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OFFICE OF MANAGEMENT AND BUDGET
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THE DIRECTOR

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MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: 
Shaun Donovan
Director

SUBJECT: Guidance for Agencies on Transfers from the Spectrum Relocation Fund for
Research and Development and Planning Activities

This memorandum provides guidance for Federal entities seeking transfers from the Spectrum Relocation Fund (SRF) for research and development and planning activities. The availability of the SRF for such activities is a result of new authorities provided by the Spectrum Pipeline Act of 2015 (Title X of P.L. 114-74, or the "Pipeline Act").

The SRF was created in 2004 by the Commercial Spectrum Enhancement Act (Title II of P.L. 108-494, or the CSEA) to streamline the process through which Federal entities can receive payments for costs associated with relocating their spectrum-dependent systems from spectrum bands that were authorized to be auctioned under the Federal Communications Commission's (FCC) competitive bidding procedures. OMB administers the SRF and approves transfers to agencies, in consultation with the National Telecommunications and Information Administration (NTIA).

The Middle Class Tax Relief and Job Creation Act of 2012 (P.L. 112-96, or the "Tax Relief Act") amended the CSEA to, among other things, allow eligible Federal entities to receive payments for sharing costs in addition to relocation costs and to expand the types of costs for which agencies could receive payments from the SRF. In addition, the Tax Relief Act required eligible Federal entities to follow new procedures to receive payments from the SRF, including submission of a transition plan and approval of that plan by a Technical Panel comprised of three members, one appointed by each of OMB, NTIA, and the FCC.

The Pipeline Act further amended the CSEA to allow transfers from the SRF for research and development and planning activities that have the potential to facilitate further spectrum auctions. The Pipeline Act requires a Federal entity seeking such transfers to submit to the Technical Panel a plan describing the proposed activities. The Director of OMB may not make a payment to an agency from the SRF unless an agency's plan has been approved by the Technical Panel.

General Requirements

The Pipeline Act appropriated up to \$500 million in existing balances, and up to 10% of all future deposits into the SRF, for research and development and planning activities. Federal entities (as defined in 47 USC 923(l)) may request transfers from the SRF for research and development, engineering studies, economic analyses, activities with respect to systems, or other planning activities. These activities must be intended to improve the efficiency and effectiveness of spectrum use of Federal entities in order to make available spectrum frequencies for reallocation for either non-Federal use or shared Federal and non-Federal use, or a combination thereof, and for auctions in accordance with such reallocations. The auction must be of frequencies that are assigned to a Federal entity, have not been identified for auction at the time of the activities conducted with such payments, and meet all other statutory requirements for transition planning.¹

The Pipeline Act further specified that systems that improve the efficiency and effectiveness of Federal spectrum use include the following:

- (i) Systems that have increased functionality or that increase the ability of a Federal entity to accommodate spectrum sharing with non-Federal entities.
- (ii) Systems that consolidate functions or services that have been provided using separate systems.
- (iii) Non-spectrum technology or systems.

The Director of OMB may not make a payment to a Federal entity for research and development or planning activities unless the Federal entity has submitted to the Technical Panel a plan describing the activities that the Federal entity will conduct with such payment (hereafter, “Spectrum Pipeline Plan”) and the Technical Panel has approved such plan. During its review, the Technical Panel must consider whether the activities conducted with the payment will increase the probability of relocation from or sharing of Federal spectrum, facilitate an auction intended to occur not later than eight years after the payment, and increase the net expected auction proceeds in an amount not less than the time value of the amount of the payment.

The Technical Panel has up to 120 days to approve or disapprove a Spectrum Pipeline Plan. Prior to making a payment from the SRF for an approved plan, the Director of OMB must also submit the approved plan to the Committees on Appropriations and Energy and Commerce of the House of Representatives and the Committees on Appropriations and Commerce, Science, and Transportation of the Senate, and 60 days must elapse after submission of the plan to those Congressional committees. The Director of OMB is responsible for ensuring, to the extent practicable, that payments for research and development or planning activities take priority over payments to eligible Federal entities to complete the implementation of a transition plan more quickly under the provisions of 47 U.S.C. 928(f). In addition, the Technical Panel must ensure that the transfer will leave sufficient amounts in the SRF to meet the other purposes of the SRF.

¹ Generally, spectrum will be considered “identified for auction” at the time at which the FCC notifies NTIA of its intention to commence an auction of the eligible frequencies, which must occur at least 18 months prior to the commencement of the auction. *See* 47 U.S.C. § 923(g)(4)(A).

Content of Spectrum Pipeline Plans

In consultation with NTIA and the FCC, OMB expects that plans that receive approval from the Technical Panel will include the information described below. In addition, we request that agencies submit documents providing additional information on specific aspects of the plan (hereafter, “supporting documentation”), as outlined below. This information may not represent all information the Technical Panel needs to make a decision to approve a plan. Federal entities should anticipate that the Technical Panel may ask for additional information as necessary, and may request meeting(s) to discuss the content of plans.

In general, the Federal entity or entities submitting Spectrum Pipeline Plans must fully define the planned activities (hereafter, “project”), including, but not limited to, the following information:

- a narrative description of all planned activities that SRF payments would support, including a description of the project’s goals and the types of findings or information expected to be provided at the project’s conclusion;
- a description of all systems that will be affected by the planned activities, including the purpose of that system and characteristics of usage;
- a description of both current spectrum assignments that might be affected by the planned activities and any new spectrum assignments the entity anticipates requesting;
- a summary of any new proposed systems, technologies, or applications, if applicable, that will be researched or developed with SRF payment(s);
- the frequencies of spectrum that are being targeted to be made available for auction or sharing via the proposed project, and a tentative timeline for when this spectrum might become available for commercial use;
- measurable goals and objectives, including initial and anticipated Technology Readiness Levels (TRL) for any systems, applications, or technologies that will be researched, developed, modified, or tested as a result of the planned activities;
- a detailed budget by year for the project;
- a justification for how the project meets the statutory requirements in 47 USC 928(g), and
- a description of any potential follow-up research, development, or activity that might be required to make the identified frequencies of spectrum available for auction.

The plan should describe the planned project management structure and allocation of payments among agencies and bureaus. In the case of a joint project where payment would be provided to more than one Federal entity, the plan should provide this information for all involved Federal entities, including processes for managing multi-agency stakeholder input into project elements such as project requirements, milestones, and deliverables. Entities are encouraged to identify other non-participating entities that operate in any affected bands and explain why those entities are not participating in a project.

In the case of a complex, multi-phase project, Federal entities may elect to submit a single plan or multiple plans as appropriate. In the case of a single plan, the plan should clearly identify the phases of the overall project and the criteria/milestones that must be fulfilled before the next phase of the project can commence. A multi-phase plan can include phases with different

governance structures (e.g. an initial phase conducted by a single entity, followed by joint activities with other entities), but this must be clearly indicated and detailed in the plan.

The plan should include contact information for engineering, policy, legal, and budgetary leads. The plan should be signed by a Secretary-level official or their designee prior to submission to the Technical Panel.

A Spectrum Pipeline Plan or any supporting documentation should not include any classified or other sensitive information that cannot be released to the public. If such information must be considered for the plan to be properly assessed, the entity should place the information in a separate annex properly marked and reference it in its plan. The Technical Panel will make arrangements for submission and briefing of such information. If required, the annex shall be provided to the subcommittee of primary jurisdiction of the congressional committee of primary jurisdiction in accordance with appropriate national security stipulations but shall not be disclosed to the public or provided to any unauthorized person through any means.²

We encourage Federal entities to submit plans that are clearly written and as descriptive and complete as possible. Congress imposed a significant obligation on the Technical Panel and OMB to ensure the plans are consistent with the purposes Congress articulated. Federal entities can help ensure their plans are approved by striving to meet the guidelines set forth in this memorandum and by working cooperatively with the Technical Panel and OMB to rectify any identified deficiencies.

We understand that we are asking agencies to provide a significant amount of information. This is to ensure that the Technical Panel has sufficient information to meet the statutorily mandated requirements and reduce the likelihood that the Technical Panel will make extensive requests for additional information from applicants. Failure to provide the requested information may result in delayed review or adverse decision. We do realize, however, that plans have unique characteristics and may be in different stages of maturity. If an entity cannot provide requested information at the time it submits a Spectrum Pipeline Plan, we ask it to provide a brief explanation for why the information cannot be provided at this time and an estimate of how and when such information could be provided.

Supporting Documentation

Statutory Criteria for Technical Panel Approval: The Pipeline Act requires the Technical Panel to consider the following factors in considering whether to approve or disapprove a plan. To assist the Technical Panel in this assessment, a Federal entity submitting a plan should, insofar as possible, include supporting documentation outlining in detail how the project will meet each of the following three criteria:

- (1) That the planned activities will increase the probability of relocation from or sharing of Federal spectrum, including an estimate of the magnitude of the anticipated probability increase based on the likely effectiveness of the plan and the characteristics of the

² 47 U.S.C. § 929 (b).

anticipated auctionable spectrum. The applicant should show how much spectrum and the geographic extent of the spectrum that could be made available for non-Federal use.

(2) That the planned activities will facilitate an auction not later than eight years after payment. As part of this analysis, Federal entities should indicate whether they anticipate that the project will, with a successful outcome, provide all information needed to determine whether frequencies of spectrum could be made available for auction without further research and development or planning activities. If not, entities should describe what additional information might be needed. Entities should include a high-level timeline for actions that supports their determination that the activities will facilitate an auction or reallocation for sharing within eight years. To the extent feasible, agencies should provide preliminary plan and budget estimates for relocation or sharing of systems associated with such an auction.

(3) That the planned activities will increase the net expected auction proceeds in an amount not less than the time value of the amount of the payment. This should be accompanied by a cost-benefit or equivalent quantitative analysis. For assistance in this effort, OMB recommends that entities use the methodology outlined in OMB memorandum M-13-01 (p. 4), estimating that an auction of relevant spectrum frequencies will take place no later than 8 years from the time a Spectrum Pipeline Plan is funded.³

Budget and Cost Estimates: Federal entities should provide supporting documentation with their plan detailing additional budget and cost estimates for the project. This information, should, at a minimum, describe all costs associated with the planned activities, by system, year, type of activity, and agency office or bureau. Per the categories outlined in statute, each activity and funding line should be categorized as one of the following: (1) Research & Development, (2) Engineering Studies, (3) Economic Analyses, (4) Activities with Respect to Systems, or (5) Planning Activities. The documentation should also describe the anticipated mechanism for executing the funded activities and the oversight and control mechanisms that will be used to manage requested payments.

Planned Activities: The supporting documentation should describe any prior or current payment that has supported the planned activities or substantially related activities, and the associated projects and project outcomes. Entities should provide confidence levels regarding their TRL estimates.

Technical and Engineering Information: To the extent the plan relates to activities that are not directly related to systems, entities should identify the frequency bands and uses that might be affected by the activities. Supporting documentation should explain in detail how the activities might affect such frequencies or uses, including, for example, how those uses might become more efficient or how they may better coexist with other spectrum-dependent systems.

To the extent that the plan relates to activities associated with systems, entities should also clearly specify the systems in use associated with the proposed activities and the scale of these systems. Entities should explain specifically how requested payments will increase functionality

³ Available at <https://www.whitehouse.gov/sites/default/files/omb/memoranda/2013/m-13-01.pdf>.

of current systems in a way that increases the ability of the agency to accommodate spectrum sharing with non-Federal entities, consolidates functions or services of separate existing systems, and/or implements non-spectrum technology or systems. Entities should describe and detail the use or mission the system serves; applicable general technical parameters, including, but not limited to, transmit power, occupied bandwidth, frequency range, antenna height, and antenna types; and operational characteristics. Entities should specify the geographic areas in which the systems are located and their specific area of operation, both in terms of the specific systems that are certified and deployed and those systems that are certified but not deployed. Entities should estimate their geographic usage of the spectrum and quantify the potential population within the area affected by the proposed activities.

For plans that would increase the probability of shared access between Federal entities and a future non-Federal user, supporting documentation should describe the expected continued Federal use in terms of frequencies occupied, time occupied, and specific geographies occupied to the greatest extent possible. Entities should also describe the plans for future growth of the systems and any potential degradation of sharing in the future. To the extent that a plan will study coexistence between a Federal system and a commercial system, the plan should outline the options for sharing and outline interference detection and mitigation techniques.

Entities should also describe any current coordination criteria used to manage interference from other Federal and non-Federal users in the bands they have identified in their plan. Entities should provide estimates of anticipated changes in any coordination criteria as a result of the planned activities, as well as any potential improvements in the ability to co-exist with other Federal or non-Federal spectrum users.

For all plans, Federal entities should define and quantify the information or radiocommunication service (e.g., data, video, radar) being transported over the radiofrequency link of any system(s) that will be researched, developed, modified, or affected by planned activities. This should describe the function(s) being provided and, as appropriate, the number of simultaneous uses for which the system is capable of processing, size of data or video processed, throughput rates, and an estimate of the timing, duration, and intensity of usage. Other measures of efficiency should be presented for consideration to capture efficiencies gained as compared to the original use, including agency and system consolidation of similar capabilities, or metrics to cover non-communications services. Entities should quantify the change in spectrum efficiency anticipated as a result of the planned activities. For assistance with these analyses, agencies may consult OMB Circular A-11, sections 31.12(a) and 31.12(b), for an example methodology.

In cases where Federal entities anticipate requesting new spectrum certifications and assignments, entities should estimate in as much detail as feasible the characteristics of such replacement systems, including the quantity of spectrum required, the frequency bands necessary, and an analysis of alternative options, including non-spectrum systems or technologies. Technical information as outlined above should be estimated for the new assignments.

Submission to the Technical Panel

By statute, NTIA provides the Technical Panel with administrative support services. NTIA has amended its regulations with respect to the duties of the Technical Panel to include the new responsibility for review and approval of Spectrum Pipeline Plans. See 47 C.F.R. § 301.115. Federal entities may submit informal plans described below, formal Spectrum Pipeline Plans, and other updates to the Technical Panel via email at PipelinePlans@ntia.doc.gov or via hard copy to the Office of the Assistant Secretary, National Telecommunications and Information Administration, Department of Commerce, 1401 Constitution Avenue N.W., Washington, DC 20230. See 47 C.F.R. § 301.30.

NTIA Technical Panel support personnel will conduct an initial screening of submitted Spectrum Pipeline Plans and return any submission that is incomplete for corrections prior to forwarding to the Technical Panel. The Federal entity will be notified when its Spectrum Pipeline Plan has been sent to the Technical Panel members, starting the 120-day review cycle. The Technical Panel will complete its review and make its determination about a plan as soon as possible and no later than 120 days.

Federal entities are encouraged to submit informal plans to the Technical Panel at any time to obtain feedback and recommendations. Informal plans should be as complete as possible. Federal entities are urged to wait for input on their informal submission from the Technical Panel prior to submitting a Spectrum Pipeline Plan, as changes made in response to Technical Panel feedback are likely to increase the chance of a plan's approval.

Federal entities should expect that the Technical Panel, communicating through NTIA, will ask for Spectrum Pipeline Plans to be submitted during a certain period or periods each year. Although entities can submit an official plan at any time, entities are encouraged to submit their proposals during these periods to ensure that the Technical Panel has as much information as possible during its review process.

NTIA may provide Federal entities with additional guidance associated with its technical panel support role as needed. Additional NTIA guidance, if necessary, would provide clarifications and procedural instructions rather than seek modifications to the contents of Spectrum Pipeline Plans. Such clarifications may include a process diagram, a decisions flow diagram, answers to frequently asked questions, or other material that will facilitate the entities' process of writing and submitting a Spectrum Pipeline Plan.

Review by the Technical Panel and OMB

Entities should anticipate that the Technical Panel will ask for additional information during its review process and should be prepared to provide that information quickly. In cases where the Technical Panel requires a substantial amount of additional information, it may request a Federal entity to resubmit their plan with additional supporting documentation.

To fulfill its statutory mandates, the Technical Panel will assess the likelihood that a project will lead to a favorable outcome, the magnitude of benefits that might be provided by the planned

activities, and the likelihood that the planned activities will help facilitate an auction within eight years. As part of that assessment, the Technical Panel will examine factors such as any previous research or development work conducted in this area, a Federal entity's capacity to implement and oversee a project, the project's governance structure, integration with other spectrum-using agencies or research organizations, and, if applicable, a project's planned contract vehicle.

Entities should anticipate that the Technical Panel may suggest changes be made to a plan prior to a final determination to approve, without requiring a Federal entity or entities to resubmit an entire plan.

OMB administers the SRF and the Director of OMB has final authority over any payments requested through a Spectrum Pipeline Plan. In some cases, the Director of OMB, in consultation with NTIA and the FCC, may determine that a project approved by the Technical Panel may not be appropriate to fund at that time, for reasons of minimizing duplicated efforts, funding projects with greater expected benefits or probability of success, ensuring that limited funding for research and development and planning activities is expended in an optimal manner, or other reasons.

OMB, in consultation with the FCC and NTIA, will give preference to Spectrum Pipeline Plans that are more likely to lead to broad-based advances in Federal spectrum use that increase the probability of relocation from or sharing of Federal spectrum and facilitate auctions within eight years after the plan is funded, such as technology changes that are likely to increase the effectiveness and efficiency of Federal systems in multiple spectrum bands, or projects that affect most or all of the Federal systems using a particular spectrum band.

OMB expects to provide its determination on whether a project is appropriate to fund at the same time as a decision by the Technical Panel. In the case of multi-phase projects, up to the entire amount requested in the plan can be made available to the submitting Federal entity or entities without submittal of a new plan. However, the Federal entity or entities receiving payments will be required to provide status updates to OMB regarding the milestones outlined in the Spectrum Pipeline Plan before payments will be released by OMB for subsequent phases of the project. OMB may consult the Technical Panel before releasing such additional payments.

If the Technical Panel approves a plan and OMB determines it is appropriate to fund the project at that time, the Spectrum Pipeline Plan will be submitted to the appropriate Congressional committees. OMB will provide any supporting documentation or additional information received as part of its review process to these Congressional committees upon request, subject to the national security stipulations described earlier.

If the Technical Panel does not approve a plan or OMB determines it is not appropriate to fund the project at that time, Federal entities may make appropriate revisions and resubmit a proposal at a later date. In some cases, the Technical Panel may make specific recommendations about revisions that may make proposed activities more likely to be approved.

Payments provided to Federal entities under the provisions related to research and development and planning activities may only be used for the purposes outlined in the Spectrum Pipeline Plan

submitted to Congress. In the case that entities are no longer able to spend payments in this manner (including due to a negative project outcome or due to successful completion), the entities must return any remaining payments to the SRF. Entities should update the Technical Panel about the results and outcomes of a project upon termination or completion of the project or achievement of a major milestone.

Questions about this memorandum should be addressed to your agency's OMB representative.