



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

AGENDA: 14

Overview of State and Federal Funding for Retrofitting Low- Income Homes with Cleaner Appliances

Board of Directors Meeting
February 15, 2023

Amy Dao
Senior Environmental Planner
adao@baaqmd.gov

Presentation Outcome



- Update the Board on federal and state incentives that can support moderate and low-income residents in retrofitting pollution-causing appliances.

Presentation Outline



- Background
 - Health Impacts
 - Costs
- Federal Incentives
- State Incentives
- Regional & Local Incentives and Financing

Presentation for Information Only



- No action required

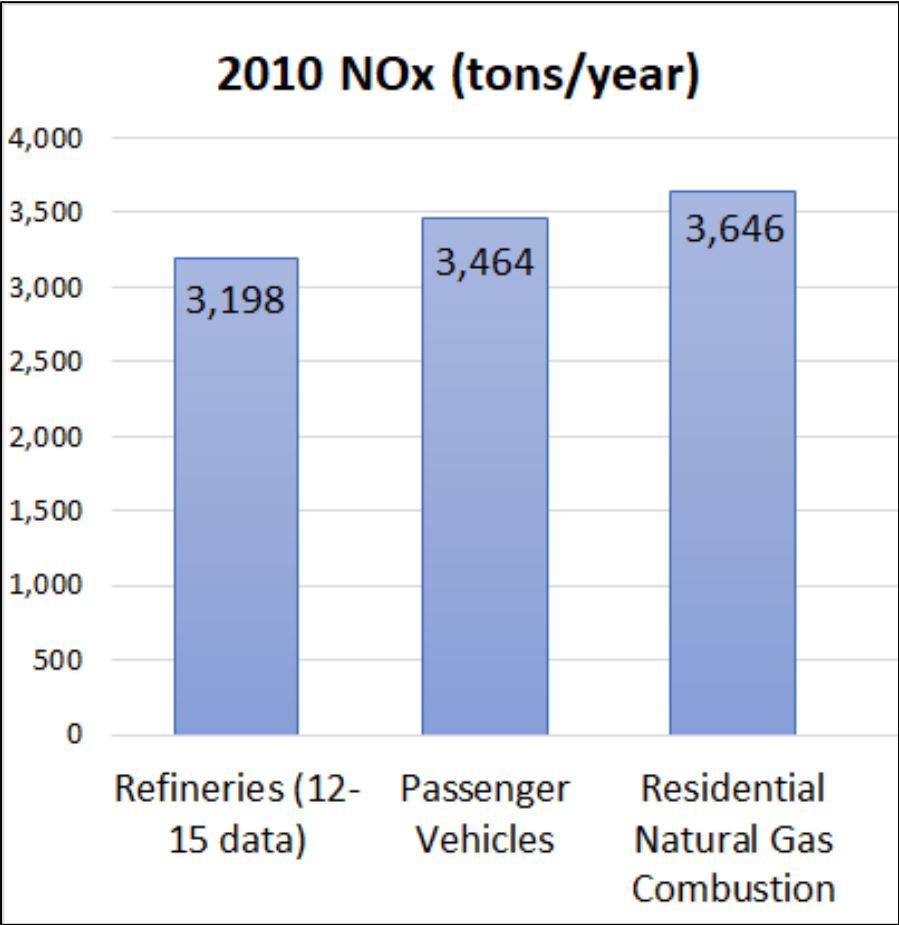
Background- Health Impacts



- NOx and PM2.5 short- and long-term exposure impacts:
 - Coughing, wheezing, difficulty breathing
 - Asthma, other respiratory diseases
 - Increased susceptibility to respiratory infections
 - Neurological disease
 - Heart attack, stroke, lung cancer
- Higher exposure in communities of color



Background



- Modeled Regional Health Impacts:
 - Up to 89 premature deaths per year
 - Up to \$890M annually in health impacts

Background (cont.)



- Alternatives are electric heat pumps
- ~\$3.7k more expensive than equivalent gas appliances
- Electric service upgrades for older homes:
 - ~\$4k for single family units
 - ~\$2.7k for multi-family units



BAAQMD. Staff Report Proposed Amendments to Building Appliance Rules—Regulation 9, Rule 4 and Rule 6. December 2022

Federal Incentives- Inflation Reduction Act



25C: Residential Energy Efficiency Tax Credit

- 30% tax credit for purchase and installation of heat pump water and space heaters
- \$2,000 max for heat pump water and space heaters; \$600 for electric panel
- \$8.5 B nationally (~\$560 M for CA) for home retrofit rebate programs with low-income focus



IRA: High Efficiency Electric Home Rebate Program (HEEHRA)



- ~\$280 M for point-of-sale rebates through qualified electricians for electric appliances
- Contractors can receive up to a \$500 incentive
- Income Eligibility and % Costs Covered
 - <80% Area Median Income (AMI) eligible for up to 100% costs covered
 - 80-150% AMI eligible for up to 50% costs covered

Maximum Funding Amounts	
\$1,750	Heat pump water heater
\$8,000	Heat pump for space heating or cooling
\$4,000	Electric panel or breaker upgrade
\$2,500	Electric wiring
\$14,000	Total per entity

IRA: Homeowner Managing Energy Savings Program (HOMES)



- ~\$282 M for California
- Incentive amounts based on whole-house energy savings
 - Capped at 80% of project costs
- For low/moderate income <80% AMI:
 - 20% energy savings: up to \$4,000 per household
 - 35% energy savings: up to \$8,000 per household

State Funds: California Energy Commission (CEC)



- Sept. 2022: Governor signed Assembly Bill (AB) 209 and AB 179
 - Directs CEC to develop an Equitable Building Decarbonization program
 - \$835M total
- Draft Timeline
 - Guidelines: Spring 2023
 - Solicitation: Summer 2023



California Public Utilities Commission



- Heat pumps can now participate in energy efficiency and load-shifting/demand response programs



Self-Generation Incentive Program (SGIP)

- \$84.7M statewide for heat pump water heaters
- Half of funds reserved for low-income households
 - Up to \$4,885 per customer

Other Funds



- PG&E Energy Savings Assistance (ESA) Program
 - No-cost weatherization including heat pump space heating
- Bay Area Regional Energy Network
 - \$1,000 per heat pump
- Community Choice Aggregators





Discussion

Briefing for the Board of the Bay Area Air Quality Management District

Ruth Ann Norton, President and CEO
Green & Healthy Homes Initiative

February 15, 2023

Vision: Advancing the social determinants of health and racial equity through healthy housing.

Mission

GHHI is dedicated to addressing the social determinants of health and the advancement of racial and health equity through the creation of healthy, safe and energy efficient homes. By delivering a standard of excellence in its work, GHHI aims to eradicate the negative health impacts of unhealthy housing and unjust policies for children, seniors and families to ensure better health, economic and social outcomes in historically disinvested communities – with an emphasis on communities of color.

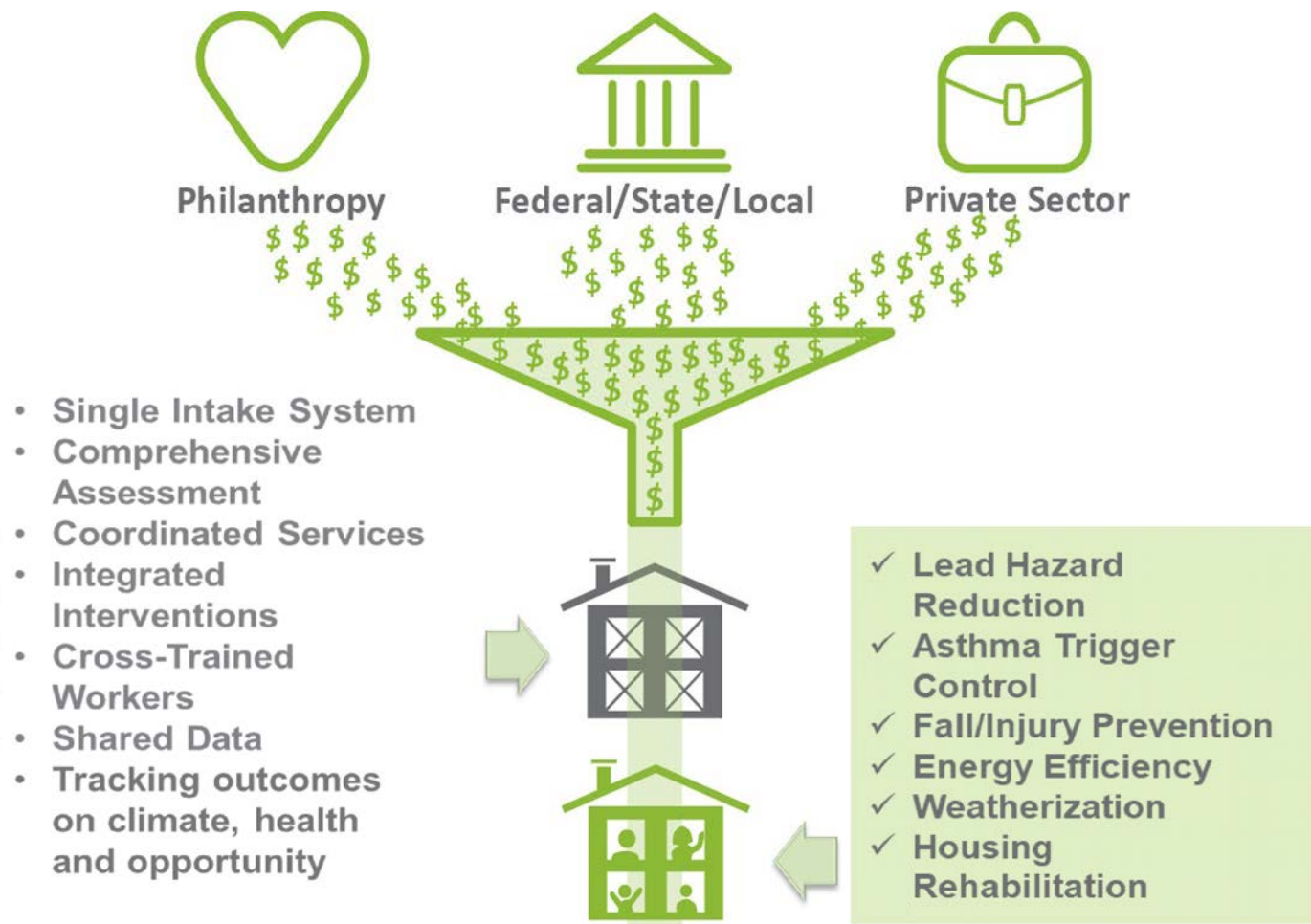
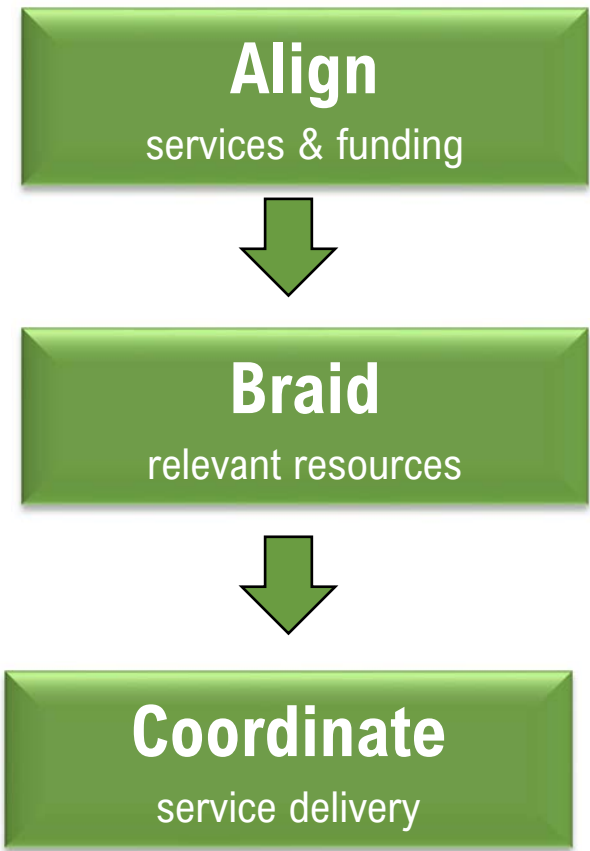


Accomplishments

-  \$400 million raised and 49 pieces of legislation passed to support health and equity in housing
-  Architect of the most health protective lead laws in the nation, leading to a 99% reduction in lead poisoning in Maryland, which garnered \$44.5B in lifetime earnings from lead poisoning prevention. Policies have been replicated around the country
-  Designed largest hospital community benefit investment in healthy housing (\$50M in PA)
-  Leading healthy housing convener both at the local (over 75 partnering jurisdictions), state and national levels
-  Field leader in alignment of housing with other sectors such as healthcare, energy, and education
-  National leader in innovative financing models for healthy homes including designing the first Pay for Success model with Medicaid paying for outcomes
-  One of the only health homes programs contracted by a Medicaid MCO and ACO. Supports other contracted programs



The GHHI Model: Aligning Resources to Advance Holistic Retrofits



The Whole-House Strategy in Baltimore: Assessors, Educators, and Crews Address Housing Issues Holistically

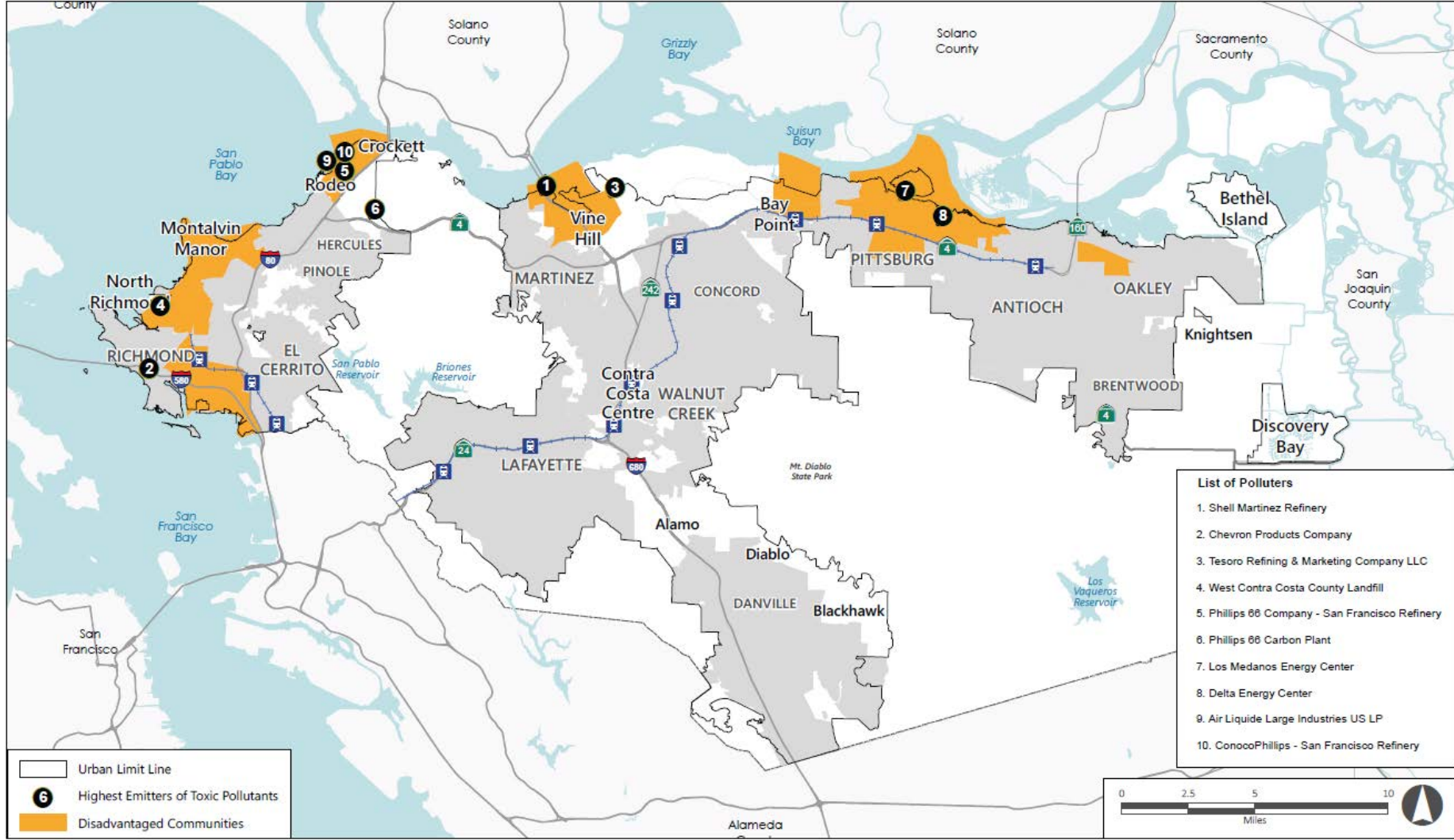
- Asthma Trigger Reduction and Improved IAQ
- Elimination of Lead Hazards
- Energy Efficiency and Weatherization
- Integrated Pest Management
- Mold and moisture remediation
- Injury prevention measures including carbon monoxide and smoke detectors; Fall reduction measures, senior accessibility
- Radon, asbestos, and home-based env. hazard remediation

Other Jurisdictions Implementing Whole House Models

- States of New Jersey and Pennsylvania, City of Milwaukee



Contra Costa Asthma Technical Assistance – Data utilized to map disadvantaged communities and largest polluters



Program Component

Staffing Organization

Home Visits

2-3 Home Visits for Asthma Education

Coordinate with PCP on Asthma Action Plan; medication usage training; environmental triggers training; follow up with PCP and care managers

Consumer Supplies to reduce asthma triggers

e.g. green cleaning supplies, hypo-allergenic mattress and pillow covers, integrated pest management, food storage containers



Home Assessment

Environmental assessment

Identify home-based asthma triggers and write remediation scope

Single-Family:
County
Weatherization

Multi-Family:
Association for
Energy Affordability

Trigger Remediation

Remove asthma triggers from home

Moisture issues (mold removal, ventilation, plumbing leaks)
Allergens (carpet removal/cleaning), and
Irritants (HVAC, combustion gases, VOCs)



**EE/
Weatherization**

Lower energy bills and improve comfort of home

Leveraged funds

Lighting, heat pumps, energy-efficient appliances, HVAC



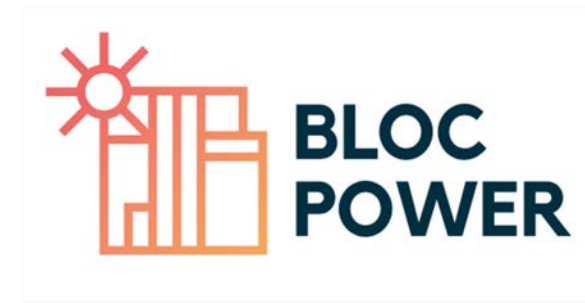
Project with revalue.io

- revalue is an Alameda-based project developer that manages building energy upgrade and electrification projects on behalf of partners such as BayRen, East Bay Community Energy (EBCE), and BlocPower.
- GHHI is providing technical assistance to revalue to assess the feasibility of braiding healthcare funding to address asthma triggers alongside the energy needs of underserved households.
- GHHI is also advising on systems-level alignment that would allow agencies to braid a broad range of home repair resources (e.g., energy efficiency, electrification, weatherization, lead-based paint remediation, asthma trigger reduction).



Project with BlocPower

- BlocPower is a New York-based technology company with operations in the Bay Area that analyzes, finances and installs all-electric technologies in low- and moderate-income buildings.
- GHHI is supporting BlocPower by:
 - **Researching the health impacts** of residential electrification
 - **Calculating the value of healthcare savings** from residential electrification
 - **Strategizing how to braid** electrification retrofits with other healthy housing interventions (asthma, lead, etc.)
 - **Incorporating health data into BlocMaps**, a proprietary mapping software for municipalities, utilities, and business owners to identify buildings to retrofit



Increasing public health consensus on indoor air quality and natural gas appliances

Major Medical Associations are Recognizing the Link Between Gas Stoves, Indoor Air Quality and Asthma Triggers –

AMA resolution 439, 2022 Annual Meeting

“RESOLVED, That our American Medical Association recognize the association between the use of gas stoves, indoor nitrogen dioxide levels and asthma; ...”

APHA Policy Statement, 2022 Annual Meeting

Gas Stove Emissions Are a Public Health Concern: Exposure to Indoor NO₂ Increases Risk of Illness in Children, Older Adults, and People with Underlying Health Conditions

8. [APHA] Calls upon state and local authorities responsible for building codes to legislate the inclusion of whole-home ventilation and outdoor-venting exhaust hoods in all new buildings and remodels, adhering to ANSI/ASHRAE Standard 62.2.

9. Calls upon local and state legislative and regulatory bodies to adopt residential building codes with preferences for installing electric appliances and to require electric appliances for building projects receiving municipal or state funding. Funding for retrofits or building upgrades should have stipulations that minimize displacement.

Effects of Gas Stoves



Photo by [KWON JUNHO](#) on [Unsplash](#)

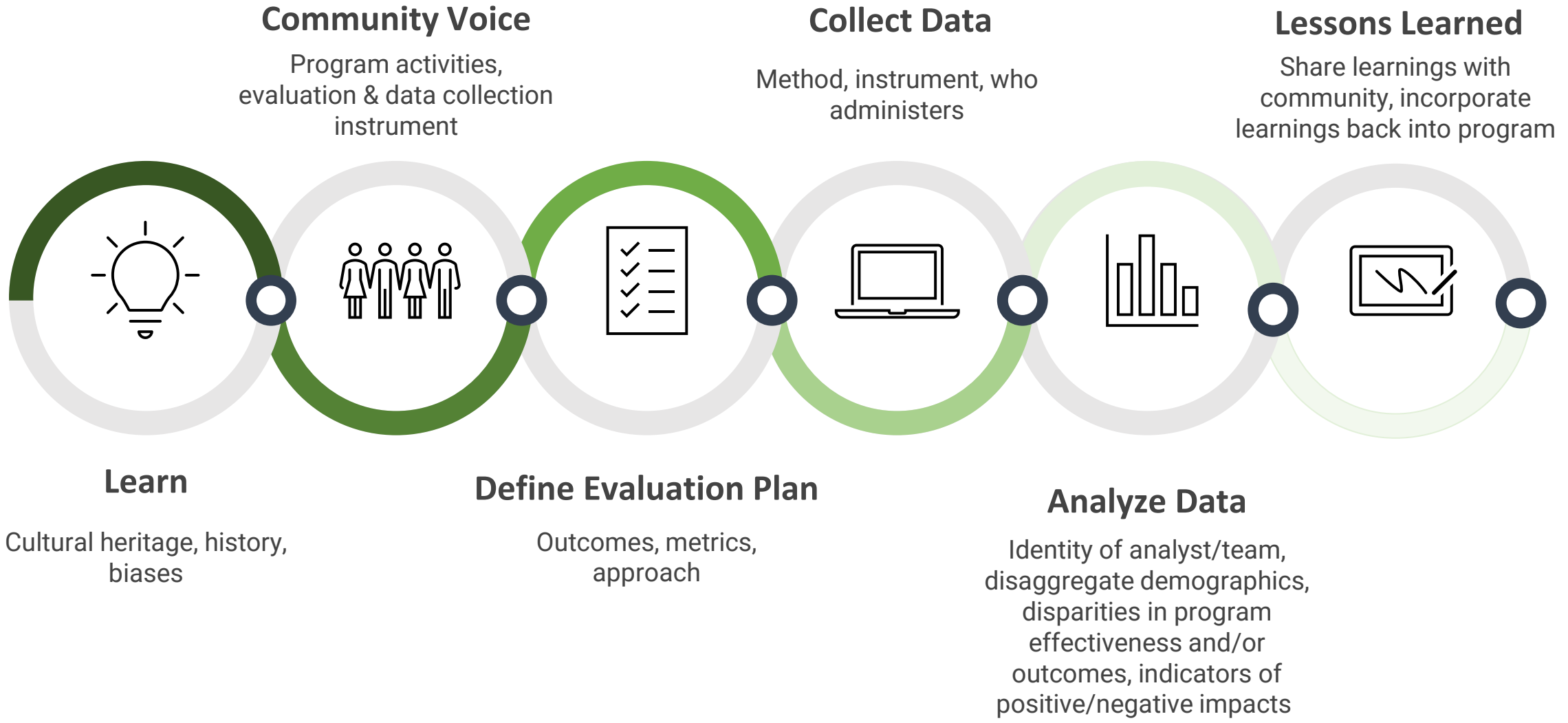
Gas stoves constantly leak methane, even when turned off.

<https://pubs.acs.org/doi/10.1021/acs.est.1c04707>

- Gas stoves emit a variety of pollutants, including particulate matter, nitrogen dioxide, and carbon monoxide.
- Peak indoor air pollution from using gas stoves can reach levels that, if outdoors, would exceed California Air Quality Standards
- Health risks related to nitrogen dioxide are well known. NO₂ is known risk for asthma and other respiratory illnesses.
- In homes with gas stoves:
 - Children with current asthma problems face a 42% increased risk of experiencing symptoms
 - Children face a 24% increased risk of ever being diagnosed with asthma
 - Children face, overall, a 32% increased risk of experiencing symptoms and being diagnosed

Source: RMI, <https://rmi.org/insight/gas-stoves-pollution-health/>

Racial Equity Metrics



Decarbonization / electrification policies in other jurisdictions

Cities and States Across the Country are Adopting Housing Codes and Standards to Improve Indoor Air Quality and Reduce Asthma Triggers –

- Electrification is growing in prominence as both a climate and health measure
- Examples of all-electric construction codes for residential and/or commercial buildings
 - Requirements include net-zero carbon usage for new and existing buildings, requirements for electric heating and cooling in new buildings, and bans on gas connections to new buildings
 - Four states have adopted: California, Colorado, Maryland and Washington
 - 85+ cities have adopted: including Boston, Burlington, Chicago, Ithaca, New York City, Salt Lake City, Seattle, and Washington DC
 - 50 cities and counties in California have adopted: including San Jose, San Francisco, Los Angeles, Oakland, Berkeley, Emeryville, Richmond, and more

Relevant health policy considerations

State Plan Amendment – Asthma Preventive Services

In July 2022 CMS approved California's SPA for Asthma Preventive Services.

- New covered (reimbursable) benefits include:
 - 1) asthma self-management education that can take place in the home or other community settings and
 - 2) home assessments for asthma triggers.
- Services may be provided by medical professionals as well as non-licensed providers such as community health workers and promotoras.
- Providers must receive training from CDPH or other approved training program.
- **These new benefits combined with In Lieu of Services (ILOS- next slide), make possible the provision of comprehensive asthma services.**

In Lieu of Services (1115 Waiver)

- **“In lieu of” services** – State-approved services that health plans can offer as a medically appropriate and cost-effective substitutes for state plan benefits
- See [California's updates](#) from 2021 designating healthy home remediation for asthma as “in lieu of” service.
 - Asthma remediation (up to \$7,500) as allowable ILOS for health plans
 - Optional for health plans to utilize ILOS
- GHHI wrote [publication](#) in 2017 on using ILOS for asthma healthy homes services.
- GHHI wrote a [brief](#) on Medi-Cal’s ILOS for asthma in 2022
- GHHI is engaging home remediation providers to take advantage of this policy

Policy for CA to explore: CHIP Health Service Initiatives (HSI)

- HSIs must fit within the allowed administrative cap of CHIP for a state and leverages an enhanced FMAP.
- Has been used for a wide variety of services including asthma education, supplies, home visiting, environmental assessment, and environmental remediation.
- GHHI is part of Maryland's HSI which includes environmental case management for asthma, delivered by local health departments. MD HSI budget is \$7.2M per year.
- GHHI supported Wisconsin's 2021 expansion of its HSI for lead hazard control to become the first state HSI to also include asthma in-home education, environmental assessments, and remediation of asthma triggers (up to \$5,000).
- **Because of the broad allowance of different types of services in the HSIs to date, there could be an opportunity to establish an HSI that specifically includes removal of the sources of hazardous emissions in the home**

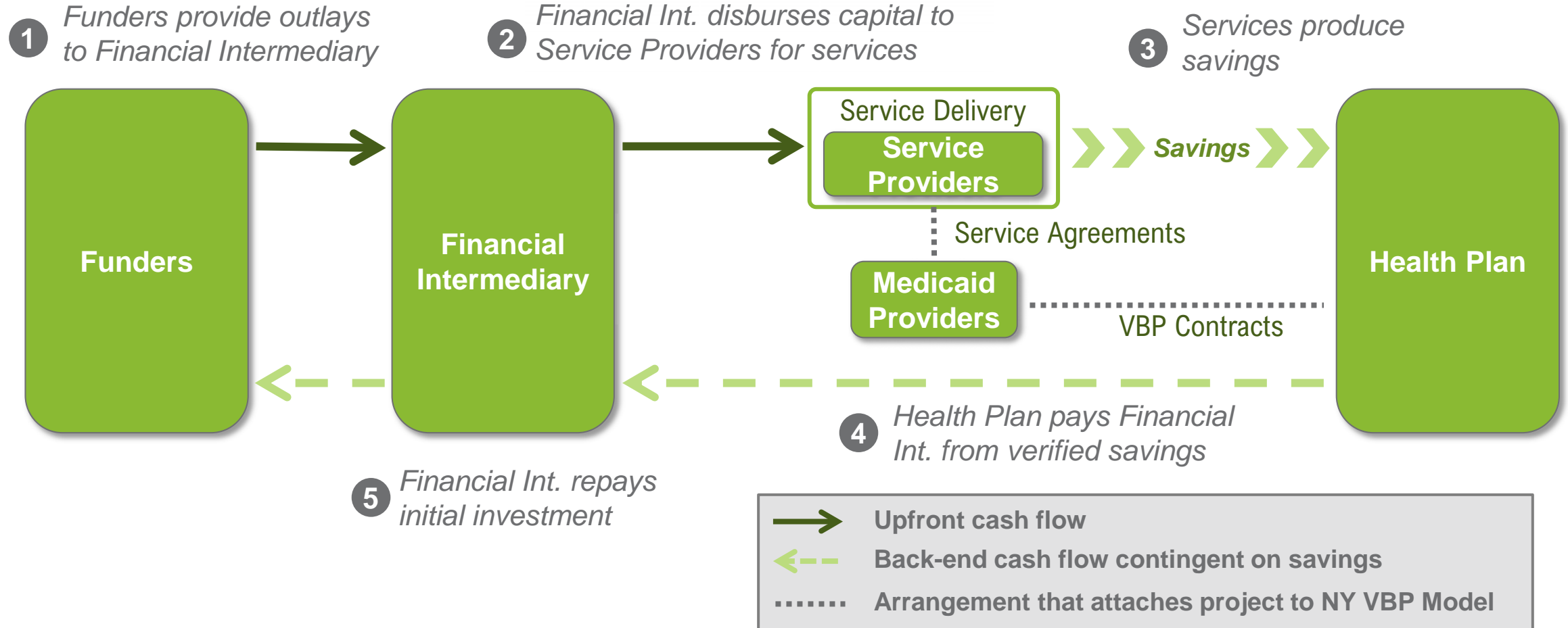
Policy for CA to explore: Health Related Social Needs–(1115 Waiver)

- CMS approved [Massachusetts](#) and [Oregon](#) 1115 waivers in September 2022, both of which include non-medical services that address Health Related Social Needs (HRSN) for Medicaid members.
- **Oregon’s waiver explicitly allows for coverage of services such as air filters and air conditioners in areas impacted by climate change emergencies**
- Allowable HRSN services include medically necessary supplies and home modifications:
 - Air conditioners
 - Humidifiers
 - Air filtration devices, HEPA filters
 - Vacuum cleaners
 - Pest management
 - Hypoallergenic mattress and pillow covers
 - Asthma remediation

Value-Based Model / Public-Private \$4.75M Investment in New York City to Serve 850 Medicaid Members with Asthma

Partners	Roles	Description
	Referral provider and back-end payer	Bronx-based health plan founded in 1986. Affinity by Molina serves over 300k members in its lower NY 10-county service area.
 <p>Healthy has an address</p>	Lead social care and home visiting service provider	20yr-old social enterprise with expertise in home-based asthma interventions led by Community Health Workers in NYC.
	Home remediation provider	Expert in advancing energy-efficient housing to foster and maintain affordable, healthy housing and communities.
 <p>Green & Healthy Homes Initiative</p>	Project manager and junior investor	Largest U.S. healthy homes nonprofit; leader in developing innovative models to sustainably address social determinants of health.
	Senior investor	One of the largest and oldest banks in the U.S.; involved in several outcomes-based financing projects
	Technical advisor	NYC Department of Health and Mental Hygiene will assist with code enforcement and coordinate with other local programs.
	Financial intermediary	National nonprofit and community-development finance institution dedicated to catalyzing excellence in primary care.

NY Healthy Homes Collaborative – Funding Flow Diagram



Ruth Ann Norton
President & CEO
Green & Healthy Homes Initiative
ranorton@ghhi.org

www.ghhi.org

 @HealthyHousing

 @RuthAnnNorton

 GHHInational

 healthy_housing





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AGENDA: 16

Air Monitoring and Modeling of Incidents: Formation of Ad Hoc Committee

**Board of Directors Meeting
February 15, 2023**

**Ranyee Chiang, Ph.D.
Director of Meteorology & Measurement
rchiang@baaqmd.gov**

Presentation for Information Only



- No action required.

Stationary Source and Climate Impacts Committee: Agenda Items on Incidents



- September 2022 – Air Monitoring during Incidents: Limitations of Current Air District Programs
- November 2022 – Air Monitoring during Incidents: Programs at South Coast Air Quality Management District
- February 2023 – Air Monitoring and Modeling of Incidents: Options and Next Steps, Formation of an Ad Hoc Committee

Current Air District Role During Incidents



- Emergency Operations Plan, includes advising first responders, incident managers, health officers
 - Ensure safety of Air District personnel
 - Integrate into the existing incident management structure
 - Coordinate Air District resources with the lead agency
 - Coordinate public messaging with response partners
 - Document facility compliance status

Limitations to Current Air District Role During Incidents



- Not first responders
- Monitoring is designed for goals like community-scale monitoring, enforcement of regulations, comparison with national standards. (September 2022 Stationary Source and Climate Impacts Committee presentation)

Formation of an Ad Hoc Committee



- On Feb. 8, 2023, the Stationary Source Committee recommended the Board Chair appointment an ad hoc committee to help guide the development of a possible incident response monitoring and/or modeling program. This ad hoc committee would report back to the full Board.

Per Division I, Section 6.1 of the Administrative Code, the Chairperson of the Board has the authority to appoint special committees such as this proposed ad hoc committee.

Ad Hoc Committee



- The ad hoc committee's scope would be limited to this topic and its duration should be no longer than the end of 2023.
- The ad hoc committee would work with staff to prepare concepts and other materials in preparation for seeking public input before bringing a recommendation to the board.

Summary of Proposal - Timeline



- December 2022 – January 2023: Initial concepts developed
- February 8, 2023: Potential ad hoc committee discussed at Stationary Source and Climate Impacts Committee
- February 16 – March 21, 2023: Work with ad hoc committee on goals, options, trade-offs, costs, scope, fee, and budget
- March 2023: Planned initiation of overall Air District strategic planning and prioritization process
- April 5, 2023 – Finance and Administration Committee receives proposed budget and proposed fee regulation amendments
- April – June 2023: Consider FTEs, budget, and fee to support the program.
- July 2023: If resources are approved, begin recruitment.
- October 2023: After initial FTEs are hired, begin program development (including additional refinement of scope and objectives) and build out begins.



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AGENDA: 23

Recommend Amending the Management Audit Contract with Sjoberg Evashenk Consulting, Inc.

**Board of Directors Meeting
February 15, 2023**

**John Chiladakis
Acting Chief Administrative Officer
jchiladakis@baaqmd.gov**

Outline



- Key Milestones to Date
- Next Audits
- Funding Authorization Request

Requested Action



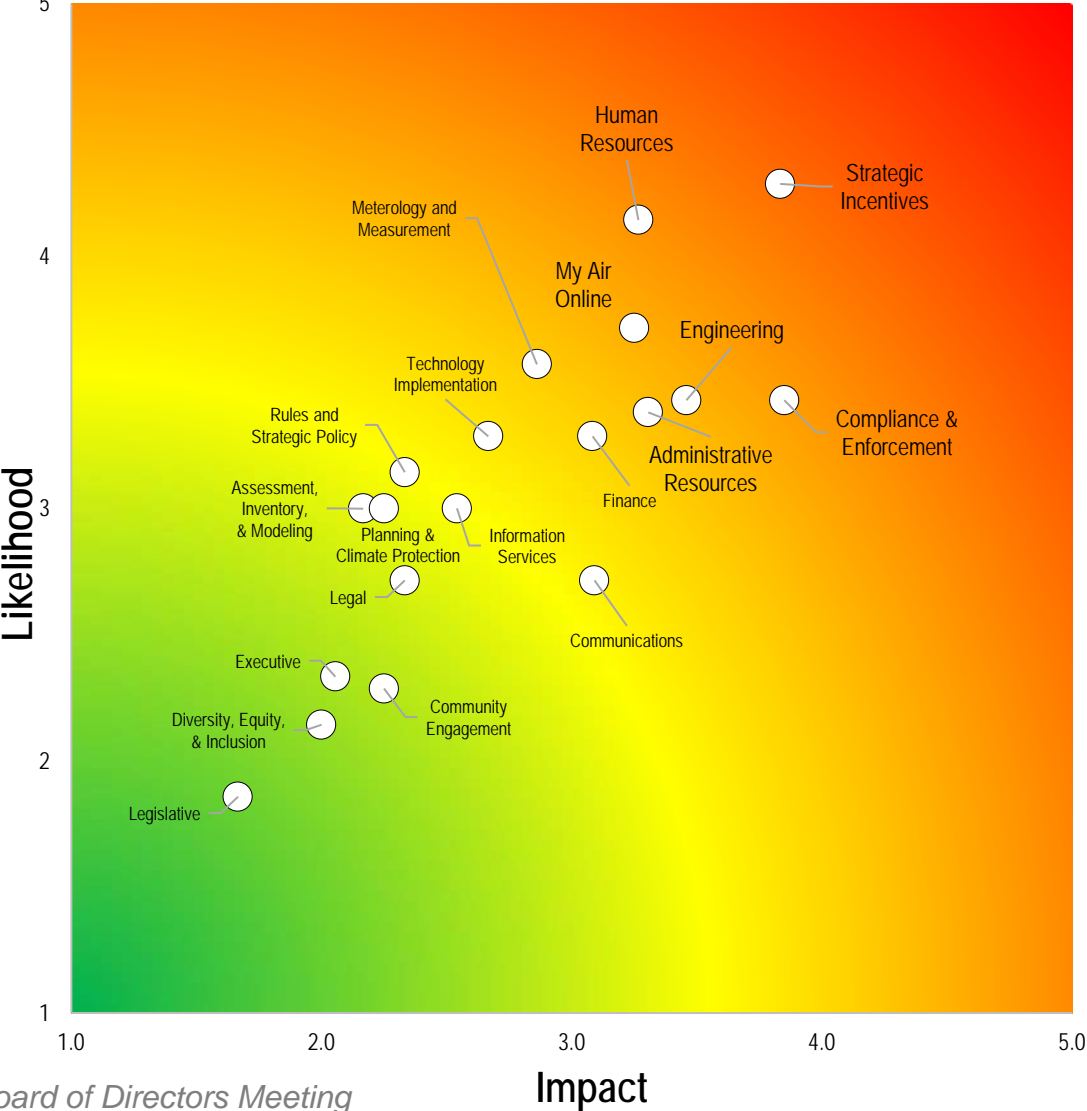
Recommend the Board of Directors authorize the Interim Executive Officer/APCO to amend the Air District's contract with Sjoberg Evashenk Consulting, Inc. to fund ongoing management audit services through 2023 by increasing the contract's not to exceed amount by \$300,000 from \$250,000 to a total of \$550,000.

Key Milestones to Date



- **December 01, 2021**, Panel of staff, Board Members, Community, Employees' association and Subject Matter Expert Recommend Sjoberg Evashenk for 3-year engagement
- **June 15, 2022** – *Risk Assessment*
- **July 6, 2022** – *Priority Staffing Recommendations*
- **November 2, 2022**– *Organizational Structure*
- **November 2, 2022**– *Performance Audit of Human Resources*

Next Audits



- Prioritization with oversight from Administration Committee
- Two additional divisional audits expected this year
 - Strategic Incentives
 - Compliance and Enforcement
 - Engineering
 - My Air Online
 - Administrative Resources
- Cost for two additional audits \$300,000

Requested Action



Recommend the Board of Directors authorize the Interim Executive Officer/APCO to amend the Air District's contract with Sjoberg Evashenk Consulting, Inc. to fund ongoing management audit services through 2023 by increasing the contract's not to exceed amount by \$300,000 from \$250,000 to a total of \$550,000.