

HAWAII TECHNOLOGY DEVELOPMENT CORPORATION

BOARD OF DIRECTORS MEETING

MAY 5, 2022





WHO WE ARE

WHAT WE DO



VISION

A Thriving

Economy

Fueled by

Technology



MISSION

Inspire Hawaii to
Accelerate
Business Growth With

**Local
Innovation**

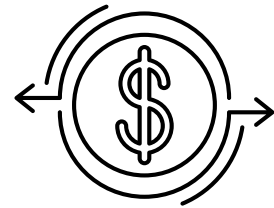


Purpose

(HRS 206M-2)



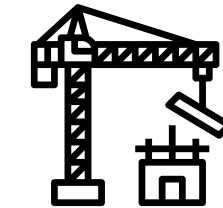
Open New Markets



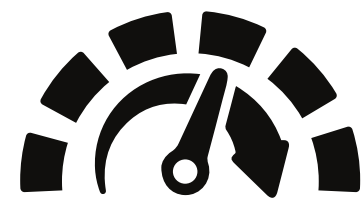
Policy & Budget



Coordinate Industry



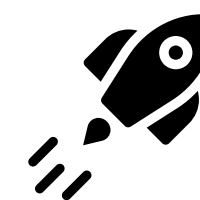
Develop
Infrastructure



Accelerate
Time to Market



Develop Workforce



Scale Local
Innovation



Metrics

Economic Development
(State Funded)

INNOVATE HAWAII
(Federally Funded)

HCATT
(Federally Funded)



Len Higashi
Acting Executive Director



Ray Gomez
Fiscal Manager



Wayne Inouye
Center Director



Wayne Layugan
Program Manager



Dave Molinaro
Acting Director



Sandi Kanemori
Contracts Manager



Ellen Ng
Economic Dev.
Specialist



Stephanie Yuu-Sato
Fiscal & Contracts
Specialist



Cindy Matsuki
SBIR Program
Manager



Olivia Sou
Project
Coordinator



Kanna Kawai
Contracts
Administrator



innovate

H A W A I I

Focused on Tech and
Manufacturing



Scale Local Innovation

Open New Markets

Accelerate Time to Market

Coordinate Industry

Develop Workforce



VISION

Hawaii's leader in manufacturing consulting and training to strengthen the state's growing manufacturing industry

MISSION

Foster the growth of the Hawaii's manufacturing sector by facilitating commercialization, innovation and local / U.S. mainland connections

STRATEGY

- Adopt a "VOC" market driven approach
- Leverage the "Made in Hawaii" brand
- Build strong local partnerships

INNOVATE HAWAII | OVERVIEW

Advisory Committee Members

Board
Chair



Gary Yoshioka
Diamond Bakery
President



Summer Shiigi
Ten Tomorrow
Owner



Trung Lam
La Tour Bakehouse
CFO



Kent Untermann
Art Source Inc.
President

Ex-Officio Members



Len Higashi
HTDC
Acting Executive Director



Sandra Fujiyama
UH Manoa, PACE
Executive Director



Pono Chong
Pono Chong
Consulting

Organizations



UNIVERSITY of HAWAII®

INNOVATE HAWAII | PARTNERS

Manufacturing Output

1.73% of total state output

\$1.66B (2019)

747 manufacturers (2017)

Workforce

1.93% of total state workforce

11K employees (2020)

\$47K annual salary (2019)

Total Hawaii Manufacturing Sectors (2019), \$M

F&B / Tobacco

\$519.6

Petroleum / Coal

\$480.2

Nonmetallic Mineral

\$148.5

Aerospace / Transportation

\$115.9

Nonmetallic Mineral

\$98.1

Total Major Manufacturing Sectors for Job Growth (2020)*

Pharmaceutical / Medicine

24.9%

Aerospace

15.2%

Ship & Boat

10%

Semiconductor / Electronic Component

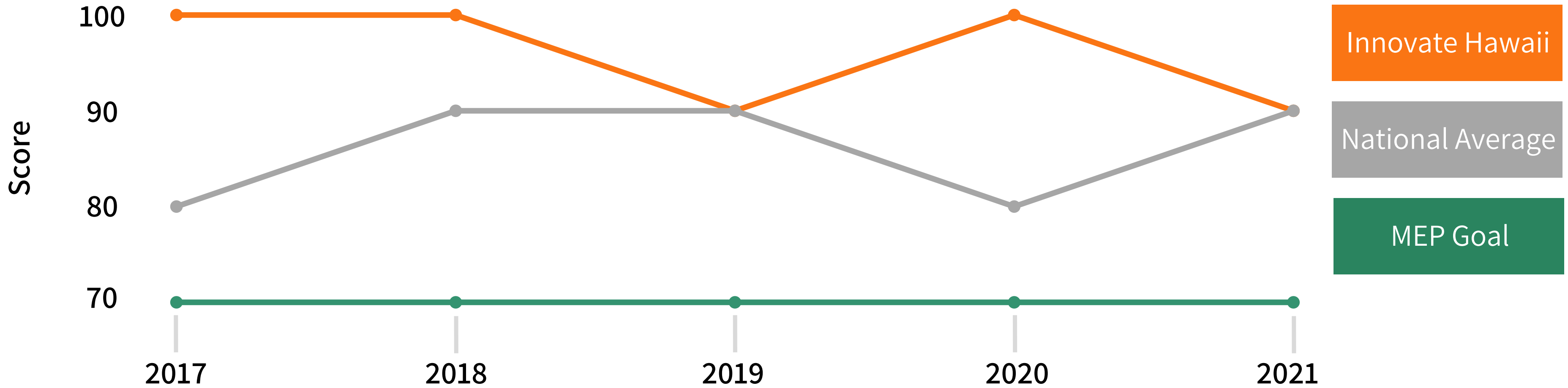
7.8%

Beverage

6.4%

Source: [National Association of Manufacturers](#)

Exceeding NIST MEP Performance Goals To Secure Federal Funding Since 2017



2021

New Revenue Generated

\$32.9M

Jobs Saved / Created

496

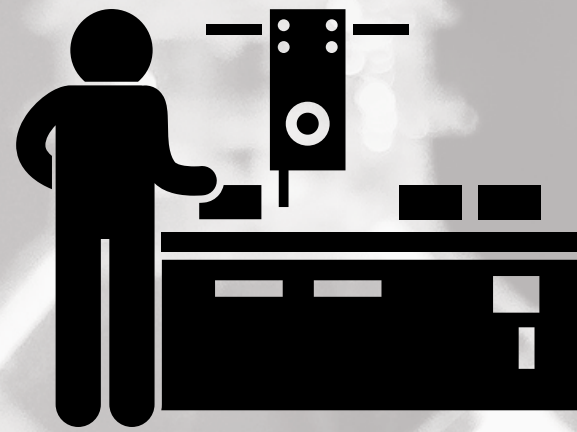
Value of Exports (2020)

\$0.18B



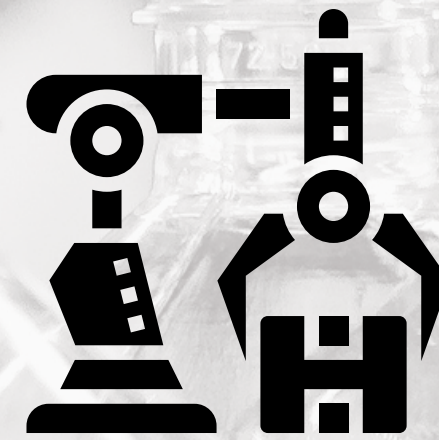
Food & Beverage

- System Automation / Cobots
- Food Safety Training
- E-Commerce & Digital Marketing Training
- Packaging Assistance



Workforce

- Apprenticeship Training
- Online Skills Training
- New Career Pathways
- Advanced MFG Training



Industry 4.0

- Cyber Security Assessments
- Additive Manufacturing
- IoT
- Robotics
- Integration



SBIR / STTR

- Growing the pipeline
- Market Research
- Commercialization
- Finding New Customers

INNOVATE HAWAII | FOCUS AREAS (CORE)

Open New Markets

Accelerate Time to Market

Develop Workforce

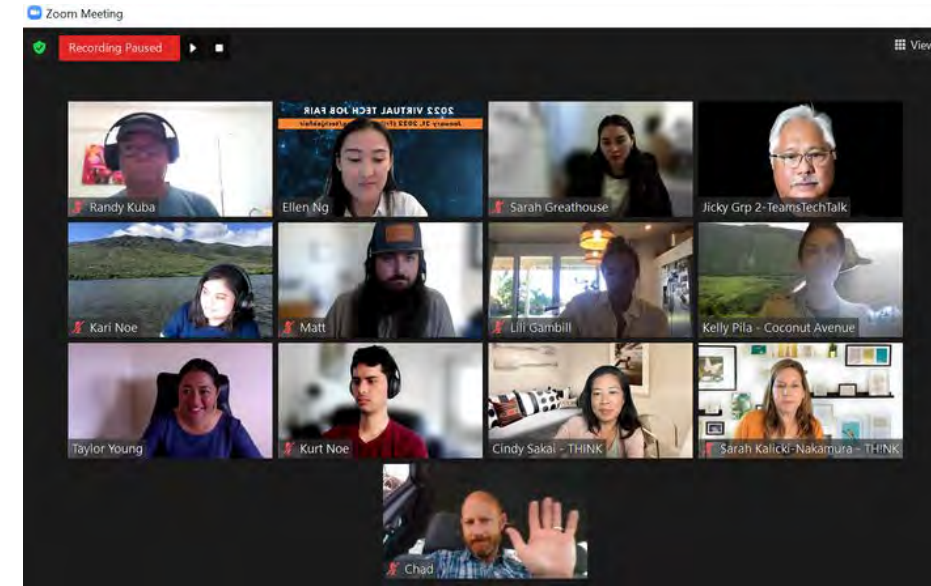
Collect Data & Report

\$465K
total funding

Mission: Help manufacturers build brand awareness and sustainable direct-to-consumer sales channels beyond Hawaii



- Started in August 2020
- Formats
 - Cohort-Based Learning
 - Live Webinars
 - Direct Assistance
 - Workshops
- Content
 - U.S. / English-based Markets
 - Internationalization (Japan)

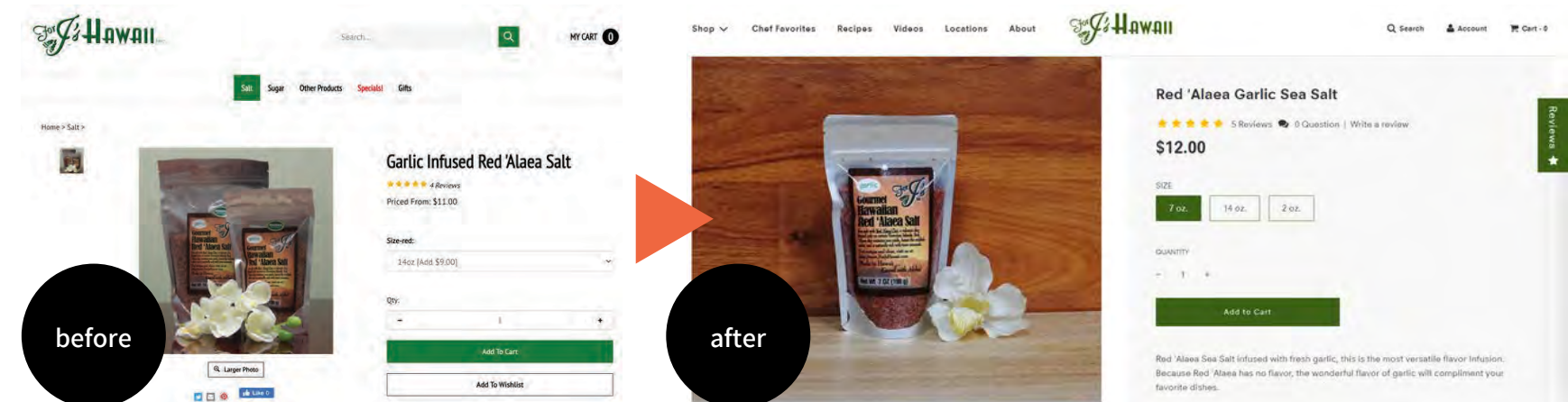


Cohort-Based Learning via Zoom



Photography Workshop (Kauai)

Direct Assistance



Scale Local Innovation



Supports small business R&D and financing of cutting-edge technologies

\$25M in SBIR / STTR Federal Funds awarded to Hawaii-based companies (2021)

Open New Markets

Accelerate Time to Market

Develop Workforce

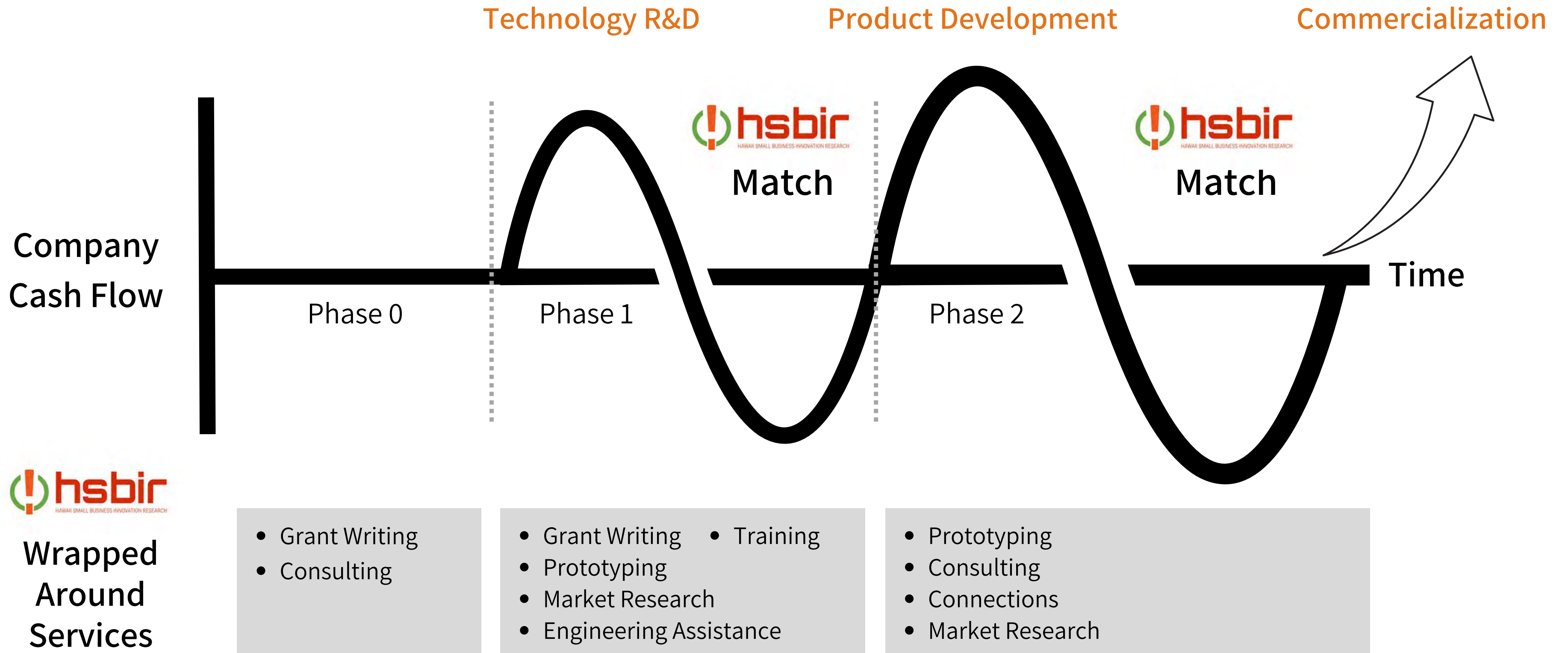
PHASE

SBIR (Federal)

SBIR (Hawaii)

0	- For 1st time Phase 1 Applicants	No federal support	- Up to \$3K - Reimbursement for grant writing assistance
I	- Proof of Concept - 6 - 12 months	Award : \$50K - \$250K	+ Up to 50% or \$75K of the federal award
II	- Prototype Development - 24 months	Award : \$500K - \$1.5M	+ Up to 50% or \$500K of the federal award
III	- Commercialization	No federal support	+ Up to 50% or \$500K of the federal award

Hawaii SBIR plays a critical role in the company's life cycle



INNOVATE HAWAII | SBIR

Hawaii SBIR Program helps Hawaii startup scale



- Acquired funding through HSBIR co-matching
- Hired staff through HTDC Tech Job Fairs
- Build partner and customer relationships through HTDC-hosted SBIR Conference, networking events and webinars



Stage of Business	PhD Research	Proof of Concept	Prototype & Test	Customer Validation & Sales @ Sandia National Lab, CAEN Technologies
No. of Employees	1 (Founder)	5 (UH Graduates)	18 - 15 UH Graduates - 10 Hawaii born and raised - 11 (\$80K salary)	



Tech Bridge

- Assist in solving local ONR problems
- Connecting with Hawaii tech companies to solve these problems



Shipyard

- Apprenticeship training
- New tech adoption
- Advanced Manufacturing training
- Workforce Development



Mfg. Clusters

- Hilo Innovation Manufacturing Center (IMC)
- Supporting new value-added food projects in rural locations

INNOVATE HAWAII | FOCUS AREAS (NEW)

Accelerate
Time to
Market

Open New
Markets

Scale Local
Innovation

Coordinate
Industry

Develop
Workforce



Naval Information
Warfare Center



PACIFIC

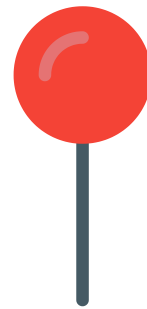


Mission:

Getting Capability and Solution to the Fleet Faster
Connect and create local opportunities to DoD



- Lead: Neal Miyake, Director



- **Pearl City:** Naval Information Warfare Center (NIWC) Pacific's Indo-Pacific Department
- **Honolulu:** *Entrepreneurs Sandbox*



- Command and Control
- Computers / Networks
- Cyber / Space Systems
- Energy & Resilience
- Communication
- Intelligence
- Surveillance
- Reconnaissance

INNOVATE HAWAII | TECH BRIDGE

Connect Tech Bridge to Hawaii's Innovation ecosystem

Department of Defense



Naval Information Warfare Center



PACIFIC



State of Hawaii



PIA



Industry



Academia



EPA & CA

PIA : Partnership Intermediary Agreement
 EPA : Educational Partnering Agreement
 CA : Cooperative Agreement

INNOVATE HAWAII | TECH BRIDGE

Hilo Innovation & Manufacturing Center (IMC) at Hilo FTZ9

Scale Local
Innovation

Integrating Hilo's
Agricultural and
Manufacturing Industries



Develop
Infrastructure

Accelerate
Time to Market

Coordinate
Industry

Develop
Workforce



- Collaboration between local farmers and agricultural researchers
- Enable technological advances in agriculture and value-added manufacturing



Focus Areas:

- Import/Export Resource Center
- Entrepreneurship support
- Manufacturing Assistance

Facility:

- Collaboration / Coworking space
- Rentable small office space for potential trade companies
- Training / Conference rooms
- Rentable manufacturing production (PD) space

INNOVATE HAWAII | HILO IMC

HCA TT

HAWAII CENTER FOR ADVANCED
TRANSPORTATION TECHNOLOGIES



Open New
Markets

Scale Local
Innovation

Coordinate
Industry

Policy / Collect
Data & Report



VISION

Energy for CH₂ANGE

100% RPS*
by 2045

*renewable portfolio standards

Mission: Inspire & transform Hawaii's clean energy future



INNOVATE

Solutions to meet the state's 2045 RPS



ACCELERATE

Adoption of H₂ & fuel cell technologies



CATALYZE

Collaborations between State, DOD, public and private stakeholders



EDUCATE & INFLUENCE

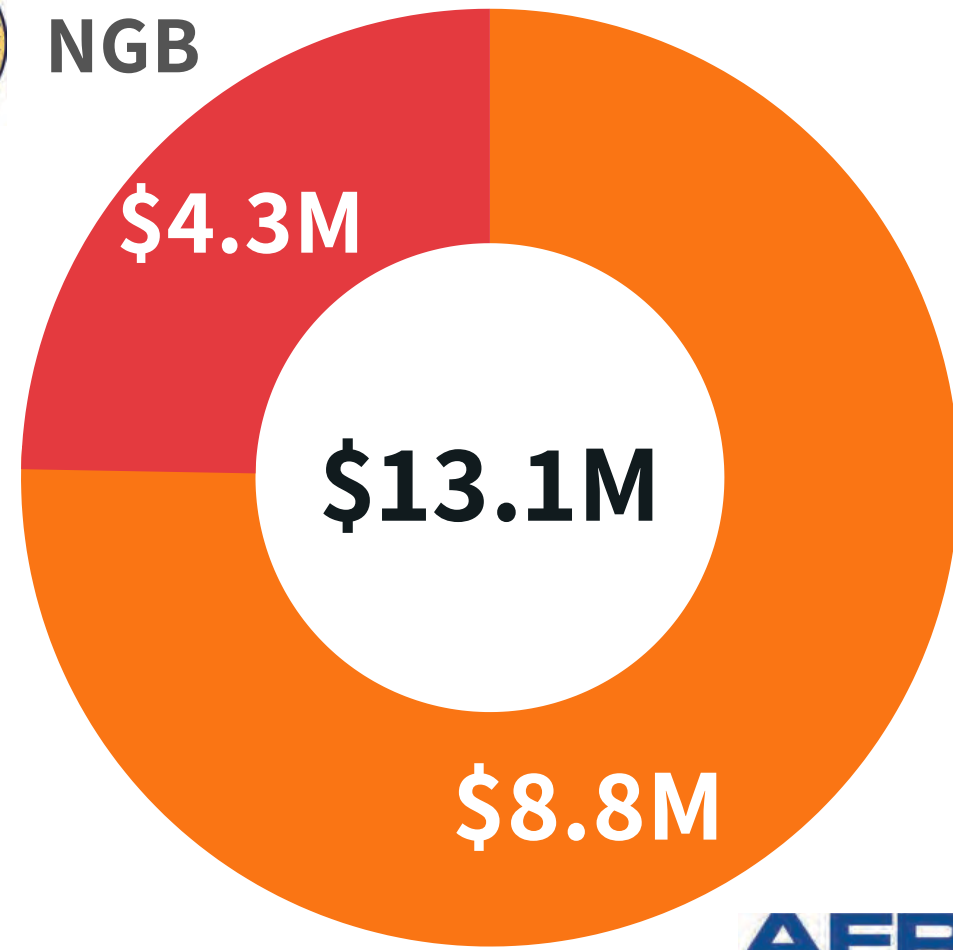
Hawaii to be leaders in H₂ technology

HCATT |

**HAWAII CENTER FOR ADVANCED TRANSPORTATION
TECHNOLOGIES**



NGB



PEARL MICROGRID

Hawaii Air National Guard
(HIANG) F-22 Campus

FUNDING

AFRL -
Air Force Research Lab

NGB -
National Guard Bureau

SAF/IE -
U.S. Air Force (Energy,
Installations and Environment)

1992



INCEPTION

- Congressional Apropr / Discretionary Funding
- No State Funding ever appropriated

2015



COOPERATIVE AGREEMENT WITH AFRL

- \$30M awarded in August 2015

Current



FUNDING REQUESTS

- SAF / IE - Requested \$5M from Congress (authorization expected)
- NGB - Drafting \$2.6M appropriations request



Groundbreaking Ceremony | Dec 17, 2019

Pacific Energy Assurance & Renewables Laboratory

MICROGRID

IMPACT



**ATTAIN STATE'S 2045
100% RPS VISION**

by enabling prototyping,
testing and deployment



**DEVELOP NEXT-GEN
ENERGY TECHNOLOGIES***

in distributed energy
generation, storage, control



**ACHIEVE ENERGY
ASSURANCE & RESILIENCY**

for critical military
infrastructure



Non-Critical
Buildings



Power Distribution
Center



Critical
Buildings



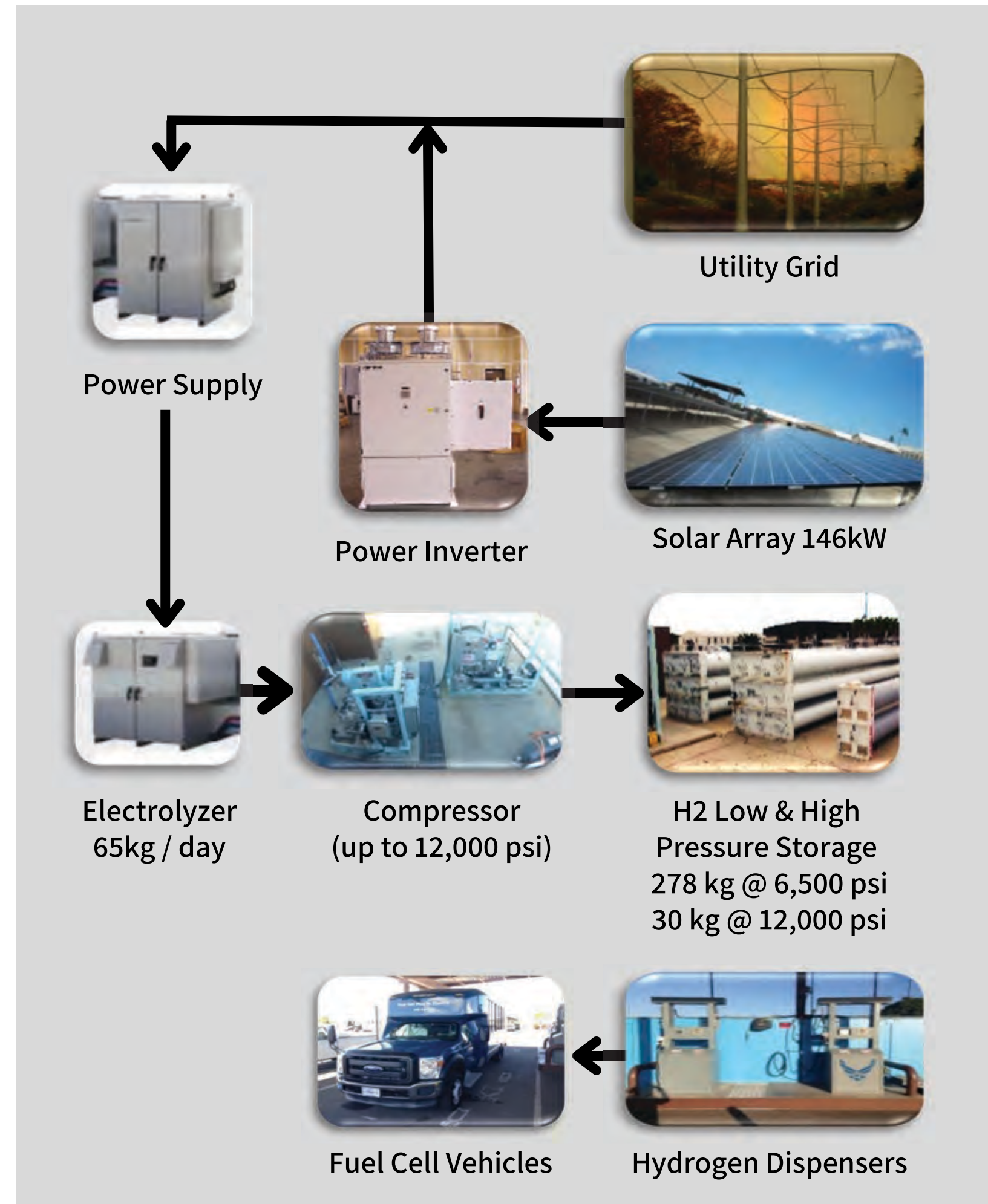
Solar
Panels



H2 Infrastructure for USAF Applications

IMPACT

First H2 Demonstration Station in the Air Force (Joint Base, Hawaii)





U.S. AIR FORCE

FCEVs for USAF Applications

*FCEV - Fuel Cell Electric Vehicle

IMPACT

FC DISTINGUISHED VISITORS' SURREY

A FCEB at Joint Base Pearl Harbor- Hickam



FC WEAPON LOADER

Demonstrated by Air Force Research Laboratory



SECURE POWER ON DEMAND

FC powered step van with import & export power capabilities



FC U-30 AIRCRAFT TOW TRACTOR

Towing a 186,000 pound aircraft



H2 MOBILE GENERATORS & LIGHT CARTS

NATIONAL GUARD BUREAU (NGB) MISSION



“The system was 100 percent reliable in supporting operations, which in an emergency response environment like CBRNE*, is an absolute necessity – and doing so with renewable energy is a game changer for the National Guard.”

**Hawaii National Guard CBRNE
Exercise Director**

*CBRNE - Chemical, Biological, Radiological, Nuclear, and high yield Explosives.

H2 for State & Public Applications

EAT THE STREET FESTIVAL



Source: Pacific Business News

KAPOLEI CITY LIGHTS



Source: KCL FB Page (Kate Wade)

IMPACT



H₂ can be produced from diverse natural resources in the State and can be integrated into existing sectors and infrastructure



Geothermal



Airports (e.g. GSE)



Public Transit



PV & Wind
(Non-Curtailed & Curtailed)



Municipal & Military
Infrastructure



Ports & Maritime



Electrolyzer for Energy
Storage & Grid Management



Ports & Maritime



Tourism Industry

H₂ OPPORTUNITIES

Support Local Innovation

■ **ADVOCACY & EDUCATION**

- Support State's renewable energy evolution by adopting H2 technologies for a resilient, clean, and secure energy infrastructure
- Promote H2 policies, programs, and education

Open New Markets

■ **COMMERCIALIZATION**

Transition PEARL & H2 technologies from demonstration to operational support for the Hawaii Air National Guard and USAF

Coordinate Industry

■ **COLLABORATION**

Expand alliances with government, military, private industry and universities to further H2 and microgrid capabilities in the Pacific

■ **HTDC BOARD INVOLVEMENT**

- Support State funding for full time positions and appropriations for HCATT programs
- Promote the incorporation of renewable energies as a critical path in economic development
- Advocate for HI H2 Development/Business Council

NEXT STEPS

sandbox



INITIATIVES

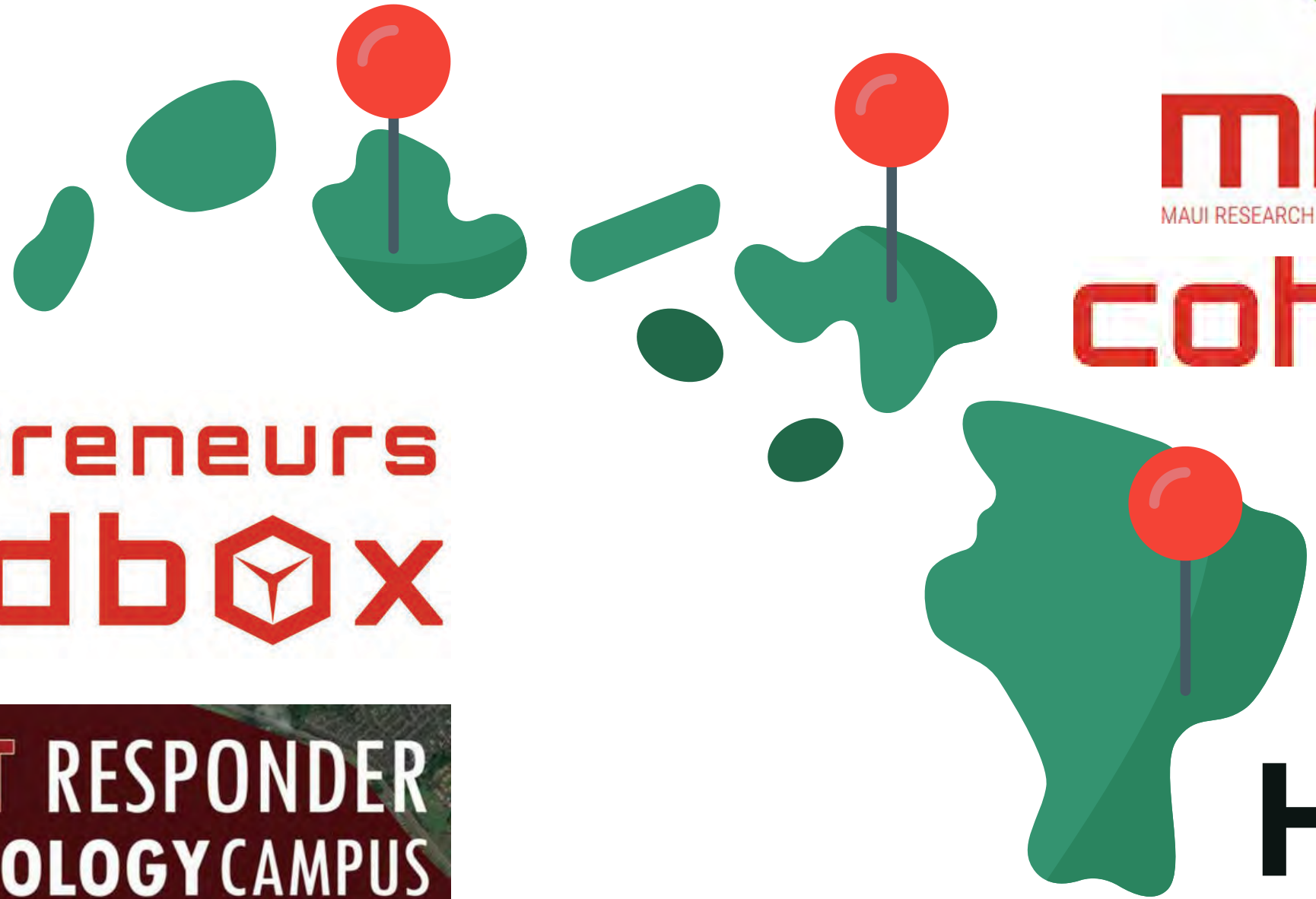


Develop
Infrastructure

Scale Local
Innovation

Accelerate
Time to Market

Develop
Workforce



entrepreneurs
sandbox

 **FIRST RESPONDER
TECHNOLOGY CAMPUS**


mrtec
MAUI RESEARCH AND TECHNOLOGY CENTER
cohana

Hilo IMC

HTDC FACILITIES

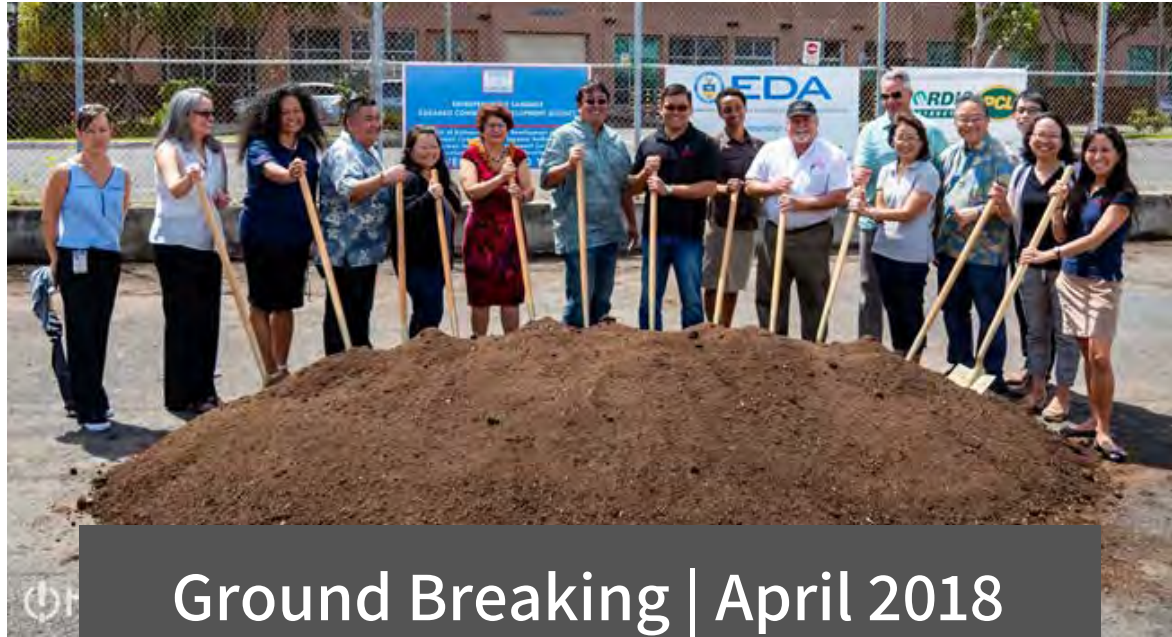


- 40,000 sqft
- Opened in 1993
- 50 private offices of various sizes
- Conference/training rooms and cowork space
- TechOhana courtyard



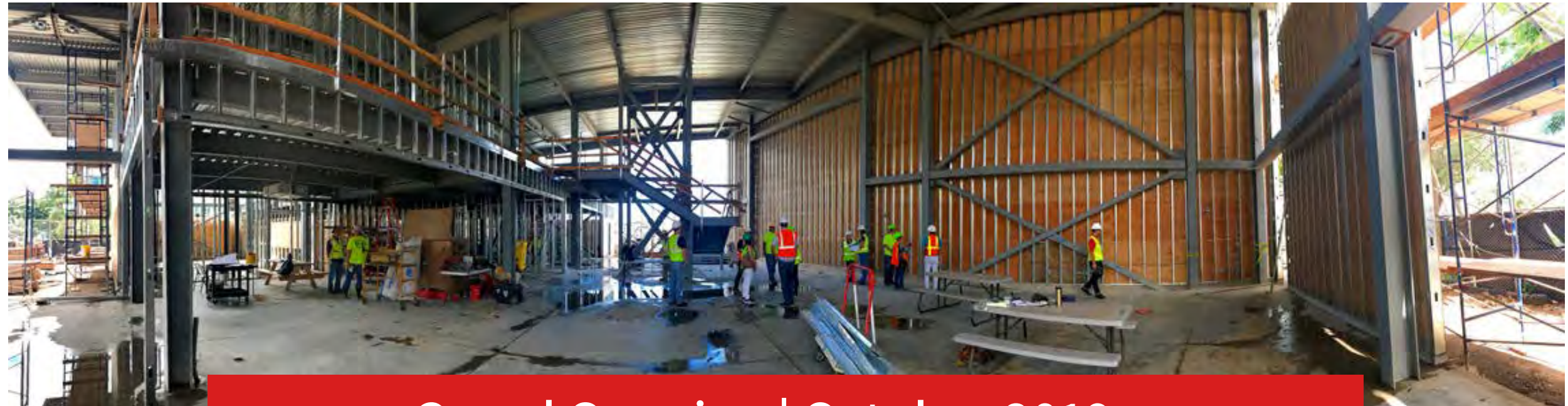
MAUI RESEARCH & TECHNOLOGY CENTER | OVERVIEW

entrepreneurs sandbox



Ground Breaking | April 2018

- 13,500 sq ft
- \$7.3M - Federal, State, Private
- Event / Collaboration / Co-work Space
- 9-Private Offices @ 200sq ft
- Conference / training rooms
- Soundstage / Media Room



Grand Opening | October 2019



ENTREPRENEURS SANDBOX | OVERVIEW



ENTREPRENEURS SANDBOX | PARTNERS

Scale Local
Innovation

Open New
Markets

Accelerate
Time to Market

Supporting local events around tech and entrepreneurship

FY 22 - \$88,900 | FY 21 - \$197,480



HTDC | SPONSORSHIPS



BLUE STARTUPS

- 13 Cohorts (Cohort #14 Starting August 2022)
- 70% Active or Acquired (1 IPO - Volta Charging)
- \$400M Follow-On Funding Raised

" Software/Apps"



MANA UP HAWAII

- 6 Cohorts (Cohort #7 Starting Q3 2022)
- 47 Companies Generated \$43.4M in Revenue (2020)
 - \$18.47M From Outside of Hawaii
- Created 315 Jobs (2020)

" locally made products"



- 2 Cohorts (Cohort #3 Starting June 2022)
- 14 Ventures; \$16K in Funding Awarded

" Social Impact"



- 3 Cohorts (Cohort #4 Starting June 2022)
- 49 Companies

" pre-accelerator"



- 1 Cohort
- 5 Companies

" female entrepreneurs"

Open New Markets

Coordinate Industry

Develop Workforce

Collect Data & Report



TECHNOLOGY READINESS USER EVALUATION

Hawaii Executive Collaborative



JAPAN AIRLINES



HAWAII EXECUTIVE collaborative



Booz | Allen | Hamilton®



TRUE INITIATIVE | OVERVIEW

Scale Local Innovation

Open New Markets

Develop Workforce

Policy / Collect Data & Report

2 Year Pilot Program
Ends June 30, 2022

Partner



15
companies

Bill

HB2108

Mission:

- Create a regulatory framework for legislation
- Explore economic development opportunities

EXCHANGES (TRADING)



BROKERAGE



PAYMENTS



ATM NETWORKS



FISCAL UPDATES



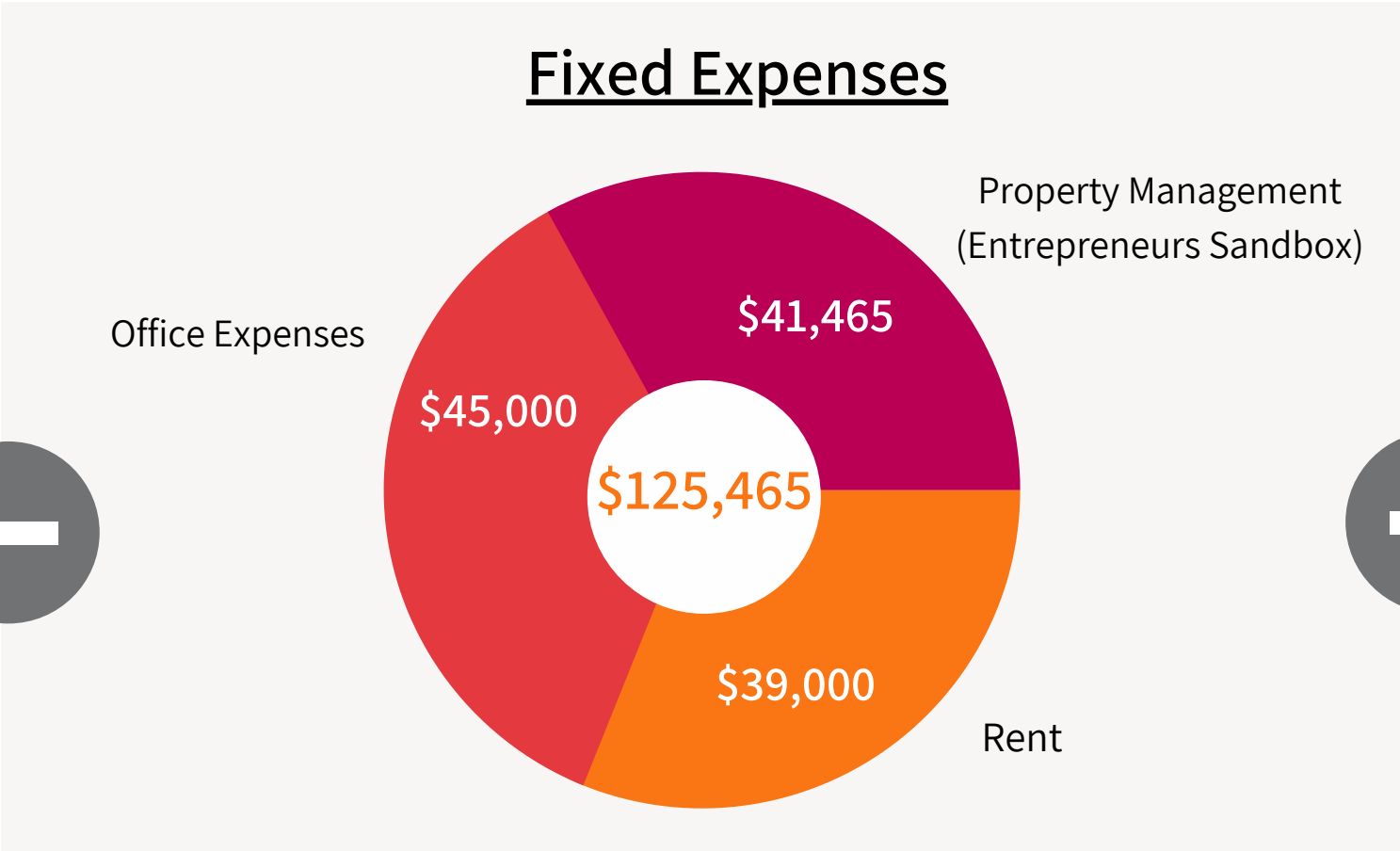
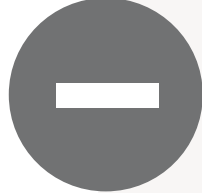
Appropriations

\$1,258,111

\$592,419 **\$665,692**

Payroll

Other Current Expenses



Governor Restrictions
\$88,000 (FY22)
Usually 5% - 10%

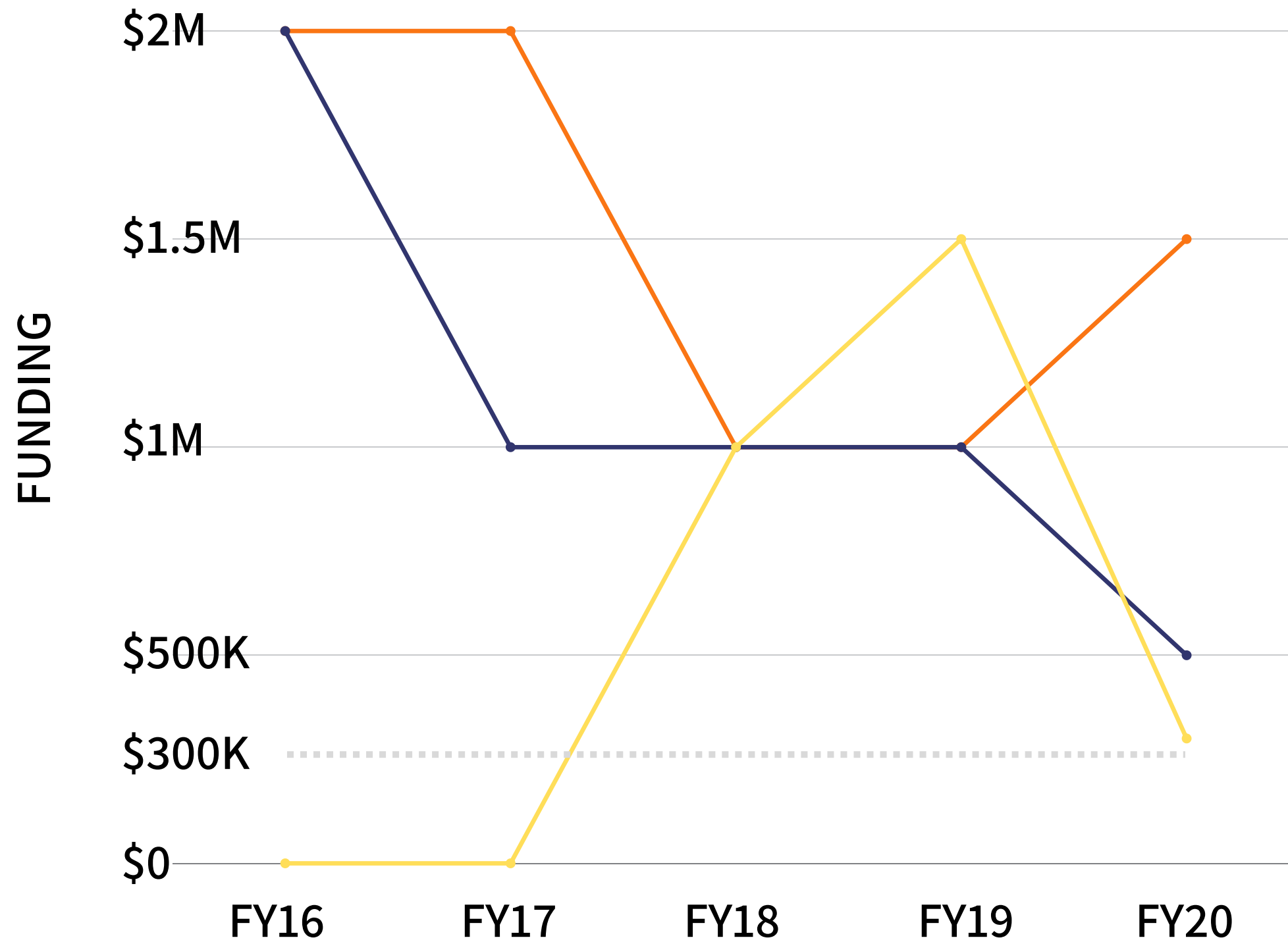
Remaining

\$42,227
Program / Other Budget

HSBIR PHASE
II & III

MAP

ACCELERATOR



Additional Sources

NIST Manufacturing Extension Program

- \$709,800 x 5 years

Air Force Research Labs

- \$18,484,157

Economic Development Administration

- \$600,000

FAST (SBA)

- \$125,000

Rural Business Development (USDA)

- \$75,000

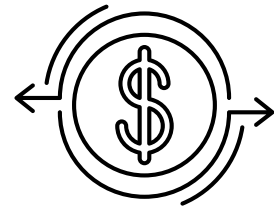
FISCAL | OTHER GENERAL FUNDED PROGRAMS

In Alignment With Our Purpose



Open New Markets

- TRUE Initiative
- DCIL
- Tech Bridge
- PEARL



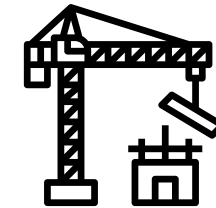
Policy & Budget

- Legislature
- Grants



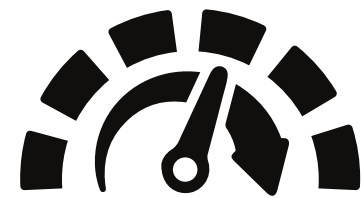
Coordinate Industry

- Entrepreneurs Sandbox
- Sponsorships



Develop Infrastructure

- FRTC
- Hilo IMC



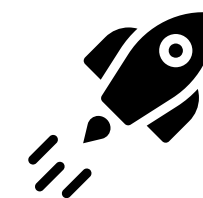
Accelerate Time to Market

- HSBIR
- Accelerators
- NI3



Develop Workforce

- Smart Talent
- Webinars
- Tech Job Fair



Scale Local Innovation

- MAP Grants
- Food Safety
- E-Commerce / Digital Marketing



Metrics

- Website

**THANK
YOU!**





FIRST RESPONDER TECHNOLOGY CAMPUS

OVERVIEW & VISUAL CONCEPT



FRTC – INTRODUCTION

FIRST RESPONDER TECHNOLOGY CAMPUS OVERVIEW:

- 243-Acre Campus for Joint Training Across Nineteen Federal, State and County First Responder Agencies/Departments
- Supports Continuity Of Operations Programs (COOP) & Critical Government Functions
- State's Strategic Disaster Recovery Site & Emergency Operation Center (EOC)
- Purpose: Collaboration and Communication, operations and logistics hub, technology advancement and sharing

FRTC – STAKEHOLDERS

State Departments

HAWAII TECHNOLOGY DEVELOPMENT CORPORATION, STATE DBEDT

HAWAII DEPARTMENT OF DEFENSE – NATIONAL GUARD

HAWAII DOD – HAWAII EMERGENCY MANAGEMENT AGENCY

DOD – HOMELAND SECURITY/FUSION CENTER

AIRPORT RESCUE FIRE FIGHTERS, STATE DOT

HARBOR POLICE, STATE DOT

HAWAII PUBLIC SAFETY DEPARTMENT

DIV. OF FORESTRY AND WILDLIFE, STATE DLNR

DIV. OF CONSERVATION AND RESOURCES ENFORCEMENT, STATE DLNR

OFFICE OF ENTERPRISE TECHNOLOGY SERVICES, STATE DAGS

UNIVERSITY OF HAWAII COMMUNITY COLLEGE SYSTEM

County Departments

HONOLULU FIRE DEPARTMENT

HONOLULU POLICE DEPARTMENT

EMERGENCY MANAGEMENT SERVICES, C&CH HESD

HONOLULU DEPARTMENT OF EMERGENCY MANAGEMENT

Federal Agencies

HOMELAND SECURITY INVESTIGATIONS

FEDERAL BUREAU OF INVESTIGATIONS

FEDERAL FIRE DEPARTMENT

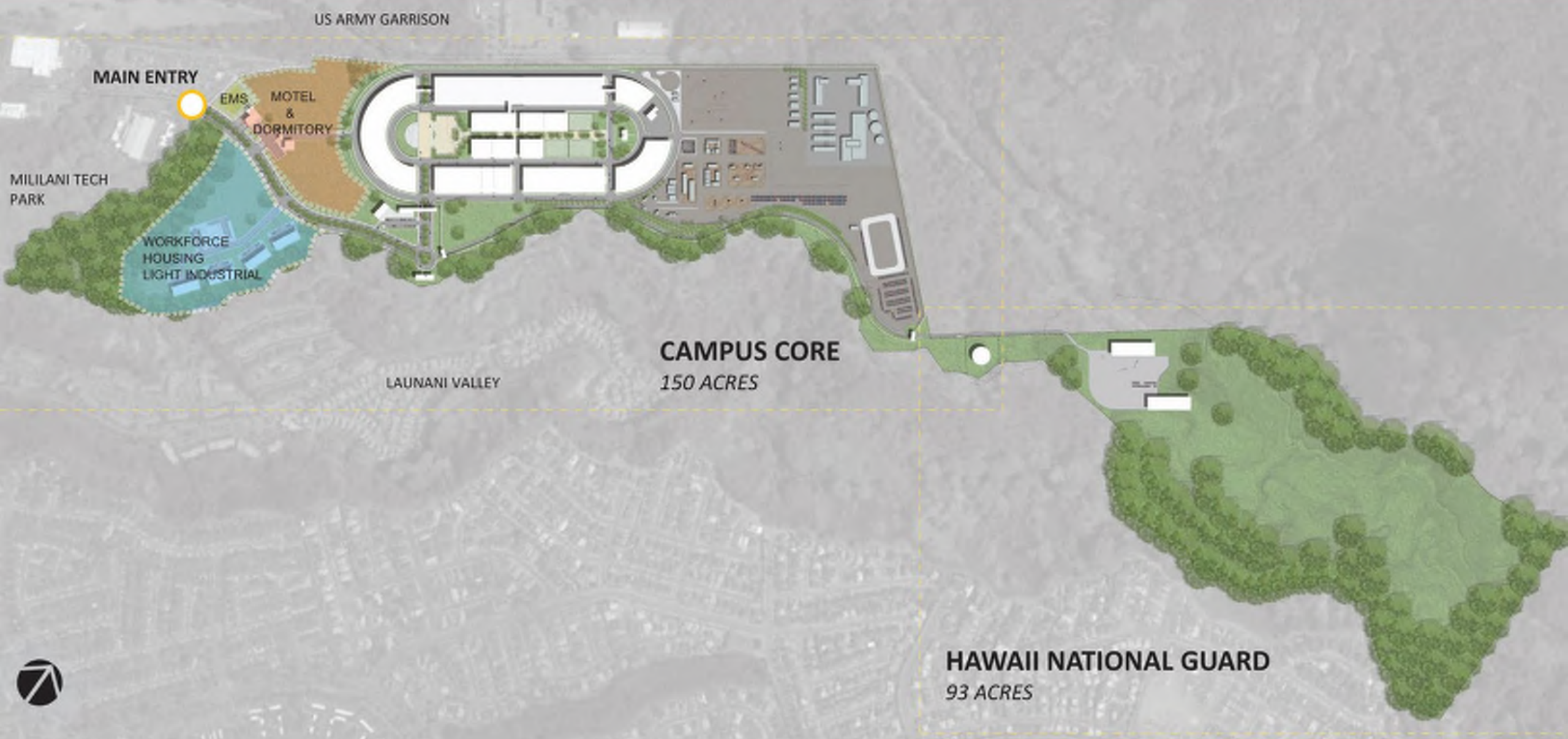
US MARSHALS SERVICE

FRTC – PARCEL MAPS



FRTC – OVERALL SITE PLAN

TWO SITES



FRTC – SITE MASSING

LOOKING EAST



FRTC – SITE MASSING

LOOKING WEST



FRTC – SITE MASSING

PROMENADE



FRTC – SITE MASSING

RESPONDER PLAZA



FRTC – MAHALO





SSBCI 2.0

HTDC Board brief



2021 American Rescue Plan Act

\$10 billion State Small
Business Credit
Initiative (SSBCI) to
fund small business
credit support and
investment programs



SSBCI 2.0 – 2021 American Rescue Plan



Budget

- \$56MM+ Capital
- \$792k Tech. Assist.
- \$500k State
- 3 Tranches, 9 years



New Requirements

- CDFI Plan
- Pandemic Response
- 30% Underserved



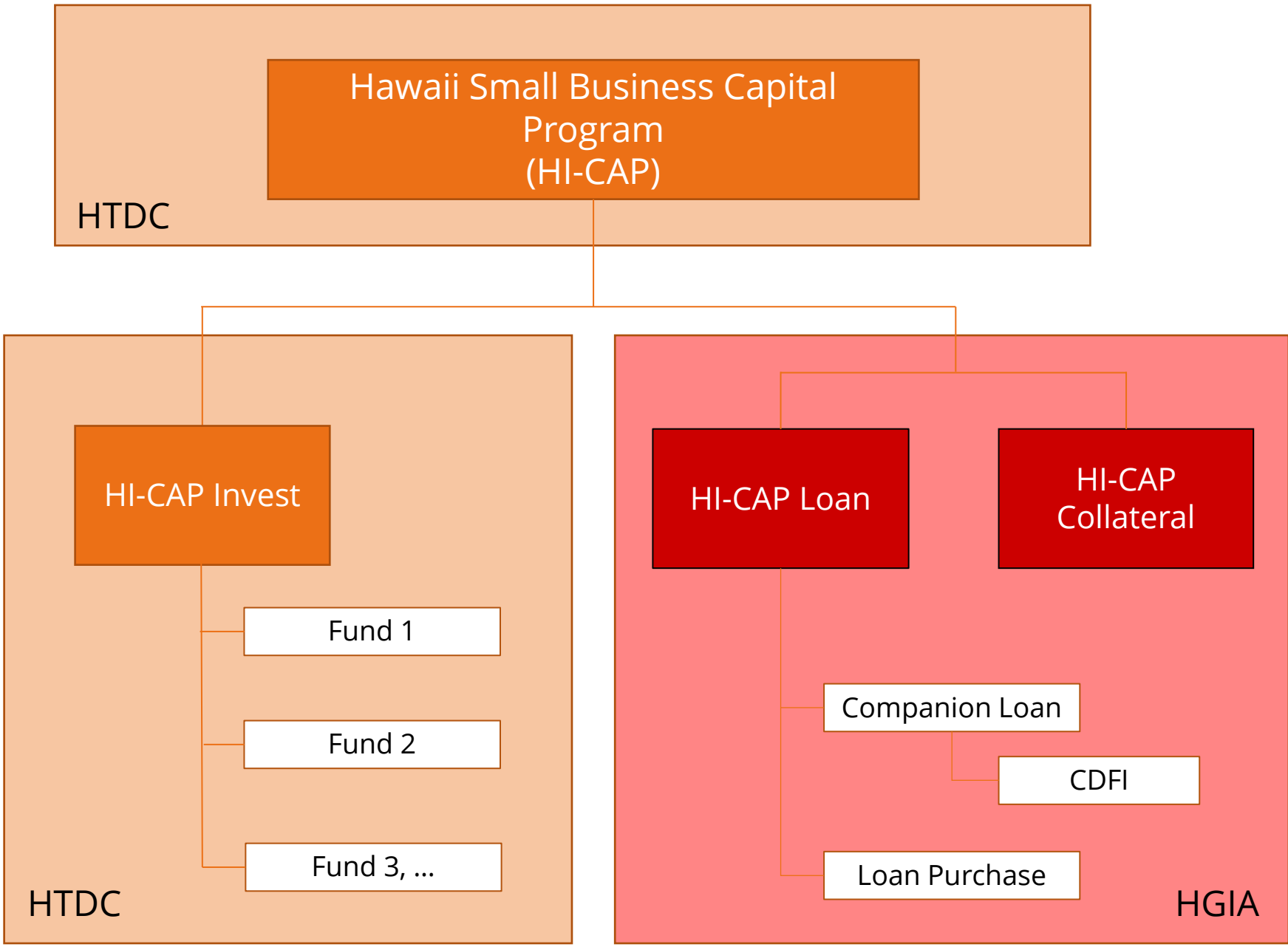
Deliverables

- 10:1 Leverage Ratio
- 80% Tranche Committed Every 3 years



SSBCI 1.0 - Hawaii

- 2013 – State of Hawaii (HSDC) invested \$13.2 million
 - Blue Ventures I, II, III, Reef Fund, Startup Capital Ventures, GTA Development Fund, Upside, Energy Excelerator, Mana Loa Ventures
- State supported with \$2MM LAVA, \$6MM HI-Growth
- Approximately 1:1 co-invest
- >\$300+ Million Follow-On Funding



HI-CAP Invest

Fund of Funds - diverse portfolio of equity investment funds

- State Investment: \$1M to 5M
- Fund Size: \$2M to \$25M

Examples:

- High-Growth Venture Capital Fund
- Social impact Fund
- Alternative Funding models

Summary of SSBCI 1.0 (National Stats)

Average leverage ratio: 12.76:1, Hawaii- Almost 35:1

Average investment amount: \$2.57M

HI-CAP Loans

Participation or Subordinated Loans for catalytic projects,
similar to GEMS

- Target Loan Amount: \$3M to \$5M
- Maximum combined loan amount: \$20M

Examples:

- CDFI
- Shared Infrastructure

Summary of SSBCI 1.0 (National Stats)
Average leverage ratio: 7.53:1
Average loan size: \$1.53M

HI-CAP Collateral

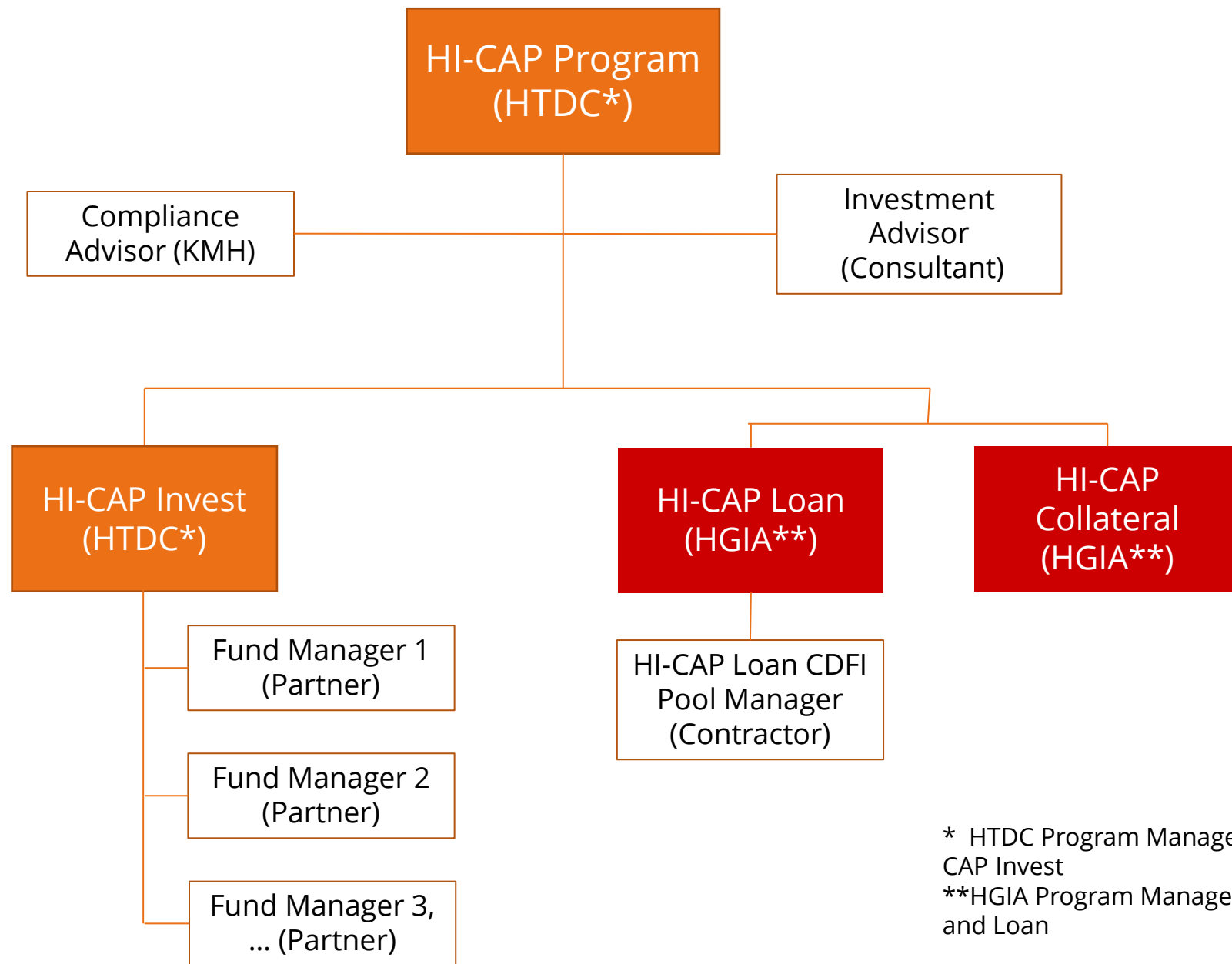
Collateral Support Enhancement for small business loans:

- State cash collateral up to 20% or \$1,000,000
- Maximum loan amount: \$20,000,000
- Maximum loan term: 10 years

Summary of SSBCI 1.0 (National Stats)

Average leverage ratio:

Average loan size: \$



* HTDC Program Manager will manage HI-CAP and HI-CAP Invest
**HGIA Program Manager will manage HI-CAP Collateral and Loan

Allocation Timeline

	Due Date
Applications Due	December 11, 2021
Tranche 2	2024 (3 years after approval of participation)
Tranche 3	2027 (6 years after approval of participation)
End of Program	September 30, 2030

Allocation Schedule¹

- 1st Tranche given after approval of application and allocation agreement
- 2nd Tranche must be transferred to the State before the end of the end of the 3-year period beginning on the date that the Secretary approves the State for participation.
- 3rd Tranche must be transferred to the State before the end of the end of the 6-year period beginning on the date that the Secretary approves the State for participation.
- The Secretary of the Treasury shall complete all disbursements and remaining obligations before September 30, 2030.

Appendix

- Main SSBCI Page: <https://home.treasury.gov/policy-issues/small-business-programs/state-small-business-credit-initiative-ssbci>
- SSBCI Program Profiles: <https://www.treasury.gov/resource-center/sb-programs/Pages/ssbci-profiles.aspx>
- TA & Best Practices: <https://home.treasury.gov/policy-issues/small-business-programs/state-small-business-credit-initiative-ssbci/technical-assistance-and-best-practices>
- 1.0 SSBCI FAQ: <https://home.treasury.gov/system/files/256/All-SSBCI-FAQs-as-of-4-21-2016-FINAL.pdf>