CONSTRUCTION MANAGEMENT, CONTRACTING, AND OVERSIGHT PRINCIPLES: AN ECCM TRAINING DOCUMENT
FOREWORD

Core Engineering and Construction Contracting Management (ECCM) training program resources have been made available as helpful resource documents for planning, preparing solicitations, and implementing and managing construction projects.

ECCM TRAINING COURSES

The ECCM 201 course was initiated through a task order awarded under the Bureau for Economic Growth, Education, and Environment’s (E3's) Architectural and Engineering (A&E) Global IQC and transferred to M/OAA/PDT to complete course development and management. Subsequent to the task order transfer ECCM 211 - Local Systems (LS) was created. ECCM curricula were produced based on adult learning principles and are available for all USAID staff. The program is designed primarily to improve USAID’s Acquisition Workforce (AWF)\(^1\) contractual knowledge about and access to A&E and construction services, best practices, lessons learned, and reference materials when undertaking construction projects in the development context. The ECCM training program will assist the USAID AWF to achieve the ultimate objective of a successful construction project - completion according to specifications, within budget, while meeting industry quality standards, notwithstanding all construction challenges. Missions may desire, as appropriate, request technical engineering support services from the E3, Office of Energy and Infrastructure Programs (E&I) or USAID regional missions.

ECCM curricula are intended to emphasize U.S. Government rules and regulations, and USAID operational guidance and policies when implementing construction projects in partner countries. ECCM curricula combine lecture-style presentations with interactive discussions and group activities to provide participants immediate operational skills and knowledge. Course materials include presentation slides, group exercises and discussions, checklists, and many short videos and supporting reference and resource materials.

M/OAA/PDT and E3 sponsored training classes for over 300 USAID AWF members primarily through the two courses -- ECCM 201 and ECCM 211 - LS. All interested USAID staff are strongly encouraged to enroll in ECCM courses through USAID University. Below are brief descriptions of the ECCM 201 and ECCM 211-LS and a list of additional “Supplementary Training Resource Documents”:

**ECCM 201**

The overall goal of ECCM 201 is to provide the USAID AWF with basic operational skills and competencies related to procurement and management of construction projects. This course covers many ECCM contracting subject matter areas including alternative procurement instruments and financing options, the construction program life cycle and its phases, and sequencing relationships including planning, design, procurement, construction, oversight, post construction, operation and maintenance (O&M), and sustainability.

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\(^1\) Acquisition Workforce in defined as Contracting/Assistance Specialists, Contracting/Assistance Officer Representatives, Purchasing Series staff, Executive Officers Foreign National Procurement Staff and Personal Services Contractors employed as procurement staff.
ECCM 211- LS

The ECCM 211-LS course curriculum was designed as a follow-on course to ECCM 201. The overall goal is to provide USAID AWF with additional and higher-level knowledge, skills, and competencies for complex construction project situations, choice of implementation instruments and financing options when using direct contract, assistance, host country contracting (HCC), and government-to-government (G2G) instruments. ECCM 211-LS makes extensive use of example documents as learning guides to provide the USAID AWF “real-time” exposure to common procurement, implementation, and management issues.

ECCM SUPPLEMENTARY TRAINING DOCUMENTS

Supplementary training documents were drafted by former senior USAID engineers and funded by M/OAA for the ECCM training program and include updated USAID guidelines and procedures. These training documents have been tailored to support the AWF’s understanding of selected ECCM processes. We anticipate that USAID’s AWF and other staff will find these documents useful and are welcome to read and download them as needed from the M/OAA/PDT web page. The ECCM supplementary training documents completed to date include:

1. **Reference for Construction Management and Contracting Processes:** An ECCM Training Document prepared by Fred Zobrist, 2017

2. **Construction Management, Contracting, and Oversight Principles:** An ECCM Training Document prepared by Moenes Youannis, 2017

3. **Construction Tendering And Contracting Guidelines:** An ECCM Training Document prepared by Michael Gould, 2017


5. **Use of Government to Government (G2G) Fixed Amount Reimbursement (FAR) in Construction Projects:** An ECCM Training Document prepared by Moenes Youannis, 2017

6. **Use of Host Country Contracting in Construction Projects:** An ECCM Training Document prepared by Moenes, 2017

With my compliments,

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TABLE OF CONTENTS

ACRONYMS ........................................................................................................................................ III

EXECUTIVE SUMMARY .................................................................................................................... IV

1. INTRODUCTION ........................................................................................................................... 1
   1.1 Objectives .................................................................................................................................. 1
   1.2 USAID Infrastructure Projects ................................................................................................. 2
   1.3 USAID Financing and Implementation of Construction Projects ........................................... 3

2. KEY PLAYERS AND STAKEHOLDERS IN CONSTRUCTION PROJECTS ..................................... 6
   2.1 The Owner .............................................................................................................................. 6
   2.2 The Construction Contractor ................................................................................................. 7
   2.3 Subcontractors and Suppliers of Equipment and Material ....................................................... 7
   2.4 The Financier ......................................................................................................................... 7
   2.5 The Beneficiaries and Community ......................................................................................... 8
   2.6 The A-E Firm ........................................................................................................................ 8
   2.7 USAID ..................................................................................................................................... 8

3. CONSTRUCTION PROJECT LIFE CYCLE .................................................................................... 10
   3.1 Planning and Conceptual Designs ......................................................................................... 10
   3.2 Procurement Planning ........................................................................................................... 11
   3.3 Procurement of Engineering and Construction Services ....................................................... 11
   3.4 Development of Preliminary and Full Designs ...................................................................... 11
   3.5 Construction and Oversight .................................................................................................. 11
   3.6 Start-Up and Commissioning ............................................................................................... 11
   3.7 Contract Close-Out and Settlement of Disputes ................................................................... 11
   3.8 Operation and Maintenance ................................................................................................... 12

4. CONSTRUCTION OVERSIGHT AND MANAGEMENT ................................................................. 14
   4.1 USAID Construction Assessment Report (2014) ................................................................... 16
   4.2 Construction Management and Program Management ........................................................... 17
   4.3 The A-E Team ....................................................................................................................... 17
5. LESSONS LEARNED AND BEST PRACTICES ................................................................. 25

6. ADDITIONAL SUPPORT AND RESOURCES ............................................................ 27
   6.1 ECCM Training Courses ......................................................................................... 27
   6.2 Engineering Support Through E3/EI and the A-E IDIQ ......................................... 28
   6.3 USAID Supplementary training document s .......................................................... 28

ANNEX A – FIDIC DEFINITION, DESCRIPTION, AND SUPPLEMENTAL INFORMATION .................................................................................................................. A-1
| A-E     | Architecture and Engineering |
| ADS    | Automated Directive Systems  |
| AUPGS  | Approval for the Use of Partner Government Systems |
| CPFF   | Cost-reimbursable plus fixed fee |
| CO     | Contracting Officer          |
| COR    | Contracting Officer Representative |
| FAR    | Federal Acquisition Regulations |
| FARA   | Fixed Amount Reimbursement Agreement |
| FIDIC  | Fédération Internationale des Ingénieurs Conseils (International Federation of Consulting Engineers) |
| G2G    | Government to Government     |
| HC     | Host Country                 |
| HCC    | Host Country Contracting     |
| HCIE   | Host Country Implementation Entity |
| HCIU   | Host Country Implementation Unit |
| IL     | Implementation Letter        |
| O&M    | Operation and Maintenance    |
| PAD    | Project Appraisal Document   |
| PFM    | Public Financial Management  |
| PFMRAF | Public Financial Management Risk Assessment Framework |
| PG     | Partner Government           |
| PGIE   | Partner Government Implementation Entity |
| PGS    | Partner Government Systems   |
| PIO    | Public international organization |
| PM     | Program Management           |
| SOW    | Statement of work            |
| USAID  | United States Agency for International Development |
USAID-funded construction projects have been extremely important in achieving the U.S. Government development objectives worldwide. USAID has invested billions of dollars to finance infrastructure projects in many countries to provide access to basic services and to rebuild damaged infrastructure resulting from conflicts, or natural disasters. USAID construction projects have been crucial for addressing the need for services in unserved areas, as well as rebuilding damaged infrastructure systems in post-conflict and post-disaster programs.

As part of USAID infrastructure projects, USAID has funded development of master plans, engineering studies, engineering designs, construction of infrastructure facilities, and construction management and operation and maintenance (O&M) services. USAID funded construction projects were either standalone infrastructure projects or as components of projects such as health, education, economic growth, and democracy and governance.

Projects funded by USAID varied in size, complexity, project delivery method, implementation instrument, and funding methods. Although construction projects may vary in many aspects, they still have many common features. Construction projects require extensive coordination and supervision efforts. Engineering services and construction oversight have always been important for the success of these projects. The Architecture and Engineering (A-E) firm, also referred to as the “Engineer” or the Construction Management Contractor (CMC), generally develops project designs, supports the “Owner” during the procurement process, and provides construction oversight throughout the construction project from inception to completion.

The USAID Construction Assessment Report (2014) under titles such as: Key Findings, Critical Success Factors, and Best Practices emphasizes the crucial need for construction oversight and quality verification in all construction project.

The A-E firm tasked with providing construction management and oversight services assigns a team of technical and administrative professionals to oversee the construction contract and provide daily oversight of construction activities. This team is usually led by an official representative, “Engineer’s Representative” as the authorized individual managing the project in the field office and supported by a number of specialized individuals from the home office of the A-E firm or specialized subcontractors.

Some of the A-E firm’s tasks include reviewing the Construction contractor’s securities and bonds, construction schedule, O&M manuals, construction contractor submittals, requests for extension of time or compensation for additional costs incurred or payment for extra work, and the construction contractor’s claims. The A-E also conducts daily construction monitoring and inspection, inspections during the Defects Liability Period, and monitors the implementation of Risk Management, Quality Control, and Safety Programs on behalf of the “Owner”. The A-E approval of the Contractor’s Construction Risk Management
and Quality Control Programs, Shop drawings and submittals, construction Safety plans, and requests for payment are only few examples of a much broader scope that the A-E firm is generally tasked with. These are addressed in more details in several sections of this supplementary training document. The A-E firm is also expected to keep USAID and the host government informed in a timely manner of any issues that may affect the quality, schedule, or cost of the project.

Obtaining the services of a qualified, experienced, and independent A-E firm to provide construction oversight and management services, according to a well-defined scope, is important to complete construction projects on time, within budget, and according to specifications.
1. INTRODUCTION

1.1 OBJECTIVES

The primary objective of this supplementary training document is to provide USAID engineering and non-engineering development professionals with a one-stop reference for construction oversight and management, under USAID funded infrastructure programs. This supplementary training document provides USAID professionals with tools and a simple road map to help them steer construction projects through the different phases of construction. It assists USAID personnel in achieving the ultimate objectives of a successful project: completing the project according to specifications, on time, within budget, and according to industry quality standards, notwithstanding all construction challenges.

The supplementary training document provides a detailed discussion of why using construction management services is important for the success of infrastructure projects. It also describes the roles and responsibilities of the construction management contractor (CMC), as well as other key stakeholders during the design and implementation of USAID funded infrastructure programs. Finally, it provides a discussion of USAID infrastructure programs risks, success factors, and important lessons learned based on the recent USAID Infrastructure Assessment Report of 2014, and many years of USAID experience in the design, procurement, and management of USAID funded infrastructure programs. Some of these lessons are based on USAID/Egypt’s 30 years of experience implementing major infrastructure programs. These programs were USAID’s most challenging, successful, and diverse infrastructure programs which were implemented through a combination of Host Country Contracting (HCC), Direct Contracting, and Government to Government (G2G) assistance. USAID’s experience in Egypt is a good source of first-hand information to better understand the roles of USAID, the roles of stakeholders and parties for construction contracts, the challenges and constraints, and the need for utilizing engineering expertise.

The supplementary training document includes definitions, guidelines, and a brief discussion of USAID construction projects. It provides an overview of a typical construction project life cycle, identifies important stakeholders and parties for construction contracts, and discusses the contractual and work relationships between them while focusing on USAID’s role. Challenges faced in implementing construction projects are also discussed with the objective of enhancing USAID staff members’ awareness regarding what to expect in implementing a USAID construction project. It provides an overview of factors that have significantly affected these programs, and focuses on construction oversight as an essential tool for ensuring successful completion of these projects. Finally, this supplementary training document provides a list of relevant and important lessons learned and best practices.

The primary source of regulations and guidance used throughout this Supplementary training document are the USAID Automated Directive Systems (ADS) and its Supplementary References, the Federal Acquisition Regulations (FAR), and AID Acquisition Regulations (AIDAR) in effect at the time of drafting the Supplementary training document. Some of these clauses and regulations
are quoted throughout the Supplementary training document. Readers are strongly encouraged to regularly check the ADS, FAR, and AIDAR for more recent updates.

1.2 USAID INFRASTRUCTURE PROJECTS

USAID-funded construction projects have been a successful investment in achieving the U.S. Government development objectives. As part of these efforts, USAID has invested billions of dollars to finance infrastructure projects in many countries.

The objectives of USAID construction programs vary by country. In some it has been to provide access to basic services to impoverished and underserved communities, in other countries it has been to rebuild the infrastructure that was destroyed as a result of lengthy and destructive conflicts, or natural disasters. USAID construction programs have been successful in addressing the needs for service, as well as dealing with post-conflict and post-disaster damaged infrastructure systems.

USAID infrastructure projects include developing master plans, conducting engineering studies, developing engineering designs, construction of infrastructure facilities and service buildings, providing construction management, and operation and maintenance (O&M) of construction activities. With such sizeable investments, USAID funds have successfully supported a wide range of construction projects, which were either:

- Standalone infrastructure projects such as water treatment plants, wastewater treatment plants, roads, bridges, and power plants
- Components of other sectors projects such as health, education, local development, economic growth, and democracy and governance

Projects funded by USAID varied in terms of size and complexity from major state-of-the-art multidisciplinary projects such as power plants, water treatment plants, and wastewater treatment plants costing hundreds of millions of dollars, to simple one-classroom schools, earth and gravel roads, or water stand posts in rural areas, each serving small communities.

USAID infrastructure programs also varied in the project delivery method including:

- Design-bid-build (DBB), the traditional delivery method where design and construction are sequential and contracted separately with two contracts and two contractors (FAR 36.102, Definitions)
- Design-build (DB), combining design and construction in a single contract with one contractor (FAR 36.102, Definitions)
- Program Management (PM), a project delivery method to implement infrastructure programs efficiently with respect to time and cost when there is little definition up front on what specific facilities are to be planned, engineered, and constructed. Under this project delivery method, the PM firm provides

MATCHING TERMINOLOGIES

Host Country = Cooperating Country = Partner Government (PG)
Host Country Implementing Unit = Partner Government Implementing Entity (PGIU)
Architecture and Engineering firm (A-E) = Engineer = Engineering Consulting Contractor = Construction Management Contractor (CMC)
Fixed Amount Reimbursement (FAR) = Fixed Amount Reimbursement Agreement (FARA)
Owner = Employer
planning, engineering, and construction management services on a cost-reimbursable plus fixed fee (CPFF) basis, working closely with USAID. The PM firm performs studies to define the needed infrastructure. Upon USAID’s approval of the specific infrastructure, the PM firm then procures the services of subcontractors to provide technical, engineering, and construction services.

1.3 USAID FINANCING AND IMPLEMENTATION OF CONSTRUCTION PROJECTS

USAID uses several implementation instruments and financing options. Following is a brief overview of three that USAID has generally used in implementing its construction projects.

1.3.1 Direct Contracts (ADS 302)

In Direct Contracting, USAID is a direct party, a signatory, in a mutually binding legal relationship that obligates the seller ("contractor") to furnish supplies or services and the buyer ("USAID") to pay for them. ADS 302 prescribes the Agency’s policy directives, required procedures, and internal guidance for the procurement of goods and services through direct contracts for the purposes of implementing Agency’s programs and supporting Agency’s logistics.

Under this implementation instrument, USAID has a clear direct contractual relationship with the contractor. USAID receives the goods or services and pays for them. USAID is directly involved in the procurement process and implementation.

1.3.2 Host Country Contracts (ADS 305)

Host Country Contacting (HCC) is a mechanism for program implementation in which USAID finances, but is not a party to, contractual arrangements between the Host Country and the supplier of goods and/or services (ADS 305).

ADS 305, Host Country Contracts, specifies the policies and procedures to follow when designing, negotiating, and implementing USAID activities using HCC.

Under HCC construction programs, USAID finances the goods and services being provided under a contractual relationship between the Host Country Implementation Unit (HCIU) and the construction contractor. Although USAID is not a party to this contractual relationship, USAID is interested in seeing this activity completed successfully in order to protect its investment and achieve its development objectives. USAID must ensure that both parties to the contract are qualified, possess the required technical, management, and financial systems that are essential for the successful completion of the construction project, and that the procurement process and implementation steps are in accordance with applicable U.S. Government regulations.

Under this implementation instrument USAID, although not a party to the HCC, reserves the right of prior approval of the most critical steps of the contracting process for any Host Country Contract exceeding $250,000.

1.3.3 Government To Government (G2G) Assistance (ADS 220)

Under G2G assistance, USAID disburses funds directly to a Partner Government Implementing Entity (PGIE) to implement a project or project activity using the Partner Government’s (PG) own financial management, procurement, or other systems. ADS 220 specifies the policies and
procedures that must be followed when designing, negotiating, and implementing direct funding agreements to PGs under G2G assistance.

PG agencies generally play an extremely important role under the G2G assistance including setting goals and targets, managing resources, establishing codes and standards, monitoring and evaluation of contractors’ performance, providing oversight and quality control, and settling disputes.

ADS 220, Use and Strengthening of Reliable PGs for Implementation of Direct Assistance, specifies USAID policies and procedures to be followed when designing, negotiating, and implementing direct funding agreements to PGs under the G2G assistance.

There are two main methods of financing G2G activities:

- **Cost Reimbursement (based on inputs):** Under this method, USAID reimburses the PG for the costs of the inputs that are reasonable and necessary to implement an approved project or a project activity. Inputs are defined in the Project Appraisal Document (PAD) and provide the basis for the financial plan for the project or project activity.

- **Fixed Amount Reimbursement (based on achievement of outputs or associated milestones):** Under this method, USAID pays a fixed amount for the PG’s completion of activity outputs or associated milestones based on a reasonable estimate of the costs likely to be incurred to produce or achieve an objectively verifiable, independently useful output or associated experience. Outputs or associated milestones must be clearly defined regarding quality standards as measured and verified by USAID, or its third-party representative for completion in accordance with the agreed upon specifications. As earlier mentioned in the document, this method of finance is referred to throughout the document as Fixed Amount Reimbursement Agreement (FARA), instead of simply Fixed Amount Reimbursement, to avoid confusing the term with the Federal Acquisition Regulations (FAR).

**IN GENERAL:**

Design, procurement, construction, and construction supervision services of USAID funded projects are either carried out by major U.S. engineering and construction contractors or by local engineering and construction contractors. Local contractors’ capabilities vary greatly from one country to the other and within the same country.

**ADS 303 maw:** to address many of the issues and controversies surrounding the selection of the most suitable contracting mechanism for the procurement of engineering and construction services, USAID issued “USAID Implementation of Construction Activities”, A Mandatory Reference for ADS Chapters 303 (303maw) to “state the Administrator-approved policy limiting the use of assistance awards to implement construction activities.”

It is important to note that some of the USAID infrastructure programs include a combination of the above-mentioned mechanisms. For example, in some infrastructure programs USAID uses direct contracting for the procurement of engineering design and construction management services, and funds HCC for the procurement of construction services.

Throughout a USAID funded infrastructure projects’ life cycle – from conceptualization to O&M – in the daily implementation and contractual matters, USAID works closely with the Host Country Implementation Unit (HCIU). The HCIU is the host government unit authorized
by the recipient host country government (Borrower or Grantee). This unit is generally the recipient and ultimate owner and operator of the facilities funded by USAID. Roles, responsibilities, and obligations of each party are generally described in the Bilateral Agreements between USAID and the Host Government and subsequent Implementation Letters (IL).

The capabilities of the Host Country (HC) counterparts tasked with implementing the projects varies from country to country, and in many cases, varies between different geographic locations within the same country. Similarly, the technical and financial qualifications and capabilities of the contractors and engineering firms designing and carrying out the actual construction are different.

There are a few cases where these HCIUs are well established and capable government authorities with thousands of employees and relatively sophisticated systems. However, in many cases they are simple local government units operating in small urban or rural areas with limited resources and few qualified personnel. It is important to point out that not many of these government units have the expertise and adequate management, procurement, or financial management systems to undertake infrastructure programs. Generally, these units need significant assistance and hand-holding throughout the design, procurement, and construction phases of USAID-funded infrastructure programs.

Similarly, USAID missions with infrastructure portfolios are different in terms of their ability to handle infrastructure programs design and implementation responsibilities. Some USAID missions do not have the engineering, or contracting staff, or experience required for the design, procurement, and implementation of infrastructure programs.
2. KEY PLAYERS AND STAKEHOLDERS IN CONSTRUCTION PROJECTS

Construction projects are usually multidisciplinary activities. They involve a large number of stakeholders and interested parties in addition to the main parties of the project. Due to the nature of the work to be carried out, construction projects require a lot of coordination and efforts to ensure that all requirements, expectations, and interests of the stakeholders are met.

Construction projects are expected to comply with many regulations and codes. It is important to understand all the stakeholders’ requirements while designing the construction project in order to minimize the risk of facing unforeseen situations that may hinder progress or end up in major legal disputes.

Construction projects may vary in many aspects related to size, complexity, location, and capabilities of parties involved. However, there are many common features which result in only slight disparities between construction projects. Similarly there are common, core stakeholders and players in construction projects.

Following is an attempt to summarize some common parties and stakeholders involved in construction projects, and some of the factors that shape the relationships among them:

**2.1 THE OWNER**

The Owner, also referred to as the “Employer,” is the ultimate recipient and user of the project. In most cases the Owner is also responsible for the O&M of the facility once completed. The Owner is expected to provide, or obtain, funding to cover...
the engineering and construction costs of the project and all O&M costs for the completed facility to ensure sustainability. The Owner’s primary interest is to receive a product that is designed to meet all the required needs, constructed to the highest levels of quality standards, as specified in the contract, delivered on time, and within the available budget.

The Owner may, and is encouraged to, delegate some of its authorities and responsibilities during the construction phase to the Architect and Engineer Firm (A-E) in order to expedite decisions and reduce any construction delays that could lead to claims.

2.2 THE CONSTRUCTION CONTRACTOR

The construction contractor is the firm responsible for constructing the facility according to the required specifications, within a specific time, and for the price specified in the contract. The construction contractor may be one firm or a joint venture of firms, and is responsible for providing the required resources for carrying out the work. This may include engaging subcontractors, suppliers, and specialized firms required for fulfilling the requirements of the scope of work, including coordinating work and schedules between its team members.

The construction contractor is generally selected based on a competitive bidding process. This means that the construction contractor’s bid is the lowest responsive bid. Since the construction contract is generally a fixed price contract (there are other types), the construction contractor is usually interested in completing the project as early as possible. This allows the construction contractor and its subcontractors to realize savings in overhead and administrative costs, and to be able to utilize construction equipment and labor for other projects. Therefore, the construction contractor expects to receive permits, approval of submittals, and any technical directions on time. The construction contractor expects to receive progress payments on time to reduce the cost of financing the work and to be able to pay its subcontractors and suppliers on time. In summary, it is of utmost importance for the construction contractor to control schedule and cost. The construction contractor provides the required performance bonds and expects release of the bonds on the times specified in the contract.

2.3 SUBCONTRACTORS AND SUPPLIERS OF EQUIPMENT AND MATERIAL

Subcontractors and suppliers of equipment and material are expected to comply with the terms of their contract with the prime contractor, and complete their part of the scope according to the time schedule as approved by the prime contractor. Subcontractors and suppliers should be able to understand the overall project and all the “pass through” clauses in their contract as required by the terms of the contract between the Owner and the prime construction contractor. They expect to receive payments on time upon completing their contractual obligations. Subcontractors and suppliers are expected to provide warranties to cover all equipment delivered and installed.

2.4 THE FINANCIER

The financier provides funding according to financial criteria including the feasibility of the project, credit worthiness of the borrower, and potential risk involved. The financier may be a bank, a government, or a donor agency. The financier is generally interested in making sure work is completed and contracts are closed on time, according to the approved scope, and that all disputes are amicably settled. The financier usually reserves some rights when providing funding, and requests assurances that the work will be completed as scheduled. When USAID funds are provided, USAID reserves the right to oversee and approve most steps of the procurement process and oversee project implementation.
2.5 THE BENEFICIARIES AND COMMUNITY

The beneficiaries expect to receive new or improved services from the constructed facility. An example would be construction of a new water treatment plant or expansion of an existing plant. In this case, the beneficiaries start realizing benefits and receiving service only when the facility is completed, turned over to the owner, and starts producing water. The beneficiaries are in most cases part of the community where the facility is being constructed, and as such, they may be affected by the construction activities and disturbance to the environment. The beneficiaries expect the construction contractor’s activity to cause the least disruption to the community, traffic, and the environment. The community also expects the construction contractor to follow adequate safety measures and procedures for offsite work.

2.6 THE A-E FIRM

The A-E, also referred to as the “Engineer” or the “Construction Management Contractor (CMC)”, is responsible for developing the required project designs, providing support to the Owner during the procurement process, and providing construction oversight throughout the construction phase. The A-E provides its services under a contractual arrangement with the Owner. In some USAID projects, the Owner authorizes USAID to contract directly with the A-E following USAID direct contracting procedures. It is important to mention that in some USAID, several A-E contracts were awarded under HC contracts. However, A-E firms faced many challenges in maintaining impartiality and receiving timely payments for services rendered.

The A-E generally acts impartially or as the Owner’s representative and is responsible for administering the construction contract to ensure that the work is carried out in accordance with the contract’s conditions and specifications, completed on time, and within contract budget.

The A-E is responsible for the overall management of the construction project and coordination between the parties and stakeholders. The A-E plays a major role in highlighting any anticipated cash flow or schedule issues. The A-E is interested in seeing all parties comply with the contract terms and provisions to ensure successful completion of the construction project.

2.7 USAID

The Goal:

The goal of any construction project is to have the required product or facility delivered according to the design and specifications, in accordance with industry quality standards, on time, within budget to provide timely quality and sustainable service, with no outstanding liabilities or claims.

USAID has a very important role to play in all USAID-funded construction projects. USAID’s level of involvement varies from project to project according to the type of implementation instrument, financing option, project delivery method, and the need and capabilities of the Host Country counterpart agency. However, some responsibilities are common. USAID staff should possess the required engineering and construction experience and are generally expected to:

- Work closely with the HC to identify needs
- Explain USAID regulations and requirements
- Develop the SOW for the A-E under direct contracts
- Clearly define roles and responsibilities
- Monitor the A-E and construction contractor performance and participate in monthly progress meetings; review requests for approval of variation orders
• Conduct regular site visits with representatives of the Owner, Contractor, and A-E

• Check deliverables and monitor construction progress

• Review, approve, and process payment requests

• Review project schedule

• Verify contractor’s compliance with USAID requirements

• Assist parties in contract close out and settlement of disputes

• Ensure proper use of USAID funds

There are many factors that may have a great effect on reaching the aforementioned goal. They may include: the scope of the required services; availability of the required financial, technical, and managerial resources; available time for completion; availability and quality of supplies and services; financial stability and inflation; risks involved; and flexibility to handle varied conditions.
3. CONSTRUCTION PROJECT LIFE CYCLE

Although construction projects vary in many aspects, they still have many common features. Construction projects require extensive coordination efforts to ensure that all requirements and interests of the stakeholders are met. The following is a brief and simplified description of a typical construction project life cycle from conceptualization to operation and maintenance.

3.1 PLANNING AND CONCEPTUAL DESIGNS

Major construction projects generally fall within an overall master plan. The master plan identifies the needs based on a number of studies of the existing conditions, required capacities, demographic surveys and expected population growth, expansion plans, available alternatives, available resources, availability of land and topography, cost and possible options, feasibility studies, and environmental considerations.

Conceptual designs for projects are generally produced at the master planning phase. The services of the A-E are extremely important during this phase.
3.2 PROCUREMENT PLANNING

Procurement planning is a major factor in determining the successful completion of any construction project. It is important to invest time in the planning phase of any construction project.

From a scheduling point of view, some activities and tasks should start simultaneously, others should overlap, and other activities cannot start unless a preceding activity has either started or has been completed. For example, the prequalification of construction contractors and the development of the bid documents may start at the same time. On the contrary, issuing the invitation for bids is a subsequent activity to prequalification of contractors and development of the bid documents.

From a resource planning point of view, it is important to make sure that required resources are available when and where they are needed. This includes cash flow requirements, qualified contractors and suppliers, qualified construction contractors, availability of raw materials, adequate transportation, etc. The services of the A-E are extremely important during this phase.

3.3 PROCUREMENT OF ENGINEERING AND CONSTRUCTION SERVICES

During this phase, the Owner (or USAID on behalf of the Owner) engages an A-E firm to undertake the development of the designs and required studies. The A-E also assists the owner in the procurement of construction services, and provides construction oversight. During the procurement phase, the A-E may undertake a number of activities on behalf of USAID and the owner.

3.4 DEVELOPMENT OF PRELIMINARY AND FULL DESIGNS

Designs should be developed by qualified professional engineers. The Owner may choose to develop the designs using its own staff, or in most cases, outsource the design tasks to a qualified A-E firm. Preliminary designs are required and should provide alternative design options coupled with a study of the cost implications of each. Designs should be developed in close coordination with the Owner.

3.5 CONSTRUCTION AND OVERSIGHT

Construction activities start when the Owner and the construction contractor sign the construction contract and the construction contractor has submitted all required securities and guarantees. The A-E then issues to the construction contractor the notice to proceed, the construction contractor completes mobilization, and the A-E issues the notice to commence construction. The A-E holds the preconstruction conference to discuss with the construction contractor and the Owner all construction-related procedures and all the required reports and forms. Any identified issues should also be discussed at this stage. The A-E provides all contract administration and construction oversight services. The services of the A-E are extremely important during this phase.

3.6 START-UP AND COMMISSIONING

Upon completion of the facilities under construction, the construction contractor undertakes the start-up of the equipment. The construction contractor’s objective is to run any required system tests and complete any required steps in order for the Owner or the Owner’s designee to accept the facility and take over the works.

3.7 CONTRACT CLOSE-OUT AND SETTLEMENT OF DISPUTES

At the contract close-out phase, the A-E is responsible for verifying that all contractual obligations have been met and that there are no outstanding claims. The A-E identifies potential claims and disputes as early as possible and provides engineering opinions to the Owner and construction contractor on the merit of any claim or the validity of any dispute.
3.8 OPERATION AND MAINTENANCE

Operation of the facilities and preventive maintenance become the responsibility of the Owner, unless the contract provides for an O&M period to be undertaken by the construction contractor. During this phase the Owner is responsible for making available all required resources to operate and maintain the completed facilities. The A-E may provide technical support to the Owner.
Throughout the implementation of USAID infrastructure programs, the role of using qualified Architectural and Engineering firms (A-E) to provide engineering services has always been a subject of discussion and contention.

During the early years of USAID-funded program implementation, host country officials were not supportive of using the services of A-E firms for design and, more importantly, construction oversight and management. Host country officials believed that the cost of procuring these “non-essential” services would create a burden on the project budget. They were also reluctant to delegate any authority to the A-E. However, it is important to point out that USAID-funded A-E firms have played an important and effective role in implementing successful USAID-funded construction projects.

Despite realizing that construction projects are risky and a complex undertaking, it is not unusual for the Employer to consider the major and important investment in the construction project to be the labor, materials, and equipment required for construction. They may think that engaging an A-E firm to provide construction oversight might be costly and would create an unjustified financial burden on the project budget. A quick overview of the roles, responsibilities, and relationships in any construction project, some of which are identified in Sections 2 and 3 above, might help us answer both questions.

Soon after the Owner and construction contractor celebrate signing the construction contract, they often realize that there are many issues and details which still need to be addressed and resolved. Simultaneously, they realize that there are a number of unanticipated issues that resulted from varied conditions, such as different soil conditions, or any other circumstances that are not controlled by either the Owner or the construction contractor. Additionally, the Owner starts realizing a number of other responsibilities and concerns including: the need to address other local authorities’ requirements; disagreement over interpretation of contract terms and clauses; obtaining the right of way; reviewing and accepting submittals; differing site conditions; relocating existing utilities; addressing...
environmental concerns; administering contract securities and bonds; critical activities in project schedule; mobilization difficulties; unforeseen circumstances; the need to approve variation or change orders; addressing safety concerns; contract administration; quality control; cash flow and financial planning; defects liability period responsibilities and disputes; and contractor’s warranties. The following figure illustrates how the Owner and construction contractor may be overburdened with the aforementioned responsibilities which might result in costly construction claims.

There are also a number of factors that cannot be ignored such as the capacity of the Owner to handle technical issues, the need for long-term and short-term specialized technical expertise in a wide variety of fields, and the need for coordination with other stakeholders. The A-E firm plays a major role in project success by providing specialized technical and program or project management services to the Owner in administering all aspects of the construction contract. Delegating adequate authority to the A-E in administering the contract, would allow the A-E to provide effective and timely construction oversight and management.

During the implementation of USAID-funded projects there has been an obvious need for engineering support regardless of the contracting mechanism used. In most of its successful construction projects, USAID has relied on qualified engineering firms for providing engineering design, procurement support, and construction management services. These services were generally provided by US engineering firms or consortia, supported by US and local engineering subcontractors for large infrastructure programs. The same services were generally provided by local qualified engineering consultants in simple small-scale infrastructure projects.

USAID has played a leading role in identifying the need for engineering expertise and in introducing the concept of using specialized A-E firms in construction programs. USAID has provided technical support and guidance to the Host Country Implementation Units (HCIU) in developing the SOW for the required engineering services, establishing the selection criteria, developing cost estimates, and monitoring the performance of the A-E firms throughout different stages of the project.

It is important to refer to the USAID Construction Assessment Report of 2014, to realize the importance
of having construction management services and the consequences and risks of not having such services under USAID funded projects.

4.1 USAID CONSTRUCTION ASSESSMENT REPORT (2014)

The USAID Construction Assessment Report (2014) states that “In 2013, USAID conducted a survey of construction awards for the purpose of deepening our understanding of the scope, location, and parameters of the portfolio. The survey identified 758 prime awards (including 3,304 subaward) that included construction and were active during the two-year assessment period. Together, these awards represented an estimated value of $5.6 billion.”

The Report estimates that these awards were carried out through the use of a number of award mechanisms including direct contracts, cooperative agreements and grants, Public International Organizations (PIO), Government to Government (G2G) Fixed Amount Reimbursement Agreements (FARA), and Host Country Contracts (HCC).

The Key Findings, Critical Success Factors, and Best Practice sections described in the Report are quoted below. These quotes emphasize the crucial need for construction oversight and quality verification in any construction project.

4.1.1 Key Findings, Recommendations, and Critical Success Factors

One of the key findings of the USAID Construction Assessment Report of 2014 is that:

“Management approaches, particularly in levels of oversight, professional experience, and managing change, were found to be variable across the portfolio. This reflects not only the decentralized nature of the USAID system but also the shortage of USAID engineering expertise. Balancing risk, good development, and humanitarian outcomes will be the challenge”

The report also recommends:

“Increase the number of Foreign Service and other engineers to provide oversight for such an extensive portfolio and to strengthen the knowledge and understanding of the many non-engineers who are managing and overseeing small construction activities”

The Report identified a number of critical success factors such as “Construction Oversight and Quality Verification.” The following are some important quotes from Appendix III, Risk Analyses, and Conclusions of the Construction Assessment report:

“To promote competitive pricing, construction is typically procured through sealed bidding, which has created a tension between owners and contractors who are in a position of trying to maintain profitability, sometimes at the expense of quality or safe outputs. As a consequence, construction supervision has been part of the construction process since the end of the 19th century and has typically been undertaken by the engineer or architect of record…. “

“Determining how construction oversight will be provided, and by whom, is an important aspect of the implementation plan that should be addressed for each individual project.”

4.1.2 Construction Industry Best Practices

Table III-2 of the USAID Construction Assessment Report provides a list of the Critical Success Factors, summarizing key findings of USAID risks for each of them, and the corresponding best practices. One of which is that the use of construction oversight and quality verification is not consistent across the Agency. This is identified as a critical exposure area. Further explanation on this finding can be found in Table II-2.10 of the USAID Construction Assessment Report.

Accordingly, Exhibit 27 of the USAID Construction Assessment Report provides a summary of industry best practices associated with Critical Success Factor Number 10: Construction Oversight and Quality Verification.
4.1.3 International Development Community Critical Success Factors for Construction Projects

The *USAID Construction Assessment Report* provided the following to summarize the experience and conclusion of the international development community regarding key factors that affected the implementation of construction projects:

“The combined experiences of the international development community point to a number of common conclusions on the key factors affecting implementation of constructions projects, and best practices that may be used to maximize the chance for success. The terminology used to describe and categorize these factors often differs from one organization to the other, although there are continuing efforts within the industry to establish commonality. Drawing from these efforts, this section presents eleven success factors (CSFs), summarized in Exhibit 6 below, as a basis for identifying and comparing best practices. In each case, an illustrative range of corresponding risks and potential best practices for addressing them is suggested.”

Exhibit 6 of the *USAID Construction Assessment Report* provides a summary of Critical Success Factors for construction projects and provides a detailed explanation of this topic.

4.2 CONSTRUCTION MANAGEMENT AND PROGRAM MANAGEMENT

Construction management (construction oversight) is a scheme, or system for management of construction projects. It is utilized from inception to completion with the objective of controlling scope, time, cost, and quality. As an example, the A-E may provide construction management services for the construction of a water treatment plant or a pipeline.

Program Management is required for capital investment programs that may include one or more projects from inception to completion. Program Management covers the overall planning, design, procurement, construction, and commissioning, with the objective of controlling scope, time, cost, and quality. The A-E may provide Program Management services for a program comprising of different phases at one or several sites. An example would be a program including several components and phases, such as design and construction of one or more water treatment plants and pump stations, procurement of pipes and equipment, installation of a water network, start-up of the system, and in some cases training of system operators.

4.3 THE A-E TEAM

The A-E firm tasked with providing construction management and oversight services assigns an official representative, “Engineer’s Representative” as the authorized individual managing the project in the field office. The Engineer’s Representative heads a team of technical and administrative professionals in administering the contract and providing daily oversight of construction activities at all project sites. This team is usually supported by a number of specialized, and in some cases more senior, individuals from the home office of the A-E. The A-E team also engages specialized subcontractors as needed to cover all aspects of the project and to address issues related to local sites and conditions.

A qualified, experienced, and independent A-E providing construction management services, according to a well-defined scope, will help you complete your project on time, within budget, and according to specifications.

The A-E team generally consists of specialized individuals qualified to cover required engineering fields including architectural, design, structural, civil, electrical, mechanical, geotechnical, surveying, sanitary, hydraulic, etc. The team also covers other areas, including financial, cost estimation, scheduling, legal, administrative, and any other field as needed by the project.
ROLE OF THE A-E: The A-E support starts during the planning stage, continues to the project design, and extends throughout the construction phase to the completion of the project as identified in the scope of work. The A-E works closely with the Owner during the planning phase and in procurement planning. The A-E provides procurement support to the Owner for the procurement of the construction services.

The A-E provides construction management and oversight services throughout the construction phase, during the start-up and operation and maintenance (O&M) period, during the Defects Liability Period, and in settling outstanding claims. The A-E keeps USAID and the employer informed of all implementation issues including:

- Progress of the works
- Non-compliance with contract terms and provisions
- Quality control
- Schedule and critical activities
- Potential cost overruns and cost to complete
- Anticipated claims
- Cash flow concerns
- Status of validity of bonds and warranties

PRE-AWARD AND PROCUREMENT SUPPORT SERVICES: The A-E works closely with the Owner during the planning phase of the project on many tasks and activities. An important activity is procurement planning. The A-E provides support to the Owner during the solicitation process in preparation of the prequalification and solicitation documents and in developing the list of prequalified firms. Other areas of support include developing cost estimates, conducting the pre-bid conference, issuing addenda to the solicitation documents, receipt and evaluation of bids, recommending contract award, and preparation of the contract documents.

CONSTRUCTION MANAGEMENT SERVICES: The A-E provides construction O&M services during the construction and post construction phases. As part of these responsibilities the A-E is expected to:

<table>
<thead>
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<th>Review</th>
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<tbody>
<tr>
<td>• Construction contractor’s securities and bonds</td>
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<td>• Contractor’s construction schedule and critical path method (CPM)</td>
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<td>• O&amp;M manuals</td>
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<tr>
<td>• Construction contractor submittals</td>
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<tr>
<td>• Contractor’s requests for extension of time or compensation for additional costs incurred, or payment for extra work</td>
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<tr>
<td>• Contractor’s claims</td>
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<table>
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<tr>
<th>Conduct</th>
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<tbody>
<tr>
<td>• Pre-construction meeting</td>
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<tr>
<td>• Daily construction monitoring and inspection</td>
</tr>
<tr>
<td>• Periodic construction implementation meetings</td>
</tr>
<tr>
<td>• Trainings for the Owner’s staff</td>
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<tr>
<td>• Inspections during the Defects Liability Period</td>
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<tr>
<td>• Final Inspection</td>
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Additionally, the A-E advises the Owner and USAID of potential problems that may adversely impact project quality, cost, or schedule and keeps USAID and the employer informed of all issues related to progress of the work, non-compliance with contract terms and provisions, quality control, schedule and critical activities, potential cost overruns and cost to complete, anticipated claims, cash flow concerns, and status of bonds and warranties. Included in the construction management services is assistance to the Owner, the construction contractor, and USAID in settling any outstanding disputes and in drafting settlement agreements.

The A-E is tasked with a number of reports that are required by the Owner and USAID. These reports cover all aspects of the project from design to completion and may include monthly and quarterly progress reports, technical reports such as the basis of design report, the soil investigation report, the geotechnical report, feasibility studies, environmental reports, demographic reports, ad-hoc technical reports, cash flow requirements, and project completion report, etc.

### 4.3.1 A-E Contractual Relationship with Other Stakeholders

The A-E relationship and reporting requirements may be different based on the implementation
instrument or financing option used. The followings are different types of A-E’s contractual relationships.

**Direct A-E Contract and Direct Construction Contract:** Under this type of contracting, USAID would generally contract the A-E firm to prepare the designs and required studies (environmental, feasibility, demographic, geotechnical, climate change resiliency, etc.), manage the procurement process, and provide construction management services. USAID would also contract directly with the construction contractor.

**Host Country A-E Contract and Host Country Construction Contract:** Under this model, the HCIU contracts with the A-E firm to provide construction management services and with the construction contractor to provide construction services.
**Direct A-E Contract and Host Country Construction Contract:**
Under this model, USAID enters into a direct contract with the A-E firm. The HCIU contracts with the construction contractor. In other words, it is a combination of direct and HCC. This model has been successfully used in several USAID-funded infrastructure projects in Egypt. The model addresses some of the issues and concerns that developed when the A-E firm and construction contracts were HCC with the HCIU, which resulted in the inability of the A-E firms to maintain impartiality or receive timely payments for services rendered.

**G2G Using Fixed Amount Reimbursement:** When using the FARA method of finance for implementing G2G engineering and construction activities, USAID may use one of the following two options. Please note that USAID may designate an A-E firm as a USAID representative/designee to provide overall monitoring of the project process, conduct required inspections, ensure that contractors are complying with the specifications, and review PGIE reimbursement requests.

**PGIE Contract with A-E and Construction Contractor:** The PG/PGIE uses its financial, procurement, contracting, and management systems to procure the A-E design and construction management services, construction services, and O&M services.
**USAID Contracts with the A-E and PGIE Contracts with the Construction Contractor:** USAID, on behalf of the PG/PGIE, procures the A-E design and construction management services and PG uses its financial, procurement, contracting, and management systems to procure construction and O&M services.

**4.3.2 Applicable Regulations and Guidance**

**Direct Contracting:** All direct contracts follow the Federal Acquisition Regulations (FAR) and AIDAR as applicable. Direct Contracting for selection and award of the A-E firm follow FAR 36.6 – Architect-Engineer Services. According to The Brooks Act, engineering firms are selected on quality-first basis. The field of interested firm is narrowed down to a short list, ranked in order of quality, after which price is negotiated with the top-ranked firm (FAR 15). FAR 36.6 covers both
pre-award process and guidance relevant to the engineering work.

**AIDAR 736** – Construction and A-E Contracts, contain the USAID specific adaptations of FAR 36 and applies to direct contracts. AIDAR 736.5 lists the specific clauses that flow down from the FAR into USAID direct contracts. The following is a summary of AIDAR evaluation criteria for selection of A-E services contractor:

- Specialized experience (including each member of joint venture or association)
- Capacity to perform the work (including specialized services) within time limitations
- Past record of performance (USAID, other Government agencies, private industry)
- Ability to assign qualified key personnel from the organization
- Portion of the work the A-E is able to perform with its own forces
- Ability to furnish or to obtain required materials and equipment
- Familiarity with the locality where the project is situated
- Financial capacity
- Responsibility under standards provided in (48 CFR)
- Volume of work previously awarded to the firm by the Agency, with the object of effecting an equitable distribution of A-E contracts among qualified firms

**Host Country Contracting:** USAID has generally used Fédération Internationale des Ingénieurs Conseils (FIDIC) based conditions of contract in its Host Country Construction programs. A definition and supplemental information on FIDIC is found in Annex A of this supplementary training document. FIDIC conditions specify the role of the parties to the construction contract and the A-E (The Engineer), and lay out all the conditions related to the performance of the work under the construction contract. Conditions of particular applications (Special Conditions) are usually added to specify special requirements and to include USAID requirements and its mandatory contract clauses.

FIDIC Conditions of Contract for Work of Civil Engineering Construction, Part I: General Conditions and Part II: Conditions of Particular Application are included as attachments 2R and 2S respectively to USAID Country Contracting Handbook Chapter 2, Procurement of Construction Service, an Internal Mandatory Reference (now provided as guidance) to ADS 305.

Under HCC, USAID reserves the right of prior approval of the most critical contracting steps to ensure compliance with specific provisions of its policies. USAID approvals are not to be construed as making USAID a party to the HCC.
USAID reserves the right of prior approval of the most critical steps of the contracting process for any Host Country procurement in excess of $250,000. The following are some of the steps that require USAID approval:

- Notices to prospective offerors
- Lists of prequalified offerors prior to issuance of the solicitation document
- Complete solicitation document prior to issuance
- The contractor selection method that may be part of approval of solicitation document
- The selected contractor
- Host Contracting Agency decision to terminate negotiations with the highest ranked offeror and to initiate negotiations with the next ranked offeror, or to reject all offers
- The contract prior to execution
- Signed contract documents before financing
- Contract administrative actions such as subcontracts, amendments, and change orders, as determined by the Mission and stipulated in an Implementation Letter
- USAID may also require approval on contracts which are not funded by USAID but have a substantial impact on the activity

**Government to Government (G2G):**

ADS 220 (Use and Strengthening of Reliable PGSs for Implementation of Direct Assistance) specifies the USAID policies and procedures are to be followed when designing, negotiating, and implementing direct funding agreements to PGs under the G2G assistance. Guidance in ADS 220 incorporates and supersedes policy and guidance formerly contained in ADS 317 for FARA. ADS 220 guidance must be used, if applicable, in lieu of the guidance provided in ADS 305, HCC. However, payment directly by USAID to a PG construction contractor or grant recipient for project assistance requires the use of ADS 305 procedures.

Fixed Amount Reimbursement is the most commonly used method of financing when using G2G procedures. USAID and the PGIE are the parties to the FARA. It is important to emphasize that USAID is not a party to any contractual arrangement resulting from entering into a FARA. Although the PGIE is not legally required to follow USAID or FAR competition requirements, USAID should encourage the PG to maximize the use of competition subject to the PG’s own legal and policy requirements, and sound public procurement principles and practices.

Procurement under FARA must follow the requirements of ADS 220mah, G2G Implementing and Funding Mechanisms Fixed Amount Reimbursement.
5. LESSONS LEARNED AND BEST PRACTICES

Below is a summary of key lessons learned and best practices:

- Construction projects are not simple. They are complex, multidisciplinary, and require extensive monitoring.
- Construction projects have many stakeholders; each has his own interests.
- Construction projects face many challenges and unforeseen circumstances. This is normal in any construction project.
- Large projects have more stakeholders, involve more investments and more challenges, and the disputes are more serious.
- Construction Management is a specialized professional system for facilitating planning, management, and control of a project from inception to completion. Construction management is essential for the success of construction projects.
- Appointing an individual “Project Manager” is most of the times not a better alternative to using an A-E firm for delivering construction management services. This is because of the wide variety of expertise required to provide construction oversight, and the need to constantly monitor construction at different times and locations.
- You need a qualified A-E firm (Engineer, Construction Management Contractor (CMC)) from project inception to completion.
- Bring the A-E on board as early as possible on the project. The A-E in most USAID-funded projects may be hired to develop the designs and continue providing services during the construction phase.
- Have your A-E on board at the planning stage.
- Select the A-E firm based on the qualifications and experience of the firm, proposed staff qualifications, and experience.
- A qualified, experienced, and independent A-E providing construction management services, according to a well-defined scope, will help you complete your project on time, within budget, and according to specifications.
- The cost of procuring Construction Management services will most likely be offset by the quality of the construction, construction savings, avoiding cost overruns, timely completion of the project, and avoiding claims and costly litigation.
- The owner is not necessarily qualified to perform A-E duties.
• Remember, you are the USAID representative and not the A-E on the job

• Develop the A-E scope of work, monitor the performance, and let the A-E do its job and carry its responsibilities

• Delegate authority to your A-E firm, monitor performance, and look for accountability

• A-E firms under direct contracts with USAID have a better opportunity to provide impartial professional opinion

• Visit the site. If you have concerns, do not give verbal or written instruction to the construction contractor, instead talk to your A-E

• At the site, always ask questions – the right ones

• The A-E is the owner’s representative. The A-E should be objective, independent, and experienced to protect the Owner’s interests

• The A-E ensures that the contractor, suppliers, and the employer comply with the contract terms
6. ADDITIONAL SUPPORT AND RESOURCES

Following are some additional resources that might be helpful for USAID professionals in managing construction programs.

6.1 ECCM TRAINING COURSES

Engineering and Construction Contracting Management (ECCM) training courses started through the Construction Contracting, Webpage and Knowledge Management Support (CCWKMS), a Task Order under the Architectural and Engineering Global IQC. Under the TO, the contractor developed and implemented a set of construction contracting management courses for USAID staff in order to improve USAID’s access to A-E and construction services related knowledge base, best practices, lessons learned, and literature and references.

Over 300 USAID staff received training during the life of the task order (2012-2017). Interested USAID professional who are tasked with management of USAID projects that include a construction component are strongly encouraged to enroll in ECCM courses through USAID’s Learning Management System (LMS). A Description of ECCM courses are listed below.

6.1.1 ECCM 201

The overall goal of this five day ECCM 201 course is to provide the USAID staff with skills and competencies related to contracting and contract management of A&E and construction services. This participatory course covers the “contractual matters” related to all phases of the construction program contracts from planning, design, procurement of construction contractors, construction, oversight, post construction, to O&M and sustainability. The uniqueness of the course is its emphasis on USAID infrastructure programs as implemented overseas through various contracting mechanisms. The course combines lecture-style presentations with interactive discussions, and group activities to give participants skills that can be readily applied in their day-to-day jobs. The course materials include a pilot tested 5-day curriculum, set of hundreds of presentation slides, checklists, relevant short videos, and supporting reference and resource materials.

6.1.2 ECCM 211-LS

The overall goal of the participatory five day ECCM 211- Local Systems (ECCM 211-LS) course is to provide USAID staff with skills and competencies related to contracting and contract management of A&E and construction services performed under USAID funding. The uniqueness of the course is its emphasis on using Local Systems in USAID infrastructure programs as implemented overseas through various special contracting mechanisms and appropriate options. The curricula for this course was developed over a 12 month period. The basic curricula was first pre-piloted in Washington D.C. presented to OAA and a small group of relevant experienced USAID staff who were invited to critique the curricula. The comments were incorporated into the curricula that pilot tested at the Asia Regional Training Center in Bangkok. Course was offered two times during 2016 and 2017.
6.2 ENGINEERING SUPPORT THROUGH E3/EI AND THE A-E IDIQ

Many USAID mission are currently funding construction projects. Some missions have the technical capabilities to manage simple small scale construction projects. Furthermore, some missions assign the responsibility for managing construction projects to staff that do not have any engineering back ground.

Note one of the findings of the USAID Construction Assessment Report (2014):

“Increase the number of Foreign Service and other engineers to provide oversight for such an extensive portfolio and to strengthen the knowledge and understanding of the many non-engineers who are managing and overseeing small construction activities”

It is strongly recommended that missions acquire the services of a qualified A-E firm to perform the engineering and construction management and oversight tasks and responsibilities identified in this supplementary training document. It is also recommended that missions contemplating infrastructure programs consider having Foreign Service National (FSN) or Direct Hire engineering positions. Missions may also obtain engineering support from USAID Engineering Office of from USAID regional missions if they do have the engineering capacity.

While some missions may be able to engage a qualified A-E firm to provide construction management services, other missions might not have the capacity to procure such services. In such case missions may access engineering services through the Bureau for Economic Growth, Education, and Environment (E.3), Office of Energy and Infrastructure Programs (E&I).

The Engineering Division of E3/E&I supports USAID missions and other Operating Units by providing engineering, construction and infrastructure technical support through virtual and TDY assistance provided by engineers and infrastructure technical staff in the Office. In addition, the Division manages the Architecture and Engineering IDIQ, providing access to small and large engineering service providers.

E&I is also the focal point for the Agency’s Construction Improvement Program to implement the recommendations of the USAID 2014 world-wide Construction Assessment.

6.3 USAID SUPPLEMENTARY TRAINING DOCUMENTS

Since 2010, USAID has issued a number of draft supplementary training documents to support USAID construction programs. The primary objective of these supplementary training documents is to enhance USAID capabilities in the design, procurement stages of a project, and manage engineering and construction services. The supplementary training documents provide both engineering and non-engineering USAID development professionals with a number of documents that each can be used as a one-stop reference for particular subjects. These subjects are necessary for the successful implementation of their role in designing and managing USAID funded construction activities. These have been updated and improved upon. The following is a list of updated supplementary training documents and the lead authors:
<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
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<tr>
<td>Reference for Construction Management and Contracting Processes: An ECCM Training Document</td>
<td>Fred Zobrist</td>
</tr>
<tr>
<td>Construction Tendering And Contracting Guidelines: An ECCM Training Document</td>
<td>Michael Gould</td>
</tr>
<tr>
<td>Use of Government to Government (G2G) Fixed Amount Reimbursement (FAR) in Construction Projects: An ECCM Training Document</td>
<td>Moenes E. Youannis</td>
</tr>
<tr>
<td>Use of Host Country Contracting in Construction Projects: An ECCM Training Document</td>
<td>Moenes E. Youannis</td>
</tr>
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ANNEX A – FIDIC DEFINITION, DESCRIPTION, AND SUPPLEMENTAL INFORMATION
FIDIC is an abbreviation for Fédération Internationale des Ingénieurs Conseils, an international professional organization that promotes and advocates the global consulting engineering industry. FIDIC’s vision is to enable the development of a sustainable world as the recognized global voice for the consulting engineering industry. FIDIC works closely with consulting engineering firms and the construction industry to improve the business climate and enable its members to contribute to making the world a better place to live in, with “Quality, Integrity, and Sustainability” as its core principles.

FIDIC published a large number of publications covering the most important and needed resources for the construction industry including:

- FIDIC’s selection of contracts and agreements
- Business practices information for consulting engineers on risk management, project sustainability management, environment, quality management, integrity management, dispute resolution techniques, insurance, capacity building, transfer of technology, law, and other business issues
- Guides for quality based selection, procurement and tendering procedures, consultant selection, quality of construction and other documents about the use of consulting engineers

FIDIC based contracts are used extensively in the construction industry in most countries. A simplified FIDIC based contract in a local language will be most useful for developing programs. Contractors and partner government agencies are familiar with FIDIC-based contracts, as FIDIC-based contracts are used by other donors. FIDIC is best known for its range of Standard Conditions of Contract for Construction. FIDIC publishes the Multilateral Development Banks (MDB) Harmonized Edition of the Construction Contract that is used by MDBs including the World Bank. FIDIC documents have been translated into several languages. Its contract documents are user friendly and are “living documents” which are updated regularly. FIDIC has capacity building programs and makes available to its members a number of courses, modules, and best practice guidelines and documents. The FIDIC suite of standard conditions for construction contracts include:

- Construction for building and engineering works designed by the employer (Red Book)
- Multilateral Development Bank harmonized (Pink Book)
- Design-Build and Turnkey (Orange Book), Mechanical and electrical (Yellow Book)
- EPC/turnkey (Silver Book)
- Design, build and operate (Gold Book)
Acknowledgement

An earlier abbreviated version of this document was originally drafted by Moenes Youannis in 2012 under a USAID contract to International Resources Group. The document was updated, expanded on, and redrafted in 2017 by Moenes Youannis to also address comments and questions received during the delivery of ECCM courses over a 4 period.

Mr. Youannis has more than 30 years of extensive management experience in the conceptualization, design, negotiations, planning, implementation, and monitoring of infrastructure programs. He served for 27 years as USAID Authorized Representative and Team Leader for programs totaling more than $400 million in Egypt, where his responsibilities included: grant agreements, and fixed amount reimbursement agreements (FARA); liaising with other donors; and selecting and supervising US and Egyptian construction contractors and engineering teams for implementing infrastructure programs using G2G, HCC, and USAID direct contracting mechanisms. He is currently Vice President for Operations for ME&A, Inc. in Washington.