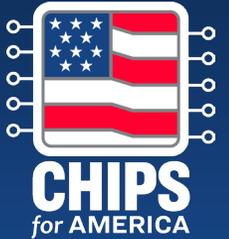


# CHIPS for America: Investment Process Overview



May 7, 2024

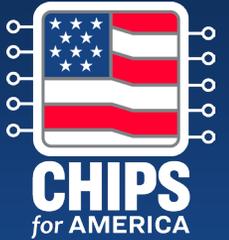
# Agenda & Objectives for today



## Agenda

- Context and objectives for the CHIPS Act
- Building the team, designing a portfolio strategy, and crafting a rigorous review process
- Executing merit review and applicant engagement
- Scoping and sizing awards
- Due diligence, legal documentation, and award execution process

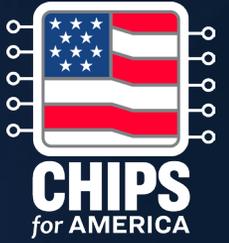
# Today's Speakers



**Brad Koenig**  
Senior Relationship  
Director

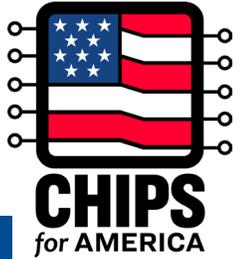


**Ozair Ahmad**  
Investment Principal



# The CHIPS Vision

# Context for the CHIPS Act



## Four Critical Developments Leading to CHIPS Act Passage in August 2022

### 1. Offshoring of U.S. Semiconductor Capacity

- U.S. share of global fabrication capacity was **40% in 1990 and 12% in 2020**
  - U.S. companies account for ~46% of the semiconductor *design* market today

### 2. Concentration of Fabrication in East Asia

- **~80%** of semiconductor fabrication capacity today in East Asia
- Geopolitical considerations and natural disasters threaten severe disruption

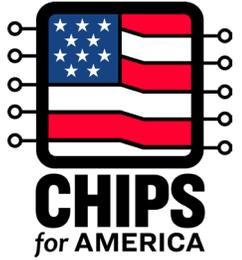
### 3. Pandemic Exposed Severe Impact of Chip Disruption

- Delays and shortages of semiconductors during the COVID-19 pandemic led to enormous economic losses
  - **An estimated 9.5 million light vehicles were *not* sold in 2021** due to a lack of the necessary semiconductors

### 4. Substantial Increase in Leading-Edge Fab Cost

- Cost of leading-edge fabs **increased from ~\$1B in 2001 to \$20B+ today**

# CHIPS for America Programs



**\$39 billion  
for incentives**

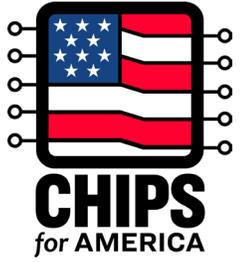
Components:

1. Attract **large-scale investments in advanced technologies** such as leading-edge logic and memory
2. **Incentivize expansion of manufacturing capacity** for mature and other types of semiconductors

**\$11 billion  
for R&D**

- National Semiconductor Technology Center
- National Advanced Packaging Manufacturing Program
- Manufacturing USA institute
- Metrology

# CHIPS for America Vision



## National Security

Support U.S. manufacturing of high-quality and secure chips for defense and other critical infrastructure applications.



## Economic Security

Strengthen supply chain security and increase economic resilience in critical sectors.

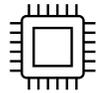
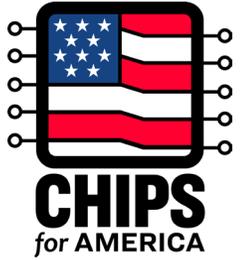


## Future Innovation

Spur innovation, increase competitiveness, and ensure long-term U.S. leadership in the sector

# Vision for Success

*Future projects will be prioritized based on whether they can be operational by 2030*



## Leading-Edge Logic

- ✓ Anticipating **~20% of global leading-edge logic** chip manufacturing and at least **two new large-scale clusters** of leading-edge logic fabs



## Advanced Packaging

- ✓ **Multiple high-volume** advanced packaging facilities



## Memory

- ✓ U.S.-based fabs will **produce high-volume, cost-competitive memory chips**

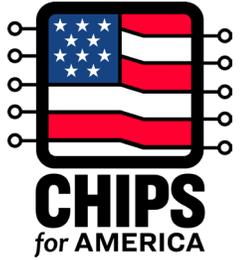


## Current-Generation and Mature

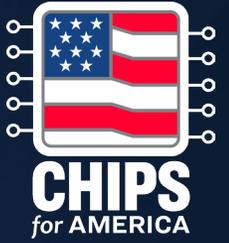
- ✓ **Strategic increase in production capacity** for current-gen and mature chips



# Achieving this vision requires:

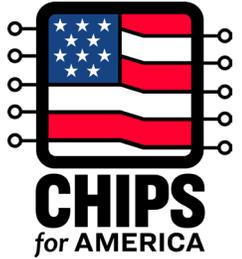


- Catalyzing private investment
- Protecting taxpayer dollars
- Building a skilled and diverse workforce
- Engaging with U.S. partners and allies
- Driving economic opportunity and inclusive economic growth



# Launching the Program

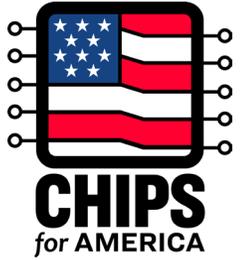
# Building the Team



**CPO Director**  
Mike Schmidt



- **Over 150 total team members**
- **Extraordinary blend of public and private sector experience**
- **Building a program from the ground up**



# Engaging with Experts

**CPO frequently meets with industry stakeholders** to refine its view of the market, including...

**1. Leading-Edge + Current & Mature Customers**

**2. CEOs, C-Suite, and Semiconductor Procurement Executives**

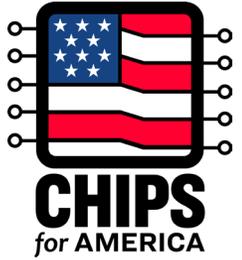
**3. Semiconductor Industry Associations**

**4. EDA Vendors, Supply Chain Equipment & Materials Producers**

**5. Key Industry Investors and Experts**

**6. Workforce, Labor, Environmental Experts and Other Key Stakeholders**

*...and many more experts across the semiconductor value chain*



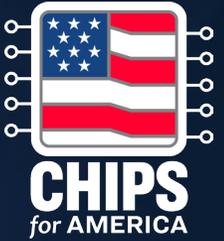
# Portfolio Approach

**CPO is investing in a holistic portfolio** of critical technologies that reflects the latest market intelligence

- Every application is *first* evaluated on its own merits, but awards are also decided based on building a portfolio that achieves CPO's Vision for Success

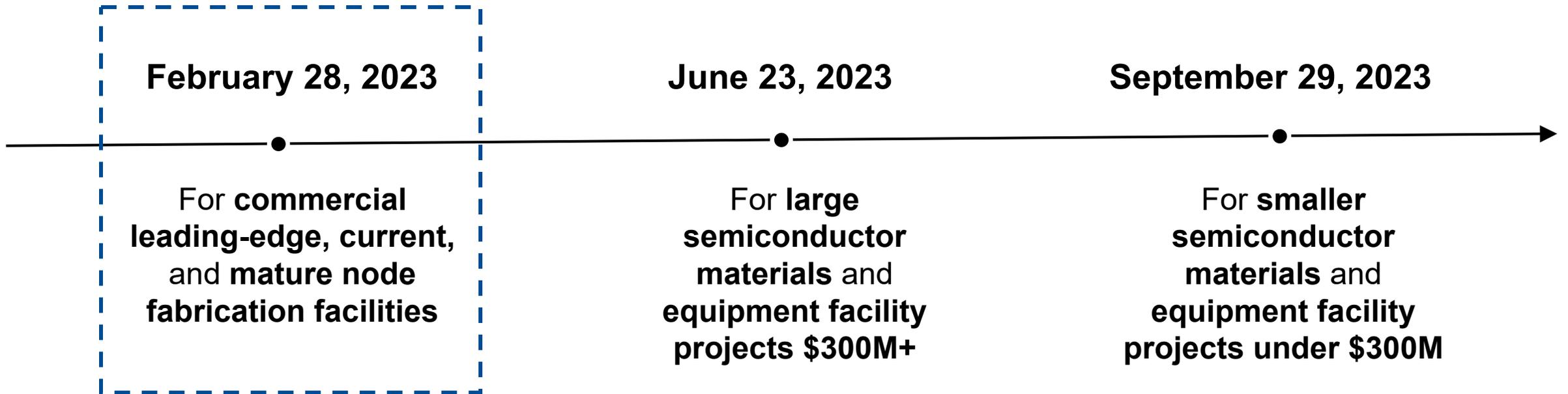
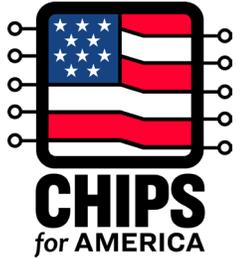
## Key Portfolio Principles

- The portfolio should reflect public and private customer needs **across different nodes and technology types**
- **\$28B for Leading-Edge Chip Manufacturing**
- At least **\$2B for Mature** nodes
- Targeted investments in **Advanced Packaging & Supply Chain** projects
- Focus on projects in **production by 2030**



# Implementing a Rigorous Process

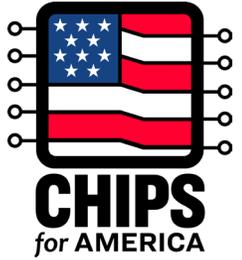
# Announced Funding Opportunities



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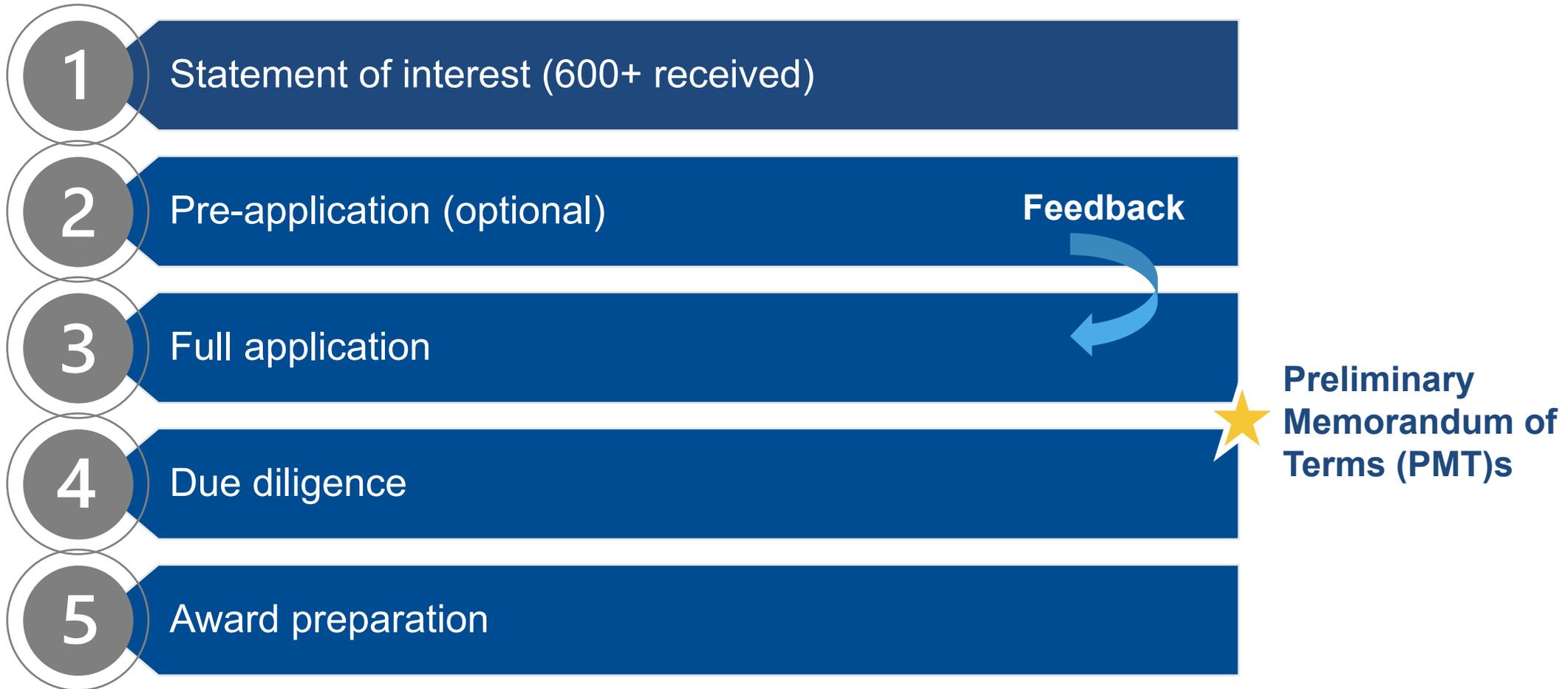
*The CHIPS Program Office has received over 640 statements of interest, over 190 pre-applications and full applications, and over 160 small supplier concept plans.*

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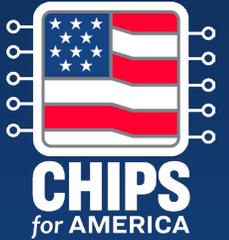


# NOFO 1 Application Process

The CHIPS team conducts an in-depth, standardized “Merit Review” of the project with feedback and determinations made by the Investment Committee



# Merit Review Evaluation Criteria



*CPO's Merit Review process is akin to commercial due diligence in the private sector, leveraging critical information from sources such as customer calls to conduct an in-depth review of the applicant and project*



## Economic and national security

Example:  
CPO will review how effectively the project enhances domestic supply chain resilience



## Commercial viability

Example:  
CPO will conduct in-depth review of end market demand through sources such as customer calls



## Financial strength

Example:  
CPO will review the certainty of private funding sources (including third-party and company funding)



## Technical feasibility & readiness

Example:  
CPO will study and assess the construction workplan, as well as the project's environmental risks



## Workforce development

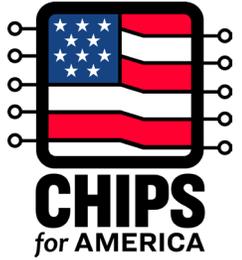
Example:  
CPO will review the quality of workforce partnerships and plans to develop and retain a diverse workforce



## Broader impacts

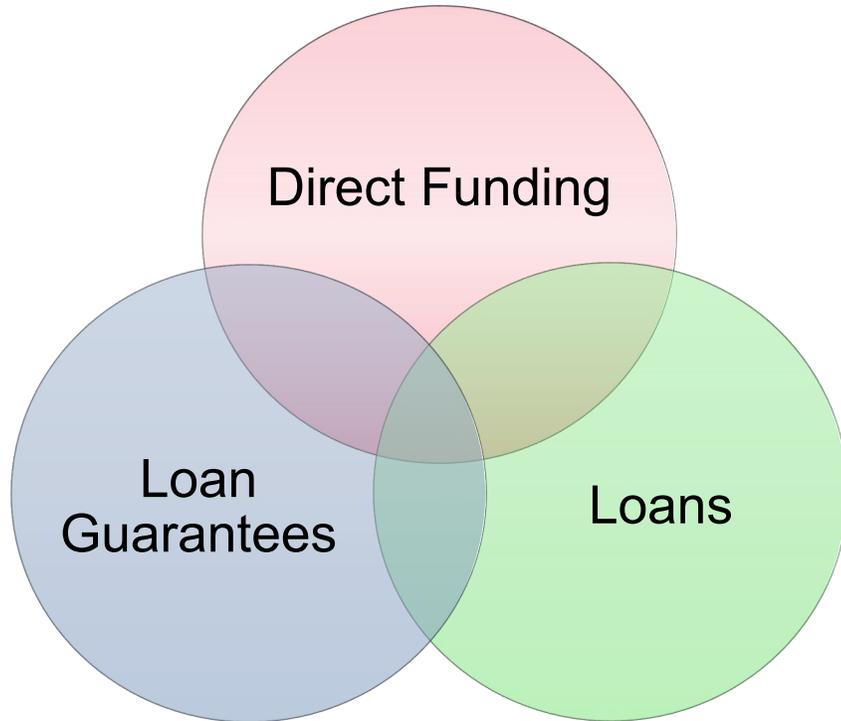
Example:  
CPO will review future domestic investments and the applicant's capital allocation policies

**CPO then constructs a PMT that is anchored on tailored milestones that reflect construction, technical, environmental, workforce and other criteria that the applicant must meet to receive funding**



# Funding Instruments & Allocation

## Funding instruments



### Alternate funding sources:

- Investment Tax Credit (26 U.S.C. § 48D)
- State & Local Incentives
- Private Investments

## Total funding

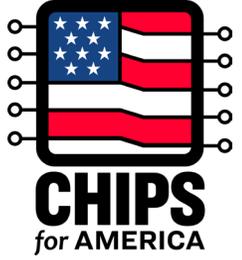
For CHIPS **Direct Funding**, up to **~\$39B** available in total

For CHIPS **Loans** and **Loan Guarantees**, up to **\$75B** in total in direct loan or guaranteed principal

## Funding by project

Direct funding expected to be **5-15%** of project capital expenditures

Expected total amount of a CHIPS Incentives Award expected not to exceed **35%** of project capital expenditures



# CHIPS Award Decision Factors

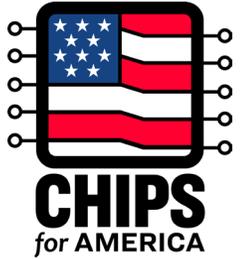
*Bespoke process for each Applicant – no “one-size-fits-all” comparison across CPO*

1

- ★ **National and economic security prioritized**
- ★ **Optimize return on the Direct Funding investment and act as a steward of taxpayer funds**
- ★ **Size/impact of project/capacity relative to needs/gaps**
- ★ **Scope of project** (*LE, memory, C&M, advanced packaging, supply chain, etc.*)
- ★ **Nature of the capacity** (*greenfield, brownfield, modernization*)
- ★ **Timing of the project**
- ★ **Incentives to drive outcomes**
- ★ **Onshoring vs. alternative sources of supply**
- ★ **Financial returns**

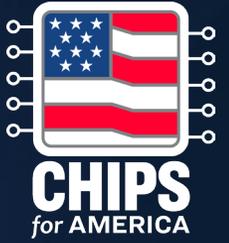
**CPO proactively engages Applicants to expand scope of projects**  
(incremental capacity, alternative nodes, R&D commitments, national security provisions)

# PMT, Due Diligence & Final Legal Documents



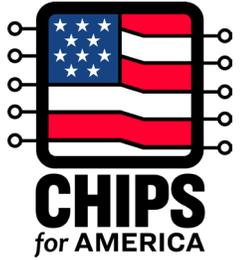
Following Merit Review, a multi-step process is launched to finalize legal documentation & complete due diligence

<b>Negotiate PMT Key Terms</b>	<ul style="list-style-type: none"><li>• Potential funding amounts between Direct Funding, Loans, and/or Loan Guarantees</li><li>• Disbursement milestones (e.g., construction, production, and/or business goals)</li><li>• Policy commitments across workforce, NEPA, R&amp;D investments/partnerships, and broader impacts</li></ul>
<b>Expand Due Diligence</b>	<ul style="list-style-type: none"><li>• Increased scope and depth of due diligence</li><li>• May include external technical advisors, such as accountants and construction consultants</li></ul>
<b>Draft Long-Form Term Sheet</b>	<ul style="list-style-type: none"><li>• An expanded version of the term sheet, outlining a more fulsome set of legal points</li></ul>



# The Road Ahead

# CHIPS has made significant strides in the last year...



## Strong Industry Response

- Large and compelling set of opportunities, with 600+ Statements of Interest
- Corresponding **\$300B+** in private investment catalyzed

## On Track for Significant Impact on Leading Edge

- Anticipating **~20% leading-edge market share** in the U.S. by 2030 (up from 0% today)
- **Surpassing the expectation** of two leading-edge clusters

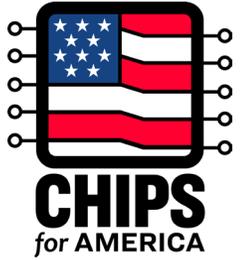
## Announced 7 PMTs\* to Date

- BAE Systems
- GlobalFoundries
- Intel
- Microchip
- Micron
- Samsung
- TSMC

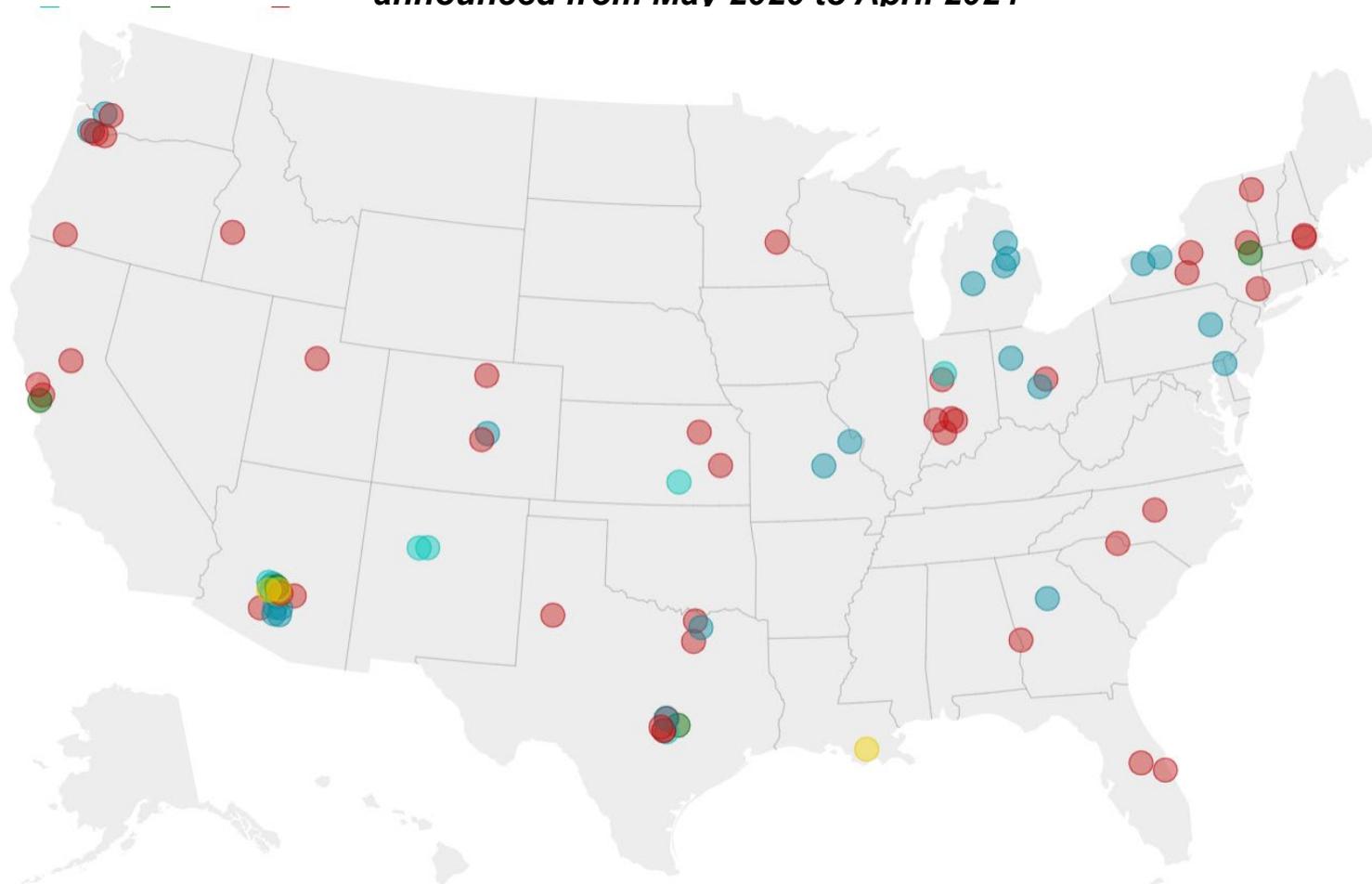
*\*PMT: Preliminary Memorandum of Terms*

***With much more to come over the course of this year...***

# ...And CHIPS is spurring investment in the semiconductor industry across the country

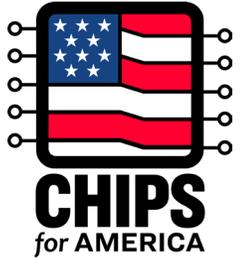


*Semiconductor manufacturing private investments  
announced from May 2020 to April 2024*



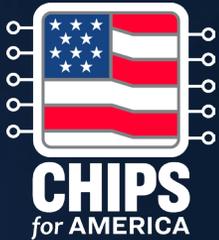
Equipment Materials Packaging R&D Facility Semiconductors

Source: Semiconductor Industry Association



# Resources

- Visit CHIPS.gov for resources, including:
  - Funding Updates List
  - Funding Opportunities
  - Vision for Success papers
  - Applicant Guides and Templates
  - FAQs and fact sheet
- Join our mailing list
- Contact us
  - [askchips@chips.gov](mailto:askchips@chips.gov) – general inquiries
  - [apply@chips.gov](mailto:apply@chips.gov) – application-related inquiries



**Thank You**