

Rebuilding Together Silicon Valley

# Evaluation Report

2019-2020



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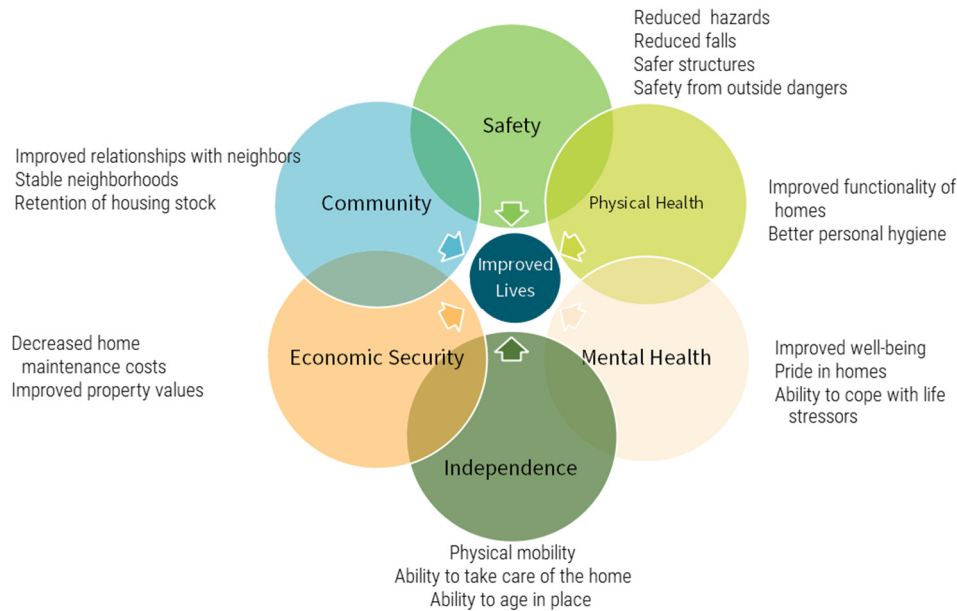
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## Executive Summary

Measuring the impact of its repair work on low-income homeowners is critical to the success of RTSV's mission. To strengthen its impact measurement process, RTSV engaged Actionable Insights, LLC, a professional research and evaluation firm, to support its efforts in 2019–2020. The goals of this project were:

- Improve the collective understanding of RTSV's impact on the residents and community it serves.
- Strengthen RTSV's storytelling ability by collecting evidence about the impact of its work.
- Demonstrate RTSV's credibility and value to existing and potential donors.

Over the course of several months, Actionable Insights led RTSV staff in drafting and finalizing a logic model that articulated the desired outcomes pictured below.



## METHODS

In collaboration with RTSV staff, in early 2020 Actionable Insights adapted the homeowner survey it had developed for Rebuilding Together's national impact measurement project. RTSV collected data from the following sources for **194 of its homeowners** whose projects closed between July 1, 2019–March 31, 2020.

**SalesForce database:** RTSV enters data from homeowner applications and tracks project data in its SalesForce database. Actionable Insights (AI) analyzed demographic and project data to learn who RTSV served, and used the data to understand how impact might have varied by project cost or client characteristics.



**Healthy Housing Checklist:** RTSV uses a checklist of 25 safe and healthy housing principles to assess homes before they repair them. Once repairs are complete, RTSV staff fill out the checklist again (post-repairs). AI analyzed the changes by comparing the checklists pre-repairs and post-repairs for each client.

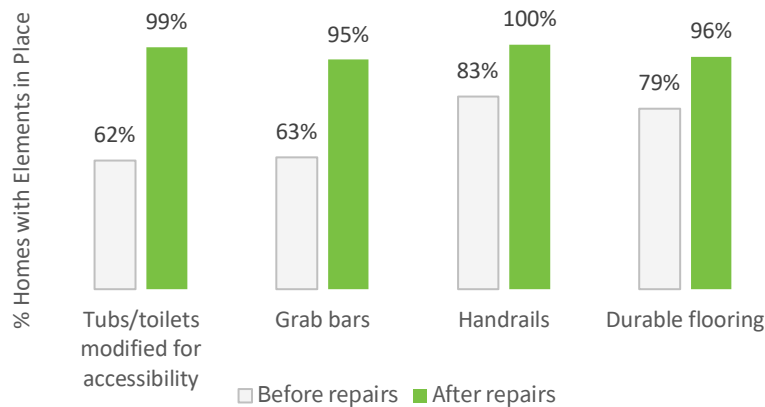


**Homeowner Impact Survey:** To measure impact on homeowners themselves, RTSV surveyed the clients it served in a nine-month period. The survey asked about changes they may have experienced since repairs were made. Every client received a paper survey (with self-addressed stamped envelope). RTSV followed up with clients who did not respond and surveyed them by phone. AI analyzed the retrospective pre- and post- survey results for each client.



## RESULTS: SAFETY

Top safety modifications that RTSV made to prevent falls.



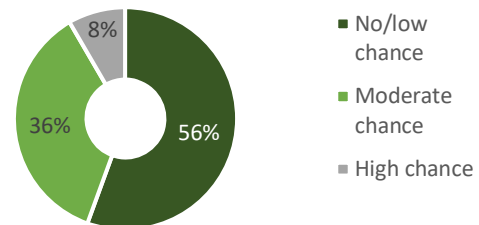
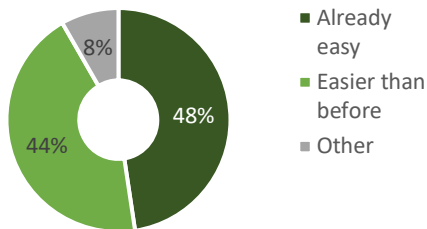
SURVEY RESPONDENTS SAID:

**“The handrails, higher toilet, and step make simple things like walking easier for Dad.”**

**“Turning the water on and off doesn’t hurt my hands [anymore, and] the grab bar in my shower makes me feel MUCH safer!”**

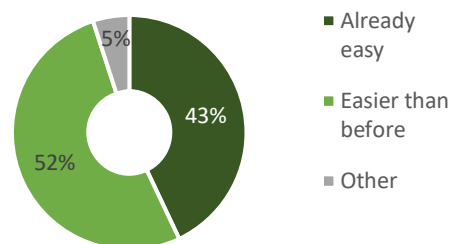
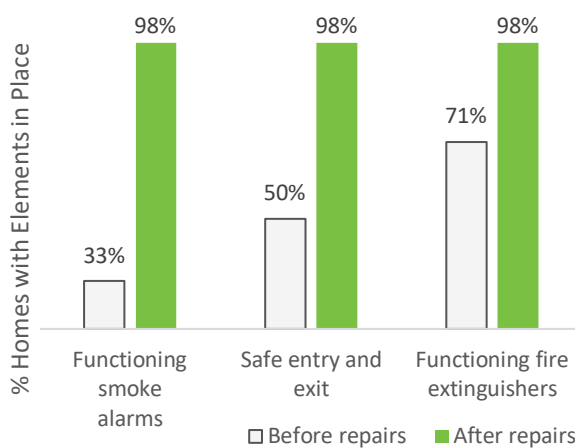
RTSV modifications made it easier to move around all the rooms of the home.

The majority (56%) of homeowners who fell or had a close call before repairs said their likelihood of falling after repairs was “no/low chance.”



Top home modifications that RTSV made to improve fire safety.

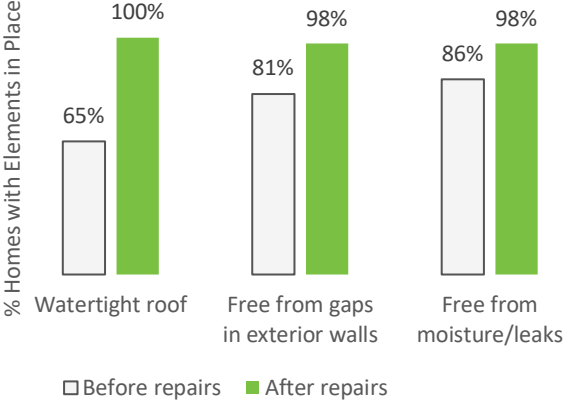
RTSV modifications improved the ease of home entry and exit.



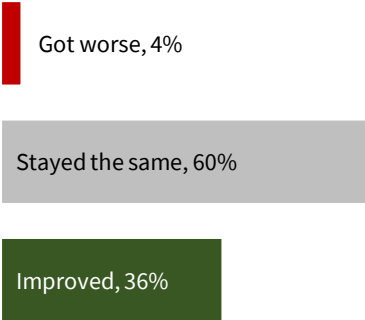
**“Feeling safe to walk down hallway and not fall through [the floor]! Able to use restroom without fear the toilet would fall through, either.”**

**RESULTS: PHYSICAL HEALTH**

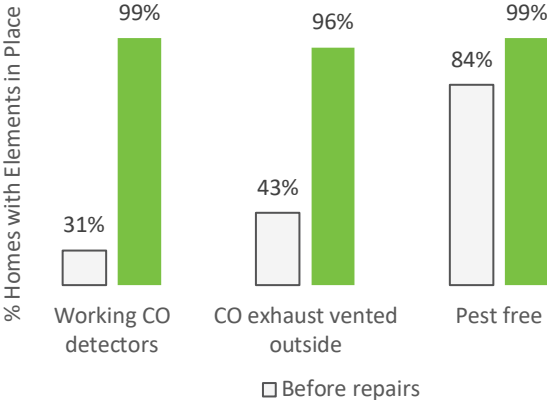
Top repairs that RTSV made to reduce interior moisture problems.



Many homeowners with chronic conditions said their symptoms had improved because of repairs.



Top improvements that RTSV made to homes to prevent respiratory health problems.



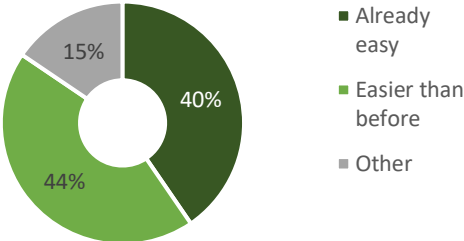
**SURVEY RESPONDENTS SAID:**

**“The mold on the inside of entry door caused me to cough up phlegm every morning for hours, now 80% better [after repairs]!”**

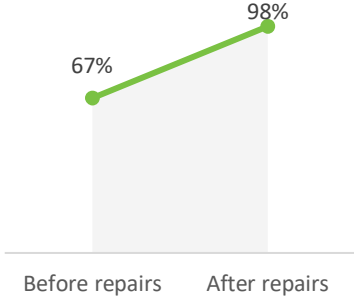
**“We got heaters replaced. I was always cold and uncomfortable. Now am warm, and sleep much, much better.”**

**“After repairs, it was so nice not having to bail water out the back door again.”**

RTSV repairs made it safer and easier for many homeowners to bathe.

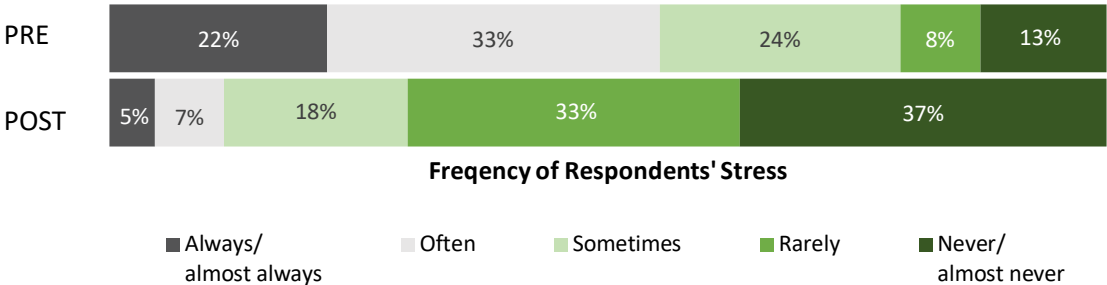


Almost all homeowners had functioning plumbing after RTSV repairs.



**RESULTS: MENTAL HEALTH**

Homeowners felt stressed less often about home maintenance after RTSV’s repairs.



Some homeowners felt less alone after RTSV repairs than they did before.

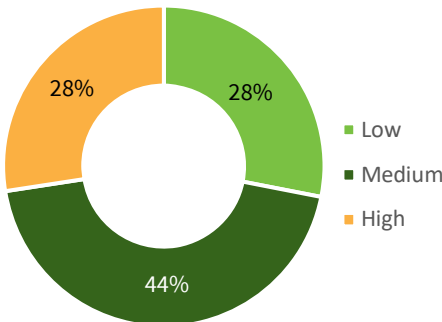


**RESULTS: PROJECT INVESTMENT ACROSS IMPACT DOMAINS**

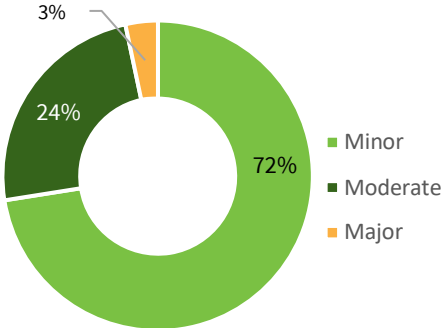
To better understand how the size of RTSV’s financial investment in a project may have affected survey results, Actionable Insights analyzed measures of retrospective pre-/post- change in survey respondents’ answers by project investment level. There were two different distributions of funding categories:

RTSV investment levels: Projects were distributed relatively equally across spending “buckets.”

RTN-rubric investment levels: Based on Rebuilding Together national funding categories.



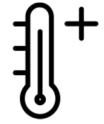
Low=<\$800; Medium=\$800–\$4,999; High=\$5,000+



Minor=<\$5,000; Moderate=\$5,000–\$11,999; Major=\$12,000+

### Statistically Significant Differences in Impact by Project Investment Level

**Temperature control:** Homeowners whose projects received medium or high investments (\$800+) were significantly more likely to report improvement in their ability to control temperature after repairs vs. before, compared with homeowners whose projects received low investments (<\$800).



**Moving around all the rooms of the home:** Homeowners whose projects received medium or high investments were significantly more likely to report greater ease and comfort in moving around their home after repairs vs. before, compared with homeowners whose projects received low investments.



**Entry/exit:** Homeowners whose projects received major investments (\$12,000+) were significantly more likely to report greater ease in home entry/exit after repairs vs. before than homeowners whose projects received minor or moderate investments (<\$12,000).



**Natural light:** Homeowners whose projects received major investments were significantly more likely to report greater natural light in their home after repairs vs. before than homeowners whose projects received minor or moderate investments.



**Stress levels:** Comparing the responses of homeowners from low-investment projects (<\$800) to the combined responses of homeowners from medium- and high-investment projects (\$800+), there was a significant difference, with low-investment respondents significantly less likely to experience reductions in frequency of stress after repairs vs. before, compared with medium- and high-investment respondents.



**Feeling safe:** Comparing the responses of homeowners from low-investment projects to the combined responses of homeowners from medium- and high-investment projects, there was a significant difference, with low-investment respondents significantly less likely to experience increases in feeling safe after repairs vs. before, compared with medium- and high-investment respondents.



### ADDITIONAL RESULTS

The work done by RTSV achieved positive outcomes in all six key areas of impact identified in the logic model, including:



**Independence:** Improvements made by RTSV increased the proportion of low-income homeowners surveyed who said they would age in place. About one in three respondents who had not planned to stay in their current homes forever said that they now plan to stay longer. This may be related to the respondents' ability to move around all of the rooms of their home: More than eight in 10 said that it is now easier and more comfortable to do so. Also, a small proportion of homeowners said the repair or replacement of kitchen appliances contributed to their ability to cook and eat healthier food.



**Economic security:** RTSV's efforts increased the ability of homeowners who were served to pay for daily necessities, according to those who responded to the survey. In part, this may be the result of a reduction in utility and/or home maintenance costs, which was reported by one in four

respondents. In addition, over eight in 10 who were more able to pay for daily necessities said that they spend the savings they realized on goods and other basic needs like food and clothes.



**Community:** RTSV's home repairs affect entire communities as well as individual dwellings. More than one in four low-income homeowners said they felt an increased connection with their neighbors after the repairs were completed, reflecting the broad impact of RTSV's work.

### RECOMMENDATIONS: PROGRAM

- Review work declined by homeowners and determine how to address in order to increase post-repair completion rate.
- Piggy-backing on RTSV's Safe at Home webinar series, develop or adapt a guide for homeowners to help them reduce falls and create a safe home.
- Consider offering monthly maintenance checklist, partnering to offer referrals to social services and financial literacy education.

### RECOMMENDATIONS: PROCESS

- Define and communicate the definition of "closed date" across the organization; pay greater attention to timely closing of projects.
- Retrain all relevant personnel on Healthy Housing Checklist.
- Consider developing and implementing a system in Salesforce for tracking all repairs.
- Consider requesting homeowners' utility bills, both at application and one year later (include consent language in application).

Of course, RTSV should also consider carefully the potential effects of any changes on its budget, personnel, and processes. However, by implementing at least some of these recommendations, RTSV will make the impact measurement process more successful and the work it does to maintain and repair households—and improve the lives of homeowners—even more impactful.

## Introduction

Since its establishment in 1991, Rebuilding Together Silicon Valley has renovated over 4,500 homes and community facilities. RTSV's work preserves affordable housing by transforming homes and lives through critical repairs and accessibility modifications for low-income homeowners and community organizations at no cost to the service recipient. The majority of the low-income homeowners served are adults age 65 or older and/or people with disabilities who are physically and financially unable to maintain safe and comfortable living conditions for themselves and their families.

### RTSV PROGRAMS

With a focus on preventive health and safety, and long-term improvements to quality of life, RTSV repairs homes and revitalizes communities through four core programs:

1. **National Rebuilding Day (RD):** Since 1991, RTSV has partnered with community sponsors each spring and fall to provide repairs of 50–60 projects for low-income homeowners and nonprofit facilities. RD includes the annual Adopt-a-Park event, which serves multiple households in one designated mobile home park. RD projects are supported by the work of approximately 1,750 volunteers annually.
2. **Safe at Home (SAH):** Since 2005, RTSV has focused on year-round safety modifications as well as critical repairs such as repairing or replacing roofs, water heaters, and furnaces through our Critical Repair program, a sub-program of SAH. RTSV serves approximately 350 low-income homeowners through these programs each year with the support of staff, local contractors, and skilled volunteers.
3. **Team Builds:** Since 2015, RTSV has engaged in volunteer repair projects outside the RD seasons, partnering with community sponsors to engage local volunteers in team-building opportunities. RTSV takes on eight to 10 Team Builds annually.
4. **Nonprofit Facility Repairs and Renovations:** As part of its RD and Team Build programs, RTSV designs volunteer projects that support nonprofits and their facilities. Volunteers have tackled projects such as creating a quiet outdoor space for adults at a homeless shelter for families, sprucing up the interior of a group home for children with autism, and renovating bathrooms at a senior nutrition center.

### RTSV'S IMPACT

Measuring the impact of its repair work on low-income homeowners is critical to the success of the organization's mission. Impact measurement is an intentional way to determine the extent to which a program or an intervention has achieved its intended outcomes: positive changes in the everyday experiences of individuals, families, organizations, and/or the community at large. Evidence of outcomes can be collected using indicators (specific, measurable data) that are gathered before, during, and/or after the intervention to help document whether specific outcomes have occurred.<sup>1</sup>

To strengthen its impact measurement process, RTSV engaged a professional research and evaluation firm to support impact measurement in 2019–2020. The goals of this impact measurement project were:

- Improve the collective understanding of RTSV's impact on the residents and community it serves.
- Strengthen RTSV's storytelling ability by collecting evidence about the impact of its work.
- Demonstrate RTSV's credibility and value to existing and potential donors.

## Areas of Impact

### LOGIC MODEL AND OUTCOMES

In 2019, RTSV began collecting evidence of its impact on low-income homeowners and the communities in which they live. RTSV engaged Actionable Insights, LLC, to guide it through this process.

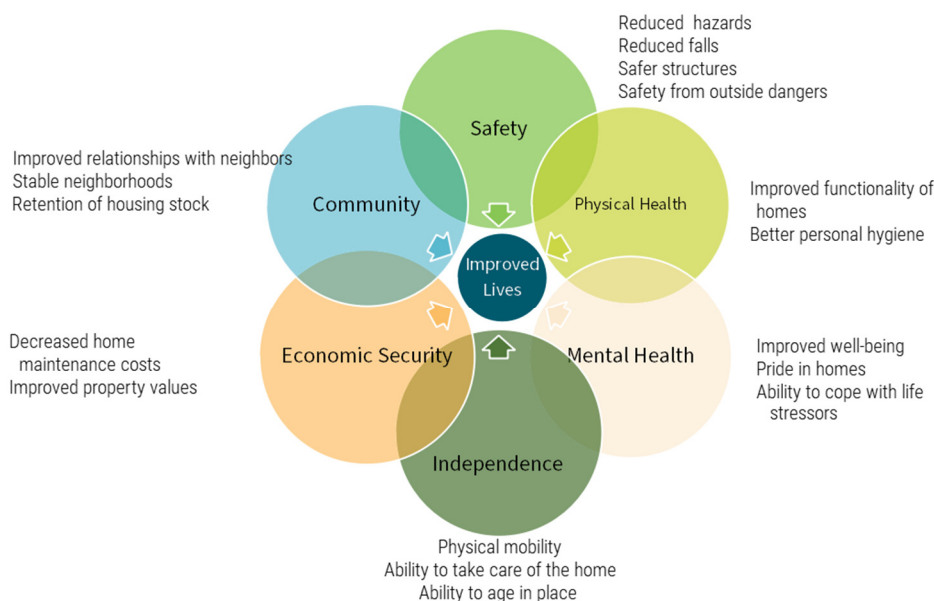
Over the course of several months, Actionable Insights led RTSV staff in drafting and finalizing a logic model that articulated the desired outcomes. The logic model, a keystone of professional evaluation practice, is rooted in research, mapping an organization’s activities, outputs, and outcomes. Based on RTSV’s logic model, Actionable Insights developed a visual diagram (Figure 1) of the outcome domains that the organization wishes to achieve in the short- and long-term.

The logic model outcomes were organized into six areas of impact:

- Safety
- Physical health
- Mental health
- Independence
- Economic security
- Community

The logic model served as the basis for the evaluation project. Both the logic model and the evaluation plan are set up to change with RTSV’s goals and/or vision over time. In other words, RTSV can use the logic model on an ongoing basis to guide its program evaluation and data collection and to support continuous program improvement.

Figure 1. Outcome domains (based on logic model) show the desired outcomes of RTSV’s repair programs.



## Data Gathering and Analysis Methods

The impact evaluation project was designed to determine the impact of RTSV's services on the individuals and community it serves. The data-collection tools and methods are described in this section.

### APPLICATIONS

RTSV collects demographic data on low-income homeowners through program applications. These demographics are stored in a Salesforce database and aggregated for reporting. Demographics presented in this report are based on application data.

### HEALTHY HOUSING CHECKLIST

The RTSV Healthy Housing Checklist (also called the "25 Safe & Healthy Housing Priorities") is based on its national organization's strategic approach to safe and healthy housing. Home repair and modification work targets significant safety and health hazards based on the eight principles of healthy homes: (keep it) dry, clean, pest-free, safe, contaminant-free, well-ventilated, maintained, and thermally controlled. RTSV uses the checklist as a means to ensure that every property meets these healthy housing standards.<sup>a</sup> RTSV staff members fill out the checklist as part of an initial home assessment, marking each item "yes" or "no" to determine needed repairs. The data recorded are entered into the Salesforce database. After completing the project, staff members fill out the checklist again. Actionable Insights used these data to understand which healthy housing items had improved (i.e., changed

from "fail" to "pass"). RTSV provided Healthy Housing Checklist data representing 188 projects that were completed between July 1, 2019, and March 31, 2020.<sup>b</sup> (For a summary of these data, see Appendix A.)

### IMPACT MEASUREMENT SURVEYS

#### Homeowners

RTSV used a retrospective pre- and post-impact survey. This survey, which assesses the effect of household repairs on low-income homeowners, was developed based on the logic model and evaluation plan. Actionable Insights used the 2015 Rebuilding Together AmeriCorps survey by McMahon Consulting Group, LLC, as the basis of its survey design. After gathering feedback from RTSV and piloting the survey with adults age 65 and older, Actionable Insights streamlined the survey to reduce the level of effort required to administer it and to keep annual evaluation feasible. (See Appendix D for the survey instrument.) RTSV had the survey professionally translated into Spanish and Vietnamese, the two non-English languages spoken by the greatest number of RTSV's clients.

Actionable Insights recommended a hybrid approach—an initial mailing followed by telephone surveys for nonrespondents—and trained RTSV staff on survey administration methods. Surveys were assigned unique ID numbers corresponding to the Site IDs that RTSV uses for its projects. At regular intervals between April and September 2020, RTSV identified all homeowners who had received repairs four to 12 months earlier<sup>c</sup> and

<sup>a</sup> See Appendix D for RTSV's Healthy Housing Checklist.

<sup>b</sup> There were 450 projects in total for 194 households; RTSV often conducts multiple repair projects on a single home. The Healthy Housing Checklist assessment is conducted before any repairs are done, and after all repair projects are completed. The Checklist was not completed for six households during this timeframe.

<sup>c</sup> In a few cases, surveys were sent to homeowners who received repairs less than four months earlier (three received repairs about three months prior to the survey) or more than 12 months earlier (two received repairs 12.5 months prior to the survey). When the

sent each of them the impact survey along with a self-addressed, stamped envelope and a letter explaining the survey process. Self-identified primary language drove whether homeowners received the survey only in English, or in both English and Spanish or Vietnamese.<sup>d</sup> Two to three weeks after sending the surveys, RTSV staff members called homeowners who had not returned completed surveys by mail.

Some homeowners contacted by phone chose to complete the written survey and mail it back, treating the call as a reminder. Others completed the survey by phone instead; these surveys took approximately 25 minutes each.<sup>e</sup> RTSV provided a financial incentive (a \$5 bill) to all participants who completed the survey, whether by phone or by mail.

RTSV staff entered survey data into a SurveyMonkey form. Actionable Insights downloaded and analyzed the survey data for this report.

Of the 194 households served by RTSV during the impact evaluation project timeframe, 181 were sent the survey and 93 (51%) responded. Ten (11%) of those survey responses were collected by phone; the remainder were returned by mail. Based on Actionable Insights' experience and evaluation industry standards, this is a very good return rate. On average, there were 11 months between the date a project closed and the date of survey response. (See Appendix C for a summary of impact evaluation survey data and demographics.)

### Facilities

RTSV served five facilities during the impact evaluation timeframe. A retrospective pre- and post-impact survey to determine the effect of

facility repairs on facility staff was developed based on the logic model and evaluation plan for facilities. (See Appendix D for the facilities instrument.) The COVID-19 pandemic strained local facilities' resources such that only one facility ultimately responded to the survey. It is recommended that, after the pandemic is over, the survey be re-sent to all facilities served. Once the results are in, an addendum describing the findings may be made to this report.

### DATA ANALYSIS

Demographically, the households that responded to the RTSV impact survey reflected the households served overall in terms of residents' ages, income levels, and racial identities. This was not the case in other areas. For example, households whose occupants included a resident with disabilities or in which the homeowner did not speak English were less likely to respond (despite survey translation into Spanish and Vietnamese). Going forward, Actionable Insights recommends that RTSV consider working to improve response rates from households with residents with disabilities and homeowners who do not speak English, perhaps by making the survey available in more accessible formats and additional languages. Other factors, including the amount of time that had elapsed between the household's repairs and the survey, made no statistically significant difference in likelihood of responding. (See Appendix C for more details.)

Actionable Insights matched the household demographics and the Healthy Housing Checklist

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data were analyzed, both with and without these cases, there was no significant difference in results; thus, they remain in the data set for this report.

<sup>d</sup> The English version of the survey was one-sided; bilingual versions of the survey were double-sided, with English on one side and the other language on the back side of each page.

<sup>e</sup> This average excludes one outlier interview that lasted over two hours.

data provided by RTSV with the retrospective pre- and post-impact survey. The Site ID was used as a unique identifier matching all of these data sets.

Actionable Insights used cross-tabs (tables that show the relationships between variables) to compare pre- and post-data from the Healthy Housing Checklist, resulting in percentage differences in the usability or accessibility of participant homes between the initial home inspection and repair completion. Actionable Insights employed cross-tabs, paired t-tests (statistical tests that compare the averages of two samples—in this case, pre-survey responses compared to post-survey responses), and ANOVAs (statistical analyses that compare the averages of three groups—in this case, pre-/post- change scores by level of project investment) to understand the improvements reported by homeowners in the impact survey. We also conducted regression analyses, a statistical method to explain the relationship between a dependent variable (in this case, a post-survey score) and various independent or “explanatory” variables. For these analyses, independent variables included pre-survey score and application data, such as income level and household composition (whether or not older adults, children, or individuals with disabilities reside in a home). We note the number of responses for each item, as they do not always represent 100% of households (e.g., not all households responded to all questions). In all

## Effect Size Is More Helpful Than Statistical Significance

Many readers may be familiar with t-tests, which check for statistical significance. A t-test indicates whether a change is statistically meaningful; however, it does not measure the size of any effect the change may have had. Effect size is the magnitude—what might be thought of as the importance—of the change. The change (or difference) in responses between pre- and post- survey may be statistically significant yet too small in effect size to make any practical impact.

When appropriate, Actionable Insights calculated effect sizes using the Common Language (CL) effect size statistic for correlated samples (such as paired pre-/post-scores) originally proposed by McGraw & Wong.<sup>f</sup> CL is a proportion: the difference between mean (average) pre- and post- scores (“ $M_{diff}$ ”) divided by the standard deviation of those difference scores (“ $S_{diff}$ ”). This allowed AI to describe effect size using probability rather than standard deviation.<sup>a</sup> For example, an effect size of 72% for the item “Ease of bathing” means a 72% chance that the average homeowner served by RTSV experienced greater ease of bathing after home repairs were done than before.<sup>f</sup>

cases where we report statistical significance, we also assess effect size to determine how much impact the change might make (see sidebar).<sup>f</sup>

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<sup>f</sup> See McGraw, K. O., & Wong, S. P. (1992). A common language effect size statistic. *Psychological Bulletin*, 111(2), 361–365. Retrieved from <https://doi.org/10.1037/0033-2909.111.2.361>

## RTSV Demographics of Individuals Served

As previously mentioned, RTSV completed projects for 194 households between July 1, 2019, and March 31, 2020, the period covered by the impact evaluation project. A total of 312 people resided in those households. The data in this section come from homeowners' applications for repairs.

### INCOME LEVEL

RTSV serves low-income households. RTSV defines income as "low" according to guidelines provided by the U.S. Department of Housing and Urban Development (HUD). HUD considers a household's size (number of occupants) and earnings (percentage of the geographical area's median income). In 2019, a two-person household in Santa Clara County was considered low-income if its occupants collectively earned \$83,150 or less per year (Table 1).

Table 1. Income categories for Santa Clara County were based on HUD limits.

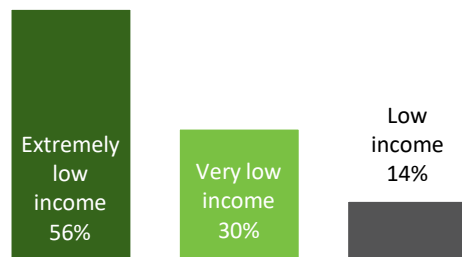
Category	2019 Income Limit for a Two-Person Household, Santa Clara County	% of Area Median Income (AMI) <sup>9</sup>
<b>Low income</b>	\$83,150	51–80% of AMI
<b>Very low income</b>	\$58,550	31–50% of AMI
<b>Extremely low income</b>	\$35,120	30% or less of AMI

Source: U.S. Department of Housing and Urban Development, 2020.

Over half (56%) of RTSV households served during the period covered by the impact evaluation project were extremely low-income, and close to one-third (30%) were very low-income. The median income among RTSV households was \$30,658. Figure 2 shows the distribution of households served, by income category.

Figure 2.

RTSV households' incomes were mostly very low or extremely low.



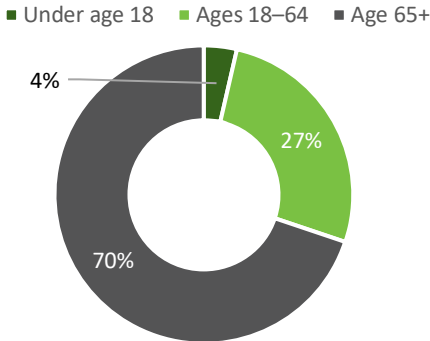
Source: RTSV application data, 2019–2020 (N=194).

<sup>9</sup> AMI for a two-person household may be calculated by doubling the very low-income limit, which is 50% of AMI. See <https://www.huduser.gov/portal/datasets/il/il2019/2019summary.odn> for more information.

**AGE**

The majority (70%) of residents of all RTSV households served were adults age 65 or older, and 85% of households had at least one resident in this group. A small fraction of households (4%) included at least one child. Figure 3 shows the age distribution of residents in households RTSV served.

Figure 3.  
RTSV household members were mostly older adults.

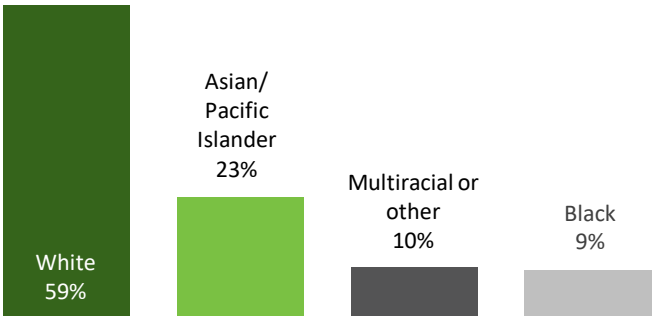


Source: RTSV application data, 2019-2020 (N=194). Percentages add up to more than 100% due to rounding.

**RACE AND ETHNICITY**

More than half of RTSV homeowners served were white, while a quarter were Asian or Pacific Islander. About a quarter (23%) were Hispanic/Latinx (N=181). Figure 4 shows the distribution of backgrounds.

Figure 4.  
The majority of RTSV homeowners were white.

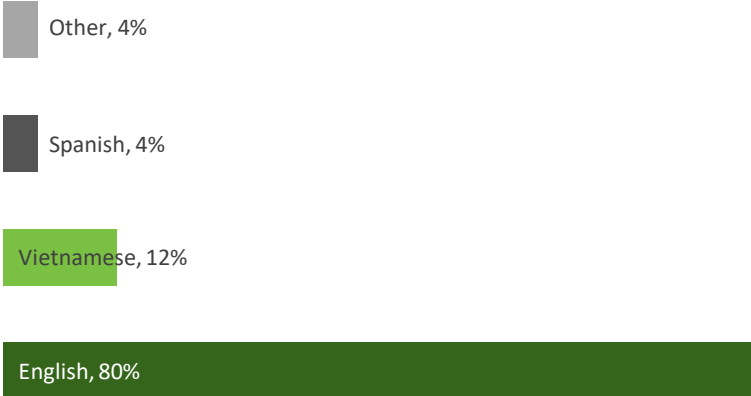


Source: RTSV application data, 2019-2020 (N=168). Note: Totals add up to more than 100% due to rounding and because people who identify as Hispanic/Latinx, a cultural distinction, may also identify as any race or as multiracial.

**PRIMARY LANGUAGE**

Most RTSV homeowners (80%) spoke English as their primary language, followed by Vietnamese (12%) (Figure 5). Fewer than one in 10 homeowners primarily spoke Spanish (4%) or any other language (4%).

Figure 5.  
Languages spoken by RTSV homeowners.

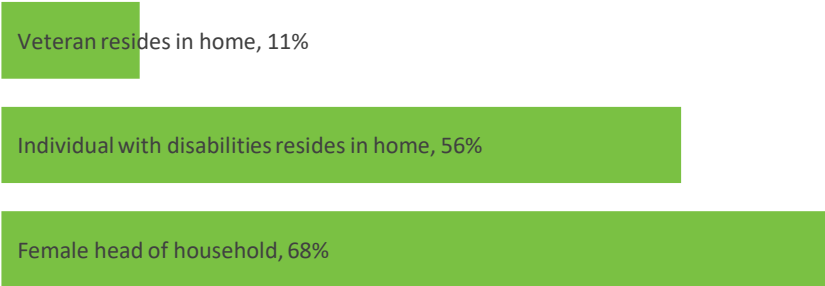


Source: RTSV application data, 2019–2020 (N=189).

**OTHER CHARACTERISTICS**

Over half of all households reported having a person with disabilities living in the home (Figure 6). More than one in 10 households had a U.S. military veteran in residence. More than two-thirds of homes had a female head of household.

Figure 6.  
RTSV households: Women in charge, military veterans, and people with disabilities

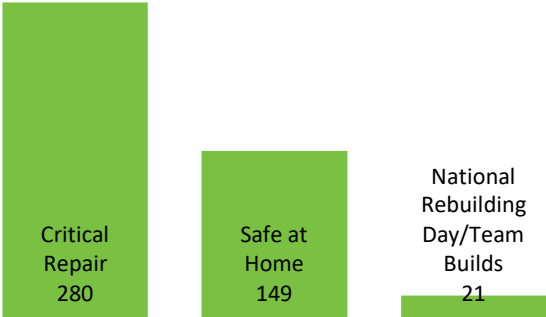


Source: RTSV application data, 2019–2020. Note: N=194. These categories may overlap (a household headed by a female may also include a veteran, etc.).

**PROGRAMS**

Rebuilding Together Silicon Valley completed 450 home-repair projects for 194 different households during the nine-month impact evaluation period. More than three in five RTSV projects (62%) received home repairs through the Critical Repair Program (Figure 7). Most of the remainder (33%) benefitted from Safe at Home.

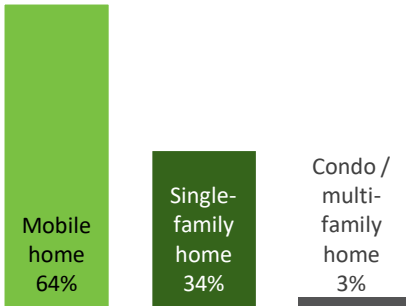
Figure 7.  
Most RTSV households received support through the Critical Repair Program.



Note: N=450 projects (194 households).

Nearly two-thirds of all homeowners RTSV served lived in mobile homes, and the rest resided in single-family homes or condos (Figure 8).

Figure 8.  
Nearly two-thirds of RTSV households were in mobile homes.

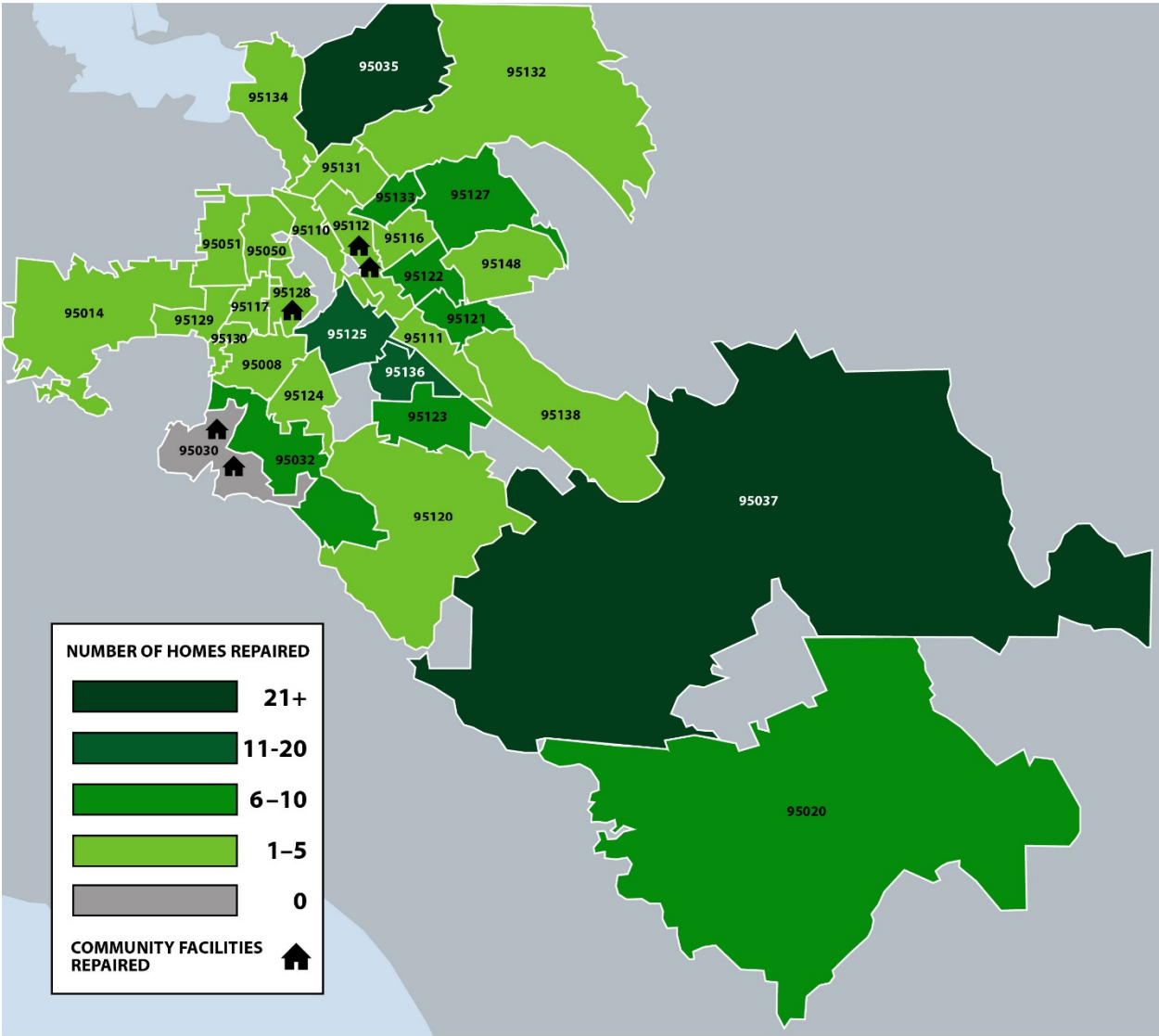


Note: N=194.

### PROJECT LOCATIONS

RTSV serves Santa Clara County. The locations of projects completed during the impact measurement period (July 1, 2019, to March 31, 2020) are mapped in Figure 9. RTSV served the greatest number of homeowners in San José (ZIP Codes include 95110–95139 and 95148), Morgan Hill, and Milpitas.

Figure 9.  
RTSV’s repairs took place in these Santa Clara County ZIP codes.



Source: Rebuilding Together Silicon Valley’s application data, 2019–2020. N=194.

## Evaluation Results by Area of Impact

As described in the section on data gathering, there were two main instruments used to gather data for this evaluation project: the Healthy Housing Checklist and the impact survey.

The RTSV Healthy Housing Checklist is based on its national organization’s strategic approach to safe and healthy housing. RTSV uses the checklist as a means to ensure that every property meets 25 healthy housing standards. Staff members fill out the checklist as part of an initial home assessment, marking each item “yes” or “no” to determine needed repairs. After completing the repairs, staff members fill out the checklist again. Actionable Insights used these data to understand which healthy housing items had improved (i.e., changed from “fail” before repairs to “pass” after repairs).

To gather data on other areas of impact (e.g., reduced stress, reduced costs, feelings of inclusion), RTSV used a retrospective pre- and post-impact survey. At regular intervals between April and September 2020, RTSV identified all homeowners who had received repairs four to 12 months earlier and sent each of them the impact survey along with a self-addressed, stamped envelope and a letter explaining the survey process. Two to three weeks after sending the surveys, RTSV staff members called homeowners who had not returned completed surveys by mail and, when possible, conducted the survey by interview instead. Actionable Insights used these data to understand the effects residents perceived the repairs to have had on them.

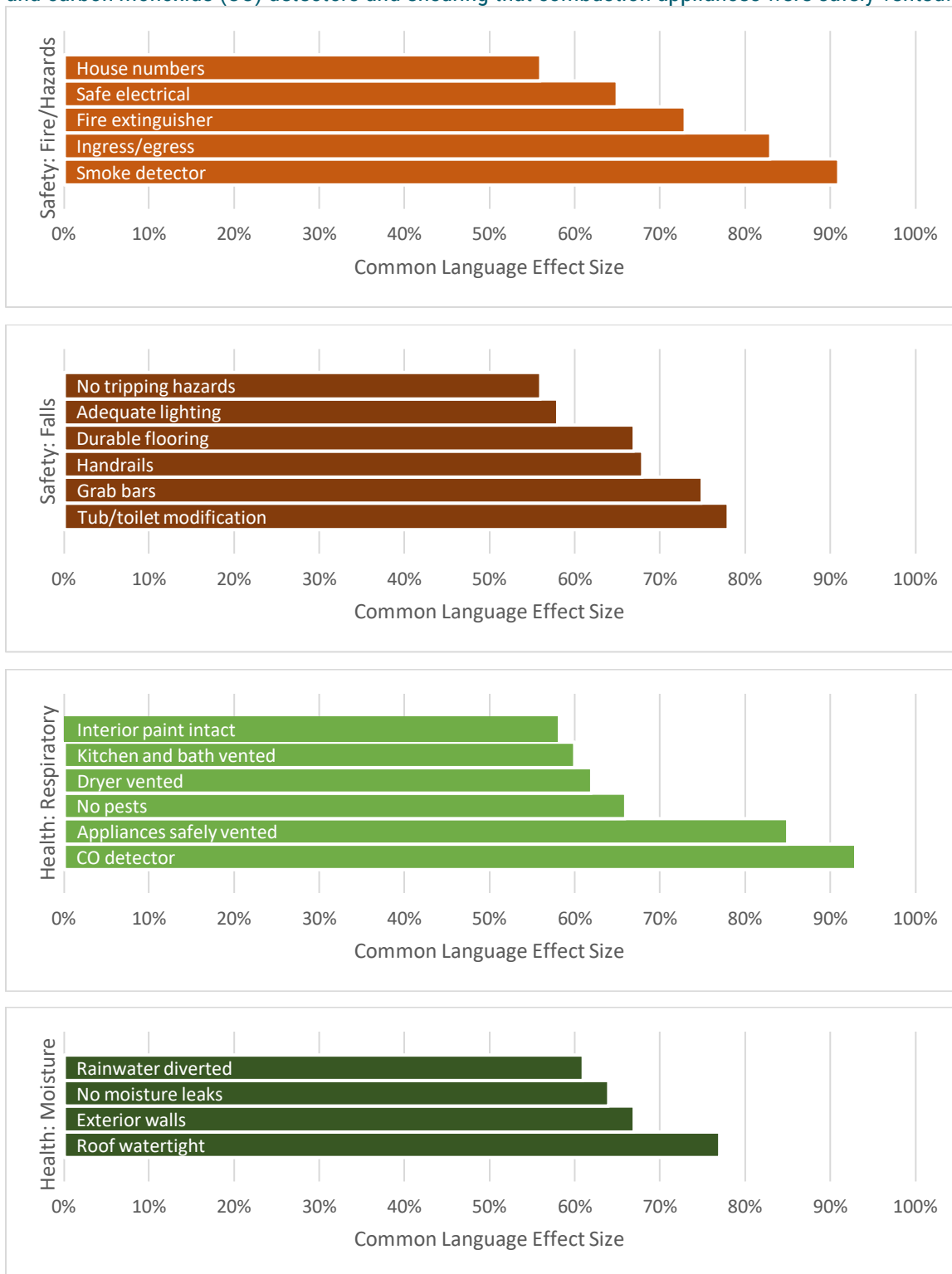
Actionable Insights measured the change between pre- and post- Healthy Housing Checklists and between retrospective pre- and post-impact survey responses, and calculated the effect sizes in six areas of impact:

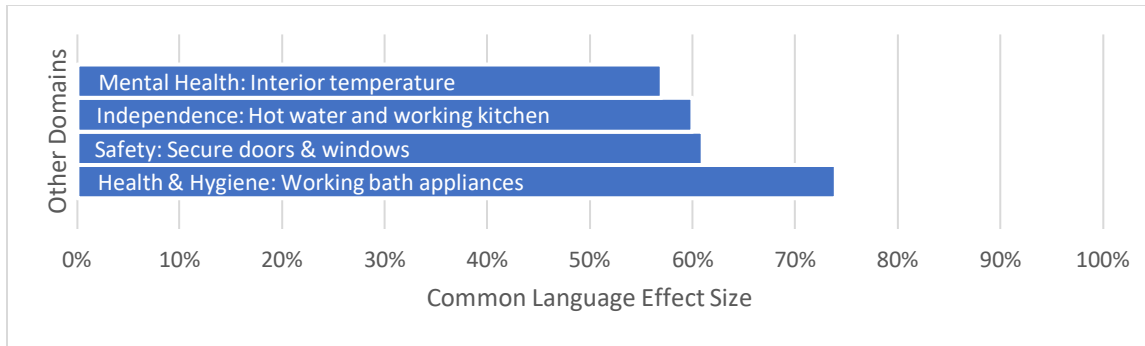
Safety	Physical health	Mental health	Independence	Economic security	Community benefits
Reducing falls	Improving respiratory health	Reducing worry and stress	Enabling better kitchen conditions	Reducing costs related to the home	Feelings of inclusion in neighborhood
Reducing hazards		Improving mental health			
Improving home security	Protecting against airborne contaminants			Increasing the ability to afford daily necessities	
Increasing fire safety					

As explained on page 12, the Common Language effect size measures the magnitude of the pre-/post-change. It is expressed as a percentage, with higher percentages indicating a larger effect. For example, a Common Language effect size of 75% for grab bars means that three out of four times, a home chosen at random (from the 188 homes assessed by RTSV with the Healthy Housing Checklist during the evaluation period) would have grab bars in strategic locations throughout the house after repairs were completed. In other words, it is the **probability** that a given checklist item would be satisfied in a random household that received repairs. The larger the effect size, the more likely a change would occur from pre- to post-. Figure 10 shows the Common Language effect size for all of the Healthy Housing Checklist items.

Figure 10.

Healthy Housing Checklist data showed the largest effects of repairs were in equipping homes with smoke and carbon monoxide (CO) detectors and ensuring that combustion appliances were safely vented.





Source: RTSV's Healthy Housing Checklist data, 2019–2020 (N=188).

The sections that follow include a detailed look at how RTSV repairs affected homeowners (or households) in each area of impact. The data in these sections come from two sources: (1) Healthy Housing Checklists completed by RTSV staff members before and after each home repair project, and (2) impact survey responses from households served during the nine-month evaluation period. All households were asked to complete the survey; more than half (51%) participated. Because the sample size isn't large enough to generalize, where survey results are cited, they should be read as applying only to the households that responded (and not to all households served). Checklist and survey results are also available in table form in Appendices A and B, respectively.

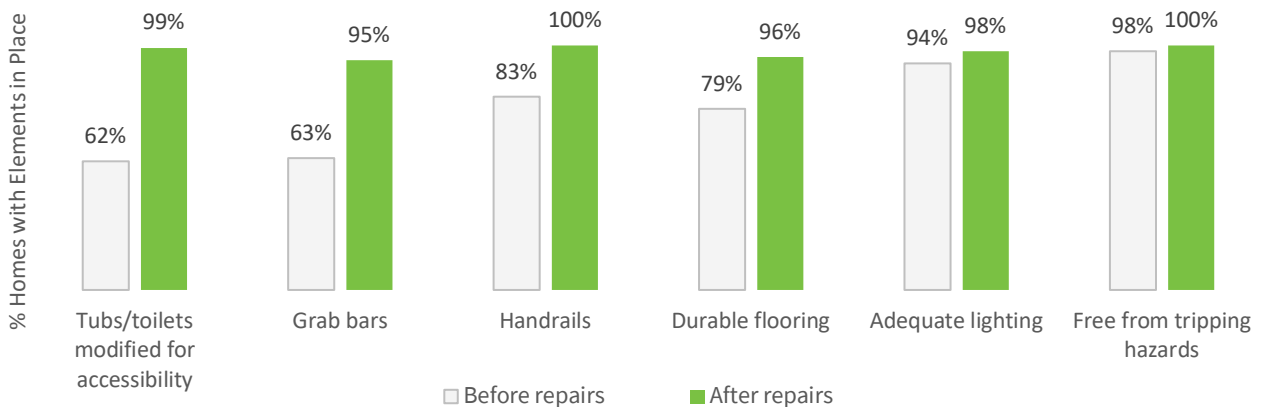
## SAFETY

Maintaining good physical health requires preventing injuries at home. Falling (including slipping and tripping) is the most common source of home injuries<sup>2</sup> and a particular concern for RTSV: About 85% of the households served during the data collection period included at least one adult age 65 or older. Falls at home and nearby are common: Over 3 million older adults nationwide needed medical treatment and close to 25,000 died from falling in 2012. Injuries from falls can reduce independence, require long-term care, and increase the risk of earlier death.

Research shows that taking steps to reduce home hazards reduces falls. One study found that safety interventions decreased the number of falls among high-risk recipients by 44% and the number of fallers by 22%.<sup>3</sup> Another study found a 26% drop in the rate of falls-related injuries among people in households receiving home modifications.<sup>4</sup> In other words, home repairs and upgrades such as those made by RTSV can reduce the number of people who fall and how many falls they have. By the end of their projects, nearly all RTSV households served had elements in place to prevent falls (Figure 11).

### Reducing Hazards

Figure 11.  
RTSV made these safety modifications to prevent falls.



Source: RTSV's Healthy Housing Checklist data, 2019–2020 (N=189).

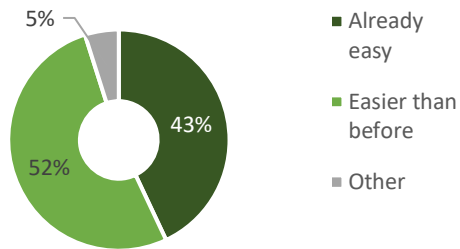
Specifically, RTSV provided a substantial number of tub and toilet modifications and installed grab bars in strategic places within homes. Based on the effect size metrics, there is a 78% probability that the average home served by RTSV during the evaluation period would have a tub or toilet modification in place and a 75% probability of having grab bars installed. (See page 12 for an explanation of Common Language effect size.)

steps), flooring replacement, and lighting improvement; the chances of these repairs being made to the average home were lower, but not insignificant (68% for handrails, 67% for flooring, 58% for lighting).

Additional safety modifications made to some homes included handrail installation (at stairs and

Although RTSV strives to meet 100% of all checklist items, sometimes it is not possible (mainly due to homeowner refusal or lack of funding). This is typical for Rebuilding Together affiliates across the country.

Figure 12.  
RTSV modifications improved the ease of home entry and exit.



Source: Impact Measurement Survey, 2020 (N=84).

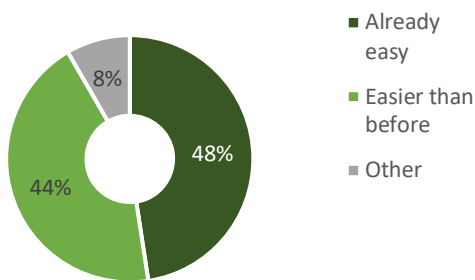
**78%**

The chance that homeowners would report greater ease of entering/exiting after repairs

Homeowners were surveyed about their ease of home entry and exit. About half (52%) of survey respondents said they found it easier to get into and out of their home after repairs were completed than before (Figure 12). Among those who felt entering and exiting were not easy before repairs (38 of 84 respondents), **nearly all (92%) reported easier access** after repairs, while only 2% said it was harder.<sup>h</sup> The effect size metric indicates there is a 78% probability that the average homeowner would report greater ease of entering/exiting after repairs were completed.

There was no statistically significant difference in respondents' perceived ease of entry/exit after repairs for households with older adults versus households without older adults, or for households in which at least one individual with a disability resided versus households without any individuals with disabilities.<sup>i</sup> **This is a positive result**, suggesting that individuals who would be expected to have a hard time entering/exiting their home perceived themselves, after repairs, as having **no greater trouble entering/exiting** than individuals who would not be expected to have trouble doing so.

Figure 13.  
RTSV modifications made it easier to move around all the rooms of the home.



Source: Impact Measurement Survey, 2020 (N=84).

Homeowners were also surveyed about ease of moving around all the rooms of their home. Among survey respondents, 44% said they found moving around all the rooms of their home to be easier/more comfortable after repairs were completed (Figure 13). Among survey respondents who said it was not easy to move around all the rooms of their home before repairs (32 of 84 respondents), **81% reported that it was easier/more comfortable** after repairs. The effect size metric indicates there is a 75% probability that the average homeowner served by RTSV would report greater ease/comfort in moving around all

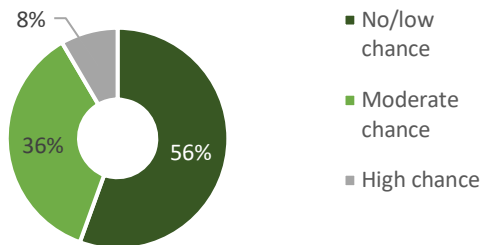
<sup>h</sup> One respondent indicated this was "due to corona[virus]." It is unclear whether entering and existing the home was difficult for the homeowner due to physical illness or a mandate to shelter in place.

<sup>i</sup> Based on a regression analysis, after controlling for their retrospective pre-survey response.

the rooms of their home after repairs were completed.

There was no statistically significant difference in self-rated ease and comfort of moving around their home after repairs for households with older adults or individuals with disabilities versus households without.<sup>j</sup> As before, this is a **positive result**, suggesting that those who would be expected to have a hard time moving around the rooms of their home perceived themselves as having **no greater trouble doing so after repairs** than individuals who would not be expected to have trouble moving around the rooms of their home.

Figure 14.  
The majority (56%) of homeowners who fell or had a close call before repairs said their likelihood of falling after repairs was “no/low chance.”



Source: Impact Measurement Survey, 2020 (N=36).

About four in 10 respondents (43%) fell or had a close call in the six months before repairs; after repairs were made, nearly two-thirds (66%) felt they had a “low chance” or “no chance” of falling.

Among just those who reported falling or having a “close call” (i.e., they almost fell) in the six months prior to repairs (36 of 86 respondents<sup>k</sup>), 56% rated their chances of falling after repairs as “low” or “no

**SURVEY RESPONDENTS SAID:**

“Feeling safe to walk down hallway and not fall through [the floor]! Able to use restroom without fear the toilet would fall through, either.”

“The handrails, higher toilet, and step make simple things like walking easier for Dad.”

“I am so grateful for the adaptations made to my home. I can sometimes go up and down my stairs with alternating feet!”

chance” (Figure 14). In a regression analysis, after controlling for any previous fall(s), there was no statistically significant difference in the self-rated chance of falling after repairs between households with at least one older adult occupant and those without any, or for households with at least one disabled occupant and those without any. Once again, this is a positive result, suggesting that individuals who would be expected to have higher chances of falling perceived themselves as **no more likely to fall** after repairs than individuals who would not be expected to have higher chances of falling.

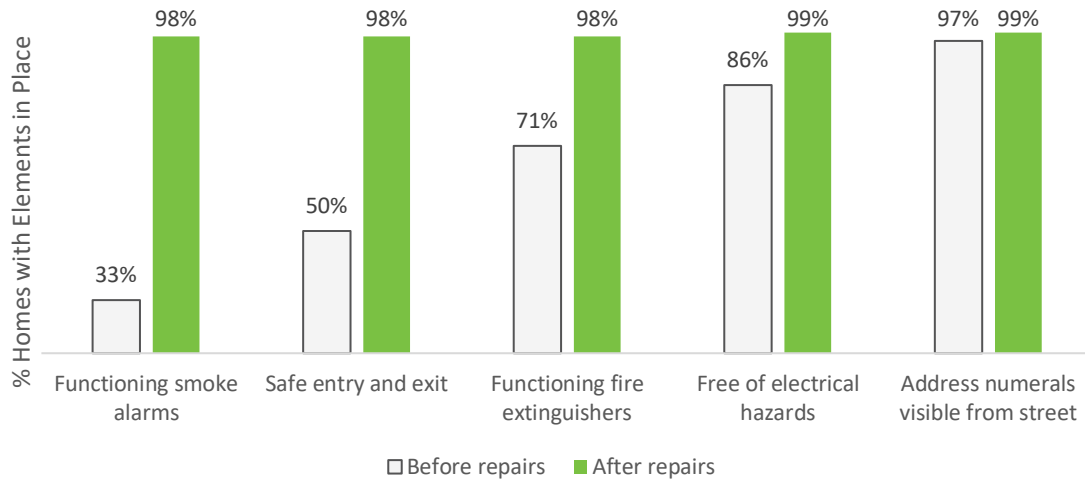
**Increasing Fire Safety**

Functioning smoke alarms have been shown in rigorous studies to reduce death rates of occupants by about 50%.<sup>5,6</sup> RTSV strives to reach 100% for alarms and extinguishers, recognizing other safety issues may be restricted by available resources and participant willingness to make changes. By the end of their projects, nearly all households served during the evaluation period had fire safety features in place.

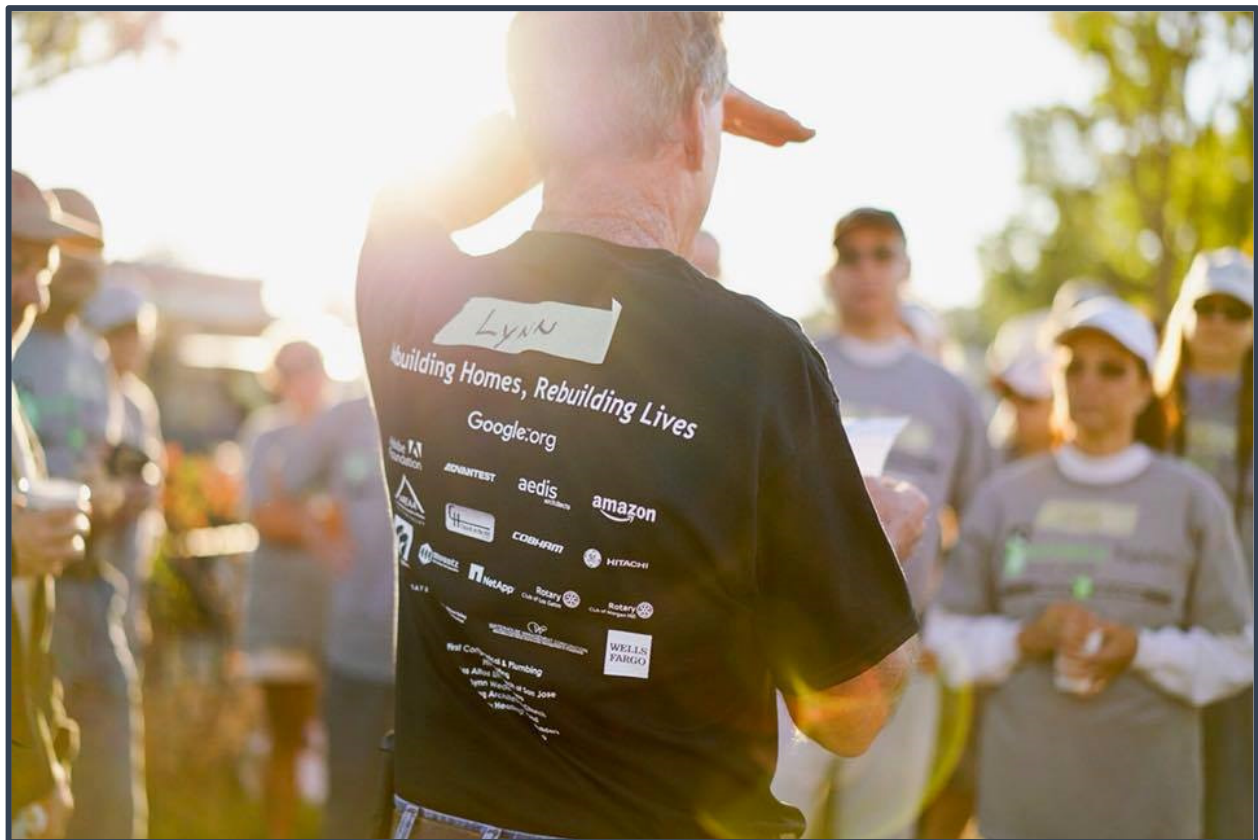
<sup>j</sup> Employing a regression analysis that controlled for retrospective pre-survey response.

<sup>k</sup> Only 86 respondents answered both the pre- and post- questions for this item.

Figure 15.  
RTSV made home modifications that improve fire safety.



Source: RTSV's Healthy Housing Checklist data, 2019–2020 (N=189).



RTSV made repairs and modifications that considerably improved fire safety among the households served. The percentage of homes with functioning smoke alarms and fire extinguishers significantly increased as the result of RTSV’s improvements (Figure 15, previous page). Based on the effect size metric, there is a 91% probability that the average household served by RTSV would have had a properly working smoke detector and a 73% probability a home would have had a functioning fire extinguisher by the time repairs were completed.

Repairs also made it possible for nearly 100% of homes to have safe entry and exit routes in case of an emergency.<sup>l</sup> Additional modifications made to some homes increased safety by fixing electrical wiring that could start a fire; the chances of these modifications being made to the average home were also significant and had moderate to very large effect sizes (83% for safe entry/exit, 65% for electrical hazards).

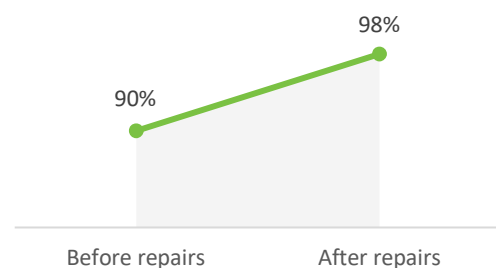
**“RTSV’s work is made possible by so many in our community—volunteers, donors, and friends—who believe that everyone deserves a safe and healthy home.” —Survey Respondent**

### Improving Home Security

Windows, doors, and locks certified to meet specific anti-theft standards have been shown to reduce the rate of break-ins by at least one-third.<sup>7,8</sup> RTSV made repairs and modifications to the properties of low-income homeowners to increase home security, including ensuring that windows and doors can close and lock (Figure 16). Looking at the effect size metric, there is a 61% likelihood that the average home served by RTSV would have these modifications in place by the end of their repair project.

Among survey respondents who did not feel safe in their homes before repairs (36 of 87 respondents), 36% reported feeling safer after repairs.<sup>m</sup> Among all respondents, a total of 20% said they felt safer in their homes after repairs were completed than before, and 2% said they felt less safe. The effect size metric indicates there is a 62% probability that the average homeowner served by RTSV would report feeling safer at home after repairs were completed than before.

Figure 16. More homeowners were able to secure their windows and doors after repairs.



Source: RTSV Healthy Housing Checklist data, 2019–2020 (N=189).

<sup>l</sup> In an emergency, safe entry is just as important as safe exit; it means that emergency personnel (e.g., paramedics, firefighters) can safely enter the home to assist occupants.

<sup>m</sup> One survey respondent who said they did not feel safer attributed this to a “weird neighbor who shot a gun ... into my house at my dogs” (i.e., unrelated to repairs); another said they would feel safer with “screens that lock.”

PHYSICAL HEALTH

51%

of respondents felt that their health had improved due to RTSV’s home repairs.

Housing conditions have major implications for residents’ well-being and contribute to disparities in health status and outcomes. Poor housing is associated with a wide range of adverse health conditions, including asthma and other respiratory diseases, cardiovascular diseases, infectious diseases, injuries, and poor mental health. Improving unsafe and substandard housing can reduce the risk of injury, prevent disease, lower stress, increase quality of life, and decrease poverty.<sup>9</sup>

A home that is clean, dry, well-ventilated, and free of pests enables good physical health.<sup>10,11,12</sup> For example, a longitudinal study of home repair in the U.K. found that improvements such as insulating walls, upgrading electrical wiring, and installing secured and weatherproofed windows and doors reduced hospital admissions among the homes’ adult occupants age 60 and older by 39%.<sup>13</sup>

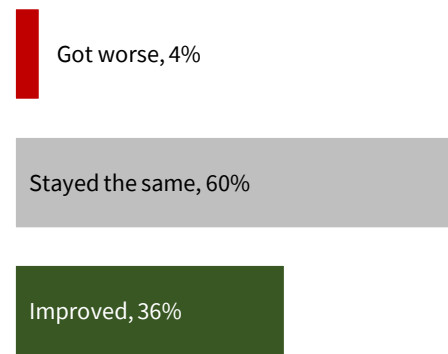
When asked whether RTSV’s services had led to a change in their overall health, 51% (N=82) of survey respondents said the repairs improved their health “some” or “a lot,” and the rest indicated the repairs had not changed their health. No one stated that the repairs had worsened their health.

More than two-thirds of survey respondents (70%, N=82) reported that they had a chronic health condition. Among those who answered the follow-up question regarding how the symptoms or effects of their health condition changed as a result of the repairs (N=55), 36% indicated their

symptoms had improved and 60% said their symptoms had not changed (Figure 17). Two respondents (4%) said their symptoms worsened as a result of the repairs.

**“The mold on the inside of entry door caused me to cough up phlegm every morning for hours, now 80% better [after repairs]! Thank you!”  
—Survey Respondent**

Figure 17. Many homeowners with chronic conditions said their symptoms had improved because of repairs.



Source: Impact Measurement Survey, 2020 (N=55).

There were no significant differences in post-repair ratings of health or symptoms of chronic disease by household demographics (i.e., having an older adult, a child, an individual with disabilities, or a veteran in the household, did not make a difference in respondents’ ratings). However, respondents with chronic conditions for whom there was a longer period between the date of repairs and the date of their survey were significantly more likely ( $p < .01$ ) to answer positively regarding the effect of repairs on their symptoms. This may mean that it requires more time for respondents to perceive the effects of repairs on chronic conditions, or it may mean that the more time had passed, the more negatively they characterized their pre-repair symptoms in their memories.

### Improving Respiratory Health

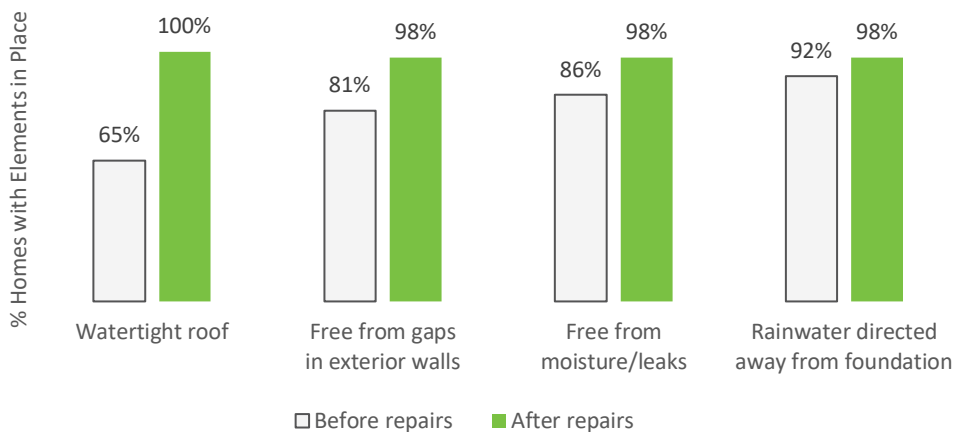
Health researchers associate developing asthma and other respiratory illnesses with living in a home that is damp. Moisture can create conditions that promote cockroaches and other pests as well as dust mites, mold, and other allergens.<sup>14</sup>

In a randomized controlled trial of asthma and mold abatement interventions such as RTSV's efforts, over half (52%) of the participants in the treatment group experienced improved breathing six months after the intervention and none of the control group participants did. Also, 41% of the treatment group reported less need for medication

use in the same time period, compared with 17% of the control group.<sup>15</sup>

Another study found that repairs similar to those performed by RTSV achieved significant results in both reducing the number of days per month that asthmatic children experienced symptoms (by about 50%) and lowering the proportion of people who experienced asthma attacks requiring emergency room or urgent-care visits and/or hospitalizations (33% in the control group compared with 4% in the treatment group).<sup>14</sup> RTSV made various types of repairs to reduce leaks and moisture as shown in Figure 18.

Figure 18.  
RTSV repairs reduced interior moisture problems.



Source: RTSV's Healthy Housing Checklist data, 2019–2020 (N=189).

Specifically, RTSV ensured that all homes had watertight roofs. Looking at the effect size metric, there is a 77% probability that the average home RTSV served would have had a watertight roof in place. There is also a 67% probability that the average home would have had no sizeable gaps in its exterior walls after repairs were complete.

Additional repairs to some homes included the installation or redirection of rainwater downspouts and other work to reduce moisture/leaks. The chances of these modifications being made to the

average home were lower but not insignificant: 64% for moisture/leak repairs, 61% for rainwater redirection.

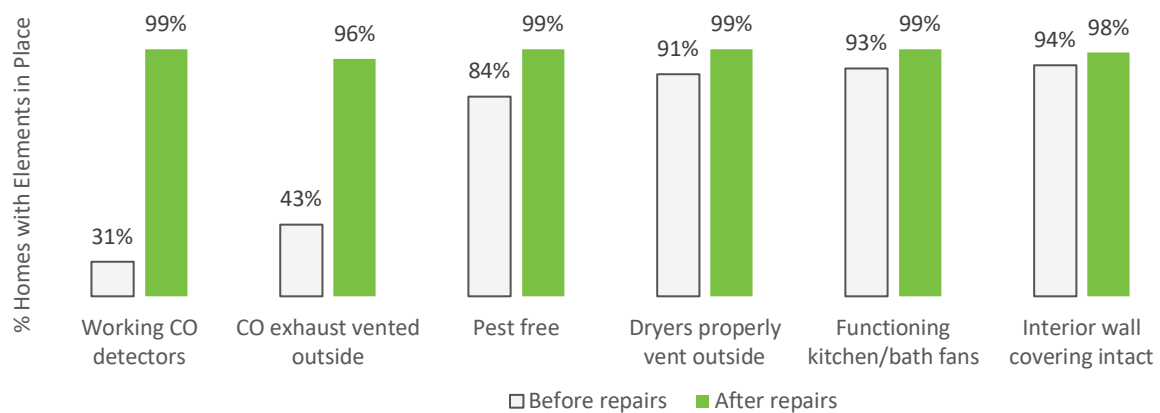
### Protecting Against Airborne Contaminants

Functioning carbon monoxide alarms save lives and contribute to respiratory health.<sup>16,17</sup> No rigorous studies have been conducted, but some experts suggest that increasing the number of carbon monoxide alarms in homes would have an impact similar to installing (and educating homeowners about) smoke alarms.<sup>18,19,20</sup>

In addition, a simulation conducted on behalf of the U.S. Department of Housing and Urban Development with improvements similar to RTSV's found that upgrading unvented combustion appliances is the "single most effective intervention" for reducing carbon monoxide and nitrogen dioxide in homes.<sup>21</sup> The simulation found

additional significant reductions of carbon monoxide from the installation or repair of externally vented kitchen and bathroom exhaust fans, assuming inhabitants used these fans when appropriate.<sup>21</sup> The results of interventions by RTSV are shown in Figure 19.

Figure 19.  
RTSV repairs improved homes to prevent respiratory health problems.



Note: "CO" is short for carbon monoxide. Source: RTSV's Healthy Housing Checklist data, 2019–2020 (N=189).

Specifically, RTSV installed a large number of carbon monoxide detectors and ensured that most homes with combustion appliances (96%) vented those appliances outside. This included replacing water heaters and furnaces that use combustion and ensuring these vent externally. Using the effect size metric, there is a 93% probability that the average home served by RTSV would have had a carbon monoxide detector installed, and an 85% probability that hot water, heating, and carbon monoxide ventilation-related issues would not exist after repairs were done.

Some homes also received pest eradication services, improved carbon monoxide venting for dryers, repair or replacement of ventilation fans, and/or a fresh coat of interior paint. The chances of the average home having these elements after repairs were lower, but not insignificant: 66% for

being pest free, 62% for dryer venting, 60% for fans, 58% for interior paint.

### Potential for Improved Hygiene

Meta-analyses of scientific studies found consistent reductions in infectious diseases (such as diarrhea and hookworm) related to improved access to clean water, whether for personal hygiene or other uses.<sup>22</sup> Studies of the effects of interventions in U.S. schools, day care, and elder-care settings found a 20% relative reduction in the risk of infectious disease with the use of good hygiene practices such as proper hand-washing, bathing, and human waste disposal.<sup>23</sup>

RTSV's activities included ensuring that homeowners had access to clean, running water via functioning water heaters, sinks, and toilets. Six months after

repairs, 44% of survey respondents reported that bathing was easier than before (Figure 20).<sup>n</sup> The effect size metric indicates there is a 77% probability that the average homeowner served by RTSV would report greater ease of bathing safely after repairs were completed than before. There were no significant differences in post-repair ratings of ease of bathing among households with older adult occupants vs. households without them, or households with disabled occupants vs. households without them, controlling for pre-repair ratings. As with the other regression analyses, **this is a positive result**, suggesting that those who would be expected to have a hard time bathing perceived themselves as having **no greater trouble doing so after repairs** than individuals who would not be expected to have trouble bathing.

There was a sizeable increase in the proportion of homes with functioning plumbing from pre- to post-

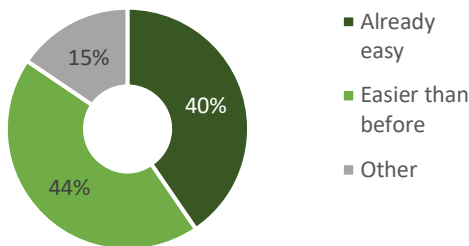
repairs (Figure 21). Looking at the effect size metric, there is a 74% likelihood that the average home would have received plumbing repairs as a result of RTSV’s activities.

**SURVEY RESPONDENTS SAID:**

**“[Got a] new water heater because mine was leaking. This was a big lifting of the burden for me having to replace it myself. Thank you.”**

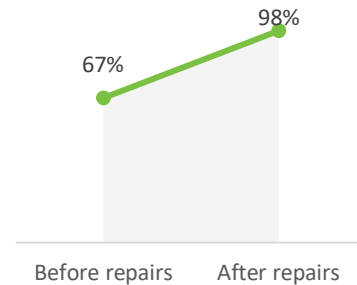
**“Turning the water on and off doesn’t hurt my hands [anymore, and] the grab bar in my shower makes me feel MUCH safer!”**

Figure 20.  
RTSV repairs made it safer and easier for many homeowners to bathe.



Source: Impact Measurement Survey, 2020 (N=84).

Figure 21.  
Almost all homeowners had functioning plumbing after RTSV repairs.



Source: RTSV’s Healthy Housing Checklist data, 2019–2020 (N=189).

<sup>n</sup> One survey respondent who said repairs did not make bathing easier indicated that they’d had multiple knee surgeries and thus bathing was “always difficult and unsafe.”

## MENTAL HEALTH

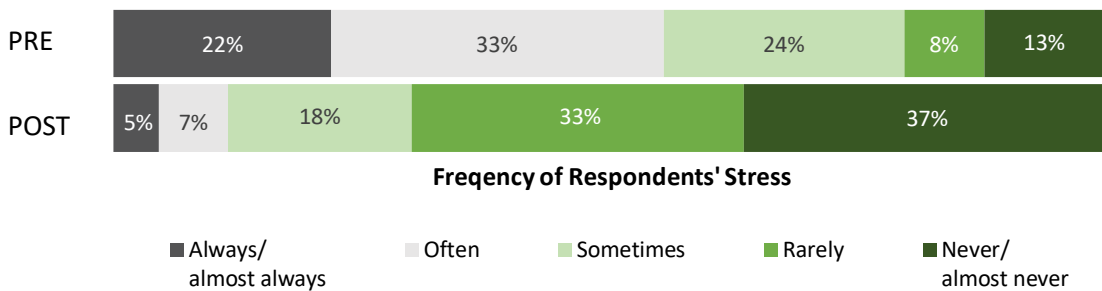
Homeowners experience stress related to home maintenance.<sup>24</sup> Research shows that, although home ownership is considered to have a “therapeutic” effect, the stress of maintaining a home can be “emotionally draining” and “damaging to health.”<sup>25</sup> By providing no-cost home repairs, RTSV can improve low-income homeowners’ mental health.

Low-income homeowners rated their level of nervousness and stress about home repairs and maintenance.

Figure 22 shows the survey respondents’ level of stress (proportion of total) before and after RTSV repaired their homes. Before repairs, 55% said they were often or almost always stressed, compared with 12% after repairs.

The effect size metric indicates there is an 80% probability that the average homeowner served by RTSV would report a lower level of stress after repairs were completed than before.

Figure 22.  
Homeowners felt stressed less often about home maintenance after RTSV’s repairs.



Source: Impact Measurement Survey, 2020 (N=87).

### SURVEY RESPONDENTS SAID:

**“Big relief knowing repairs are done and I didn't have to pay for them. Stress of more repairs has been a nightmare!”**

**“I would not have been able to pay for repairs. Rebuilding [Together] took the worry and stress off of me by doing them. So thankful this service is available.”**

### Reducing Worry and Stress

Homeowners cited improved well-being among the changes that made the biggest positive impact on their lives. Homeowners rated their stress level on a scale from 1 to 5 (with 1 being the highest level of stress possible). Among those who rated their stress level as moderate or higher before repairs (69 of 87 respondents), 90% reported a decrease in the frequency of feeling stressed after repairs. Almost three-quarters of all participants (63 of 87 respondents) experienced less stress about home repairs and maintenance after repairs.

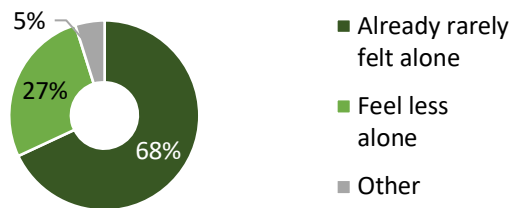
# 90%

of the most-stressed respondents felt **less stress about home repairs and maintenance** six months after receiving services from RTSV

### Improving Mental Health

More than one in four homeowners (27%) said they felt less alone six months after RTSV's repairs (Figure 23). The effect size metric suggests there is a 60% probability that the average homeowner RTSV served would report feeling less alone after repairs were completed than before repairs.<sup>o</sup>

Figure 23.  
Some homeowners felt less alone after RTSV repairs than they did before.



Source: Impact Measurement Survey, 2020 (N=84).

A large cross-sectional study found at least a 30% increased risk of depression among those who lived in dwellings with inadequate natural light, controlling for other factors (including gender, health status, marital status, disability, and age).<sup>26</sup> More than one in 10 homeowners (11%) reported that RTSV improved the level of natural light in their homes (11%). Most other homeowners (72%) reported their homes already got a lot of natural light. The effect size metric suggests there is a 59% probability that the average homeowner RTSV served would report having more natural light in their home after repairs were completed than before.

#### SURVEY RESPONDENTS SAID:

**“Many neighbors have said that we have the best-looking roof in the [mobile home] park.”**

**“We got heaters replaced. I was always cold and uncomfortable. Now am warm, and sleep much, much better.”**

**“A stove and heater made a big difference in the comfort of my home. Thank you.”**

**“I deeply appreciate the work you have done. It has made a wonderful impact in terms of safety and comfort.”**

<sup>o</sup> The survey also measured levels of feeling alone after Santa Clara County's stay-at-home orders related to the COVID-19 pandemic were implemented. Any improvements in loneliness that homeowners reported after RTSV repairs disappeared as they sheltered in place. See Appendix B for more information.

A systematic review of studies found that home repairs—particularly improvements to thermal comfort and energy efficiency—have been associated with improved mental health.<sup>27,p</sup> RTSV improved the ability to control interior temperature in only a few homes, but in doing so increased the proportion of households that could control their interior temperature to 100%.<sup>q</sup> Looking at the effect size metric, there is a 57% likelihood that the average home served by RTSV would have experienced thermal comfort improvements after repairs.

Over 40% of homeowners said they were more often able to maintain a comfortable temperature in their home six months after RTSV completed repairs (Figure 24). Based on the effect size metric, there is a 74% probability that the average homeowner would report more frequent ability to maintain their home at a comfortable temperature after repairs than before.

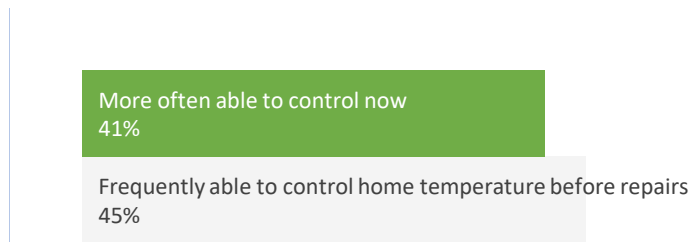
Finally, nearly three quarters (74%, 64 of 87 respondents) of homeowners said they felt more pride in their properties after repairs had been completed. The effect size metric suggests there is an 88% probability that the average homeowner would report a greater level of pride after repairs were completed than before repairs.

## INDEPENDENCE

Everyone needs safe homes that they can afford to maintain. This enables them to stay healthy and live independently, as well as to handle any stressors or crises that may arise.

One measure of independence is whether homeowners can “age in place” (remain in their homes as they age).<sup>28</sup> According to the American Association of Retired Persons, although 76% of adults age 50 and older would like to remain in their current home as they age, only 46% feel they will be able to do so.<sup>r</sup>

Figure 24.  
RTSV repairs gave homeowners better control of the temperature indoors.



Source: Impact Measurement Survey, 2020 (N=80).

<sup>p</sup> Thomson, H., Thomas, S., Sellstrom, E., & Petticrew, M. (2013). Housing improvements for health and associated socio-economic outcomes. *Cochrane Database of Systematic Reviews*, 2. Retrieved from <https://researchonline.lshtm.ac.uk/856558/1/CD008657.pdf>

<sup>q</sup> Note that RTSV tracks the replacement of furnaces as part of the “CO vented externally” item, which increased significantly and had a sizable effect. See section on Improving Respiratory Health, page 27.

<sup>r</sup> Note that respondents to AARP’s survey were not only homeowners but also renters. Binette, J. & Vasold, K. (2019). 2018 Home and Community Preferences: A National Survey of Adults Ages 18-Plus. *AARP Research*. Retrieved from <https://www.aarp.org/research/topics/community/info-2018/2018-home-community-preference.html>

Eight in 10 (80%) of impact measurement survey respondents reported that, prior to RTSV’s repairs, they had planned to stay in their homes for the rest of their lives. After the repairs, of those who had not planned to stay in their homes for the rest of their lives (N=18), 33% planned to stay longer and 17% expected to move even sooner than before. There were no differences in post-reports of plans to age in place by household demographics. However, respondents with a longer period between the date of repairs and the date of their survey were significantly more likely ( $p < .05$ ) to answer that they planned to move sooner. This may mean that it takes more time for respondents to fully experience the advantages and limitations of their repaired home. There may be other explanations as well.

RTSV also made repairs and modifications that considerably increased mobility and use of the home for the homeowners served. (See Safety, page 21, and Physical Health, page 26.)

**SURVEY RESPONDENTS SAID:**

**“After repairs, it was so nice not having to bail water out the back door again.”**

**“They also installed a portable ramp. Knowing my disabled daughter can get to her doctor appointments made our lives more secure.”**

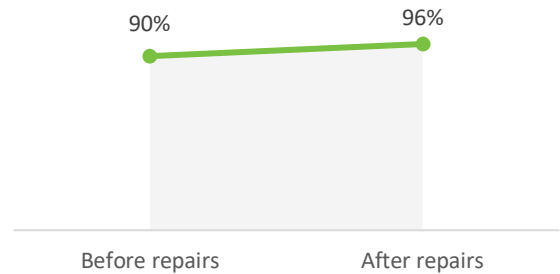
**Enabling Better Kitchen Conditions**

Another important aspect of independence is the ability to prepare meals. Cooking at home is positively associated with healthier eating.<sup>29</sup> When homeowners lack access to working kitchen appliances (such as a refrigerator or range), they have a higher risk of a poor diet and associated chronic diseases.<sup>30,31</sup> Repair or replacement of kitchen appliances contributes to a homeowner’s ability to cook and eat more nutritious food.

Additionally, studies of the effects of interventions in U.S. schools, day care, and elder care settings found a 20% relative reduction in the risk of infectious diseases with the use of hygiene practices such as proper hand- and dish washing.<sup>32</sup> RTSV’s activities included ensuring that homeowners had access to clean, running water via functioning water heaters and sinks (see Physical Health, page 26).

There was a small increase in the proportion of homes with functioning kitchen appliances and water heaters before and after repairs (Figure 25). Looking at the effect size metric, there is a 60% likelihood that the average home would have received improvements to kitchen appliances or water heaters during RTSV’s repairs.

Figure 25. **Nearly all homeowners had functioning kitchen appliances and water heaters after RTSV repairs.**

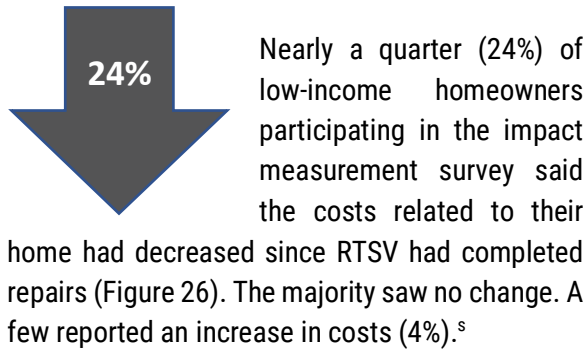


Source: RTSV’s Healthy Housing Checklist data, 2019–2020 (N=189).

**ECONOMIC SECURITY**

A home represents a larger proportion of the wealth in a low-income household than a high-income household.<sup>33</sup> Therefore, when the costs associated with a home (including maintenance) increase, low-income homeowners tend to experience greater financial stress than high-income homeowners. For example, increased housing costs exacerbate food insecurity in low-income families.<sup>34</sup> By providing repairs at no cost, RTSV’s efforts may relieve financial stress and, in some cases, free up homeowners’ funds for other purposes.

Reducing Costs Related to Home

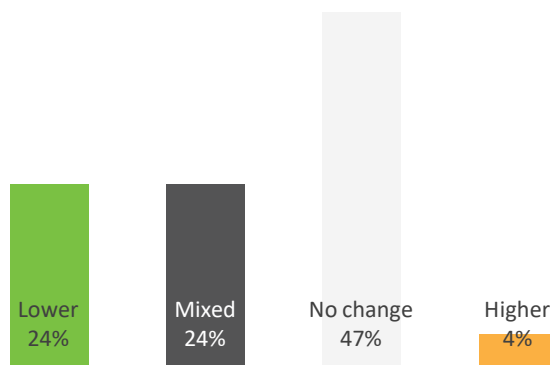


**“My home insurance was lowered with the new roof. My PG&E [bill was] lower also.”**  
**–Survey Respondent**

Increasing the Ability to Afford Daily Necessities

The costs of a home can interfere with low-income homeowners’ ability to pay for food and other daily necessities. Before repairs, 28% of homeowners participating in the impact survey said they were either “not able” or “barely able” to pay for daily necessities, compared 20% after repairs. After

Figure 26. After RTSV repairs, one-quarter of homeowners reported lower utility bills and one-quarter reported a mix of higher and lower bills.



Source: Impact Measurement Survey, 2020 (N=74).

Respondents who said their costs were lower after repairs were asked whether they had been able to spend their savings on other goods or services (N=17). Most (82%) said they spent some or all of the extra money on food, clothes, housecleaning, or other goods or services. One survey respondent mentioned that costs were lower after repairs because they could now have a housemate.

**80%**

felt they would be able to pay for daily necessities six months after repairs, compared with 72% before

repairs, 2% said they were unable to afford daily necessities, a decrease from 6%. Those who could “comfortably” pay their bills increased from 17% to 24% (Figure 27, next page).

Using the effect size metric, there is a 62% chance that the average homeowner served by RTSV would report a greater ability to pay for daily necessities after repairs were completed than before. Homeowners with children reported an improvement in their ability to pay for daily necessities after repairs, controlling for pre-repair ability and income category – a statistically significant result.<sup>†</sup>

<sup>s</sup> The increase may be the result of various factors, including residents using appliances that were previously broken; a change in weather from the prior year; utility rate hikes; lack of weather-stripping or energy-efficient appliances; or more household members.

<sup>†</sup> There was no significant difference in post-repair ability to pay for daily necessities among households by income category or for homes with older adults in residence, controlling for pre-repair ability to pay for daily necessities.

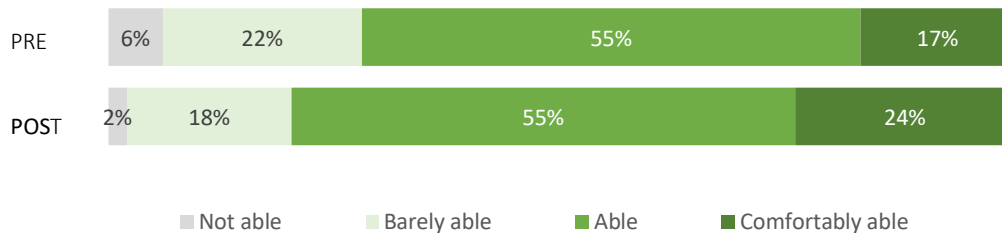
These results are despite the pandemic, which negatively affected the economy and some homeowners’ income and costs. One survey respondent said that their household income had dropped. Another stated that costs had gone up because they were spending more time at home in compliance with shelter-in-place orders.

**SURVEY RESPONDENTS SAID:**

**“Your hot water heater replacement eased my financial situation considerably. Thank you for caring.”**

**“[RTSV] gave me the time and money to repair previous damage; it gave the ways and means to get life and physical surroundings back to normal.”**

Figure 27.  
RTSV repairs helped increase the proportion of homeowners able to pay for daily necessities.



**COMMUNITY**

Home repairs positively influence the overall condition of the neighborhood<sup>35</sup> and can have a positive spillover effect.<sup>36</sup> RTSV believes that repairs also boost social inclusion for the homeowners.

Over 25% of homeowners said they felt more a part of their neighborhood six months after RTSV’s repairs.<sup>u</sup> The effect size metric indicates there is a 65% likelihood that the average homeowner served by RTSV would report feeling more a part of their neighborhood after repairs were completed than before. Qualitatively, many survey respondents commented on the effect RTSV had on their feelings of connectedness.

Greater neighborhood stability is a desired outcome of RTSV’s work. Maintaining and

repairing homes not only improves the chances that homeowners will be able to age in place,<sup>37</sup> but also boosts the quality of housing stock and potentially slows the rate of property turnover.<sup>38,39</sup> Although comprehensive research in this area to date is scarce—and RTSV lacks the resources to conduct a thorough analysis at this time—the data related to homeowners’ plans to age in place has helped raise RTSV’s understanding of the importance of stability in low-income neighborhoods.

<sup>u</sup> Pandemic concerns and public health mandates (shelter-in-place orders) affected survey respondents differently. One noted that the “neighbors are home more, and I am, too.” Another mentioned that club activities “don’t exist because of COVID-19,” referring to local and state restrictions on group gatherings. Finally, note that RTSV made well-check calls to clients during the early part of the pandemic, which appear to have positively affected respondents’ feelings of connectedness.

**SURVEY RESPONDENTS SAID:**

**“I am amazed at the weekly or biweekly phone calls [from RTSV] to see how I am doing. I have been very down since I lost my brother and with the lack of ... work, social, and church activities. Those phone calls have lifted me up more than you guys would ever know!”**

**“Everyone was happy to help, not like charity but like friends.”**

**“How wonderful the Friday check-in phone calls were. They were like a good [friend] who cared about my condition.”**

**“100% positive experience. I feel like I have somebody who cares.”**



## Investment

To better understand how the size of RTSV's financial investment in a project may have affected survey results, Actionable Insights analyzed measures of retrospective pre-/post-change in survey respondents' answers by project investment level. To do so, AI used two different indicators: RTSV investment levels and RTN-rubric investment levels.

The RTSV investment levels were determined by separating repair projects into three relatively equal "buckets" based on their total cost (Figure 28):

- low (less than \$800)
- medium (\$800 to \$4,999)
- high (\$5,000 or more)

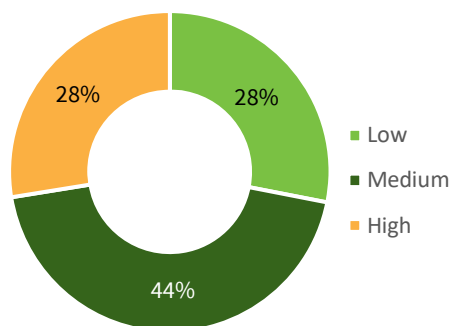
The RTN-rubric investment levels were determined by separating the same projects into three "buckets" based on Rebuilding Together's national rubric (Figure 29):

- minor (less than \$5,000)
- moderate (between \$5,000 and \$11,999)
- major (\$12,000 or more)

The median cost of repairs per project was \$3,150 (N=194).

Figure 28.

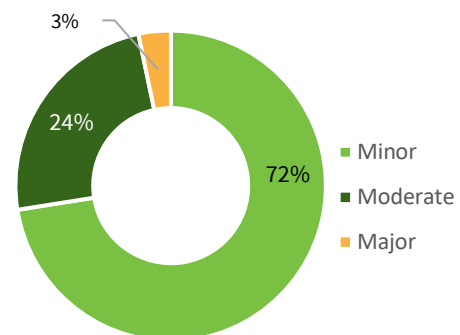
RTSV investment levels were set such that projects were distributed relatively equally across spending "buckets."



Low=<\$800; Medium=\$800–\$4,999; High=\$5,000+

Figure 29.

RTN-rubric investment levels showed that RTSV's spending primarily funded minor projects.



Minor=<\$5,000; Moderate=\$5,000–\$11,999; Major=\$12,000+

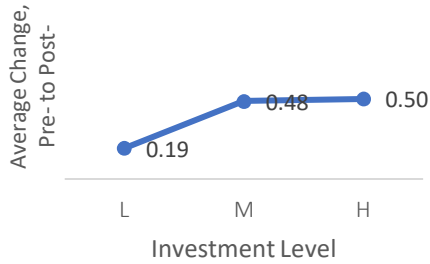
Note: N=178; projects with a zero-dollar investment were treated as missing for the purpose of these investment analyses.

AI generated change scores for the pre-/post- survey items and then condensed the results into a scale of 1 (positive change), 0 (no change), or -1 (negative change).<sup>†</sup> Table 2 contains charts of these condensed change scores plotted by investment level.

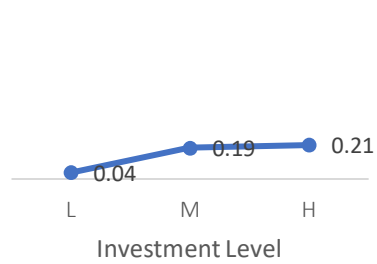
<sup>†</sup> For ANOVA analyses (analyzing change scale for three categories of investment), AI used the Duncan statistic for significance testing.

Table 2.  
The investment level had a significant influence on RTSV project impact.

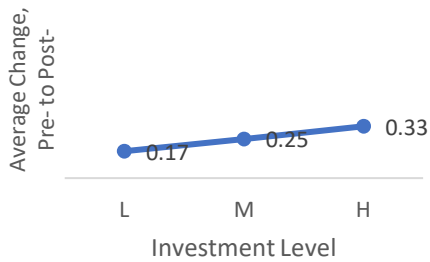
Controlling temperature\*



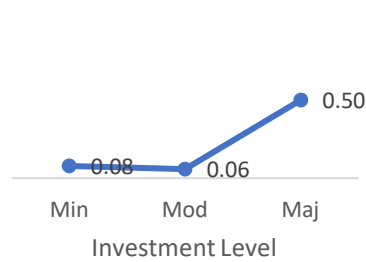
Greater ability to pay for daily necessities



Feeling part of neighborhood



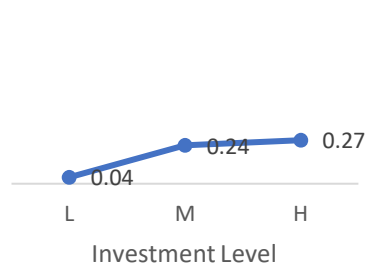
More natural light\*



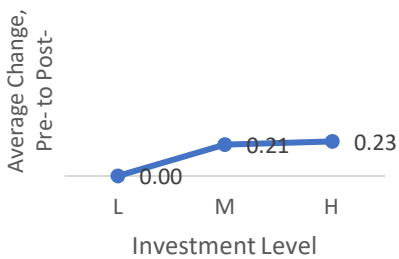
Ease of entry/exit\*



Frequency of feeling stressed\*



Feeling safe/secure\*



Moving around all rooms of the house\*



L=Low investment; M=Medium investment; H=High investment (RTSV levels).  
Min=Minor investment; Mod=Moderate investment; Maj=Major investment (RTN rubric).

Notes: Average change could vary from -4 to 4 but was condensed for analysis. Thus, positive change is represented by 1, negative change by -1, and no change by 0. \* Statistically significant. For details, see Investment Level Analysis on page 39.

## INVESTMENT-LEVEL ANALYSIS

### Statistically Significant Differences in Impact (by Project Investment Level)

**Temperature control:** Homeowners whose projects received medium or high RTSV investments (\$800+) were significantly more likely to report improvement in their ability to control temperature from pre- to post- than homeowners whose projects received low RTSV investments (ANOVA,  $p < .05$ , one-tailed).<sup>w</sup>

**Moving around all the rooms of the home:** Homeowners whose projects received medium or high RTSV investments were significantly more likely to report greater ease and comfort in moving around their home from pre- to post- than homeowners whose projects received low RTSV investments (ANOVA,  $p < .05$ , one-tailed).<sup>w</sup>

**Entry/exit:** Homeowners whose projects received major investments (\$12,000+) were significantly more likely to report greater ease in home entry/exit from pre- to post- than homeowners whose projects received minor or moderate investments (t-test,  $p < .05$ , one-tailed), based on RTN-rubric investment levels. AI found a similar pattern using RTSV investment levels, but it was not statistically significant.

**Natural light:** Homeowners whose projects received major investments were significantly more likely to report greater natural light in their home from pre- to post- than homeowners whose projects received minor or moderate investments (t-test,  $p < .05$ , one-tailed) based on RTN-rubric investment levels. AI found a similar pattern using RTSV investment levels, but it was not statistically significant.

**Stress levels:** The change in frequency of feeling stressed by level of project investment was not statistically significant. However, the plot of the average changes by investment level suggests that the greater the investment, the more positive the change (decrease) in frequency of feeling stressed. Comparing the responses of homeowners from low-investment projects to the combined responses of homeowners from medium- and high-investment projects, AI found a significant difference, with low-investment respondents having significantly less change compared with medium- and high-investment respondents (t-test,  $p < .05$ ).

**Feeling safe:** The change in frequency of feeling safe by level of project investment was not statistically significant. However, the plot of the average changes by investment level suggests that the greater the investment, the more positive the change (increase) in frequency of feeling safe. Comparing the responses of homeowners from low-investment projects to the combined responses of homeowners from medium- and high-investment projects, AI found a significant difference, with low-investment respondents having less change compared with medium- and high-investment respondents (t-test,  $p < .05$ , one-tailed).

### No Statistical Significance in Impact (by Project Investment Level)

**Ability to pay for daily necessities:** The amount of change by separate level of project investment was not statistically significant. However, the plot of the average changes by investment level is suggestive: With medium or high levels of RTSV investment (\$800+) , the change in respondents' reported ability to pay for

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<sup>w</sup> AI found a similar pattern of results for RTN-rubric investment levels, though the differences were only significant for respondents from projects with major investments versus respondents from projects with minor and moderate investments combined (t-test,  $p < .05$ ).

daily necessities appears higher. It is possible that in an analysis with more respondents, this finding might be statistically significant.

**Feeling part of neighborhood:** The amount of change by separate level of project investment was not statistically significant. However, the plot of the average changes by investment level is suggestive: The greater the RTSV investment, the more positive the change in respondents' reported feelings of being part of their neighborhood appears. It is possible that in an analysis with more respondents, this finding might be statistically significant.

## Conclusions

The work done by RTSV achieved positive outcomes in all six key areas of impact identified in the logic model.

### SAFETY

RTSV clients realized some of the largest impacts (effects) in the area of safety. RTSV's work substantially reduced the risk of falls in households served through toilet/tub modifications for better accessibility and the installation of grab bars and handrails. Over half of survey respondents who had experienced a fall or a close call in the six months before repairs rated their chances of falling after repairs as "low" or "no chance."

RTSV also improved home security and fire and structural safety at the properties where work was performed. Repairs and modifications included installing or replacing fire extinguishers and smoke alarms, enhancing window and door security, improving lighting, and reducing electrical hazards. Finally, repairs gave nearly 100% of residents a safe way to exit their home (and for emergency personnel to enter) in case of an emergency.

### PHYSICAL HEALTH

Half of the homeowners who responded to the impact evaluation survey said that their health improved after RTSV completed its repairs. RTSV reduced dampness in homes by stopping active leaks and providing watertight roofs, and it lowered risks of airborne contaminants by installing or replacing carbon monoxide detectors and making sure interior wall coverings were intact. (These types of measures can improve occupants' respiratory health.) Before repairs, only two thirds of homes had functioning plumbing; after repairs, nearly all had functioning plumbing. This is a likely contributor to improved hygiene for clients: Four in 10 survey respondents found bathing after repairs easier than before.

### MENTAL HEALTH

Some of the largest effects of RTSV's repairs were in the area of mental health. Before repairs, almost six in 10 survey respondents said they "often" or "almost always" felt stressed about home repairs and maintenance; after repairs, that number dropped to about one in 10. After repairs (but before the COVID-19 pandemic started), over one in four said that they felt less alone than before repairs. About three in four expressed feeling greater pride in their homes since RTSV completed repairs. Finally, after repairs, all respondents said they were able to control the interior temperature of their homes, a 25% improvement.

### INDEPENDENCE

Improvements made by RTSV increased the proportion of low-income homeowners surveyed who said they would age in place. About one in three respondents who had not planned to stay in their current homes forever said that they now plan to stay longer. This may be related to the respondents' ability to move around all of the rooms of their home: More than eight in 10 said that it is now easier and more comfortable to do so. Also, a small proportion of homeowners said the repair or replacement of kitchen appliances contributed to their ability to cook and eat healthier food.

### ECONOMIC SECURITY

RTSV's efforts increased the ability of homeowners who were served to pay for daily necessities, according to those who responded to the survey. In part, this may be the result of a reduction in utility and/or home

maintenance costs, which was reported by one in four respondents. In addition, over eight in 10 who were more able to pay for daily necessities said that they spend the savings they realized on goods and other basic needs like food and clothes.

## COMMUNITY

RTSV's home repairs affect entire communities as well as individual dwellings. More than one in four low-income homeowners said they felt an increased connection with their neighbors after the repairs were completed, reflecting the broad impact of RTSV's work.

## Recommendations

### PROGRAM RECOMMENDATIONS

#### Healthy Housing Checklist use

Actionable Insights recommends that RTSV review work declined by homeowners and consider how to address objections in order to increase the post-repair completion rate. In a previous report,<sup>x</sup> AI recommended that the organization's national office help disseminate best practices to its affiliates for collaborating with homeowners who initially resist or decline critical safety repairs. If no such guidance has been provided, RTSV can take its own steps to improve how staff members and captains communicate the risks associated with ignoring specific home safety issues vs. the benefits of making improvements.

#### Consumer information and education

RTSV may consider developing new programs or partnerships that provide information or education to homeowners. It already provides a "Safe at Home" webinar series; it may consider piggy-backing on the series to develop or adapt a guide for homeowners to help them reduce falls and create a safe home. Additionally, tools and training that empower people to track and perform routine home maintenance tasks—and prevent the need for major repairs—could include a monthly preventive maintenance checklist. For homeowners who are physically unable to handle tasks themselves, RTSV could provide a list of approved local experts (plumbers, electricians, roofers, etc.) with tips on how to interview and hire help.

Financial literacy improves a person's ability to manage financial resources, a key to homeownership.<sup>40</sup> Adults 65+ and older may also need support applying to programs that can reduce their living expenses (such as Medicare savings, food assistance, energy discounts, property-tax relief, etc.).<sup>41</sup> RTSV could consider partnering with local organizations, including those that promote financial literacy, so that staff members could provide homeowners with appropriate referrals. This could help homeowners maximize their limited resources and, in some cases, retain their homes.

### PROCESS RECOMMENDATIONS

Actionable Insights recommends that the following changes be adopted for future impact measurement efforts to improve the process:

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<sup>x</sup> Rebuilding Together. (2020). Impact Measurement Pilot Report, 2019–2020. Retrieved from [https://rebuildingtogether.org/sites/default/files/PDF/Our%20Impact/2019%20Eval%20Report%20FINAL-2020-06-15\\_fixed.pdf](https://rebuildingtogether.org/sites/default/files/PDF/Our%20Impact/2019%20Eval%20Report%20FINAL-2020-06-15_fixed.pdf)

- Clearly define and communicate to staff what constitutes the “closed date” of a repair project. Make sure staff members pay greater attention to the closing process and record these dates in a timely manner (i.e., as the project ends, rather than at the end of the fiscal year). This is important in part because these dates are used for data analysis: When a homeowner should be surveyed about RTSV’s work is determined by comparing the survey date to the closed date (the months that have elapsed).
- Retrain everyone who conducts pre- and post-repair inspections in how to use the Healthy Housing Checklist, particularly what to mark when an item does not require repair.
- Explore ways to systematically track each repair made per project in a systematic way, so that the “scope of work” is captured in a methodical fashion. This would allow for survey results and changes in the safe and healthy housing attributes of each home to be compared with the changes RTSV actually made to the home.
- Cost savings are another important indicator of home improvement for the households served by RTSV. The survey responses indicated that repairs lowered costs for some homeowners. To collect fixed data, Actionable Insights recommends that RTSV request copies of homeowners’ utility bills as part of the application process and again after project completion (during the same months before and after repairs, for comparison) to examine the actual difference.

Of course, RTSV should also consider carefully the potential effects of any changes on its budget, personnel, and processes. However, by implementing at least some of these recommendations, RTSV will make the impact measurement process more successful and the work it does to maintain and repair households—and improve the lives of homeowners—even more impactful.

## Appendix A: Healthy Housing Checklist Results

Table 3. Healthy Housing Checklist Results: Pre- and Post- Comparisons, By Effect Size

Safe & Healthy Housing Priority	% of Households in Compliance Pre-Repairs	% of Households in Compliance Post-Repairs*	Percentage Points (Proportional Increase) <i>Effect Size**</i>
<b>A working CO detector protects homes with combustion appliances or attached garage.</b>	31%	<b>99%</b>	+68 points (+219%) Effect Size: 93%
<b>A working smoke detector is on each floor and in or near each bedroom to meet code.</b>	33%	<b>98%</b>	+65 points (+197%) Effect Size: 91%
<b>Water heaters, furnaces, and space heaters that produce CO exhaust outside.</b>	43%	<b>96%</b>	+53 points (+123%) Effect Size: 85%
<b>The homeowner has safe ingress and egress to the home.</b>	50%	<b>98%</b>	+48 points (+96%) Effect Size: 83%
<b>Modifications to toilets and tubs assist those who need help using the toilet or bathing.</b>	62%	<b>99%</b>	+37 points (+60%) Effect Size: 78%
<b>The roof is watertight.</b>	65%	<b>100%</b>	+35 points (+54%) Effect Size: 77%
<b>Grab bars are strategically placed for those at risk of falls.</b>	63%	<b>95%</b>	+32 points (+51%) Effect Size: 75%
<b>The homeowner has access to a working sink, toilet, and bathtub or shower.</b>	67%	<b>98%</b>	+31 points (+46%) Effect Size: 74%
<b>A currently dated Class ABC fire extinguisher is available in or near the kitchen.</b>	71%	<b>98%</b>	+27 points (+38%) Effect Size: 73%
<b>Stairs and steps have secure handrails that meet occupants' needs.</b>	83%	<b>100%</b>	+17 points (+20%)

\*Pre- to post- changes in **bold** are statistically significant ( $p < .05$ ) and positive based on McNemar change tests.

\*\* These Common Language effect size statistics should be read as the likelihood that a home received a given repair or modification. An effect size may be considered small but non-zero at >55%, moderate at >63%, large at >71%, very large at >83%, and extremely large at >91%. See Wuensch, K. (2015). *CL: The Common Language Effect Size Statistic*. Accessed via <http://core.ecu.edu/psyc/wuenschk/docs30/CL.pdf>

Appendix A: Healthy Housing Checklist Results

Safe & Healthy Housing Priority	% of Households in Compliance Pre-Repairs	% of Households in Compliance Post-Repairs*	Percentage Points (Proportional Increase) Effect Size**
			Effect Size: 68%
<b>Old, worn carpeting has been replaced, preferably with durable flooring.</b>	79%	<b>96%</b>	+17 points (+22%) Effect Size: 67%
<b>Exterior walls have no gaps, cracks, or holes larger than 1/8 inch.</b>	81%	<b>98%</b>	+17 points (+21%) Effect Size: 67%
<b>The home is free of live infestation of pests, and sources of attraction are removed.</b>	84%	<b>99%</b>	+15 points (+18%) Effect Size: 66%
<b>No known electrical hazards are present, and kitchens and baths have ground fault circuit interrupters (GFCIs).</b>	86%	<b>99%</b>	+13 points (+15%) Effect Size: 65%
<b>The home is free of active water leaks and serious moisture problems.</b>	86%	<b>98%</b>	+12 points (+14%) Effect Size: 64%
<b>The clothes dryer, if present, vents outside with metal duct and unobstructed airflow.</b>	91%	<b>99%</b>	+8 points (+9%) Effect Size: 62%
<b>Window and exterior doors open effectively, close and lock securely, and seal well.</b>	90%	<b>98%</b>	+8 points (+9%) Effect Size: 61%
<b>Rainwater is effectively shed and directed away from the structure.</b>	92%	<b>98%</b>	+6 points (+7%) Effect Size: 61%
<b>The homeowner has access to a working water heater, refrigerator, and range.</b>	90%	<b>96%</b>	+6 points (+7%) Effect Size: 60%
<b>The kitchen and bathrooms have an exhaust fan that vents outside.</b>	93%	<b>99%</b>	+6 points (+6%) Effect Size: 60%
<b>Interior paint and wall covering are intact.</b>	94%	<b>98%</b>	+4 points (+4%) Effect Size: 58%

Appendix A: Healthy Housing Checklist Results

Safe & Healthy Housing Priority	% of Households in Compliance Pre-Repairs	% of Households in Compliance Post-Repairs*	Percentage Points (Proportional Increase) Effect Size**
<b>Main rooms and stairs have adequate lighting for occupants to move about safely.</b>	94%	<b>98%</b>	+4 points (+4%) Effect Size: 58%
<b>The homeowner can maintain the interior temperature in a comfortable range.</b>	97%	<b>100%</b>	+3 points (+3%) Effect Size: 57%
<b>Main rooms and stairs are free of tripping hazards.</b>	98%	100%	+2 points (+2%) Effect Size: 56%
<b>The numbers in the property's street address are clearly visible from the street.</b>	97%	99%	+2 points (+2%) Effect Size: 56%

Notes: N=189. \*Pre- to post- changes in **bold** are statistically significant ( $p < .05$ ) and positive based on McNemar change tests.  
 \*\*These Common Language effect size statistics should be read as the likelihood that a home received a given repair or modification. An effect size may be considered small but non-zero at >55%, moderate at >63%, large at >71%, very large at >83%, and extremely large at >91%. See Wuensch, K. (2015). *CL: The Common Language Effect Size Statistic*. Accessed via <http://core.ecu.edu/psyc/wuenschk/docs30/CL.pdf>

Source: RTSV's Healthy Housing Checklist data, 2019–2020.

## Appendix B: Impact Measurement Survey Results

The Impact Measurement Survey was sent once to each homeowner served, within four to 13 months after the date their repairs were completed. Survey respondents were asked to assess the state of, and feelings about, their home both before (pre-/retrospective) and after (post-/current) repairs.

Table 4. Impact Measurement Survey Results: Pre- and Post- Comparisons, By Effect Size

Indicator (N=Number of Respondents)	Average Score Before Repairs (Retro-spective)	Average Score After Repairs*	Average Change (Proportional Increase) Effect Size**
<b>Pride in property (N=87)</b> (1=Not proud at all, 5=Very proud)	2.91	<b>4.26</b>	+1.36 points (+47%) Effect Size: 88%
<b>Frequency of stress about home maintenance (N=87)</b> (1=Always/almost always, 5=Never/almost never)	2.56	<b>3.91</b>	+1.34 points (+52%) Effect Size: 80%
<b>Ease of entry/exit (N=84)</b> (1=Very difficult, 5=Very easy)	3.56	<b>4.61</b>	+1.05 points (+29%) Effect Size: 78%
<b>Ease of bathing safely (N=84)</b> (1=Very difficult, 5=Very easy)	3.39	<b>4.32</b>	+0.93 point (+27%) Effect Size: 77%
<b>Move around all rooms easily and comfortably (N=84)</b> (1=Not at all easily/comfortably, 5=Very easily/comfortably)	3.85	<b>4.60</b>	+0.75 point (+19%) Effect Size: 75%
<b>Maintain comfortable temperature (N=80)</b> (1=Never/almost never, 5=Always/almost always)	3.26	<b>4.08</b>	+0.81 point (+25%) Effect Size: 74%
<b>Frequency of feeling alone, after repairs: pre-COVID pandemic vs. after repairs: while sheltering in place (N=85)</b> (1=Never/almost never, 5=Always/almost always)	4.09	<b>3.45</b>	<b>-0.66 point</b> (-16%) Effect Size: 65%
<b>Feeling part of neighborhood (N=83)</b> (1=Not at all a part, 5=A strong part)	3.47	<b>3.95</b>	+0.48 point (+14%)

\* Pre- to post- changes in **bold** are statistically significant ( $p < .05$ ) and positive based on Wilcoxon ranked sign tests. Negative changes are shown in **red**.

\*\* Negative changes shown in **bold**. Common Language effect size statistics may be read as the likelihood that a homeowner reported a higher rating after repairs were completed, compared to before. An effect size may be considered small but non-zero at >55%, moderate at >63%, large at >71%, very large at >83%, and extremely large at >91%. See Wuensch, K. (2015). *CL: The Common Language Effect Size Statistic*. Accessed via <http://core.ecu.edu/psyc/wuenschk/docs30/CL.pdf>

Appendix B: Impact Measurement Survey Results

Indicator (N=Number of Respondents)	Average Score Before Repairs (Retro-spective)	Average Score After Repairs*	Average Change (Proportional Increase) Effect Size**
			Effect Size: 65%
<b>Feel safe in home from intruders/break-ins (N=87)</b> (1=Very unsafe, 5=Very safe)	3.78	<b>4.00</b>	+0.22 point (+6%) Effect Size: 62%
<b>Ability to pay for daily necessities (N=83)</b> (1=Not able to pay, 4=Comfortably able to pay, and more)	2.83	<b>3.01</b>	+0.18 point (+6%) Effect Size: 62%
<b>Frequency of feeling alone, before vs. after repairs: pre-COVID pandemic (N=84)</b> (1=Never/almost never, 5=Always/almost always)	3.80	<b>4.05</b>	+0.25 points (+7%) Effect Size: 60%
<b>Frequency of feeling alone, before repairs: pre-COVID pandemic, vs. after repairs: while sheltering in place (N=83)</b> (1=Never/almost never, 5=Always/almost always)	3.82	<b>3.43</b>	<b>-0.39 point</b> (-10%) Effect Size: 59%
<b>Amount of natural light (N=76)</b> (1=None/almost none, 5=Plenty)	4.17	4.28	+0.11 point (+3%) Effect Size: 59%

\* Pre- to post- changes in **bold** are statistically significant (p<.05) and positive based on Wilcoxon ranked sign tests. Negative changes are shown in **red**.

\*\* Negative changes shown in **bold**. Common Language effect size statistics may be read as the likelihood that a homeowner reported a higher rating after repairs were completed, compared to before. An effect size may be considered small but non-zero at >55%, moderate at >63%, large at >71%, very large at >83%, and extremely large at >91%. See Wuensch, K. (2015). *CL: The Common Language Effect Size Statistic*. Accessed via <http://core.ecu.edu/psyc/wuenschk/docs30/CL.pdf>

Source: RTSV's Impact Measurement Survey, 2019–2020.

## Appendix C: Survey Respondent Demographics

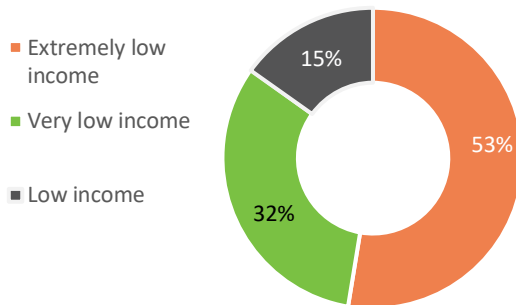
The demographics of the 93 homeowners who responded to the impact measurement survey are described in detail in this appendix.

### INCOME LEVEL

The majority of survey respondents live in households with extremely low income (Figure 30). Over half of respondent households are extremely low-income, and nearly one third (32%) are very low-income. Survey respondents' median household income was \$31,176.

Figure 30.

More than half of respondents live in households with extremely low income.



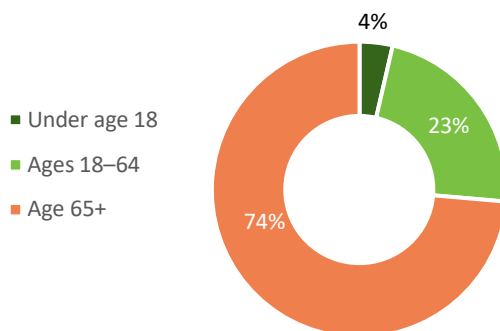
Source: Rebuilding Together Silicon Valley's application data, 2019–2020. (N=93.)

### AGE

The majority (74%) of residents of all respondent households are older adults, and 86% of respondents' households had at least one older adult resident. A small fraction of respondents' households (3%) had at least one child living in the home. Figure 31 shows the distribution of RTSV impact survey respondents' households served by resident age range.

Figure 31.

Most survey respondents live in households where most residents are adults age 65 and older.

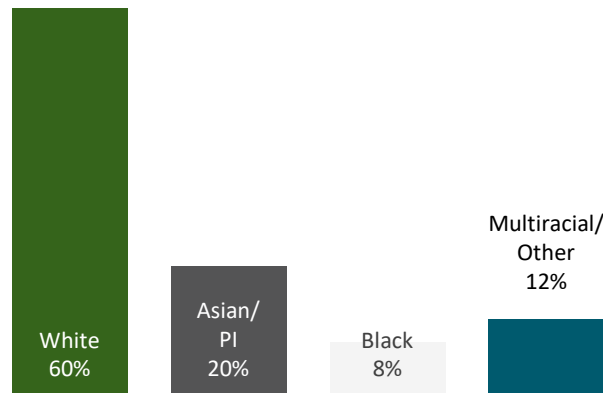


Percentages add up to more than 100% due to rounding. Source: RTSV's application data, 2019–2020. (N=93.)

### RACE AND ETHNICITY

Three in five homeowners (60%) that responded to the survey were white (Figure 32). One in five was Asian/Pacific Islander, fewer than one in 10 (8%) was Black, and more than one in 10 (12%) were multiracial or of some other race. About two in five (21%, N=86) were Latinx (of any race).

Figure 32.  
The majority of survey respondents were white.

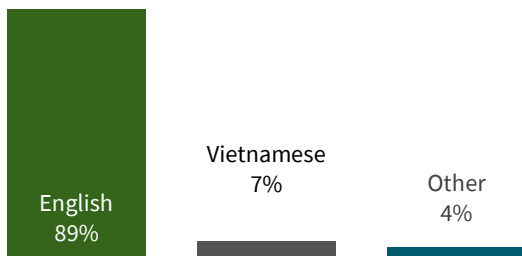


Source: RTSV’s application data, 2019–2020. (N=85.)

### PRIMARY LANGUAGE

Most homeowners (89%) who responded to the survey spoke English as their primary language (Figure 33). Fewer than one in 10 primarily spoke Vietnamese (7%) or another language (4%).

Figure 33.  
Most respondents spoke English as their primary language.



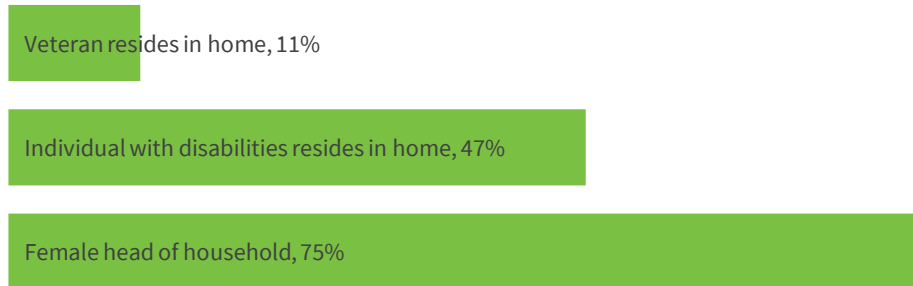
Source: RTSV’s application data, 2019–2020. (N=91.)

## OTHER CHARACTERISTICS

More than one in 10 homeowners surveyed said a U.S. military veteran lived in their residence (Figure 34). Nearly half reported that a person with disabilities lives in their household.

Figure 34.

The majority of respondents said a woman was head of their household.



Percentages do not add up to 100% because categories may overlap (a household headed by a female may also include a veteran, etc.).

Source: RTSV's application data, 2019–2020. (N=93.)

## DEMOGRAPHIC COMPARISONS

### Similarities between survey respondents and all households served

Survey respondents demographically reflected all households served by RTSV during the data collection period in the level of household income (53% extremely low, 32% very low, 15% low), proportions of households with older adult (86%) and child residents (3%), proportions of households with veteran residents (11%), and the representation of various racial/ethnic groups (white 60%, Latinx 21%, Asian 20%, multiracial/other 12%, Black 8%). The length of time from the project sign-off date to end of the data collection period was not significantly different for respondents versus nonrespondents.

### Differences between survey respondents and all households served

Survey respondents demographically differed from overall households served by RTSV during the data collection period in that they were significantly more often from homes with female heads of household, from smaller households, or from households with fewer male residents. Survey respondents were also significantly less often from households in which individuals with disabilities resided or from households in which a primary language other than English was spoken.

Table 5.  
How survey respondents compare to all households served by RTSV.

Demographic Statistic	RTSV Households Served (Total N=194)	RTSV Impact Measurement Survey Respondents Households (Total N=93)
<b>Average household income</b>	\$31,974	\$32,158
Extremely low income	56%	53%
Very low income	30%	32%
Low income	13%	15%
<b>Average number of residents in household</b>	1.61	<b>1.47*</b>
<b>Average number of female residents in household</b>	1.03	1.03
<b>Average number of male residents in household</b>	0.53	<b>0.41*</b>
<b>Female homeowner</b>	68%	<b>75%*</b>
<b>Any older adult resident in home</b>	85%	86%
<b>Any child resident in home</b>	4%	3%
<b>Any residents with disabilities in home</b>	56%	<b>47%*</b>
<b>Any veteran resident in home</b>	11%	11%
<b>Ethnicity of homeowner</b>	<i>N=168 race, 181 ethnicity</i>	<i>N=85 race, 86 ethnicity</i>
White	59%	60%

\* Items marked with an asterisk (\*) and **bold** are significantly different from all households served.

Appendix C: Survey Respondent Demographics

Demographic Statistic	RTSV Households Served (Total N=194)	RTSV Impact Measurement Survey Respondents Households (Total N=93)
Black	9%	8%
Asian/Pacific Islander	23%	20%
Latinx (of any race)	23%	21%
Multiracial/Other	9%	12%
<b>Primary language of homeowner:</b>	N=189	N=91
English	80%	<b>89%*</b>
Spanish	4%	1%
Vietnamese	12%	7%
Other	4%	3%
<b>Average days from project sign-off to close of data collection period</b>	333	322
<b>Average cost of project</b>	\$3,476	\$3,370

Items marked with an asterisk (\*) and **bold** are significantly different from all households served.

Source: RTSV's application data, 2019–2020.

## Appendix D: Research Instruments

This appendix provides the full text of the Healthy Housing Checklist and the Impact Measurement Survey used to collect data for this evaluation.

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