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SUBJECT: Child Nutrition Information Technology Solutions: Best Practices for
             Project Management for the Child Nutrition Programs System
             Replacement or Upgrade

TO: Regional Directors
             Special Nutrition Programs
             All Regions

             State Directors
             Child Nutrition Programs
             All States

This memorandum is the third in a series of memoranda to support State agencies administering the Child Nutrition Programs as they enhance or build Information Technology (IT) solutions for their State agency operations. The series will provide State agencies with best practices and practical direction on Child Nutrition (CN) IT system planning, procurement, project management, data ownership and intellectual property, and testing.

In FNS memorandum SP 01-2020; CACFP 01-2020; SFSP 01-2020, Best Practices for Defining the Child Nutrition Programs System Replacement or Upgrade, FNS provided best practices for conducting a feasibility study and features to consider when developing a proposed IT system project plan. This memorandum discusses the principals of project management as they relate to a State's CN IT solution. Specific highlights in this document include: establishing a project team; having a dedicated Project Manager; identifying stakeholders; developing a Project Management Plan; preforming quality assurances; controlling scope and monitoring risk; and project closure.

The attached relies heavily on information incorporated in *FNS Handbook 901: The Advance Planning Document Process: A State Systems Guide to America's Food Programs* which was developed to assist SAs administering the Supplemental Nutrition Assistance Program (SNAP) and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) navigate through a formal, mandatory planning process for IT projects. Although the information contained in this document is not mandatory for Child Nutrition Programs, the Handbook 901 contains a multitude of best practices and

procurement information that is also applicable to Child Nutrition agencies. For more in-depth information, you are encouraged to reference the Handbook 901 at: Link to FNS Handbook 901.

State agencies with questions may contact the appropriate FNS Regional Office.

Original Signed

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Attachment

Project Management for the Child Nutrition Information Technology Project

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Introduction

Effective project management is essential to the success of your State's Child Nutrition (CN) information technology (IT) system project. As defined in the Project Management Institute's *A Guide to the Project Management Body of Knowledge* (PMBOK) 6th edition, project management is "the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements." The PMBOK categorizes project management into five (5) process groups and ten (10) knowledge areas.

According to the PMBOK, a process group is "a logical grouping of project management inputs, tools and techniques and outputs" for conducting project work. The five (5) process groups, include:
- Initiating;
- Planning;
- Executing;
- Monitoring and controlling; and
- Closing.

The PMBOK also defines knowledge areas as "an identified area of project management defined by its knowledge requirements and described in terms of its component processes, practices, inputs, outputs, tools, and techniques." The knowledge areas occur within each of the five (5) process groups and serve as the technical subject matter of a project. The ten (10) knowledge areas include the management of:

- Integration;
- Scope;
- Schedule;
- Cost;
- Quality;
- Resource;
- Communications;
- Risk;
- Procurement; and
- Stakeholders.

FNS has released numerous resources related to project management accessible to the State agencies via the FNS PartnerWeb, including templates, webinars, and presentations. The resources have addressed each of the knowledge areas described above. Two specific documents, located in the FNS PartnerWeb, that describes the common terms and documents that are based on the best practices of the project management industry standards are entitled *Common Project Management Terms* and *Common Project Management Documents*. Other templates, webinars and presentations related to project management can be found under the "Technology Training (CNAAT)" and "Resources" folder within the Child Nutrition Programs tab of the FNS PartnerWeb.

For more information on PMBOK's five (5) process groups and ten (10) knowledge areas, State agencies can visit the FNS PartnerWeb to find two webinars entitled "Project Management 101" and "Project Management: Advanced Concepts," which provides an overview of these project management principals and an outline of the project management documents of each knowledge area.

Here we will cover:
- Part I: Establishing a Project Team;
- Part II: Dedicated Project Manager;
- Part III: Initiating – Identifying Stakeholders;
- Part IV: Planning – Developing a Project Management Plan;
- Part V: Executing – Performing Quality Assurances;
- Part VI: Monitoring & Controlling – Controlling Scope & Monitoring Risks; and
- Part VII: Closing – Project Closure.

Part I: Establishing a Project Team

A project team is a group of interdependent working individuals temporarily formed with a common goal which they are equally responsible and accountable. A well-developed project team includes stakeholders at all levels (from upper management to the end user) will, for example, assist in identifying the project's:
- Goal(s) or big-picture result(s) desired for the project within a specific timeframe;
- Purpose or expected realized benefit(s) of the project;

- Deliverables or outputs;
- Resources, or inputs, needed to produce the deliverables;
- Benefit analysis (discussed further in Part II);
- Business and system requirements;
- Scope;
- Risks;
- Quality assurances; and
- Schedule.

The project team can change throughout the life of the project depending on the phase of the project and the role a team member plays. For example, near the beginning of a project that includes purchasing a commercial off-the-shelf (COTS) product, project team members may include the State's procurement and IT departments. However, once the product is purchased the procurement department members may leave the project team, while the IT department members remain.

Throughout the life of the project, project team members may also help to identify:
- Stakeholders;
- Cost and schedule estimates;
- Constraints and assumptions;
- Dependencies between project activities; and
- Interdependencies with other IT systems.

Including the project team early on in the planning process gives team members a sense of ownership and buy-in to the project's plan. It also promotes responsibility and accountability for successfully completing the project.

The project team consist of individuals who have a core role in the project. When establishing a project team think of the various roles each member will play on the project's success. Project team members may include:
- State CN Program office staff;
- State financial and/or procurement office staff;
- State IT office staff;
- Contractors; and/or
- End users (from State and local offices)

A project team typically includes the following members:
- **Project Sponsor** – Provides the financial resources to the project and is the project's champion or spokesperson to higher management. The project sponsor defines and initiates projects, hires or assigns project manager(s) to manage cost, schedule, and performance, and works to ensure the project's ultimate success and acceptance. The project sponsor would also authorize any changes in scope, budget or schedule, and other important decision that have a high risk associated with them (e.g., a go/no-go decision).

- **Project Manager** – Responsible for leading the project team through the life of the project activities and has the responsibility of reaching the project's objectives. The project manager is also responsible for reviewing deliverables for accuracy, approving deliverables, providing status reports to management, and managing communications with stakeholders. Depending on the size and scope of the project, a dedicated Project Manager is essential to the successfully completion of a CN IT system project.

- **Functional Manager** – Holds a management role within a State agency's administrative or functional department and assign/directs individuals to perform technical work as part of the project team. Examples of administrative or functional departments include: program; procurement; IT; accounting; human resources. The project manager and functional manager must negotiate and coordinate resource expectations for the project. In general, a functional manager, such as the CN Program Director, should not also serve as the project manager for a CN IT system project.

- **Team Members** – Work together to carry out the work of the project. Project team members help in the planning of the project activities and creating cost and schedule estimates, as well as ensuring the scope, budget, quality and schedule of the project remain intact throughout the life of the project. Project team members can be dedicated (i.e., working full-time on the project) or part-time members and can vary throughout the project.

In order to ensure a positive team environment and that all team members have clear expectations, it is important to set the ground rules at the beginning of the project. For example, identifying common goal(s) of the project and the team members' roles and responsibilities; expectations regarding meeting attendance and engagement; and team conduct.

Given the complex nature of a CN IT system enhancement/development, and the interdependence of technical, program, and operational considerations, using a diverse project team approach is recommended. The team should consist of a variety of individuals with different skills and backgrounds (e.g., IT, procurement, CN Program reviewers, end users, local agency staff).

Depending on the complexity and scope of the CN IT system project, the CN Program Director may play any one of the above mentioned roles. However, a project manager should not be the State agency's CN Program Director. The project manager must be empowered by the project sponsor, CN Program Director and other Department managers, as well as be knowledgeable of each functional area, to direct the work of the project team members. In some cases, the CN Program Director is the project sponsor and a contracted or State agency staff member is the dedicated project manager. Having the CN Program Director and project manager duties separated ensures that the CN Program Director can provide support to the project and continue their day-to-day management of the CN program(s).

Due to the potential complexities of CN IT system projects, it is not recommended for the CN Program Director to serve as the project manager. Having a dedicated project manager could

become crucially important for the success of your CN IT system project. We will discuss this next.

Part II: Dedicated Project Manager

The challenge of project management is to control project scope, time, and cost. Known as the "triple constraints;" one element cannot be changed without affecting at least one of the others. The correlation of these constraints dictates the quality of the project results. Conscientious project management, via a dedicated project manager, is essential to a successful project outcome.

A project manager, or PM, should be assigned early on; ideally the PM should be involved from the beginning of the project. An effective PM should be well versed in interpersonal skills, such as:
- Leadership and team building;
- Communication;
- Negotiation;
- Conflict management;
- Environmental factors (i.e., cultural, social, and political); and
- Decision making.

While a PM is responsible for efficient project oversight, the PM relies on knowledgeable project team members to accomplish the work necessary for the project. The project staff is equally responsible for being knowledgeable of the critical activities of the project to include efficient use of funds. The project staff should clearly understand the role of the PM and how it relates to their roles.

The PM:
- Focuses solely on managing the project;
- Typically does not take on assignments or participate as a member of workgroups;
- Keeps the project on schedule, on budget, and within scope;
- Understands the environment in which the project will operate;
- Understands that each project is different depending on the technology, culture, and personalities of critical stakeholders;
- Guides the project toward the most realistic definition of success;
- Oversees development of the requirements in order to successfully implement the project's scope;
- Identifies the most disruptive risks and develops response plans with the team that eliminate or reduce consequences;
- Avoids confusion by clearly outlining the critical path when creating the project schedule;
- Establishes the right relationships with team members and stakeholders along with a speedy issue-resolution process;

- Works with complex scenarios and decisions involving numbers, and the politics that may accompany some project decisions;
- Understands the importance of the operations perspective for the production of the system;
- Is flexible, yet firm, and checks his/her ego at the door; and
- Spends 90% of their other time communicating with and facilitating the project team and stakeholders.

Depending on the scope and complexity of the project, it is a worthwhile investment to obtain a dedicated PM. While it may not be required to obtain a formally trained, certified Project Management Professional, or PMP, it is valuable to have an individual experienced in project management that possesses the organizational, management and interpersonal skills mentioned above.

Within FNS' Administrative Review and Training (ART) Grants and the CN Technology Innovation Grants (TIGs), applicants are encouraged to include a dedicated PM within the project and budget of their grant proposal; this may be a State agency staff or contracted project manager. Having a dedicated PM allows other State agency staff to support the project as a project team member while they maintain their duties and responsibilities for the CN Programs.

A successfully managed project is reflected in the examples listed below:
- Establishing project goals and objectives;
- Identifying system requirements;
- Following Federal, State and local procurement requirements, if applicable;
- Balancing demands of quality with time, scope, and cost (the triple constraints)
- Adapting, as necessary, specifications, plans, and approach to meet stakeholder needs and expectations, while still controlling scope;
- Developing a comprehensive project management plan before starting the project;
- Setting clear performance expectations and establishing a communications protocol for stakeholders, including contractors involved in the project;
- Making contingency plans for known and unknown risks;
- Testing the IT system against documented requirements;
- Training end users and staff on the new IT system;
- Inviting stakeholder feedback throughout the process;
- Broadcasting achievements throughout the process; and
- Managing expectations.

One key to the success of a project is identifying key stakeholders to provide support to the project, which we will discuss next.

Part III: Initiating – Identifying Stakeholders

In addition to creating a project charter, which formally authorizes the project and project manager to apply resources to the project activities, identifying stakeholders is an activity under

the Initiating Process Group. Thoughtful and accurate identification of stakeholders, and continuous interaction with them, during the life of the project is very important to the success of the project. Some examples of stakeholders may include: technical experts, customers, system users, State agency leadership, State procurement staff, State IT staff, local agency representatives, etc. To help you identify potential stakeholders, you may want to ask your project team the following questions:

- Who is the customer?
- Who will have a contribution to this project?
- Who will be affected *by* the project?
- Who will cause impact *to* the project?

When you think of your project's stakeholders, think of individuals both internally and externally to the CN department (e.g., program, State Superintendent, IT, financial, procurement), as well as to the State agency (e.g., Local Educational Agencies, Sponsoring Organizations, vendors). For example, an internal stakeholder could include CN State staff that use the CN IT system on a daily basis. External stakeholders, on the other hand, could include: your State procurement office (if procurement is required for your IT solution; Local Educational Agencies or Sponsoring Organizations (who may be end users of your IT solution); and/or Food and Nutrition Service's (FNS) Regional Office (if the IT solution includes data reporting to FNS or reporting to FNS for a grant award).

Resources on the Project Stakeholder Management knowledge area are available to State agencies on the FNS PartnerWeb, including presentations and templates for a Stakeholder Management Plan and stakeholder register

Part IV: Planning – Developing a Project Management Plan

A Project Management Plan is a formally approved document defining how a project is managed, executed, and controlled. It documents the established "ground rules" such as procedures, priorities, and responsibility for handling various situations. It also establishes the baselines from which performance metrics are measured. A Project Management Plan is the document that puts the expectations and plans on paper.

The Project Management Plan is generated during the initiation phase of a project; or first of five (5) process groups mentioned above. Therefore, specific details may be missing at that time or circumstances may change. Due to this, a Project Management Plan is a "living document," and should be updated as the project progresses.

A comprehensive Project Management Plan addresses each of the ten (10) knowledge areas of PMBOK's project management principals, discussed above, to assist in keeping the project's scope, time, and cost in check. The components listed below, while not an exhaustive list, provides some examples of what is found in the Project Management Plan:

- The subsidiary management plans for each knowledge area (i.e., scope, schedule, cost, quality, resources, communication, risk, procurement and stakeholder);

- Baselines for scope, schedule and cost;
- Change Management Plan – Documents how change will be monitored and controlled to include managing the change control process involving the Change Control Board (i.e., a formally charted group responsible for reviewing, evaluating, approving, delaying, or rejecting changes to the project). Any determinations made by the board should be documented in the project's change log. (Note: Changes to the project's plan should not be taken lightly as they can often lead to increased cost and/or schedule delays.);
- Configuration Management Plan – Documents the processes, procedures and tools that establish and maintain consistency of a project's performance and changes across its life cycle;
- Development approach – Describes the development approach, such as waterfall, agile, or hybrid model, for the product or service;
- Process Improvement Plan – Describes how activities will be reviewed and analyzed so that efficiency improves as the project progresses; and
- Requirements Management Plan – Defines the methodology a project manager intends to use to compile and evaluate requirements, maintain requirement documentation and tracking, and manage related activities. This plan directly impacts the team's generation of a Functional Requirements Documentation.

    o A Requirements Traceability Matrix, or RTM, is a common component of the Requirements Management Plan. An RTM tracks requirements from origination to implementation in the final result. It supports testing activities by linking requirements to specific tests for requirements.

    An RTM is also a useful tool in managing the scope of a project. The RTM is useful not only throughout the life of the project, but after project completion it provides a history of the system from inception to closing. This may prove helpful in the maintenance and operation phase of the project, defining enhancements, and serve as a functionality baseline when system replacement is considered.

    State agencies can find a template and webinar on the RTM via the FNS PartnerWeb. Another RTM example is on page 341 of FNS Handbook 901.

State agencies can find two webinars entitled "Project Management 101" and "Project Management: Advanced Concepts" on the FNS PartnerWeb for more information on what is contained in the Project Management Plan, as well as the subsidiary plans. Also, State agencies can find a resource entitled *Common Project Management Documents* which explains common documents used in the best practice standards of the project management industry on the FNS PartnerWeb.

Planning Project Schedules

Let's now take a closer look at planning a realistic project schedule. The project schedule is a listing of a project's milestones, activities, and deliverables. Using the project team as subject matter experts can help to build a more realistic schedule for the project. When building a project schedule, the project team should also discuss any potential external constraints, possibly not

within their control that will impact the project; such as, receiving approvals from a State governing board or other State government entities before starting a project; working within State fiscal years; etc.

Planning the project schedule is an opportunity to identify all implementation activities; such as systems design, development, testing, quality assurance, data conversion, training, and deployment that need to be accomplished. The project schedule should identify the major milestones and management decision points, which can be used as project markers to determine if the project is proceeding according to schedule.

The project schedule should be reviewed throughout the life of the project. To assist in developing the proposed schedule, the project team should consider the following:
- Defined activities;
- Sequence of activities;
- Availability of activity resources (i.e., financial, human resources and equipment);
- Duration of activity;
- Interdependence of activities (e.g., Does one activity need to be completed before another begins? Do multiple activities need to run concurrently?); and
- Procurement constraints or timetables.
  - *Suggestion*: If your State has procured for materials or services similar to the CN IT system project, consult with the procurement office regarding what a realistic procurement timeline would like.

Part V: Executing – Performing Quality Assurances

While many activities occur within the Executing Process Group, here we will focus on performing quality assurance (QA). Performing QA relies on the Project and Quality Management Plans, as well as quality metrics and checklists. Conducting QA includes independent monitoring of project status indicators such as schedules, accomplishments, deliverables, and costs, and assesses whether the State agency's policies, processes and standards for the project's deliverables are producing the intended results. This assurance is critical to the oversight of IT project development.

QA and project management have separate functions. While the project manager's role is described above, the performing QA provides the State agency with a proactive process to determine how well the project's deliverables are being managed and areas where improvements can be made.QA may be performed by a QA contractor or by qualified State agency staff. The QA contractor must not be the same as the project management contractor. Likewise, the State QA staff should be independent from the project management or development staff.

State agencies should consider having QA as part of their project. QA findings can be used to improve project processes and identify areas of improvement to ensure a quality end product. It may also lead to change requests, in which the Change Management Plan would need to be consulted. Recording the results of the quality checks is an activity within the PMBOK's Monitoring and Controlling Process Group.

Part VI: Monitoring & Controlling – Controlling Scope & Monitoring Risks

A number of activities are identified under PMBOK's Monitoring and Controlling Process Group. However, within this document we will focus on controlling scope and monitoring risks. Additional basic information on the Monitoring and Controlling Process Group can be found in two webinars entitled "Project Management 101" and "Project Management: Advanced Concepts" on the FNS PartnerWeb, which is accessible to State agencies.

Controlling Scope

Within the Scope Management Plan, which was developed in the Planning Process Group, the scope of the CN IT project should be clearly defined. Project scope defines the work (features and functions) to meet the project objectives. Input from the project sponsor and all stakeholders during the planning phase is very important so that the project scope is clear and meets expectation within the established timeline/schedule and cost. This includes identifying the project scope statement and scope baseline.

In controlling the scope of your project, the project manager should proactively be comparing the work performed to the project scope statement and scope baseline throughout the life of the project. Frequently referencing the project's scope with all identified stakeholders will help manage expectations. While a change in scope may be necessary, it should not be casually made as a scope change may have significant impact on the cost and schedule of the project. Should a scope change be necessary, the project manager must consult the Change Management Plan and obtain approval from the project's stakeholders and sponsor. Changes made to the scope of the project must be documented.

Monitoring Risk

While it is important to identify known and anticipated risks during planning with the input of the project team, it is also important for the project manager to monitor risks throughout the life of the project. Some examples of project risks may include: procurement delays, staff turnover, lack of resources, testing delays, etc. The project manager's response to a risk should be identified in the Risk Management Plan, which developed in the Planning Process Group and provides the structure of the project's risk management and addresses how risk management will be performed on a project. The project manager needs to be aware of the potential impact a risk would have to the project's cost, time, scope and quality.

A project manager should keep track or log risks in risk register. A risk register acts as repository for capturing all identified project risks. The risk register generally includes details such as risk description, probability, impact, mitigation plan, and risk owner. The outcome of monitoring a risk could include: a change request with documented recommendations for corrective and/or preventative action; updates to the Project Management Plan; and/or updates to project documents or organizational processes.

For more information on Risk Management, State agencies can find the available resources, including webinars and a risk register template, on the FNS PartnerWeb.

Part VII: Closing – Project Closure

The purpose of project closeout is primarily to bring closure to all of the project's administrative activities. This means providing feedback on project team member's performance in an effort to capture both best practices and areas to improve, updating the skills inventory, capturing key project metrics, and filing all pertinent project materials into the project repository. This includes documenting final actual project expenditures, closing open contracts, and finalizing project records. All finalized project documents should be archived for future reference for other projects.

At this point the project is within the closing phase of the project management life cycle and the responsibilities of the project manager are to:
- Compile documentation as result from the project's activities;
- Assess how closely the project met customer needs;
- Identify and document highlights of what worked well or project best practices;
- Identify and document lessons learned resulting from mistakes or setbacks during the life of the project or ways to improve processes executed throughout the project;
- Identify and document patterns and trends;
- Communicate results to all stakeholders;
- Close all phases of the project; and
- Close all open contracts (if applicable) related to the project.

For more information on project management, State agencies can access the FNS PartnerWeb which contains a variety of project management resources, including templates, webinars, and presentations, on each of the knowledge areas described above. In addition, FNS Handbook 901, Chapter 7 is dedicated to the topic of Project Management, as it relates to State's projects.

Other helpful resources on project management includes trainings and certifications that are offered through the Project Management Institute at the following link: www.pmi.org.