CHIPS for America: SEDE Transformative Manufacturing State Convening

May 7, 2024
Context for the CHIPS Act

### Three 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**  
  |  | o 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 is 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  
  |  | o An estimated **9.5 million light vehicles were not sold in 2021** due to a lack of the necessary semiconductors |
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.
$39 billion for incentives
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

Together with CHIPS initiatives from other agencies, including DOD, State, NSF, and Treasury
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
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*

- 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 and supply chain across the country

Semiconductor industry manufacturing investments announced by the private sector from May 2020 to March 2024

CHIPS awards to date

Leading-Edge Companies:
- Intel – facilities located in Arizona, New Mexico, Ohio, and Oregon
- TSMC – facilities located in Arizona
- Samsung – facilities located in Texas
- Micron – facilities located in Idaho and New York

Current and Mature Node Companies:
- BAE Systems – facility located in New Hampshire
- Microchip – facilities located in Colorado and Oregon
- GlobalFoundries – facilities located in New York and Vermont

Source: Semiconductor Industry Association
How can states and localities support the CHIPS for America long-term vision?
States have already been actively investing to spur ecosystem development

State-level CHIPS Legislation*

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<thead>
<tr>
<th>State</th>
<th>Name</th>
<th>Date Signed</th>
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<tbody>
<tr>
<td>Colorado</td>
<td>CHIPS Refundable Tax Credit Program (HB23-1260)</td>
<td>May 2023</td>
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<tr>
<td>Idaho</td>
<td>Idaho Semiconductors for America Act (HB 678)</td>
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<td>Illinois</td>
<td>Manufacturing Illinois Chips for Real Opportunity Act (MICRO) (SB3917)</td>
<td>April 2022</td>
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<td>Minnesota</td>
<td>Minnesota Forward Fund (HF2997)</td>
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<td>Nebraska</td>
<td>Creating Helpful Incentives to Produce Semiconductors (CHIPS) (LB 92)</td>
<td>June 2023</td>
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<td>New York</td>
<td>Green CHIPS Program (S.9467/ A.10507)</td>
<td>August 2022</td>
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<td>Ohio</td>
<td>Megaprojects Bill (HB 110/HB687)</td>
<td>September 2022</td>
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<tr>
<td>Oregon</td>
<td>Oregon CHIPS Act (SB4); R&amp;D Tax Credit for Semiconductors (HB2009)</td>
<td>April 2023</td>
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<tr>
<td>Texas</td>
<td>Texas CHIPS Act (HB 5174)</td>
<td>June 2023</td>
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</tbody>
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*Illustrative, not comprehensive
Federal, state, local, and private collaboration can accelerate national ecosystem development

Opportunities for supply chain best practice sharing across state lines include:

- Site selection and preparation
- Small Business Support
- Aftercare programs
- Asset mapping
- Permitting
- Emergency Response Planning and Readiness
Industrial infrastructure development represents key opportunity for cross-state strategies

Opportunities for best practice sharing across state lines include:

- Regional Transportation Planning and Expansion
- Smart Growth Planning
- Commercial Reuse Initiatives
- Water, Wastewater, and Energy Capacity Planning and Expansion
- Construction Workforce Housing
- Infrastructure Financing
States play key role in CHIPS Supply Chain Vision for Success

**Strengthen Supply Chain Resilience**

- The U.S. and its allies will reduce chokepoint risks flowing from geographic concentration
- Supply chain participants will improve the transparency of demand and supply to reduce the risks of production disruptions

**Advance U.S. Technology Leadership**

- The U.S. will have incentivized major U.S. equipment and materials suppliers to increase their footprints in the U.S.
- Non-U.S. suppliers of the world's most advanced equipment, materials, and subsystems will also establish large-scale footprints in the U.S.

**Support Vibrant U.S. Fab Clusters**

- Each CHIPS-funded fab cluster in the U.S. will be supported by dozens of suppliers, including many investing in the U.S. for the first time
- State and local entities encouraged to help facilitate the expansion of these ecosystems

By the end of the decade…
The CHIPS Program Office has received over 620 statements of interest, over 170 pre-applications and full applications, and over 160 small supplier concept plans.

**February 28, 2023**
For commercial leading-edge, current, and mature node fabrication facilities

**June 23, 2023**
For large semiconductor materials and equipment facility projects $300M+

**September 29, 2023**
For smaller semiconductor materials and equipment facility projects under $300M

*Statements of interest from all potential applicants are currently being accepted on a rolling basis until June 18, 2024.

*Concept plans were accepted between December 1, 2023, and February 1, 2024. Invited applicants must submit Full Applications by July 1, 2024.
Natcast is an independent nonprofit organization and operator of the NSTC consortium.
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 – general inquiries
  - apply@chips.gov – application-related inquiries
Thank You