

ALASKA ARMY NATIONAL GUARD CONSTRUCTION
PLANNING PROCESS IMPROVEMENT

By

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Project Management

Project Abstract

The Alaska Army National Guard (AKARNG) is a jointly funded agency run under a cooperative agreement between the federal and state governments. Recognized as a state agency, the AKARNG reports to the governor for domestic response and trains for federal missions. With this relationship, the AKARNG receives funds from the National Guard Bureau (NGB) and the Alaska State Legislature for the execution of construction projects. Under the cooperative agreement, the AKARNG follows state procedures and uses the Alaska Department of Transportation and Public Facilities (ADOT/PF) to manage projects. The AKARNG Construction and Facilities Maintenance Officer (CFMO) ensures federal oversight of all AKARNG facilities. This project looks at the relationship between the AKARNG CFMO and ADOT/PF as they collaborate and plan construction projects for the AKARNG. The primary deliverables for this project are a current state swim lane chart (SLC) with written description and an improved state SLC with a written description. The goal of this project is to offer the AKARNG a roadmap for process improvement. The current and improved SLCs were produced by conducting research and engaging with stakeholders through interviews and questionnaires. Stakeholders were engaged throughout and offered quality oversight of the deliverables. The improved state SLC incorporated regulatory compliance and previously omitted policy requirements. When necessary, the improved state SLC included the addition or subtraction of steps to add value to the process. This project delivered the AKARNG a scalable depiction of their construction planning process and recommendations for improvement.

Background

The Alaska Army National Guard (AKARNG) is a subordinate agency of the Alaska Department of Military and Veteran Affairs (DMVA). The AKARNG is a joint agency under the operational control of the governor. The commissioner for the DMVA, the governor's cabinet member, also serves as The Adjutant General (TAG) and commands the AKARNG. TAG is the only position recognized by the Department of Defense (DOD) as a joint position (NGR 5-1 pg. 5). As a part of the DOD, the AKARNG receives federal funding from the National Guard Bureau (NGB). NGB offers oversight and guidance per federal laws and regulations (NGR 5-1 pg. 1). Through the power of monetary authority, NGB controls the execution of federal funds in the State of Alaska (SOA). The combination of state operational control and federal funding makes the AKARNG a joint agency. This arrangement exists throughout all 54 states and territories that have a National Guard.

To ensure Army National Guard units are prepared to support their federal mission, the NGB through the direction of the DOD and Congress establishes Master Cooperative Agreements (MCA) between the state and federal governments (NGR 5-1 pg. 2). The MCA consists of separate appendices that govern the execution of federal funding for jointly funded programs. The Military Youth Academy, Information Technology Services, and Facilities Management are all examples of programs managed under the MCA. A functional division at NGB governs each program. The MCA establishes a baseline for each state to follow while allowing each state to follow local procedures within the established parameters outlined in federal regulations.

As a stopgap measure for the management of federal funds, NGB appoints a representative in each state to oversee federal funding execution. The United States Property and Fiscal Officer (USPFO) is an active duty Army or Air Force officer who reports directly to the Chief of NGB and serves as the grantor for the MCA. The USPFO is responsible for compliance with federal law. The Chief of NGB is a voting member of the Joint Chiefs of Staff and oversees the National Guard on behalf of the DOD. The USPFO works with TAG to execute the MCA. With a direct line to the Chief of NGB, the USPFO's role is unique and powerful (NGR 5-1 pg. 2). To manage federal funds, the USPFO delegates the execution authority of federal funds to program managers and activity managers throughout the AKARNG. Program and activity managers within the AKARNG represent large-scale organizational functions.

Overseeing one of the largest programs in the AKARNG, the Construction and Facilities Maintenance Officer (CFMO) is the federally designated program manager for facilities management. The CFMO's staff consists of a design and projects manager, financial resource manager, real estate manager, environmental compliance manager, and facilities maintenance director. These staff positions serve as functional activity managers. The CFMO and staff receive operational guidance from the TAG and financial guidance from the USPFO. The MCA works as a reimbursable agreement that allows the State of Alaska (SOA) to advance funds for projects. The federal government reimburses the SOA for costs incurred on construction projects that have authorized federal expenses. To limit risk to the SOA, the CFMO and staff are involved in the construction process. The inclusion of the CFMO and staff ensures reimbursable expenditures follow the federal rules and regulations. As an advance-funded program, the execution of construction projects follows state procedures. In Alaska, the Department of Transportation and Public Facilities (ADOT/PF) is the proponent for construction projects. This relationship is outlined in Exhibit 1.

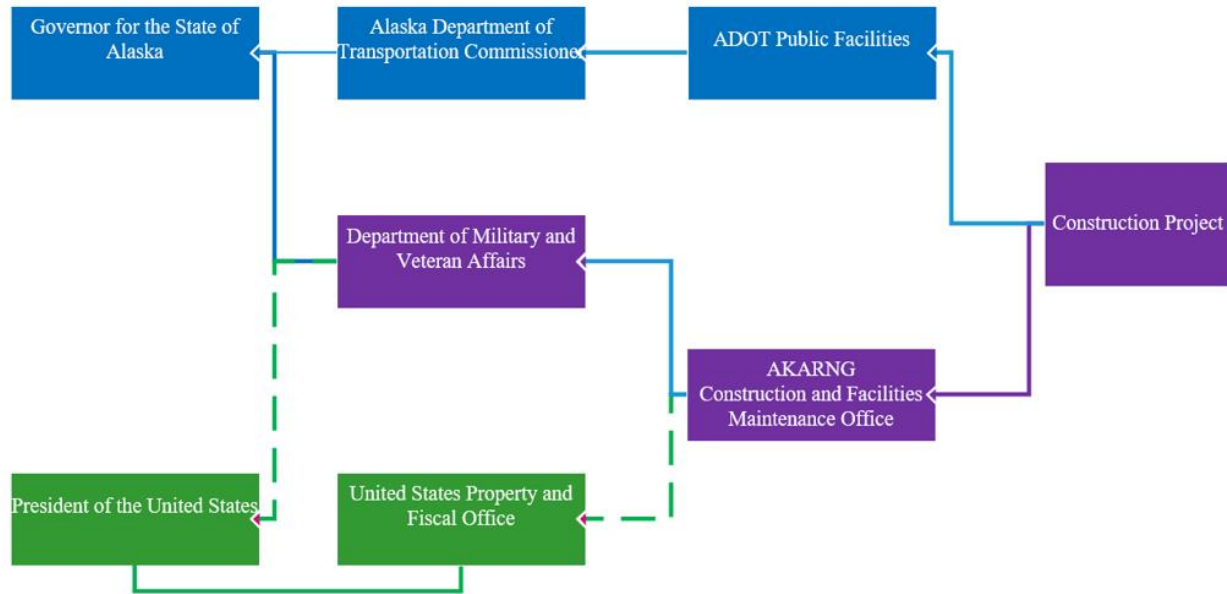


Exhibit 1 Construction Process Relationship

Introduction

Audits exposed material weaknesses throughout the AKARNG CFMO office. The federal oversight had diminished over the prior years, and the relationship between the state managed staff and the federally managed staff had deteriorated (Haltom, M, 2016, Personal Interview). Relations between the CFMO and ADOT/PF deteriorated and projects relied heavily upon personal experience rather than established processes. The relationship affected the CFMO's ability to deliver projects to their stakeholders in the AKARNG. The opportunity exists where the relationships between the AKARNG and ADOT/PF are improving (Haltom, M, 2016, Personal Interview), and the chance to address the construction process is available. This project will lay the framework for these two organizations to improve past disagreements and develop a process that works for both organizations.

Business Case

With the presence of the MCA, federal funding and construction guidelines apply to construction projects executed on behalf of the AKARNG by ADOT/PF. The addition of ADOT/PF's procedures compounds an already bureaucratic process (Haltom, M, 2016, Personal Interview). There is no written policy or current SLC between the AKARNG and ADOT/PF regarding the execution of construction projects. The current process relies on the experience of project managers on both staffs. The business case for this project relies on the need to improve the planning process (Haltom, M, 2016, Personal Interview) between the AKARNG CFMO and ADOT/PF. By reviewing the steps and making

recommendations for improvement, the groundwork was outlined for the AKARNG to streamline construction projects and deliver them to their customers efficiently. The presence of a federal and state funding stream requires both agencies to work diligently for funding. By mapping this process, the DMVA state and federal staff will be able to use the process to illustrate challenges they face when competing for additional resources from the NGB and the State of Alaska Legislature.

Goals and Objectives

The business objective of this project was to identify the current process that shows how the current execution of AKARNG construction projects occurs. The secondary objective was to determine areas of improvement in the current-state SLC. The overall project objective delivered an improved state SLC for future improvement for adoption by the AKARNG and ADOT/PF. By illustrating the process, the AKARNG can begin to identify wasted resources in the delivery of construction projects. The project hypothesis is

H₁: improvement of the construction planning process will save the AKARNG planning time and dedicated resource hours throughout the construction planning cycle

The goal was to illustrate areas of improvement by graphing the process on a Swim Lane Chart (SLC). A secondary goal was to gain acceptance by both organizations and ensure the CFMO has the tools to deliver construction projects to their stakeholders in the AKARNG. By executing more efficiently, the AKARNG can better support its federal and state missions. The tertiary goal of this project was to validate and improve the skills of the project manager. The focus areas of demonstration for the project manager were stakeholder management, communications management, and risk management. This report includes instances where the knowledge areas were demonstrated. During the execution of this project, the project manager used these performance goals to ensure the project remained on task and schedule.

Project Deliverables

The deliverables for this project are:

- “Current State” Swim Lane Chart graphic
- “Improved State” Swim Lane Chart graphic
- Written summary of the project outcomes

This report enhances these deliverables and outlines each of the steps in the current and improved SLCs. This report also provides a roadmap for implementation of the recommended improvements. Future areas of research which enhance these outcomes are identified in Conclusions.

Scope

An opportunity occurred early in execution which the project scope was updated to exploit. While collecting research data, the project identified a weakness in the original project's deliverables. The project scope changed from production of a current and improved Value Stream Map to a current and improved Swim Lane Chart.

PROJECT SCOPE: Develop a swim lane chart for use by the AKARNG CFMO that efficiently maps the construction planning process. The process begins at the end of the state appropriation process and starts at the AKARNG facility board. The process follows the path of the acquisition of funding, through project approval, through project transfer to ADOT/PF, and finally to the make-buy decision point by ADOT/PF. The project delivered the project management plan (PMP) on April 17, 2016. The execution portion of this project was delivered December 5, 2016. The execution portion of this project exploited recent changes in the process, which were imposed by the USPFO (DeMers, B. 2016, email). The project produced a current swim lane chart based on the process that existed before July 1, 2016. The project assessed the current state SLC. The project captured lessons learned and delivered the improved state SLC with a written summary of changes. project deliverable were developed through conducting of interviews and research.

Research Methodology

Research methodology for this project changed throughout the life of the project. The initial plan utilized a research questionnaire that answered the following set of questions.

What does the current construction process for the Alaska Army National Guard using Reimbursable Support Agreements (RSA) with the Alaska Department of Transportation look like in its present state?
What improvements can be made to the process to improve the execution of projects in the future?

A questionnaire was provided to a list of stakeholders, through email, that included USPFO representatives, CFMO staff, and ADOT/PF personnel. The questionnaire consisted of questions that specifically led to the development of the current state and determined what improvements were needed. The questionnaire consisted of the following statement to set the baseline and limit the range of recommendations outside of the project scope.

The Alaska Army National Guard CFMO is required to follow federal funding and construction guidelines. Also, as a federal agency operating under a cooperative agreement, the State of Alaska is the lead agent under a reimbursement agreement. Within the State of Alaska, the Alaska Department of Transportation maintains the authority to execute construction projects on behalf of the State of Alaska.

Stakeholders were asked to summarize the process as defined in the statement above. Stakeholders were asked the following questions.

1. Please describe your role in the process.
2. What resources do you have at your disposal which apply to either federal or state construction?
3. Please provide your assessment of the current process.
4. Please provide recommendations for an improved process.
5. Please explain the current process to establish a Reimbursable Support Agreement from your perspective.

As the research progressed, it was obvious the original research methodology was vague, because it failed to address the data needed to develop the current state SLC. Only two out of fifteen stakeholders responded to the questionnaire. In response, the project manager updated the language in the project management plan. The original plan called for a hands-off approach to feedback. Email questionnaires were sent to stakeholders as planned, but resulted in a limited response. It proved difficult to continue the project with an inadequate response rate. The indirect approach was abandoned in favor of a direct approach; research was conducted by referencing the few questionnaires that were received and conducting face-to-face interviews with these engaged stakeholders. The direct approach was productive and was iterated as project deliverables were built. Project deliverables were developed and refined based on the verbal and written feedback from stakeholders.

The original plan included collecting project data from previously completed construction projects. As the project progressed, the project sponsor and the project manager determined this information would not add value to the project deliverables. The inclusion of construction project data from the research methodology was removed. An additional modification involved review of regulations, policies, and books to build deliverables. The project manager negated use of literature as a sole source and rather included it as a reference for validation of the current and improved state SLCs. Much of this change came as the project progressed through early stages of execution.

The research methodology was enhanced through the project maturity process. Stakeholders reviewed the current state SLC for omissions. The addition of this hands-on approach enabled the clear identification of errors and omissions in the development of the current state SLC. To meet the deliverables, each swim lane chart was iterated repeatedly. Stakeholders who were the most knowledgeable about the steps being modified or added reviewed each iteration. This approach was critical in developing the current state SLC, which became the baseline for the improved state SLC. The

same trial and error approach was used to build and deliver the improved SLC. Feedback was managed by ensuring recommendations were feasible and added value to the process.

Project Execution

Planning

Planning for this project occurred from January through April of 2016. Delivery of the project management plan took place on April 7, 2016. The planning phase consumed 231.2 effort hours. The project was suspended at the end of the planning phase pending future execution. In September, 2016, the project plan execution was recommenced. Because of the time lapse between the planning and execution phase 30 hours were consumed updating the project management plan to account for risks and opportunities occurring during this extended period. Most of the work conducted in preparation for execution was administrative. The project was segmented into phases, and the work breakdown structure for phase two was updated.

Scope Management

Multiple tools were used to manage scope. Along with regular meetings with the project sponsor, subject matter expertise and advice were utilized on the building, refinement, and enhancement of the scope when required. In addition to the sponsor, the project manager had the added benefit of a unique set of advisors with extensive project management experience who guided the project manager as needed in the process. If there was concern about a proposed change or risk, the project manager consulted with the advisory committee and the project sponsor. Ultimately, the project manager assumed full discretion in managing scope. As project data became available, the project manager updated and changed scope as needed to deliver a value-added product.

Schedule Management

The completion date was the primary constraint of this project. Most of the available time outside of developing the deliverables was dedicated to managing and monitoring the schedule. Multiple software systems were instrumental in managing the schedule. Microsoft Project™ and WBS SchedulePro™ were used to perform time and resource allocation and to develop the work packages in the work breakdown structure (WBS). The project manager was the only identified resource in the project. As a mechanism of monitoring progress, the project manager applied a nominal \$1 per hour value to the project manager's time in order to enable effort tracking. The inclusion of cost allowed for the comparison of actual effort against planned effort for individual tasks and the overall project, using key performance indicators (KPIs) to track project performance. Work performance index (using CPI) and schedule performance index (SPI) were used as the primary project KPIs. At the beginning of the execution phase, an interim

baseline was applied to the project schedule that accurately accounted for the performance in phase two. All the KPIs for phase two were monitored using the interim baseline. The inclusion of the interim baseline produced accurate performance calculations for phase two. Throughout both phases, the project sponsor and advisory committee were informed of the project's progress utilizing real-time metrics pulled from the project schedule.

A set of project milestones were used as additional monitoring tools. Throughout the planning and execution phases, milestones were used to illustrate key objectives in both phases. These milestones were linked to work packages in the schedule and each milestone aligned with a set of project deliverables. The completion of work packages was linked to project milestones in the schedule.

Each phase included sets of work packages, including tasks that were necessary to meet the project deliverables. Exhibits 2 and 3 depict each phase of the project respectively.

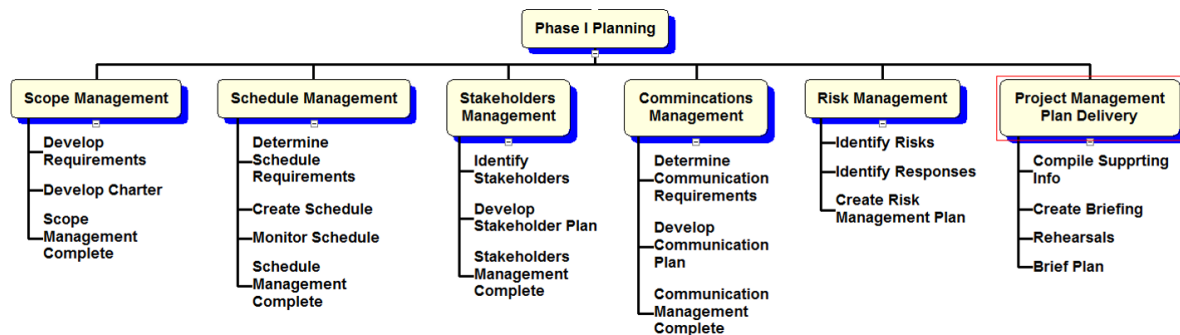


Exhibit 2 Phase 1 WBS

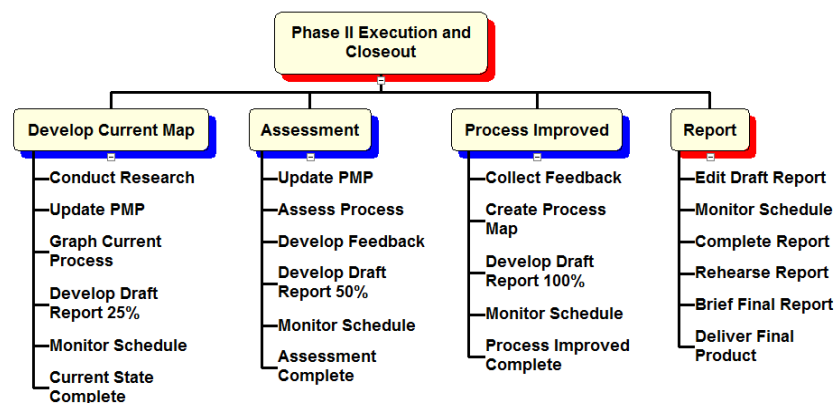


Exhibit 3 Phase 2 WBS

Change Management

The change control process for this project followed the steps below. The CCB approved one change to scope throughout the project. All other changes were at the discretion of the project manager. Scope and schedule changes were documented in the change log. Each version of the project management plan included a version history of changes by section. The version history was beneficial in keeping track of changes as they occurred throughout the project.

Stakeholder and Communication Management

Communication and stakeholder management were vital to this project. The project management plan called for three forms of communication: phone calls, emails, and in-person interactions throughout the project to communicate with stakeholders. The management of stakeholders and controlling communication was a critical step in the research and product development phases. High impact stakeholders, USPFO, CFMO, ADOT/PF and project sponsor, were managed closely throughout the project. In those instances where email communication faltered, in-person interactions increased. This was a planned communication risk response to limited feedback.

Project Outcomes

“Current State” Swim Lane Chart

The current state SLC was produced with the feedback from stakeholders using the research methodology outlined in the project management plan. The integration of the few questionnaire responses with oral interviews with stakeholders was utilized to develop the current state SLC. Phases were used to develop and diagram each SLC. In each phase, the SLC draft was reviewed by stakeholders. The first graphic did not include swim lanes and omitted the identification of organizations responsible for each task. In response, follow on drafts included four process groups and swim lanes. The process groups added were CFMO planning, federal funding, DMVA internal, and DMVA external. These process groups are aligned vertically on the SLC and represent each phase in the process. Additionally, swim lanes were inserted to identify the organizations responsible for each step. As major agencies in the process, the DMVA, NGB, ADOT/PF, and Office of Management and Budget for the State of Alaska (OMB SOA) represent each horizontal swim lane. The development of the current state SLC underwent multiple edits. The graphic was subject to quality reviews by stakeholders with detailed knowledge of the process.

Many of the stakeholders in the process were highly trained and knowledgeable about the steps they control. The stakeholder ownership of the steps in the SLC complicated the reviews of the graphic because of the stakeholder’s tendency to preface recommendations with “we should”, or “we need to”.

Many stakeholders would point out steps that should be occurring rather than what action was actually occurring. To overcome this issue, for every recommendation the project manager would rephrase the question.

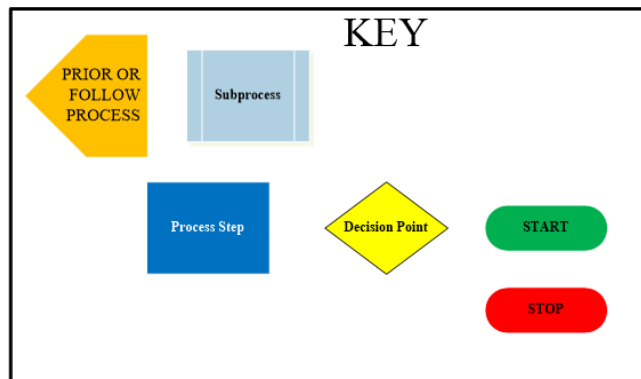


Exhibit 4 Swim Lane Chart Key

Is this how business is done? This approach or rephrasing of the question usually was sufficient to trigger the stakeholder to rethink or modify a recommendation. Occasionally, stakeholders would identify out of sequence or omitted steps. In these cases, the graphic was updated to reflect the omission. To assist the project manager with quality control, the project sponsor reviewed updates to the graphic. The multiple edits and reviews by stakeholders were critical steps in determining the current state. As a deliverable of the project, the current state SLC became the baseline for the improved state SLC. Based on the size and complexity of the current state SLC, the graphic was divided to magnify each process group.

CFMO Planning

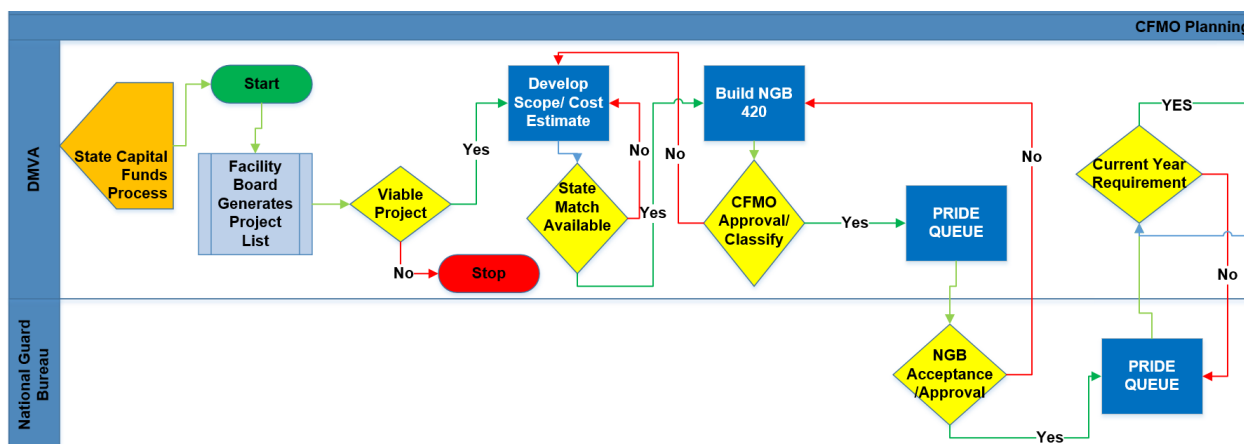


Exhibit 5 “Current State” CFMO Planning Phase

As a jointly funded organization positioned between two governments, the Alaska Army National Guard (AKARNG) Construction and Facilities Management Officer (CFMO) and staff are responsible for orchestrating and navigating the execution of AKARNG construction projects (NGR 420-10). The current state SLC has multiple contributing internal sub-processes. There are multiple feeding and follow-on processes. Federal and state regulations, policies, and laws influence the current state SLC. As a scope management tool, boundaries were set for the process. Through discussions with the project sponsor, it was decided that the first element of the AKARNG construction planning process would be the completion of the *State Capital Funds Process*. Based on the need to receive state and federal funding, this feeder process is a key factor in allowing construction planning to begin. Based on a number of factors, the *State Capital Funds Process* precedes the federal funding process. The *State Capital Funds Process* is managed by the Department of Military and Veteran Affairs (DMVA) senior staff and consists of requesting state appropriations based on future construction requirements. The output of this process is a list of state appropriations by House district tied to projects. This list is updated and published annually in the governor's budget.

At the completion of the state capital funds process, the construction planning process begins for the AKARNG. The list of approved state project appropriations is generated as an output of the *State Capital Funds Process* and is reviewed by the *AKARNG Facility Board*. A sub-process of the SLC, the *AKARNG Facility Board*, consists of senior staff who represent major functions within the organization. The output of this sub-process is a list of projects that meet the critical and strategic needs of the organization. The list generated becomes the CFMO's guidance for project execution. The CFMO and staff review the list and determine if the *AKARNG Facility Board* selected viable projects. Even though the CFMO receives direction from the *AKARNG Facilities Board*, occasionally, due to the length of the *State Capital Funds Process*, some projects are not executed as planned. As the federally identified engineer, the CFMO is the only representative who can classify work. (NGR 420-10 2-9, pg 6) If the CFMO has concerns about the legality of the project, the process stops. If the project is determined to be viable, the project moves forward in the process. The CFMO's staff develops the scope of the project and a cost estimate. While this is late in the process, many of the appropriation requests submitted to the State Legislature in the *State Capital Funds Process* are generic. The CFMO's staff refines the project list following production of the scope. Once the CFMO's staff develops the estimate, the CFMO and staff determine if sufficient state funds are available. If the cost estimate exceeds the state appropriation, the CFMO refines the scope to fit within the available funding. Exhibit 5 graphically depicts the process in CFMO planning.

Federal Funding

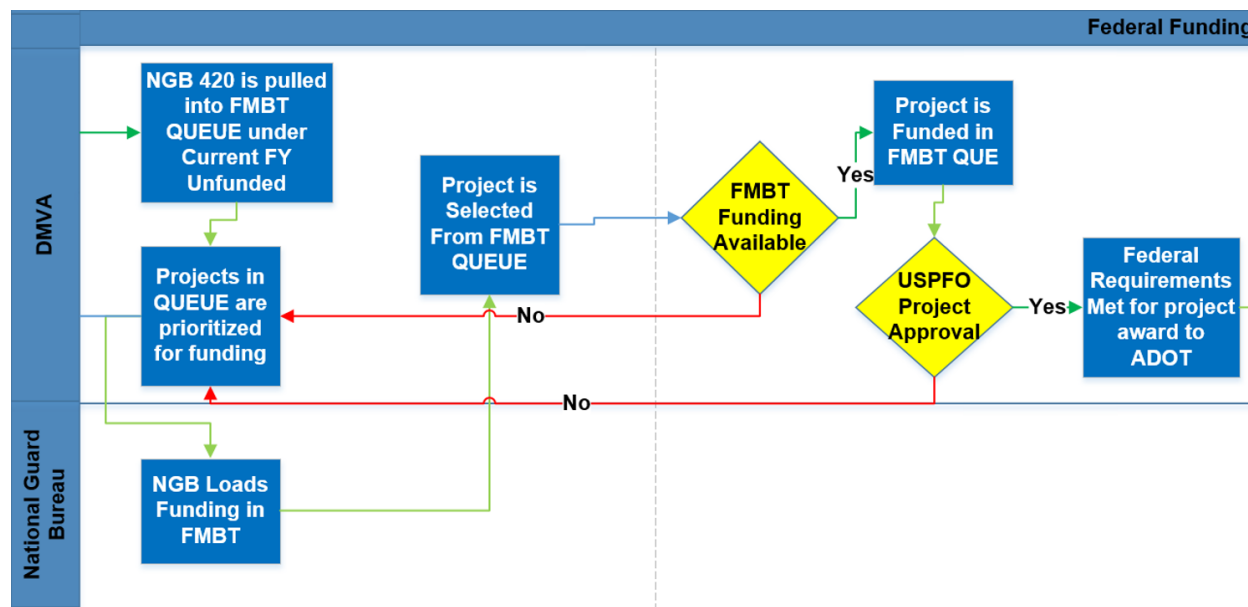


Exhibit 6 “Current State” Federal Funding Phase

If state funds are available, the CFMO’s staff builds an NGB 420. The NGB 420 is an electronic worksheet that is required to receive federal funding (NGR 420-10). The NGB 420 resides in a system called PRIDE, used by NGB to manage the real estate and construction projects in 54 state and territories. Once the shell is complete, the CFMO reviews the NGB 420 for classification characterizing projects as sustainment, restoration or modernization construction projects. (NGR 420-10). Each category has regulatory and fiscal limitations managed by functional managers at NGB. Sustainment projects are maintenance projects and may range from small projects to large-scale lifecycle replacement projects. Modernization projects are new construction and are authorized based on the real estate square footage. Modernization projects are used to fill square footage deficits or replace demolished property. Restoration projects are projects in which the quality of a building is below a pre-determined monetary threshold for sustainment. By classifying a project, the CFMO is confirming that scope meets one of three categories and that state funds are available to execute the project. If the CFMO does not support the scope of the project as outlined in the NGB 420, the project is returned for scope refinement.

Once the CFMO classifies and approves the NGB 420, the project moves to the PRIDE queue, which, in turn, notifies the NGB staff to review the project. The role of NGB is to verify and assist the CFMO in classification. If NGB has concerns or declines to support the scope as defined, NGB returns the NGB 420 to the state for refinement. If the NGB 420 meets the regulatory guidelines, the project is approved and sent back to the PRIDE queue. The process occurs routinely and includes projects covering

multiple funding years. Once NGB approves the project, the CFMO must determine if the project is a current year requirement. If the CFMO selects the project for future years, the project remains in the PRIDE queue.

If the CFMO selects the project for execution, the CFMO's staff pulls the project into the FMBT queue, a sub-system in PRIDE used to manage fiscal year budgets. Within the FMBT queue, the CFMO's staff prioritizes projects for funding. Based on priority, NGB loads funding into FMBT. The CFMO's staff selects a project for execution and determines if sufficient funds are available. If the funds are not available, the project remains in the FMBT queue. The presence of projects in the FMBT queue notifies NGB of an unfunded project requirement for future funding consideration. If funds are available in FMBT, the project is funded and sent to the USPFO for final project approval. Once approved by the USPFO, the CFMO's staff begins preparation for the transition of the project management duties to the ADOT/PF. In the purview of NGB, the federal process of project planning is complete at this stage. The state process subsumes the process at this point. Exhibit 6 shows the steps for federal funding.

DMVA Internal

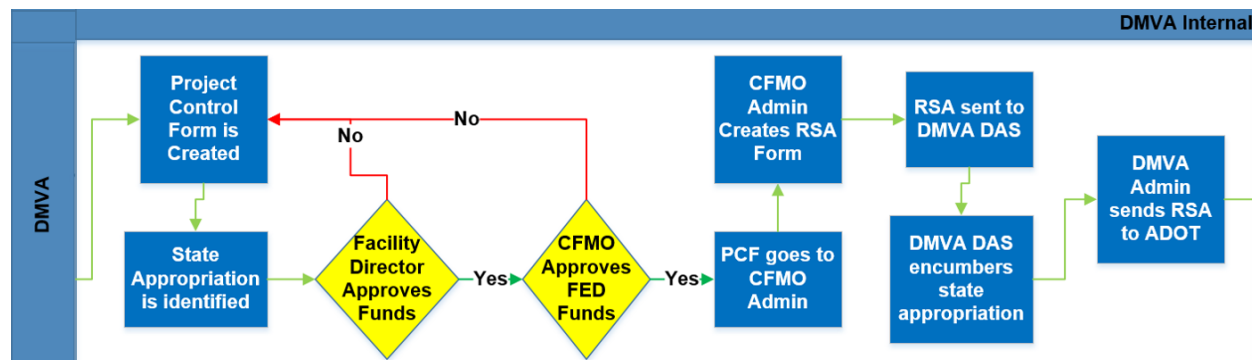


Exhibit 7 “Current State” DMVA Internal Phase

A Project Control Form (PCF) is generated within the CFMO. The PCF is a local form defining scope of the project, federal appropriation, state appropriation and cost to state and federal government. Once the CFMO generates the PCF, the State Facility Director reviews the PCF for state funding approval. If the State Facility Director disapproves funding, the PCF is returned for refinement. If state funds are approved, the CFMO approves associated federal funds and authorizes the project to proceed. With all approvals complete, the CFMO administration section receives the PCF for creation of the Reimbursable Support Agreement (RSA), a state agreement which is equivalent to a contract between two state agencies (AAM 40). Once the CFMO administration section builds the RSA structure, supporting paperwork is forwarded to the DMVA Division of Administration Services (DAS). DMVA DAS

encumbers the state funding (AAM 40). Because of the reimbursable relationship between the state and federal government under the MCA, the state encumbers the total amount of the project funding, including state and federal shares. The federal government reimburses costs as work is completed. The approval of the PCF, and thus the RSA, by the CFMO guarantees full reimbursement downstream to the state for the project portion in which the federal government is responsible. When funds are encumbered, and all supporting documents are in place, the CFMO staff sends the package to ADOT/PF. Exhibit 7 depicts the DMVA internal phase.

DMVA External

Once ADOT/PF receives the RSA, they are authorized to execute the project as their own, conducting this portion of the process without counsel from the CFMO or DMVA. Upon receipt of the RSA, ADOT/PF's RSA desk logs the information and notifies the OMB SOA. OMB SOA logs the RSA in their records and OMB SOA sends the project to ADOT/PF for execution. At this point

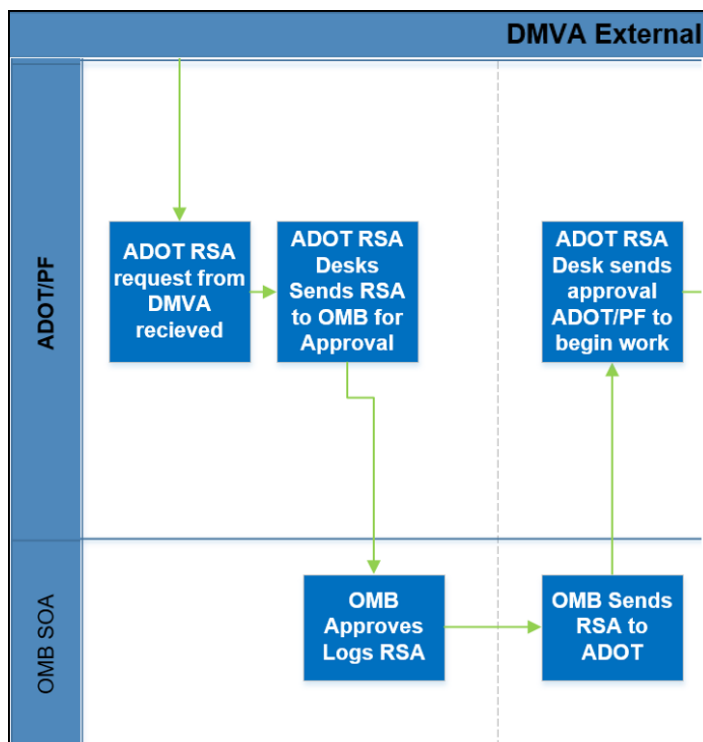


Exhibit 8 “Current State” DMVA External Phase

ADOT/PF has full project authority. Exhibit 8 and Exhibit 9 depict the DMVA External phase.

Per Design-Build Institute of America (DBIA) “Design-build is a method of project delivery in which one entity – the design-build team – works under a single contract with the project owner to

provide design and construction services. This involves a single entity, one contract, one unified flow of work from initial concept through completion – thereby re-integrating the roles of designer and constructor. Design-build is an alternative to the traditional design-bid-build project delivery method” (DBIA website). Both the federal and state rules authorize each method. ADOT/PF routinely uses both methodologies.

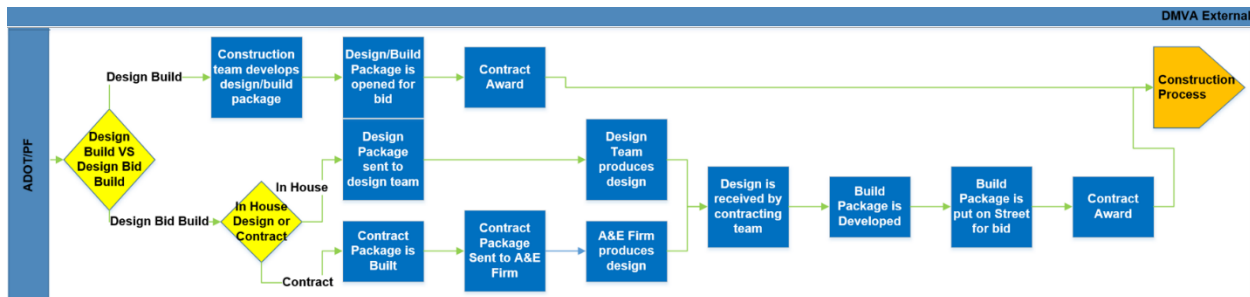


Exhibit 9 “Current State” External Phase cont.

The contract type is job specific; the choice to use one or the other may affect time and risk for the project. ADOT/PF’s construction team receiving the RSA must determine if the project will be a design-build or a design-bid-build. If the design-build option is selected, the contract package is built and posted for bid. Once bids are accepted project award is authorized, work can begin.

ADOT/PF predominately chooses to use the design-bid-build method. There are several reasons for this; in this methodology, designs can be delivered or held for future use. Issues raised in the design process may cause cost increases or scope changes. The decision to freeze the design may be based on shifts in the strategic goals of the AKARNG. The design-bid-build method may be less costly because ADOT/PF retains more project risk. Design-build projects allow for modifications to scope to respond to risk. Regardless of the reason for selecting this option, ADOT/PF must decide on the design method. ADOT/PF has professional engineers and architects on staff who create designs. The in-house design is typically a more cost-effective method for ADOT/PF. However, they are limited in the number of designs that can be produced. ADOT/PF has Architect and Engineer (A&E) firms under contract as needed. The ADOT/PF construction team must prepare and provide necessary documents to the in-house design team or A&E firm. The in-house design team or A&E firm produces the design for the project and returns the design to the construction team, which can then shelve the project for future use if needed or proceed to the construction contract award. In some cases, the construction team may not have sufficient staff to manage the projects and may opt to delay issuing a request for bid. At this point, the design team either has a design-build or design-bid-build contract ready for award. Assuming the award of the contract

occurs, the construction planning process delivers an awarded contract but does not initiate the execution of the construction process.

“Improved State” Swim Lane Chart

Initial Observations

Development of the current state development was challenging and complex. To avoid these challenges in the improved state, the project used lessons learned from interactions with stakeholders to enhance the feedback needed to produce the improved state swim lane chart (SLC). The stakeholder questionnaire had little impact on the production of the current state SLC. In response, the project successfully employed trial and error techniques in the development of the current state SLC. The process consisted of reviewing the current state SLC with stakeholders and posing questions about the process. With the visual presence of a graphic, the feedback was more accurate and added value to the improved state SLC. The project manager duplicated similar techniques in production of the improved state SLC.

The first step in improving the current state SLC was to identify missing steps which were considered critical by stakeholders. The steps not shown in the current state SLC are needed steps either later in the process or follow-on execution of the construction contract. Stakeholders identified two areas where steps were missing. The first is a preceding environmental process that feeds the planning process. The project manager with assistance from stakeholders identified technical reviews as omitted. Technical reviews were included to shield the downstream construction process from risk exposure. Both the construction team and the environmental section require the technical reviews. Although not as critical, the second omission in the process was a step allowing for designs to be shelved and closed within a design-bid-build project. By adding this step, the project planning team may make decisions based on scope, cost, or schedule without committing to the actual construction process.

From the project manager’s perspective, the current state is protracted. In project management terms, the entire process works like a waterfall; steps in the process are linked sequentially. Stakeholders validated this observation. To improve the perception of a longer process, the project manager identified redundant tasks and unnecessary restrictions within the process. Although not visually present in the current state SLC, most feedback from stakeholders points to communication breakdowns in the current state SLC. To resolve the communication breakdown, the project manager with the aid of the primary stakeholders identified steps executable by multiple stakeholders, an action encouraging cross-communication in the planning process.

Another common message from stakeholders related to a simplification process requiring the review of pertinent regulations to determine which steps could be eliminated. The project manager

determined many of the steps should be retained. The likelihood of obtaining approval for changing the process in CFMO planning and federal funding is unlikely. The federal process relies on federal regulations and laws and supports all 54 states and territories. Unless there is a significant issue with the process, it is unlikely NGB will modify requirements for receiving federal funding. As state agencies, the DMVA and ADOT/PF face similar challenges. As a part of the state government, much of the process relies on state law and policy.

In response to the limitations imposed by the state and federal processes, the recommendation for improvement was to identify areas where steps could be fast-tracked or initiated earlier in the process. For example, the current state SLC is protracted and consists of independently functioning phases. Many of the steps which occur in the DMVA external phase could be executed earlier, limiting the duration of the process. This makes the challenge of simplifying the process difficult. By focusing on “stacking” tasks, the AKARNG and ADOT/PF may save time by restricting the number of handoffs in the process.

The decision to stack tasks creates a secondary risk. In the current state, there is a handoff from the DMVA to ADOT/PF. The secondary risk is a result of restrictions with the Reimbursable Support Agreement (RSA) used to fund the construction contracts. The RSA tied to each project includes oversight fees for ADOT/PF budget staff and project managers. ADOT/PF does not devote resources to the project without a fully-funded project RSA because there is no assurance of reimbursement for in-house costs. To counter this, the project manager and stakeholders recommend developing an annual administrative RSA. ADOT/PF can invoice administrative costs outside of project specific costs. ADOT/PF staff will be able to work throughout the funding cycle without limiting their involvement in the planning process. This change is critical in allowing the improved state to function as intended.

The last hurdle in the development of the improved state is a result of recent shifts in the regulatory process. At the beginning of the project execution, the USPFO changed the RSA procedures. Under state law, an RSA is considered a contract (AAM 40). Federal funding, which is valid for one year of obligation and five years of execution, was previously considered obligated when ADOT/PF received an RSA from the DMVA. After reviewing this process, the USPFO found this definition did not comply with federal law. Based on the USPFO decision, federal funds are not obligated unless ADOT/PF awards a third-party contract. The USPFO’s decision implies that rather than considering funds obligated part way through the process; funds are now considered unobligated until the planning process is complete and ADOT/PF awards a third-party contract. Based on the USPFO’s decision, steps are identified as needed within one fiscal year to avoid missing the regulatory window outlined by the USPFO.

Improvement Recommendations

The first recommendation is to replace four existing with two new process groups. This replacement is a response to the change in the process group and meets the fiscal year requirements. The tasks grouped in the planning phase are not restricted to the federal fiscal year. The tasks grouped in the fiscal year execution must occur in one federal fiscal year. This change complies with the USPFO's decision regarding federal funding obligations. Beyond the change in the process groups, the addition of the project manager included the *Environmental Permitting and Compliance Process* which precedes the construction planning process. The *Environmental Permitting and Compliance Process* occurs in parallel to the *State Capital Funds* and is required for initiation of the construction planning process. Without the addition of this process, the planning team may face risk downstream in the planning and execution of a construction contract. The step *Develop Scope/ Cost Estimate* was moved to cover both the DMVA and ADOT/PF. This change is intended to encourage joint planning and collaboration. Exhibits 10 and 11 depict the recommended modifications in the Planning process group.

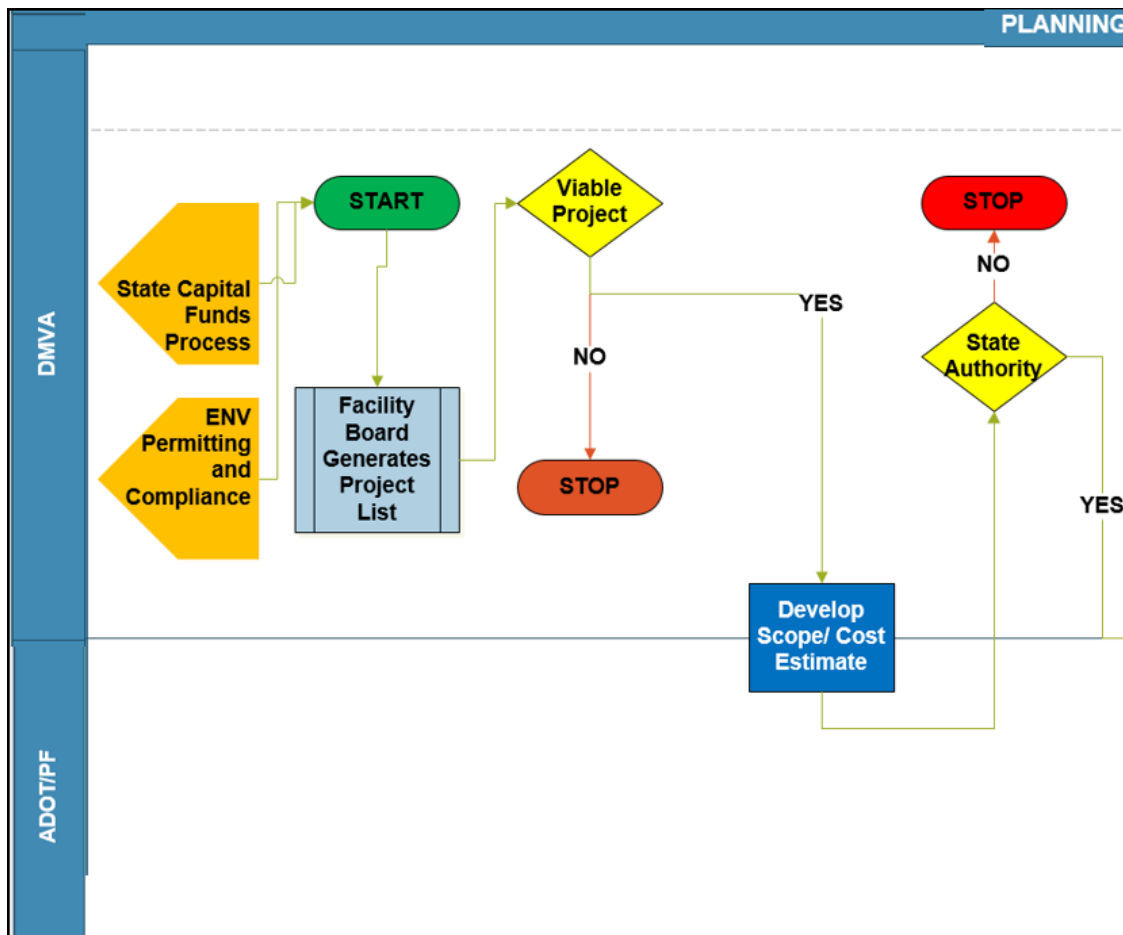


Exhibit 10 "Improved State" Planning Phase

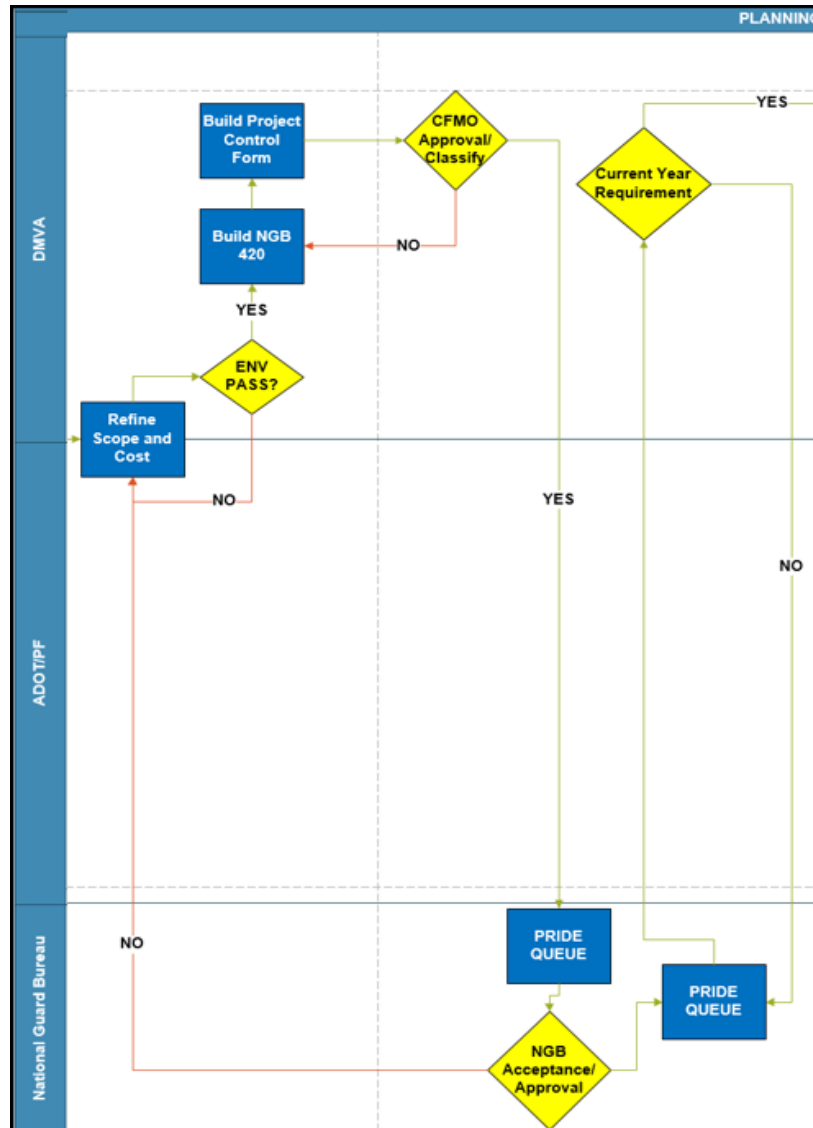


Exhibit 11 “Improved State” Planning Phase cont.

The second half of the planning process group has been modified to add or re-sequence steps. The project manager placed *Refine Scope, and Cost* as a successor step to DMVA and ADOT/PF. The *Build Project Control Form* has been placed earlier in the process for similar reasons. Analysis and research showed there was no benefit to this step occurring downstream. The final change is the addition of the *ENV PASS* decision point.

Because of the addition of the preceding *Environmental Permitting and Compliance Process*, checkpoints were added to verify this process was completed as planned. With the moving of the *Build Project Control Form*, a checkpoint was inserted to ensure the PCF document created early in the planning phase is complete. Tasks have been moved to reflect steps that can be stacked. This is reflected in Exhibit 12. The previous tasks ADOT/PF and OMB SOA accomplished have been stacked to optimize process time.

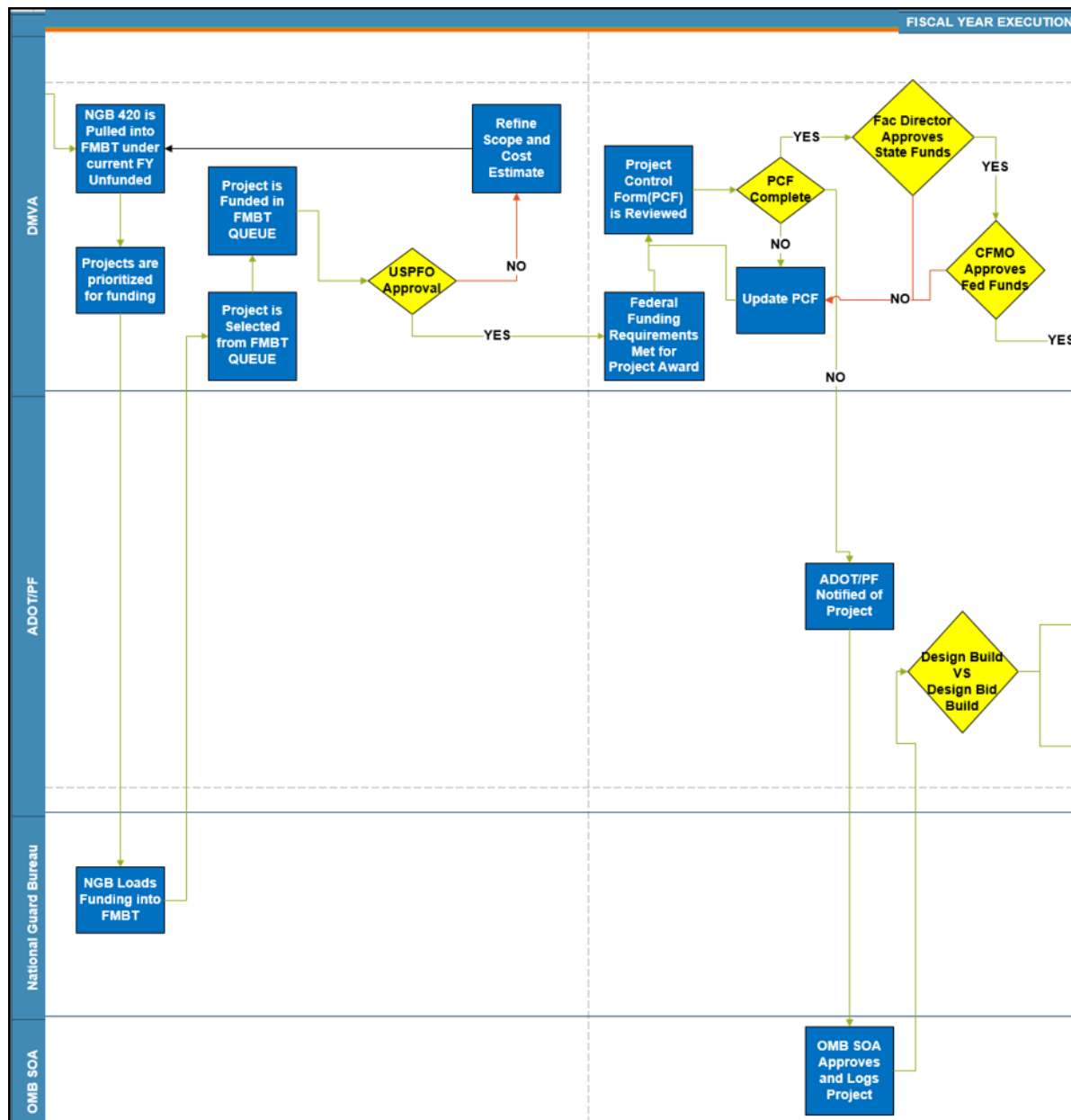


Exhibit 12 “Improved State” Fiscal Year Execution Phase cont.

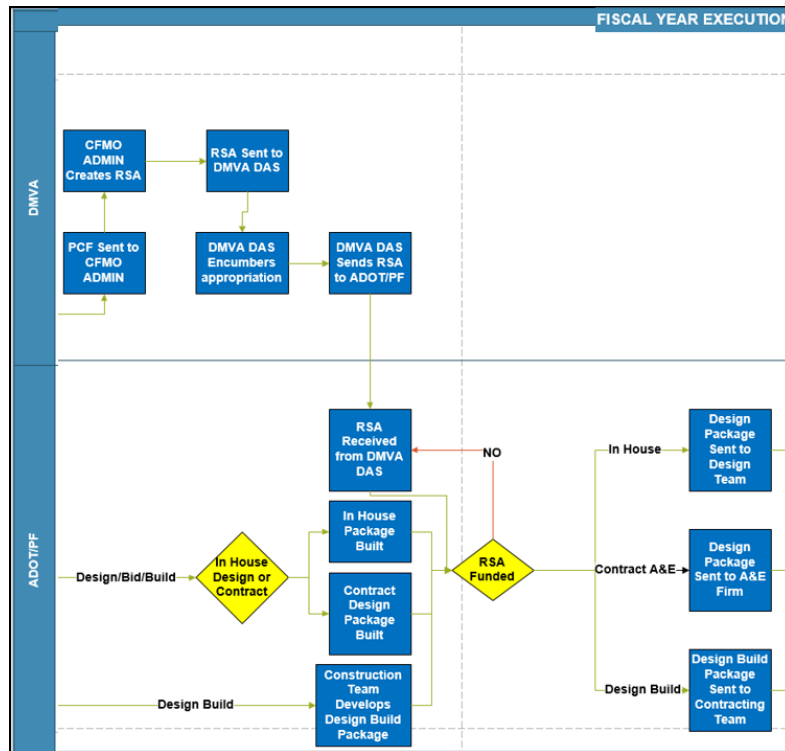


Exhibit 13 “Improved State” Fiscal Year Execution Phase cont.

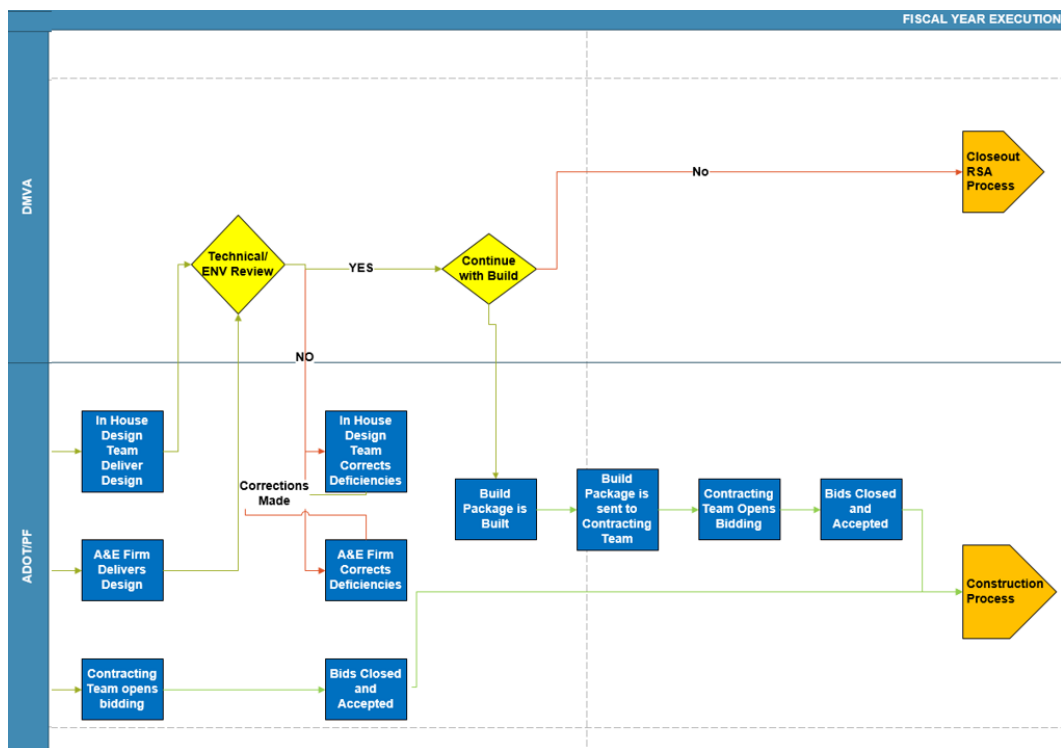


Exhibit 14 “Improved State” Fiscal Year Execution Phase cont.

The only addition to Exhibit 13 is the decision point of the *RSA Funded*. The decision to move tasks earlier in the process and stack them with other steps forces this decision point. The additions to Exhibit 14 include two decision points for *Technical/ENV Review* and *Continue with Build*. If the design is shelved, this triggers the *Closeout RSA Process* to occur.

Improved State Graphic Conclusion

The modifications made to the current state SLC leading to the improved state SLC were all based on feedback from stakeholder interviews and interactions. Development of the improved state SLC faced regulatory hurdles throughout which complicated the process of improving the current state SLC. Most changes were a result of adjusting the logical flow of the tasks to improve process efficiency and eliminate bottlenecks. Without previously discussed changes to the RSA process, recommended modifications in the improved state SLC may not have occurred. Implementation of the improved state SLC will provide DMVA and ADOT/PF a toolkit for process improvement. While producing the improved state SLC the project manager received positive feedback and organizational acknowledgment that validated the deliverables by not only justifying the improvements, but also the provision of a useful and functionally accurate swim lane chart.

Future Research and Project Conclusion

Future Research

Beyond the recommended changes proposed in the improved state SLC, documenting these steps will assist the DMVA and ADOT/PF. Based on the communication errors that led to many of the changes proposed in the improved state SLC, the project manager recommends establishment of a supplemental project management plan that coincides with process steps and adds value. In addition to a project management plan, future research may examine predecessor and successor processes to further refine planning processes. With further research, the DMVA and ADOT/PF may show continuous process improvement and deliver value-added products to their customers.

Project Conclusion

The project to provide process improvement tools to the DMVA and ADOT/PF was challenging and rewarding. By incorporating the skills learned from the Project Management Body of Knowledge, the project manager examined an organizational problem and produced tools to assist these two organizations in process improvement. Employing the tools outlined in the project management plan, the project goals and business objectives were met. The project manager delivered a current state SLC, an improved state SLC and a written narrative description of the improvements, leveraging skills in stakeholder management, communications management, and risk management to control the volatility of project

execution. With use of these tools, the project added value to both organizations and increased professional experience and project management maturity.

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Alaska Army National Guard Construction Planning Process Improvement

Appendix 2 "Improved State" Swim Lane Chart

