

(Added Pub. L. 117–58, div. B, title I, §21101(a), Nov. 15, 2021, 135 Stat. 652.)

Editorial Notes

REFERENCES IN TEXT

The date of enactment of this section and the date of enactment of the Surface Transportation Investment Act of 2021, referred to in subsecs. (i) and (j)(3), are the date of enactment of div. B of Pub. L. 117–58, which was approved Nov. 15, 2021.

§ 119. Advanced Research Projects Agency–Infrastructure

(a) DEFINITIONS.—In this section:

(1) ARPA–I.—The term “ARPA–I” means the Advanced Research Projects Agency–Infrastructure established by subsection (b).

(2) DEPARTMENT.—The term “Department” means the Department of Transportation.

(3) DIRECTOR.—The term “Director” means the Director of ARPA–I appointed under subsection (d).

(4) ELIGIBLE ENTITY.—The term “eligible entity” means—

- (A) a unit of State or local government;
- (B) an institution of higher education;
- (C) a commercial entity;
- (D) a research foundation;
- (E) a trade or industry research collaborative;
- (F) a federally funded research and development center;
- (G) a research facility owned or funded by the Department;
- (H) a collaborative that includes relevant international entities; and
- (I) a consortia of 2 or more entities described in any of subparagraphs (A) through (H).

(5) INFRASTRUCTURE.—

(A) IN GENERAL.—The term “infrastructure” means any transportation method or facility that facilitates the transit of goods or people within the United States (including territories).

(B) INCLUSIONS.—The term “infrastructure” includes—

- (i) roads;
- (ii) highways;
- (iii) bridges;
- (iv) airports;
- (v) rail lines;
- (vi) harbors; and
- (vii) pipelines.

(6) SECRETARY.—The term “Secretary” means the Secretary of Transportation.

(b) ESTABLISHMENT.—There is established within the Department an agency, to be known as the “Advanced Research Projects Agency–Infrastructure”, to support the development of science and technology solutions—

- (1) to overcome long-term challenges; and
- (2) to advance the state of the art for United States transportation infrastructure.

(c) GOALS.—

(1) IN GENERAL.—The goals of ARPA–I shall be—

(A) to advance the transportation infrastructure of the United States by developing innovative science and technology solutions that—

(i) lower the long-term costs of infrastructure development, including costs of planning, construction, and maintenance;

(ii) reduce the lifecycle impacts of transportation infrastructure on the environment, including through the reduction of greenhouse gas emissions;

(iii) contribute significantly to improving the safe, secure, and efficient movement of goods and people; and

(iv) promote the resilience of infrastructure from physical and cyber threats; and

(B) to ensure that the United States is a global leader in developing and deploying advanced transportation infrastructure technologies and materials.

(2) RESEARCH PROJECTS.—ARPA–I shall achieve the goals described in paragraph (1) by providing assistance under this section for infrastructure research projects that—

(A) advance novel, early-stage research with practicable application to transportation infrastructure;

(B) translate techniques, processes, and technologies, from the conceptual phase to prototype, testing, or demonstration;

(C) develop advanced manufacturing processes and technologies for the domestic manufacturing of novel transportation-related technologies; and

(D) accelerate transformational technological advances in areas in which industry entities are unlikely to carry out projects due to technical and financial uncertainty.

(d) DIRECTOR.—

(1) APPOINTMENT.—ARPA–I shall be headed by a Director, who shall be appointed by the President, by and with the advice and consent of the Senate.

(2) QUALIFICATIONS.—The Director shall be an individual who, by reason of professional background and experience, is especially qualified to advise the Secretary regarding, and manage research programs addressing, matters relating to the development of science and technology solutions to advance United States transportation infrastructure.

(3) RELATIONSHIP TO SECRETARY.—The Director shall—

(A) be located within the Office of the Assistant Secretary for Research and Technology; and

(B) report to the Secretary.

(4) RELATIONSHIP TO OTHER PROGRAMS.—No other program within the Department shall report to the Director.

(5) RESPONSIBILITIES.—The responsibilities of the Director shall include—

(A) approving new programs within ARPA–I;

(B) developing funding criteria, and assessing the success of programs, to achieve the goals described in subsection (c)(1) through the establishment of technical milestones;

(C) administering available funding by providing to eligible entities assistance to

achieve the goals described in subsection (c)(1);

(D) terminating programs carried out under this section that are not achieving the goals of the programs; and

(E) establishing a process through which eligible entities can submit to ARPA-I unsolicited research proposals for assistance under this section in accordance with subsection (f).

(e) PERSONNEL.—

(1) IN GENERAL.—The Director shall establish and maintain within ARPA-I a staff with sufficient qualifications and expertise to enable ARPA-I to carry out the responsibilities under this section, in conjunction with other operations of the Department.

(2) PROGRAM DIRECTORS.—

(A) IN GENERAL.—The Director shall designate employees to serve as program directors for ARPA-I.

(B) RESPONSIBILITIES.—Each program director shall be responsible for—

(i) establishing research and development goals for the applicable program, including by convening workshops and conferring with outside experts;

(ii) publicizing the goals of the applicable program;

(iii) soliciting applications for specific areas of particular promise, especially in areas that the private sector or the Federal Government are not likely to carry out absent assistance from ARPA-I;

(iv) establishing research collaborations for carrying out the applicable program;

(v) selecting on the basis of merit each project to be supported under the applicable program, taking into consideration—

(I) the novelty and scientific and technical merit of proposed projects;

(II) the demonstrated capabilities of eligible entities to successfully carry out proposed projects;

(III) the extent to which an eligible entity took into consideration future commercial applications of a proposed project, including the feasibility of partnering with 1 or more commercial entities; and

(IV) such other criteria as the Director may establish;

(vi) identifying innovative cost-sharing arrangements for projects carried out or funded by ARPA-I;

(vii) monitoring the progress of projects supported under the applicable program;

(viii) identifying mechanisms for commercial application of successful technology development projects, including through establishment of partnerships between eligible entities and commercial entities; and

(ix) as applicable, recommending—

(I) program restructuring; or

(II) termination of applicable research partnerships or projects.

(C) TERM OF SERVICE.—A program director—

(i) shall serve for a term of 3 years; and

(ii) may be reappointed for any subsequent term of service.

(3) HIRING AND MANAGEMENT.—

(A) IN GENERAL.—The Director may—

(i) make appointments of scientific, engineering, and professional personnel, without regard to the civil service laws;

(ii) fix the basic pay of such personnel at such rate as the Director may determine, but not to exceed level II of the Executive Schedule, without regard to the civil service laws; and

(iii) pay an employee appointed under this subparagraph payments in addition to basic pay, subject to the condition that the total amount of those additional payments for any 12-month period shall not exceed the least of—

(I) \$25,000;

(II) an amount equal to 25 percent of the annual rate of basic pay of the employee; and

(III) the amount of the applicable limitation for a calendar year under section 5307(a)(1) of title 5.

(B) PRIVATE RECRUITING FIRMS.—The Director may enter into a contract with a private recruiting firm for the hiring of qualified technical staff to carry out this section.

(C) ADDITIONAL STAFF.—The Director may use all authorities available to the Secretary to hire administrative, financial, and clerical staff, as the Director determines to be necessary to carry out this section.

(f) RESEARCH PROPOSALS.—

(1) IN GENERAL.—An eligible entity may submit to the Director an unsolicited research proposal at such time, in such manner, and containing such information as the Director may require, including a description of—

(A) the extent of current and prior efforts with respect to the project proposed to be carried out using the assistance, if applicable; and

(B) any current or prior investments in the technology area for which funding is requested, including as described in subsection (c)(2)(D).

(2) REVIEW.—The Director—

(A) shall review each unsolicited research proposal submitted under paragraph (1), taking into consideration—

(i) the novelty and scientific and technical merit of the research proposal;

(ii) the demonstrated capabilities of the applicant to successfully carry out the research proposal;

(iii) the extent to which the applicant took into consideration future commercial applications of the proposed research project, including the feasibility of partnering with 1 or more commercial entities; and

(iv) such other criteria as the Director may establish;

(B) may approve a research proposal if the Director determines that the research—

(i) is in accordance with—

(I) the goals described in subsection (c)(1); or

- (II) an applicable transportation research and development strategic plan developed under section 6503; and
- (ii) would not duplicate any other Federal research being conducted or funded by another Federal agency; and
- (C)(i) if funding is denied for the research proposal, shall provide to the eligible entity that submitted the proposal a written notice of the denial that, as applicable—
- (I) explains why the research proposal was not selected, including whether the research proposal fails to cover an area of need; and
- (II) recommends that the research proposal be submitted to another research program; or
- (ii) if the research proposal is approved for funding, shall provide to the eligible entity that submitted the proposal—
- (I) a written notice of the approval; and
- (II) assistance in accordance with subsection (g) for the proposed research.
- (g) FORMS OF ASSISTANCE.—On approval of a research proposal of an eligible entity, the Director may provide to the eligible entity assistance in the form of—
- (1) a grant;
 - (2) a contract;
 - (3) a cooperative agreement;
 - (4) a cash prize; or
 - (5) another, similar form of funding.
- (h) REPORTS AND ROADMAPS.—
- (1) ANNUAL REPORTS.—For each fiscal year, the Director shall provide to the Secretary, for inclusion in the budget request submitted by the Secretary to the President under section 1108 of title 31 for the fiscal year, a report that, with respect to the preceding fiscal year, describes—
- (A) the projects that received assistance from ARPA-I, including—
- (i) each such project that was funded as a result of an unsolicited research proposal; and
 - (ii) each such project that examines topics or technologies closely related to other activities funded by the Department, including an analysis of whether the Director achieved compliance with subsection (i)(1) in supporting the project; and
- (B) the instances of, and reasons for, the provision of assistance under this section for any projects being carried out by industry entities.
- (2) STRATEGIC VISION ROADMAP.—Not later than October 1, 2022, and not less frequently than once every 4 years thereafter, the Director shall submit to the relevant authorizing and appropriations committees of Congress a roadmap describing the strategic vision that ARPA-I will use to guide the selection of future projects for technology investment during the 4 fiscal-year period beginning on the date of submission of the report.
- (i) COORDINATION AND NONDUPLICATION.—The Director shall ensure that—
- (1) the activities of ARPA-I are coordinated with, and do not duplicate the efforts of, programs and laboratories within—
 - (A) the Department; and
 - (B) other relevant research agencies; and
 - (2) no funding is provided by ARPA-I for a project, unless the eligible entity proposing the project—
 - (A) demonstrates sufficient attempts to secure private financing; or
 - (B) indicates that the project is not independently commercially viable.
- (j) FEDERAL DEMONSTRATION OF TECHNOLOGIES.—The Director shall seek opportunities to partner with purchasing and procurement programs of Federal agencies to demonstrate technologies resulting from activities funded through ARPA-I.
- (k) PARTNERSHIPS.—The Director shall seek opportunities to enter into contracts or partnerships with minority-serving institutions (as described in any of paragraphs (1) through (7) of section 371(a) of the Higher Education Act of 1965 (20 U.S.C. 1067q(a)))—
- (1) to accomplish the goals of ARPA-I;
 - (2) to develop institutional capacity in advanced transportation infrastructure technologies and materials;
 - (3) to engage underserved populations in developing, demonstrating, and deploying those technologies and materials; and
 - (4) to otherwise address the needs of ARPA-I.
- (l) UNIVERSITY TRANSPORTATION CENTERS.—The Director may—
- (1) partner with university transportation centers under section 5505 to accomplish the goals, and address the needs, of ARPA-I; and
 - (2) sponsor and select for funding, in accordance with section 5505, competitively selected university transportation center grants, in addition to the assistance provided under section 5505, to address targeted technology and material goals of ARPA-I.
- (m) ADVICE.—
- (1) ADVISORY COMMITTEES.—The Director may seek advice regarding any aspect of ARPA-I from—
- (A) an existing advisory committee, office, or other group within the Department; and
 - (B) a new advisory committee organized to support the programs of ARPA-I by providing advice and assistance regarding—
 - (i) specific program tasks; or
 - (ii) the overall direction of ARPA-I.
- (2) ADDITIONAL SOURCES.—In carrying out this section, the Director may seek advice and review from—
- (A) the President's Council of Advisors on Science and Technology;
 - (B) the Advanced Research Projects Agency-Energy; and
 - (C) any professional or scientific organization with expertise relating to specific processes or technologies under development by ARPA-I.
- (n) EVALUATION.—
- (1) IN GENERAL.—Not later than December 27, 2024, the Secretary may enter into an arrange-

ment with the National Academy of Sciences under which the National Academy shall conduct an evaluation of the achievement by ARPA-I of the goals described in subsection (c)(1).

(2) INCLUSIONS.—The evaluation under paragraph (1) may include—

(A) a recommendation regarding whether ARPA-I should be continued;

(B) a recommendation regarding whether ARPA-I, or the Department generally, should continue to allow entities to submit unsolicited research proposals; and

(C) a description of—

(i) the lessons learned from the operation of ARPA-I; and

(ii) the manner in which those lessons may apply to the operation of other programs of the Department.

(3) AVAILABILITY.—On completion of the evaluation under paragraph (1), the evaluation shall be made available to—

(A) Congress; and

(B) the public.

(o) PROTECTION OF INFORMATION.—

(1) IN GENERAL.—Each type of information described in paragraph (2) that is collected by ARPA-I from eligible entities shall be considered to be—

(A) commercial and financial information obtained from a person;

(B) privileged or confidential; and

(C) not subject to disclosure under section 552(b)(4) of title 5.

(2) DESCRIPTION OF TYPES OF INFORMATION.—The types of information referred to in paragraph (1) are—

(A) information relating to plans for commercialization of technologies developed using assistance provided under this section, including business plans, technology-to-market plans, market studies, and cost and performance models;

(B) information relating to investments provided to an eligible entity from a third party (such as a venture capital firm, a hedge fund, and a private equity firm), including any percentage of ownership of an eligible entity provided in return for such an investment;

(C) information relating to additional financial support that the eligible entity—

(i) plans to invest, or has invested, in the technology developed using assistance provided under this section; or

(ii) is seeking from a third party; and

(D) information relating to revenue from the licensing or sale of a new product or service resulting from research conducted using assistance provided under this section.

(p) EFFECT ON EXISTING AUTHORITIES.—The authority provided by this section—

(1) shall be in addition to any existing authority provided to the Secretary; and

(2) shall not supersede or modify any other existing authority.

(q) FUNDING.—

(1) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the

Secretary such sums as are necessary to carry out this section.

(2) SEPARATE BUDGET AND APPROPRIATION.—

(A) BUDGET REQUEST.—The budget request for ARPA-I shall be separate from the budget request of the remainder of the Department.

(B) APPROPRIATIONS.—The funding appropriated for ARPA-I shall be separate and distinct from the funding appropriated for the remainder of the Department.

(3) ALLOCATION.—Of the amounts made available for a fiscal year under paragraph (1)—

(A) not less than 5 percent shall be used for technology transfer and outreach activities—

(i) in accordance with the goal described in subsection (c)(2)(D); and

(ii) within the responsibilities of the program directors described in subsection (e)(2)(B)(viii); and

(B) none may be used for the construction of any new building or facility during the 5-year period beginning on the date of enactment of the Surface Transportation Investment Act of 2021.

(Pub. L. 117–58, div. B, title V, §25012(a), Nov. 15, 2021, 135 Stat. 859.)

Editorial Notes

REFERENCES IN TEXT

Level II of the Executive Schedule, referred to in subsec. (e)(3)(A)(ii), is set out in section 5313 of Title 5, Government Organization and Employees.

The date of enactment of the Surface Transportation Investment Act of 2021, referred to in subsec. (q)(3)(B), is the date of enactment of div. B of Pub. L. 117–58, which was approved Nov. 15, 2021.

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