

# VA Joint Commission on Technology and Science Aerospace Advisory Committee

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## *The Space Florida Model and Recommended Legislative Changes to the Virginia Commercial Spaceflight Authority*

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# Topics

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- Florida
- Texas
- California
- New Mexico
- Virginia
- Recent Incentive Prizes
- Lessons Learned
- Recommendations
- Discussion and Q&A

# Florida

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## □ **Space Florida**

- Considered the best model for sector-focused state economic development agencies today
- Lead state economic development agency responsible for space/aerospace sector
- A formal arm of Florida's economic development organization
- Statewide jurisdiction and focus, not just the Cape
- Bonding (debt financing) authority
- Designed to secure both large aerospace projects as well as startup companies (incubators, etc)
- \$150Mn **Aerospace & Alternative Energy Investment Fund** (public/private monies) announced in early 2007
- Authorizing legislation passed in 2006

# Florida

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## ❑ **Space Florida** authorizing language

### – Scope of authority:

- “‘Aerospace’ means the industry that designs and manufactures aircraft related to space flight, rockets, missiles, spacecraft, satellites, space vehicles, space stations, space facilities or components thereof, and equipment, systems, facilities, simulators, programs, and related activities.”

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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## ❑ **Space Florida** authorizing language

### – Charter:

- “...under the direction and leadership of a single, private-public board, this state has the opportunity to strengthen its existing leadership in **civil and military aerospace** activity and emerge as a leader in the **nation's new vision for space exploration and commercial aerospace** opportunities, including the **integration of space, aeronautics, and aviation technologies.**”

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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## ❑ **Space Florida** authorizing language

### – Charter:

- “...will focus on the state's economic development efforts in order to capture a larger share of **activity in aerospace research, technology, production, and commercial operations**, while maintaining the state's historical leadership in space launch activities; and will preserve the unique national role served by the Cape Canaveral Air Force Station and Kennedy Space Center by reducing costs and improving the regulatory flexibility for commercial sector launches while pursuing the **development of alternative sites for commercial horizontal launches...**”

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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## ❑ **Space Florida** authorizing language

### – Strategy:

- “...it is the intent of the Legislature that Space Florida provide a **single point of contact for state aerospace related activities** with federal agencies, the military, state agencies, businesses, and the private sector....”

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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## ❑ **Space Florida** authorizing language

### – Mission:

- “Space Florida shall promote aerospace business development by **facilitating business financing, spaceport operations**, research and development, workforce development, and innovative education programs.”

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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## ❑ **Space Florida** authorizing language

– Acceptable projects include:

➤ “...any **small business incubator initiative, including any startup aerospace company**, and any aerospace business proposing to expand or locate its business in this state, ... any tourism initiative, including any space experience attraction, microgravity flight program, aerospace space-launch-related activity”.

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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## ❑ **Space Florida** authorizing language

– Powers of Space Florida include:

- “...own, acquire, construct, develop, create, reconstruct, equip, operate, maintain, extend, and improve launch pads, landing areas, ranges, payload assembly buildings, payload processing facilities, laboratories, **aerospace space business incubators**, launch vehicles, payloads, space flight hardware, facilities and equipment for the construction of payloads, space flight hardware, rockets, and other launch vehicles, and other spaceport facilities and other aerospace-related systems”.

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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## ❑ **Space Florida** authorizing language

– Powers of Space Florida include:

- “Insure, coinsure, lend, and guarantee loans and to originate for sale direct aerospace-related loans, pursuant to criteria, bylaws, policies, and procedures adopted by the board.”.
- “Capitalize, underwrite, and secure funding for aerospace infrastructure, satellites, launch vehicles, and any service that supports aerospace launches.”

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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## □ **Space Florida** authorizing language

– Powers of Space Florida include:

- “Examine, develop, and use utilize new concepts, designs, and ideas; own, acquire, construct, reconstruct, equip, operate, maintain, extend, and improve experimental spaceport facilities and services; and otherwise **undertake, sponsor, finance**, and maintain such research activities, experimentation, and development as the board may from time to time determine, in connection with any of the projects that Space Florida the authority is authorized to undertake pursuant to the powers and authority vested in it by this act, and **in order to promote the development and utilization of new concepts, designs, and ideas in the fields of space exploration, commercialization of the space industry, and spaceport facilities.**”

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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## □ **Space Florida** authorizing language

– Duties of Space Florida include:

- “In cooperation with Enterprise Florida, Inc., develop a plan to **finance aerospace businesses**. The plan may include the following activities:
  - (a) Assembling, publishing, and disseminating information concerning financing opportunities and techniques for aerospace projects, programs, and activities; sources of public and private aerospace financing assistance; and sources of aerospace-related financing.”
  - (b) Organizing, hosting, and participating in seminars and other forums designed to disseminate information and technical assistance regarding aerospace-related financing.”
  - (d) Establishing a network of contacts among those domestic and foreign public and private organizations that provide information, technical assistance, and financial support to the aerospace industry.”

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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## ❑ **Space Florida** authorizing language

– Duties of Space Florida include:

- “(c) Pursue the **development of additional commercial spaceports in the state** through a competitive request for proposals in partnership with counties or municipalities, the Federal Government, or private entities.”
- “(d) Promote and facilitate launch activity within the state...”

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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## ❑ **Space Florida** authorizing language

### – Foreign Trade Zone:

- “Space Florida may apply to the Federal Government for a grant allowing the **designation of any spaceport territory as a foreign trade zone...**”

**Source:** Space Florida Act, HB 1489, 2006.

# Florida

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- ❑ **Space Florida** authorizing language
  - Tax Exemptions for space investments:
    - “(j) Machinery and equipment used in semiconductor, defense, or **space technology production and research and development.**”

**Source:** Space Florida Act, HB 1489, 2006.

# Texas

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## ❑ **Texas Emerging Technology Fund**

- Industry cluster focus, including **aerospace** and defense
- Commercialization awards to startup companies and existing businesses - selected, **early-stage investments** in new, technology-based, private entrepreneurial entities that collaborate with public or private institutions of higher education in Texas
- Research grant matching for universities
- Integrated with seven statewide Regional Centers of Innovation and Commercialization (RCICs)
- Administered out of Governor's office, appropriated from state general revenue fund, established in 2005

## ❑ **Governor's Office of Economic Development and Tourism.**

- Director for Aerospace and Aviation
- Primarily focused on attracting major new aerospace facilities and tenants

## ❑ **Space Authority of Texas** initiative

- Grass roots effort to create a non-profit organization aimed at space sector economic development; goals and progress not clear

# California

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## □ California Space Authority

- A non-profit organization formed in the 1990s separate from state of California government
- Not a formal part of the state economic development organization, but has a formal relationship
- No spaceport administration authority or jurisdiction (eg Mojave)
- No bond financing authority from state of California
- Major focus on CA workforce development, congressional appropriations and PR issues, with emphasis on southern California aerospace industry
- Little historical attention to entrepreneurial space sector, dominated by “large aerospace”, may be slowly changing

# New Mexico

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## ❑ **New Mexico Spaceport Authority (NMSA)**

- Established in 2005 by state legislature
- Closely tied to Economic Development Department
- Debt finance authority only (bonds)
- Primary charter is to operate and secure tenants for Spaceport America
- Jurisdiction is limited to immediate spaceport region in southern New Mexico, is not statewide
- Strong statewide support from NM state legislators is questionable

## ❑ **New Mexico State Investment Council (SIC)**

- Primary mandate is to secure superior financial returns
- No formal connection with economic development agencies
- Authorized to make equity investments in startup companies
- Offered up to \$20 Mn in equity financing for any NASA COTS winner locating in New Mexico

# Virginia

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- ❑ Virginia Commercial Spaceflight Authority
  - Primary focus is on promoting commercial space flight industry in Virginia and esp. at Wallops/MARS
  - Current financing authority includes:
    - Debt financing (bond) authority

# Virginia

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## □ Center for Innovative Technology (CIT)

### – GAP Funds

- makes seed-stage equity investments in Virginia-based technology and life science companies with a high potential for achieving rapid growth and generating significant economic return
- invests up to \$100,000 alone, or in syndications of \$500,000 or less
- Sectors targeted include:
  - Software, Telecommunications, Semiconductors, Media and Entertainment, E-Commerce, Networking and Equipment, Electronics/Instrumentation, Industrial/Energy, Computers and Peripherals.
- Does not appear to have an active focus on space-related markets, technologies and companies, including launch services companies with potential interest in operating out of MARS

# Summary Comparison of States

| State             | Organization  | Scope   | Statewide?  | Spaceport Jurisdiction?   | Equity Finance?   | Debt Financing                              |
|-------------------|---|---|---|---|---|---|
| <b>Virginia</b>   | Virginia Commercial Spaceflight Authority (VCSFA)                           | Commercial spaceflight only   | No, limited to area around Wallops on eastern shore | Yes, Mid-Atlantic Regional Spaceport (MARS)   | No. CIT GAP Funds make seed investments, no aerospace focus                               | Yes, VCSFA has bonding authority            |
| <b>Florida</b>    | Space Florida (state agency)  | "Aerospace" industry, which includes aircraft and rocket R&D, manufacturing, operations, facilities, etc. | Yes   | Yes; orbital launch facilities based around Kennedy / Canaveral; suborbital can be based out of FL airports | Yes, thru \$150Mn Aerospace and Alternative Technology Fund (if created); incubators also | Yes, Space Florida has bonding authority    |
| <b>Texas</b>      | No formal state authority established; Economic Development & Tourism Dept. | Aerospace, which includes aviation and space  | Yes   | No  | Thru Texas Emerging Technology Fund   | Not clear                                   |
| <b>California</b> | California Space Authority (non-profit organization w/ ties to state)       | Civil, military and commercial space; does not appear to include aviation                                 | Yes, but primary focus to date on SoCal             | No jurisdiction over Mojave or any other spaceport  | No. State of CA may have an equity fund?  | No, CSA has no bonding authority from state |
| <b>New Mexico</b> | New Mexico Spaceport Authority (NMSA)                                       | Any activities which can be supported by Spaceport America  | No, limited to Spaceport America near Las Cruces    | Yes, Spaceport America  | No. NM State Investment Council (SIC) manages funds                                       | Yes, NMSA has bonding authority             |

# Recent Incentive Prizes

| Prize                                 | Amount        | Sponsor/Administrator   | Winner(s)  | Year      |
|---------------------------------------|---------------|---|--|-----------|
| <b>Google Lunar Prize</b>             | \$30 Million  | X-Prize Foundation  | None yet   | 2007-2008 |
| <b>Personal Air Vehicle Challenge</b> | \$250,000     | NASA/Comparative Aircraft Flight Efficiency (CAFÉ) Foundation | Vance Turner and others  | 2006-2007 |
| <b>Astronaut Glove Challenge</b>      | \$200,000     | NASA/Spaceflight America                                      | Volanz Aerospace Inc.  | 2006-2007 |
| <b>Lunar Lander Challenge</b>         | \$2.5 Million | NASA/X-Prize Foundation                                       | None yet (to be competed again in October 2007 at X-Prize Cup) | 2006-2007 |
| <b>Ansari X-Prize</b>                 | \$10 Million  | X-Prize Foundation  | Mojave Aerospace Ventures/Scaled Composites                    | 2004      |

# Lessons Learned

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- ❑ Integration of space authorities with the state economic development department seems essential to long term focus and success
- ❑ Broader focus on “aerospace” vs “commercial space” provides for stronger constituency in legislature, industry and populace
- ❑ Local vs statewide jurisdiction
  - Focusing space industry development efforts around a specific spaceport or locale can lead to less-than-adequate support from other state legislators down the road
- ❑ Startup finance vs large project financing instruments/methods needed
- ❑ Equity financing authority and ability to raise, invest and administer seed- and early-stage investment funds is increasingly necessary to attract serious startup companies (vs large-company projects)
- ❑ No states currently employ **incentive prizes** to attract innovators, top faculty and grad students, industry and startup companies

# Recommendations

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- ❑ Virginia needs:
  - A broad-based system-level approach to strengthening Virginia’s aerospace industry, which includes the ability to assist private entities, including startup companies and established aerospace corporations, in their equity and project financing needs
  - A “one stop shopping” approach for companies to interface with, closer to Space Florida model
  
- ❑ Recommendations
  - Broaden VCSFA scope beyond commercial spaceflight to include “aerospace” research, development, production and operations
  - Extend charter to include **statewide** aerospace-related economic development
  - Investigate the feasibility and benefits of extending VCSFA authority to include working with startup companies in incubators
  - Improve coordination and synergy between VCSFA and CIT’s investment funds
  - Explore **incentive prize sponsorship** and financing authority similar to federal agencies (NASA, DARPA, NSF, etc)
  
- ❑ **Caveat:** Above preliminary recommendations are offered with the cautionary note that additional legal research is required to assess their specific feasibility in the context of Virginia and federal law, and with regard to the charters of current Virginia economic development entities and funds

# Acknowledgements

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# Discussion

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Q & A