



**2026
Research Incentives – Request for Proposal
Research Commercialization**

Timelines

Request for Proposals Released	April 20, 2026
Proposal Submission Window	April 21 – May 19, 2026
Questions from Interested Parties no later than	May 4, 2026
Notification of Awarded Proposals	By June 5, 2026

Submissions

One electronic PDF copy file uploaded by the submission date to <https://rfp.ohiohighered.org>.

Research Incentive – Request for Proposal

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Third Frontier Research Incentives Request for Proposals

I. Program Overview

Section 381.670 (Research Incentive Third Frontier) of Am. Sub. House Bill 96 of the 136th Ohio General Assembly authorizes the Chancellor of the Ohio Department of Higher Education (ODHE) to use funds to advance collaborative research at institutions of higher education that support and promote research intended to be commercialized.

Special consideration will be provided for proposals that encourage intellectual property retention in the State of Ohio and/or which reward inventors through greater than normal intellectual property ownership consistent with Ohio IP Promise aspirations.

II. About Third Frontier Funding

Use of funds appropriated through the Ohio Third Frontier Initiatives is governed by the Ohio Constitution. Funds appropriated via section 381.670 of Am. Sub. House Bill 96 are governed by Article VIII Section 2p (**Issuance of bonds for economic and educational purposes and local government projects**). Section 2p(A)(2) of this article authorizes bonds to be issued for “research and development purposes”. **Pursuant to this section, research and development funded under this article must be in support of Ohio industry, commerce, and business.** Projects or initiatives supported pursuant to this article include:

- A. General research meeting the intent of this section.
- B. Product innovation
- C. Development and commercialization through efforts by and collaboration among:
 - 1. Ohio business and industry
 - 2. State and local public entities and agencies
 - 3. Public and private education institutions, or research organizations and institutions

III. Research Commercialization General Principles

Commercialization offers a pathway toward entrepreneurship and job creation in the state of Ohio.

The state of Ohio recognizes the importance of Ohio institutions of higher education to this innovation effort and strategically supports institutions for that purpose.

This opportunity continues State of Ohio support by offering funding for research and technologies which have a demonstrated potential to be commercialized.

Priorities for this funding round include:

- Research with a nexus to Ohio-based manufacturing involving:
 - 1. Artificial Intelligence
 - 2. Defense Technologies
 - 3. Semiconductor Fabrication
- As well as commercialization-ready technology related to federal funding priorities in:
 - 1. Aerospace
 - 2. Space
 - 3. Quantum

A. Priorities Defined

1. **Research with a nexus to Ohio-based manufacturing** – means research that relates to existing investments within the State of Ohio in manufacturing already in production or for which substantial investments have already been made.
2. **Artificial Intelligence** – means computational systems using machine learning, neural networks and large-scale data to perform tasks requiring human-like cognition such as perception, reasoning, and autonomous decision-making.
3. **Defense Technologies** – means technologies used by federal defense agencies and which relate to existing investments within the State of Ohio with potential for growth.
4. **Semiconductor Fabrication** – means the process of manufacturing advanced semiconductor chips including but not limited to CPUs (processors), AI accelerators or other logic chips using next-generation processing technologies.
5. **Commercialization-ready technology related to federal funding priorities** – means technology that federal funding agencies have identified as priorities and which generally satisfy the eligible projects criteria in this RFP.
6. **Aerospace** – means domains of research in aerospace in which the State of Ohio maintains leadership, including but not limited to propulsion, advanced materials, additive manufacturing, rapid prototyping and lightweight composites.
7. **Space** – means domains of research related to space travel, space stations, power, propulsion, communications, materials and applied research in partnership with federal agencies and/or commercial investors in space-related technologies.
8. **Quantum** – means domains of research related to quantum in which the State of Ohio maintains leadership, including but not limited to quantum computing, sensors, communications, cryptography, materials, photonics, cryogenics and cybersecurity.

Second tier priorities can be found in Exhibit II of this document.

B. Eligible Projects

Using a standard Technology Readiness Level (TRL, 1-9), research and technology projects across the entire spectrum are eligible for funding (See Exhibit I). Priority may be given to projects closer to market commercialization (levels 6-9). Each project submitted must provide tangible evidence of its TRL.

Technology Readiness Level (TRL) Scale (1-9)

TRL 1: Basic principles observed and reported.

TRL 2: Technology concept and/or application formulated.

TRL 3: Analytical and experimental critical function and/or characteristic proof of concept.

TRL 4: Component and/or breadboard validation in a laboratory environment.

TRL 5: Component and/or breadboard validation in a relevant environment.

TRL 6: System/subsystem model or prototype demonstration in a relevant environment.

TRL 7: System prototype demonstration in an operational environment.

TRL 8: Actual system completed and qualified through test and demonstration.

TRL 9: Actual system proven through successful mission operations.

Projects must include a Technology Commercialization Plan (Plan) that includes:

1. Research/Technology Description
2. Value Position
3. Target Market Research Analysis Overview
4. Evidence of Market Validation
5. Product Development Strategy
6. Marketing Strategy
7. Competitive Landscape
8. Intellectual Property Obtainment
9. Financial Plan through Commercialization
10. Regulatory and Legal Considerations
11. Technology Commercial Launch / Company Start-up

Evaluation of the Plan will take into consideration the TRL of the project submitted.

IV. Project Funding

Project funding awards will range between \$200,000 - \$250,000.

The Chancellor, after considering the recommendations of independent reviewers shall make the final determination regarding which proposals, if any, shall receive an award. Funds will be available to awardees after execution of a Memorandum of Understanding with ODHE.

V. Intellectual Property

Special consideration will be provided for proposals that encourage intellectual property retention in the State of Ohio and/or which reward inventors through greater than normal intellectual property ownership consistent with Ohio IP Promise goals.

VI. Proposal Submission Process

The RFP will be released on the schedule outlined above. The schedule is subject to revision by ODHE, and any changes will be posted at <https://rfp.ohiohighered.org>.

- A. One electronic PDF file uploaded to <https://rfp.ohiohighered.org>.
- B. There will be no opportunity to discuss alignment of interest with ODHE prior to submission.

Applicants are responsible for timely submissions of proposals. Proposals become the property of ODHE and are subject to public record laws of the state. Proposals containing all the required elements will receive careful consideration but cannot be guaranteed funding. Late proposals, or proposals missing any of the required submission criteria listed below will not be considered.

Applicant may submit questions regarding the proposal process and should be submitted in writing via email to csee@highered.ohio.gov and mdunn@highered.ohio.gov. Responses to questions will be posted online at <https://rfp.ohiohighered.org>.

VII. Proposal Requirements

A. Format

Proposals must be submitted in Arial font, 11 points or larger; there is an exception for tables and images. Please see below for page allocations and directions for each section of the proposal.

1. **Cover Letter (one page maximum):** Title of project; identify the primary contact plus the fiscal agent by name, title, address, phone number, and email address.
2. **Executive Summary (one page maximum):** Include: 1) brief overview of the research to be conducted or the initiative or program to be supported; 2) a synopsis of how the research will be conducted or the plan to execute the initiative or program proposed; 3) a description of the anticipated conclusions of the research or outcomes of the program or initiative; 4) a description of any potential development of new products or innovative advances based upon the research being conducted or program or initiative being advanced; 5) a description of how the research or initiative will support Ohio business, industry, or commerce.
3. **Project Narrative (12 pages maximum):** Should address the proposal criteria in the order outlined in **section B below**.
4. **Budget Narrative & Budget Table (two pages maximum):** The budget narrative will provide background related to the costs of the project and its deployment.
 - a. The budget narrative should include:
 - i. One to two paragraph descriptions of the activities and expenses included in each budget line.
 - ii. Prioritization of activities in order of most critical to project completion or success.
 - iii. Explanation of how the program's costs were calculated.
 - iv. Description of any matching funds that will be leveraged clearly labeled.
 - v. Note: Indirect costs are capped at a maximum of 8%.

- vi. Note: the proposed budget should be for the full award period; both fiscal years, unless the applicant is specifically applying for only one year of funding.
5. **Attachments (no page limit):** Proof of commitment form for all parties responsible for the implementation of the research or project initiative is required: this includes letters of commitment and/or agreements from collaborative partners if applicable.

Proposals, where applicable, should build upon existing work in Ohio that has advanced understanding in these fields and take into account Ohio's unique challenges and characteristics.

B. Project narratives are required to address the following criteria:

1. **Project Rationale and Area Focus**
 - a. Describe the research/technology to be undertaken.
 - b. Provide relevant baseline data or other information used to identify the proposed research/technology.
 - c. Describe prior research or work performed in the area of focus, conclusions reached, and why additional research or work is being proposed.
 - d. Describe how development of the research or execution of the technology will be conducted, and how the chosen method will lead to actionable results.
 - e. Describe preliminary assumptions regarding research/technology outcomes (What are you trying to accomplish).
 - f. Attach any exhibits, data tables, or other relevant information.
 - g. Applicants should identify whether the proposed project is part of an existing effort or if the proposal is a new project. If the proposal is part of an existing effort, the applicant should describe:**
 - i. Previous funding for the existing project.
 - ii. Funding available at the time of the proposal.
 - iii. How funds, if awarded through this process, will advance the current work.
 - iv. How activities described in this proposal are new and distinguishable from activities previously funded.
2. **Partnerships and Collaborations** - List and describe any collaborations that will be part of the proposed administration of the program. Describe the specific roles and responsibilities of each project collaborator. Collaborations must be documented in a letter of commitment from each anticipated collaborator. Note: Collaboration letters should be included in the proposal attachment and are not part of the project narrative page limitation.

3. **Support of Ohio Industry** - Describe how the research/technology will support Ohio industry, business or commerce, specifically describe where applicable:
 - a. The specific industry potentially impacted by the research/technology.
 - b. The size of the potential market impact of the research/technology.
 - c. The specific industry problem being addressed.
 - d. The specific customer segment targeted by the research/technology
 - e. Any supplemental products or technologies that could result from the research or primary technology proposed.
 - f. The potential economic impact of the research/ technology.
4. **Sustainability** - Describe how the project could be sustained beyond the funding period and what potential the program has for long-term and lasting impact. **Note: Applicants should provide evidence of commitment, including private investment, to ensure sustainability after the funding period.**
5. **Project Plan** - This section should provide a clear description and timeline for activities to be undertaken and should:
 - a. Outline the roles and responsibilities of key project personnel and provide brief biographies. Note: biographies should be included in the proposal attachment and are not part of the project narrative page limitation.
 - b. Provide a GANNT chart for the entire project with proposed activities, dependencies, and estimated completion milestone for each activity.
6. **Project Evaluation** - Explain how project success will be measured. The evaluation plan should include both formative and summative measurements where applicable. Project evaluation must include a system to measure the success of the research/technology and the impact on Ohio business, industry /or commerce (What are your metrics). Specifically:
 - a. Describe the evaluation design.
 - b. Describe the ongoing evaluation process, including collecting data, analyzing data, and responding to data.
 - c. Provide a timeline for the evaluation process, including formative and summative evaluations complementing the project GANNT chart.

VIII. Reporting Requirements

ODHE will monitor each project for which an award is granted to ensure that there is fiscal accountability and operating progress, and that the desired outcomes are achieved. Regular reports will be required from all awardees. All award expenditures must be properly documented following Ohio Revised Code and Administrative rules.

IX. Legal Notices

The applicant understands that if its application is accepted by the State, the applicant shall enter into an agreement with the State governing the use of the awarded funds. The applicant agrees to comply with all applicable federal, state, and local laws and regulations in the conduct of the work hereunder.

The State reserves the right to fund any application in full or in part, to request additional information to assist in the review process, to require new applications from interested parties, to reject any or all applications responding to this announcement, or to reissue the announcement if it is determined that it is in the best interest of the State of Ohio. Issuing this announcement does not bind the State to making any awards.

The State reserves the right to adjust the dates for this announcement for whatever reasons are deemed appropriate. The State reserves the right to waive any non-substantive infractions made by an applicant, provided that the applicant cures such infraction upon request.

All costs incurred in preparation of an application shall be borne by the applicant. Application preparation costs are not recoverable under an award. The State of Ohio shall not contribute in any way to recovering the costs of application preparation.

The funding decisions are final. Applicants will be notified of the outcome of their application(s) at the conclusion of the review process.

The applicant understands that the information provided herein is intended solely to assist the applicant in submittal preparation. To the best of the State's knowledge, the information provided is accurate. However, the State does not warrant such accuracy, and any errors or omissions subsequently determined will not be construed as a basis for invalidating this solicitation. Interested parties bear the sole responsibility of obtaining the necessary information to submit a qualifying application. The State retains the right to modify or withdraw this solicitation at any time. By submitting an application, applicants expressly agree to these terms.

X. Trade Secrets

All lead applicants are strongly discouraged from including in a proposal any information that the lead applicant considers to be a "trade secret," as that term is defined in Section 1333.61(D) of the Ohio Revised Code. All information submitted in response to this RFP is public information unless a statutory exception exists that exempts it from public release under the Ohio Public Records Act in Section 149.43 of the Ohio Revised Code.

If any information in the proposal is to be treated as a trade secret, the proposal must:

- A.** Identify each and every occurrence of the information within the proposal with an asterisk before and after each line containing trade secret information and underline the trade secret information itself.
- B.** Identify that the proposal contains trade secret information in the cover letter; and
- C.** Include a summary page immediately after the cover letter that lists each page in the proposal that includes trade secret information and the number of occurrences of trade secret information on that page.
- D.** To determine what qualifies as trade secret information, refer to the definition of "trade secret" in the Ohio Revised Code at 1333.61(D), which is reproduced below for reference:
 1. "Trade Secret" means information, including the whole or any portion or phase of any scientific or technical information, design, process, procedure, formula, pattern, compilation, program, device, method, technique or improvement, or any business information or plans, financial information, or listing of names, addresses, or telephone numbers that satisfy both of the following:
 - a. It derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.
 - b. It is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

- i. ODHE requires non- disclosure agreements from all non-ODHE persons who may have access to proposals containing trade secret information, including evaluators.
- ii. If the applicant claims that a record is not subject to disclosure under the Ohio Public Records law based on trade secret, it will bear the costs of defending this claim.

Exhibit 1: Technology Readiness Levels and Description

Technology Readiness Level Definition	
TRL 1	Basic Research: Initial scientific research has been conducted. Principles are qualitatively postulated and observed. Focus is on new discovery rather than applications.
TRL 2	Applied Research: Initial practical applications are identified. Potential of material or process to solve a problem, satisfy a need, or find application is confirmed.
TRL 3	Critical Function or Proof of Concept Established: Applied research advances and early stage development begins. Studies and laboratory measurements validate analytical predictions of separate elements of the technology.
TRL 4	Lab Testing/Validation of Alpha Prototype Component/Process: Design, development and lab testing of components/processes. Results provide evidence that performance targets may be attainable based on projected or modeled systems.
TRL 5	Laboratory Testing of Integrated/Semi-Integrated System: System Component and/or process validation is achieved in a relevant environment.
TRL 6	Prototype System Verified: System/process prototype demonstration in an operational environment (beta prototype system level).
TRL 7	Integrated Pilot System Demonstrated: System/process prototype demonstration in an operational environment (integrated pilot system level).
TRL 8	System Incorporated in Commercial Design: Actual system/process completed and qualified through test and demonstration (pre-commercial demonstration).
TRL 9	System Proven and Ready for Full Commercial Deployment: Actual system proven through successful operations in operating environment, and ready for full commercial deployment.

TRL 1 Definition	TRL 1 Description
<p>Basic Research. Initial scientific research begins. Examples include studies on basic material properties. Principles are qualitatively postulated and observed.</p>	<p>Basic principles are observed. Focus is on fundamental understanding of a material or process.</p>
TRL 2 Definition	TRL 2 Description
<p>Applied Research. Initial practical applications are identified. Potential of material or process to satisfy a technology need is confirmed.</p>	<p>Once basic principles are observed, practical applications can be identified. Applications are speculative, and there may be no proof or detailed analysis to support the assumptions. Examples are still limited to analytic studies. Supporting information includes publications or other references that outline the application being considered and that provide analysis to support the concept. The step up from TRL 1 to TRL 2 moves the ideas from basic to applied research. Most of the work is analytical or paper studies with the emphasis on understanding the science better. Experimental work is designed to corroborate the basic scientific observations made during TRL 1 work.</p>
TRL 3 Definition	TRL 3 Description
<p>Critical Function, i.e., Proof of Concept Established. Applied research continues and early stage development begins. Includes studies and initial laboratory measurements to validate analytical predictions of separate elements of the technology. Examples include research on materials, components, or processes that are not yet integrated.</p>	<p>Analytical studies and laboratory-scale studies are designed to physically validate the predictions of separate elements of the technology. Supporting information includes results of laboratory tests performed to measure parameters of interest and comparison to analytical predictions for critical components. At TRL 3 experimental work is intended to verify that the concept works as expected. Components of the technology are validated, but there is no strong attempt to integrate the components into a complete system. Modeling and simulation may be used to complement physical experiments.</p>
TRL 4 Definition	TRL 4 Description
<p>Laboratory Testing/Validation of Alpha Prototype Component/Process. Design, development and lab testing of technological components are performed. Results provide evidence that applicable component/process performance targets may be attainable based on projected or modeled systems.</p>	<p>The basic technological components are integrated to establish that the pieces will work together. This is relatively "low fidelity" compared with the eventual system. Supporting information includes the results of the integrated experiments and estimates of how the experimental components and experimental test results differ from the expected system performance goals. TRL 4-6 represent the bridge from scientific research to engineering, from development to demonstration. TRL 4 is the first step in determining whether the individual components will work together as a system. The goal of TRL 4 should be the narrowing of possible options in the complete system.</p>

TRL 5 Definition	TRL 5 Description
<p>Laboratory Testing of Integrated/Semi-Integrated System. Component and/or process validation in relevant environment- (Beta prototype component level).</p>	<p>The basic technological components are integrated so that the system configuration is similar to (matches) the final application in almost all respects. Supporting information includes results from the laboratory scale testing, analysis of the differences between the laboratory and eventual operating system/environment, and analysis of what the experimental results mean for the eventual operating system/environment. The major difference between TRL 4 and 5 is the increase in the fidelity of the system and environment to the actual application. The system tested is almost prototypical. Scientific risk should be retired at the end of TRL 5. Results presented should be statistically relevant.</p>
TRL 6 Definition	TRL 6 Description
<p>Prototype System Verified. System/process prototype demonstration in an operational environment- (Beta prototype system level).</p>	<p>Engineering-scale models or prototypes are tested in a relevant environment. This represents a major step up in a technology's demonstrated readiness. Examples include fabrication of the device on an engineering pilot line. Supporting information includes results from the engineering scale testing and analysis of the differences between the engineering scale, prototypical system/environment, and analysis of what the experimental results mean for the eventual operating system/environment. TRL 6 begins true engineering development of the technology as an operational system. The major difference between TRL 5 and 6 is the step up from laboratory scale to engineering scale and the determination of scaling factors that will enable design of the final system. The engineering pilot scale demonstration should be capable of performing all the functions that will be required of a full manufacturing system. The operating environment for the testing should closely represent the actual operating environment. Refinement of the cost model is expected at this stage based on new learning from the pilot line. The goal while in TRL 6 is to reduce engineering risk. Results presented should be statistically relevant.</p>
TRL 7 Definition	TRL 7 Description
<p>Integrated Pilot System Demonstrated. System/process prototype demonstration in an operational environment-(integrated pilot system level).</p>	<p>This represents a major step up from TRL 6, requiring demonstration of an actual system prototype in a relevant environment. Final design is virtually complete. The goal of this stage is to retire engineering and manufacturing risk. To credibly achieve this goal and exit TRL 7, scale is required as many significant engineering and manufacturing issues can surface during the transition between TRL 6 and 7.</p>

TRL 8 Definition	TRL 8 Description
<p>System Incorporated in Commercial Design. Actual system/process completed and qualified through test and demonstration- (Pre-commercial demonstration).</p>	<p>The technology has been proven to work in its final form and under expected conditions. In almost all cases, this TRL represents the end of true system development. Examples include full scale volume manufacturing of commercial end product. True manufacturing costs will be determined and deltas to models will need to be highlighted and plans developed to address them. Product performance delta to plan needs to be highlighted and plans to close the gap will need to be developed.</p>
TRL 9 Definition	TRL 9 Description
<p>System Proven and Ready for Full Commercial Deployment. Actual system proven through successful operations in operating environment, and ready for full commercial deployment.</p>	<p>The technology is in its final form and operated under the full range of operating conditions. Examples include steady state 24/7 manufacturing meeting cost, yield, and output targets. Emphasis shifts toward statistical process control.</p>

Exhibit 2: Second Tier Priorities

- Hypersonics
- Nuclear Power Generation
- Advanced Wireless
- Cell and gene therapy
- Medical devices and diagnostics

Attachment A: SECTION 381.670. RESEARCH INCENTIVE THIRD FRONTIER

(A) The foregoing appropriation item 235639, Research Incentive Third Frontier - Tax, shall be used by the Chancellor of Higher Education to advance collaborative research at institutions of higher education. Of the foregoing appropriation item 235639, Research Incentive Third Frontier - Tax, a portion in each fiscal year shall be used by the Chancellor to support and promote research that is intended to be commercialized. Research funded under division (A) of this section shall include a condition that the discoveries, inventions, or patents developed therein be retained by the researcher, unless all or a portion of the interests therein are specifically granted to the state college or university at which the researcher is employed. In reviewing proposals and making awards under division (A) of this section, the Chancellor may enlist the assistance of the Ohio Technology Transfer Officer's Council.

(B) Of the foregoing appropriation item 235639, Research Incentive Third Frontier - Tax, up to \$2,000,000 in each fiscal year may be allocated toward research regarding the improvement of water quality, up to \$750,000 in each fiscal year may be allocated for spinal cord research, up to \$750,000 in each fiscal year may be allocated toward research regarding cyber security initiatives, up to \$300,000 in each fiscal year may be allocated toward the I-Corps@Ohio program, and up to \$200,000 in each fiscal year may be allocated toward the Ohio Innovation Exchange program.

Attachment B: Ohio Constitution Section VIII.02p

Issuance of bonds for economic and educational purposes and local government projects.

§2p (A) It is determined and confirmed that the development purposes referred to in this division, and provisions for them, are proper public purposes of the state and local governmental entities and are necessary and appropriate means to create and preserve jobs and enhance employment and educational opportunities; to improve the quality of life and the general and economic well-being of all the people and businesses in all areas of this state, including economically disadvantaged businesses and individuals; and to preserve and expand the public capital infrastructure; all to better ensure the public health, safety, and welfare. Those purposes are:

(1) Public infrastructure capital improvements, which shall be limited to roads and bridges, waste water treatment systems, water supply systems, solid waste disposal facilities, and storm water and sanitary collection, storage, and treatment facilities, including real property, interests in real property, facilities, and equipment related to or incidental thereto, and shall include, without limitation, the cost of acquisition, construction, reconstruction, expansion, improvement, planning, and equipping;

(2) Research and development in support of Ohio industry, commerce, and business (hereinafter referred to as “research and development purposes”), which shall include, without limitation, research and product innovation, development, and commercialization through efforts by and collaboration among Ohio business and industry, state and local public entities and agencies, public and private education institutions, or research organizations and institutions, all as may be further provided for by state or local law, but excluding purposes provided for in Section 15 of Article VIII, Ohio Constitution; and

(3) Development of sites and facilities in Ohio for and in support of industry, commerce, distribution, and research and development purposes.

(B) The General Assembly may provide by law, in accordance with but subject to the limitations of this section, for the issuance of general obligation bonds and other obligations of the state for the purpose of financing or assisting in the financing of the cost of projects implementing those purposes.

(1) Not more than one billion three hundred fifty million dollars principal amount of state general obligations may be issued under this section for public infrastructure capital improvements. Not more than one hundred twenty million dollars principal amount of those obligations may be issued in each of the first five fiscal years of issuance and not more than one hundred fifty million dollars principal amount of those obligations may be issued in each of the next five fiscal years of issuance, plus in each case the principal amount of those obligations that in any prior fiscal year could have been but were not issued within those fiscal year limits. No infrastructure obligations may be issued pursuant to this division and division (C) of this section until at least one billion one hundred ninety-nine million five hundred thousand dollars aggregate principal amount of state infrastructure obligations have been issued pursuant to Section 2m of Article VIII, Ohio Constitution.

(2) Not more than one billion two hundred million dollars principal amount of state general obligations may be issued under this section for research and development purposes. Not more than four hundred fifty million dollars principal amount of those obligations may be issued in total

from fiscal years 2006 through 2011, not more than two hundred twenty-five million dollars principal amount of those obligations may be issued in the next fiscal year of issuance, and not more than one hundred seventy-five million dollars principal amount of those obligations may be issued in any other fiscal year, plus in each case the principal amount of those obligations that in any prior fiscal year could have been but were not issued.

(3) Not more than one hundred fifty million dollars principal amount of state general obligations may be issued under this section for development of sites and facilities for industry, commerce, distribution, and research and development purposes. Not more than thirty million dollars principal amount of those obligations may be issued in each of the first three fiscal years of issuance, and not more than fifteen million dollars principal amount of those obligations may be issued in any other fiscal year, plus in each case the principal amount of those obligations that in any prior fiscal year could have been but were not issued.

(C) Each issue of state general obligations for public infrastructure capital improvements or development of sites and facilities shall mature in not more than thirty years from the date of issuance, and each issue of state general obligations for research and development purposes shall mature in not more than twenty years from the date of issuance; or, if issued to retire or refund other obligations, within that number of years from the date the debt being retired or refunded was originally issued. If state general obligations are issued as notes in anticipation of the issuance of bonds, provision shall be made by law for the establishment and maintenance, during the period in which the notes are outstanding, of a special fund or funds into which shall be paid, from the sources authorized for the payment of such bonds, the amount that would have been sufficient, if bonds maturing during the permitted period of years had been issued without such prior issuance of notes, to pay the principal that would have been payable on such bonds during such period. Such fund or funds shall be used solely for the payment of principal of such notes or bonds in anticipation of which such notes have been issued.

Notwithstanding anything to the contrary in Section 2k or 2m of Article VIII, obligations issued under this section or Section 2k or 2m to retire or refund obligations previously issued under this section or Section 2k or 2m shall not be counted against the fiscal year or total issuance limitations provided in this section or Section 2k or 2m, as applicable.

The obligations issued under this division and division (B) of this section are general obligations of the state. The full faith and credit, revenue, and taxing power of the state shall be pledged to the payment of the principal of and premium and interest and other accreted amounts on outstanding obligations as they become due (hereinafter called debt service), and bond retirement fund provisions shall be made for payment of that debt service. Provision shall be made by law for the sufficiency and appropriation, for purposes of paying debt service, of excises, taxes, and revenues so pledged or committed to debt service, and for covenants to continue the levy, collection, and application of sufficient excises, taxes, and revenues to the extent needed for that purpose.

Notwithstanding Section 22 of Article II, Ohio Constitution, no further act of appropriation shall be necessary for that purpose. The obligations and the provision for the payment of debt service, and repayment by governmental entities of any loans made under this section, are not subject to Sections 5, 6, and 11 of Article XII, Ohio Constitution. Moneys referred to in Section 5a of Article XII, Ohio Constitution may not be pledged or used for the payment of that debt service. Debt service on obligations issued for research and development purposes and for development of

sites and facilities shall not be included in the calculation of total debt service for purposes of division (A) of Section 17 of Article VIII, Ohio Constitution.

(D)(1) The state may participate in any public infrastructure capital improvement under this section with municipal corporations, counties, townships, or other governmental entities as designated by law, or any one or more of them. Such participation may be by grants, loans, or contributions to them for any such capital improvements. The entire proceeds of the infrastructure obligations shall be used for public infrastructure capital improvements of municipal corporations, counties, townships, and other governmental entities, except to the extent that the General Assembly provides by law that the state may reasonably be compensated from such moneys for planning, financial management, or administrative services performed in relation to the issuance of infrastructure obligations.

(2)(a) Implementation of the research and development purposes includes supporting any and all related matters and activities, including: attracting researchers and research teams by endowing research chairs or otherwise; activities to develop and commercialize products and processes; intellectual property matters such as copyrights and patents; property interests, including time sharing arrangements; and financial rights and matters such as royalties, licensing, and other financial gain or sharing resulting from research and development purposes. State and local public moneys, including the proceeds of bonds, notes, and other obligations, may be used to pay costs of or in support of or related to these research and development purposes, including, without limitation, capital formation, direct operating costs, costs of research and facilities, including interests in real property therefor, and support for public and private institutions of higher education, research organizations or institutions, and private sector entities. The exercise of these powers by the state and state agencies, including state-supported and state-assisted institutions of higher education, and local public entities and agencies, may be jointly or in coordination with each other, with researchers or research organizations and institutions, with private institutions of higher education, with individuals, or with private sector entities. State and local public participation may be in such manner as the entity or agency determines, including by any one or a combination of grants, loans including loans to lenders or the purchase of loans, subsidies, contributions, advances, or guarantees, or by direct investments of or payment or reimbursement from available moneys, or by providing staffing or other support, including computer or other technology capacity, or equipment or facilities, including interests in real property therefor, and either alone or jointly, in collaborative or cooperative ventures, with other public agencies and private sector entities including not for profit entities. In addition to other state-level monetary participation as referred to in this section or otherwise, state-supported and state-assisted institutions of higher education may, as authorized from time to time by the General Assembly, issue obligations to pay costs of participating in and implementing research and development purposes. In addition to the other obligations authorized in or pursuant to this section, the General Assembly also may authorize the state and state agencies and local public entities and agencies, and corporations not for profit designated by any of them as such agencies or instrumentalities, to issue obligations to borrow and loan or otherwise provide moneys for research and development purposes, including, but not limited to, obligations for which moneys raised by taxation shall not be obligated or pledged for the payment of debt service and which are therefore not subject to Sections 5, 6, and 11 of Article XII, Ohio Constitution.

(b) Implementation of the research and development purposes shall include utilization of independent reviewers to review the merits of proposed research and development projects and to make recommendations concerning which proposed projects should be awarded support from the proceeds of the sale of obligations under this section. Prior to the utilization of an independent

reviewer, the state agency proposing to award the support for a project shall provide the name and other descriptive information regarding the independent reviewer to the Governor, the President and Minority Leader of the Senate, and the Speaker and Minority Leader of the House of Representatives. If the recommendations of an independent reviewer with respect to a proposed project are not adopted by the state agency proposing to award the support for the project, the agency shall notify the Governor, the President and Minority Leader of the Senate, and the Speaker and Minority Leader of the House of Representatives of that fact and explain the reasons for not adopting the recommendations.

(c) From the proceeds of the sale of obligations issued under this section, not more than four hundred fifty million dollars may be awarded, promised, or otherwise committed in total for research and development purposes from fiscal years 2006 through 2011, not more than two hundred twenty-five million dollars may be awarded, promised, or otherwise committed for research and development purposes in fiscal year 2012, and not more than one hundred seventy-five million dollars may be awarded, promised, or otherwise committed for research and development purposes in any other fiscal year beginning in fiscal year 2013 and thereafter, plus in each case the amount of the proceeds that in any prior fiscal year could have been but were not awarded.

(3) Development of sites and facilities for and in support of industry, commerce, distribution, and research and development purposes includes acquisition of real estate and interests in real estate, site preparation including any necessary remediation and cleanup, constructing and improving facilities, and providing public infrastructure capital improvements and other transportation and communications infrastructure improvements for and in support of the use of those sites and facilities for those purposes. State and local public moneys, including the proceeds of bonds, notes, and other obligations, may be used to pay costs of those purposes. The exercise of these powers by the state and state agencies and local public entities and agencies, may be jointly or in coordination with each other, and with individuals or private sector business entities. State and local public participation may be in such manner as the entity or agency determines, including by any one or a combination of grants, loans including loans to lenders or the purchase of loans, subsidies, contributions, advances, guarantees, or by direct investments of or payment or reimbursement from available moneys. In addition to other state-level monetary participation as referred to in this section or otherwise, state-supported and state-assisted institutions of higher education, and local public entities and agencies may, as authorized from time to time by the General Assembly, issue obligations to pay costs of participating in and implementing the development of sites and facilities.

(E) Obligations issued under authority of this section for research and development purposes and site and facility development purposes, provisions for the payment of debt service on them, the purposes and uses to which and the manner in which the proceeds of those obligations or moneys from other sources are to or may be applied, and other implementation of those development purposes as referred to in this section, are not subject to Sections 4 and 6 of Article VIII, Ohio Constitution. Obligations issued under authority of this section, the transfer thereof, and the interest, interest equivalent, and other income and accreted amounts therefrom, including any profit made on the sale, exchange, or other disposition thereof, shall at all times be free from taxation within the state.

(F) This section shall otherwise be implemented in the manner and to the extent provided by law by the General Assembly, including provision for the procedure for incurring and issuing obligations, separately or in combination with other obligations, and refunding, retiring, and

evidencing obligations; provision for ensuring the accountability of all state funding provided for the development purposes referred to in division (A) of this section; provision for restricting or limiting the taking of private property under Section 19 of Article I for disposition to private sector entities for the purposes identified in divisions (A) (2) and (3) of this section or restricting the disposition of that property to private sector entities or individuals; and provision for the implementation of the development purposes referred to in division (A) of this section to benefit people and businesses otherwise qualified for receipt of funding for the development purposes referred to in division (A) of this section, including economically disadvantaged businesses and individuals in all areas of this state, including by the use to the extent practicable of Ohio products, materials, services, and labor.

(G) The powers and authority granted or confirmed by and under, and the determinations in, this section are independent of, in addition to, and not in derogation of or a limitation on, powers, authority, determinations, or confirmations under laws or under other provisions of the Ohio Constitution including, without limitation, Section 7 of Article I, Section 5 of Article VI, Sections 2i, 2n, 2o, 13, and 15 of Article VIII, Article X, and Section 3 of Article XVIII, and do not impair any previously adopted provisions of the Ohio Constitution or any law previously enacted by the General Assembly or by a local public agency.