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## PROJECT MANAGEMENT

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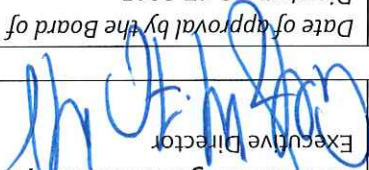

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Each jurisdiction is required to develop a comprehensive transportation improvement program (STIP) for all areas of the jurisdiction, covering a period of at least four years. The STIP is a staged, multi-year, comprehensive intermodal program of transportation projects, consistent with the statewide transportation plan and planning processes as well as metropolitan plans, transportation improvement programs (TIP), and planning processes. Each metropolitan planning organization (MPO) is required to develop a Transportation Improvement Program (TIP)—a list of upcoming transportation projects—covering a period of at least four years. The TIP must be developed in cooperation with the corresponding jurisdiction and public transit providers.

## 2 Background

The purpose of these desk procedures is to provide guidance on Project Management for the Authority. These procedures support the regulatory provisions of the Governmental Accounting Standards Board (GASB) and the regulations and guidance (circulars and bulletins) issued by the U.S. Department of Transportation (DOT) – Federal Transit Administration (FTA), the Office of Management and Budget, other Federal agencies, the enabling Act of the Authority, as amended, and the Commonwealth of Puerto Rico laws and regulations. The ultimate intent of these procedures is to ensure that the internal controls over project management processes are effective, promotes efficiency, and is transparent to the Authority's internal management and to its external customers.

## 1 Purpose

		<b>PROJECT MANAGEMENT</b>		Title regulation or procedure:	
DEPARTAMENTO DE TRANSPORTACIÓN Y OBRAS PÚBLICAS PUERTO RICO INTEGRATED TRANSIT AUTHORITY (PRITA)		Approved by:  Alberto M. Figueroa Medina, PhD, PE, Executive Director		Validate By:  Juan A. Vázquez Acevedo, Chief Financial Officer	
Regulation Number or Procedure: ATI-00012-2015		Date of approval by the Board of Directors: 12-17-2015		Date of Revision: 17th of December, 2015	
		Work Unit: Finance		Administration and Finance	
		Notes:			





The Authority is responsible for the creation of capital and operating budgets. These budgets include projects that the Authority will undertake in the future. A project is conceived through the organization's strategic planning process and documented in a Capital Improvement Plan (CIP). The Authority's motives for developing projects are to supply capital assets needs for:

- ❖ Sustaining service or improve quality of service;
- ❖ Expanding service to meet growing demand; and
- ❖ Complying with regulatory requirements.

During project development, the Authority identifies the need for a project, assesses the project's ranking in importance relative to other projects, analyzes its funding requirements, and decides whether to authorize the project for implementation. The project management process starts with a well thought out business justification that usually includes some type of cost calculation. Once these measures are established, it is up to the project manager to ensure that on-time, on-budget performance is maintained; otherwise, the project will never produce the expected results. That's what good project management is all about, and why there's a need for project management. Every project is made up of a series of connected activities, each of which has its own constraints. The project manager identifies the critical path of activities – the optimal sequence of actions that best ensure the project's successful completion.

After the Authority's budget is approved by the grantee and applicable local authorities, the Authority begins to work on the actual project based upon established milestones. The internal controls included in the project management process are supported by the Authority's grant management system and general ledger and should be sufficient enough to account for the Sources and Uses of all Federal and Non-Federal Funds.

### 3 Objective

- To ensure that the grants/project management process is adequately controlled and grant status is properly reported to the federal agency.
- Specifically, to ensure that:
  - The Grantee's project accounting system properly interfaces with the overall financial management system.
  - Controls are adequate to ensure that the grants management system properly reflects the percentage of completion of the grant project, considering actual effort completed as well as cost incurred.
  - The project management process is effective in identifying and addressing problems as they arise.



## 4 Scope and Applicability

These procedures will assist the Authority in developing the right mix of planning, monitoring and controlling to ensure that grant funded projects are completed on time, on budget, and with high quality results. When implemented and followed, these desk procedures will also serve as a source for the enhancement of the control environment within the Project Management Department. These desk procedures will also address peripheral matters including the proper *segregation of duties* that should be an inherent feature of the project management process.

Project Management is both an art and a science. The processes presented in these procedures illustrate the science of project management. The science consists of a systematic approach using a standard methodology. The art consists of "soft skills" including leadership, trust, credibility, problem solving, and managing expectations. The art of project management is developed through experience, practice, and intuition. A project manager who is skilled in the art instinctively knows how and when to react to project problems. Project management is equally divided between the art and science and a successful project manager utilizes and refines both skill sets to effectively manage projects.

These procedures will also address the required document maintenance pertaining to project management.

## 5 THE ROLE OF THE PROJECT MANAGER AND CONSTRUCTION MANAGER

### 5.1 The Project Manager's role

A project's execution is planned and controlled by the project manager. The project manager is assigned by the Authority, i.e., the Authority's executive management. The project manager acts as an extension of the Authority's staff to oversee all phases of the project. In such instances, the project manager must report to the Authority's staff members who are clearly identified in all project documents as the individuals with management and decision making responsibility. The project manager must have adequate authority to exercise the responsibility of forming and managing a team for support of the project. The project manager must have prior experience and resources, it is well advised to outsource project management services for management of the project. The project manager may be tasked with management of multiple projects that may require assignment of additional project managers for support. In such cases the project manager is taking on the role of a program manager.

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No matter which organization approach is chosen, the grantee has the ultimate responsibility for effective management of the project.

## 5.2 The Construction Manager's Role

For all but the simplest project, you will need project staff with expertise and experience in construction management beyond the capability and capacity of the Authority's regular employees, for which it will need to retain a construction manager (CM) consultant. The CM acts as the Authority's representative with the contractors, oversees what work the contractors perform pursuant to the contract drawings and specifications, inspects the work as acceptable, and recommends payment of contractor invoices. The key CM staff is the resident engineer (RE) who is the principal point of contact with the contractor and is stationed at the site for larger projects and for smaller projects visits the construction site one or more days a week.

## 6 PROCEDURES

### 6.1 Project management system (PMS)

A project management system is the coherent organization of the information required for an organization to execute projects successfully. A PMS is typically one or more software applications and a methodical process for collecting and using project information. These electronic systems help to plan, execute, and close project management goals. PMS systems differ in scope, design and features depending upon an organization's operational requirements. What a PMS does is to manage all stakeholders in a project such as the project owner, client, contractors, sub-contractors, in-house staff, workers, managers and etc. At the center of any modern PMS is software. Project management software can vary from something as simple as a Microsoft Excel spreadsheet, to a full blown enterprise project portfolio management system. Project management software has the capacity to help plan, organize, and manage resource pools and develop resource estimates. Depending on the sophistication of the software, it can manage estimation and planning, scheduling, cost control and budget management, resource allocation, collaboration software, communication, decision-making, quality management and documentation or administration systems.

### 6.2 Change orders

Change Orders are changes to the construction contract that occur after award of the contract, while being within the general scope of the contract. The changes may include changes to project schedule duration, changes to the scope of the contract, and changes may be additive or negative.

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The Authority is responsible for the administration and implementation of the project for which construction grant assistance is awarded. The Authority is also financially responsible for any additional non-federal costs associated with a change. Should the reviewing agency determine that the change order is not allowable for federal participation, the entire cost would then be considered non-federal costs.

The Authority is the one who must agree to any change in the conditions of the construction contract because it is the only party that has entered into the contract with the construction contractor.

#### The Authority is responsible for:

- Determining whether a change order is warranted.
- Negotiating a fair and reasonable price for required changes, or authorizing the Engineer to do so.
- Maintaining costing records for the change including records of negotiation.
- Maintaining current and accurate fiscal projections of contract and project completion costs.
- Resolving disputes which may have arisen as a result of a proposal for a change.
- Notifying the reviewing agency in writing of events or proposed changes which may require a grant amendment.
- These include:
  - Conditions which require prior written approval.
  - Significant changed conditions at the project site.
  - Changes which may increase or substantially decrease the grantee needed to complete the project.
  - Significant delay or acceleration of the project schedule. This requires continuous monitoring of the construction contractors construction schedule.

#### 6.2.1 Documenting Change Orders

Each change order should be shown separately, in numerical order, with its individual tabulation of quantity and payment. If the change affects an original contract quantity, the change will still appear separately, since there may be a time lapse between grantee processing grantor approval. A change which alters an original contract quantity or price will reference to the original item. The grantee should file the following documents, as applicable, with the contract changes:

- Request for change order approval – signed and dated copy - attachments as follows:
  - Memorandum of negotiation including the Engineer's independent estimate (if requested by the reviewing agency).
  - Change order.
  - Notice to proceed (if prior approval is required, notice will be furnished separately).
  - Grantee's checklist – signed and dated copy.
  - Notification of approval or disapproval.





- Request for additional information or clarification.
- Memoranda of meetings.
- Telephone conversations – notes of the grantee.
- Inspection reports – review agency inspector.
- Project cost summary – updated.

### 6.3 Disputes

Many of the delays and misunderstandings surrounding the modification process can be avoided by effective and frequent communication between the grantee and the construction contractor. The grantee bears the entire responsibility to settle construction contractor claims. When a claim is submitted, the grantee should request and obtain a change order proposal from the construction contractor, investigate the circumstances promptly, reach a tentative decision of the merits, and notify the construction contractor of that decision, justifying the position based upon the plans, specifications, and other contract documents. In reaching that decision, the grantee may find it advisable to obtain legal advice or to consult with the representatives of the reviewing agency.

If the grantee determines that a change order proposal is unmeritorious, the construction contractor may decide to pursue the claim through litigation, arbitration, or other form of dispute resolution. In that case, the grantee may request the reviewing agency's advice and assistance prior to assessing and/or defending against the claim. Reviewing agency technical and legal assistance can also be requested for the administration and enforcement of construction contracts, especially where a dispute may jeopardize completion of the project. Prompt action to resolve disputes cannot be overemphasized, since efficient execution of the entire change order management process can save both time and money. Government agencies require that the Authority notify them of pending litigation.

### 6.4 Construction in progress or Work in Progress

Grantees who are involved in constructing buildings and/or purchasing land and then developing it have to comply with accounting requirements for revenue and expense recognition that are a little different. Generally Accepted Accounting Principles (GAAP) requires that revenue and costs are not to be recognized on financial statements as income and expense until the job is complete, or in some cases as certain milestones are completed for the job.

The costs of a constructed asset are accumulated in the account Construction Work-in-Progress until the asset is placed into service. When the asset is completed and placed into service, the account Construction Work-in-Progress will be credited for the accumulated costs of the asset and will be debited to the appropriate Property, Plant and Equipment account.

Depreciation begins after the asset has been placed into service.





Below is an **example** of the accounting for construction in progress.

1) On March 1, 20XX the Authority Controller approved a project to add a new piece of equipment to the Authority. No entries are required at this point.

2) On March 14, 20XX Vendor A delivered a major portion of the equipment to the Authority and issued an invoice for \$100,000:

Account Titles	Debit	Credit
Construction in Progress	100,000	
Accounts Payable		100,000

3) On March 15, 20XX the Authority received a bill from a transportation company for the delivery of the equipment. The transportation cost is to be included into the CIP account for the equipment because it relates to making the asset ready for use. The bill amount \$3,000:

Account Titles	Debit	Credit
Construction in Progress	3,000	
Accounts Payable		3,000

4) On March 25, 20XX the Authority used some of its inventory in preparing the asset for use. The cost of such inventory was \$1,500:

Account Titles	Debit	Credit
Construction in Progress	1,500	
Inventory		1,500

5) On March 31, 20XX the Authority's Engineering Department advised Finance Department that equipment was not ready for use. No entries are required at this point.

6) On April 2, 20XX Vendor B delivered additional parts for the equipment and issued an invoice amounting \$25,000:

Account Titles	Debit	Credit
Construction in Progress	25,000	
Accounts Payable		25,000

7) On April 16, 20XX the Authority Engineering Department performed final testing of the equipment and put it in use. Engineering also advised Finance Department that the equipment

*Handwritten signature and initials*



was put in use. At this point, Finance Department posted a journal entry to move the accumulated asset cost to a property, plant and equipment account called Equipment. The cost was determined as follows:

Vendor A Invoice	\$ 100,000
Transportation Invoice	3,000
Inventory Used	1,500
Vendor B Invoice	25,000
<b>Total</b>	<b>\$ 129,500</b>

The journal entry to transfer the cost of this asset to the fixed assets is as follows:

Account Titles	Debit	Credit
Equipment	129,500	
Construction in Progress		129,500

In April 20XX the Authority would also start depreciating this piece of equipment.

Management of progress payments begins with the contract specifications clearly stating how the contractor's work progress is to be measured, how payments are determined based on the measured progress, and what documents and reports are required to be submitted by the contractor to justify the payment request. The project manager should authorize payment only when the contractor's progress payment request is in full compliance with the contract requirements and the progress claimed has been independently verified by the Construction Manager.

## 6.5 Construction Certificates

Before you begin any building work, you need a construction certificate. Either a consent authority or an accredited private certifier can issue a construction certificate. A construction certificate is required after development consent is issued and before any building work is carried out. Building work means any physical activity involved in the erection of a building, including alterations and additions.

### What is the purpose of a construction certificate?

A construction certificate is used to verify, before you begin any building work, that:

- The work you intend to carry out complies with the Building Code.
- The design and construction work as depicted in the plans and specification you submit is not inconsistent with the development consent.





- Any conditions of development consent that must be complied with before a construction certificate is issued have been met.
- Security required as a condition of consent has been provided.
- Any monetary contributions required as a condition of consent have been paid.
- Structural strength and fire protection matters have been satisfied, in the case of a change of building use or alterations to an existing building.

Note: A fire safety schedule is issued as part of the construction certificate. The schedule outlines your commitments for ongoing maintenance of essential fire safety measures. Building work cannot commence unless these matters have been satisfied.

During the building process, regular inspections are required to ensure that the building works are consistent with your approved plans and that the work is being carried out in accordance with the Building Code and relevant standards.

## 6.6 Retainage

Retainage is a portion of the agreed upon contract price deliberately withheld until the work is substantially complete to assure that the contractor or subcontractor will satisfy its obligations and complete a construction project. Given the often large scale, complexity, cost and length of construction projects, the risk of something not going according to plan is almost certain. Accordingly, a common approach contracting party's take in order to mitigate this risk is to include retainage provisions within their agreements. The concept of retainage is unique to the construction industry and attempts to do two things: (1) provide an incentive to the contractor or subcontractor to complete the project; and, (2) protect the owner against any liens, claims or defaults, which may surface as the project nears completion. Incidentally, and more so now than ever, owners and contractors use retainage as a source of financing for the project, contractors in turn withhold retainage from subcontractors, frequently at a greater percentage than is being withheld from them.

Reconciling retainage subsidiary ledger accounts on a regular basis is imperative to maintaining accurate business records and important to the Authority's internal control. The purpose of the reconciliation is to identify retainage accounts that contain material errors, explain the errors and make adjusting journal entries. The dollar value of the Authority's material errors is dependent on their revenues and normal transaction levels. A company may reconcile certain retainage accounts based on the perceived risk level that the account may contain an error. This level of risk is related to the number of transactions that occur in the account as well as the complexity of transactions.



## 6.7 Project Closeout

Completing a project requires procedures to closeout project contractual and administrative activities. Closing contractual activities requires that the Authority's project manager oversee final settlement of project contracts, acceptance of contract deliverables, collection of contract documents and records (such as as-built drawings, operation and maintenance manuals, and warranties, etc.), and approval of final payments. The project manager's responsibilities for administrative closeout relate to demobilizing the project team and completing activities with other stakeholders, arranging the disposition of project records, closing of funding and financing agreements, and performing an evaluation of project success and lessons learned.

The project manager, commissioning manager, construction manager/resident engineer, and contract administrator, should follow the procedures and actions specified in each contract's terms and conditions to settle and close the project's construction contract agreements.

Although closing a professional service contract, for things such as design or management services, does not involve as many milestones and activities as a construction contract, you still need to follow the completion procedures dictated by the terms of the professional service contract.

The project manager has to arrange for project records, including ownership documents such as titles and operating manuals to be transferred to the Authority's document control function. Project records required to be maintained will be determined by a combination of the Authority's own records retention policy, retention requirements imposed by parties funding the project such as the FTA, and any special requirements due to contract provisions. Should there be an unresolved change/claim dispute, it is important that all records pertaining to the contract and dispute also be retained.

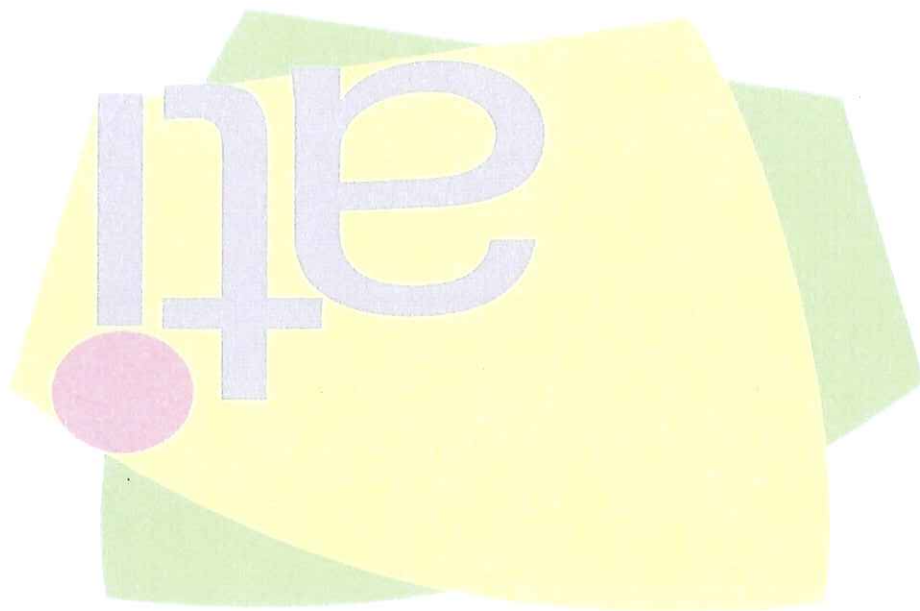
## 6.8 Segregation of duties

Certain duties within the Project Management Department should be performed by separate individuals to reduce the risk of fraud or concealment of errors, and no one individual should have responsibility of all aspects of a transaction. In general the following transaction related duties are considered incompatible and should be performed by separate individuals:

- Initiating
- Approving
- Record Keeping
- Custody of an Asset
- Reconciling the related accounts




Managers should be aware of duties that are potentially incompatible and arrange assignments so that no employee has incompatible duties. Managers of smaller departments where segregation of some duties may not be feasible must implement compensating controls such as detailed management review of reconciliations.



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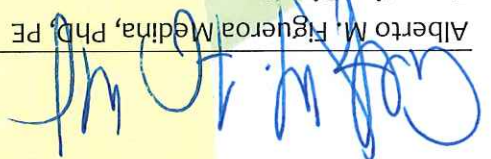


**7 ADOPTED & VALIDATE BY:**

  
 Juan A. Vázquez Acevedo  
 Chief Financial Officer,  
 Puerto Rico Integrated Transit Authority (The Authority)  
 DATE 17th of December, 2015

**8 EFFECTIVENESS, REPEAL AND APPROVAL**

This procedure, shall be valid from the date of approval by the Board of Directors of the Puerto Rico Integrated Transit Authority.

  
 Alberto M. Figueroa Medina, PhD, PE  
 Executive Director  
 Puerto Rico Integrated Transit Authority  
 DATE 17th of December, 2015

Duly approved by the Board of Directors of the Puerto Rico Integrated Transit Authority, in regular meeting held on the 17th of December, 2015

  
 Miguel A. Torres Diaz  
 Chairman of the Board  
 Puerto Rico Integrated Transit Authority  
 DATE 17th of December, 2015

