Sustaining and Enhancing Access to the Rhode Island Geographic Information System (RIGIS) Geospatial Database

A Project Renewal Proposal to the Rhode Island Statewide Planning Program

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Background Information

The Rhode Island Geographic Information System (RIGIS) is a consortium of government entities, academic institutions and private organizations that utilize GIS technology and the geospatial data and information that drives such technology. The mission of RIGIS is to monitor, coordinate, and provide leadership for activities related to the use of geographic information system technology in Rhode Island; to support initiatives that implement or use this technology; and to manage and provide access to a common and comprehensive database of geographically referenced information that conforms to RIGIS-accepted minimum standards for accuracy, completeness and documentation.

The collective RIGIS database consists of data that are voluntarily contributed by RIGIS participants and partners. This database is heavily used by a wide variety of individuals and organizations, ranging from all levels of government, non-profit organizations, private industry, personal use, and nearly all levels of educational institutions in the State.

The RIGIS online data clearinghouse, hosted and maintained by the University of Rhode Island Environmental Data Center, serves as the single access point for publicly available geospatial data provided by RIGIS partners, including the Statewide Planning Program, Department of Environmental Management (RIDEM), Department of Transportation (RIDOT), and Rhode Island Public Transit Authority (RIPTA). The geospatial data offered by the clearinghouse are the basis of numerous applications that benefit every citizen in the State. Recent uses include applications that support:

1. Transportation planning, civil engineering, and pre-planning for surveying studies
2. Environmental impact assessments
3. Municipal planning and tax assessment
4. Emergency response planning, recovery, and mitigation
5. Broadband technology infrastructure assessment

Since the inception of RIGIS in 1986, the University of Rhode Island's Environmental Data Center (URI EDC) has supported the Statewide Planning Program's mandate to administer and provide public access to the collective RIGIS database. URI EDC staff have managed the day-to-day maintenance of the data contained within the RIGIS database, ensuring the functional integrity of data distributed by RIGIS. The URI EDC also maintains the underlying hardware and software that supports the RIGIS database and the RIGIS online data clearinghouse.

In federal FY2013 (October 1, 2012 – September 30, 2013), 4.4 TB of data were downloaded from the RIGIS online data clearinghouse. This statistic does not take into account the 16.7 million requests to the free map services hosted by the URI EDC that utilize RIGIS data. Rhode Island is privileged to have free, simple, and reliable access to perhaps the most comprehensive statewide collection of geospatial data found anywhere in the United States.

The URI EDC is eager to continue this partnership with the Rhode Island Statewide Planning Program as we currently have no other funding source to support the activities outlined in this proposal. Should the URI EDC not secure funding support, we will have no practical alternative but to reduce the current level of Internet access to RIGIS data and associated online map services. The University of Rhode Island does not fund any of our activities that directly support RIGIS, hence our need to secure extramural funding.

2013 in Review

The highlights of 2013 were the availability of derived data products from the 2011 Northeast LiDAR Project, and the related development of a new standardized approach to how RIGIS prepares and distributes raster data. Substantial infrastructure changes were also made at the URI EDC to better support the long-term hosting of the RIGIS data distribution clearinghouse, and Esri ArcGIS 10.2 for Server was tested and implemented.

In partnership with RIDOT, the URI EDC contributed to RIGIS a new seamless statewide raster Digital Elevation Model, a seamless statewide raster hillshade surface dataset, and seamless statewide vector contour lines at 2-, 5-, and 10-ft intervals. In addition to these, RIDEM contributed a new impervious surfaces dataset that reflects conditions in 2011. While all of these datasets have since been made available in their native format – namely the Esri file geodatabase – RIGIS remains committed to distributing data in formats that are both usable by a wide range of software, and hopefully stand the test of time.

Bearing this in mind, new grids were created for the State that divide the area up into a series of tiles measuring 10,000 ft, 5,000 ft, and 1,000 ft on a side. Each of these grid tiles has a unique identifier, taking advantage of a naming strategy implemented by Photo Science in support of the 2011 RIDEM orthophotography project.

A geoprocessing model was developed to automate the process of clipping, exporting, and naming statewide datasets into the new grids. Thematic raster data are exported as ERDAS Imagine img format, continuous raster data as GeoTIFF and JPEG2000 file formats, and vector data as Esri shapefiles. This model was successfully used to process the six datasets above, and re-process the 2003-04 impervious surfaces dataset that was previously available exclusively in Esri file geodatabase format.

Finally, the JavaScript-based data distribution mapping applications used to distribute these tiled datasets were updated to reflect the most current API available from Esri. This new standardized approach to distributing raster data and large statewide vector datasets has been enthusiastically received by the RIGIS community, with no problems reported.

The URI EDC has largely completed its transition to a cluster virtualized server environment. The current RIGIS data distribution website and related services were quietly and seamlessly transitioned to this new environment in October 2013. This new server environment offers a greater degree of reliability and

flexibility than the previous version, and is positioned to readily support the development of a new RIGIS data distribution website starting in 2014.

The URI EDC continues to support a broad library of online map services that support a wide variety of applications, including RIDOT transportation planning activities and maintenance of street addresses by RI E-911. Esri ArcGIS 10.2 for Server was successfully installed and implemented in August 2013, however a software bug that wasn't unearthed in our testing environment emerged. Nearly two weeks of intensive discussion with Esri technical support solved the issue, stabilizing the system again for the RIGIS community.

The production of a single Esri file geodatabase containing all vector data available from RIGIS remains under development, with its public release anticipated for early 2014. This geodatabase will make it incredibly convenient for Esri software users who prefer to download the entire RIGIS vector library at one time, rather than as individual datasets.

Looking Ahead

As requested by the Statewide Planning Program, the URI EDC is proposing a 6-month renewal to this ongoing project. The purpose of this move is to align the timeframe of this annual proposal to match the fiscal year followed by the State of Rhode Island (July 1 – June 30). This will help the Statewide Planning Program to more easily write this ongoing work into their respective annual budget proposal process.

The proposed objectives and deliverables for the first six months of calendar year 2014 still carry the familiar predominant themes of maintaining the collective RIGIS database, maintaining the current website, and serving as a technical resource to partner state agencies. Below are descriptions that highlight some of the new and updated deliverables included in this proposal.

Metadata

Updating the documentation (aka metadata) distributed with RIGIS data continues as a significant ongoing initiative in the coming year. A number of RIGIS datasets continue to have outdated information (e.g., data primary point of contact, distribution point of contact) and and/or are missing fields necessary for metadata that are appreciably compliant with the standard published by the Federal Geographic Data Committee. Not only does this ongoing work better situate RIGIS to consider developing a formal digital archival plan, but better postures the consortium to more easily participate in data portals such as data.gov, and to more easily adapt appropriate International Organization for Standardization (ISO) metadata standards at some point in the future.

Transportation Data Development

The Rhode Island Enhanced 911 Uniform Emergency Telephone System (RIE911) has become the most regular contributor of data to the RIGIS consortium. Updates for the roads, driveways, building

addresses, and fire hydrants are shared with RIGIS on a quarterly basis. The road and building address datasets are incredibly useful for a wide range of applications beyond supporting RIE911's core mission of supporting community first responders in Rhode Island, and the members of the public that rely these responders. RIE911 has been forward-thinking by making these data publicly available in partnership with RIGIS. By sharing these data, RIE911 is able to make further improvements using feedback shared by users of these data, and in return these users are able to take advantage of these datasets for their own work.

The URI EDC will continue supporting RIE911's continued contributions by building a simple, easy-to-use online web mapping application that will help municipal E911 address coordinators to review data for their respective cities and towns. The app will focus on displaying the content of the RIE911 datasets in an easy-to-understand manner using out-of-the-box tools supplied by Esri ArcGIS Online. A new reporting feedback mechanism will not be included in this version of this new app, instead relying on tried-and-true email.

We will also assist the Rhode Island Public Transit Authority (RIPTA) by helping them build a file geodatabase that lends itself to being more easily shared with RIGIS and other partners. Their current geodatabase used for data development work uses an attribute field naming convention that is truncated when their data are exported for distribution via RIGIS. We will build a script that will seamlessly port their datasets into a new file geodatabase that takes advantage of attribute field name aliases, and provide a tutorial on how to use field name aliases in the future.

Map Services

The URI EDC continues to be the leader in both implementing and supporting web GIS in Rhode Island. The Rhode Island Digital Atlas 2.0 - slated for release in spring 2014 - will introduce over 100 web map applications that are simple to understand, easy to use, and are readily usable by mobile devices. All of these apps feature data published by RIGIS, and their underlying map services (commonly referred to as the “RIGIS map services” by the RIGIS community) are increasingly utilized by a wide variety of third parties at no cost, including ProvPlan’s Community Profiles (http://profiles.provplan.org), widespread use by desktop users by government agencies such as RIDOT, and municipal map apps such as one recently developed for the Town of Richmond by Applied Geographics (http://www.mapgeo.com/RichmondRI). These free map services are a key component to the broad implementation of web GIS in Rhode Island.

As part of this proposal, the URI EDC will continue to refine its ability to quickly update, document, and publicize the map services it hosts that feature RIGIS data, emphasizing those that directly support transportation planning functions by RIDOT and RIPTA.

Objectives and Deliverables

1. Continue maintaining the RIGIS database.

    a. Review, accept, process, and publish at least ten new or updated datasets. At minimum, the following datasets are expected to be contributed to RIGIS by partners in the first half of calendar year 2014:

        i. Quarterly updates of RI E911 roads, addressed structures, driveways, and fire hydrants.

        ii. Updated RIDOT roads and bridges.

        iii. Updated RIPTA transit routes and bus stops.

        iv. Updated broadband infrastructure data contributed by Broadband Rhode Island.

        v. New land use and cover data contributed by RIDEM.

    b. Continue reviewing metadata distributed with RIGIS data, focusing on updating the primary point of contact for each dataset and researching missing content as time permits.

    c. As new datasets are published by RIGIS, continue to update the publicly available Esri file geodatabase that contains all RIGIS vector datasets. Release an updated version of this geodatabase in June 2014.

2. Continue maintaining the current RIGIS data distribution website.

    a. Provide 24/7 access to the RIGIS online data distribution website.

    b. Conduct nightly backups of the website and underlying databases, and archive them at both onsite and offsite locations.

    c. Maintain server, network, and physical security for the file server, database server, and web server that support the online services provided on behalf of RIGIS by the URI EDC.

3. Support transportation data development by RIE911 and RIPTA.

    a. Create a new online web mapping application that will assist municipal E911 coordinators with reviewing transportation data maintained by RIE911. The app will be developed using out-of-the-box app development tools available from Esri ArcGIS Online. Part of this deliverable will be building and/or updating map services hosted by the URI EDC that feature RIE911 data with improved symbology and labeling as needed by this new application.

b. Time permitting, prototype a new map atlas series for each Rhode Island municipality that facilitates the review of RIE911 data. This PDF-based atlas series will be built using Python scripting, allowing the URI EDC to easily update the series after each quarterly release of RIE911 data. The atlas will leverage the United States National Grid, and be designed in a manner that lends itself well to use by emergency responders.

c. Assist RIE911 with building an Esri mosaic dataset of the most recent statewide orthophotography for internal, offline use at the agency. This dataset may be used for both transportation data updates, as well as for supporting other in-house operations.

d. Create a geoprocessing script that ports RIPTA's primary file geodatabase used for data development seamlessly into a new file geodatabase that takes advantage of attribute field name aliases. Provide technical support to RIPTA on an ad hoc basis as it continues to build its in-house GIS capabilities.

4. Continue maintaining and growing URI-EDC hosted map services that use RIGIS data.

    a. Continue to update existing map services to reflect the most recent data available from RIGIS.

    b. Maintain related ArcGIS Online map service records that use RIGIS data.

    c. Develop and publish new map services that depict the most recent available bus route and bus stop datasets contributed to RIGIS by RIPTA.

    d. Time and URI EDC server capacity permitting, develop and publish additional new map services that leverage RIGIS data and are of wide interest to the RIGIS community.

    e. Maintain server, network, and physical security for the ArcGIS Server array that supports the online services provided by the URI EDC.

5. Continue serving as a technical advisor to the following state government agencies as time and resources permit.

    a. RIDOT, specifically with hands-on metadata development assistance to help facilitate more frequent contributions to RIGIS.

    b. RIEMA, as the agency continues to work towards establishing a robust GIS that can be quickly staffed by state partners to support emergency response efforts. When specifically requested by Shane White and/or Jared Rhodes of the Statewide Planning Program, provide additional hands-on support to RIEMA to assist with any active disaster preparation and/or response efforts.

    c. Rhode Island Statewide Planning Program, as it continues to lead the development of a state government enterprise GIS.

6. Continue serving as a member of the RIGIS Executive Committee, serving in an advisory role to the RIGIS Executive Committee Working Groups, and be an active participant of the RIGIS Data Distribution Working Group.

7. Continue outreach support for RIGIS by responding to at least thirty technical support questions regarding RIGIS data.

8. Continue spending one day per month working at the Statewide Planning Program, RIDOT, RIPTA, RIE911, or other state agencies according to a schedule mutually determined with the RIGIS Coordinator. The primary intent of this time will be face-to-face meetings with the RIGIS Coordinator and state agency GIS professionals to help complete the objectives of this proposal.

9. Provide quarterly progress reports via email to the RIGIS Coordinator. These reports will be provided no later than 30 days after the conclusion of each reporting period.

Budget

Total Project Cost - $26,475

$21,180 from SWPP (80% of overall project cost)

$ 5,295 URI (20% project match)

Budget Detail

	TOTAL	SWPP	URI Match
Personnel			
Bonynge Salary (0.2 FTE)	6,291	6,291	
Bonynge Benefits	1,815	1,815	
August Salary (0.002 FTE)	270		270
August Fringe	103		103
Res. Associate I Salary (0.18 FTE)	3,680	3,680	
Res. Associate I Fringe	1,582	1,582	
EDC Computing Charges	3,576	3,576	
Total Direct	17,317	16,944	373
Indirect (difference 53.5%- 25%)	9,158	4,236	4,922
Total	**$26,475**	**21,180**	**5,295**

Budget Narrative

20% project match required on FHWA Metropolitan Planning Funds documented in Section 120(b) (page 48) of Title 23, United States Code - Highways

Personnel: *Mr. Gregory Bonynge will contribute 20% FTE and a Research Associate I 18% FTE towards this effort.*

URI In-kind Match: *To meet the 20% FHWA match requirement, we are providing $5,295 or 20% match consisting of 1) salary, benefits totaling $373 for Dr. Peter August's implementation and administration effort on this project 2) waived indirect costs of $93 on Dr. August's matched salary and benefits, and 3)*

waived indirect cost of $4,829 on the project which is the difference in indirect cost between the URI standard indirect rate of 53.5% ($9,065) applied to the total SWPP share of direct costs of $16,944 and indirect from the URI State Agency rate of 25% ($4,236) applied to the SWPP share of direct project costs of $16,944.

Operating: EDC Computing Charges – FY14 *bench space rate is calculated at $856.35/month for ~0.38 FTE to cover software and hardware maintenance, data backups, security, etc.*

Indirect (overhead) costs: *The FY14 negotiated standard rate for URI is 53.5% and the current statewide rate is 25%. The difference in waived indirect costs will be considered a component of the match toward this project.*

Billing Schedule

Quarterly billing on invoices will be submitted to RIDOA/SWPP.

EXHIBIT 1

49CFR19 - UNIFORM ADMINISTRATIVE REQUIREMENTS FOR GRANTS AND AGREEMENTS WITH INSTITUTIONS OF HIGHER EDUCATION, HOSPITALS, AND OTHER NONPROFIT ORGANIZATIONS

PART 19—UNIFORM ADMINISTRATIVE REQUIREMENTS FOR GRANTS AND AGREEMENTS WITH INSTITUTIONS OF HIGHER EDUCATION, HOSPITALS, AND OTHER NON-PROFIT ORGANIZATIONS

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APPENDIX A TO PART 19—CONTRACT PROVISIONS

AUTHORITY: 49 U.S.C. 322(a).

SOURCE: 59 FR 15639, Apr. 4, 1994, unless otherwise noted.

Subpart A—General

§ 19.1 Purpose.

This part establishes uniform administrative requirements for Federal grants and agreements awarded to institutions of higher education, hospitals, and other non-profit organizations. Federal awarding agencies shall not impose additional or inconsistent requirements, except as provided in §§19.4 and 19.14 or unless specifically required by Federal statute or executive order. Non-profit organizations that implement Federal programs for the States are also subject to State requirements.

§ 19.2 Definitions.

(a) *Accrued expenditures* means the charges incurred by the recipient during a given period requiring the provision of funds for:

(1) Goods and other tangible property received;

(2) Services performed by employees, contractors, subrecipients, and other payees; and,

(3) Other amounts becoming owed under programs for which no current services or performance is required.

(b) *Accrued income* means the sum of: (1) Earnings during a given period from:

(i) Services performed by the recipient, and

(ii) Goods and other tangible property delivered to purchasers; and

(2) Amounts becoming owed to the recipient for which no current services or performance is required by the recipient.

(c) *Acquisition cost of equipment* means the net invoice price of the equipment, including the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the property usable for the purpose for which it was acquired. Other charges, such as the cost of installation, transportation, taxes, duty or protective in-transit insurance, shall be included or excluded from the unit acquisition cost in accordance with the recipient's regular accounting practices.

(d) *Advance* means a payment made by Treasury check or other appropriate payment mechanism to a recipient upon its request either before outlays are made by the recipient or through the use of predetermined payment schedules.

(e) *Award* means financial assistance that provides support or stimulation to accomplish a public purpose. Awards include grants and other agreements in the form of money or property in lieu of money, by the Federal Government to an eligible recipient. The term does not include: Technical assistance, which provides services instead of money; other assistance in the form of loans, loan guarantees, interest subsidies, or insurance; direct payments of any kind to individuals; and, contracts which are required to be entered into and administered under procurement laws and regulations.

(f) *Cash contributions* means the recipient's cash outlay, including the outlay of money contributed to the recipient by third parties.

(g) *Closeout* means the process by which a Federal awarding agency determines that all applicable administrative actions and all required work of the award have been completed by the recipient and Federal awarding agency.

(h) *Contract* means a procurement contract under an award or subaward, and a procurement subcontract under a recipient's or subrecipient's contract.

(i) *Cost sharing or matching* means that portion of project or program costs not borne by the Federal Government.

(j) *Date of completion* means the date on which all work under an award is completed or the date on the award document, or any supplement or amendment thereto, on which Federal sponsorship ends.

(k) *Disallowed costs* means those charges to an award that the Federal awarding agency determines to be unallowable, in accordance with the applicable Federal cost principles or other terms and conditions contained in the award.

(l) *Equipment* means tangible nonexpendable personal property including exempt property charged directly to the award having a useful life of more than one year and an acquisition cost of $5,000 or more per unit. However, consistent with recipient policy, lower limits may be established.

(m) *Excess property* means property under the control of any Federal awarding agency that, as determined by the head thereof, is no longer required for its needs or the discharge of its responsibilities.

(n) *Exempt property* means tangible personal property acquired in whole or in part with Federal funds, where the Federal awarding agency has statutory authority to vest title in the recipient without further obligation to the Federal Government. An example of exempt property authority is contained in the Federal Grant and Cooperative Agreement Act (31 U.S.C. 6306), for property acquired under an award to conduct basic or applied research by a non-profit institution of higher education or non-profit organization whose principal purpose is conducting scientific research.

(o) *Federal awarding agency* means the Federal agency that provides an award to the recipient. Except for the specific review requirements for deviations in §19.4, for Department of Transportation (DOT) awards, it means the DOT operating administration or departmental office that made the award.

(p) *Federal funds authorized* means the total amount of Federal funds obligated by the Federal Government for use by the recipient. This amount may include any authorized carryover of unobligated funds from prior funding periods when permitted by agency regulations or agency implementing instructions.

(q) *Federal share* of real property, equipment, or supplies means that percentage of the property's acquisition costs and any improvement expenditures paid with Federal funds.

(r) *Funding period* means the period of time when Federal funding is available for obligation by the recipient.

(s) *Intangible property and debt instruments* means, but is not limited to, trademarks, copyrights, patents and patent applications and such property as loans, notes and other debt instruments, lease agreements, stock and other instruments of property ownership, whether considered tangible or intangible.

(t) *Obligations* means the amounts of orders placed, contracts and grants awarded, services received and similar transactions during a given period that require payment by the recipient during the same or a future period.

(u) *Outlays or expenditures* means charges made to the project or program. They may be reported on a cash or accrual basis. For reports prepared on a cash basis, outlays are the sum of cash disbursements for direct charges for goods and services, the amount of indirect expense charged, the value of third party in-kind contributions applied and the amount of cash advances and payments made to subrecipients. For reports prepared on an accrual basis, outlays are the sum of cash disbursements for direct charges for goods and services, the amount of indirect expense incurred, the value of in-kind contributions applied, and the net increase (or decrease) in the amounts owed by the recipient for goods and other property received, for services performed by employees, contractors, subrecipients and other payees and other amounts becoming owed under programs for which no current services or performance are required.

(v) *Personal property* means property of any kind except real property. It may be tangible, having physical existence, or intangible, having no physical existence, such as copyrights, patents, or securities.

(w) *Prior approval* means written approval by an authorized official evidencing prior consent.

(x) *Program income* means gross income earned by the recipient that is directly generated by a supported activity or earned as a result of the award (see exclusions in §§19.24 (e) and (h)). Program income includes, but is not limited to, income from fees for services performed, the use or rental of real or personal property acquired under federally-funded projects, the sale of commodities or items fabricated under an award, license fees and royalties on patents and copyrights, and interest on loans made with award funds. Interest earned on advances of Federal funds is not program income. Except as otherwise provided in Federal awarding agency regulations or the terms and conditions of the award, program income does not include the receipt of principal on loans, rebates, credits, discounts, etc., or interest earned on any of them.

(y) *Project costs* means all allowable costs, as set forth in the applicable Federal cost principles, incurred by a recipient and the value of the contributions made by third parties in accomplishing the objectives of the award during the project period.

(z) *Project period* means the period established in the award document during which Federal sponsorship begins and ends.

(aa) *Property* means, unless otherwise stated, real property, equipment, intangible property and debt instruments.

(bb) *Real property* means land, including land improvements, structures and appurtenances thereto, but excludes movable machinery and equipment.

(cc) *Recipient* means an organization receiving financial assistance directly from Federal awarding agencies to carry out a project or program. The term includes public and private institutions of higher education, public and private hospitals, and other quasi-public and private non-profit organizations such as, but not limited to, community action agencies, research institutes,

educational associations, and health centers. The term may include commercial organizations, foreign or international organizations (such as agencies of the United Nations) which are recipients, subrecipients, or contractors or subcontractors of recipients or subrecipients at the discretion of the Federal awarding agency. The term does not include government-owned contractor-operated facilities or research centers providing continued support for mission-oriented, large-scale programs that are government-owned or controlled, or are designated as federally-funded research and development centers.

(dd) *Research and development* means all research activities, both basic and applied, and all development activities that are supported at universities, colleges, and other non-profit institutions. "Research" is defined as a systematic study directed toward fuller scientific knowledge or understanding of the subject studied. "Development" is the systematic use of knowledge and understanding gained from research directed toward the production of useful materials, devices, systems, or methods, including design and development of prototypes and processes. The term research also includes activities involving the training of individuals in research techniques where such activities utilize the same facilities as other research and development activities and where such activities are not included in the instruction function.

(ee) *Small awards* means a grant or cooperative agreement not exceeding the small purchase threshold fixed at 41 U.S.C. 403(11) (currently $25,000).

(ff) *Subaward* means an award of financial assistance in the form of money, or property in lieu of money, made under an award by a recipient to an eligible subrecipient or by a subrecipient to a lower tier subrecipient. The term includes financial assistance when provided by any legal agreement, even if the agreement is called a contract, but does not include procurement of goods and services nor does it include any form of assistance which is excluded from the definition of "award" in paragraph (e) of this section.

(gg) *Subrecipient* means the legal entity to which a subaward is made and which is accountable to the recipient for the use of the funds provided. The term may include foreign or international organizations (such as agencies of the United Nations) at the discretion of the Federal awarding agency.

(hh) *Supplies* means all personal property excluding equipment, intangible property, and debt instruments as defined in this section, and inventions of a contractor conceived or first actually reduced to practice in the performance of work under a funding agreement ("subject inventions"), as defined in 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts, and Cooperative Agreements."

(ii) *Suspension* means an action by a Federal awarding agency that temporarily withdraws Federal sponsorship under an award, pending corrective action by the recipient or pending a decision to terminate the award by the Federal awarding agency. Suspension of an award is a separate action from suspension under Federal agency regulations implementing E.O.s 12549 and 12689, "Debarment and Suspension."

(jj) *Termination* means the cancellation of Federal sponsorship, in whole or in part, under an agreement at any time prior to the date of completion.

(kk) *Third party in-kind contributions* means the value of non-cash contributions provided by non-Federal third parties. Third party in-kind contributions may be in the form of real property, equipment, supplies and other expendable property, and the value of goods and services directly benefiting and specifically identifiable to the project or program.

(ll) *Unliquidated obligations*, for financial reports prepared on a cash basis, means the amount of obligations incurred by the recipient that have not been paid. For reports prepared on an accrued expenditure basis, they represent the amount of obligations incurred by the recipient for which an outlay has not been recorded.

(mm) *Unobligated balance* means the portion of the funds authorized by the Federal awarding agency that has not

been obligated by the recipient and is determined by deducting the cumulative obligations from the cumulative funds authorized.

(nn) *Unrecovered indirect cost* means the difference between the amount awarded and the amount which could have been awarded under the recipient's approved negotiated indirect cost rate.

(oo) *Working capital advance* means a procedure whereby funds are advanced to the recipient to cover its estimated disbursement needs for a given initial period.

§ 19.3 Effect on other issuances.

For awards subject to this part, all administrative requirements of codified program regulations, program manuals, handbooks and other non-regulatory materials which are inconsistent with the requirements of this part are superseded, except to the extent they are required by statute, or authorized in accordance with the deviations provision in § 19.4.

§ 19.4 Deviations.

The Office of Management and Budget (OMB) may grant exceptions for classes of grants or recipients subject to the requirements of this part when exceptions are not prohibited by statute. However, in the interest of maximum uniformity, exceptions from the requirements of this part shall be permitted only in unusual circumstances. Federal awarding agencies may apply more restrictive requirements to a class of recipients when approved by OMB. All requests for class deviations shall be processed through the Assistant Secretary for Administration. Federal awarding agencies may apply less restrictive requirements when awarding small awards, except for those requirements which are statutory, subject to the concurrence of the Assistant Secretary for Administration. Exceptions on a case-by-case basis may also be made by Federal awarding agencies, with the concurrence of the Assistant Secretary for Administration to ensure conformance with Department of Transportation grant administration policies.

§ 19.5 Subawards.

Unless sections of this part specifically exclude subrecipients from coverage, the provisions of this part shall be applied to subrecipients performing work under awards if such subrecipients are institutions of higher education, hospitals or other non-profit organizations. State and local government subrecipients are subject to the provisions of 49 CFR part 18, "Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments."

§ 19.6 Availability of material referenced in this part.

(a) Copies of Federal Transit Administration (FTA) documents identified in this part may be obtained by calling the FTA Administrative Services Division at (202) 366-4865.

(b) Copies of Federal Aviation Administration (FAA) documents identified in this part may be obtained by calling the FAA Program Guidance Branch at (202) 267-3831.

Subpart B—Pre-Award Requirements

§ 19.10 Purpose.

Sections 19.11 through 19.17 prescribes forms and instructions and other pre-award matters to be used in applying for Federal awards.

§ 19.11 Pre-award policies.

(a) *Use of grants and cooperative agreements, and contracts.* In each instance, the Federal awarding agency shall decide on the appropriate award instrument (i.e., grant, cooperative agreement, or contract). The Federal Grant and Cooperative Agreement Act (31 U.S.C. 6301-08) governs the use of grants, cooperative agreements and contracts. A grant or cooperative agreement shall be used only when the principal purpose of a transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute. The statutory criterion for choosing between grants and cooperative agreements is that for the latter, "substantial involvement is expected between the executive agency and the

State, local government, or other recipient when carrying out the activity contemplated in the agreement." Contracts shall be used when the principal purpose is acquisition of property or services for the direct benefit or use of the Federal Government.

(b) *Public notice and priority setting.* Federal awarding agencies shall notify the public of its intended funding priorities for discretionary grant programs, unless funding priorities are established by Federal statute.

§ 19.12 Forms for applying for Federal assistance.

(a) Federal awarding agencies shall comply with the applicable report clearance requirements of 5 CFR part 1320, "Controlling Paperwork Burdens on the Public," with regard to all forms used by the Federal awarding agency in place of or as a supplement to the Standard Form 424 (SF–424) series.

(b) Applicants shall use the SF–424 series or those forms and instructions prescribed by the Federal awarding agency.

(c) For Federal programs covered by E.O. 12372, "Intergovernmental Review of Federal Programs," as implemented at 49 CFR part 17, Intergovernmental review of Department of Transportation programs and activities, the applicant shall complete the appropriate sections of the SF–424 (Application for Federal Assistance) indicating whether the application was subject to review by the State Single Point of Contact (SPOC). The name and address of the SPOC for a particular State can be obtained from the Federal awarding agency or the Catalog of Federal Domestic Assistance. The SPOC shall advise the applicant whether the program for which application is made has been selected by that State for review.

(d) Federal awarding agencies that do not use the SF–424 form should indicate whether the application is subject to review by the State under E.O. 12372.

§ 19.13 Debarment and suspension.

Federal awarding agencies and recipients shall comply with the nonprocurement debarment and suspension rule, 49 CFR part 29, "Governmentwide Debarment and Suspension (Nonprocurement) and Governmentwide Requirements for Drug-Free Workplace (Grants)," implementing E.O.s 12549 and 12689, "Debarment and Suspension." This rule restricts subawards and contracts with certain parties that are debarred, suspended or otherwise excluded from or ineligible for participation in Federal assistance programs or activities.

§ 19.14 Special award conditions.

(a) Federal awarding agencies may impose additional requirements as needed, if an applicant or recipient:

(1) Has a history of poor performance,

(2) Is not financially stable,

(3) Has a management system that does not meet the standards prescribed in this part,

(4) Has not conformed to the terms and conditions of a previous award, or

(5) Is not otherwise responsible.

(b) Additional requirements may only be imposed provided that such applicant or recipient is notified in writing as to:

(1) The nature of the additional requirements,

(2) The reason why the additional requirements are being imposed,

(3) The nature of the corrective action needed,

(4) The time allowed for completing the corrective actions, and

(5) The method for requesting reconsideration of the additional requirements imposed.

(c) A copy of such notices shall be sent to the Assistant Secretary for Administration. Any special conditions shall be promptly removed once the conditions that prompted them have been corrected.

§ 19.15 Metric system of measurement.

The Metric Conversion Act, as amended by the Omnibus Trade and Competitiveness Act (15 U.S.C. 205), declares that the metric system is the preferred measurement system for U.S. trade and commerce. The Act requires each Federal agency to establish a date or dates in consultation with the Secretary of Commerce, when the metric system of measurement will be used in the agency's procurements, grants, and other business-related activities. Metric implementation may take longer

where the use of the system is initially impractical or likely to cause significant inefficiencies in the accomplishment of federally-funded activities. Federal awarding agencies shall follow the provisions of E.O. 12770, "Metric Usage in Federal Government Programs."

§ 19.16 Resource Conservation and Recovery Act.

Under the Act, any State agency or agency of a political subdivision of a State which is using appropriated Federal funds must comply with section 6002. Section 6002 requires that preference be given in procurement programs to the purchase of specific products containing recycled materials identified in guidelines developed by the Environmental Protection Agency (EPA) (40 CFR parts 247–254). Accordingly, State and local institutions of higher education, hospitals, and nonprofit organizations that receive direct Federal awards or other Federal funds shall give preference in their procurement programs funded with Federal funds to the purchase of recycled products pursuant to the EPA guidelines.

§ 19.17 Certifications and representations.

Unless prohibited by statute or codified regulation, each Federal awarding agency is authorized and encouraged to allow recipients to submit certifications and representations required by statute, executive order, or regulation on an annual basis, if the recipients have ongoing and continuing relationships with the agency. Annual certifications and representations shall be signed by responsible officials with the authority to ensure recipients' compliance with the pertinent requirements.

Subpart C—Post-Award Requirements

FINANCIAL AND PROGRAM MANAGEMENT

§ 19.20 Purpose of financial and program management.

Sections 19.21 through 19.28 prescribe standards for financial management systems, methods for making payments and rules for: satisfying cost sharing and matching requirements, accounting for program income, budget revision approvals, making audits, determining allowability of cost, and establishing fund availability.

§ 19.21 Standards for financial management systems.

(a) Federal awarding agencies shall require recipients to relate financial data to performance data and develop unit cost information whenever practical.

(b) Recipients' financial management systems shall provide for the following.

(1) Accurate, current and complete disclosure of the financial results of each federally-sponsored project or program in accordance with the reporting requirements set forth in § 19.52. If a Federal awarding agency requires reporting on an accrual basis from a recipient that maintains its records on other than an accrual basis, the recipient shall not be required to establish an accrual accounting system. These recipients may develop such accrual data for its reports on the basis of an analysis of the documentation on hand.

(2) Records that identify adequately the source and application of funds for federally-sponsored activities. These records shall contain information pertaining to Federal awards, authorizations, obligations, unobligated balances, assets, outlays, income and interest.

(3) Effective control over and accountability for all funds, property and other assets. Recipients shall adequately safeguard all such assets and assure they are used solely for authorized purposes.

(4) Comparison of outlays with budget amounts for each award. Whenever appropriate, financial information should be related to performance and unit cost data.

(5) Written procedures to minimize the time elapsing between the transfer of funds to the recipient from the U.S. Treasury and the issuance or redemption of checks, warrants or payments by other means for program purposes by the recipient. To the extent that the provisions of the Cash Management Improvement Act (CMIA) (Pub. L. 101–453) govern, payment methods of State agencies, instrumentalities, and fiscal agents shall be consistent with CMIA

Treasury-State Agreements or the CMIA default procedures codified at 31 CFR part 205, "Withdrawal of Cash from the Treasury for Advances under Federal Grant and Other Programs."

(6) Written procedures for determining the reasonableness, allocability and allowability of costs in accordance with the provisions of the applicable Federal cost principles and the terms and conditions of the award.

(7) Accounting records including cost accounting records that are supported by source documentation.

(c) Where the Federal Government guarantees or insures the repayment of money borrowed by the recipient, the Federal awarding agency, at its discretion, may require adequate bonding and insurance if the bonding and insurance requirements of the recipient are not deemed adequate to protect the interest of the Federal Government.

(d) The Federal awarding agency may require adequate fidelity bond coverage where the recipient lacks sufficient coverage to protect the Federal Government's interest.

(e) Where bonds are required in the situations described above, the bonds shall be obtained from companies holding certificates of authority as acceptable sureties, as prescribed in 31 CFR part 223, "Surety Companies Doing Business with the United States."

§ 19.22 Payment.

(a) Payment methods shall minimize the time elapsing between the transfer of funds from the United States Treasury and the issuance or redemption of checks, warrants, or payment by other means by the recipients. Payment methods of State agencies or instrumentalities shall be consistent with Treasury-State CMIA agreements or default procedures codified at 31 CFR part 205.

(b)(1) Recipients are to be paid in advance, provided they maintain or demonstrate the willingness to maintain:

(i) Written procedures that minimize the time elapsing between the transfer of funds and disbursement by the recipient, and

(ii) Financial management systems that meet the standards for fund control and accountability as established in section § 19.21.

(2) Cash advances to a recipient organization shall be limited to the minimum amounts needed and be timed to be in accordance with the actual, immediate cash requirements of the recipient organization in carrying out the purpose of the approved program or project. The timing and amount of cash advances shall be as close as is administratively feasible to the actual disbursements by the recipient organization for direct program or project costs and the proportionate share of any allowable indirect costs.

(c) Whenever possible, advances shall be consolidated to cover anticipated cash needs for all awards made by the Federal awarding agency to the recipient.

(1) Advance payment mechanisms include, but are not limited to, Treasury check and electronic funds transfer.

(2) Advance payment mechanisms are subject to 31 CFR part 205.

(3) Recipients shall be authorized to submit requests for advances and reimbursements at least monthly when electronic fund transfers are not used.

(d) Requests for Treasury check advance payment shall be submitted on SF-270, "Request for Advance or Reimbursement," or other forms as may be authorized by OMB. This form is not to be used when Treasury check advance payments are made to the recipient automatically through the use of a predetermined payment schedule or if precluded by special Federal awarding agency instructions for electronic funds transfer.

(e) Reimbursement is the preferred method when the requirements in paragraph (b) cannot be met. Federal awarding agencies may also use this method on any construction agreement, or if the major portion of the construction project is accomplished through private market financing or Federal loans, and the Federal assistance constitutes a minor portion of the project.

(1) When the reimbursement method is used, the Federal awarding agency shall make payment within 30 days after receipt of the billing, unless the billing is improper.

(2) Recipients shall be authorized to submit request for reimbursement at

least monthly when electronic funds transfers are not used.

(f) If a recipient cannot meet the criteria for advance payments and the Federal awarding agency has determined that reimbursement is not feasible because the recipient lacks sufficient working capital, the Federal awarding agency may provide cash on a working capital advance basis. Under this procedure, the Federal awarding agency shall advance cash to the recipient to cover its estimated disbursement needs for an initial period generally geared to the awardee's disbursing cycle. Thereafter, the Federal awarding agency shall reimburse the recipient for its actual cash disbursements. The working capital advance method of payment shall not be used for recipients unwilling or unable to provide timely advances to their subrecipient to meet the subrecipient's actual cash disbursements.

(g) To the extent available, recipients shall disburse funds available from repayments to and interest earned on a revolving fund, program income, rebates, refunds, contract settlements, audit recoveries and interest earned on such funds before requesting additional cash payments.

(h) Unless otherwise required by statute, Federal awarding agencies shall not withhold payments for proper charges made by recipients at any time during the project period unless the conditions in paragraphs (h)(1) or (2) of this section apply.

(1) A recipient has failed to comply with the project objectives, the terms and conditions of the award, or Federal reporting requirements.

(2) The recipient or subrecipient is delinquent in a debt to the United States as defined in OMB Circular A-129, "Managing Federal Credit Programs." Under such conditions, the Federal awarding agency may, upon reasonable notice, inform the recipient that payments shall not be made for obligations incurred after a specified date until the conditions are corrected or the indebtedness to the Federal Government is liquidated.

(i) Standards governing the use of banks and other institutions as depositories of funds advanced under awards are as follows.

(1) Except for situations described in paragraph (i)(2) of this section, Federal awarding agencies shall not require separate depository accounts for funds provided to a recipient or establish any eligibility requirements for depositories for funds provided to a recipient. However, recipients must be able to account for the receipt, obligation and expenditure of funds.

(2) Advances of Federal funds shall be deposited and maintained in insured accounts whenever possible.

(j) Consistent with the national goal of expanding the opportunities for women-owned and minority-owned business enterprises, recipients shall be encouraged to use women-owned and minority-owned banks (a bank which is owned at least 50 percent by women or minority group members).

(k) Recipients shall maintain advances of Federal funds in interest bearing accounts, unless the conditions in paragraphs (k)(1), (2) or (3) of this section apply.

(1) The recipient receives less than $120,000 in Federal awards per year.

(2) The best reasonably available interest bearing account would not be expected to earn interest in excess of $250 per year on Federal cash balances.

(3) The depository would require an average or minimum balance so high that it would not be feasible within the expected Federal and non-Federal cash resources.

(l) For those entities where CMIA and its implementing regulations do not apply, interest earned on Federal advances deposited in interest bearing accounts shall be remitted annually to Department of Health and Human Services, Payment Management System, P.O. Box 6021, Rockville, MD 20852. Interest amounts up to $250 per year may be retained by the recipient for administrative expense. In keeping with Electric Funds Transfer rules, (31 CFR part 206), interest should be remitted to the HHS Payment Management System through an electric medium such as the FEDWIRE Deposit system. Recipients which do not have this capability should use a check. State universities and hospitals shall comply with CMIA, as it pertains to interest. If an entity subject to CMIA uses its own

funds to pay pre-award costs for discretionary awards without prior written approval from the Federal awarding agency, it waives its right to recover the interest under CMIA.

(m) Except as noted elsewhere in this part, only the following forms shall be authorized for the recipients in requesting advances and reimbursements. Federal agencies shall not require more than an original and two copies of these forms.

(1) SF–270, Request for Advance or Reimbursement. Each Federal awarding agency shall adopt the SF–270 as a standard form for all nonconstruction programs when electronic funds transfer or predetermined advance methods are not used. Federal awarding agencies, however, have the option of using this form for construction programs in lieu of the SF–271, "Outlay Report and Request for Reimbursement for Construction Programs."

(2) SF–271, Outlay Report and Request for Reimbursement for Construction Programs. Each Federal awarding agency shall adopt the SF–271 as the standard form to be used for requesting reimbursement for construction programs. However, a Federal awarding agency may substitute the SF–270 when the Federal awarding agency determines that it provides adequate information to meet Federal needs.

§ 19.23 Cost sharing or matching.

(a) All contributions, including cash and third party in-kind, shall be accepted as part of the recipient's cost sharing or matching when such contributions meet all of the following criteria.

(1) Are verifiable from the recipient's records.

(2) Are not included as contributions for any other federally-assisted project or program.

(3) Are necessary and reasonable for proper and efficient accomplishment of project or program objectives.

(4) Are allowable under the applicable cost principles.

(5) Are not paid by the Federal Government under another award, except where authorized by Federal statute to be used for cost sharing or matching.

(6) Are provided for in the approved budget when required by the Federal awarding agency.

(7) Conform to other provisions of this part, as applicable.

(b) Unrecovered indirect costs may be included as part of cost sharing or matching only with the prior approval of the Federal awarding agency.

(c) Values for recipient contributions of services and property shall be established in accordance with the applicable cost principles. If a Federal awarding agency authorizes recipients to donate buildings or land for construction/facilities acquisition projects or long-term use, the value of the donated property for cost sharing or matching shall be the lesser of (1) or (2).

(1) The certified value of the remaining life of the property recorded in the recipient's accounting records at the time of donation.

(2) The current fair market value. However, when there is sufficient justification, the Federal awarding agency may approve the use of the current fair market value of the donated property, even if it exceeds the certified value at the time of donation to the project.

(d) Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as cost sharing or matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services shall be consistent with those paid for similar work in the recipient's organization. In those instances in which the required skills are not found in the recipient organization, rates shall be consistent with those paid for similar work in the labor market in which the recipient competes for the kind of services involved. In either case, paid fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.

(e) When an employer other than the recipient furnishes the services of an employee, these services shall be valued at the employee's regular rate of pay (plus an amount of fringe benefits that are reasonable, allowable, and allocable, but exclusive of overhead costs), provided these services are in

the same skill for which the employee is normally paid.

(f) Donated supplies may include such items as expendable equipment, office supplies, laboratory supplies or workshop and classroom supplies. Value assessed to donated supplies included in the cost sharing or matching share shall be reasonable and shall not exceed the fair market value of the property at the time of the donation.

(g) The method used for determining cost sharing or matching for donated equipment, buildings and land for which title passes to the recipient may differ according to the purpose of the award, if the conditions in paragraph (g)(1) or (2) of this section apply.

(1) If the purpose of the award is to assist the recipient in the acquisition of equipment, buildings or land, the total value of the donated property may be claimed as cost sharing or matching.

(2) If the purpose of the award is to support activities that require the use of equipment, buildings or land, normally only depreciation or use charges for equipment and buildings may be made. However, the full value of equipment or other capital assets and fair rental charges for land may be allowed, provided that the Federal awarding agency has approved the charges.

(h) The value of donated property shall be determined in accordance with the usual accounting policies of the recipient, with the following qualifications.

(1) The value of donated land and buildings shall not exceed its fair market value at the time of donation to the recipient as established by an independent appraiser (e.g., certified real property appraiser or General Services Administration representative) and certified by a responsible official of the recipient.

(2) The value of donated equipment shall not exceed the fair market value of equipment of the same age and condition at the time of donation.

(3) The value of donated space shall not exceed the fair rental value of comparable space as established by an independent appraisal of comparable space and facilities in a privately-owned building in the same locality.

(4) The value of loaned equipment shall not exceed its fair rental value.

(5) The following requirements pertain to the recipient's supporting records for in-kind contributions from third parties.

(i) Volunteer services shall be documented and, to the extent feasible, supported by the same methods used by the recipient for its own employees.

(ii) The basis for determining the valuation for personal service, material, equipment, buildings and land shall be documented.

(iii) Section 18(e) of the Federal Transit Act, as amended, (49 U.S.C. app. 1614(e)) provides that the Federal share for operating assistance shall not exceed 50 percent of the net cost. At least 50 percent of the remainder (the local share) must be derived from sources other than Federal funds or revenues of the system; and up to half of the local share may be derived from other Federal funds. For purposes of determining local share for section 18 operating assistance, the term "Federal funds or revenues" does not include funds received pursuant to a service agreement with a State or local service agency or a private social service organization. Nonregulatory guidance is contained in FTA Circular 9040.1B, section 18 Program Guidance and Grant Application Instructions, Chapter III, section 7.

§ 19.24 Program income.

(a) Federal awarding agencies shall apply the standards set forth in this section in requiring recipient organizations to account for program income related to projects financed in whole or in part with Federal funds.

(b) Except as provided in paragraph (h) of this section, program income earned during the project period shall be retained by the recipient and, in accordance with Federal awarding agency regulations or the terms and conditions of the award, shall be used in one or more of the ways listed in the following.

(1) Added to funds committed to the project by the Federal awarding agency and recipient and used to further eligible project or program objectives.

(2) Used to finance the non-Federal share of the project or program.

(3) Deducted from the total project or program allowable cost in determining the net allowable costs on which the Federal share of costs is based.

(c) When an agency authorizes the disposition of program income as described in paragraph (b)(1) or (b)(2) of this section, program income in excess of any limits stipulated shall be used in accordance with paragraph (b)(3) of this section.

(d) In the event that the Federal awarding agency does not specify in its regulations or the terms and conditions of the award how program income is to be used, paragraph (b)(3) of this section shall apply automatically to all projects or programs except research. For awards that support research, paragraph (b)(1) of this section shall apply automatically unless the awarding agency indicates in the terms and conditions another alternative on the award or the recipient is subject to special award conditions, as indicated in § 19.14.

(e) Unless Federal awarding agency regulations or the terms and conditions of the award provide otherwise, recipients shall have no obligation to the Federal Government regarding program income earned after the end of the project period.

(f) If authorized by Federal awarding agency regulations or the terms and conditions of the award, costs incident to the generation of program income may be deducted from gross income to determine program income, provided these costs have not been charged to the award.

(g) Proceeds from the sale of property shall be handled in accordance with the requirements of the Property Standards (See §§ 19.30 through 19.37).

(h) Unless Federal awarding agency regulations or the terms and condition of the award provide otherwise, recipients shall have no obligation to the Federal Government with respect to program income earned from license fees and royalties for copyrighted material, patents, patent applications, trademarks, and inventions produced under an award. However, Patent and Trademark Amendments (35 U.S.C. 18) apply to inventions made under an experimental, developmental, or research award.

(i) Section 4(a) of the Federal Transit Act, as amended, (49 U.S.C. app. 1603(a)) allows FTA recipients to retain program income for allowable capital or operating expenses, but program income may not be used to refund or reduce the local share of a grant. The section 16 and 18 programs, however, operate differently. Under the special authority to set appropriate terms and conditions for the section 16(b)(2) program, program income in the form of contract service revenue may be used as local share without a proportionate reduction in the Federal share. Similarly, section 18 allows the use of program income in the form of contract service revenue as local share without requiring a proportionate reduction in the Federal share. Grantees must account for program income in their accounting systems, which are subject to audit. The accounting system must be capable of identifying program income and the purpose for which it was used. Nonregulatory guidance is contained in FTA notice N 5.5005.1, Guidance on Program Income and Sales Proceeds.

§ 19.25 Revision of budget and program plans.

(a) The budget plan is the financial expression of the project or program as approved during the award process. It may include either the Federal and non-Federal share, or only the Federal share, depending upon Federal awarding agency requirements. It shall be related to performance for program evaluation purposes whenever appropriate.

(b) Recipients are required to report deviations from budget and program plans, and request prior approvals for budget and program plan revisions, in accordance with this section.

(c) For nonconstruction awards, recipients shall request prior approvals from Federal awarding agencies for one or more of the following program or budget related reasons.

(1) Change in the scope or the objective of the project or program (even if there is no associated budget revision requiring prior written approval).

(2) Change in a key person specified in the application or award document.

(3) The absence for more than three months, or a 25 percent reduction in

time devoted to the project, by the approved project director or principal investigator.

(4) The need for additional Federal funding.

(5) The transfer of amounts budgeted for indirect costs to absorb increases in direct costs, or vice versa, if approval is required by the Federal awarding agency.

(6) The inclusion, unless waived by the Federal awarding agency, of costs that require prior approval in accordance with OMB Circular A–21, "Cost Principles for Institutions of Higher Education," OMB Circular A–122, "Cost Principles for Non-Profit Organizations," or 45 CFR part 74 Appendix E, "Principles for Determining Costs Applicable to Research and Development under Grants and Contracts with Hospitals," or 48 CFR part 31, "Contract Cost Principles and Procedures," as applicable.

(7) The transfer of funds allotted for training allowances (direct payment to trainees) to other categories of expense.

(8) Unless described in the application and funded in the approved awards, the subaward, transfer or contracting out of any work under an award. This provision does not apply to the purchase of supplies, material, equipment or general support services.

(d) No other prior approval requirements for specific items may be imposed unless a deviation has been approved by OMB.

(e) Except for requirements listed in paragraphs (c)(1) and (c)(4) of this section, Federal awarding agencies are authorized, at their option, to waive cost-related and administrative prior written approvals required by this part and OMB Circulars A–21 and A–122. Such waivers may include authorizing recipients to do any one or more of the following:

(1) Incur pre-award costs 90 calendar days prior to award or more than 90 calendar days with the prior approval of the Federal awarding agency. All pre-award costs are incurred at the recipient's risk (i.e., the Federal awarding agency is under no obligation to reimburse such costs if for any reason the recipient does not receive an award or if the award is less than anticipated and inadequate to cover such costs).

(2) Initiate a one-time extension of the expiration date of the award of up to 12 months unless one or more of the following conditions apply. For one-time extensions, the recipient must notify the Federal awarding agency in writing with the supporting reasons and revised expiration date at least 10 days before the expiration date specified in the award. This one-time extension may not be exercised merely for the purpose of using unobligated balances.

(i) The terms and conditions of award prohibit the extension.

(ii) The extension requires additional Federal funds.

(iii) The extension involves any change in the approved objectives or scope of the project.

(3) Carry forward unobligated balances to subsequent funding periods.

(4) For awards that support research, unless the Federal awarding agency provides otherwise in the award or in the agency's regulations, the prior approval requirements described in paragraph (e) of this section are automatically waived (i.e., recipients need not obtain such prior approvals) unless one of the conditions included in paragraph (e)(2) of this section applies.

(f) The Federal awarding agency may, at its option, restrict the transfer of funds among direct cost categories or programs, functions and activities for awards in which the Federal share of the project exceeds $100,000 and the cumulative amount of such transfers exceeds or is expected to exceed 10 percent of the total budget as last approved by the Federal awarding agency. No Federal awarding agency shall permit a transfer that would cause any Federal appropriation or part thereof to be used for purposes other than those consistent with the original intent of the appropriation.

(g) All other changes to nonconstruction budgets, except for the changes described in paragraph (j) of this section, do not require prior approval.

(h) For construction awards, recipients shall request prior written approval promptly from Federal awarding agencies for budget revisions whenever

the conditions in paragraphs (h) (1), (2) or (3) of this section apply.

(1) The revision results from changes in the scope or the objective of the project or program.

(2) The need arises for additional Federal funds to complete the project.

(3) A revision is desired which involves specific costs for which prior written approval requirements may be imposed consistent with applicable OMB cost principles listed in §19.27.

(i) No other prior approval requirements for specific items may be imposed unless a deviation has been approved by OMB.

(j) When a Federal awarding agency makes an award that provides support for both construction and nonconstruction work, the Federal awarding agency may require the recipient to request prior approval from the Federal awarding agency before making any fund or budget transfers between the two types of work supported.

(k) For both construction and nonconstruction awards, Federal awarding agencies shall require recipients to notify the Federal awarding agency in writing promptly whenever the amount of Federal authorized funds is expected to exceed the needs of the recipient for the project period by more than $5,000 or five percent of the Federal award, whichever is greater. This notification shall not be required if an application for additional funding is submitted for a continuation award.

(l) When requesting approval for budget revisions, recipients shall use the budget forms that were used in the application unless the Federal awarding agency indicates a letter of request suffices.

(m) Within 30 calendar days from the date of receipt of the request for budget revisions, Federal awarding agencies shall review the request and notify the recipient whether the budget revisions have been approved. If the revision is still under consideration at the end of 30 calendar days, the Federal awarding agency shall inform the recipient in writing of the date when the recipient may expect the decision.

§ 19.26 Non-Federal audits.

(a) Recipients and subrecipients that are institutions of higher education or other non-profit organizations (including hospitals) shall be subject to the audit requirements contained in the Single Audit Act Amendments of 1996 (31 U.S.C. 7501–7507) and revised OMB Circular A–133, "Audits of States, Local Governments, and Non-Profit Organizations."

(b) State and local governments shall be subject to the audit requirements contained in the Single Audit Act Amendments of 1996 (31 U.S.C. 7501–7507) and revised OMB Circular A–133, "Audits of States, Local Governments, and Non-Profit Organizations."

(c) For-profit hospitals not covered by the audit provisions of revised OMB Circular A–133 shall be subject to the audit requirements of the Federal awarding agencies.

(d) Commercial organizations shall be subject to the audit requirements of the Federal awarding agency or the prime recipient as incorporated into the award document.

[59 FR 15639, Apr. 4, 1994, as amended at 62 FR 45939, 45947, Aug. 29, 1997]

§ 19.27 Allowable costs.

For each kind of recipient, there is a set of Federal principles for determining allowable costs. Allowability of costs shall be determined in accordance with the cost principles applicable to the entity incurring the costs. Thus, allowability of costs incurred by State, local or federally-recognized Indian tribal governments is determined in accordance with the provisions of OMB Circular A–87, "Cost Principles for State and Local Governments." The allowability of costs incurred by non-profit organizations is determined in accordance with the provisions of OMB Circular A–122, "Cost Principles for Non-Profit Organizations." The allowability of costs incurred by institutions of higher education is determined in accordance with the provisions of OMB Circular A–21, "Cost Principles for Educational Institutions." The allowability of costs incurred by hospitals is determined in accordance with the provisions of Appendix E of 45 CFR part 74, "Principles for Determining Costs Applicable to Research and Development Under Grants and Contracts with Hospitals." The allowability of costs incurred by commercial organizations

and those non-profit organizations listed in Attachment C to Circular A–122 is determined in accordance with the provisions of the Federal Acquisition Regulation (FAR) at 48 CFR part 31.

§ 19.28 Period of availability of funds.

Where a funding period is specified, a recipient may charge to the grant only allowable costs resulting from obligations incurred during the funding period and any pre-award costs authorized by the Federal awarding agency.

PROPERTY STANDARDS

§ 19.30 Purpose of property standards.

(a) Sections 19.31 through 19.37 set forth uniform standards governing management and disposition of property furnished by the Federal Government whose cost was charged to a project supported by a Federal award. Federal awarding agencies shall require recipients to observe these standards under awards and shall not impose additional requirements, unless specifically required by Federal statute. The recipient may use its own property management standards and procedures provided it observes the provisions of §§ 19.31 through 19.37.

(b) Transfer of capital assets. Section 12(k) of the Federal Transit Act, as amended, (49 U.S.C. app. 1608(k)) allows the transfer without compensation of real property (including land) and equipment acquired under the Act for another public purpose under certain conditions. Procedures to allow these transfers have not been issued.

§ 19.31 Insurance coverage.

Recipients shall, at a minimum, provide the equivalent insurance coverage for real property and equipment acquired with Federal funds as provided to property owned by the recipient. Federally-owned property need not be insured unless required by the terms and conditions of the award.

§ 19.32 Real property.

Each Federal awarding agency shall prescribe requirements for recipients concerning the use and disposition of real property acquired in whole or in part under awards. Unless otherwise provided by statute, such requirements, at a minimum, shall contain the following.

(a) Title to real property shall vest in the recipient subject to the condition that the recipient shall use the real property for the authorized purpose of the project as long as it is needed and shall not encumber the property without approval of the Federal awarding agency.

(b) The recipient shall obtain written approval by the Federal awarding agency for the use of real property in other federally-sponsored projects when the recipient determines that the property is no longer needed for the purpose of the original project. Use in other projects shall be limited to those under federally-sponsored projects (i.e., awards) or programs that have purposes consistent with those authorized for support by the Department of Transportation.

(c) When the real property is no longer needed as provided in paragraphs (a) and (b) of this section, the recipient shall request disposition instructions from the Federal awarding agency or its successor Federal awarding agency. The Federal awarding agency shall observe one or more of the following disposition instructions.

(1) The recipient may be permitted to retain title without further obligation to the Federal Government after it compensates the Federal Government for that percentage of the current fair market value of the property attributable to the Federal participation in the project.

(2) The recipient may be directed to sell the property under guidelines provided by the Federal awarding agency and pay the Federal Government for that percentage of the current fair market value of the property attributable to the Federal participation in the project (after deducting actual and reasonable selling and fix-up expenses, if any, from the sales proceeds). When the recipient is authorized or required to sell the property, proper sales procedures shall be established that provide for competition to the extent practicable and result in the highest possible return.

(3) The recipient may be directed to transfer title to the property to the Federal Government or to an eligible

third party provided that, in such cases, the recipient shall be entitled to compensation for its attributable percentage of the current fair market value of the property.

§ 19.33 Federally-owned and exempt property.

(a) *Federally-owned property.* (1) Title to federally-owned property remains vested in the Federal Government. Recipients shall submit annually an inventory listing of federally-owned property in their custody to the Federal awarding agency. Upon completion of the award or when the property is no longer needed, the recipient shall report the property to the Federal awarding agency for further Federal agency utilization.

(2) If the Federal awarding agency has no further need for the property, it shall be declared excess and reported to the General Services Administration, unless the Federal awarding agency has statutory authority to dispose of the property by alternative methods (e.g., the authority provided by the Federal Technology Transfer Act (15 U.S.C. 3710(I)) to donate research equipment to educational and non-profit organizations in accordance with E.O. 12821, "Improving Mathematics and Science Education in Support of the National Education Goals.") Appropriate instructions shall be issued to the recipient by the Federal awarding agency.

(b) *Exempt property.* When statutory authority exists, the Federal awarding agency has the option to vest title to property acquired with Federal funds in the recipient without further obligation to the Federal Government and under conditions the Federal awarding agency considers appropriate. Such property is "exempt property." Should a Federal awarding agency not establish conditions, title to exempt property upon acquisition shall vest in the recipient without further obligation to the Federal Government.

§ 19.34 Equipment.

(a) Title to equipment acquired by a recipient with Federal funds shall vest in the recipient, subject to conditions of this section.

(b) The recipient shall not use equipment acquired with Federal funds to provide services to non-Federal outside organizations for a fee that is less than private companies charge for equivalent services, unless specifically authorized by Federal statute, for as long as the Federal Government retains an interest in the equipment.

(c) The recipient shall use the equipment in the project or program for which it was acquired as long as needed, whether or not the project or program continues to be supported by Federal funds and shall not encumber the property without approval of the Federal awarding agency. When no longer needed for the original project or program, the recipient shall use the equipment in connection with its other federally-sponsored activities, in the following order of priority:

(1) Activities sponsored by the Federal awarding agency which funded the original project, then

(2) Activities sponsored by other Federal awarding agencies.

(d) During the time that equipment is used on the project or program for which it was acquired, the recipient shall make it available for use on other projects or programs if such other use will not interfere with the work on the project or program for which the equipment was originally acquired. First preference for such other use shall be given to other projects or programs sponsored by the Federal awarding agency that financed the equipment; second preference shall be given to projects or programs sponsored by other Federal awarding agencies. If the equipment is owned by the Federal Government, use on other activities not sponsored by the Federal Government shall be permissible if authorized by the Federal awarding agency. User charges shall be treated as program income.

(e) When acquiring replacement equipment, the recipient may use the equipment to be replaced as trade-in or sell the equipment and use the proceeds to offset the costs of the replacement equipment subject to the approval of the Federal awarding agency.

(f) The recipient's property management standards for equipment acquired with Federal funds and federally-owned

equipment shall include all of the following.

(1) Equipment records shall be maintained accurately and shall include the following information.

(i) A description of the equipment.

(ii) Manufacturer's serial number, model number, Federal stock number, national stock number, or other identification number.

(iii) Source of the equipment, including the award number.

(iv) Whether title vests in the recipient or the Federal Government.

(v) Acquisition date (or date received, if the equipment was furnished by the Federal Government) and cost.

(vi) Information from which one can calculate the percentage of Federal participation in the cost of the equipment (not applicable to equipment furnished by the Federal Government).

(vii) Location and condition of the equipment and the date the information was reported.

(viii) Unit acquisition cost.

(ix) Ultimate disposition data, including date of disposal and sales price or the method used to determine current fair market value where a recipient compensates the Federal awarding agency for its share.

(2) Equipment owned by the Federal Government shall be identified to indicate Federal ownership.

(3) A physical inventory of equipment shall be taken and the results reconciled with the equipment records at least once every two years. Any differences between quantities determined by the physical inspection and those shown in the accounting records shall be investigated to determine the causes of the difference. The recipient shall, in connection with the inventory, verify the existence, current utilization, and continued need for the equipment.

(4) A control system shall be in effect to insure adequate safeguards to prevent loss, damage, or theft of the equipment. Any loss, damage, or theft of equipment shall be investigated and fully documented; if the equipment was owned by the Federal Government, the recipient shall promptly notify the Federal awarding agency.

(5) Adequate maintenance procedures shall be implemented to keep the equipment in good condition.

(6) Where the recipient is authorized or required to sell the equipment, proper sales procedures shall be established which provide for competition to the extent practicable and result in the highest possible return.

(g) When the recipient no longer needs the equipment, the equipment may be used for other activities in accordance with the following standards. For equipment with a current per unit fair market value of $5,000 or more, the recipient may retain the equipment for other uses provided that compensation is made to the original Federal awarding agency or its successor. The amount of compensation shall be computed by applying the percentage of Federal participation in the cost of the original project or program to the current fair market value of the equipment. If the recipient has no need for the equipment, the recipient shall request disposition instructions from the Federal awarding agency. The Federal awarding agency shall determine whether the equipment can be used to meet the agency's requirements. If no requirement exists within that agency, the availability of the equipment shall be reported to the General Services Administration by the Federal awarding agency to determine whether a requirement for the equipment exists in other Federal agencies. The Federal awarding agency shall issue instructions to the recipient no later than 120 calendar days after the recipient's request and the following procedures shall govern.

(1) If so instructed or if disposition instructions are not issued within 120 calendar days after the recipient's request, the recipient shall sell the equipment and reimburse the Federal awarding agency an amount computed by applying to the sales proceeds the percentage of Federal participation in the cost of the original project or program. However, the recipient shall be permitted to deduct and retain from the Federal share $500 or ten percent of the proceeds, whichever is less, for the recipient's selling and handling expenses.

(2) If the recipient is instructed to ship the equipment elsewhere, the recipient shall be reimbursed by the Federal Government by an amount which is computed by applying the percentage of the recipient's participation in the cost of the original project or program to the current fair market value of the equipment, plus any reasonable shipping or interim storage costs incurred.

(3) If the recipient is instructed to otherwise dispose of the equipment, the recipient shall be reimbursed by the Federal awarding agency for such costs incurred in its disposition.

(4) The Federal awarding agency may reserve the right to transfer the title to the Federal Government or to a third party named by the Federal Government when such third party is otherwise eligible under existing statutes. Such transfer shall be subject to the following standards.

(i) The equipment shall be appropriately identified in the award or otherwise made known to the recipient in writing.

(ii) The Federal awarding agency shall issue disposition instructions within 120 calendar days after receipt of a final inventory. The final inventory shall list all equipment acquired with grant funds and federally-owned equipment. If the Federal awarding agency fails to issue disposition instructions within the 120 calendar day period, the recipient shall apply the standards of this section, as appropriate.

(iii) When the Federal awarding agency exercises its right to take title, the equipment shall be subject to the provisions for federally-owned equipment.

§ 19.35 Supplies and other expendable property.

(a) Title to supplies and other expendable property shall vest in the recipient upon acquisition. If there is a residual inventory of unused supplies exceeding $5000 in total aggregate value upon termination or completion of the project or program and the supplies are not needed for any other federally-sponsored project or program, the recipient shall retain the supplies for use on non-Federal sponsored activities or sell them, but shall, in either case, compensate the Federal Government for its share. The amount of compensation shall be computed in the same manner as for equipment.

(b) The recipient shall not use supplies acquired with Federal funds to provide services to non-Federal outside organizations for a fee that is less than private companies charge for equivalent services, unless specifically authorized by Federal statute as long as the Federal Government retains an interest in the supplies.

§ 19.36 Intangible property.

(a) The recipient may copyright any work that is subject to copyright and was developed, or for which ownership was purchased, under an award. The Federal awarding agency(ies) reserve a royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use the work for Federal purposes, and to authorize others to do so.

(b) Recipients are subject to applicable regulations governing patents and inventions, including government-wide regulations issued by the Department of Commerce at 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements."

(c) The Federal Government has the right to:

(1) Obtain, reproduce, publish or otherwise use the data first produced under an award; and

(2) Authorize others to receive, reproduce, publish, or otherwise use such data for Federal purposes.

(d)(1) In addition, in response to a Freedom of Information Act (FOIA) request for research data relating to published research findings produced under an award that were used by the Federal Government in developing an agency action that has the force and effect of law, the Federal awarding agency shall request, and the recipient shall provide, within a reasonable time, the research data so that they can be made available to the public through the procedures established under the FOIA. If the Federal awarding agency obtains the research data solely in response to a FOIA request, the agency may charge

the requester a reasonable fee equaling the full incremental cost of obtaining the research data. This fee should reflect costs incurred by the agency, the recipient, and applicable subrecipients. This fee is in addition to any fees the agency may assess under the FOIA (5 U.S.C. 552(a)(4)(A)).

(2) The following definitions apply for purposes of this paragraph (d):

(i) *Research data* is defined as the recorded factual material commonly accepted in the scientific community as necessary to validate research findings, but not any of the following: preliminary analyses, drafts of scientific papers, plans for future research, peer reviews, or communications with colleagues. This "recorded" material excludes physical objects (e.g., laboratory samples). *Research data* also do not include:

(A) Trade secrets, commercial information, materials necessary to be held confidential by a researcher until they are published, or similar information which is protected under law; and

(B) Personnel and medical information and similar information the disclosure of which would constitute a clearly unwarranted invasion of personal privacy, such as information that could be used to identify a particular person in a research study.

(ii) *Published* is defined as either when:

(A) Research findings are published in a peer-reviewed scientific or technical journal; or

(B) A Federal agency publicly and officially cites the research findings in support of an agency action that has the force and effect of law.

(iii) *Used by the Federal Government in developing an agency action that has the force and effect of law* is defined as when an agency publicly and officially cites the research findings in support of an agency action that has the force and effect of law.

(e) Title to intangible property and debt instruments acquired under an award or subaward vests upon acquisition in the recipient. The recipient shall use that property for the originally-authorized purpose, and the recipient shall not encumber the property without approval of the Federal awarding agency. When no longer needed for the originally authorized purpose, disposition of the intangible property shall occur in accordance with the provisions of paragraph § 19.34(g).

[59 FR 15639, Apr. 4, 1994, as amended at 65 FR 14407, 14419, Mar. 16, 2000]

§ 19.37 Property trust relationship.

Real property, equipment, intangible property and debt instruments that are acquired or improved with Federal funds shall be held in trust by the recipient as trustee for the beneficiaries of the project or program under which the property was acquired or improved. Agencies may require recipients to record liens or other appropriate notices of record to indicate that personal or real property has been acquired or improved with Federal funds and that use and disposition conditions apply to the property.

PROCUREMENT STANDARDS

§ 19.40 Purpose of procurement standards.

Sections 19.41 through 19.48 set forth standards for use by recipients in establishing procedures for the procurement of supplies and other expendable property, equipment, real property and other services with Federal funds. These standards are furnished to ensure that such materials and services are obtained in an effective manner and in compliance with the provisions of applicable Federal statutes and executive orders. No additional procurement standards or requirements shall be imposed by the Federal awarding agencies upon recipients, unless specifically required by Federal statute or executive order or approved by OMB.

§ 19.41 Recipient responsibilities.

The standards contained in this section do not relieve the recipient of the contractual responsibilities arising under its contract(s). The recipient is the responsible authority, without recourse to the Federal awarding agency, regarding the settlement and satisfaction of all contractual and administrative issues arising out of procurements entered into in support of an award or other agreement. This includes disputes, claims, protests of award, source