WASHINGTON STATE DEPARTMENT OF
Natural Resources

PETER GOLDMARK
Washington State Commissioner of Public Lands

MEMORANDUM

August 20, 2012

TO: Forest Practices Board

FROM: Jim Hotvedt, Adaptive Management Program Administrator

SUBJECT: LEAN Implementation

At its November 2011 quarterly meeting, the Forest Practices Board (Board) directed the Adaptive Management Program (AMP) to spend a portion of the FY12 CMER budget to facilitate a LEAN review of the AMP with the goal of improving program efficiency. Earlier this year, the AMP completed an "opportunity assessment" of AMP processes suitable for reviewing through a formal LEAN event and chose to conduct a LEAN event on processes for developing CMER scoping papers and study designs. The LEAN event was completed and the results were presented to you by our LEAN consultant at your May 2012 quarterly meeting.

After hearing the presentation in May, the Board instructed the AMP to pilot the proposed "To-Be" process for developing study designs.

As you might recall, development of a study design under the proposed LEAN "To-Be" process entails CMER relying on a smaller group of scientists to develop the study design, with fewer decision points along the way. CMER formally approved development of a study design for an Eastside type N buffer effectiveness study at its June 2012 monthly meeting, with concurrence by the Scientific Advisory Group – Eastside (more commonly known as SAGE). To date, two CMER participants have agreed to initiate development of a charter for the project. Supervisors of the two CMER participants have been contacted and have agreed to their participation. CMER must now formally approve the initial writing team who will begin development of a charter. It is anticipated that two-to-three additional members will be added to the writing team once a charter is developed.

Currently, Mark Hicks (CMER Co-chair) is reviewing the schedule of projects associated with the recent Forest Practices HCP settlement agreement for projects anticipated to start in the next two years. He has also been talking to SAGs, as well as individual CMER participants, about projects that could be initiated soon using the LEAN concept, and whether or not individual CMER participants might be interested in serving on a writing team.

cc: Mark Hicks, Department of Ecology

1111 WASHINGTON ST SE • PO BOX 47041 • OLYMPIA, WA 98504-7041
TEL: (360) 902-1250 • FAX: (360) 902-1780 • TTY: (360) 902-1125
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CMER Protocols & Standards, Scoping Paper and Study Design Redesign & Reform Project Using Lean Process Improvement

Final Report

May 25, 2012

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WASHINGTON STATE DEPARTMENT OF Natural Resources

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About the Project

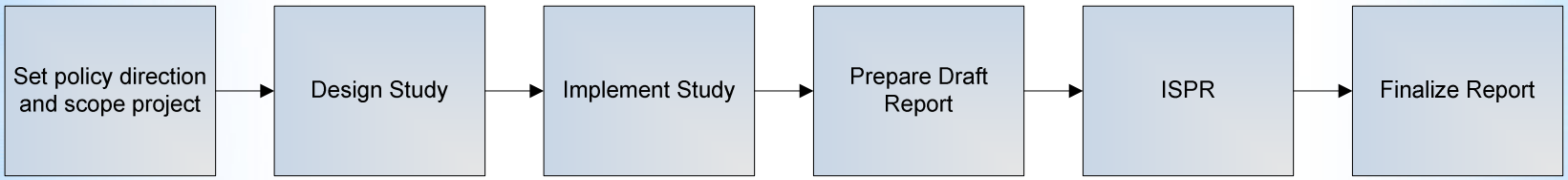
- The purpose of this project was to examine the Forest Practices Adaptive Management Program (AMP) processes and use Lean process improvement techniques to redesign these processes.
- This project was requested by the Forest Practices Board (FPB) as part of a larger evaluation of the AMP.
- This project looked at processes used by the Cooperative Monitoring, Evaluation and Research (CMER) Committee and Policy Committee.
- The project had four main objectives:
  1. Identify specific, AMP-related areas and circumstances where LEAN could be used for process improvements.
  2. Identify specific areas where experts feel LEAN could best be deployed within the Adaptive Management Program.
  3. Identify areas within the AMP with challenges that may prove to be difficult in implementing LEAN.
  4. Identify resources or services the AMP could utilize in approaching problems with a LEAN perspective.

Lean Vision for AMP

- **Representatives of both CMER and the Policy Committee met and identified an overall vision for the Lean effort. This vision can be summarized by the following three goals:**
  - **Eliminate non-value added work or process steps (i.e., eliminate parts of the AMP process that fail to add value to the ultimate outcome of the process)**
  - **Reduce process cycle time (i.e., reduce the time required to undertake certain parts of the AMP process)**
  - **Maintain quality of AMP work products**

Recommended Lean Opportunities

- **CMER has many documented processes in its Protocols and Standards Manual (PSM)**
- **The processes discussed with CMER are presented below. They are all associated with planning, designing, implementing and reporting on research and monitoring projects.**
  - **Set policy direction and scope project – determining the objectives of a project and the scope of what is being studied. This component includes interactions with the Policy Group in setting direction for research and monitoring projects.**
  - **Design study – designing the protocols, definitions, data collection needs and procedures to be used in a research or monitoring study.**
  - **Implement study – this process element involves the actual data collection and analysis associated with a research or monitoring study.**
  - **Prepare draft report – processes used to produce a draft report.**
  - **ISPR – scientific peer review of the draft report.**
  - **Finalize report – processes used to complete and finalize a research or monitoring report once the peer review is completed.**

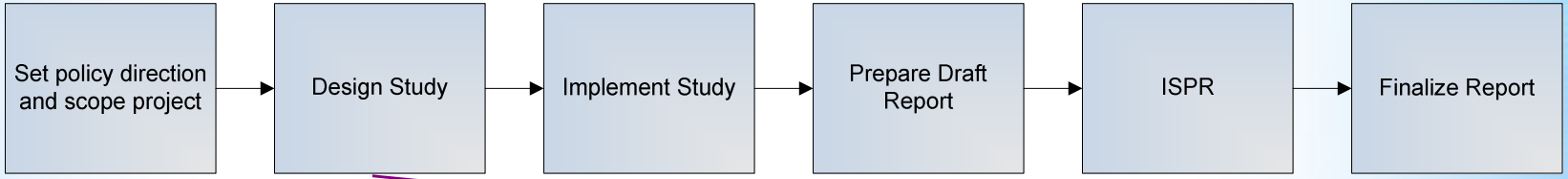


Recommended Lean Opportunities

- In order to narrow the scope of the Lean project, representatives of CMER and the Policy Committee selected those portions of the CMER process which could benefit most from Lean transformation. The following criteria were used in evaluating candidate process elements:
  - The extent that a process component supports the overall Lean vision of reducing cycle time, eliminating non-value added work steps and maintaining quality.
  - The process component is really a process. Business activities that are not true processes were screened out. Work processes are defined as sequential series of steps that are easily repeatable and are, in fact, repeated across multiple transactions.
  - The extent that the AMP can actually control how a process is performed. If the AMP has little control over this then the process was screened out.
  - Lean results can be achieved in a timely manner so that the State can realize a positive return on its investment in Lean transformation.
  - Process performance is easily measured. This is particularly important as the Lean vision emphasizes a reduction in cycle time, a quantitatively based vision.
  - Stakeholders (e.g., the Forest Practices Board) share the Lean vision and are genuinely interested in seeing results.
- Based on a facilitated voting process, CMER and Policy Group members selected these processes for the subsequent Lean effort:
  - Set policy direction and scope project
  - Develop study design

Recommended Lean Opportunities

Issues identified that pertain to the selected process components include . . . .



- Many work steps. Each step requires "buy-in" from stakeholders.
- Lots of discussion and circular arguments within the SAGs and CMER.
- Lack of a shared vision about study objectives.
- Requires interaction with the Policy Group.
- This process is critical for the success of the study – influences the ultimate cost.
- Work scopes tend to get cumbersome.
- Review process within study scoping is time consuming and difficult.
- Not easy to agree on what the problem statement should be.

- Multiple review iterations with ISPR, SAGs and CMER. Requires "buy-in" and check-ins
- Circular arguments within SAGs and CMER
- Have to revisit project scope and budget
- Have to do a response matrix – process is time consuming and inefficient. CMER needs some latitude on the scope of this matrix
- Review process is particularly troublesome

The processes were defined as the activities that occur between the following start and end points . . . .

Process component	Start	End
Set policy direction & scope study	CMER starts scoping project from FPB-approved budget spreadsheet	Finished project scope
Design study	Finished project scope	Completed study design

As – Is Processes

- The As-Is processes for developing scoping papers and study designs were mapped using input from AMP participants using value stream mapping techniques. The As-Is maps are found in Appendix A.
- The As-Is processes are characterized by:
  - Multiple review and approval steps by CMER, Policy and SAG
    - » Value added from the CMER review steps are questionable based on input from AMP participants
  - Excessive cycle times
  - A one-size-fits-all approach to study questions regardless of their complexity or potential impact
  - The scoping paper process is invoked without a clear definition of the study objectives
- As-Is process metrics:
  - Up to 62 months in cycle time
  - 9 separate "do-loops" totaling 16 iterations
  - 12 different approval points for five separate documents (e.g., study design, response matrix)

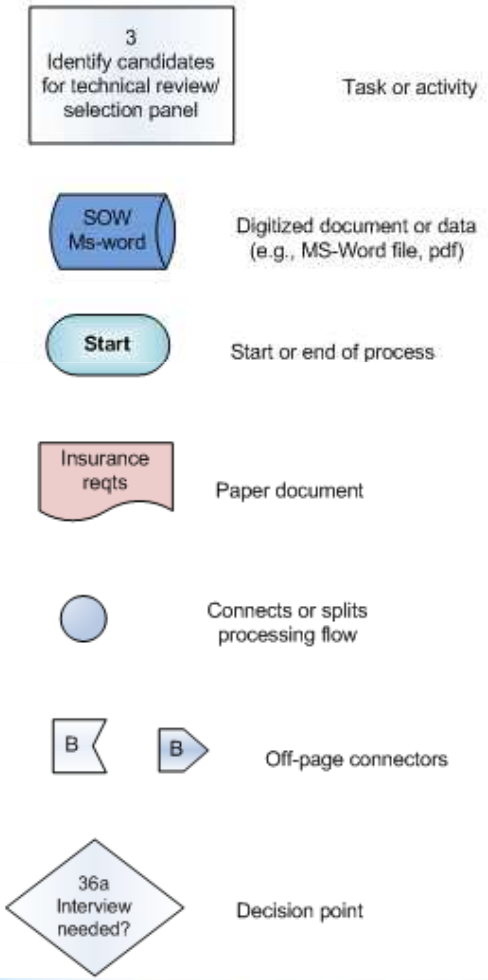
To – Be Processes

- Using Lean techniques, a combined CMER and Policy working group redesigned the scoping paper and study design processes. The recommended resulting To-Be (or proposed) process:
  - Combines the two As-Is processes
  - Replaces the Scoping paper with a streamlined project charter document
  - Reduces the scope of literature reviews, or bypasses them in certain areas
  - Invokes the full peer review only for projects that are complex or have the potential for a rule change
  - Has fewer input/comment/decision points for CMER
  - Relies on a smaller team of qualified scientists and technical personnel for preparing the Project Charter and Study Design rather than a SAG
- The To-Be value stream map is found on the following pages
- To-Be process metrics:
  - 15 months in cycle time
    - » As much as 75% reduction from As-Is process
  - 3 separate "do-loops"
  - 5 different approval points for five separate documents

To – Be Processes

Title of Process: To-Be Project Charter-Study Design v.1
Created: 4/30/12
Last modified: 5/21/12

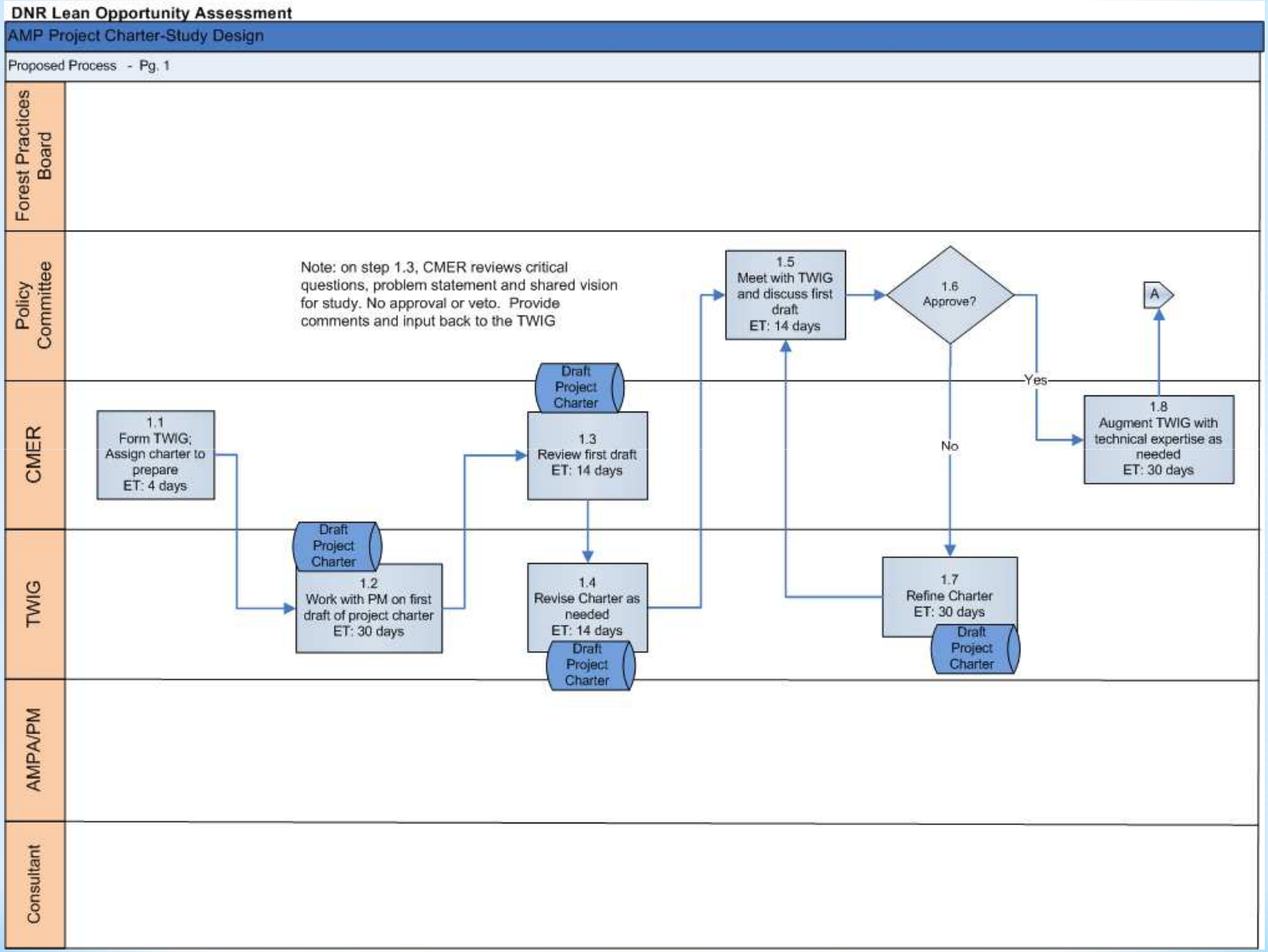
Symbol Legend



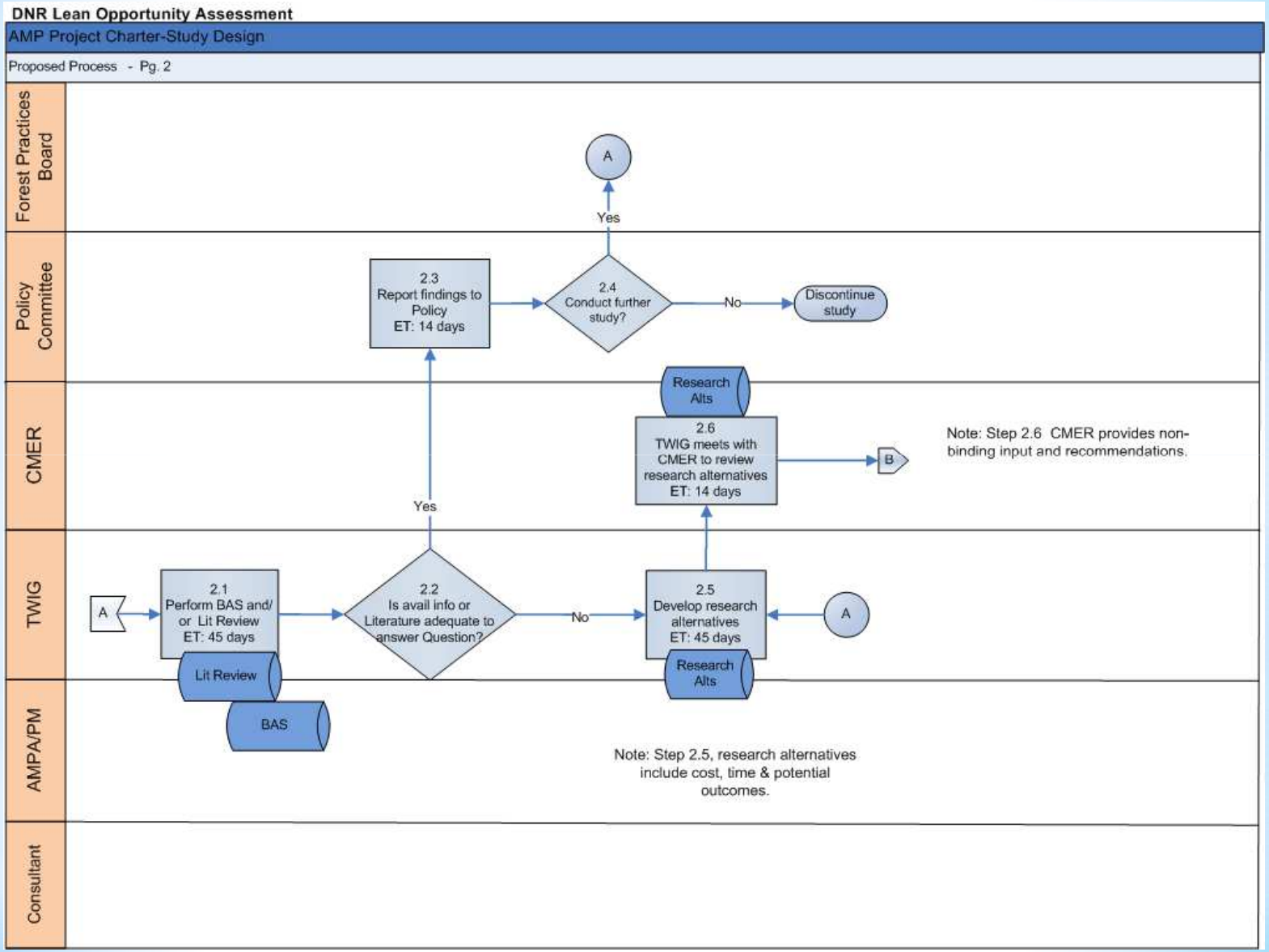
Acronym Key

AMP = Adaptive Management Program
CMER = Cooperative Monitoring, Evaluation, & Research Committee
DNR = Department of Natural Resources
AMPA = Adaptive Management Program Administrator
TWIG = Technical Writing & Implementation Group
BAS = Best Available Science
ISPR = Independent Scientific Peer Review
PM = Project Manager
AE = Associate Editor

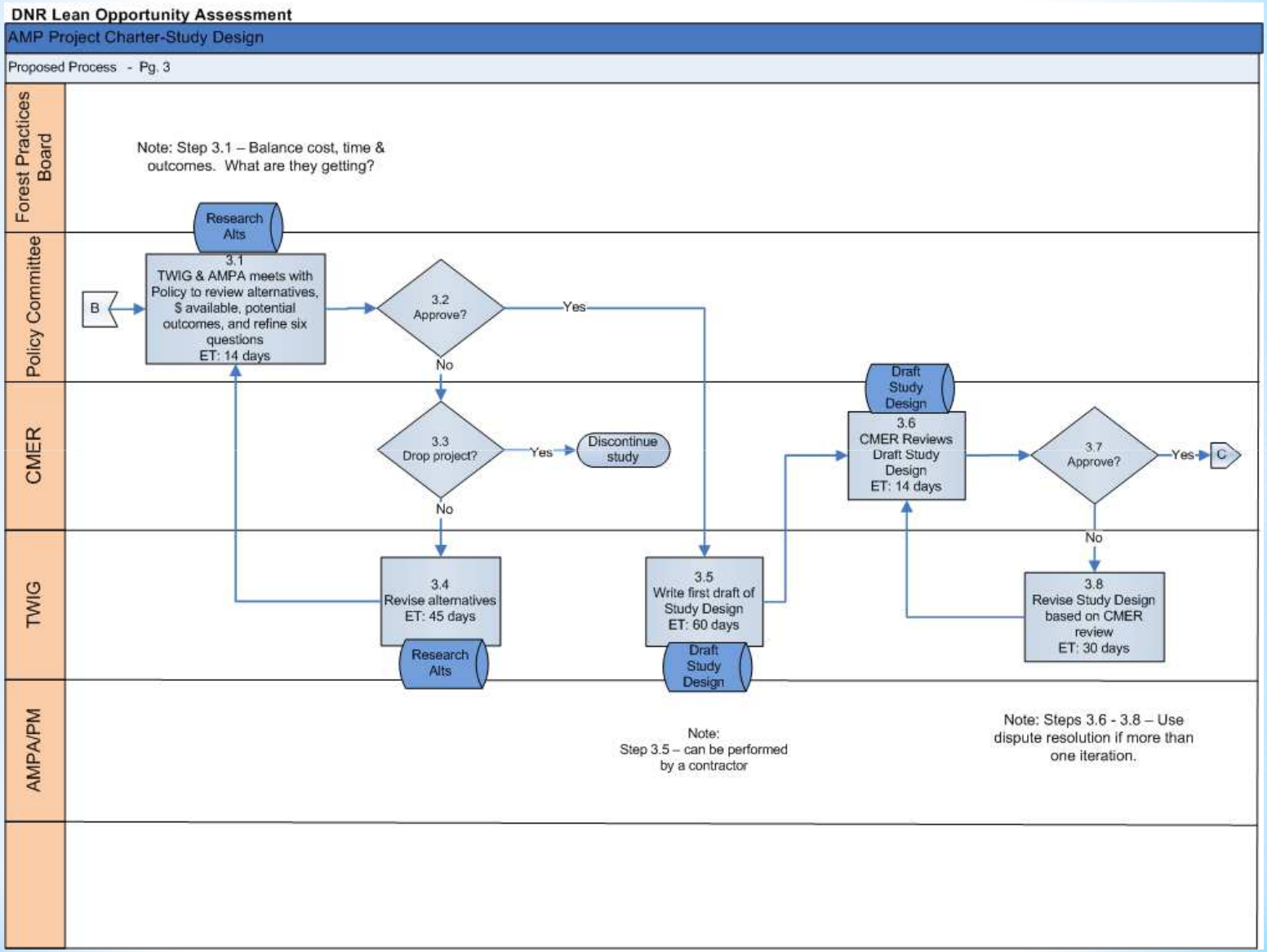
To – Be Processes



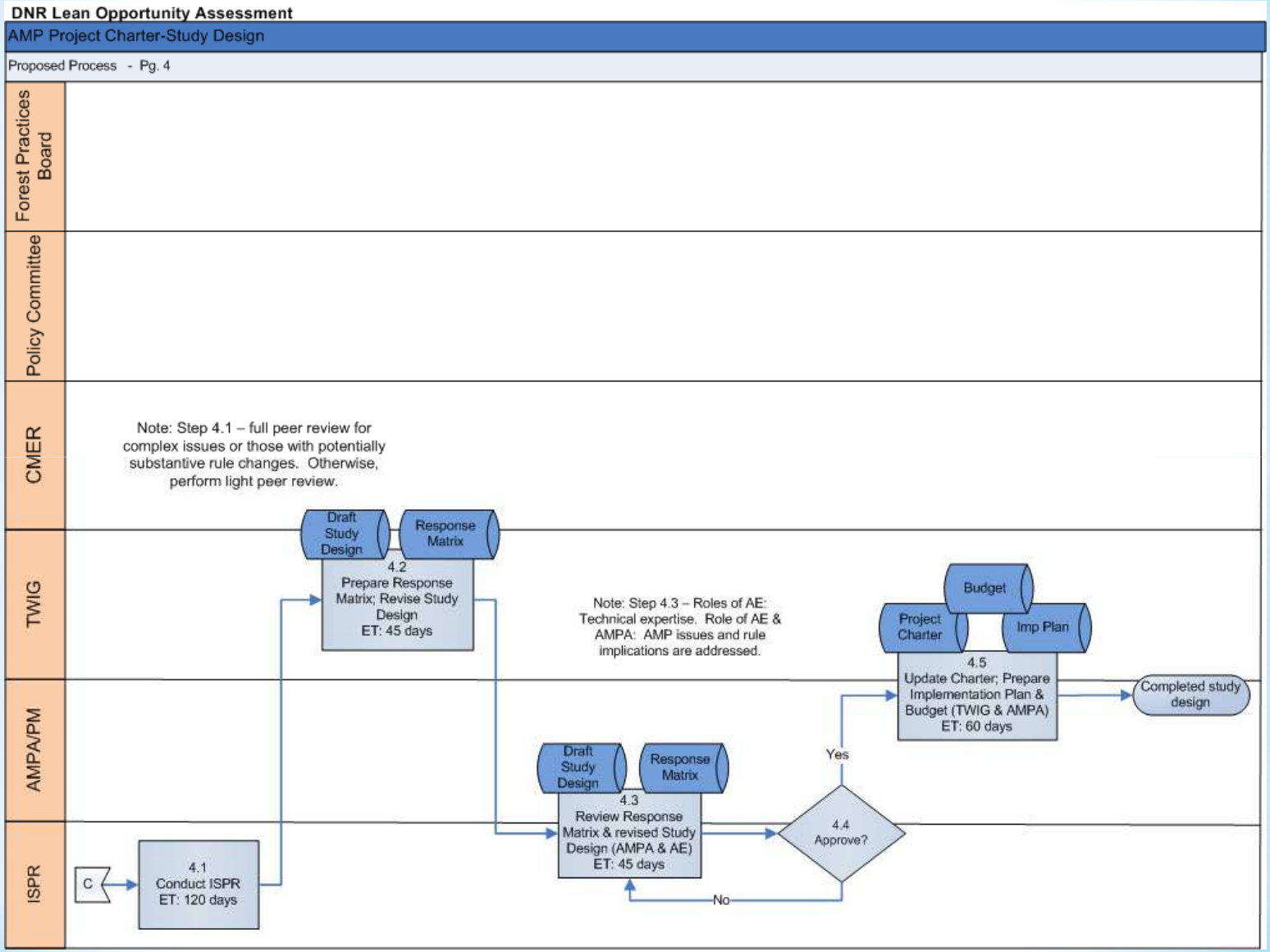
To – Be Processes



To – Be Processes



To – Be Processes



Challenges in Implementation

- **The AMP will have to deal with change management issues regarding phasing out the SAGs and forming TWIGs.**
- **TWIG members will need to be committed to projects by their employing agencies or organizations and be evaluated for their role on the TWIGs.**
- **The Forest Practices Board should charge CMER with redesigning the report drafting and peer review processes (using Lean) so they are consistent with the elements of the new project chartering and study design processes.**
- **AMP policies and protocols may need to be amended to facilitate implementation:**
  - **Protocols and Standards Manual – changed by CMER**
  - **Potentially the Board Manual – changed by AMP; Approved by FPB**
  - **Potentially the Forest Practices AMP rules – changed by FPB**

Implementation Enablers

- **Based on comments and recommendations from the CMER and Policy work group, a Project Charter replaces the current Scoping Paper as the first work product in the process. The Project Charter should include the following elements:**
  - **Who will lead study?**
  - **Identification of available resources?**
  - **Problem statement**
  - **Technical rationale for addressing the issue**
  - **Critical questions to be answered**
  - **Objectives of the study**
- **A smaller working group, the Technical Writing and Implementation Group (TWIG) should replace the current SAG. Attributes of the TWIG include:**
  - **Composition of the TWIG is determined by CMER based on the technical needs of the project**
  - **A TWIG can be comprised of Agency staff (DOE, DFW, DNR), CMER members (especially in the Project Charter stage), or CMER staff. A TWIG could also include contractors (as needed)**
  - **Membership on any TWIG should be capped at four to be effective; It is not necessary that a TWIG include representation from each caucus**
  - **The TWIG should provide technical expertise to design projects and write project charters and study designs**
  - **Staff assigned to a TWIG should be committed for that role by their home agencies or organizations**
  - **TWIG members should have qualified technical expertise**
  - **Representatives of stakeholder groups can be included on a TWIG but should be part of the membership of four and be actively involved in writing documents**
  - **TWIGs should not have co-chairs and should meet as required**
  - **Each TWIG should be specific to a project**

Implementation Enablers

- **The role of CMER should change in the new processes and will include:**
  - **Approve final Study Design**
  - **Act as a gatekeeper to ensure adherence to workplan and project scope**
  - **Perform workplan updates**
  - **Conduct scientific dispute resolution**
  - **Bring people to meetings to discuss scientific topics**
  - **Request project updates**
  - **Develop the budget**
  - **Propose new projects**
  - **Respond to Policy Group requests**
  - **Act as a repository for stakeholder involvement**
  - **Advocacy for scientific basis of forest practices**
  - **Respond to requests from the Forest Practices Board**
- **The scope and triggering criteria for a formal literature review will be changed in the new processes:**
  - **The scope may be limited to determining if a scientific or technical question has been studied in peer jurisdictions (e.g., BC, OR) in the Project Charter phase.**
  - **A full literature review may not always be needed. The criteria for invoking a full literature review would be case-specific.**

Implementation Enablers

- **Based on comments and recommendations form the CMER and Policy Work group, the triggers for conducting peer reviews of study design documents will change with the new process as follows:**
  - **The Associate Editor of the peer review should now review the revised study design and the response matrix to ensure that all comments are addressed. This increased role for the Associate Editor may require an increased allocation for the Associate Editor.**
  - **The criteria for invoking a full peer review should be limited to:**
    - » **High complexity & unfamiliarity with the issue**
    - » **High potential to result in a substantive rule change**
  - **Option for open peer reviews may remain**
  - **The Criteria for a light peer review should be:**
    - » **Lower complexity and more familiarity with the issue**
    - » **Low potential for substantive rule change**
    - » **Issue is similar to a similar, previous peer reviewed study**
  - **The scope of a light peer review should be limited to ensuring that the project methodology is consistent with project objectives**
- **The Work Group recommends that the new process should be piloted with one of the following AMP projects:**
    - » **Unstable Slopes Criteria Project**
    - » **Type N Eastside Buffer Effectiveness project**
    - » **Forested Wetlands Effectiveness project.**

Consultant Observations on the AMP

- **The distinction between the composition of the CMER and Policy Group is ill-defined. The role of each group is distinct yet the same people serve on both groups raising concerns about independence and diversity of opinion.**
- **The consensus voting model used in the AMP is cumbersome and contributes to the long cycle times. Most rule-making bodies (including the Forest Practices Board) do not require consensus voting. The AMP should consider a less stringent model such as a super majority to approve work products and move them on to the next stage.**

Recommended Future steps

- **The AMP should conduct further Lean redesign projects on the draft and final report and peer review stages of the AMP process to be consistent with the new processes for project chartering and study design.**

Appendix A - As – Is Value Stream Map – Scoping Paper

Title of Process: As-Is Scoping Paper v.1
Created: 4/2/12
Last modified: 5/21/12

Symbol Legend

3
Identify candidates for technical review/ selection panel — Task or activity

SOW Ms-word — Digitized document or data (e.g., MS-Word file, pdf)

Start — Start or end of process

Insurance reqts — Paper document

Connects or splits processing flow

B B — Off-page connectors

36a Interview needed? — Decision point

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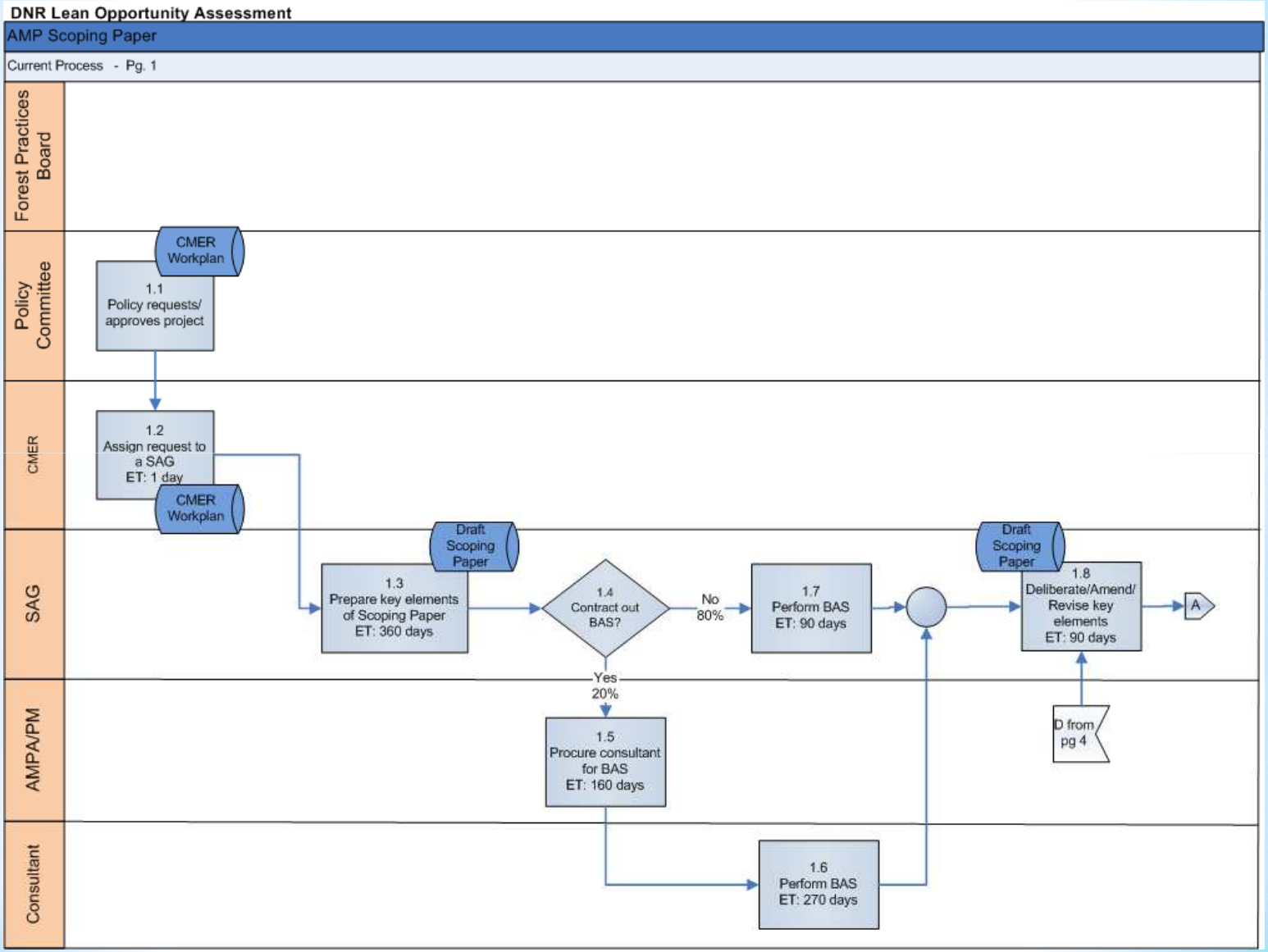
DNR = Department of Natural Resources
SAG = Scientific Advisory Group
BAS = Best Available Science

Non-value added task

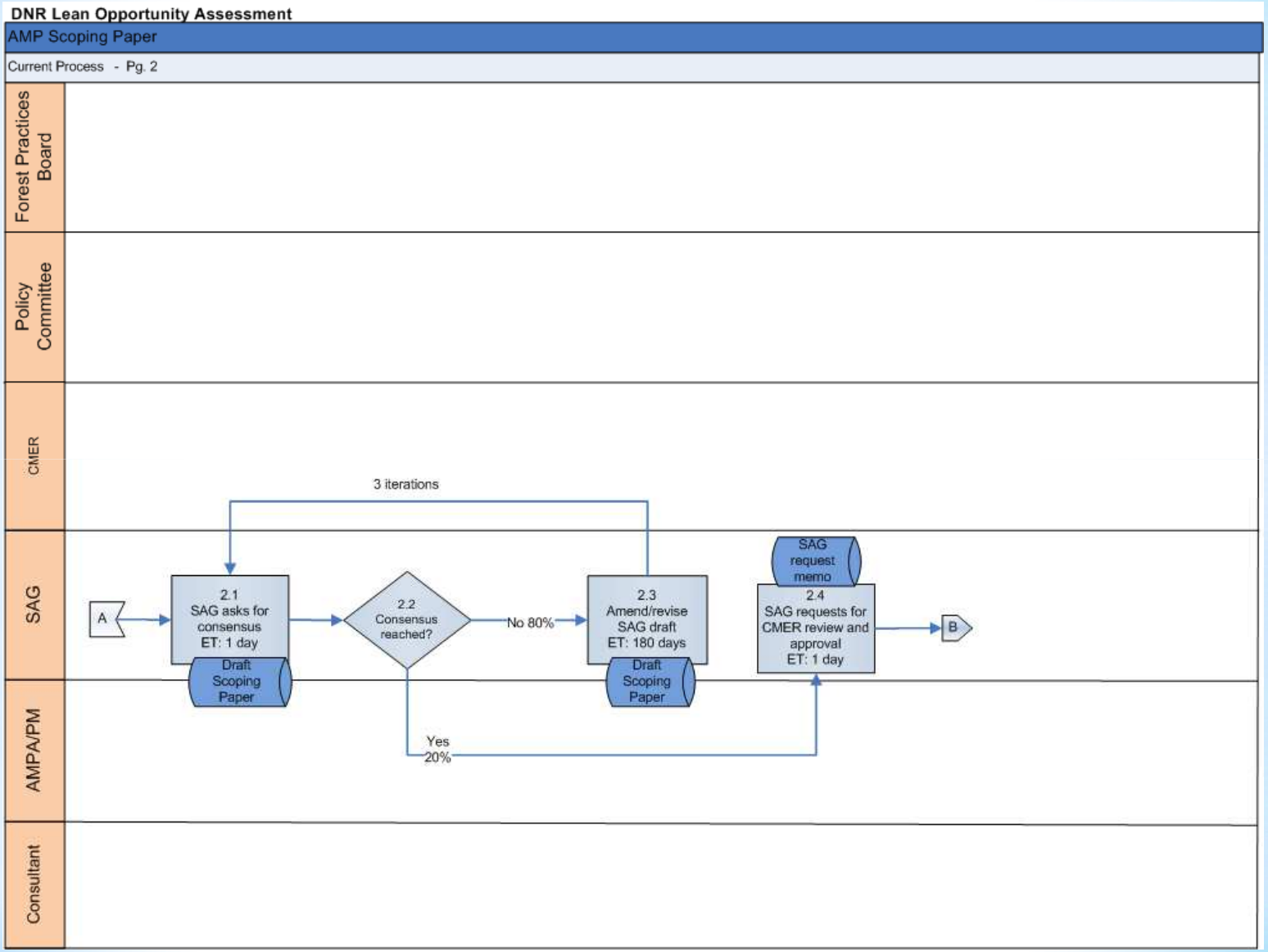
Value added task

Partial value added task

Appendix A - As – Is Value Stream Map – Scoping Paper



Appendix A - As – Is Value Stream Map – Scoping Paper



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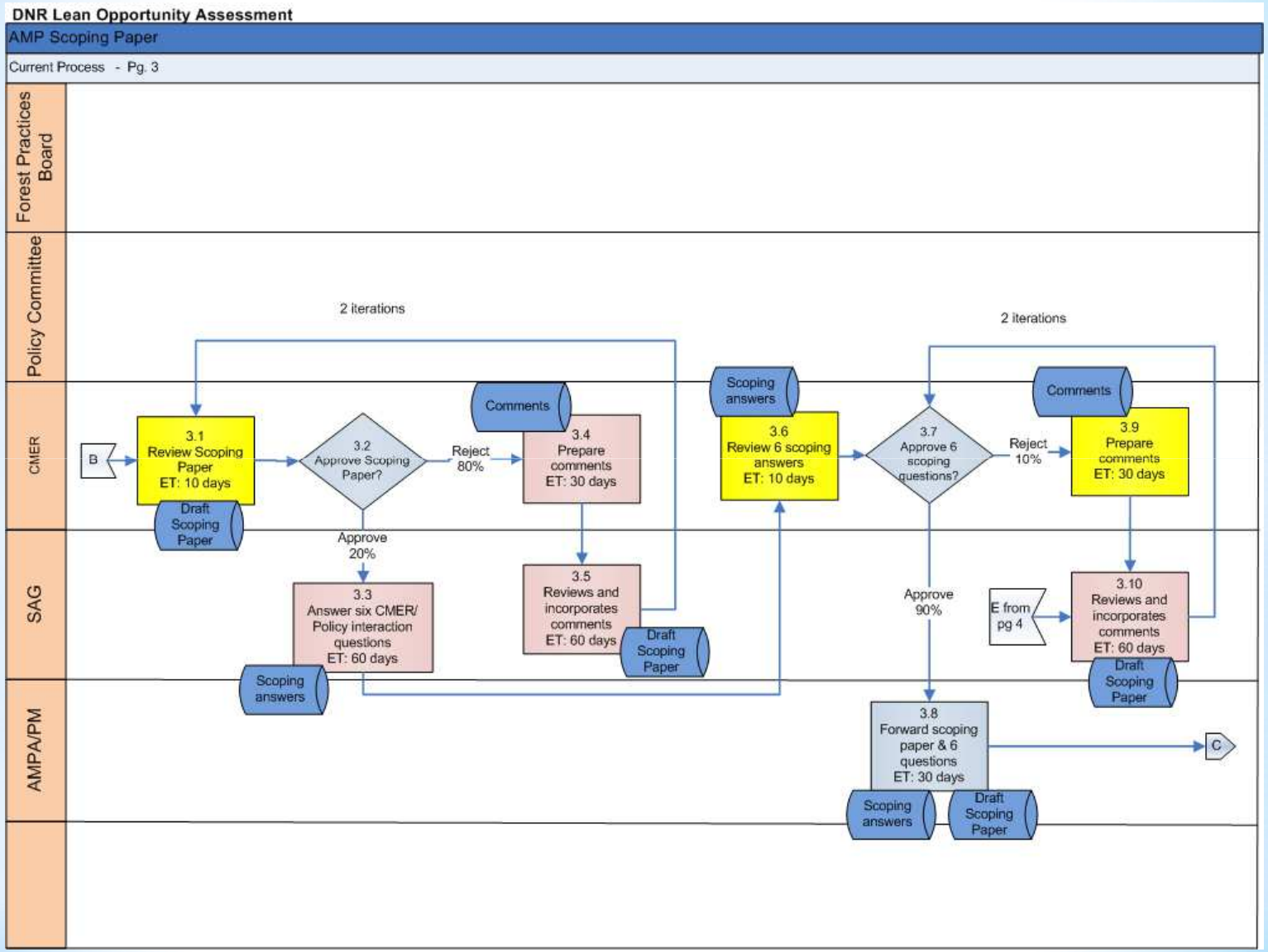
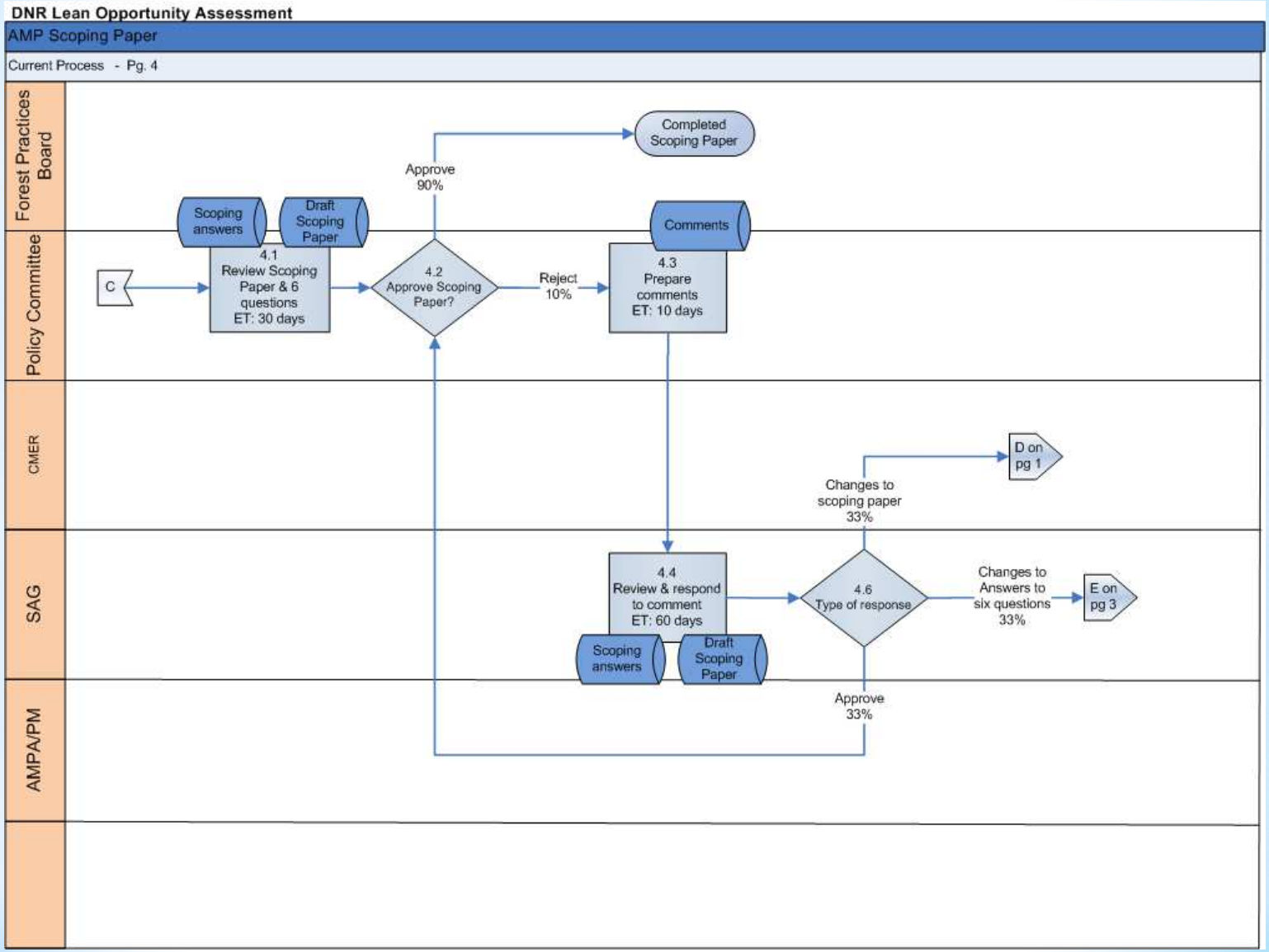


Appendix A - As – Is Value Stream Map – Scoping Paper



Appendix A - As – Is Value Stream Map – Study Design

Title of Process: As-Is Study Design v.2
Created: 4/12/12
Last modified: 5/21/12

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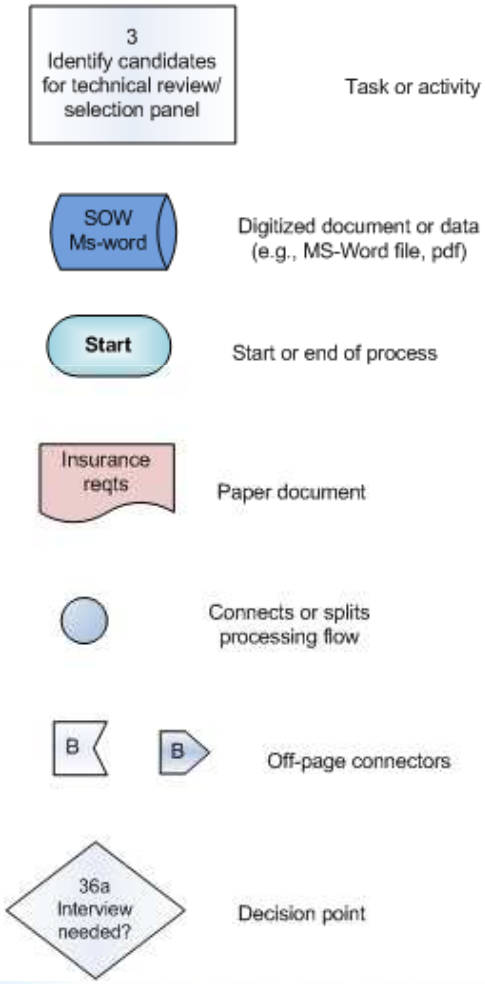

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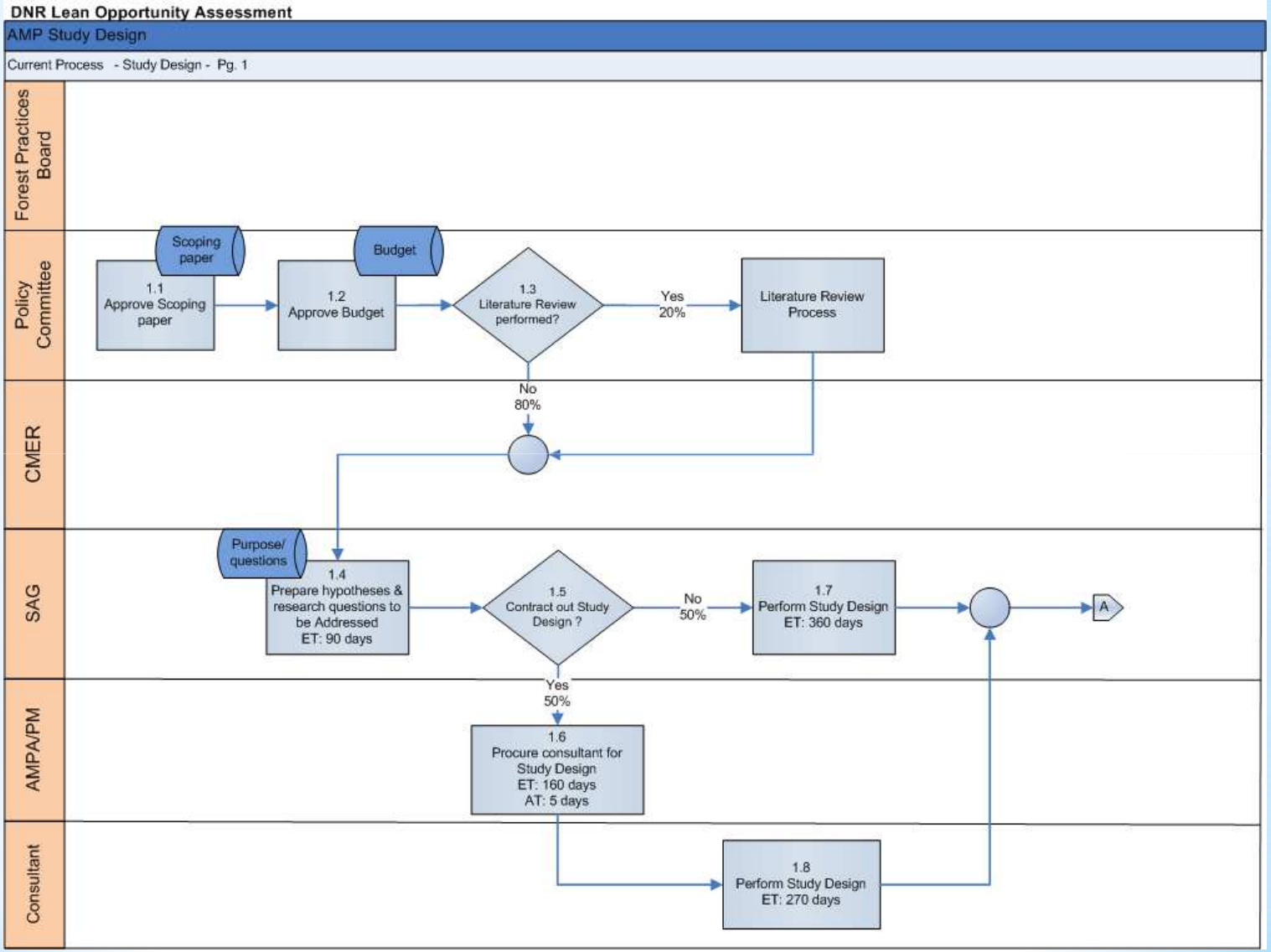
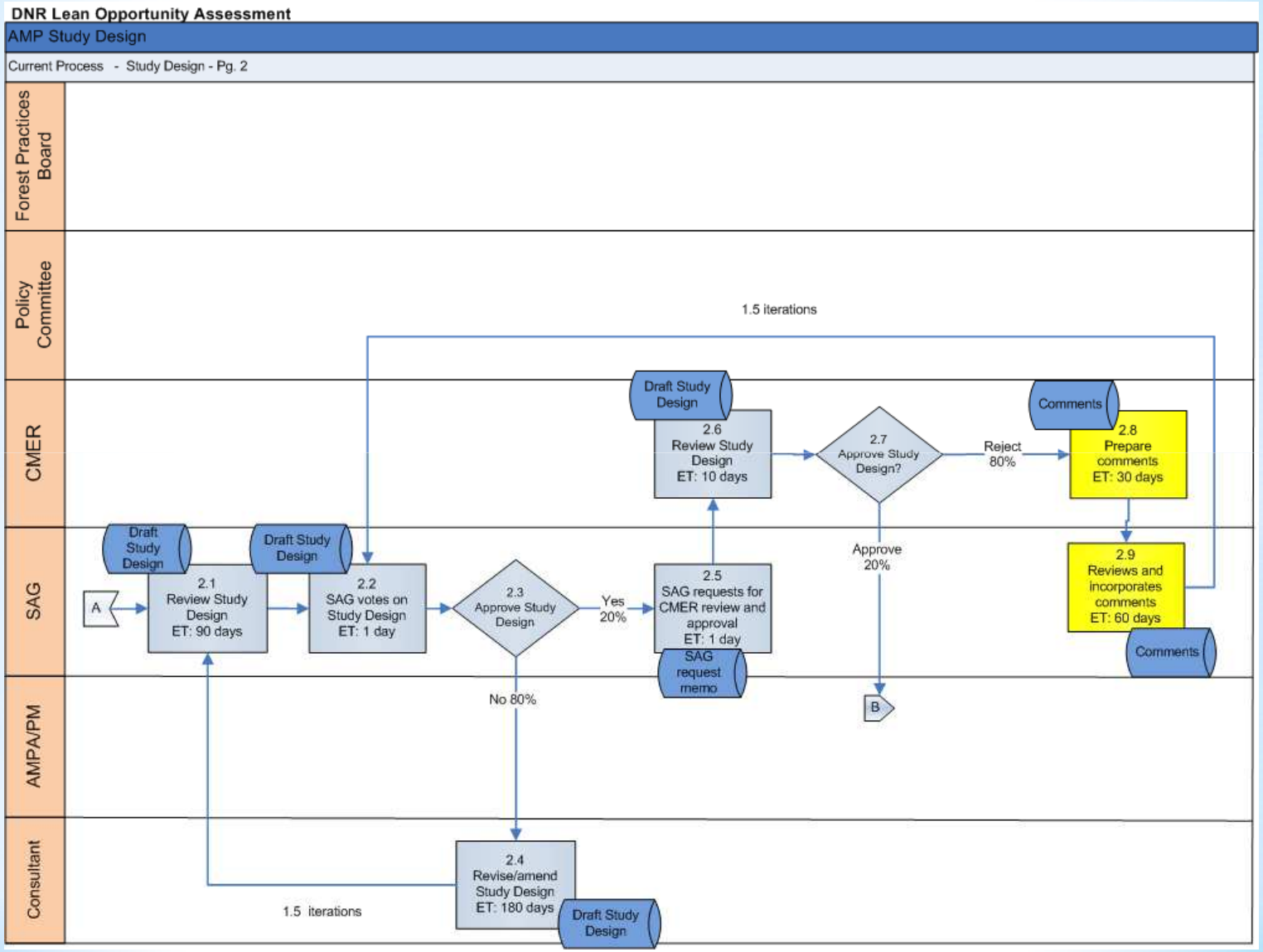
PM = Project Manager
PI = Principal Investigator

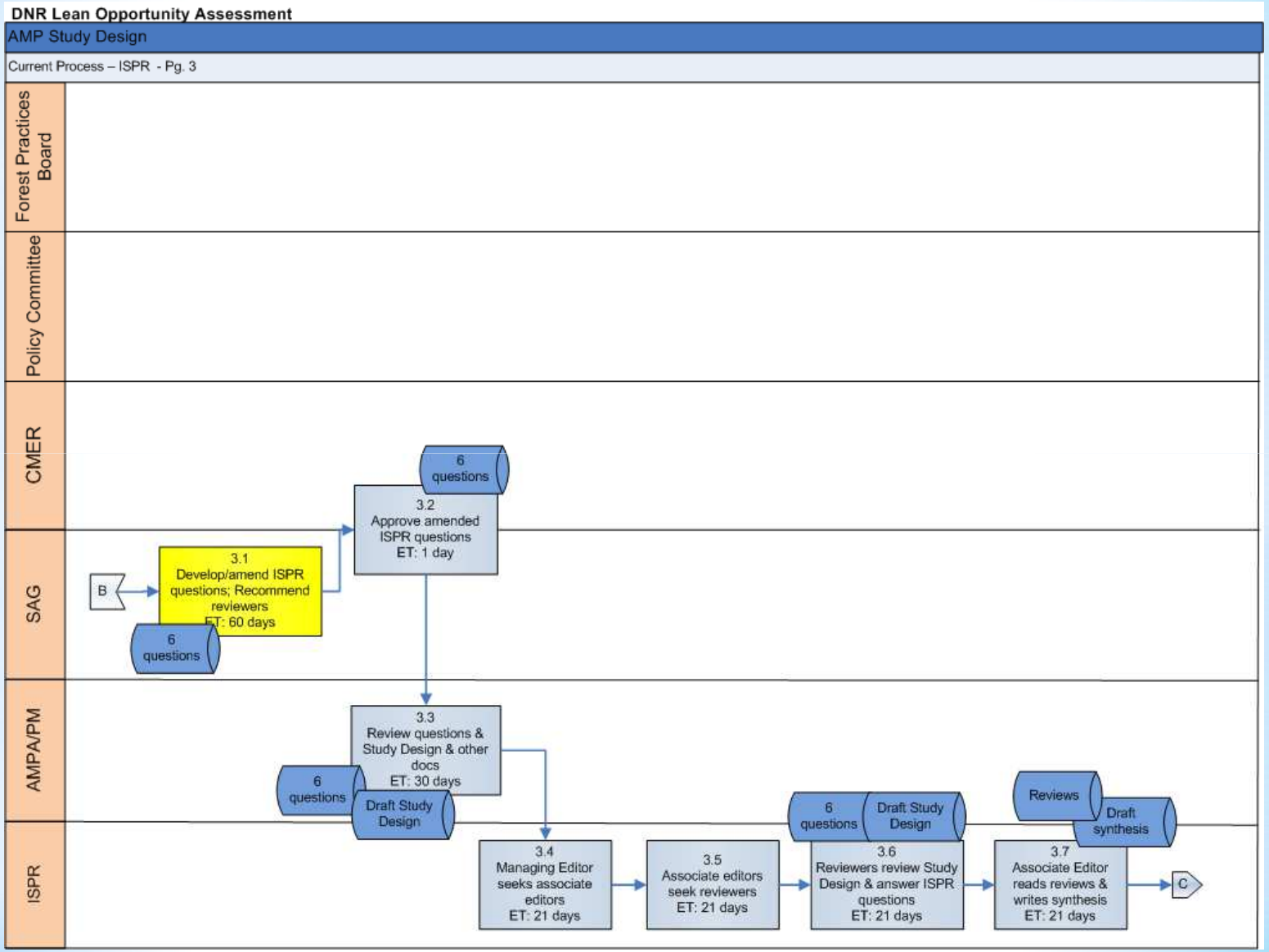
Appendix A - As – Is Value Stream Map – Study Design



Appendix A - As – Is Value Stream Map – Study Design



Appendix A - As – Is Value Stream Map – Study Design



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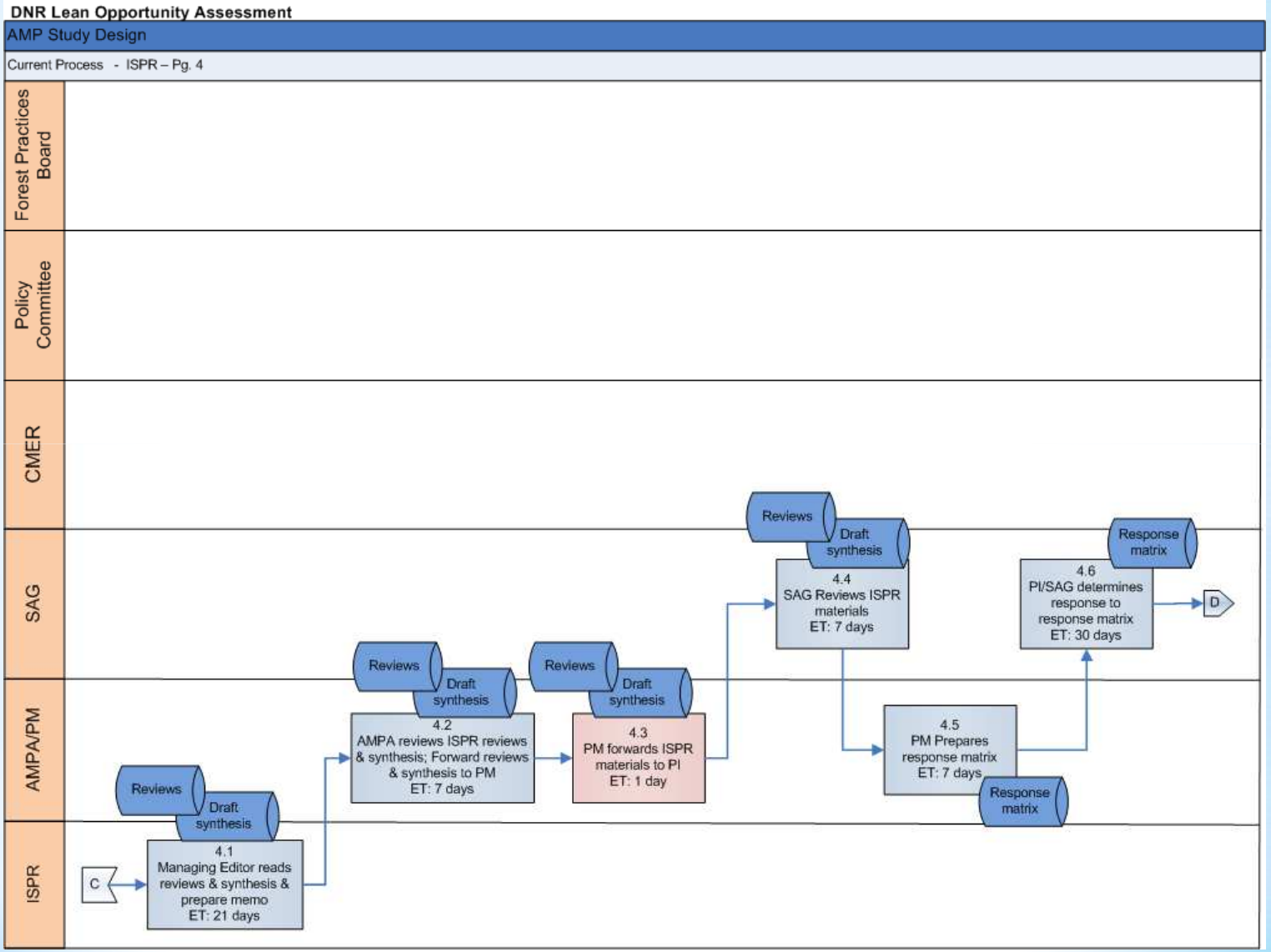
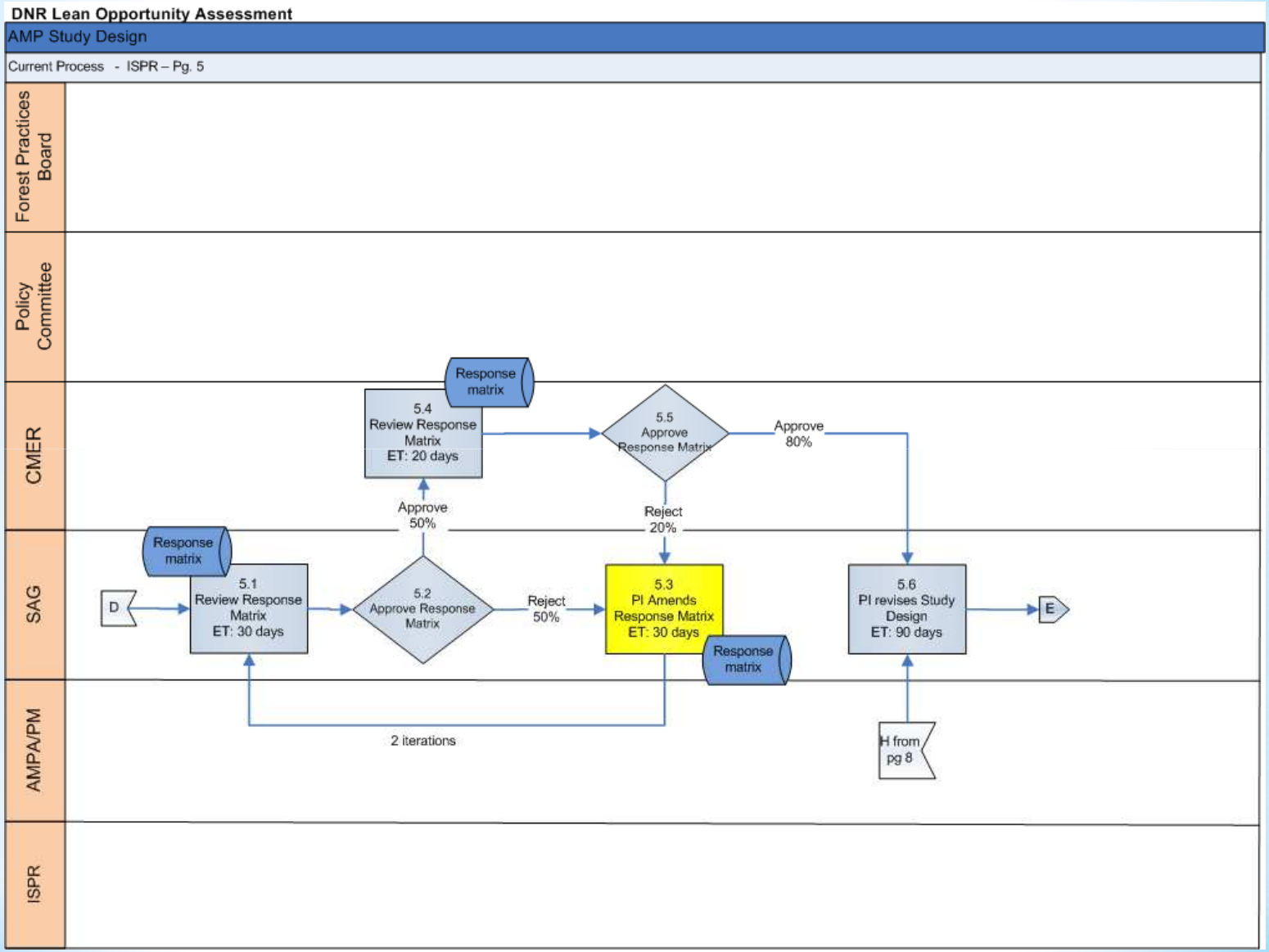


Appendix A - As – Is Value Stream Map – Study Design



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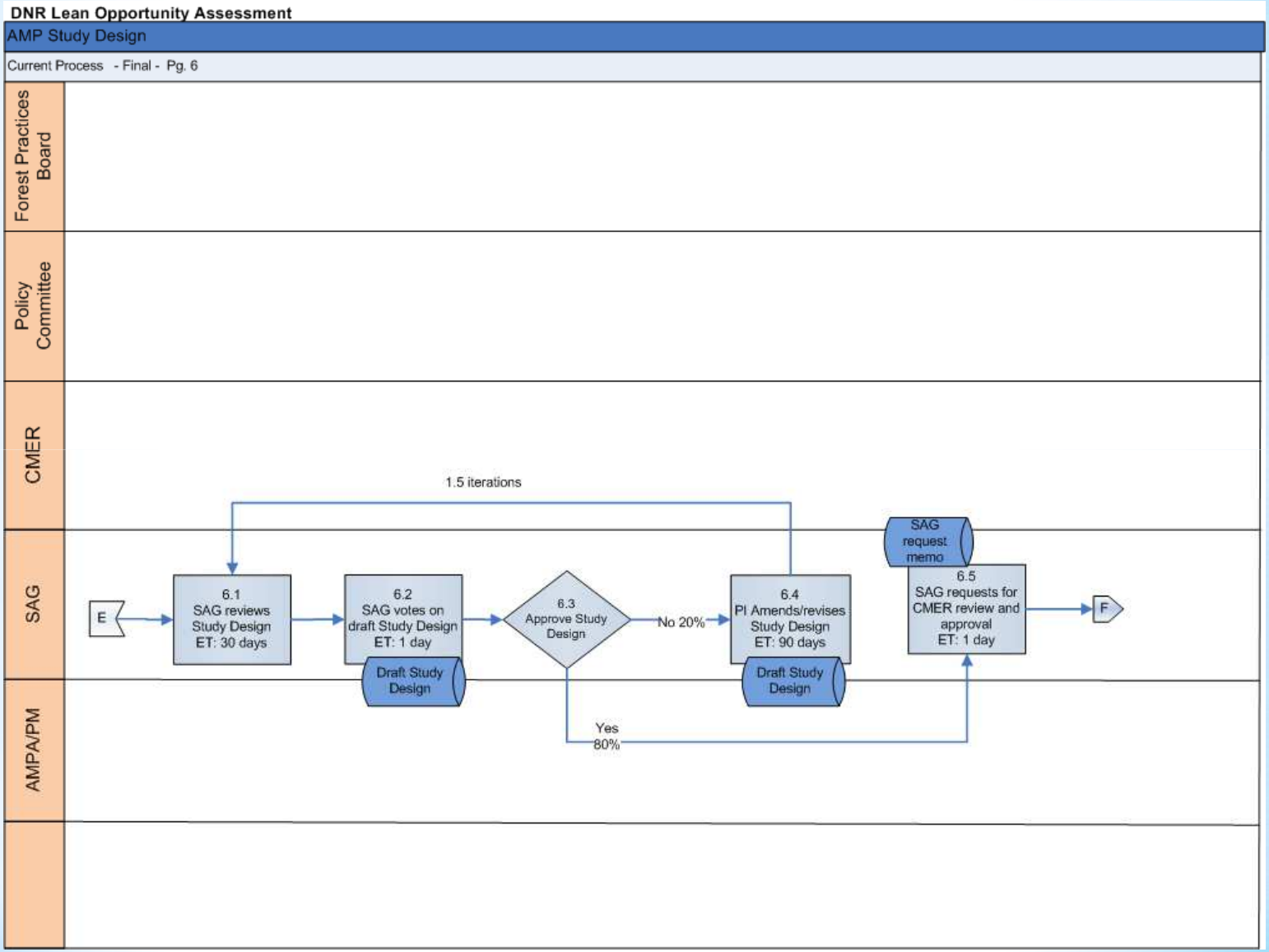

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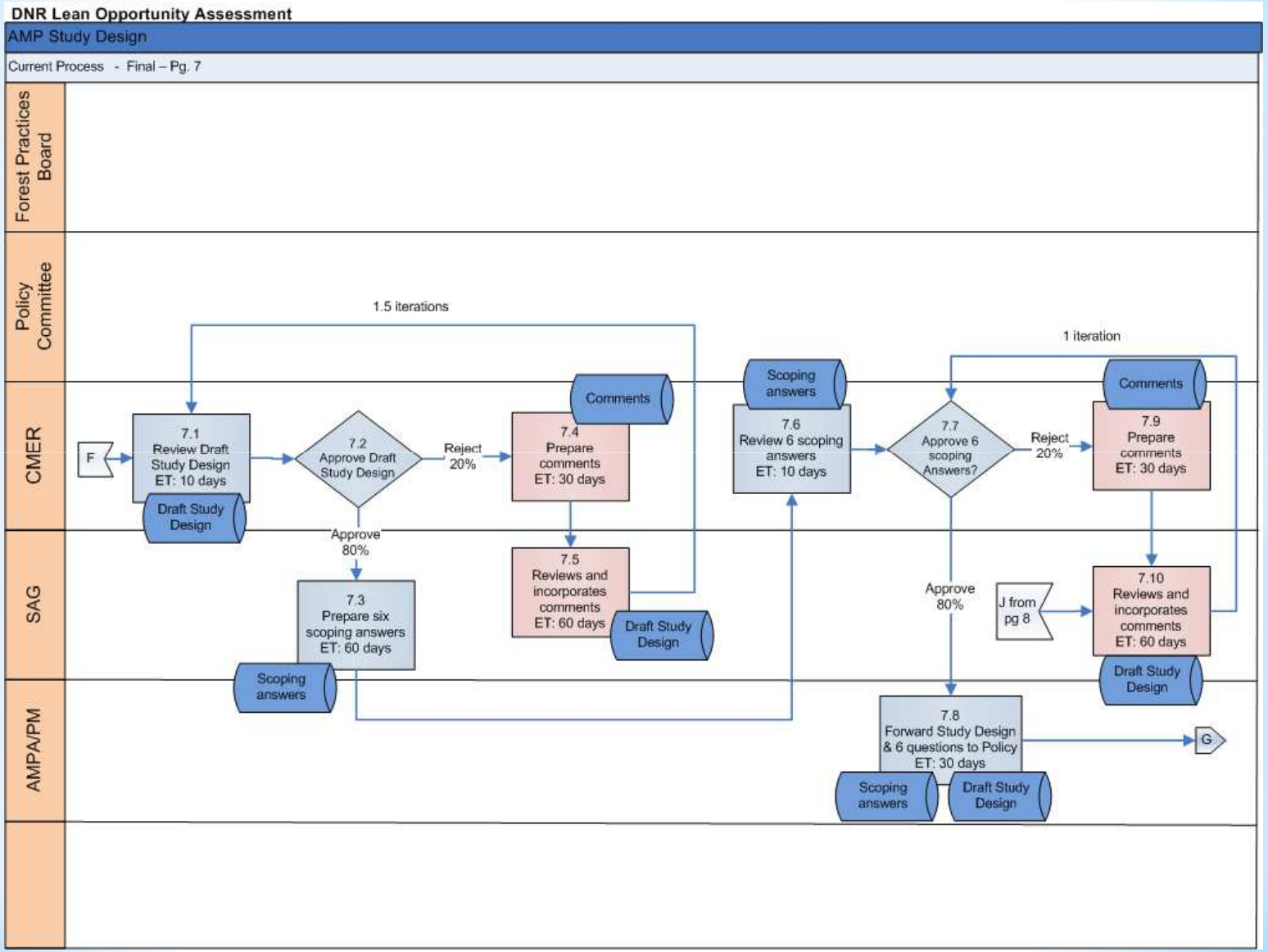
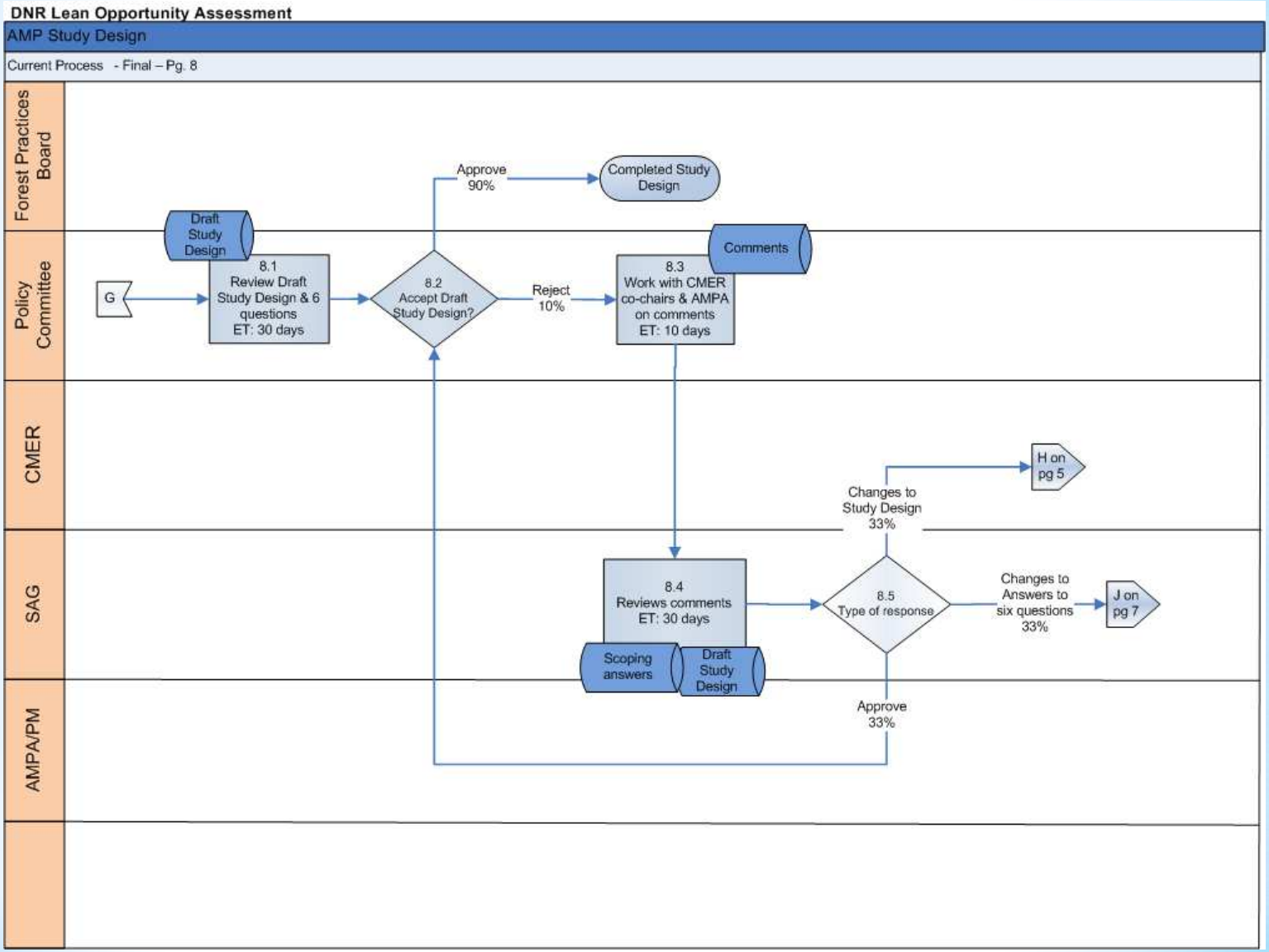
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