has just completed the second phase of our Pilot Program, designed to study options for improving the energy efficiency of our historic homes, lowering our heating costs, and increasing member comfort.

There are a total of 28 units that are in the Pilot Program (3 rows of block homes, 2 rows of frame homes, and 2 rows of brick homes). GHI is being assisted in the pilot program by Home Innovation Research Labs (H.I.R.L., formerly the Research Center of the National Association of Homebuilders).
H.I.R.L.’s participation is funded through a grant from the U.S. Dept. of Energy’s National Renewable Energy Labs, so their work and expertise come to GHI at no cost to members.

In the first year of the Pilot Program, H.I.R.L. installed measuring devices in many of the pilot homes to record data on temperature, humidity, and energy use by electric baseboard heaters and water heaters. This ‘Phase 1’ provided a year-long baseline of data on the pilot homes prior to any changes being made.

Phase 2 of the program has been about improving the ‘building envelopes’ of the homes. The building envelope consists of all of the exterior surface components of the home that separate living space from the outside: roof, outside walls, lower level floor (crawlspase or basement), windows and doors.

Different work scopes for improving building envelope performance were developed by H.I.R.L. and the Buildings Committee for the three different home types – frame, block, and brick. Following GHI’s bidding and procurement process, contractors were selected and the work proceeded in Fall, 2013.

As an overview, Phase 2 included the following major work components:

- Crawlspaces were sealed and insulated
- Attics were insulated (frame and brick homes only, as block homes have no attics)
- Windows were replaced throughout
- Doors and frames were replaced throughout
- Bathroom exhaust fans with timers were installed (for humidity control)
- Vinyl siding was replaced (frame homes only)
- Exterior wall insulation and vinyl siding was installed (certain block homes)
Phase 2 installation work was substantially completed in December 2013. The measuring devices, still in place, enable GHI to see the differences in energy use in each pilot home following these envelope improvements. The object is to compare ‘before and after’ energy consumption and member comfort in each pilot home; it is not to try and compare one home with another, since different members use their homes differently. As the 2013/14 heating season has not yet ended, we do not yet have the full data and analysis from H.I.R.L. to report the effect of the Phase 2 envelope upgrades, or to draw conclusions and make recommendations. Also, the data from one year to the next needs to be ‘normalized’ in order to be able to accurately compare, since the weather varies from one heating season to the next – this is part of H.I.R.L.’s analysis process.

We do have some anecdotal evidence from pilot members, who tell us that envelope upgrades are resulting in mild to dramatic improvements in member comfort and reduced energy costs.

“This is the first time in 14 years that I have been comfortable during the winter in our house.”

- Pilot Program member

And BREAKING NEWS: H.I.R.L. just issued a preliminary report summarizing some results from the envelope upgrade work. For example, comparing before-and-after air infiltration tests reveals a decrease in air leakage in the frame pilot homes of between 24% and 61%, a result in large part of sealing and insulating the crawlspace beneath the wooden floor decks. You won’t be surprised to learn that the accompanying DECREASE in energy consumption in the frame homes averaged 28%.

All home types showed solid performance improvements; average energy reduction for all pilot homes was 21%. There’s a lot more data to collect and analyze before we can really draw conclusions, but these figures give a strong indication that the envelope improvements are having the desired effect of seriously reducing energy consumption and improving comfort in the homes.

Another consideration is the historic appearance of our block homes. Some members feel the exterior painted block and horizontal brick striping are iconic and therefore important elements that should not be covered behind insulation and siding. Under a grant from the Md. Historic Trust, the firm Quinn-Evans Architects conducted a study on alternative solutions to insulate the block homes; their recommendations include glass fiber reinforced concrete exterior panels (very, very expensive) or insulating from the interior of the homes (very disruptive to members). The Buildings Committee, with assistance from the Architectural Review Committee, is currently looking at these options and will make a recommendation to the Board of Directors. This does not affect the Pilot Program.

Phase 2 of the Pilot Program has allowed us to learn about costs for the various upgrades in our somewhat unique homes, to look at potential payback periods, and also to learn about installation difficulties and challenges, member disturbance matters, and so on. We believe this information will help tremendously as we plan for a successful Homes Improvement Program.
JIM COHEN, CHAIR OF OUR BUILDINGS COMMITTEE

HIRL looked at a number of heating systems that might be used in GHI units.

You can see HIRL’s analysis of those unit types – along with other studies – on the Pilot Program’s section of our website. Our committee evaluated those systems with the same criteria that are contained in the committee’s overall goals for the Pilot Program that Steve mentioned a few minutes ago.

HIRL analyzed several systems that might be appropriate for GHI homes, including ducted heat pumps, ground source heat pumps (or geothermal systems); ductless split heat pumps (also called “ductless mini-splits”); wall-mounted resistance heaters with fans; radiant heat panels; and electric baseboard heaters with programmable setback wall thermostats on the first floor and wall dial thermostats for upstairs bedrooms. (Yes, our current type of electric baseboard heaters have always been an option, due to their low life-cycle cost.) Several systems were NOT considered, such as natural gas, and propane, oil and wood-fired heating, due to the cost of the fuel or the need for infrastructure to store and/or deliver fuel to appliances.

From HIRL’s analysis, 5 systems were recommended for testing in the pilot program. Pilot Program members were given an orientation on the alternatives in November and were able to visit GHI units that already had these systems to see what they looked like, find out how much they cost, see how much exterior and interior space they required, and hear from the members about their experiences with the systems (including what their energy bills were).

Following the information meetings and the tours, the Pilot Program members were allowed to choose which heating systems they wanted to test in their homes. (Sue Ready will describe how the tested units will be financed).

The pilot members’ selections resulted in the following units selected for testing in Phase 3:

- 7 pilot members chose to have no new installations, so they’ll be relying on their current baseboard heaters.
- Ten (10) of the pilot members chose to test new electric baseboard heaters with the wall-mounted programmable setback thermostats downstairs and the wall dial thermostats for the upstairs bedrooms.
- One unit with a ducted heat pump system (the system was installed in the unit by a former member).
- 10 pilot units with ductless mini-split systems.
One of the benefits of heat pumps is that they provide air conditioning as well as heating. Over the past few years, many GHI members have installed ductless mini-split systems in their units, and GHI staff members indicate there is a high level of satisfaction with them. These systems are being tested in six cinderblock units and four frame units.

Additionally, radiant ceiling heaters are being installed in 11 pilot units (only in the kitchen and/or bathroom kitchens).

Since one of the pilot program goals is to do the energy efficiency upgrades in a manner that will preserve the unique and historic nature of GHI units, we are very interested in seeing how the systems being tested in pilot phases 2 and 3 perform in the block units. That’s because exterior insulation and siding applied to block units—while making them more comfortable—will alter their unique character.

For this reason, over a year and a half ago some Buildings Committee members, GHI staff and Joe Wiehagan of HIRL met with the Maryland Historical Trust to inquire about the possibility of obtaining grant money to test options for insulating the block units on the interior, or for using an exterior insulation strategy that closely resembles cinderblock. The Trust provided a grant to Quinn Evans Architects to study the alternatives; a study that was completed late last year. We are examining the recommendations to see which, if any, are worth further exploration. However, it is possible that the ductless heat pumps being tested in the block units might show that the units can be warm in winter and cool in summer without any interior or exterior insulation being applied.

In the Summer of 2015 Phase 3 will be completed and that will conclude the Pilot Program. In closing, I invite you to check out the Buildings Committee website to access the pilot program reports, and to become a “friend” of the Committee. As a friend we will e-mail you agenda materials in advance of each meeting. We currently have over 180 friends and many of them are active participants in our meetings. And in closing I’d like to thank some especially good friends – our pilot program participants – who are doing an invaluable service to our cooperative.

SUE READY, GHI BOARD PRESIDENT

We are about to undertake a multi-million dollar Homes Improvement Program. The Pilot Program was undertaken to give us the information we will need to make informed decisions as we move forward.
## What Has the Pilot Program Cost?

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<thead>
<tr>
<th>Item</th>
<th>Costs Covered by Replacement Reserves</th>
<th>Cost Not Covered by Replacement Reserves</th>
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<tr>
<td><strong>Phase Two</strong></td>
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<tr>
<td>Preparation of specifications by Falcon Engineer</td>
<td>$20,602.50</td>
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<td>Advertisement for bids</td>
<td>$1,949.00</td>
<td>$1,949.00</td>
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<td>Phase 2A - crawlspace insulation</td>
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<td>$77,628.00</td>
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<td>Phase 2B - attic insulation</td>
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<td>$22,323.00</td>
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<tr>
<td>Phase 2C - installation of doors, windows, wall insulation, exhaust fans, siding for block units</td>
<td>$185,835.40</td>
<td>$129,948.76</td>
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<td><strong>Phase Three</strong></td>
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<td>Phase 3 - Preparation of specifications for Heating/Cooling systems by HIRL</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
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<td><strong>Total</strong></td>
<td>$185,835.40</td>
<td>$257,451.26</td>
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Additionally, Pilot Program participants have selected the heating/cooling systems that will be installed in their homes during Phase 3. For those members who selected baseboard heat, the cost of replacing the baseboard heaters will come from replacement reserves. Those Pilot Program participants who have selected any of the alternatives heating and/or cooling systems available will pay for the cost of those systems. The cooperative will be providing financing to the members who are testing these systems. Loans will be paid back over a 15-year period with no penalty of early payment.

The Pilot Program leads us into the Homes Improvement Program.
Now let’s talk about the Homes Improvement Program.

First, we have collected Replacements Reserve funds to replace the end-of-useful-life components, such as siding on the frame homes and windows and doors on all homes and replacement of baseboard heaters in all homes. These improvements are already funded and will definitely be done.

Second, based on Pilot Program findings, the membership will VOTE on whether to also make additional, energy-efficient improvements, such as insulation & alternative heating systems or programmable thermostats for the baseboard heaters. These improvements are not funded and will be undertaken only if the membership votes to do so.

Here’s where we have been:

- The Pilot Program began in 2010 with the collection of baseline data, how warm were the pilot homes, what were the energy bills, where were the points of air infiltration?
- In 2011, crawlspace were insulated in the seven rows of homes in the Pilot Project. Data was collected and analyzed in regard to the effect of this change.
- In 2012, attics were insulated in the frame and brick homes. Once again, data was collected and analyzed in regard to the effect of this change.
- In 2013, windows, doors, wall insulation, vinyl siding, and bathroom exhaust fans were installed in the pilot homes that were selected for testing these elements.
That brings us to 2014?

- Through this winter, we are collecting data on the effects of these most recent envelope improvements.
- The Request for Proposals for contractors interested in installing the new heating systems has just gone out. Work is expected to commence in the late spring.
- By early summer, H.I.R.L should complete the analysis of the information gathered over this winter.
- Board, Buildings Committee, and staff will then prepare this information for presentation to the membership for a vote this fall on whether to move forward with the insulation of crawl spaces, attics and/or walls of frame and/or block homes.

Data on the effects of the heating systems that will be installed this summer will be collected over the winter of 2014-2015. This data will be analyzed by H.I.R.L and the reported at another Special Membership Meeting to be held in the fall of 2015 at which the membership will decide on which system or systems will be installed community-wide.

**Pilot Program Timeline**

<table>
<thead>
<tr>
<th>Year</th>
<th>Phase 1: collect baseline data</th>
<th>Phase 2a: insulate crawlspace</th>
<th>Phase 2b: insulate attic</th>
<th>Phase 2c: windows, doors, insulation, siding</th>
<th>Phase 3: heating &amp; cooling climate systems</th>
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<tbody>
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<td>2010</td>
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We know that members are anxious to have at least some of this work done in their own homes. The Replacement Reserve schedule originally called for windows, doors, replacement of baseboard heats and frame-home siding to take place over a 10-year period from 2015 through 2024. By delaying the start of the program by one year and delaying the replacement of water and waste pipes in our homes, we will have the replacement reserve funds to complete this work in four years earlier, by 2020. So, the installation of building envelope improvement, including windows and doors, covered by replacement reserves, as well as any additional envelope improvements approved by membership vote will take place from 2016 through 2020. Replacement of baseboard heaters or the installation of an alternative heating and/or cooling system will take place in this same timeframe.

**Proposed Homes Improvement Program Timeline**

<table>
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<tr>
<th>Year</th>
<th>Install envelope &amp; climate systems</th>
<th>Replace block roofs</th>
<th>Replace frame roofs</th>
<th>Replace large townhome roofs</th>
<th>Replace wiring</th>
<th>Replace water pipes</th>
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<td>2016-2020</td>
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Other work which has not been a part of the pilot program, but that is included in Replacements Reserves is also scheduled. Block homes roofs will be replaced beginning in 2016 and finishing in 2025. Frame homes roofs will be replaced beginning in 2017 and finishing in 2025. Electrical wiring and water supply and waste pipes will be replaced in frame and masonry homes between 2020 and 2024.

**Funding the Homes Improvement Program**

GHI has a replacement reserves fund to which members contribute fees for the future replacement of major components of GHI’s homes and common property. The projected balance of the replacement reserves fund at the beginning of the homes improvement program in 2016 is $14 million. During the homes’ improvement program from 2016 to 2025, income from member contributions and interest earned through fund investments are estimated to be $25.4 million or an average of $2.5 million per year. Using monies in our replacement reserves fund, we will replace components such as windows, doors, baseboard heaters, siding on frame homes, roofs, plumbing pipes and electrical wiring.

The following are possible improvements that will be voted upon by the membership. Monies have not been collected in the replacement reserves’ program for these building envelope improvements:

- a) Additional attic insulation for frame and brick homes.
- b) Crawlspace insulation for frame, brick and block homes.
- c) Exterior wall insulation for frame and block homes.
- d) Siding for block homes.
- e) Installation of exhaust fans for frame, brick and block homes.
- f) Alternative heating/cooling systems

Hence, if the membership votes to install some or all of these items during the homes’ improvement program, our co-op would need to borrow the necessary funds. Each member’s fair share of the repayment of the loan would be added to the monthly co-op payment. This additional cost would be partially offset by saving on energy bills. So, while co-op payments would go up if the membership votes to install items not included in replacement reserves, energy bills may go down.

So, we, as a co-op, have a major workload ahead of us. None of this happens by magic. In addition to the usual workload, your Board, staff, and committee volunteers will be hard at work to bring all this about with a minimum of disruption to all. Major challenges will be:

- Communicating effectively with all members
- Handling all the logistics of coordinating the work and ensuring that 1600 households are prepared for the work to be done in their homes.