



Healthy Home Connect

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About Build It Green

Build It Green's Mission is to create a world of healthy and sustainable homes for all people.

BuildItGreen.org



What's in the air?

Biological

- ▶ Dust mites
- ▶ Cockroaches
- ▶ Fungus (mold)
- ▶ Rodents
- ▶ Birds (attic areas)

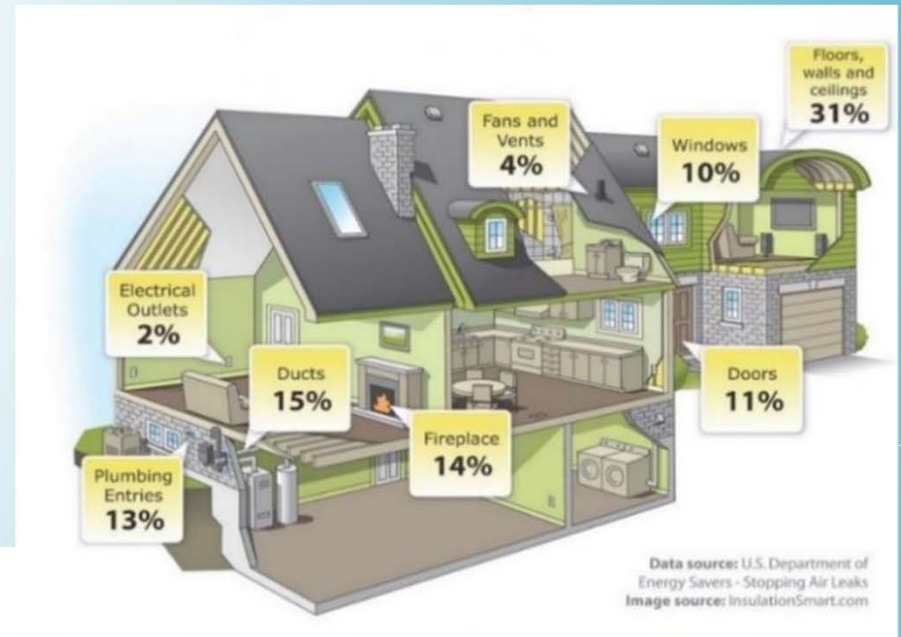
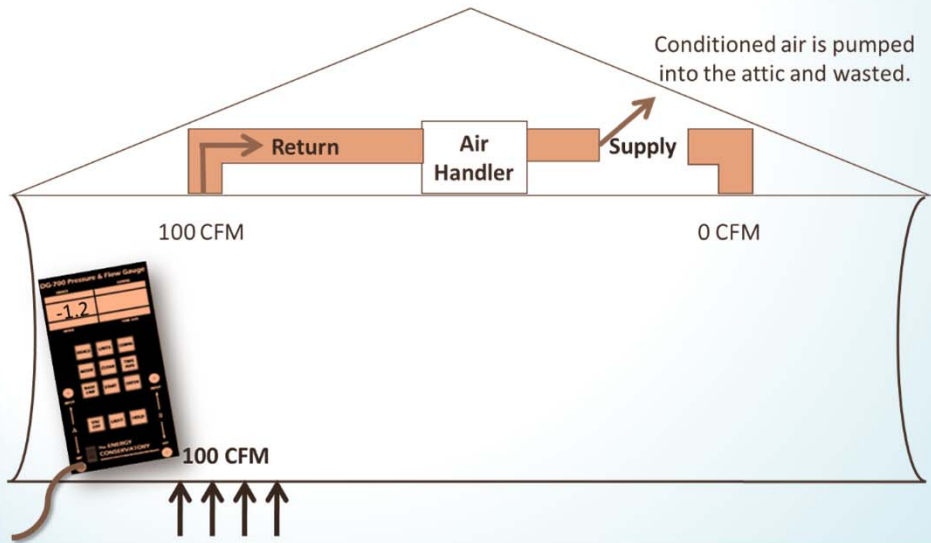


Chemical

- ▶ Asbestos
- ▶ Lead
- ▶ Pesticides
- ▶ Volatile Organic Compounds (VOCs)



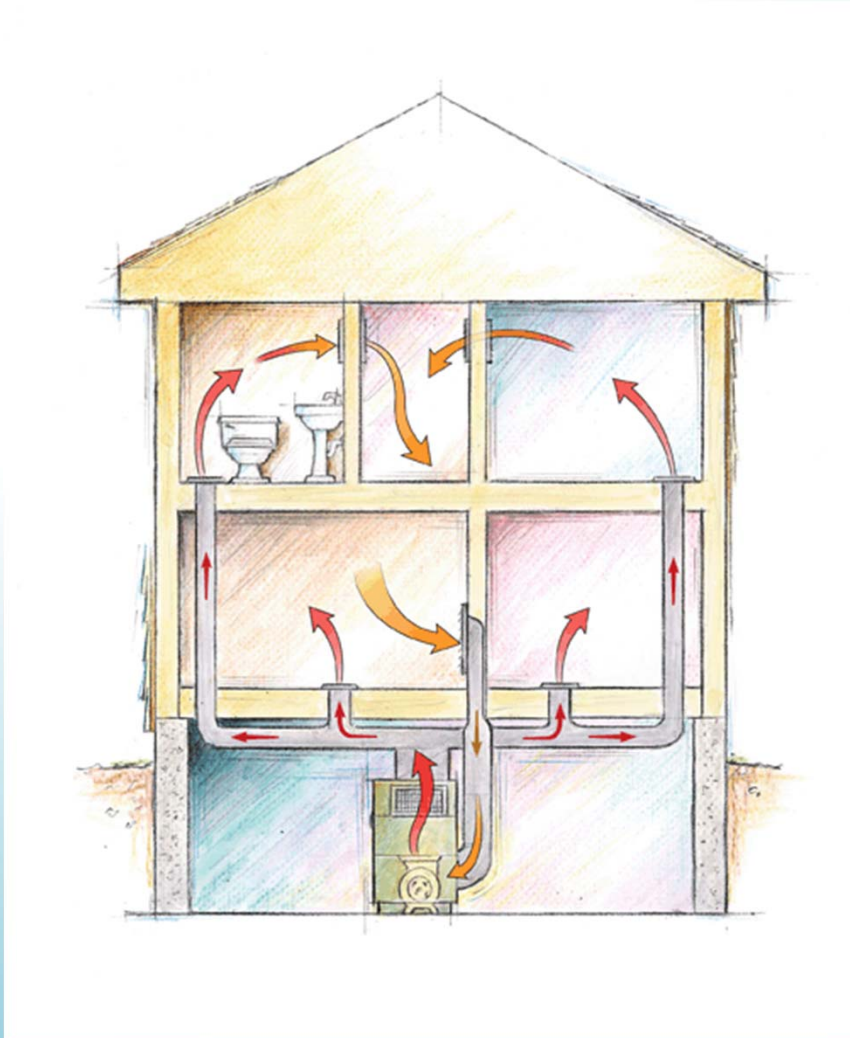
Uncontrolled air movement



The stack effect



Controlled air movement



The air in the ducts is the air in the living area and vice versa, an optimal system is a closed loop.

When both the duct system and the shell of the home are well sealed then the air can be effectively filtered, and sources can be controlled.

Relative to energy efficiency, equipment cycles less often saving energy, if the equipment is “right sized” then run times are longer and less frequent which improves filtration.

Contaminate source control



Building Performance Institute, Inc.
BPI Standards



8.3.1 Recommend the removal of indoor air pollutants sources identified in BPI-1100, Section 8.1, or implementation of other source control measures.

8.3.2 Sealing, gasketing, or weatherstripping all leaks between an attached or tuckunder garage and the house shall be recommended, including specific leakage paths as identified in BPI-1100, Section 8.2.

8.3.4 Sealing of air handler units and ducts that are located outside the pressure boundary shall be recommended.

8.3.5 For ducts located outside the pressure boundary, recommend R-8 insulation, at a minimum.

<https://exams.bpi.org/site/resources/public/online-testing/ANSI-BPI-1200-S-2015-Standard-Practice-for-Basic-Analysis-of-Buildings.pdf>



Cost of patient treatment

Asthma Costs the U.S. Economy More than \$80 Billion Per Year

- The annual per-person medical cost of asthma was **\$3,266**. Of that, \$1,830 was for prescriptions, \$640 for office visits, \$529 for hospitalizations, \$176 for hospital outpatient visits and \$105 for emergency room care.


In order to reduce asthma-related ER visits, hospitalizations, absenteeism and mortality, **we need to support guidelines-based care, expand self-management education and reduce environmental asthma triggers at homes.”**

Dr. Tursynbek Nurmagambetov
CDC’s National Asthma Control Program

American Thoracic Society, 2018

<https://www.thoracic.org/about/newsroom/press-releases/journal/asthma-costs-the-us-economy-more-than-80-billion-per-year.php>



A photograph of a two-story house with a pergola and trees. The house is light-colored with dark trim around the windows and roofline. There are large trees in the background and a pergola with red flowers in the foreground. The image is overlaid with a blue semi-transparent banner containing text.

BIG, Facebook (2X), PCE (on-going) Healthy Home Connect



Approach

Energy Saving Assistance Program (ESA)

Energy efficiency improvements



Peninsula Minor Home Repair Program + Rebuilding Together

Home repairs with a focus on health & safety



SASH – Single Family Affordable Solar Housing Program

Rooftop solar photovoltaics

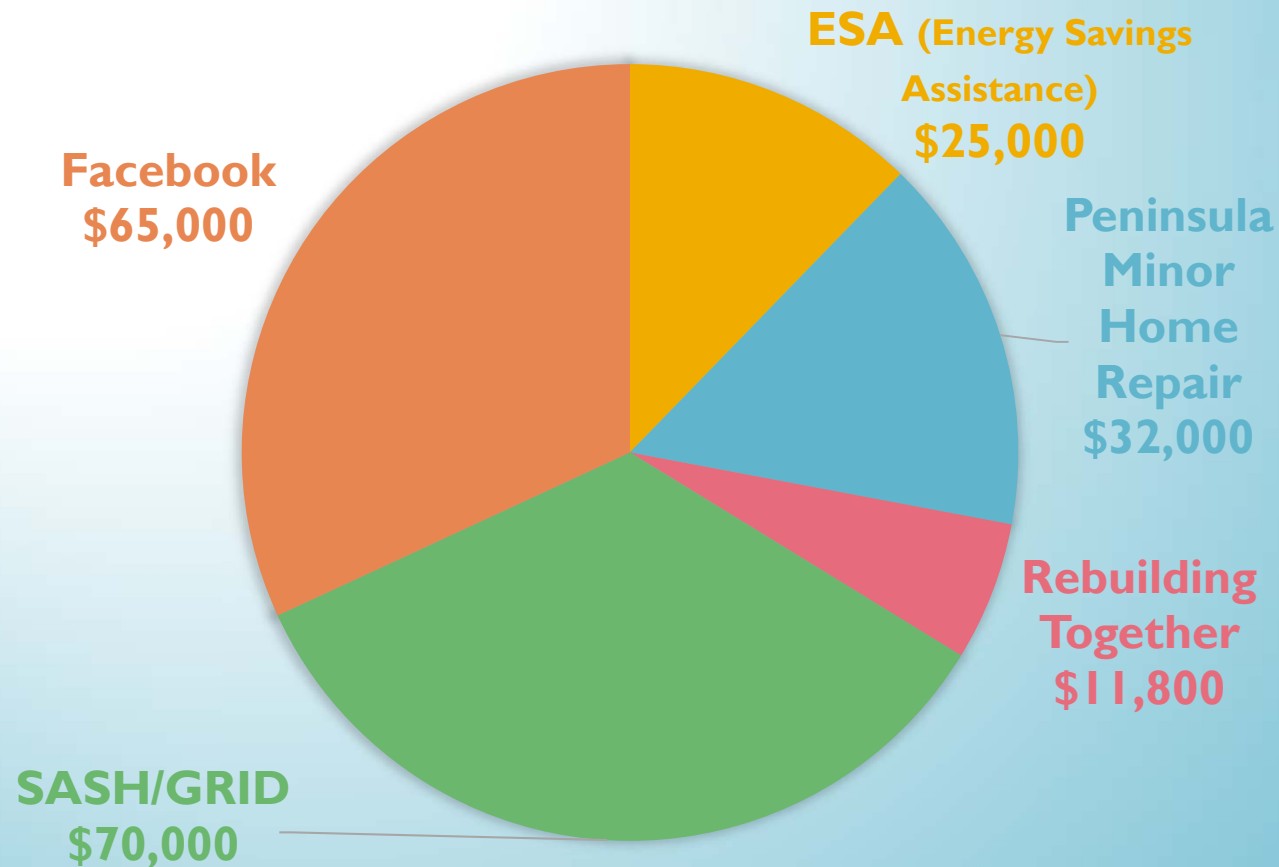


Facebook Grant

Gap funding for health remediations + repairs for disqualified homes



Funds Allocated for Home Improvements: \$208,800



Home Snapshot: Belle Haven

Hayward Score of **13**

3 People in Household - 3 year old w/ asthma



Home Snapshot: Belle Haven

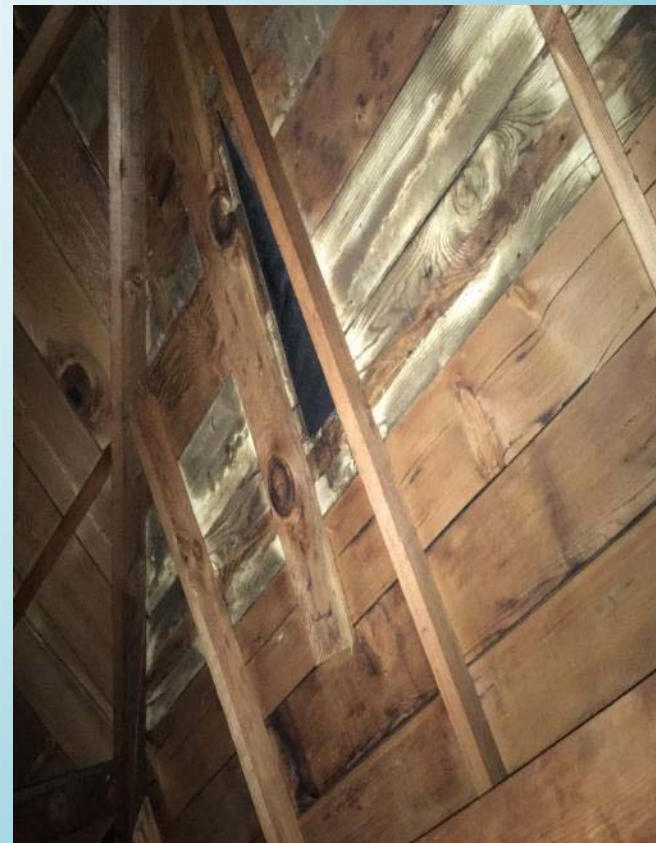
Multiple health & safety issues: Dust, mold, pests, clutter, poor IAQ, no vents, no heat, open to attic



Home Snapshot: Belle Haven

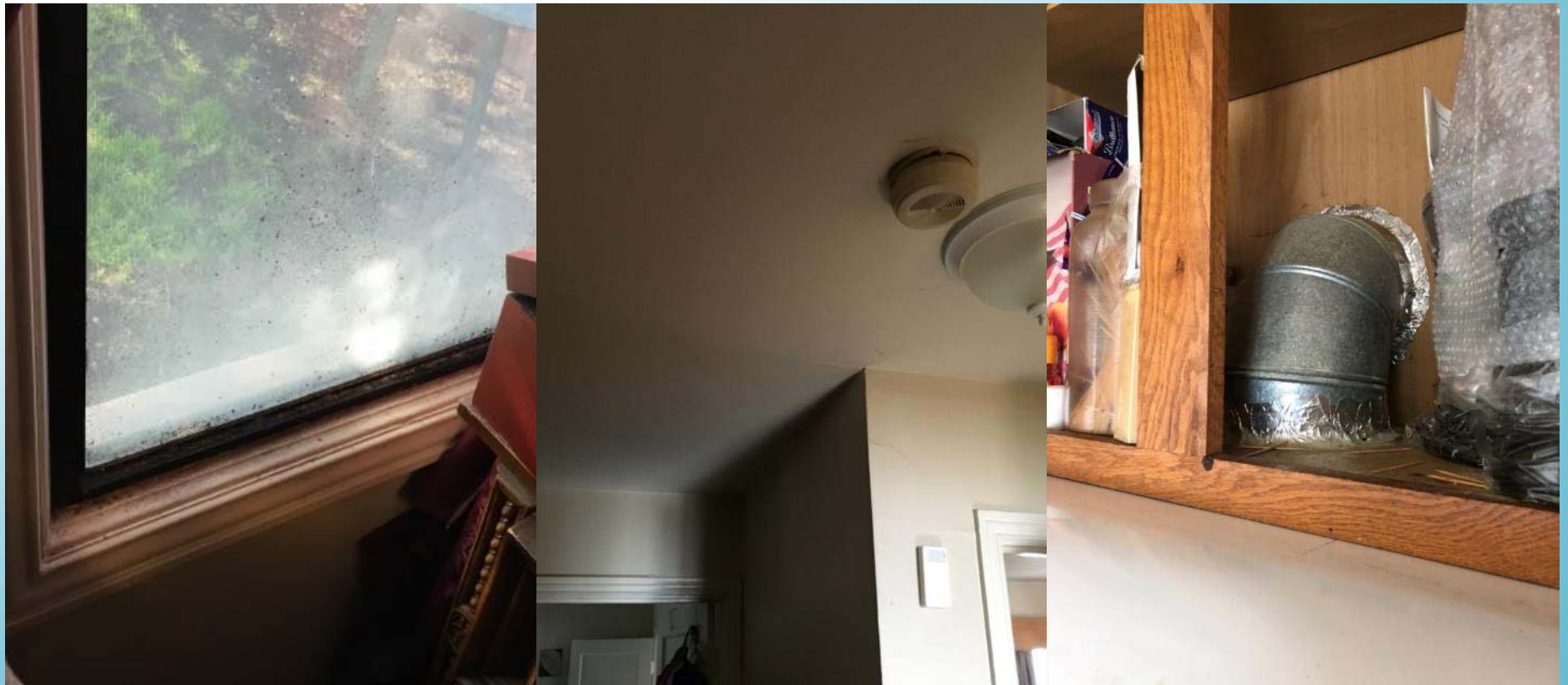
Hayward Score of **41**

1 Person in Household - Elderly



Home Snapshot: Belle Haven

Multiple health & safety issues: Dust, poor IAQ, poor venting, damaged roof, damaged smoke detector



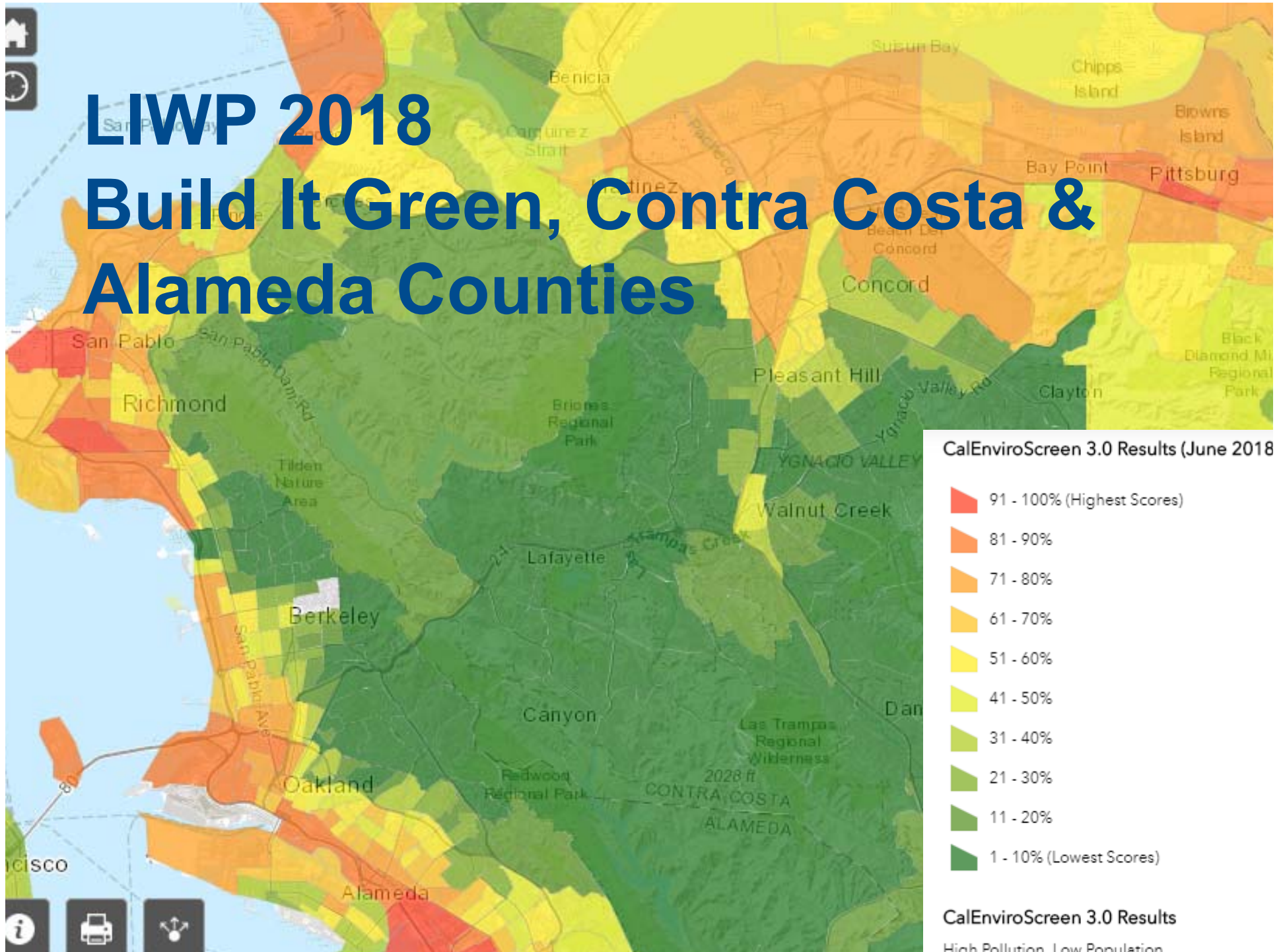
Home Snapshot: Belle Haven

Hayward Score of **54**

3 People in Household - 6 year old w/ allergies



LIWP 2018 Build It Green, Contra Costa & Alameda Counties



HTR
Outreach
Strategies

Leverage
public health
Infrastructure

Low
Income
DACs-
Hard-to-
Reach

**Harder
HTR**

Expand Services of
Energy Efficiency
Contractors for
Holistic Treatment

Leveraging PH Infrastructure

- ▶ Treat homes AND people
- ▶ Strategies to reach most vulnerable- medically vulnerable
- ▶ Referrals from trusted resources Asthma Start Program and Field Nurses
- ▶ Connect and serve clients beyond “typical” EE reach



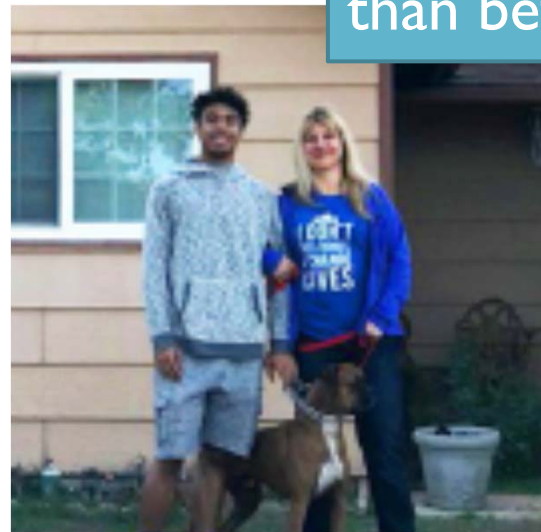
EE (Electrification) and Health

Energy efficiency upgrades improved:

- ▶ Overall health
- ▶ Respiratory conditions, including asthma
- ▶ Allergies, headaches, colds, sinus infections
- ▶ Cardiovascular conditions
- ▶ Mental health

Electrification **MAXIMIZES** Benefits

The furnace warmed the rooms, and they stayed toasty. “The best part is that so far this winter, my son hasn’t gotten sick yet, and he’s taking far fewer allergy pills than before,”



Looking Forward to Shifting Program Paradigm...Carbon Lens

- ▶ Avoid Locking in emissions
- ▶ Measure selection
- ▶ Whole building: Energy savings, GHG, and health, renewable and storage
- ▶ Not yet.....refrigerants, low carbon materials, low GWP materials, water distribution savings, Material choices... but we are going there

Some Key Considerations

- ▶ Education is needed for all parties (PH and EE)
- ▶ Program requirements and timelines can be a challenge to understand
- ▶ Need to understand and account for level of effort
- ▶ PH professionals want to help clients
- ▶ EE may not be a top concern for the clients
- ▶ Gaps in funding are a challenge (timing and scope)
- ▶ Metrics needed to support and drive work and collaborative process
- ▶ Require documentation of barriers so we know what needs to be fixed and successes to grow