



FLORIDA STATE UNIVERSITY
Utilities and Engineering Services

CAPITAL PROJECT DEVELOPMENT PROGRAM

Utilities, Maintenance & Engineering Services

Last revision: Sept 18, 2020

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II. DEFINITIONS AND ACRONYMS

FDC	Facilities Design & Construction
EOR	Engineer of Record
BCA	Building Code Administration
A&E	Architectural and Engineering
ROI	Return on Investment
EH&S	Environmental Health & Safety
UES	Utilities & Engineering Services

III. PURPOSE

The Utilities, Maintenance and Engineering teams are tasked with preparing a capital plan that meets infrastructure needs, reduces cost, or provides other benefits that are important to the University. With a deferred renewal backlog of over \$250MM, there are far more projects than available funding.

The Capital Project Development Program provides a system to advance the best projects, cancel or defer the less attractive projects, and improve effectiveness of campus resources involve in design and development of projects.

The process involves 5 bases stages:

- Ideation
- Scoping
- Feasibility / Detailed Programming
- Design
- Construction / Commissioning

Each stage has specific requirements to proceed to the next stage. Various versions of a stage gate process have been used in business and industry for many years. The process used within Utilities, Maintenance, and Engineering at Florida State University is optimized for the specific needs of our organization.

The primary project categories are infrastructure, ROI, environmental and safety.

IV. SCOPE

The scope is to follow a disciplined process to prioritize capital projects or large expense projects developed and managed by Utilities, Maintenance, & Engineering. The process is designed to ensure that the impact of our limited capital resources is maximized while delivering the best value to the University.

V. PROGRAM MANAGEMENT

This program is managed by the Executive Director of Utilities, Maintenance, & Engineering. The execution of the program is via a cross functional team of Utilities, Maintenance and Engineering leaders and team members.

VI. KEY PERSONNEL AND RESPONSIBILITIES

A. Engineering Services

1. Design: Engineering services shall be provided by the Engineering Services group as needed to support the capital project development.
2. Scope Development: Engineering services will provide a detailed work scope for projects that enter the design stage.
3. Other: Engineering services will evaluate various project stages to assist in the determination as to whether a project should pass to the next stage.

B. In House Construction

1. Estimating: The In-House Construction team shall develop costing for all projects.
2. Other: In-House Construction will evaluate various project stages to assist in the determination as to whether a project should pass to the next stage.

C. Leadership Team

1. Evaluation: The Utilities, Maintenance, & Engineering leadership team shall evaluate various project stages to assist in the determination as to whether a project should pass to the next stage.

D. Process Manager

1. Capital Budget Preparation: The Process Manager shall develop the capital plan based on information contained in the Project Development Process spreadsheet.

VII. IDEATION

The ideation stage is where department stakeholders can submit project ideas thought to benefit the meet specific department or University goals. Other common descriptions of this phase could be called brainstorming or discovery.

Projects will be roughly defined in this stage. There will likely be no understanding of project cost. The initiator may potentially have an idea of available funding.

Ideas must meet specific criteria to pass to the next stage.

1. Criticality: If the failure to complete the project will result in an imminent system failure and there are no options to mitigate the risk, the project shall automatically pass to the Design stage. One of the following criteria must be met to pass to the next stage:
 - a. Will the project need to be completed within the next 5 years to prevent an unplanned failure?
 - b. Will the delay of the project create a significant amount of additional cost?
 - c. Is there funding available?
 - d. Is this project required to meet specific University strategic goals?
2. ROI: Projects seeking approval based on ROI shall deliver an anticipated return of 7 years or

less to pass to the next stage. One of the following criteria must be met to pass to the next stage:

- a. Does the project have a ROI of less than 10 years?
 - b. Does the project offset a portion of the cost for assets that will need to be replaced in the next 5 years due to obsolescence?
3. Environmental – If the failure to complete the project will result in a compliance failure with a permit, the project shall automatically pass to the Design stage. One of the following criteria must be met to pass to the next stage:
- a. Will the delay of the project create a significant risk of a future compliance failure within the next 5 years?
 - b. Are there any grants or other dedicated funding to support the project?
 - c. Are there any cost savings to the University related to other projects impacted by this project?
4. Safety: If the failure to complete the project will result in a compliance failure with OSHA or there is a significant employee or student risk, the project shall automatically pass to the Design stage. One of the following criteria must be met to pass to the next stage:
- a. Will the delay of the project create a significant risk of a future compliance failure or injury within the next 5 years?

VIII. SCOPING

During the scoping phase, concepts from the ideation phase are more carefully evaluated. The team must weigh the potential benefits against any risks. Listed below are some items that will be considered.

1. Was the idea well sufficiently described in the prior phase?
2. What are the deliverables (savings, safety, reliability, academic mission)?
3. What are the rough cost and savings estimates?

Ideas must meet specific criteria to pass to the next stage.

1. Criticality: One of the following criteria must be met to pass to the next stage:
 - a. Will the project need to be completed within the next 3 years to prevent an unplanned failure?
 - b. Will the delay of the project create a significant amount of additional cost?
 - c. Is there funding available?
 - d. Is this project required to meet specific University strategic goals?
2. ROI: One of the following criteria must be met to pass a ROI project to the next stage.
 - a. Does the revised project estimate still have a ROI of less than 10 years (7 for energy projects)?
 - b. Does the project offset a portion of the cost for assets that will need to be replaced in the next 3 years due to obsolescence?

3. Environmental – One of the following criteria must be met to pass an environmental project to the next stage.
 - a. Will the delay of the project create a significant risk of a compliance failure within the next 3 years?
 - a. Are there any grants or other dedicated funding to support the project?
 - b. Are there any cost savings to the University related to other projects impacted by this project?

4. Safety: The following criteria must be met to pass an environmental project to the next stage.
 - a. Will the delay of the project create a significant risk of a compliance failure or injury within the next 3 years?

IX. FEASIBILITY / PROGRAMMING

During the feasibility phase, a more solid estimate of deliverables and cost will be developed. We will determine what types of resources are available to complete the project. We will identify the most appropriate construction procurement method. More importantly, this stage will develop a detailed project scope.

Projects will be evaluated to determine if there are recurring costs such as support agreements that must be maintained long term.

1. Criticality: One of the following criteria must be met to pass to the next stage:
 - a. Will the project need to be completed within the next 2 years to prevent an unplanned failure?
 - b. Will the delay of the project create a significant amount of additional cost?
 - c. Is there funding available?
 - d. Is this project required to meet specific University strategic goals?

2. ROI: One of the following criteria must be met to pass a ROI project to the next stage.
 - a. Does the revised project estimate still have a ROI of less than 10 years (7 for energy projects)?
 - b. Does the project offset a portion of the cost for assets that will need to be replaced in the next 3 years due to obsolescence?
 - c. Is the recurring support cost less than 10% of the annual savings?

3. Environmental – One of the following criteria must be met to pass an environmental project to the next stage.
 - a. Will the delay of the project create a significant risk of a compliance failure within the next 2 years?
 - b. Are there any grants or other dedicated funding to support the project?
 - c. Are there any cost savings to the University related to other projects impacted by this project?

4. Safety – The following criteria must be met to pass an environmental project to the next stage.
 - a. Will the delay of the project create a significant risk of a compliance failure within the next 2 years?

X. DESIGN

A lead designer will be assigned by Engineering Services to complete the full design. The lead designer will have already received the appropriate input from the Campus Architect and will coordinate all engineering disciplines throughout the duration of the design process.

During the design phase, we will determine the following:

1. Project Design based on the scope provided during the Feasibility stage.
2. Opinion of cost
3. Development of construction drawings sufficient to meet BCA requirements.
4. Energy model review
5. Environmental review
6. Maintainability review
7. Design Guidelines review

1. Funding: One of the following criteria must be met to pass to the next stage:
 - a. Is funding available?
 - b. Is the project (when required) on the FCO list?
 - c. Does the final project estimate of construction cost correlate with the feasibility estimates?
2. ROI: One of the following criteria must be met to pass a ROI project to the next stage.
 - a. Does the revised project estimate still have a ROI of less than 10 years (7 for energy projects)?
 - b. Does the project offset a portion of the cost for assets that will need to be replaced in the next 3 years due to obsolescence?
 - c. Is the recurring support cost less than 10% of the annual savings?

XI. CONSTRUCTION / COMMISSIONING

Construction / Commissioning is the final stage. During the construction phase, the project is constructed in accordance with the design documents. The commissioning process will ensure that the project follows the design documents and that it functions as designed. When appropriate, a final commissioning plan will be developed to ensure compliance with project scope, design guidelines, and functional performance of system.

If a project is planned for construction and funds are not available, the project shall be place on funding

hold. All projects deferred will be reviewed again when funding is available. Depending upon the criticality, the project may be advanced to priority status.

A project manager will be assigned and will coordinate activities with the various resources required to ensure that the project is completed according to design.

When the project is complete, the project team will commission the project to ensure the following:

1. Was project constructed according to the design?
2. Does the project perform as planned in the design?
3. Did the project require change orders? Why?
4. Was the project completed on budget?

XII. TOOLS

The primary tool for tracking project stages in the Project Development Spreadsheet maintained by Marcela Castaño. She functions as the Process Manager. The tool tracks the stages as well as project location and category.