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DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

44 CFR Part 206

Docket ID FEMA-2013-0042

RIN 1660-AA73

Public Assistance Cost Estimating Format for Large Projects

AGENCY: Federal Emergency Management Agency, DHS.

ACTION: Notice of proposed rulemaking.

SUMMARY: In this rule the Federal Emergency Management Agency (FEMA) proposes the implementation of the Cost Estimating Format (CEF) as the standard estimating procedure for large permanent work projects authorized under the Public Assistance program. Under the Public Assistance Program, FEMA awards grants to State and local governments, Indian tribes, and certain private nonprofit organizations to assist them in responding to and recovering from Presidentially-declared emergencies and other disasters. The CEF provides a uniform method of estimating costs for large projects. In this rule, FEMA also proposes to establish reimbursement thresholds to govern situations in which the actual cost of a work project is higher or lower than the CEF estimate.

DATES: Submit comments on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may submit comments, identified by Docket ID FEMA-2013-0042, by one of the following methods:

Federal eRulemaking Portal: http://www.regulations.gov. Follow the instructions for submitting comments.

Mail/Hand Delivery/Courier: Regulatory Affairs Division, Office of Chief Counsel, Federal Emergency Management Agency, 8NE, 500 C Street, SW., Washington, DC 20472-3100.

FOR FURTHER INFORMATION CONTACT: William Roche, Director, Public Assistance Division, Federal Emergency Management Agency, 500 C Street SW., Washington, DC 20472-3100, (phone) 202-212-2340; (facsimile) 202-646-3363; or (e-mail) william.roche@fema.dhs.gov.

SUPPLEMENTARY INFORMATION:

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Table of Acronyms

A&E	Architectural and Engineering
AASHTO	American Association of State and Highway Transportation Officials
AGCA	Associated General Contractors of America, Inc.
AIA	American Institute of Architects
APWA	American Public Works Association
ASPE	American Society of Professional Estimators
BCI	Building Cost Index
CCI	Construction Cost Index
CEF	Cost Estimating Format
CFR	Code of Federal Regulations
CSI	Construction Specifications Institute
DMA 2000	Disaster Mitigation Act of 2000 (Public Law 106-390)
E.O.	Executive Order
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMI	Emergency Management Institute
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FR	Federal Register
FY	Fiscal Year
GAP	Grant Acceleration Program
HMP	Hazard Mitigation Planning
HVAC	Heating, Ventilation, and Air-Conditioning
NACE	National Association of County Engineers
NEMIS	National Emergency Management Information System
NEPA	National Environmental Policy Act (42 U.S.C. 4321 et seq.)
NETC	National Emergency Training Center
NSPE	National Society of Professional Engineers
NTTA	National Technology Transfer and Advancement Act of 1995 (Public Law 104-113)
OMB	Office of Management and Budget
PAC	Public Assistance Coordinator
PNP	Private Non-Profit
PRA	Paperwork Reduction Act (44 U.S.C. 3501 et seq.)
RFA	Regulatory Flexibility Act (5. U.S.C. 601-612)
TAC	Technical Assistance Contractor
UMRA	Unfunded Mandates Reform Act (2 U.S.C. 1531-1538)

I. Public Participation

We encourage you to participate in this rulemaking by submitting comments and related materials. We will consider all comments and material received during the comment period.

If you submit a comment, identify the agency name and the docket ID for this rulemaking, indicate the specific section of this document to which each comment applies, and give the reason for each comment. You may submit your comments and material by electronic means, mail, or delivery to the address under the ADDRESSES section. Please submit your comments and material by only one means.

Regardless of the method used for submitting comments or material, all submissions will be posted, without change, to the Federal e-Rulemaking Portal at http://www.regulations.gov, and will include any personal information you provide. Therefore, submitting this information makes it public. You may wish to read the Privacy Act notice that is available via a link on the homepage of www.regulations.gov.

Viewing comments and documents: For access to the docket to read background documents or comments received, go to the Federal e-Rulemaking Portal at http://www.regulations.gov. Background documents and submitted comments may also be inspected at FEMA, Office of Chief Counsel, 8NE, 500 C Street, SW., Washington, DC 20472-3100.

Public Meeting: We do not plan to hold a public meeting, but you may submit a request for one at the address under the ADDRESSES section explaining why one would be beneficial. If FEMA determines that a public meeting would aid this rulemaking, it will hold one at a time and place announced by a notice in the Federal Register.

II. Background

A. Public Assistance Program

Under the Public Assistance program, authorized by the Robert T. Stafford Disaster Relief and Emergency Assistance Act[1] (Stafford Act) and implemented through regulations in title 44 of the Code of Federal Regulations (CFR), the Federal Emergency Management Agency (FEMA) awards grants to State and local governments, Indian tribes, and certain private nonprofit organizations to assist them in responding to and recovering from Presidentially-declared emergencies and major disasters. Specifically, the program provides assistance for debris removal, emergency protective measures, and permanent restoration of infrastructure. FEMA refers to debris removal and emergency protective measures as "emergency work."[2] FEMA also categorizes these types of work as Category A (debris removal) and Category B (emergency protective measures). Permanent restoration of infrastructure, which FEMA refers to as "permanent work,"[3] includes several categories, including Roads and Bridges (Category C), Water Control Facilities (Category D), Buildings and Equipment (Category E), Utilities (Category F), and Parks, Recreational Facilities, and Other Items (Category G). The Cost Estimating Format (CEF) proposed by this rulemaking applies to permanent work only (Categories C-G).

FEMA may only provide assistance under the Public Assistance program after the President issues an emergency or major disaster declaration. See 44 CFR 206.1. Under the Public Assistance program, the "grantee" of a FEMA grant of financial assistance is generally the government of the State for which an emergency or major disaster has been

[1] Disaster Relief Act of 1974, Public Law 93-288, 88 Stat. 143 (May 22, 1974), as amended, 42 U.S.C. 5121 et seq.
[2] See 44 CFR 206.201(b).
[3] See 44 CFR 206.201(j).

declared, but may also be an Indian Tribal government. See 44 CFR 206.201(e). Additionally, a State agency, local government, eligible private nonprofit organization, or Indian tribe may submit an application to the grantee for assistance as a "subgrantee" under the State's grant. See 44 CFR 206.201(a); 206.222. Public assistance is provided at a cost share, set by the President in the declaration. Usually, the Federal share is 75 percent of the total eligible cost, and the subgrantee share is 25 percent of the total eligible cost. See 42 U.S.C. 5172; 44 CFR. 206.47.

To apply for a Public Assistance grant, the applicant submits a Request for Public Assistance (FEMA Form 009-0-49[4]) to FEMA through the grantee. Upon FEMA's approval of the grant application, the grantee notifies the applicant, and the applicant becomes a subgrantee. See 44 CFR 206.202.

The basis for the amount of a Public Assistance grant is provided in a Project Worksheet (FEMA Form 009-0-91[5]). The Project Worksheet documents the details of the project, which is a logical grouping of eligible work required as a result of a declared major disaster or emergency. A project may include eligible work at several sites, and may include more than one Project Worksheet. A Project Worksheet is the primary form used to document the location, damage description and dimensions, scope of work, and cost estimate for each project. The scope of work may change as the work on the project progresses. If FEMA approves a revised scope of work, a new version of the Project Worksheet is generated. Some projects may have several versions of a Project Worksheet. An applicant may appeal FEMA determinations made in each version of the

[4] The Office of Management and Budget has approved the Request for Public Assistance form (FEMA Form 009-0-49) under information collection number 1660-0017 through July 31, 2016.
[5] The Office of Management and Budget has approved the Project Worksheet form (FEMA Form 009-0-91) under information collection number 1660-0017 through July 31, 2016.

Project Worksheet pursuant to 44 CFR 206.206.

FEMA divides applications for Public Assistance into two groups – large projects and small projects – based on the dollar amount of the project. See 44 CFR 206.203(c). The threshold for large and small projects is adjusted annually to reflect changes in the Consumer Price Index for All Urban Consumers published by the United States Department of Labor. The threshold for large projects in Fiscal Year 2013 is $67,500 (77 FR 61423, Oct. 9, 2012). This proposed rule only affects large projects.

Project Worksheets for large projects are developed by a FEMA Project Specialist, working with the applicant/subgrantee, and are submitted to a FEMA Public Assistance Coordinator (PAC) Crew Leader for review and processing. Large projects are funded on documented actual costs; however, work typically is not complete at the time of project approval. Therefore, FEMA obligates large project grants based on estimated costs. The obligation process is the process by which funds are made available to the grantee. The funds reside in a Federal account until drawn down by the grantee and paid to the subgrantee as the project progresses and actual costs are incurred. If FEMA approves a revised scope of work, a revised Project Worksheet is issued with a revised estimate, and funds are obligated or deobligated based on the revised estimate.

B. Traditional Method for Estimating Eligible Cost

This section describes the traditional method FEMA has used to estimate a project's eligible costs. For a more detailed explanation of this method, please refer to FEMA's Public Assistance Guide, available online at http://www.fema.gov/public-assistance-policy-and-guidance/public-assistance-guide. If work on a project is complete at the time of the applicant's request for Public Assistance funding, the grant amount is

based on the actual cost. However, if work on a project is not complete at the time of the applicant's request for Public Assistance funding, FEMA must use a cost estimate to determine the base cost of the project. The base cost is the amount obligated for the project prior to project completion. The base cost is also known as construction costs, and includes the cost of labor, materials, and equipment. The base cost (construction costs) plus nonconstruction costs equal the total eligible cost. Traditionally, FEMA does not reimburse nonconstruction costs until the project is complete.

Typically, FEMA uses the unit cost method to determine the estimated base cost. Unit costs are line items representing the itemized breakdown of construction costs for completing the project. For example, a typical project will have line items for labor costs, such as an equipment operator, a foreman, a dispatcher, and a laborer, each representing a unit cost. There will also be line items for material costs, such as concrete, paint, or stone. Finally, there will be line items for equipment, such as a flatbed truck, a tractor, or a bulldozer. FEMA may use several cost data sources to determine unit costs. These sources include State or local data from previously completed projects, commercial estimating sources, and FEMA cost codes.

Once the base cost is estimated, and the Project Worksheet is approved, FEMA obligates the amount of the base cost to the grantee for disbursement to the subgrantee. This may occur before the subgrantee has begun work on the project, or after the subgrantee has already started work on the project. (If the entire scope of work has already been completed, the amount would be for actual eligible costs and an estimate of eligible costs would not be necessary.)

As work progresses on a project, the subgrantee may request additional funding for cost overruns, either if the scope of work changes, or if the scope of work costs more than originally estimated. There are several reasons why a subgrantee may need additional funding, but usually it is because additional damage is discovered that was not visible at the time the estimate was determined, or there have been variations in unit prices, or there have been delays in timely starts or completion of the scope of work. The subgrantee must evaluate each cost overrun and, when justified, submit a request for additional funding through the grantee to the FEMA Regional Administrator for a final determination. The process for FEMA's approval of additional funding is the same as for the initial approval of funds – FEMA will perform a site inspection and formulate a scope of work. This will generate an additional version of the original Project Worksheet that was initially formulated and approved for the project. All requests for additional funding must contain sufficient documentation to support the eligibility of all claimed work and costs. See 44 CFR 206.204(e). If the Regional Administrator determines that eligible costs exceed the initial approval, the Regional Administrator will obligate additional funds as necessary. See 44 CFR 206.205(b)(2).

Once the project is complete, the project enters the reconciliation phase. It is during this phase that FEMA calculates the amount of eligible nonconstruction costs and adds them to the base cost. Eligible nonconstruction costs include project design and management costs, contractor overhead and profit, fees, cost escalation due to inflation, and other factors affecting the overall cost of the project, such as safety and security, including guard services, first aid, barricades, and traffic control personnel. FEMA obligates the amount of eligible nonconstruction costs at the end of the reconciliation

phase of the project. The final eligible cost of the project is based upon the reasonable, actual construction and nonconstruction costs incurred by the subgrantee in completing the eligible scope of work.

This process can be problematic in several ways. The main problem is that the total eligible cost of the project is not known until the project reconciliation phase, after work has been completed. There is no clear budget during the beginning stages of the project. The subgrantee can request additional funding as the project progresses, but the subgrantee's expectation of funding at the beginning could be much higher than approved costs at the end. Often, a subgrantee appeals the estimated amounts before even embarking on construction, which greatly slows the process of reconstruction.

Another significant problem with this method is that the subgrantee incurs nonconstruction costs during the life of the project but is not able to recover those expenditures until the work is complete. The subgrantee cannot be certain that all of its nonconstruction costs will be reimbursed until FEMA makes an eligibility determination after project completion, and nonconstruction costs could be large. Even if the estimated base cost at the beginning of the project is accurate, it could end up being only half of the total project cost once the nonconstruction costs are added to it after project completion (during the project reconciliation phase). In such cases, only half of the total project cost would be funded at the beginning, resulting in hardship for the subgrantee because the subgrantee must cover the other half of the costs from its own pocket until project closeout.

Another problem is that the process is time-consuming because funding for base costs often occurs in stages due to cost overruns. If the subgrantee encounters a cost

overrun, which is common in large projects, work on the project is often halted until the approval process for additional funding is complete. This approval in stages also leads to more opportunities for disagreement over cost estimates and methods of repair. Also, there is no cost-saving incentive for the subgrantee because the subgrantee does not have a clear idea of its budget at the beginning, and knows that it can continue to request additional funding throughout the life of the project.

Finally, the process necessitates FEMA's presence throughout the life of the project to oversee and administer cost overruns, resulting in large administrative costs for the agency.

C. Development of the Cost Estimating Format (CEF) Version 1.0: the Grant Acceleration Program (GAP)

After the Northridge California earthquake in 1994, FEMA began to develop a new cost estimating method, referred to as the Grant Acceleration Program, in an attempt to correct the problems just outlined with the traditional method of estimating costs. The Northridge earthquake occurred in a large metropolitan area, so much of the damage was to large, complex buildings. The damage was often not apparent during the initial inspection (which is common with earthquake damage), and there were many cases of serious underlying structural damage that required sophisticated engineering analysis. To provide adequate funding for subgrantees to cover the repair to this damage earlier in the grant process, FEMA established a voluntary program using the GAP method that allowed participants to receive a fair and reasonable fixed budget amount up-front, thereby accelerating the normal funding procedure (hence the name Grant Acceleration Program).

Unlike the traditional method, which provided funding for the estimated base cost at the beginning of the project but did not reimburse nonconstruction costs until after the project was completed, the GAP method provided subgrantees with funding for the total estimated cost of the project (construction and nonconstruction costs) at the beginning. The estimated total cost under GAP included the estimated base cost plus the estimated nonconstruction costs. Under the traditional method, FEMA did not need to estimate nonconstruction costs, because these costs are reimbursed after they are incurred, and therefore the actual amount is known. Under the GAP method, FEMA obligated funding for these costs before they were incurred, so FEMA had to estimate them.

To determine the amount of the nonconstruction costs under GAP, FEMA used a pre-established percentage markup. The amount of the markup is determined using RS Means Reed Construction Data. RS Means supplies construction cost information to the construction industry, and publishes a collection of annual construction cost data books which are widely used by the construction industry. This established percentage markup provided a systematic and uniform method of estimating nonconstruction costs consistent with industry practice.

Under the GAP system, once FEMA determined the estimated total cost of the project, that amount was offered to the subgrantee as a fixed sum. If the subgrantee accepted the offer, the subgrantee could not request additional funding as the project progressed. The idea was that further funding would not be necessary, since the amount that was offered to the subgrantee was for the total cost of the project, not just the base cost as with the traditional method. The GAP method was designed to be much more accurate and consistent than the traditional method and allowed the subgrantee to draw

down funds for nonconstruction costs as they were incurred. Under GAP, if there were any cost overruns, the subgrantee could not request reimbursement for the amount of the overrun, and there was no right to appeal. If there was a cost underrun, the subgrantee could use the unspent balance for approved mitigation activities pursuant to section 406 of the Stafford Act. See 42 U.S.C. 5172.

The creation of GAP was the first step in addressing the problems with the traditional method of estimating and reimbursing project costs. There were some drawbacks to GAP, however. The main drawback was that the subgrantee could not request additional funding. This is problematic if there are large cost overruns. GAP was modified to address this and other problems, and eventually evolved into a new version of the cost estimating format in 1998, which is referred to as CEF 2.0.

D. Cost Estimating Format (CEF) Version 2.0

1. General

CEF 2.0 provides a uniform method of estimating costs for large projects. It accounts for costs incurred across the entire spectrum of eligible work (from design to project completion). Under the CEF, FEMA obligates the entire amount of the Federal share of the estimate up-front to the grantee, and payments are made by the grantee to the subgrantee in increments as items of work are completed or near completion (i.e., less than a week from completion). The subgrantee can request additional amounts for cost overruns pursuant to 44 CFR 206.204.

CEF 2.0 is made up of various parts, categorized as parts A through H, that are compiled by a FEMA estimator (who is either the Public Assistance Project Specialist or is supervised by the Public Assistance Project Specialist) in a CEF Spreadsheet. Note

that an applicant may provide its own estimate of the project cost; if so, the Public Assistance Project Specialist uses the CEF to validate that estimate. The main part of the CEF is Part A, which is the base cost (construction costs) required to complete the approved scope of work. A FEMA cost estimator uses a Part A worksheet to determine the estimated base cost. After estimating the Part A base cost, the FEMA estimator applies a series of factors (referred to as Parts B through H) to the Part A base cost estimate. With the exception of Part F, these factors are percentage factors. For example, if a Part B percentage factor is 2 percent, the estimator adds 2 percent of the Part A estimated base cost to the total estimate. Sometimes the CEF provides a recommended range of percents for each factor, such as 3 to 6 percent, and it is up to the discretion of the FEMA estimator which percentage to apply, depending on the specifics of the project. The FEMA estimator must detail why he or she chose a specific percentage in a special section of the CEF worksheet designed for this purpose. This flexibility in the CEF methodology allows it to more accurately estimate the many different types of large projects under the Public Assistance program.

The Part B through H factors represent the nonconstruction costs (also referred to as construction-related costs), and are used only if the costs represented by the Parts B through H factors are not otherwise itemized in Part A. The costs represented by the factors are allowable project costs under 44 CFR part 13, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments. The cost estimator adds the estimated nonconstruction costs to the Part A base construction cost using a CEF Worksheet to estimate the total cost of completing the project. This "forward-pricing" methodology provides an estimate of the total eligible

funding at the beginning of the project. The estimate, which FEMA uses to approve funds for the project, allows the subgrantee to more accurately manage the budget with a greater degree of confidence.

Typically, a subgrantee uses a general contractor and a number of subcontractors to complete a large construction project in a competitively bid environment. The structure of the CEF mirrors the subgrantee/general contractor/subcontractor relationship for eligible work. Part A costs are representative of the construction efforts required to complete the eligible work; it represents the costs of the trade or subcontractor(s). Parts B, C, D, and E represent the general contractor or equivalent costs; they represent the costs of completing the construction work over and above the base construction costs itemized in Part A. Parts F, G, and H represent the subgrantee's non-construction project costs, including preparation of design or contract documents, plan review and permit fees, and managing project design and construction. The CEF Parts are described in detail below.

2. Part A – Estimated Base Cost

Preparing a precise base cost estimate in Part A is critical to the accuracy of the total project estimate developed with CEF 2.0. All construction work activities must be itemized and quantified in Part A. Construction work activities include labor, equipment, and materials, including small tools, incidentals, and hauling costs necessary to complete the work. (Part A also includes the subcontractor's overhead and profit, but not the general contractor's overhead and profit, which is included in the Part D factor.) Once the construction work activities are itemized, the estimator enters a unit cost for each item. There are various types of cost data that the estimator may use for the unit costs.

The preferred cost data is a bid-tab (short for bid tabulation), which is a bidder's amount for each pay item in a contract. The next preferred cost data is local cost data (also referred to as average weighted unit price data). The estimator can usually obtain local cost data from local completed project costs or a comparable bid-tab. If there hasn't been a bid on the contract, local cost data is the preferred cost data because it is the most accurate reflection of what a project will cost; it is data from actual projects that took place in the general vicinity of the project being estimated. Other types of cost data, described below, are less accurate because they reflect national averages.

If the FEMA estimator cannot obtain appropriate local cost data, the next preferred cost data is the most current nationally-recognized construction data warehouse publications, such as RS Means, BNi Costbooks, Marshall & Swift, or Sweets Unit Cost Guide. For ease of reference, cost data publications are readily available to the FEMA estimator in the disaster field office.

If the estimator is unable to use local cost data or a cost data publication from a nationally-recognized construction data warehouse, then FEMA cost codes or other commercial cost data estimating sources are a last source of reference for unit prices in preparing Part A base costs. These are the least preferred sources of cost data, however, because they are the least accurate. Local cost data best represent actual costs because the local economic factor is already incorporated. The construction data warehouses are the next preferred because they are updated quarterly. FEMA cost codes are generally averages or estimates for a large geographical area and are not updated as frequently as local cost data; therefore, they are the least preferred.

In addition to the itemization of each item of work, Part A costs are split into permanent and non-permanent work, and completed and uncompleted work. In order to accurately apply CEF cost factors, a project is divided into different types of work, depending on how the restoration activities match the requirements of the Public Assistance program. The separation of completed and uncompleted work keeps the CEF estimate organized and easy to understand. After the FEMA estimator completes Part A, which includes the amount for the completed permanent and non-permanent work and the estimate for the uncompleted permanent and non-permanent work, the estimate for Part A is entered into the CEF spreadsheet. The FEMA cost estimator then applies the Parts B through H factors to this estimate, as described below.

3. Part B Factor- General Requirements and General Conditions

Part B accounts for non-permanent job site work that is not readily itemized in Part A. Part B is split into B.1, General Requirements, and B.2, General Conditions. General requirements are those costs typically described in the general requirements of construction specifications. They include safety and security items, temporary services and utilities, quality control, and submittals, each described more fully below.

Safety and security items include guard service, first aid, barricades, uniformed traffic persons, flagging, railings, toe-boards, rented fencing, safety equipment (such as harnesses and scaffolding), fire protection (such as fire extinguishers and temporary hydrants), and temporary signage that may be required by a regulatory authority to control pedestrian or vehicle detours within and around the construction zone. For safety and security items, CEF 2.0 recommends a 4 percent factor for most construction sites, but the FEMA estimator may choose up to a 6 percent factor for complex projects such as

airports, marinas, ports, projects in urban areas, and projects in large segmented sites with phased construction.

Temporary services and utilities include construction trailer or office space, and related office equipment. The space may be for the construction job superintendent or for inspectors. It also includes temporary utilities such as construction water, electricity, telephones, construction craft sanitary facilities, and any weather protection that may be necessary for the temporary services and utilities. CEF 2.0 recommends a 1 percent factor for temporary services and utilities.

Quality control is independent testing and inspection by an organization, other than the subgrantee or contractor, with expertise specific to the project scope of work. Examples include concrete strength testing, water quality testing, and non-destructive examination of welds (joints). CEF 2.0 recommends using a default of 0.5 percent for most projects and increasing the value up to 1 percent as the overall project complexities increase.

Submittals include the contractor's costs for preparation of shop drawings, materials certifications and instructions, providing samples and product data, and construction progress schedules. CEF 2.0 recommends a 5 percent factor for submittals.

General conditions, the B.2 factor, represent the general contractor's on-site project management costs. This factor covers field supervision and quality control costs. The quality control costs in B.2 are different than the quality control costs in B.1. The B.1 quality control costs are costs incurred by an inspection service or subcontractor in meeting discipline-specific requirements to verify conformance to specification (e.g., field testing of concrete and soil backfill, laboratory testing of reinforcing steel, field

testing of electrical components after installation). The quality control costs in B.2 are general contractor costs to design, manage, and report results of the total project quality control program. CEF 2.0 recommends a 4.25 percent factor for B.2.

4. Part C Factor– Construction Cost Contingencies/Uncertainties (Design and Construction)

Part C addresses construction cost contingencies and uncertainties. It accounts for the budgetary risk associated with project unknowns and complexities in determining the scope of work. It is included in the CEF estimate to create an appropriate level of probability for completing the project within that estimate. Part C is made up of C.1, Design Phase Scope Contingencies, C.2, Facility or Project Constructability, C.3, Access, Staging, and Storage Contingencies, and C.4, Economies of Scale.

The C.1 factor, Design Phase Scope Contingencies, represents standard cost estimating contingencies based on the design and engineering process as a function of time. This contingency is based on the concept that there are typically more unknowns and items at the schematic design stage than at the final design stage. The unknowns gradually decrease as the scope of work is defined, details for completing the work are developed, and the project advances towards a set of construction drawings and specifications that can be used by a construction contractor. The project is evaluated to determine the design phase at the time the estimate is prepared.

There are two levels of design development that the estimator considers for the C.1. factor: (1) the preliminary engineering analysis stage, and (2) the working drawing stage. At the preliminary engineering analysis stage, concepts have been developed but without a significant level of detailing. It is difficult to accurately quantify work at this

stage, and contractors assume a relatively high level of risk in bidding on a project at this stage. CEF 2.0 recommends a factor of 15 to 20 percent (depending on the complexity of the project). At the working drawing stage, the design is more advanced, concepts have been determined, detailing is more complete, and work tasks and quantities have been readily defined. Contractors would assume a low to medium level of risk in bidding on a project at this stage. CEF 2.0 recommends a factor of 2 to 10 percent at the working drawing stage (depending on the level of completeness of the working drawings).

The C.2 factor, Facility or Project Constructability, addresses project complexity. The complexity of construction activities varies among the different types of projects. For new projects, the constructability factor is not applied; it is assumed that the design process takes the complexity of the project into account. The constructability factor is applied for repair and retrofit projects. These projects must be accomplished within the physical and operations constraints of existing facilities, tend to consist of tasks that are more intensely detailed and sequenced, and require closer supervision throughout the process.

The constructability factor represents site conditions or construction process complexities such as steep site embankments, unstable soil conditions, difficult subsurface construction conditions requiring such activities as de-watering and rock excavation, extreme weather conditions affecting productivity (such as winter shutdowns), urban sites, special building code requirements, availability of adequate energy, skilled craft labor, and building materials, the subgrantee's special requirements and restrictions, and environmental considerations. The subgrantee's requirements and restrictions should be reasonable; they should apply to the specific services related to the

eligible scope of construction. For example, there may be a requirement for interstate highway construction to occur during night hours because of peak traffic flow impacts.

If possible, project complexity issues should be addressed in Part A of the CEF. However, if certain project conditions cannot be identified or quantified, CEF 2.0 recommends suitable factors depending on the type of work. CEF 2.0 recommends a percentage range of 1 to 2 percent for roads (rural-urban), 1 to 5 percent for bridges and culverts (simple-complex), 1 to 5 percent for water control facilities, 1 to 2 percent for simple open buildings, 1 to 5 percent for schools, libraries, and offices, 1 to 7 percent for hospitals, museums, and historic buildings, 1 to 5 percent for public utilities, and 1 to 5 percent for park and recreation facilities. The FEMA estimator should assign a C.2 factor of 0 to 1 percent for simple construction projects, and should assign a factor at the upper end of the applicable range for projects with a combination of features that increase complexity. For example, two bridges may require the same materials and equipment, but if unstable soil conditions exist at one of the bridges, the work at that bridge will require more detailed sequencing and greater supervision.

The C.3 factor, Access, Storage, and Staging Contingencies, addresses project site conditions that impose additional costs on the work activities listed in Part A. As with the C.2 factor, these items should be addressed in Part A. But if these contingencies are not accounted for in Part A because the need for them is unclear, then the C.3 factor should be applied. The C.3 factor includes site access, storage, and staging.

Site access addresses access to the project site. There may be difficult or long access routes for trucks delivering materials, a temporary access roadway or driveway constructed to provide access for equipment, site loading conditions requiring heavy

equipment (such as barges, cranes, or forklifts), off-site parking for workers, and obstructions created by utilities or exposed systems.

Storage addresses the storage of construction materials and equipment on site to support proper staging and construction activities. There may be offsite storage of materials due to space constraints, temporary easements, and lot, sidewalk, or roadway space rental costs.

Staging addresses the timing and execution of the work, which could be complicated by occupation of facilities, lack of space, and access inside the facility. This factor should be used for sites that have work access limitations because services must continue to run in spite of construction (such as hospitals). CEF 2.0 recommends a factor of 1 to 4 percent for each of the C.3 factors, according to the impact each of the C.3 factors has on project cost.

The C.4 factor, Economies of Scale, addresses the increases or decreases in cost resulting from task or project size. For example, the mobilization cost for a worker is proportionally higher for one day's work than for 30 days' work. Economies of scale are particularly applicable to new construction projects, but are also applicable to other types of work where there is a reduction in cost due to project size. CEF 2.0 recommends a factor of 0 percent for projects under $500,000, -0.5 percent for projects under $2 million, -1 percent for projects under $10 million, and -2 percent for projects over $10 million.

5. Part D Factor – General Contractor's Overhead and Profit

Part D includes three parts: D.1, General Contractor's Overhead; D.2, General Contractor's Insurance, Payment, and Performance Bonds; and D.3, General Contractor's Profit. The general contractor's overhead includes main office expenses, including labor

and salary costs for personnel, including the principals, estimators, project managers, and general office staff, plus all other operational expenses associated with working out of the main office. CEF 2.0 recommends a factor of 7.7 percent for overhead. For the D.2 factors, CEF 2.0 recommends a factor of 1.5 percent for the general contractor's payment and performance bonds, 0.3 percent for builder's risk insurance, and 1.5 percent for public liability insurance. The total value of the D.2 factor is fixed at 3.3 percent. For the D.3 factor (the general contractor's profit), CEF 2.0 recommends a range of 3 to 10 percent, depending on the size of the project and the type of work. For example, for projects over $10 million, the recommended factor is 3 percent for repair, retrofit, or new construction. For projects under $500,000, the recommend factor is 10 percent for repair, retrofit, or new construction.

Part D should not be applied to projects completed using the subgrantee's labor, equipment, and materials (i.e., "force account" work), nor does Part D reflect the subcontractor's overhead and profit; the subcontractor's overhead and profit should be included in the line items in Part A.

6. Part E Factor– Cost Escalation Allowance

Part E accounts for cost escalation over the duration of the project and is based upon an inflation adjustment from the time the estimate is prepared until the mid-point of construction for the eligible scope of work. This factor is only used for escalating the cost of uncompleted work. The estimator applies the Part E factor by establishing a design and construction timeline to the mid-point of construction. The timeline will vary according to whether the eligible work is already started or is delayed. The escalated cost

of construction is equal to the sum of Parts A through D times the number of months to the midpoint of uncompleted construction times the escalation factor.

The escalation factor is based on a 2-year average of either the Building Cost Index (BCI) or the Construction Cost Index (CCI). These indices are published in the Engineering News-Record, a monthly trade publication. Engineering News-Record collects and publishes monthly price data on 75 different building materials from 20 major cities in the United States, plus Montreal and Toronto. It uses this data to create the BCI and CCI each month (see http://enr.construction.com/economics/default.asp). When applying CEF 2.0, the estimator uses either the BCI or the CCI to calculate the escalation factor, depending on the nature of the project.

7. Part F Factor – Plan Review and Construction Permit Costs

Part F addresses fees charged by State and local agencies for plan reviews and construction permits. It includes all fees that are paid to obtain approvals required before construction can commence. Part F is split into two factors: F.1, Plan Review Fees; and F.2, Construction Permit Fees. The actual fees are included in the CEF estimate, unlike other CEF factors where the estimator applies a percentage factor. Part F is not applicable in situations where State and local agencies waive fees during disaster recovery situations.

8. Part G Factor – Applicant's Reserve for Construction

Part G is the applicant/subgrantee's reserve for potential change orders related to eligible work and any other incident costs that may be incurred after the construction contract is awarded. It does not reflect discretionary change orders for upgrades or for any ineligible work. The applicant/subgrantee's reserve is based on project size. CEF

2.0 recommends a factor of 7 percent for projects less than $200,000, 6 percent for projects ranging from $200,001 to $800,000, 5 percent for projects ranging from $800,001 to $1,400,000, 4 percent for projects ranging from $1,400,001 to $2 million, and 3 percent for projects greater than $2 million.

9. Part H Factor – Applicant's Project Management and Design Costs

Part H represents the applicant/subgrantee's costs for overall project development and management throughout the design and construction phases. This factor includes the applicant/subgrantee's costs for managing the design process, basic design and inspection services normally performed by an architecture and engineering firm, and managing the construction phase (either third party or in-house). Incidental development costs are also absorbed into these categories. Part H costs are distinct from those management and administrative costs incurred by the applicant/subgrantee to manage the Public Assistance grant and reimbursed by FEMA pursuant to section 325 of the Stafford Act and 44 CFR part 207.

Part H.1 includes the Applicant's Project Management – Design Phase. The applicant/subgrantee's costs to manage the project during the design phase include managing the Architectural and Engineering (A&E) contracts for final design, managing the permitting and special review process, and interfacing with other agencies. (A&E contracts are contracts for the provision of design services.) A value of 1 percent has been established for this factor. The H.1 factor is not applicable in those situations where design is not required.

Part H.2 includes A&E design contract costs. This factor covers the cost of basic design and inspection services, normally performed by an A&E firm, as well as a number

of additional services not necessarily required with every construction project. The basic services consist of preliminary engineering analysis, preliminary design, final design, and construction inspection. Engineering curves are used to estimate the cost of basic engineering services as a percentage of the estimated construction cost. One of two curves, Curve A and Curve B, may be used to determine the appropriate percentage. Curve A applies to projects with above-average complexity and non-standard design. Curve B applies to projects of average complexity. The curves show a correlation between engineering costs and total construction costs. The curves are included in the Public Assistance Guide, FEMA 322, June 2007, Chapter 2, pages 58 and 60, at http://www.fema.gov/government/grant/pa/policy.shtm and in the docket for this rulemaking. To use the curves, the FEMA estimator starts with the estimate of construction costs. The FEMA estimator finds the construction cost on the horizontal axis and then finds the associated percentage of engineering and design services from the vertical axis. This percentage can be multiplied by the estimated construction cost to determine an appropriate engineering and design cost estimate. This estimate becomes the H.2 factor. The H.2 factor is not applicable in those situations where design, construction inspection, or other basic services are not required.

Part H.3 includes the Project Management – Construction Phase. Project management costs during the construction phase include quality assurance and management of additional testing during construction, advertising and awarding of the construction contract, decisions on construction problems and requests for information, management of change orders for on-site construction conditions and design errors, and omissions and unforeseen problems, such as differing site conditions and hidden damage.

The H.3 factor is applied depending on the amount of total construction costs. For construction costs under $500,000, FEMA applies a 6 percent factor. For construction costs of $500,000 to $1,000,000, FEMA applies a 5 percent factor. For construction costs of $1,000,000 to $5,000,000, FEMA applies a 4 percent factor. For construction costs of more than $5,000,000, FEMA applies a 3 percent factor.

10. Summary and Application of the Parts B through H Factors

The expenses reflected in the Parts B through H factors can reasonably be expected to occur because they are costs directly related to the project and are almost always encountered during the course of construction. When FEMA developed these factors for CEF 2.0, it determined the Parts B through H percentage factors using guidance available from the Construction Specifications Institute (CSI) and Reed Construction Data, as well as data from closed-out grants for large projects nationwide. CSI is an organization that maintains and advances the standardization of construction language as it pertains to building specifications. CSI provides structured guidelines for specification in writing in a Project Resource Manual. CSI authored MasterFormat, which is an indexing system for organizing construction data, particularly construction specifications. The MasterFormat consists of 50 divisions, reflecting the growing complexity of the construction industry, such as masonry, electrical, finishes, and mechanical.

It is critically important that the FEMA cost estimator determine all elements that make up the construction costs itemized in Part A, so that costs are not duplicated in the construction-related costs in Parts B through H. Duplication of costs would result in an inflated project cost. If all work is completed and actual costs are known and itemized in

Part A, the cost estimator need not apply Parts B through G. Conversely, if all work is not completed, the cost estimator may apply one or more of the factors in Parts B through H to the uncompleted items of work, where appropriate.

When applying the Parts B through H factors, the FEMA cost estimator must choose which cost data to use. Table 1 below depicts the hierarchy of preferred pricing with completed work favored first, and RS Means Cost Data favored least. As explained above, the hierarchy of preferred pricing is based on the accuracy of the data, with the most accurate being favored first, and the least accurate being favored last. In Table 1, the "Completed Work" column applies to any work that has been completed on a project. If work has been completed, the only factor that is applied is Factor H. Factor H is applied to completed work because it represents the applicant/subgrantee's costs for overall project development and management throughout the design and construction phases. It is applied as a percentage of the completed work. If work is not completed, the FEMA estimator uses bid-tab data, local-cost data, or RS Means Cost Data to estimate the cost of the uncompleted work. If the FEMA estimator uses bid-tab data, only Factors F, G, and H apply. Factors B through E do not apply because bid-tab data includes the items that make up those factors. For example, Factor C, which reflects construction cost contingencies, would not be applicable if bid-tab data is used because the cost is already known and, therefore, there is no contingency. Part G, however, would be applicable if bid-tab data is used because change orders and differing site conditions may still be a possibility. If local cost data is used, only Factors E through H apply, and if RS Means Cost Data is used, all factors apply.

Table 1: Hierarchy of Costs

CEF PART	Types of Costs Used in Part A and Typical Application of Factors			
A	*Completed Work*	*Bid Tab*	*Local Cost Data*	*RS Means Cost Data*
B	*	*	*	Y
C	*	*	*	Y
D	*	*	*	Y
E	*	*	Y	Y
F	*	Y	Y	Y
G	*	Y	Y	Y
H	Y	Y	Y	Y

Y = Part or Factor Normally Applied * = Part or Factor Normally Not Applied

In all cases, the cost estimator is responsible for determining the unit costs in Part A, before it applies one or more of the Parts B through H factors so that there is no cost duplication of work activities previously considered in Part A.

CEF 2.0 is explained more thoroughly in FEMA's Cost Estimating Format for Large Projects Instructional Guide, Version 2 (November 1998), available in the docket for this rulemaking at www.regulations.gov.

III. The Disaster Mitigation Act of 2000

Section 205(d) of the Disaster Mitigation Act of 2000 (DMA 2000), Public Law 106-390, 114 Stat. 552 (October 30, 2000), 42 U.S.C. 5172, which amends section 406(e) of the Stafford Act, directs the President, acting through the Administrator of FEMA,[6] to establish an expert panel, to include "representatives from the construction industry and

[6] The President has delegated the authorities of the Stafford Act to the Secretary of the Department of Homeland Security. Executive Order 13286 (February 28, 2003). The Secretary has in turn delegated those authorities to the Administrator of FEMA. DHS Delegation 9001.1 (December 10, 2010).

State and local government [to] develop recommendations concerning procedures for estimating the cost of repairing, restoring, reconstructing, or replacing a facility consistent with industry practices." DMA 2000 further requires the President to promulgate regulations that establish cost estimation procedures, taking into account the recommendations of the expert panel, for use in determining the eligible cost of repairing, restoring, reconstructing, or replacing a public or private nonprofit facility under section 406 of the Stafford Act. The statute limits use of these procedures to large projects.

DMA 2000 also requires modification of the eligible cost when the actual cost of the project is greater than a predetermined ceiling percentage or when the actual cost is less than the estimated cost by a predetermined floor percentage. The statute requires the expert panel to develop recommendations concerning floor and ceiling percentages, and requires the President to promulgate regulations establishing ceiling and floor percentages, taking into account the recommendations of the panel. . The statute requires application of the floor and ceiling percentages. If the actual project cost is greater than the ceiling percentage of the estimated cost, the President may reimburse a portion of the actual cost that exceeds the estimated cost. If the actual project cost is less than the estimate but more than or equal to the floor percentage of the estimated cost, the applicant may use the excess for mitigation activities. If the actual project cost is less than the floor percentage of the estimated cost, the applicant must return the difference.

This rulemaking implements section 205(d) of DMA 2000 by proposing the CEF as the cost estimating methodology for determining the eligible cost for large projects under the Public Assistance program, and by proposing floor and ceiling thresholds of +/-

10 percent, as recommended by the expert panel. Sections IV and V of this preamble discuss the implementation of DMA 2000 in detail.

IV. The Expert Panel on Cost Estimating

A. Establishment of the Panel

Pursuant to section 205(d) of DMA 2000, FEMA established the Expert Panel (Panel) on Cost Estimating for the Public Assistance Program on April 1, 2000. FEMA invited professional organizations to nominate candidates for membership on the Panel. There were nine panel members including experts in design, construction, and cost estimating of roads, water control facilities, buildings, utility systems, and recreational facilities, who represented various geographical regions of the country. FEMA (the Designated Federal Official) and the National Emergency Management Association co-chaired the Panel. The other Panel members represented the American Association of State and Highway Transportation Officials (AASHTO), the Associated General Contractors of America, Inc. (AGCA), the American Institute of Architects (AIA), the American Public Works Association (APWA), the American Society of Professional Estimators (ASPE), the National Association of County Engineers (NACE), and the National Society of Professional Engineers (NSPE).

The Panel's charter established the Panel to evaluate the Public Assistance program's methodology for estimating the cost of repairing, restoring, reconstructing, or replacing a public facility or private nonprofit facility based on the design of the facility as the facility existed immediately before the disaster and in conformity with codes, specifications, and standards (including floodplain management and hazard mitigation criteria required by the President or under the Coastal Barrier Resources Act (16 U.S.C.

3501 et seq.)) applicable at the time at which the disaster occurred. The Charter required the Panel to review the CEF materials and determine if the CEF methodology is appropriate for the Public Assistance program. It also required the Panel to determine what level of technical expertise is required to uniformly apply the recommended estimating methodology to maximize its accuracy and national applicability.

B. Meetings of the Panel

The Panel met twice in 2001 and each meeting was open to the general public. The meeting minutes are available for viewing in the public docket for this rulemaking. On May 25, 2001, FEMA published a notice in the Federal Register at 66 FR 28910 announcing the first meeting of the Panel. The first meeting of the Panel was conducted from June 26-27, 2001. At the meeting, FEMA provided the Panel with an overview of the Stafford Act and section 205(d) of DMA 2000, a briefing on the Public Assistance program and the GAP, and a briefing on the CEF. After FEMA's CEF presentation, Panel members expressed their general consensus that the CEF is a sound tool and discussion focused on how to make the CEF better. The Panel indicated that the applicant/subgrantee needs to be involved in developing the cost estimate and all parties involved must have a clear understanding of the scope of work, and that the scope of work must remain consistent throughout the life of the project. The Panel noted that the Public Assistance Project Officer is responsible for developing the Project Worksheet in a multi-disciplinary environment, but the lead FEMA estimator is responsible for developing the actual construction cost estimate and should participate in the on-site review of the project conducted by the Public Assistance Project Officer. The Panel noted that subgrantees have been pleased with the quality of the CEF estimates, and that

using an integrated, seamless process where everyone works together as a team has worked well. Using subgrantee-provided cost data wherever possible is especially helpful in obtaining an accurate estimate. The Panel members agreed that the factors used in the CEF are acceptable, and acknowledged that some project savings and overruns would still be realized in the real world as a result of open market conditions.

The Panel indicated that the CEF should mirror, as closely as possible, standard industry methods, such as those used by ASPE, and that ASPE Committee members would be asked to help with this effort. It discussed how the CEF is an incremental-complexity instrument (i.e., there is less risk as more information becomes known and as the process moves forward).

Next, the Panel directed that two comparative analyses be performed between the CEF version 2.0 and ASPE's Standard Estimating Practice (5th edition, 1998). The first comparative analysis would be performed by each of FEMA's Technical Assistance Contractors (TACs), and the second comparative analysis would be performed by ASPE's Standards, Certification, and Education Boards. The results of the comparative analyses would be used by the Panel at its second meeting to augment and/or revise the CEF. The Panel directed that the independent comparative analyses determine whether or not the CEF is parallel to ASPE's level 3 (design, development/budget appropriation) estimating approach, and if the CEF was not parallel to an ASPE level 3 estimate, to say so and identify the ASPE level that parallels the CEF.

ASPE cost estimates are categorized by levels. At the time of the Panel's recommendation, the Levels used were taken from Standard Estimating Practice, 5th ed., which includes Level 1 to Level 6. (The current edition has revised levels, going from

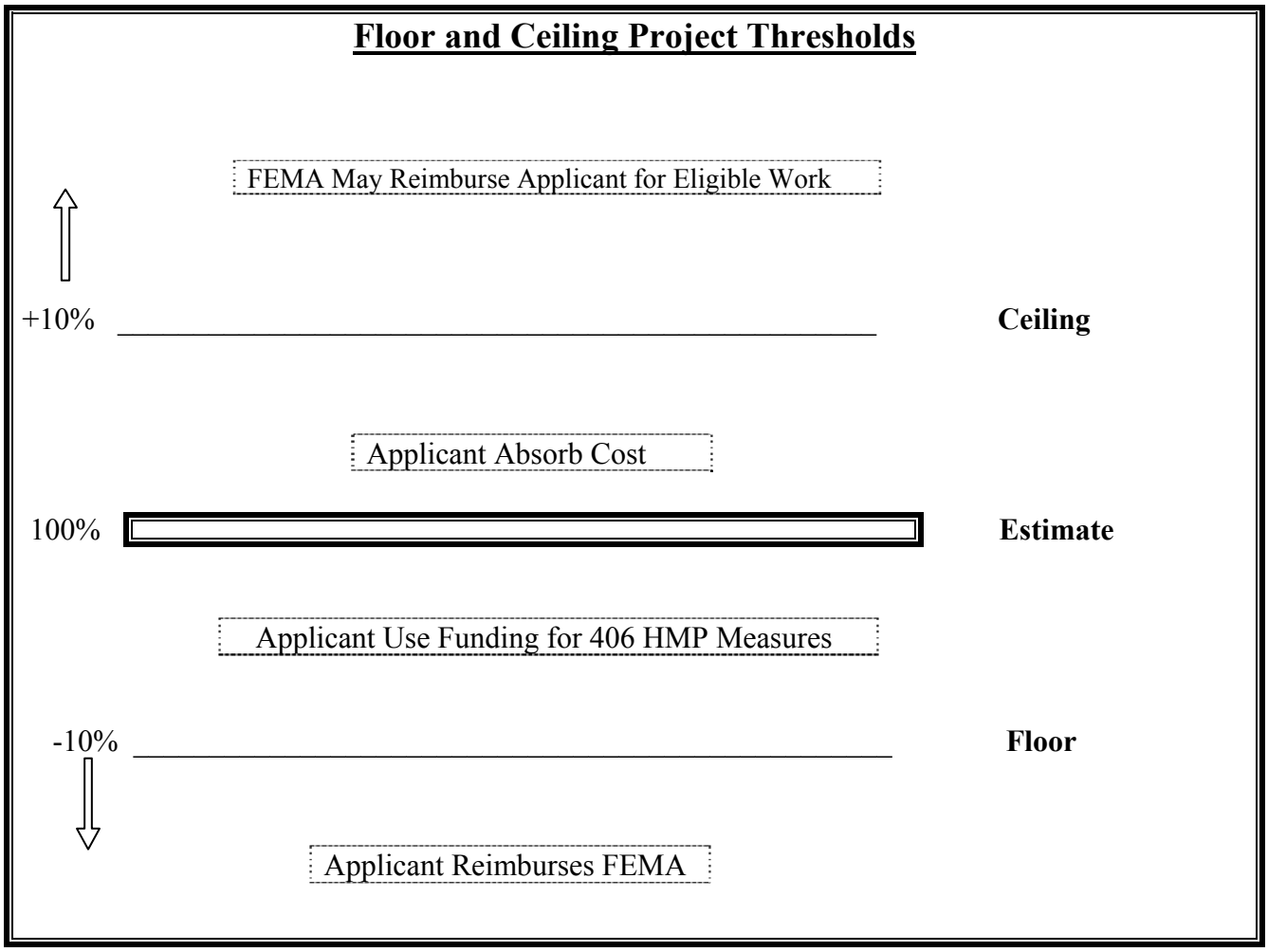
Level 1 to Level 5, which will be discussed later in this preamble.) Level 1 is the lowest level of project definition (the early planning stages of the project) and Level 6 is the highest level of project definition (when the project design is finalized). A Level 1 cost estimate will be less accurate than a Level 6 cost estimate, because of the lack of information available to the estimator at Level 1.

According to the Standard Estimating Practice, 5th ed., a Level 1 estimate is the Order of Magnitude level; at this level, the estimate contingency may range from 20 to 50 percent. Estimators prepare this level of estimate from an outline of the proposed project. Level 2 is the Schematic/Conceptual Design level; the estimate contingency may range from 20 to 30 percent. Level 3 is the Design Development level; the estimate contingency at this level may range from 15 to 25 percent. Estimators prepare this level of estimate from no less than 25 percent complete preliminary design drawings and draft specifications. Estimates produced at ASPE Level 3 are used to verify budget conformance as the scope and design is finalized and final materials are selected. Information required for this level includes drawings showing plans, elevations, typical details, engineering design criteria, equipment layouts and detailed outline specifications. ASPE Level 4 is the Project Control Level. Estimators prepare this level of estimate from no less than 75 percent complete design drawings and specifications. ASPE Level 5 is the Construction Document level; the estimate contingency at this phase may range from 5 to 10 percent. Estimators prepare this level of estimate from no less than 90 percent complete design drawings and specifications. This level is used to verify pricing as details are completed and design is modified and completed. This estimate can be used to evaluate the subcontract pricing during the bid phase. Information required for

this level includes detailed drawings showing plans, elevations, sections, details, schedules, specifications, and bidding criteria. ASPE Level 6 is the bid-phase estimate. The purpose of this level is to show probable costs in the preparation and submittal of bids. At this phase, design drawings and specifications are complete. Estimate contingencies should be at zero percent at ASPE Level 6.

The Panel directed that the comparative analyses between the CEF and the ASPE methods consist of validating whether or not a CEF estimate (at an ASPE Level 3) would provide a level of confidence commensurate with an ASPE Level 5 (construction documents/contract drawings/definitive) estimate, such that the CEF estimate (at an ASPE level 3) would be within the +/- 10 percent floor and ceiling thresholds.

Regarding the floor and ceiling thresholds, FEMA reported that its general experience with CEF to date showed that for project costs of $2 to $4 million, the project range had been (plus or minus) 10 percent; for project costs less than $2 million, there had been cost overruns of more than 20 percent, and for project costs greater than $4 million, there had been cost underruns of more than 20 percent. The Panel agreed that the following depiction expressed the intent of section 205(d) of DMA 2000:



The meeting minutes state that the Panel reached consensus and recognized that plus and minus 10 percent are reasonable floor and ceiling thresholds for project cost, "as derived from construction industry standards." The meeting minutes indicate that it was understood that some projects in the $50,000 to $100,000 range could fall outside the threshold, but there was general agreement that the 10 percent threshold is appropriate and that using the same number across the board would make the program easier to administer.

On August 28, 2001, FEMA published a notice in the Federal Register at 66 FR 45313 announcing the second meeting of the Panel. The second meeting of the Panel

was conducted from September 26-27, 2001. The Panel compared and contrasted the CEF with estimating methods used by ASPE. A representative from the ASPE gave a presentation comparing the CEF to ASPE's Level 3 estimate. The ASPE representative noted that the preliminary finding was that the CEF conforms to recommended estimating practices. However, the ASPE Board of Directors, Technical Board, and Standing Committees had not yet formalized the Society's findings. (The findings were eventually formalized in January 2002.) Further, the ASPE representative noted two areas of caution when using the CEF: the need for appropriate expertise of the personnel performing the estimates, and the quality of the construction document data that directly affects the level of detail included in the estimate. Most estimators, he said, would prefer to use historical and/or local cost data rather than factored national cost data from commercial estimating manuals, and would prefer to use the estimating expertise from the vicinity of the disaster, when possible. This allows factors to be developed on the project site. Regarding the ASPE Level 3 estimate, the ASPE representative stated that that level is not designed to require sufficient construction documentation to attain the ideal +/- 10% range of eventual firm bids.

Next, FEMA presented the results of its comparative analysis of the CEF to ASPE's Level 3 estimating approach. ASPE's Level 3 estimate is a "Design Development/Budget Appropriation" level prepared from not less than 25 percent complete preliminary design drawings and draft specifications. The purpose of this estimate is to establish probable costs within the range of available information. To perform the primary comparison of CEF to an ASPE Level 3, the documentation and design development criteria for both estimating methods were detailed. In its

presentation, FEMA noted that the requirements for both estimating methodologies are very similar. Site plans, dimensions, arrangements, and schematics are required for both. ASPE also requires detailed preliminary plumbing, mechanical and electrical drawings. This level of detail is not specifically defined as a requirement for CEF. FEMA noted that while the requirements for both methodologies are generally quite similar, they are not directly comparable. The CEF focuses on costs to return disaster-damaged eligible facilities to their pre-disaster condition. In this regard, the CEF parallels the performance objective of ASPE Level 3. Under post-disaster conditions, a CEF estimate will compare favorably with other cost estimating methodologies (e.g., Building Construction Handbook, United States Department of Energy Cost Estimating Guide, and the Association for the Advancement of Cost Engineering's Cost Estimate Classification System) and produce an estimate of approximately the same magnitude and confidence level.

FEMA concluded that the results of its comparison of the CEF to ASPE Estimating procedures (Levels 1 through 6) show that the CEF process parallels the ASPE Level 3 process in level of contingency (design phase scope contingency) and the type and level of design documentation required. ASPE's method does not specifically incorporate factors in the estimate, as is done in CEF, but it does allow a percentage to be used for general conditions in Levels 1 and 2, and standard estimating industry practice often involves adding a percentage of base costs to a number of items to put together a total estimate (e.g., construction cost contingencies, reserve for change orders, overhead, and profit).

FEMA indicated that to ensure a high level of confidence in the CEF estimate, a clear definition of the scope of work is required, along with active participation by the subgrantee, and that to meet the ASPE Level 5 criteria using the Panel's plus or minus 10 percent thresholds, the Panel could consider refining the qualification criteria to include all large permanent work projects on the basis of all work being done for an individual subgrantee, rather than on a project-by-project basis. The FEMA presenter concluded that the CEF falls well within the range of other industry-accepted cost estimating systems.

Each panelist voted on the behalf of their respective organizations and unanimously endorsed the CEF 2.0 and selected the CEF as the recommended cost estimating methodology for the Public Assistance program.

The minutes of both meetings are posted on FEMA's website at http://www.fema.gov/government/grant/pa/meeting.shtm and in the docket for this rulemaking at www.regulations.gov.

C. Panel Recommendation Report

The Panel issued a Recommendation Report in October 2002. The Report is available on FEMA's website at http://www.fema.gov/government/grant/pa/exppanel.shtm and in the docket for this rulemaking at www.regulations.gov. The Panel made nine recommendations in its report. They are:

1. Official endorsement of the CEF

The Panel officially endorsed the CEF 2.0 as the cost estimating methodology and instrument of the Public Assistance program, predicated on the following observations:

the CEF mandates the use of CSI Masterformat and estimates are prepared with the CSI number system; the format of the CEF is designed to serve the unique requirements of the Public Assistance program; the organized approach of the CEF promotes consistency in documentation; the CEF has the capability to import and incorporate cost data from other estimating programs; and the design of the CEF is flexible and, therefore, superior to other inflexible estimating systems.

2. Recommendation of plus or minus 10 percent as the reasonable floor and ceiling thresholds for project cost.

The Recommendation report indicates that the 10 percent thresholds "best represent accepted engineering and construction industry standards for estimating project costs."

3. Close attention must be made to the degree of documentation detail required for developing CEF estimates.

The Panel recommended that the highest level of detail that can be made available from design and/or construction information should be used to build the CEF estimate. When available, the use of lump sum competitive bids is discouraged in favor of itemized unit price bids. If used, lump sum bids require 100 percent full-detailed and complete drawings and the work activities should be itemized. In either case, estimate accuracy depends upon the completeness of the bid documents. The Panel noted that the realistic starting point for developing a cost estimate for a disaster-damaged facility is at an ASPE Level 3, which is prepared from not less than 25 percent complete preliminary design drawings and draft specifications. The purpose of this estimate is to establish probable costs within the range of available information. The Panel specified that in order to attain

the plus or minus 10 percent threshold accuracy proposed for a CEF estimate, the Public Assistance process should progress to a level of detail corresponding to an ASPE Level 5, which is prepared from not less than 90 percent complete design drawings and specifications. This level shows the probable project cost.

4. Important points that must be considered when using the CEF.

The Panel noted that early identification of personnel with discipline-specific, technical expertise is required to accurately develop a complete scope of work before CEF estimates are generated, and those estimates should include experienced cost estimators. The individual assigned to develop the estimate must have discipline-specific, technical expertise in the formulation of large projects. Federal, State and local partners must collaborate in good faith when identifying and documenting the eligible scope of work to repair or replace a disaster-damaged facility to improve the likelihood of realizing accurate cost estimates within the floor and ceiling thresholds. The Panel noted that it is best to take time preparing a CEF estimate at the outset to improve the chance that it will not have to be revisited in the future (i.e., if it is done incorrectly, such as not applying one of the factors). Working with the subgrantee early on in the disaster response and recovery process is essential to discussion and agreement on the scope of eligible work and could be helpful in reducing the need for change orders. Hidden damage and differing site conditions would be an exception. The Panel recommended that whenever possible, base costs captured in Part A of the CEF should be derived from local cost-estimating resources and cost data. The Panel also recommended that work activities not itemized in the CEF estimate should be eliminated from the Project Worksheet (e.g., the deduction for depreciation, insurance recovery, and salvage value,

etc.) before the CEF estimated cost and the eligible cost of the actual work are compared. The estimator should calculate the plus or minus 10 percent threshold between the CEF estimated cost and the eligible cost of the actual work.

5. CEF training offered at Disaster Field Offices should be made a resident course offering of FEMA's Emergency Management Institute.

The Panel recommended that FEMA establish a resident CEF training program at the Emergency Management Institute (EMI) of FEMA's National Emergency Training Center (NETC). The training would be for Public Assistance Project Officers, Technical Specialists, FEMA's Public Assistance Coordinators, Public Assistance Officers, and management officials responsible for disaster operations.

6. The lower-bound percentile for Factor C.1 (Preliminary Engineering Analysis Stage) should be revised to more accurately reflect the risk in bidding simple projects.

As noted in this preamble, the Part C factor accounts for the budgetary risk associated with project unknowns and complexities in determining the scope of work. It is included in the CEF estimate to create an appropriate level of probability for completing the project within that estimate. The C.1 factor, Design Phase Scope Contingencies, represents standard cost estimating contingencies based on the design and engineering process as a function of time. This contingency is based on the concept that there are typically more unknowns and items at the schematic design stage than at the final design stage. The unknowns gradually decrease as the scope of work is defined, details for completing the work are developed, and the project advances towards a set of construction drawings and specifications that can be used by a construction contractor.

The project is evaluated to determine the design phase at the time the estimate is prepared.

At the preliminary engineering analysis stage, concepts have been developed but without a significant level of detailing. It is difficult to accurately quantify work at this stage, and contractors assume a relatively high level of risk in bidding a project at this stage. CEF 2.0 recommends a factor of 15 to 20 percent (depending on the complexity of the project). The Panel's recommendation is that the current lower-bound percentile of 15 percent does not accurately depict the actual risk of bidding a simple project; the lower-bound percentile of 7 percent is more realistic.

7. Cost data should be obtained for use in analyzing results for each large project estimated by the CEF.

The Panel noted that the Public Assistance Officer forwards a CEF Large Project Report to FEMA Headquarters, and this report includes the CEF estimate of the large project and the actual cost of the completed large project. To facilitate FEMA's efforts in collecting this information, the Panel encouraged FEMA to incorporate CEF data collection into its existing database (the National Emergency Management Information System (NEMIS)), to allow FEMA the ability to standardize information reporting requirements, facilitate project cost data development, and to electronically access data for analysis.

The Panel emphasized that data collection for estimated and actual costs should be designed for comparison of like work activities between the final CEF estimated costs and the eligible costs of actual work. It is critical that work activities not itemized in the CEF estimate be eliminated from the Project Worksheet (such as the deduction for

insurance recovery), before comparing the CEF estimated cost and the eligible cost of the actual work. Only when like items of work exist is the plus or minus 10 percent threshold between the CEF estimated cost and the eligible cost of the actual work properly calculated.

8. The Engineering and Design Services Curves (A and B) should be updated as soon as practicable when received from the American Society of Civil Engineers (ASCE) Committee on Professional Practice.

As addressed in this preamble's discussion of the Part H factor, engineering curves are used to estimate the cost of basic engineering services as a percentage of the estimated construction cost. One of two curves, Curve A and Curve B, may be used to determine the appropriate percentage. Curve A applies to projects with above-average complexity and non-standard design. Curve B applies to projects of average complexity. In its recommendation, the Panel indicated that the 1975 curves being used by FEMA are lower than current engineering and construction costs, and that a better estimate of A&E costs is necessary.

9. Incorporate lessons learned into the CEF.

The Panel recommended that FEMA make periodic revisions and incorporate lessons learned from previous disasters into the CEF Instructional Guide and/or worksheet to better ensure that user guidance remains current.

V. Proposed Rule

A. General

FEMA accepts the Panel's recommendation to adopt the CEF as the cost estimating procedure for large permanent work projects. FEMA has made several

changes to CEF 2.0 as a result of the Panel's recommendations as well as other general improvements made as a result of using CEF in the field. The new version reflecting these changes is called CEF 2.1. FEMA also accepts the Panel's recommendation of a 10 percent floor threshold for underruns and a 10 percent ceiling threshold for overruns.

Pursuant to DMA 2000, FEMA will apply the CEF to large projects (projects above $67,500 for fiscal year (FY) 2013) involving permanent work (Categories C through G) only. These restrictions are implemented pursuant to section 2(d) of DMA 2000, which specifically limits applicability of the cost estimation procedures to large projects, and to projects authorized by section 406 of the Stafford Act, which are projects involving repairing, restoring, reconstructing, or replacing a disaster-damaged public facility or private nonprofit facility. FEMA categorizes such projects as permanent work.

FEMA proposes to apply the CEF only to projects that are less than 90 percent complete. By the time a project is 90 percent complete, most of the actual costs of the project are known, rendering little need for the CEF, which is designed to determine unknown costs. FEMA determines whether a project is 90 percent complete by dividing the total amount of the approved invoices for completed eligible work by the total construction contract award amount for eligible work, and then multiplying by 100. For example, if the total contract award is $100,000, and the total amount of approved invoices is $87,000, FEMA would divide $87,000 by $100,000 to get 0.87, and then FEMA would multiply 0.87 by 100 to get 87 percent complete.

Once FEMA completes the CEF estimate, FEMA will attach the CEF Spreadsheet to the Project Worksheet, along with all supporting documentation. After FEMA approves the Project Worksheet, FEMA will obligate the Federal share of the total project

cost estimate to the grantee. The grantee is responsible for drawing down funds from Smartlink[7] and for using those funds to make incremental payments to the subgrantee in accordance with local rules and procedures as work is completed and documentation is submitted. Once FEMA has established a total eligible project cost of an approved scope of work, FEMA will not alter that amount, and any cost overruns or underruns will be addressed at project closeout. FEMA will not allow for revised scopes of work because the CEF estimate takes into account the possibility of any such revisions in the Part C Factor: Construction Cost Contingencies/Uncertainties (Design and Construction). The Part C factor accounts for the budgetary risk associated with project unknowns and complexities in determining the scope of work. It is included in the CEF estimate to create an appropriate level of probability for completing the project within that estimate.

B. CEF Version 2.1

FEMA proposes in this rulemaking to use CEF version 2.1 as the cost estimating procedure for determining the total project cost estimate of a large permanent work project. FEMA has incorporated the Panel's recommendations and lessons learned from version 2.0 into version 2.1.

One of the major changes in version 2.1 is the revision of Factor C.1 (Preliminary Engineering Analysis). In accordance with the Panel's recommendation, the lower-bound percentile of bidding simple projects has been changed from 15 percent to 7 percent. For Factor C.2 (Facility or Project Constructability), the input of percentages is restricted to a maximum of 7 percent. The recommended range was not higher than 7

[7] Smartlink is an electronic money transferring system. When FEMA obligates funds for an approved Project Worksheet, FEMA transfers the approved funds to the Smartlink system. The grantee uses an identification number and password to access the Smartlink system to draw down the funds to pay the subgrantee.

percent in CEF 2.0, but the estimator had the option of using a higher percentage. CEF 2.1 no longer allows the estimator to use a percentage higher than 7 percent. This will help ensure that the CEF estimates are consistent and that the estimator chooses factors within the recommended ranges. If the FEMA estimator has sufficient information to support costs outside the recommended range, then that cost should be itemized in Part A rather than use a CEF Factor. For similar reasons, Factors B.1, C.2 and C.3 have been restricted to their recommended ranges.

Regarding Factor C.4 (Economies of scale), Factor D.3 (General contractor's profit), and Factor G (Applicant's reserve for change orders), the step functions for these factors have been changed to a curve function. When using a step function, a certain percentage is applied to a project based on the dollar amount of the project. This approach is reasonable, except for projects at the boundary of the range, which resulted in sharp dollar changes at arbitrary boundaries. By changing to a curve function, the FEMA estimator can adjust the factors based on the size of the project in a way that avoids these sharp dollar changes. For example, for a project of $2,950,000 (the sum of CEF Parts A, B, C, D.1 and D.2) CEF version 2.0 assigned a general contractor profit of 7 percent for repair/retrofit work or 6.5 percent for new construction (for projects from $1.5 million to $3.0 million). For a similar project of $3,150,000 the general contractor profit decreases to 5.5 percent for repair/retrofit work and 5 percent for new work. As shown in Table 2, the increase in project size results in a substantial decrease in the dollar amount of the profit.

In CEF version 2.1 the change in profit is continuous as the project size changes. The percentage continues to decrease but a drop in dollars at the boundaries is avoided.

CEF Version	Project Size	Repair/Retrofit		New Construction	
		% Profit	$ Profit	% Profit	$ Profit
CEF V.2	$2,950,000	7%	$206,500	6.5%	$191,750
	$3,150,000	5.5%	$173,250	5%	$157,500
CEF V2.1	$2,950,000	5.7%	$167,863	5%	$146,708
	$3,150,000	5.5%	$174,409	4.8%	$157,509

Table 2

FEMA has not included the specific recommended percentages for the factors in the regulatory text. The percentages are listed in the CEF for Large Projects Instructional Guide V2.1 and in the CEF Spreadsheet. FEMA did not include them in the regulatory text because application of a specific percentage is in the discretion of the FEMA estimator. This allows the FEMA estimator the flexibility to adjust the percentages as necessary for each specific project. This flexibility will allow the FEMA estimator to reach the most accurate estimate possible, thus avoiding the possibility of large overruns or underruns. It also allows FEMA to adjust the recommended percentages for each factor if necessary due to lessons learned or any change of circumstances such as: (1) inflation, (2) publication by the ASCE of new cost data requiring an update to the engineering design curves, (3) updated recommendations of the CEF Expert Panel, or (4) any other changes that affect the engineering and construction industry.

Another major change to CEF 2.0 affects the Part H.2 Factor (A&E Design Cost Curves). FEMA has updated the A&E curves to be consistent with the Public Assistance

Guide (FEMA 322/ June 2007) and the 2005 ASCE data, as recommended by the CEF Panel.

The Panel recommended that an appropriate amount of time be taken in preparing the eligible scope of work and in estimating the Part A costs. FEMA agrees, as this will result in a more accurate CEF estimate. FEMA has stressed the importance of preparing an accurate scope of work in the CEF Instructional Guide for version 2.1, as well as the importance of a detailed and thorough estimate in Part A.

The Panel also recommended that FEMA identify personnel with discipline-specific, technical expertise to more accurately develop a complete scope of work before CEF estimates are generated and to include experienced cost estimators. FEMA recognizes that the success of the CEF system is predicated upon the development of an accurate scope of work in Part A and selection of the appropriate factors in Parts B through H, and that the professional experience of the estimator is an important consideration. Members of the CEF team should be engineers, cost estimators, or technicians with experience in design, construction, and cost estimating. FEMA generally recognizes that an individual with cost estimating experience who qualifies as an Engineer IV, according to the ASCE, or a U.S. Army Corps of Engineers GS-11, is qualified to use the CEF. The Panel also recommended that FEMA establish a resident CEF training program at the EMI FEMA's NETC. FEMA has implemented a training and credentialing program for CEF users.

The CEF Instructional Guide for CEF 2.1 is available in the docket for this rulemaking at www.regulations.gov.

C. Floor and Ceiling Thresholds

1. Establishment of Set 10 Percent Floor and Ceiling Thresholds

Due to the time that has elapsed between the Panel's Recommendation Report in 2002 and the publication of this proposed rulemaking, FEMA contacted individual panel members to re-validate the 10 percent threshold recommendation.[8] FEMA received responses from three panel members; all three re-validated the 10 percent recommendation. FEMA also reached out to individual industry experts, who also supported the 10 percent recommendation. In addition, the 10 percent threshold is supported by industry research. See Ray R. Venkataraman and Jeffrey K. Pinto, Cost and Value Management in Projects, 43-57 (2008); J. Thomas Tanner, "Construction Cost Estimating," in Land Development Handbook, 831-847 (2002); Nigel J. Smith, Project Cost Estimating, 51-59 (1995); Anghel Patrascu, Construction Cost Engineering Handbook, 75-95 (1988). The responses from the individual Panel members and the individual industry experts, as well as the supporting research, are available for viewing in the docket for this rulemaking.

FEMA finds that the 10 percent threshold is an acceptable threshold for a CEF version 2.1 cost estimate, which is an ASPE Level 4 cost estimate. The current Level 4 is equivalent to the Level 5 at the time of the Panel's recommendation. ASPE has revised its levels since the Panel's recommendation. In the most recent edition of the Standard Estimating Practice, there are now five levels rather than six. Essentially, Levels 1 through 3 are still the same. Level 4 (project control) was removed, and the old Level 5 (construction document) became the new Level 4, and the old Level 6 (bid) became the

[8] FEMA did not request that the Panel validate any other portion of its recommendation, as the other portions of the recommendation are not meaningfully effected by the time that has elapsed.

new Level 5. The Panel recommendation that the CEF be a Level 5 estimate, which is when the level of design is 90 percent complete, would now be a Level 4 estimate.

For an accurate estimate, estimators need a detailed scope of work, detailed project specifications, drawings, diagrams, floor plans, elevations, and other similar information about the project. The more information the estimator has to define the project, the more accurate the estimate will be. FEMA's CEF 2.1 Instruction Guide stresses to the FEMA estimator the importance of gathering these materials before completing an estimate.

The Panel also stressed the importance of certain items that would ensure that the estimator is able to produce a Level 5 (now Level 4) estimate. The Panel recommended that the FEMA estimator should be an experienced estimator, with discipline-specific, technical expertise, and that the estimator take time preparing a CEF estimate at the outset to improve the chance that it will not have to be revisited in the future. The Panel also recommended that the FEMA estimator should work with the subgrantee early on in the disaster response and recovery process to determine an accurate, detailed, and clearly defined scope of eligible work, and to make use of the greatest degree of design and/or construction documentation detail. These recommendations are incorporated into CEF 2.1 and ensure that the CEF estimate is a Level 4 estimate (as per current ASPE levels). If this rule is finalized, the Instructional Guide will be revised to include a section on the application of the floor and ceiling thresholds.

The Panel emphasized that work activities not itemized in the CEF estimate should be eliminated from the Project Worksheet (such as the deduction for insurance recovery) before the CEF estimated cost and actual costs are compared. The Panel

stressed that the plus or minus 10 percent thresholds cannot be applied except when there are like items of work in the CEF estimate and the determination of actual costs. When FEMA calculates the actual cost, it will only include those items that were included in the CEF estimate. This issue will be addressed in the Instructional Guide so that there is a valid comparison between the CEF estimate and the actual cost at the project reconciliation phase.

2. Ceiling Threshold

The statutory language establishing a ceiling threshold under section 406(e) of the Stafford Act, as amended by DMA 2000, , states that if the actual project cost is greater than the ceiling percentage of the estimated cost, the President may reimburse a portion of the actual cost that exceeds the estimated cost.

There are at least two interpretations of the provision in the statute stating that FEMA may reimburse a "portion of the actual cost." It could be interpreted to mean that if the actual costs exceed the ceiling threshold: (1) FEMA may reimburse the Federal share of any amount that exceeds the CEF estimate, or (2) FEMA may reimburse the Federal share of any amount that exceeds the ceiling threshold. The first interpretation views the provision as a de minimus statute, meaning that if FEMA's estimate is fairly accurate (the amount of the overrun is less than the ceiling percentage) then there is no need for the administrative chore of adjusting that estimate, but if FEMA's estimate is in error by more than the ceiling percentage, then adjustment is necessary. With the first interpretation, FEMA would share all of the cost if the estimate is so inaccurate that it is in error by more than the ceiling percentage. The second interpretation is that FEMA may reimburse any amount of the Federal share over the ceiling threshold. This is the

interpretation of the CEF Panel, and it ensures that the subgrantee has an interest in keeping costs down during a project. If FEMA were to determine that "a portion of the actual cost" means any eligible costs over the CEF estimate, then as soon as the subgrantee surpassed the CEF estimate, it would have an incentive to spend more to go over the ceiling threshold in order to avoid paying for the portion that was over the CEF estimate but was less than the ceiling threshold.

Thus, if the actual costs exceed the CEF estimate, but are under the ceiling threshold, FEMA would not reimburse the subgrantee for the excess amount. If there is a 10 percent ceiling threshold, the CEF estimate is $100,000, and the actual costs are $125,000 (which is $15,000 over the ceiling threshold of $110,000), then FEMA may reimburse the Federal share of any portion of the $15,000 excess amount.

3. Floor Threshold

The statutory language establishing a floor percentage (referred to by FEMA as the floor threshold) under section 406(e) of the Stafford Act, as amended by DMA 2000, states that if the actual project cost is less than the estimate but more than or equal to the floor percentage of the estimated cost, the applicant may use the excess for mitigation activities. If the actual project cost is less than the floor percentage of the estimated cost, the applicant must return the difference.

Under paragraph (B)(i), if actual costs are less than the CEF estimate but are equal to or above the floor threshold, the subgrantee may keep the amount that is equal to or above the floor threshold. Thus, if the floor threshold is 10 percent, and the CEF estimate is $100,000, then the floor threshold equals $90,000. If the actual costs are between $90,000 and $99,999.99, the subgrantee may keep the excess amount. For

example, if the actual cost is $90,000, the subgrantee may keep the excess $10,000 and use it "to carry out cost-effective activities that reduce the risk of future damage, hardship, or suffering from a major disaster." FEMA interprets "cost-effective activities that reduce the risk of future damage, hardship, or suffering from a major disaster" to mean activities that mitigate risk to undamaged elements of disaster-damaged facilities, activities that mitigate risk to undamaged elements of undamaged facilities, and activities that mitigate risk of future hardship and suffering. Although the CEF Panel recommended that the mitigation activities be limited to section 406 mitigation (i.e., mitigation authorized under section 406 of the Stafford Act) and 44 CFR §206.226(e), FEMA notes that this is not a compelling incentive to keep costs down because a subgrantee would already have the ability to use section 406 hazard mitigation funds regardless of whether the subgrantee has a CEF underrun. The Stafford Act's CEF provision did not specify that cost-effective activities must be limited to section 406 mitigation activities, because it includes reducing the risk of "future damage, hardship and suffering from a major disaster." Therefore, FEMA is interpreting such cost-effective activities broadly to include activities that mitigate undamaged elements of any disaster-damaged eligible facility (not just the facility that is the subject of the grant award), activities that mitigate undamaged elements of eligible undamaged facilities, and activities that would mitigate future hardship and suffering. FEMA interprets hardship and suffering to include conditions of life that are difficult to endure and that could result from a future major disaster. Conditions of life that are difficult to endure include lack of food, water, safe shelter, and medical care.

Types of activities that would mitigate undamaged elements of disaster-damaged facilities include installing shutters over undamaged windows similar to shutters installed over damaged windows, strengthening undamaged columns after seismic events, upgrading a roof in an area subject to hurricane-force winds, elevating critical facility components, such as electrical panels and heating, ventilation, and air-conditioning (HVAC) units, and adding berms and floodwalls for floodproofing. Types of activities that would mitigate undamaged facilities include flood proofing first floors, adding berms or floodwalls around public facilities in floodplains (e.g., sewage treatment plants), demolishing facilities, upgrading a roof in an area subject to hurricane-force winds, reinforcing designated emergency shelters, enlarging spillways on dams subject to overtopping by floodwaters, and raising bridges to prevent overtopping by allowing higher flows. Activities that would mitigate future hardship and suffering include purchasing equipment such as emergency generators and emergency vehicles (e.g., fire trucks and related personal protective equipment, and ambulances), recovery planning (e.g., infrastructure assessments and risk analyses), installing storm warning systems such as weather/tornado warning sirens, providing training related to emergency response and recovery training courses that would be beneficial to communities, training for search and rescue teams, offsetting costs to establish debris recycling programs, constructing or rehabilitating designated shelters or safe rooms such as safe rooms in high incident tornado areas and inside critical facilities (e.g., schools, hospitals, government buildings, etc.), evacuation plans and signage in hurricane prone areas, earthquake detection and warning devices, and new or replacement equipment for search and rescue teams.

Under this proposed rule, the subgrantee must submit a separate Project Worksheet for FEMA approval before it may use a CEF underrun for a cost-effective activity. The subgrantee must submit the Project Worksheet within 90 days of identifying the project underrun, and the Project Worksheet must identify all projects under the same major disaster declaration with underruns that would be used to fund the cost-effective activity(ies). As with any other grant, if FEMA approves the proposed use of the subgrantee's underrun, the project would be subject to the applicable grant administration regulations at 44 CFR part 13.

Paragraph (B)(ii) of section 406(e) of the Stafford Act, as amended by DMA 2000, applies to situations where the actual cost is less than the floor threshold. There are two possible interpretations of paragraph (B)(ii), which states that if the actual costs are less than the floor threshold, the subgrantee must "reimburse [FEMA] in the amount of the difference." The "amount of the difference" may mean either: (1) the difference between the actual cost and the CEF estimate (i.e., the subgrantee would have to return the entire amount of the underrun), or (2) the difference between the actual cost and the floor threshold (i.e., the subgrantee would return the amount that is less than the floor threshold and keep the amount that is above the floor threshold). For example, under the first interpretation, if the CEF estimate is $100,000 and the actual cost is $70,000, the subgrantee would have to return the entire difference between the actual cost and the estimated cost, which is $30,000. Under the second interpretation, using the same fact pattern, the subgrantee would have to return the difference between the actual cost ($70,000) and the floor threshold ($90,000), which is $20,000. The subgrantee could keep the $10,000 above the floor threshold to use for cost-effective activities. Paragraph

(B)(ii) does not contain the provision that excess funds may be used for cost-effective activities, however. That provision is only in paragraph (B)(i). Paragraph (B)(i) only applies when the actual cost is greater than or equal to the floor threshold. However, the CEF Panel endorsed the second interpretation, and FEMA's position is that the second interpretation is in keeping with the spirit and objective of the statute that excess funds be used for cost-effective activities to reduce the risk of future damage, hardship, or suffering from a major disaster. This is a logical interpretation of the statute, and within FEMA's discretion. It does not make sense to let the subgrantee apply the entire amount of the underrun to such cost-effective activities if the underrun is small, but to make the subgrantee return the entire amount of the underrun if the underrun is large. This would not be an incentive to keep costs low, and it would not encourage cost-effective activities to mitigate future loss. Therefore, FEMA proposes to adopt the second interpretation and with a restriction, for the sake of consistency with paragraph (B)(i), that excess funds greater than or equal to the floor threshold must be used for certain cost-effective activities.

4. Improved Projects

When performing permanent restoration work on a disaster-damaged facility, a subgrantee may decide to use the opportunity to make improvements to the facility while still restoring its pre-disaster function and at least its pre-disaster capacity. For example, the subgrantee may decide to replace a firehouse that originally had two bays with one that has three. Projects that incorporate such improvements are called improved projects. An improved project could be either a small or large project and must meet Public Assistance program requirements.

Funding for such projects is limited to the Federal share of the costs that would be associated with repairing or replacing the disaster-damaged facility to its pre-disaster design, or to the actual costs of completing the improved project, whichever is less. The CEF is only used to estimate the repair or replacement cost of the original facility to its pre-disaster design. Any additional costs not required by the original eligible scope of work are not eligible. In this proposed rule, the floor and ceiling thresholds are applied to the CEF estimate of the eligible scope of work. Reimbursement for cost overruns above the ceiling threshold is available only for projects where the approved eligible costs are clearly tracked and documented separately from improvement costs. If the costs cannot be separately documented, then funding for the improved project will not exceed the Federal share of the CEF estimate. FEMA may provide assistance with hazard mitigation under Section 406 of the Stafford Act, if the improved project is not a completely new facility.

5. Alternate Projects

Alternate projects, authorized under section 406(c) of the Stafford Act and 44 CFR 206.203, may be approved by FEMA in any case in which a subgrantee determines that the public welfare would not be best served by repairing, restoring, reconstructing, or replacing the disaster-damaged facility. If a subgrantee chooses to do an alternate project, FEMA would award a portion of the funding that would have been awarded for the original project for use in the repair, restoration, or expansion of another facility, to construct a new facility, or to fund hazard mitigation measures in the disaster-affected area.

Funding for alternate projects is limited to 90 percent (for public facilities) or 75 percent (for eligible private nonprofit facilities) of the Federal share of the Federal estimate of the cost to repair, restore, reconstruct, or replace the disaster-damaged facility and of management expenses. Alternate project funding would be based on the CEF estimate to repair, restore, reconstruct, or replace the original disaster-damaged eligible facility. Any additional costs not required by the original eligible scope of work would not be eligible. FEMA would not apply the 10 percent threshold to alternate projects as the Stafford Act only provides for use of these thresholds for the repair, restoration, reconstruction, or replacement of a facility damaged or destroyed by a major disaster. Therefore, the threshold is not applicable to alternate projects.

FEMA would award the subgrantee 90 percent of the Federal share of the estimate of the original project (or 75 percent of the Federal share of the estimate if it was an eligible private nonprofit facility) to do the alternate project. FEMA would not do a new or revised estimate or scope of work for the alternate project itself because, at its option, a subgrantee can apply the funding, the amount of which is based on the estimate of the original project, to another project. The alternate project may cost much more than the original project, but FEMA only awards the 90 percent or 75 percent of the Federal share of the estimate of the original project. FEMA, however, would only reimburse for actual costs.

For example, a subgrantee decides that instead of rebuilding the disaster-damaged facility (the original project) estimated at $100,000, it wants to build a school (the alternate project) several miles away from the original project site, which is going to cost $4 million. FEMA would award the subgrantee 90 percent of the Federal share (or 75

percent of the Federal share if it's a private nonprofit facility) of the original project estimate of $100,000. So, if the Federal share is 75 percent, then the Federal share of $100,000 is $75,000. Ninety percent of $75,000 is $67,500. FEMA would award $67,500 for the alternate project.

The Stafford Act does not provide for Federal funding to cover the $4 million project cost, which is in excess of the $100,000 project estimate to repair the original disaster-damaged facility. That is why FEMA does not prepare a scope of work or a revised estimate for the alternate project itself. Once FEMA obligates the money for the alternate project, it does not do any further monitoring of the project, except to make sure that the subgrantee uses the funds to build the alternate project, along with the other general grant requirements that FEMA must ensure that subgrantees meet (such as environmental and historic preservation). The subgrantee cannot request cost overruns under 44 CFR 206.205, because FEMA is not funding the entire project, but rather a percentage based on the Federal estimate of the cost to repair, restore, reconstruct or replace the original disaster-damaged eligible facility. If there is an underrun, FEMA will deobligate funds at project reconciliation and close-out.

The amendment made by DMA 2000 that provides for modification of eligible costs outside of the floor and ceiling only applies to "the actual cost of repairing, restoring, reconstructiong, or replacing" a disaster-damaged facility. Therefore, it is not applicable to alternate projects undertaken pursuant to section 406(c). Under that section the subgrantee must determine that it will not repair, reconstruct, or replace its disaster-damaged facility, and is then limited to receiving a certain percentage of the Federal

estimate of the repair, reconstruction, or replacement of that original facility. FEMA does not have authority to modify that estimate based on the floor and ceiling thresholds.

D. Appeals

As proposed, a subgrantee may appeal any FEMA determination made under the CEF. (See proposed new 44 CFR 206.211.) This includes a determination of the CEF estimate (which can be the original estimate and any revised estimates based on revised scopes of work, which are reflected in new versions of the Project Worksheet), the determination of the amount of actual costs, and the determination of the amount of any overrun or underrun. The appeal procedures for the Public Assistance program (44 CFR 206.206) would apply to any CEF appeals.

E. Consideration of Phased Funding

As proposed, the rule would follow FEMA's current procedure, whereby the Agency works with an applicant to develop a Project Worksheet that includes a scope of work and cost estimate for the full project. FEMA bases the amount of the Project Worksheet on the Estimated Base Cost in Part A, with adjustments using the non-construction cost factors B through H. As noted above, preparing a precise base cost estimate in Part A is critical to the accuracy of the total project estimate, as all other percentages such as initial planning and design, contingencies, and overhead and profit, are based upon the cost estimate in Part A. Generally, when FEMA approves that Project Worksheet, it obligates the full amount of the cost estimate for the entire project, from initial planning and design all the way through construction. For certain large or complex projects, this can result in the commitment of large amounts of money that may not be used for months or even years until the project is ready to enter into the construction

phase. To provide for better overall financial and grant management, and to improve the quality of the estimate in Part A, FEMA may fund certain large and complex projects in two phases: (1) planning and design; and (2) construction and closeout. Under this process, FEMA would work with the applicant as it currently does to develop an initial estimate of the entire project and an estimate of the funding necessary for the planning and design phase of the project (CEF factors H.1 and H.2). FEMA would then approve one Project Worksheet to obligate the funding for the planning and design phase. FEMA and the applicant would use the results of the planning and design phase to develop a more accurate estimate for the construction phase, after which FEMA would approve a second Project Worksheet to obligate funding for the construction phase. Essentially, this change would maintain Part A as currently written, but fund factors H.1 and H.2, limited to the costs required for planning and design, as a separate subgrant to the applicant. Once the planning and design phase was complete, FEMA would then run the full CEF and provide a grant including Parts A-H for the construction and closeout. FEMA is not proposing regulatory text at this time; however, FEMA is seeking public comment regarding the efficacy and feasibility of such an approach.

F. Effective Date

If FEMA publishes a final rule implementing the CEF, the rule will be effective 60 days after the date of publication of the final rule in the Federal Register. It will apply to large permanent work projects authorized under emergency or major disaster declarations issued on or after the effective date.

VI. Regulatory Analyses

A. Executive Order 12866, Regulatory Planning and Review and Executive Order 13563, Improving Regulation and Regulatory Review

Executive Orders 13563 and 12866 direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. FEMA has prepared and reviewed this rule consistent with Executive Orders 13563 and 12866. The annual impact (in 2010 dollars) is estimated at $11.65 million in net transfers from FEMA to subgrantees. Over a 10-year period from 2013 through 2022, the total net transfers would be $116.5 million (undiscounted), or $71.5 million (discounted at 7 percent), or $93.6 million (discounted at 3 percent). This rule is not an economically significant regulatory action under section 3(f)(1) of Executive Order 12866.

FEMA provides grants to State and local governments, Indian tribes, and to certain private non-profit (PNP) organizations for debris removal, emergency protective measures, and the repair, restoration, reconstruction, or replacement of facilities damaged in Presidentially-declared major disasters. This proposed regulation would allow FEMA and subgrantees to better estimate the actual cost to repair or replace eligible disaster-damaged facilities.

Public Assistance projects are processed as either small or large projects. If the project cost is less than the annually updated cost threshold amount ($67,500 for FY2013) the project is processed as a small project. If the project cost equals or exceeds

the threshold the project is processed as a large project. This proposed rule would only affect large projects. Because of the nature of most large projects, work typically is not complete at the time of project approval; therefore, FEMA obligates grants based on an estimated cost. Upon completion of a large project, a subgrantee submits documentation to account for all incurred costs. The grantee is responsible for ensuring that all incurred costs are associated with the approved scope of work and for certifying that work has been completed in accordance with FEMA standards and policies. The grantee then submits documentation of project costs to FEMA for review. FEMA may conduct a final inspection as part of this review. Once the review is complete, FEMA determines whether funds should be obligated or de-obligated for the project.

This rule proposes to adopt the cost-estimating procedures recommended by the expert panel. When a grantee/subgrantee applies for a grant to fund a Public Assistance project, FEMA estimates the cost of the project to determine how much the grant award should be. FEMA uses the CEF to do that estimate. Implementation of the CEF via this rule would not create any impacts on grantees/subgrantees because FEMA has already been using the CEF to do these estimates since 1994. In that year, after the Northridge California earthquake, FEMA began to develop CEF version 1.0, referred to as the Grant Acceleration Program (GAP). The Northridge earthquake occurred in a large metropolitan area, so much of the damage was to large, complex buildings. The damage was often not apparent during the initial inspection (which is common with earthquake damage), and there were many cases of serious underlying structural damage that required sophisticated engineering analysis. To provide adequate funding for subgrantees to cover the repair to this damage earlier in the grant process, FEMA established a

voluntary program using the GAP method that allowed participants to receive a fair and reasonable fixed budget amount up-front, thereby accelerating the normal funding procedure (hence the name Grant Acceleration Program). The main drawback to GAP was that the subgrantee could not request additional funding, which was problematic if there are large cost overruns. GAP was modified to address this and other problems, and eventually evolved into a new version of the cost estimating format in 1998, which is referred to as CEF 2.0.

CEF 2.0, used until 2009, provided a uniform method of estimating costs for large projects. It accounted for costs incurred across the entire spectrum of eligible work (from design to project completion). Under the CEF 2.0, FEMA obligated the entire amount of the Federal share of the estimate up-front to the grantee, and payments were made by the grantee to the subgrantee in increments as items of work were completed or near completion (i.e., less than a week from completion). The subgrantee could request additional amounts for cost overruns pursuant to 44 CFR 206.204. CEF 2.1, issued in 2009, is very similar to CEF 2.0, with a few minor differences.

CEF 2.1 (as was CEF 2.0) is made up of various parts, categorized as parts A through H, that are compiled by a FEMA estimator (who is either the Public Assistance Project Specialist or is supervised by the Public Assistance Project Specialist) in a CEF Spreadsheet. The main part of the CEF is Part A, which is the base cost (construction costs) required to complete the approved scope of work. A FEMA cost estimator uses a Part A worksheet to determine the estimated base cost. After estimating the Part A base cost, the FEMA estimator applies a series of factors (referred to as Parts B through H) to the Part A base cost estimate. With the exception of Part F, these factors are percentage

factors. For example, if a Part B percentage factor is 2 percent, the estimator adds 2 percent of the Part A estimated base cost to the total estimate. Sometimes the CEF provides a recommended range of percents for each factor, such as 3 to 6 percent, and it is up to the discretion of the FEMA estimator which percentage to apply, depending on the specifics of the project. The FEMA estimator must detail why he or she chose a specific percentage in a special section of the CEF worksheet designed for this purpose. This flexibility in the CEF methodology allows it to more accurately estimate the many different types of large projects under the Public Assistance program.

The Part B through H factors represent the nonconstruction costs (also referred to as construction-related costs), and are used only if the costs represented by the Parts B through H factors are not otherwise itemized in Part A. The costs represented by the factors are allowable project costs under 44 CFR part 13, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments. The cost estimator adds the estimated nonconstruction costs to the Part A base construction cost using a CEF Worksheet to estimate the total cost of completing the project. This "forward-pricing" methodology provides an estimate of the total eligible funding at the beginning of the project. The estimate, which FEMA uses to approve funds for the project, allows the subgrantee to more accurately manage the budget with a greater degree of confidence.

As noted above, CEF 2.1 was issued in 2009. It is very similar to CEF 2.0, but with a few substantive changes. One of the main changes in CEF version 2.1 was the revision of Factor C.1 (Preliminary Engineering Analysis). In accordance with the recommendation of the expert panel, the lower-bound percentile of bidding simple

projects was changed from 15 percent to 7 percent. For Factor C.2 (Facility or Project Constructability), the input of percentages was restricted to a maximum of 7 percent. In CEF 2.0, the recommended range was not higher than 7 percent, but the estimator had the option of using a higher percentage. CEF 2.1 no longer allows the estimator to use a percentage higher than 7 percent. This will help ensure that the CEF estimates are consistent and that the estimator chooses factors within the recommended ranges. If the FEMA estimator has sufficient information to support costs outside the recommended range, then that cost should be itemized in Part A rather than use a CEF Factor. For similar reasons, Factors B.1, C.2 and C.3 have been restricted to their recommended ranges. Regarding Factor C.4 (Economies of scale), Factor D.3 (General contractor's profit), and Factor G (Applicant's reserve for change orders), the step functions for these factors were changed to a curve function. When using a step function, a certain percentage is applied to a project based on the dollar amount of the project. This approach is reasonable, except for projects at the boundary of the range, which resulted in sharp dollar changes at arbitrary boundaries. By changing to a curve function, the FEMA estimator can adjust the factors based on the size of the project in a way that avoids these sharp dollar changes.

As described above, FEMA has used the CEF for several years, and therefore, adoption of the CEF by this rule would have no additional economic impact. The qualitative benefits and efficiencies this proposed rule provides include the fact that subgrantees would now have the incentive to finish a project at or below the estimated costs because they can use the underruns (up to 10 percent) for other eligible projects. In addition, subgrantees would have a clear vision of their project and can budget up front

for their project. Currently, subgrantees do not do this because they can get reimbursed for any cost overruns throughout the project. Under the proposed rule, subgrantees would absorb any cost overruns (up to 10 percent), and would not get reimbursed for any remaining cost overruns until the end at grant closeout.

For large projects involving permanent work, this rule proposes -10 percent and +10 percent, respectively, for the floor and ceiling thresholds required by section 406(e) of the Stafford Act. If the actual eligible cost of a project is up to 10 percent less than the estimated eligible cost, the subgrantee would be allowed to use the underrun on cost-effective activities that reduce the risk of future damage, hardship, or suffering from a major disaster. We interpret these activities to have a broader scope than eligible hazard mitigation under Sections 406 of the Stafford Act. This would provide subgrantees with an incentive to manage their projects so as to possibly achieve underruns. For instance, these cost-effective activities would not be limited to the project that generated cost underruns nor would the cost-effective activities be limited to damaged portions of disaster-damaged facilities. The subgrantee must submit a separate Project Worksheet for FEMA approval before it may use a CEF underrun for a cost-effective activity. The subgrantee must submit the Project Worksheet within 90 days of identifying the project underrun, and the Project Worksheet must identify all projects under the same major disaster declaration with underruns that would be used to fund the cost-effective activity(ies). As with any other grant, if FEMA approves the proposed use of the subgrantee's underrun, the project would be subject to the applicable grant administration regulations at 44 CFR part 13.

If the actual eligible cost is more than 10 percent below the estimated eligible cost, the subgrantee would be required to reimburse FEMA the amount of the underrun greater than the -10 percent threshold. If the actual eligible cost exceeds the estimated eligible cost by up to 10 percent, the subgrantee would absorb the cost. If the actual eligible cost exceeds the estimated eligible cost by more than 10 percent, the amount over the 10 percent may be eligible for reimbursement. from FEMA to the subgrantee. FEMA would perform its normal eligibility determination to determine which costs would be reimbursed. The Panel found that the selected thresholds best represent engineering and construction industry principles for accurately estimating large project costs. These thresholds were seen as reasonable and were the consensus choice of the Panel.

FEMA selected a sample of 183 Public Assistance large projects from 2004 through 2008 for which the permanent work was 100 percent complete. The CEF was used to develop the cost estimates for these large projects and the estimates were then used as the basis for obligating funds. This sample was drawn to represent a range of disaster type (45 disasters) and damage categories (Category C – G). For the sample of 183 large projects, the total approved estimated eligible costs under CEF were $52.77 million (in 2010 $), and the actual final project costs were $52.53 million (in 2010 $), resulting in an overall total net difference for all 183 large projects of $241,593 (or 0.46 percent of $52.53 million). This seems like a relatively small difference between the estimated and actual costs. However, an individual large project could vary widely in terms having a cost underrun of greater than $200,000 or a cost overrun of greater than $600,000. When all of the underruns and overruns for the sample of 183 large projects are summed together, the total net difference is $241,593.

The distribution of the percent difference between the approved eligible costs and the final project costs is close to a symmetric distribution. FEMA expects that the amount of overruns and underruns would be about the same. Table 3 shows the distribution of the percentage difference between the approved eligible costs and the final project costs for the sample of 183 large projects. The figures in Table 3, column 3, represent the "up to 10 percent" transfer amount, and show the impact of the proposed rule. For example, the four large projects that had actual costs greater than 130 percent of the estimated costs would absorb the cost overruns up to 10 percent (a total of $390,612.62 for the four large projects) and could be reimbursed for the remainder of the cost overruns (e.g., the amount over 110 percent) as long as those costs are eligible under the Public Assistance program.

Table 3: Impact of the Proposed Rule for the Sample of 183 Large Projects

Cost Overrun (> 100%) or Underrun (< 100%) Category	Number of Large Projects	Amount of Transfer (Up to 10%) Under This Proposed Rule	Description
130% - 139.99%	4	$390,612.62	Savings to FEMA
120% - 129.99%	8	$562,004.78	Savings to FEMA
110% - 119.99%	21	$314,485.95	Savings to FEMA
100% - 109.99%	45	$541,470.26	Savings to FEMA
90% - 99.99%	38	($392,170.86)	Savings to Subgrantees
80% - 89.99%	42	($1,182,546.78)	Savings to Subgrantees
70% - 79.99%	19	($467,222.61)	Savings to Subgrantees
60% - 69.99%	4	($181,702.75)	Savings to Subgrantees
50% - 59.99%	2	($32,892.61)	Savings to Subgrantees
Total	**183**	**($447,962.01)**	**Savings to Subgrantees**

Source: FEMA

This rule proposes -10 percent and +10 percent, respectively, for the floor and ceiling thresholds for large projects. The impact of this proposed change to the sample of 183 large projects was a small increase in Public Assistance funding by $447,962, which is 0.85 percent of the total project costs of $52.53 million. FEMA funds approximately

2,745 large projects for permanent work (Category C–G work) per year for $1,365 million (in 2010 dollars). When the same 0.85 percent is applied to all 2,745 large projects with the total amount of $1,365 million, the economic impact of this proposed rule is estimated at $11.65 million per year (= $1,365 million × 0.85 percent). This economic impact would be an increase in the Public Assistance funding amount in the form of a net transfer from FEMA to subgrantees for Public Assistance projects. However, as discussed above and shown in Table 3, this is a net effect of the proposed rule and not all subgrantees may benefit from an increase in the Public Assistance funding. Subgrantees would absorb overruns if the actual eligible cost exceeds the estimated eligible cost by up to 10 percent. In addition, subgrantees would be required to reimburse FEMA the amount of underruns greater than the -10 percent threshold. Because the proposed rule would have an annual economic impact of less than $100 million, this rulemaking is not an economically significant regulatory action.

This rulemaking is not a significant regulatory action because it does not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency – the rule is unique to FEMA and its Public Assistance program. It does not materially alter the budgetary impact of the Public Assistance grant program or the rights and obligations of recipients thereof. The rule proposes to adopt a method of estimating eligible cost that has already been well developed and utilized by FEMA for large projects. Therefore, it does not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in Executive Order 12866, nor does it affect the rights and obligations of the subgrantees. Although the floor and

ceiling thresholds represent a new component of the large project funding process, implementation of the thresholds is required by statute.

To facilitate the periodic review of existing significant regulations, Executive Order 13563 requires agencies to consider how best to promote retrospective analysis of rules that may be outmoded, ineffective, insufficient, or excessively burdensome, and to modify, streamline, expand, or repeal them in accordance with what has been learned. This proposed rule would result in a net decrease in the burden on applicants by providing an additional $11.65 million per year in Federal assistance as a net transfer from FEMA to applicants, and it would also provide applicants an incentive to keep actual costs low because applicants would be able to keep the portion of any cost underrun up to 10 percent of the original estimated costs. Another qualitative benefit is that the proposed rule would increase efficiencies because the subgrantees would have a clearer vision of the project funding streams, and it would be easier for them to plan.

B. The Paperwork Reduction Act

The Paperwork Reduction Act (PRA), 44 U.S.C. 3501 et seq., requires government agencies to acquire approval from the Office of Management and Budget (OMB) for collections of information from the public. This rule does not include any new collections of information. Under this rule, a FEMA estimator will prepare the CEF estimate using a spreadsheet template specifically designed for use with the CEF. Although the subgrantee is part of the Federal-State team that assists the FEMA estimator in developing the estimate, the subgrantee does not input data into the CEF spreadsheet, nor does the subgrantee calculate the CEF estimate. After the FEMA estimator completes the CEF spreadsheet, it is attached to the Project Worksheet as documentation

of FEMA's calculations of the estimate of the total eligible cost of the approved scope of work.

During the Public Assistance process, FEMA and the subgrantee work together to complete the various aspects of the Project Worksheet, which includes a detailed location of the project, a detailed scope of work, and the estimate of the total cost of the scope of work. FEMA estimators may use various methodologies to calculate this estimate, as explained in this rulemaking. If this rule becomes effective, the CEF method will be the mandatory estimating method for large permanent work projects.

OMB has approved the Project Worksheet under the "Public Assistance Program" information collection, OMB Control No. 1660-0017. The Public Assistance Program information collection covers any information or data that a FEMA estimator may need from a subgrantee in order for the FEMA estimator to calculate a project estimate. There is no additional data or other information that a FEMA estimator needs from a subgrantee in order to complete an estimate using the CEF methodology. The CEF is simply an alternate method that is used to calculate an estimate, using the same data and information that FEMA already collects from a subgrantee to aid the FEMA estimator. Therefore, FEMA's use of the CEF spreadsheet to calculate the CEF estimate does not affect the burden hours of the subgrantee's preparation of the Project Worksheet.

The CEF for Large Projects version 2.1 requires a Public Assistance Group Supervisor to prepare and submit a CEF Large Project Report for each large project that was estimated using the CEF. This report is not an information collection because it does not gather information from the public and is not prepared or submitted by the public. It is prepared by FEMA personnel, using information already possessed by FEMA. The

report includes the disaster number and name of the Public Assistance Group Supervisor preparing the report, the declaration date and the date prepared, the subgrantee name, the Public Assistance identification number, the Project Worksheet number, the category of permanent work (C, D, E, F or G), the CEF estimated cost, the CEF actual post-construction cost, the dollar amount of obligation or de-obligation, the reason for cost reconciliation, and the primary function of the facility. FEMA does not need to request this information from the public; it is information that FEMA possesses in the course of administering the Public Assistance program. Therefore, the Project report is not an information collection under the PRA.

C. The Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (UMRA) (2 U.S.C. 1531-1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Unfunded Mandates Reform Act addresses actions that may result in the expenditure by a State, local, or Tribal government, in the aggregate, or by the private sector, of $100,000,000 (adjusted for inflation) or more in any one year. UMRA exempts from its definition of "Federal intergovernmental mandate" regulations that establish conditions of Federal assistance or provide for emergency assistance or relief at the request of any State, local, or Tribal government. Therefore, this proposed rule is not an unfunded Federal mandate under that Act.

Even if UMRA did not include this exemption, this rulemaking does not include an unfunded mandate. It provides for an alternate method of estimating eligible project costs for Public Assistance grants. The alternate method (the Cost Estimating Format) should provide a more accurate estimate of the cost of a large project than the traditional

method of estimating project costs. State, local, and Tribal governments are required to pay a cost share of the Public Assistance grant. This cost share is not expected to increase with the use of the Cost Estimating Format.

D. OMB Circular No. A-119, Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities

OMB Circular A-119 establishes policies on Federal use and development of voluntary consensus standards and on conformity assessment activities. The National Technology Transfer and Advancement Act of 1995 (NTTA), Public Law 104-113, codified existing policies in A-119, established reporting requirements, and authorized the National Institute of Standards and Technology to coordinate conformity assessment activities of the agencies. The Circular directs agencies to use voluntary consensus standards in lieu of government-unique standards except where inconsistent with law or otherwise impractical. It also provides guidance for agencies participating in voluntary consensus standards bodies and describes procedures for satisfying the reporting requirements in the Act. The policies in the Circular are intended to reduce to a minimum the reliance by agencies on government-unique standards.

Voluntary consensus standards are technical standards (e.g., specifications of materials, performance, design, or operation; test methods; sampling procedures; and related management system practices) that are developed or adopted by voluntary consensus standards bodies. This rule uses technical standards other than voluntary consensus standards, which are as follows:

1. Construction Specifications Institute

The CEF uses the MasterFormat developed by CSI. CSI is a national association dedicated to creating standards and formats to improve construction documents and project delivery. MasterFormat is a structured hierarchy of 50 divisions, and sections within each division that standardizes information in construction project manuals. MasterFormat minimizes confusion and miscommunication, leading to fewer, costly project delays, errors, and omissions. The MasterFormat 2004 edition replaces MasterFormat 1995 and is available from the CSI web pages located at http://www.csinet.org/s_csi/docs/9400/9361.pdf.

2. Reed Construction Data

The CEF also uses commercial cost reference manuals, known in the construction and engineering industry as RS Means Cost Data, as developed and published annually by Reed Construction Data, a supplier of construction cost information. RS Means Cost Data provides accurate and up-to-date cost information that helps owners, developers, architects, engineers, contractors and others to carefully and precisely project and control the cost of both new building construction and renovation projects. Key information includes: city cost indexes, productivity rates, crew composition, and contractor's overhead and profit rates. Reed Construction Data performs these functions by collecting data from all facets of the industry, and organizing it in an accessible format. From the preliminary budget to the detailed unit price estimate, the data is useful for all phases of construction cost determination. Annual cost data publications are available from the RS Means web pages located at http://www.rsmeans.com/bookstore/booksearch.asp?c=5.

MasterFormat and RS Means Cost Data were developed in the private sector but not in the full consensus process. They are widely used and accepted de-facto standards by the engineering and construction industry.

These standards are used because FEMA did not find voluntary consensus standards that are applicable to this rule on a national basis. If you are aware of voluntary consensus standards that might apply, please identify them in a comment to the address under the ADDRESSES caption and explain why they should be used.

E. Executive Order 13132, Federalism

Executive Order 13132, Federalism, 64 FR 43255, August 10, 1999, sets forth principles and criteria that agencies must adhere to in formulating and implementing policies that have federalism implications, that is, regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government." FEMA has determined that this rule does not have federalism implications as it does not limit the policymaking discretion of the States and does not preempt any State laws.

F. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, 65 FR 67249, November 9, 2000, applies to agency regulations that have Tribal implications, that is, regulations that have substantial direct effects on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and

Indian tribes. Under this Executive Order, to the extent practicable and permitted by law, no agency may promulgate any regulation that has Tribal implications, that imposes substantial direct compliance costs on Indian Tribal governments, and that is not required by statute, unless funds necessary to pay the direct costs incurred by the Indian Tribal government in complying with the regulation are provided by the Federal Government, or the agency consults with Tribal officials.

This rulemaking does not have Tribal implications. The Public Assistance program is a voluntary program that provides funding to subgrantees, including Tribal governments, in need of emergency and disaster response assistance. There is no substantial direct compliance cost associated with this proposed rule. This proposed rule would not affect the distribution of power or responsibilities of Tribal governments.

G. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) (5 U.S.C. 601-612), and section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Public Law 104-121) require that special consideration be given to the effects of proposed regulations on small entities. Under the RFA, FEMA has considered whether this proposed rule would have a significant economic impact on a substantial number of small entities. The term "small entities" includes small business, small non-profit organization, and small governmental jurisdictions. Small governmental jurisdictions mean the government of cities, counties, towns, townships, villages, school districts, or special districts that have populations of less than 50,000.

FEMA used 2000 U.S. Census Bureau data to identify actual Public Assistance subgrantees that under the RFA could be considered small entities. In the sample of 183

Public Assistance large projects for which the permanent restorative work was 100 percent complete during 2004 and 2008, FEMA identified 109 Public Assistance subgrantees with populations of 50,000 or less that have received Public Assistance funding for 119 Public Assistance large projects. These 109 small entities amount to approximately 76 percent of the total 144 subgrantees in the sample.

FEMA measured the annual impact of the rule on each of the 109 small governmental jurisdictions based on the estimated increase or decrease in Federal assistance and annual revenues. Annual revenues for these 109 small governmental jurisdictions were estimated from the per capita revenue for local governments by State. For example, the per capita revenue for all local governments in Florida in 2007 (in 2010 dollars) was $4,192.[9] Therefore, annual revenue for a small governmental jurisdiction in Florida with a population size of 1,000 is estimated approximately at $4.19 million (= $4,192 × 1,000). FEMA compared the estimated increase or decrease in Federal assistance with the estimated annual revenue for each of these 109 small governmental jurisdictions. Out of these 109 small governmental jurisdictions, only 1 percent (or less than 1 percent) was expected to have a negative impact (a decrease in Federal assistance) higher than 1 percent of their annual revenues. Since this sample was drawn to represent a range of disaster type (45 disasters) and categories C through G for Public Assistance large projects for which the permanent restorative work is 100 percent complete, FEMA expects that this finding would also apply to all 2,745 Public Assistance large projects per year. Consequently, FEMA certifies that there is no significant economic impact on a substantial number of small entities.

[9] http://www.taxpolicycenter.org/taxfacts/displayafact.cfm?Docid=513

H. National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA), as amended, 42 U.S.C. 4321 et seq., requires agencies to consider environmental impacts in their decision-making. Specifically, NEPA requires agencies to prepare an Environmental Impact Statement (EIS) for "major federal actions significantly affecting the quality of the human environment." If an action may or may not have a significant impact, the agency must prepare an Environmental Assessment (EA). If, as a result of this study, the agency makes a Finding of No Significant Impact (FONSI), no further action is necessary. If the action will have a significant effect, the agency uses the EA to develop an EIS.

Pursuant to 44 CFR 10.8(c)(1) and (2), action taken or assistance provided under sections 402, 403, 407, or 502 of the Stafford Act and action taken or assistance provided under section 406 of the Stafford Act that has the effect of restoring facilities substantially as they existed before a major disaster or emergency are statutorily excluded from NEPA and the preparation of environmental impact statements and environmental assessments by section 316 of the Stafford Act, 42 U.S.C. 5159.

I. Executive Order 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights

FEMA has reviewed this rule under Executive Order 12630, "Governmental Actions and Interference with Constitutionally Protected Property Rights" (53 FR 8859, Mar. 18, 1988) as supplemented by Executive Order 13406, "Protecting the Property Rights of the American People" (71 FR 36973, June 28, 2006). This rule will not affect the taking of private property or otherwise have taking implications under Executive Order 12630.

J. Executive Order 12988, Civil Justice Reform

FEMA has reviewed this rule under Executive Order 12988, "Civil Justice Reform" (61 FR 4729, Feb. 7, 1996). This rule meets applicable standards to minimize litigation, eliminate ambiguity, and reduce burden.

List of Subjects in 44 CFR Part 206

Administrative practice and procedure, Coastal zone, Community facilities, Disaster assistance, Fire prevention, Grant programs-housing and community development, Housing, Insurance, Intergovernmental relations, Loan programs-housing and community development, Natural resources, Penalties, Reporting and recordkeeping requirements.

For the reasons discussed in the preamble, the Federal Emergency Management Agency proposes to amend 44 CFR part 206, subpart G, as follows:

PART 206—FEDERAL DISASTER ASSISTANCE

1. The authority citation for part 206 continues to read as follows:

Authority: Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121 through 5207; Homeland Security Act of 2002, 6 U.S.C. 101 et seq.; Department of Homeland Security Delegation 9001.1; sec. 1105, Pub. L. 113-2, 127 Stat. 43 (42 U.S.C. 5189a note).

2. Amend section 206.203 by revising paragraph (c) (1)to read as follows:

§ 206.203 Federal grant assistance.

* * * * *

(c) *** (1) Large projects. When the approved estimate of eligible costs for an individual project is $35,000 or greater, Federal funding equals the Federal share of the actual eligible costs documented by a grantee, or, if FEMA estimated the eligible costs of the

project pursuant to §206.211, Federal funding equals the Federal share of the estimated total eligible cost, subject to set floor and ceiling thresholds, in accordance with §206.211. Such $35,000 amount is adjusted annually to reflect changes in the Consumer Price Index for All Urban Consumers published by the Department of Labor. FEMA publishes the threshold for large projects each year in the Federal Register.

* * * * *

3. Add section 206.211 to read as follows:

§ 206.211 Cost Estimating Format (CEF) for restoration of disaster-damaged facilities.

(a) General. FEMA will use the Cost Estimating Format (CEF) to calculate an estimate of the total eligible project cost of the approved scope of work for restoration of disaster-damaged facility projects under the Public Assistance program. Once FEMA has established a total eligible project cost of an approved scope of work, FEMA will not allow revisions to the approved scope of work. Any cost overruns or underruns will be addressed pursuant to paragraph (e) of this section.

(b) Limitations. (1) Restoration of disaster-damaged facilities. This section applies to restoration of damaged facilities projects only, which are projects authorized by section 406 of the Stafford Act. It does not apply to emergency work projects, which are projects authorized by sections 403, 407, 418, 419, and 502 of the Stafford Act.

(2) Large projects. This section applies to large projects only. FEMA publishes the threshold for large projects each fiscal year in the Federal Register. For purposes of this section, the applicable fiscal year is the year in which the emergency or major disaster is declared.

(3) Projects must be less than 90 percent complete. This section applies only to projects that are less than 90 percent complete at the time the CEF estimate is calculated. The percent complete is the sum of approved invoice amounts for eligible work divided by the approved contract amount for eligible work multiplied by 100. For projects that are over 90 percent complete, funding will be based only on the actual costs of performing eligible work.

(c) Funding. (1) General. Upon project approval by FEMA, Federal funding will equal the Federal share of the CEF estimate of the total eligible cost of the approved scope of work. (2) Improved projects. For improved projects, Federal funding is determined as described in paragraph (c)(1) of this section and is limited as provided in §206.203(d)(1). Project reconciliation and closeout apply as described in paragraph (e) of this section; however reimbursement will only be provided for actual cost overruns under subparagraph (e)(1), if eligible actual costs are tracked and documented separately from the improvement costs.

(3) Alternate projects. When the CEF is used for a large project and the subgrantee subsequently decides to do an alternate project, final Federal funding for the alternate project is a percentage of the Federal share of the CEF estimate of the total eligible cost of the approved scope of work of the original project. This percentage is determined according to §206.203(d)(2). The CEF is not applied to the alternate project itself, and the floor and ceiling thresholds described in paragraph (e) of this section do not apply.

(d) Parts of the CEF Estimate. The CEF estimate includes itemized base construction costs (Part A) plus nonconstruction costs (CEF Parts B through H Factors), as applicable. A FEMA cost estimator itemizes the unit costs in Part A and then applies one or more of

the Parts B through H factors (usually a specific percentage for each factor) to the Part A estimate. The Parts B through H factors must not duplicate any itemized cost in Part A.

(1) Part A. Part A is the estimated sum of itemized construction costs required to directly complete the approved scope of work. The sum of these costs is referred to as the base cost. The base cost includes labor, equipment, materials, small tools, incidentals, and hauling costs necessary to complete the approved scope of work, as well as subcontractor overhead and profit.

(2) CEF Parts B through H Factors. The CEF factors reflect nonconstruction costs that are not itemized in Part A.

(i) Part B Factor: General Requirements and General Conditions. The Part B factor includes general requirements, which includes safety and security, temporary services and utilities, safety and security measures, quality control, and administrative submittals, and general conditions, which include a prime contractor's on-site project management costs.

(ii) Part C Factor: Construction Cost Contingencies/Uncertainties (Design and Construction). The Part C factor addresses uncertainties in completing the approved scope of work and unforeseeable costs. The Part C factor includes the following:

(A) Factor C.1: Design Phase/Scope Definition Contingencies. This factor represents standard cost estimating contingencies based on the status of the design and engineering process at the time of the estimate. A greater percentage is applied for this factor at the beginning stages of the design and engineering process; a lesser percentage is applied for this factor at the later stages of the design and engineering process.

(B) Factor C.2: Facility or Project Constructability. This factor addresses project complexity. A greater percentage is applied to more complex projects; a lesser percentage is applied to less complex projects. The C.2 factor applies to repair and retrofit projects only; it does not apply to new construction projects.

(C) Factor C.3: Access, Storage, and Staging Contingencies. This factor addresses project site conditions that impose additional costs on the work activities included in Part A. It addresses access to the project site, storage of construction materials and equipment, and the timing and execution of the work.

(D) Factor C.4: Economies of Scale. This factor accounts for the increases or decreases in cost associated with the repetitive elements of a project. The larger the size of the project, the less it will cost for each repetitive element.

(iii) Part D Factor: General Contractor's Overhead and Profit. The Part D factor includes:

(A) Factor D.1: General Contractor's Home Office Overhead Costs. This factor addresses the general contractor's main office expenses, including labor and salary costs for personnel plus all other operational expenses associated with working out of the main office.

(B) Factor D.2: General Contractor's Insurance, Payment, and Performance Bonds. This factor addresses the general contractor's payment and performance bonds, builder's risk insurance, and public liability insurance.

(C) Factor D.3: General Contractor's Profit. This factor addresses the general contractor's profit, which is a specific percentage depending on the project size and type

of work (repair, retrofit, or new construction). For purposes of the application of Factor D.3, the project size is the sum of Parts A, B, C, D.1, and D.2.

(iv) Part E Factor: Cost Escalation Allowance. This factor accounts for cost escalation over the duration of the project and is based upon an inflation adjustment from the time the estimate is prepared until the mid-point of construction for the approved scope of work. The escalated cost of construction is equal to the sum of Parts A through D, multiplied by the number of months to the midpoint of uncompleted construction, multiplied by the escalation factor. The escalation factor is based on a 2-year average of either the Building Cost Index (BCI) or the Construction Cost Index (CCI), depending on the nature of the project.

(v) Part F Factor: Plan Review and Construction Permit Costs. The Part F factor equals actual fees charged by State and local agencies for plan reviews and construction permits.

(vi) Part G Factor: Applicant's Reserve for Construction. The G factor addresses the applicant/subgrantee's reserve for eligible work change orders approved by FEMA. It does not include discretionary change orders for upgrades or ineligible work. The percentage applied is based on project size. Project size for purposes of applying this percentage is the sum of Parts A through F.

(vii) Part H Factor: Applicant's Project Management and Design Costs. The H factor addresses the applicant/subgrantee's cost to manage the design and construction of the project. These costs are not part of the statutory administrative cost allowance provided to the applicant/subgrantee to manage the overall recovery effort. The administrative allowance implemented in 44 CFR part 207 reimburses the applicant/subgrantee's cost of

requesting, obtaining and administering Federal assistance, and does not account for project management costs. The H factor includes:

(A) Factor H.1: Applicant's Project Management – Design Phase. This factor includes the applicant/subgrantee's costs to manage the project during the design phase, including managing the architecture and engineering contracts for final design, managing the permitting and special review process, and interfacing with other agencies. The H.1 factor is not applicable in situations where a design is not required.

(B) Factor H.2: Architecture & Engineering Design Contract Costs. This factor addresses the applicant/subgrantee's cost for basic design and inspection services, including preliminary engineering analysis, preliminary design, final design, and construction inspection.

(C) Factor H.3: Project Management – Construction Phase. This factor addresses management costs during the construction phase, including quality assurance and management of additional testing during construction, advertising and awarding of the construction contract, decisions on construction problems and requests for information, management of change orders for on-site construction conditions and design errors, and omissions and unforeseen problems, such as differing site conditions and hidden damage. The H.3 factor is applied depending on the amount of total estimated construction costs.

(e) Project reconciliation and closeout. Upon completion of the approved scope of work FEMA will determine final grant funding for projects described in paragraphs (c)(1) and (c)(2) of this section, in accordance with §206.205(b)(2), except for the application of floor and ceiling thresholds as indicated in this section. For purposes of determining the amount of an overrun or underrun under this section, the actual cost must include every

item that was included in the CEF estimate, and must not include any item that was not included in the CEF estimate.

(1) Cost overruns. The cost overrun procedures in §206.204(e) do not apply to this section. A subgrantee may not apply for reimbursement for cost overruns before the completion of the approved scope of work. After completion of the approved scope of work, the project enters the reconciliation phase. If FEMA determines at the reconciliation phase that the actual costs to complete the approved scope of work exceed the CEF estimate of the approved scope of work by more than 10 percent, the amount of the Federal share over that 10 percent may be eligible for FEMA reimbursement. If the actual costs to complete the approved scope of work for a project exceed the CEF estimate of the approved scope of work by 10 percent or less, the subgrantee will not receive reimbursement from FEMA for the amount that exceeds the CEF estimate.

(2) Cost underruns. (i) If the actual cost to complete the approved scope of work is at least 90 percent of the CEF estimate of the approved scope of work, the subgrantee may use the Federal share of the underrun for the following cost-effective activities:

(A) Activities that mitigate future risk to undamaged elements of any disaster-damaged eligible facility;

(B) Activities that mitigate future risk to any element of any eligible facility owned or operated by the subgrantee;

(C) Activities that reduce the risk of future hardship and suffering as a result of a major disaster. Hardship and suffering include conditions of life that are difficult to endure and that could result from a future major disaster.

If the subgrantee plans to use an underrun for any of these cost effective activities, the subgrantee must submit a Project Worksheet for the cost effective activity(ies) within 90 days of identifying the project underrun. The Project Worksheet must identify all projects under the same major disaster declaration with underruns that would be used to fund the cost-effective activity(ies).

(ii) If the actual cost to complete the approved scope of work is less than 90 percent of the CEF estimate of the approved scope of work, the subgrantee must return the Federal share of the underrun less than 90 percent of the CEF estimate. The subgrantee may use the Federal share of the remaining 10 percent underrun for cost-effective activities as indicated in paragraph (e)(2)(i) of this section.

(iii) If the subgrantee has not started its cost-effective activities described in paragraph (e)(2)(i) of this section within 12 months of final reconciliation, FEMA will de-obligate those funds or take other appropriate action to recover funds according to procedures set forth in 44 CFR part 13.

(f) Appeal. A subgrantee may appeal a determination made by FEMA under this section in accordance with §206.206, Appeals.

(g) Effective date. This section is applicable to emergency or major disaster declarations issued on or after [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

Dated: September 19, 2013.

W. Craig Fugate
Administrator,

Federal Emergency Management Agency.

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