PALPro Planner:
Building a Planning Tool for California's Project Approval Lifecycle

PRODUCT REQUIREMENTS DOCUMENT

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Tech Executive
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ABOUT THE TECH EXECUTIVE LEADERSHIP INITIATIVE

The Tech Executive Leadership Initiative (TELI) is a skills-building initiative to prepare experienced technology leaders to engage effectively with public sector challenges.

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PURPOSE

WHAT WE ARE DOING: The State of California has released a statewide technology strategic plan titled "Vision 2023." In support of Goal 4 of this plan — to "Build a Digital Government More Quickly and Effectively" — we have studied the California Department of Technology's (CDT) Project Approval Lifecycle (PAL). PAL is the project approval and oversight process for all information technology (IT) projects undertaken by the State of California.

This document provides an overview of requirements for a proposed tool to help California project teams align technology project planning with the state's budget cycle.

WHY WE ARE DOING THIS: The State of California's existing technology project approval and oversight process is designed for large, fully planned technology "projects." While this provides assurance to the State Legislature and Department of Finance, the current process is cumbersome, slow for all stakeholders, and in great need of reform.

WHAT KEY CHANGES ARE NECESSARY: The CDT needs to reform its project approval and oversight process to better balance oversight and planning with speed and service delivery. To that end, we propose a new project management tool that helps teams to align their PAL projects with state budget cycles. The tool allows project owners to easily schedule deliverables around key budget cycle dates, and improve the PAL workflow to keep teams on track. Implementing this tool will ultimately enable faster project approval under the PAL process.

BACKGROUND OF THE PROJECT APPROVAL LIFECYCLE PROCESS

The State of California's Project Approval Lifecycle (PAL) is an oversight and approval process that guides all information technology (IT) projects undertaken by the State of California. The PAL process is currently divided into 4 stages with accompanying deliverables and gates of approval:

- ▸ Stage 1 (Business Analysis)
- ▸ Stage 2 (Alternative Analysis)
- ▸ Stage 3 (Solution Development)
- ▸ Stage 4 (Project Readiness and Approval)

Each stage requires project teams to fill out a separate application. For example, Stage 1, Business Analysis, requires each project team to submit an application listing the key stakeholders, purpose, and business alignments for the proposed project. The application must then be approved by the CDT before the project can advance to Stage 2.

Stage 1 Business Analysis

California Department of Technology, SIMM 19A.2 (Rev. 2.4), Revised 4/2/2018

1.1 General Information	
Agency or State Entity Name:	
Organization Code:	
Proposal Name:	
Proposal Description:	
When do you want to start this project?:	Date Picker
Department of Technology Project Number:	0000-000

1.2 Submittal Information	
Contact Information:	
Contact First Name	Contact Last Name
Contact Email	Contact Phone Number
Submission Date:	Date Picker
Version Number:	
Project Approval Executive Transmittal	
Attachment:	Include the Project Approval Executive Transmittal as an attachment to your email submission.

Figure 1: Stage 1 Business Analysis form, the first stage of the PAL process

Currently, state agencies take 14 months on average to complete a full PAL approval. The most time is spent on Stage 2 of the process, Alternatives Analysis, during which agencies are required to document their proposal's primary business objectives and evaluate alternative courses of action[1]. PAL approvals can also be easily delayed. According to state employees who have previously completed the process, some of the most common reasons for delay include slow approvers, stakeholders who are not fully dedicated to the project planning process, and the use of single-user Microsoft Word forms that are difficult for teams to edit collaboratively.

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1   California Legislative Analyst's Office. Aligning the State's IT Project Approval Process with the Annual Budget Process. Accessed April 1, 2021. lao.ca.gov/Publications/Report/3976.

SIGNIFICANCE OF
THE STATE BUDGET CYCLE

Overview of the State Budget Cycle and Alignment

Another common reason for PAL project delays is misalignment of project schedules with the State of California's budget process. All California technology projects that require additional state funding must consider the immovable milestones of the annual state budget cycle to begin implementation as expeditiously as possible. Without attention to these milestones, project teams can miss their funding opportunity and may have to wait for the next year's budget cycle to begin implementation.

Figure 3 illustrates the State of California's budget cycle. The state's fiscal year starts on July 1st and runs until June 30th of the subsequent calendar year. Budget formation for a given fiscal year starts as early as fall of the prior year. An initial budget is proposed in January, and limited budget revisions are allowed in the spring. Funds are then dispersed beginning on July 1st.
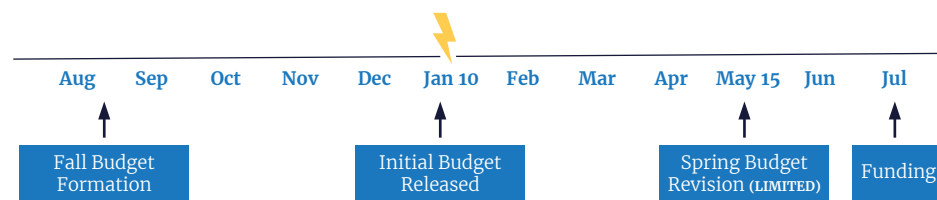

Figure 3: Overview of the State of California's budget process

It is critical that PAL projects align with these key budget cycle deadlines. If a PAL project misses the fall budget formation deadline, for example, the project would be at risk of delay until the next fiscal year.

Based on our conversations with key stakeholders and past participants in the PAL process, August is the best time to start the PAL process. A project approval process that begins in August is likely to be approved in that year's budget cycle. If a project team waits until October to begin, the PAL process is at risk of being delayed for another year. If a team waits until December, the project will miss the state budget cycle.
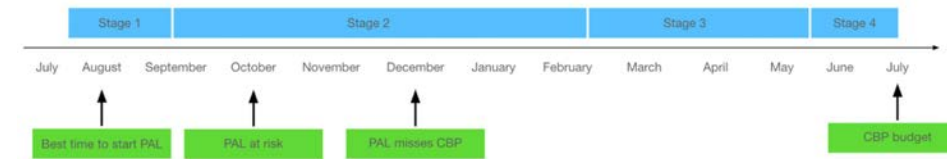

Figure 4: Overview of ideal PAL project timeline

Example scenarios with the PALPro Planner

We propose that CDT use the provided PALPro Planner so that projects can be completed more efficiently. The purpose of the PALPro Planner is multifaceted: it would allow project teams to align with the budget cycle, keep PAL projects on track to reach committed deadlines, and enable teams to learn from other related projects.

The following figures illustrate how the PALPro Planner could help teams align with the state budget cycle. These scenarios also illustrate how delays in project approval milestones can lead to delays in obtaining funding for projects.

In the scenarios below, we differentiate between "small" and "big" PAL projects. Small PAL projects, such as a project that uses open source technology, may not need to go through a formal budget evaluation or detailed requirements process. Big PAL projects require significant investment and thorough review by multiple stakeholders.
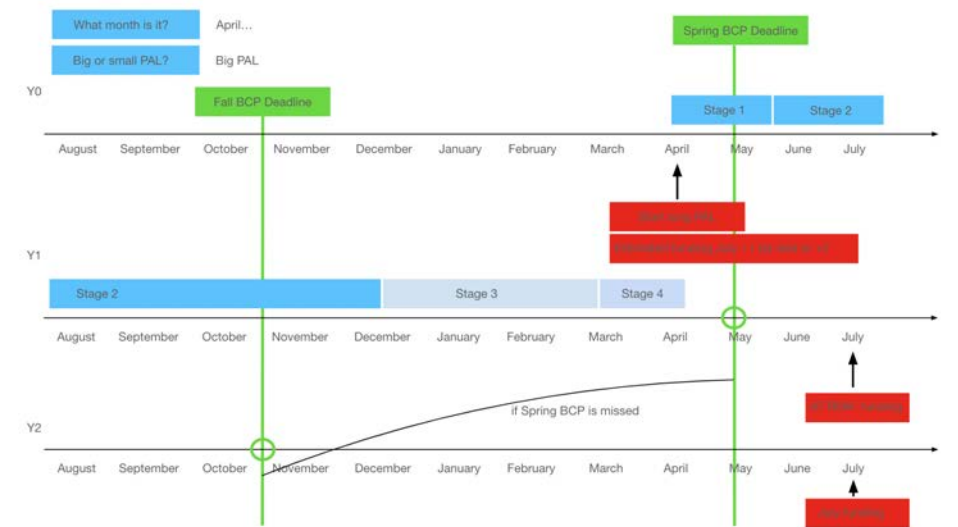
Scenario 1: Small PAL project, October start date
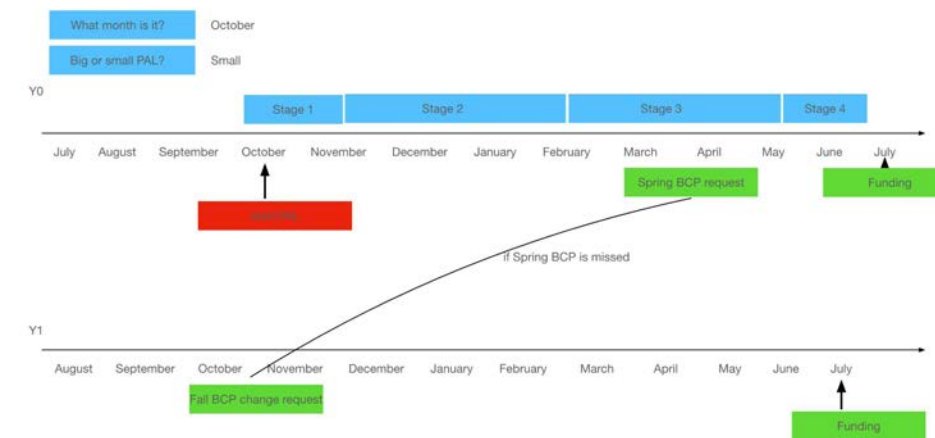
In the above scenario, if a team begins a small PAL project in October instead of August, the budget change proposal request (BCP) process would move to the following fall. This would delay the project to the next budgetary year, as shown above.

Scenario 2: Big PAL Project, April start date

In the scenario above, if a team begins a big PAL project in April instead of August, the estimated funding process may extend an additional year or 2 years.

Scenario 3: Small PAL, April start date

In the scenario above, a team initiates a small PAL project in April. Estimated funding may be delayed by as much as a year.

Scenario 4: Small PAL project, February start date
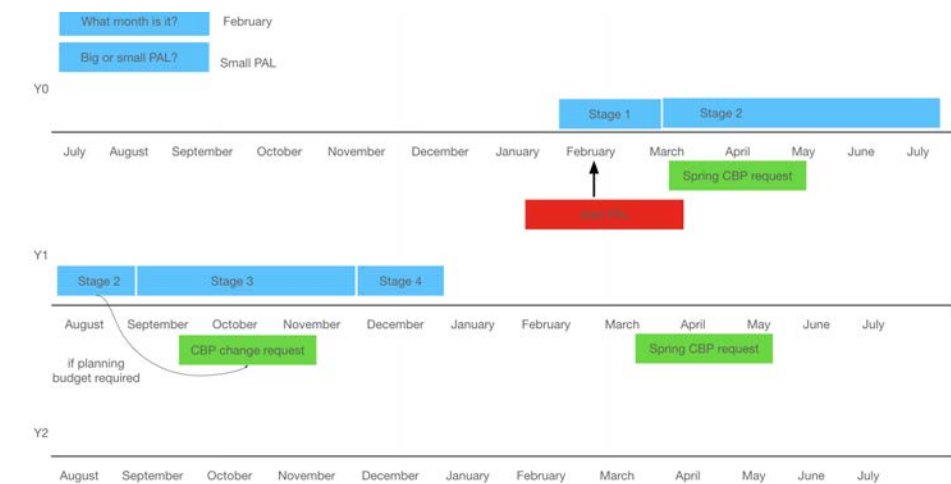
In the scenario above, a team initiates a small PAL project in February. Although the team has the possibility of having the California Budget Proposal (CBP) request approved in spring of that year (year 0), it most likely will not be approved until the following January. Funding would thus not be disbursed until July of year 1.

PALPRO PLANNER
FUNCTIONS AND NEXT STEPS

Below, we list key functions of the proposed PALPro Planner tool:

▸ After answering high-level questions about their project, project owners are provided a recommended (and adjustable) schedule based on historical sizing for each PAL stage and budget cycle submission deadlines.

▸ Notifications (via email or mobile) remind project owners when scheduled deadlines are approaching.

▸ Team members are able to collaborate on PAL documents within the tool using commenting and tagging features.

▸ Notifications inform users about actions that require their attention.

▸ Approvers are notified when they have approvals pending and are reminded as deadlines approach.

▸ Team members can flag specific areas of documents to direct individual approvers toward sections that need their review.

▸ Approvers can provide feedback directly in the tool.

In order to build such a tool, CDT would need to:

▸ Start a PAL process for building the tool. In this vein, department officials would need to complete Stage 1 of their PAL process, by filling out an application of the Stage 1 Business Analysis and SIMM 45 Appendix C forms. We have provided sample text for these forms in our online appendix.[2]

▸ Run a discovery sprint with key stakeholders to refine the product requirements outlined in this product requirements document (PRD).[3]

▸ Leverage challenge-based procurement to enable vendors of products in adjacent markets to propose innovative solutions.[4]

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2 Our online appendix with the Stage 1 Business Analysis and SIMM 45 Appendix C forms can be found at: aspentechpolicyhub.org/PALPro_Online_Appendix/

3 A discovery sprint is a process where product teams spend a few days brainstorming and prototyping a product.

4 Challenge-based procurement is a model by which governments release requests for proposals (RFPs) that detail the problem they are trying to solve, for which companies pitch different solutions. This new approach to procurement differs from the standard approach, where governments release RFPs that are prescriptive and detail exactly what vendors need to deliver.
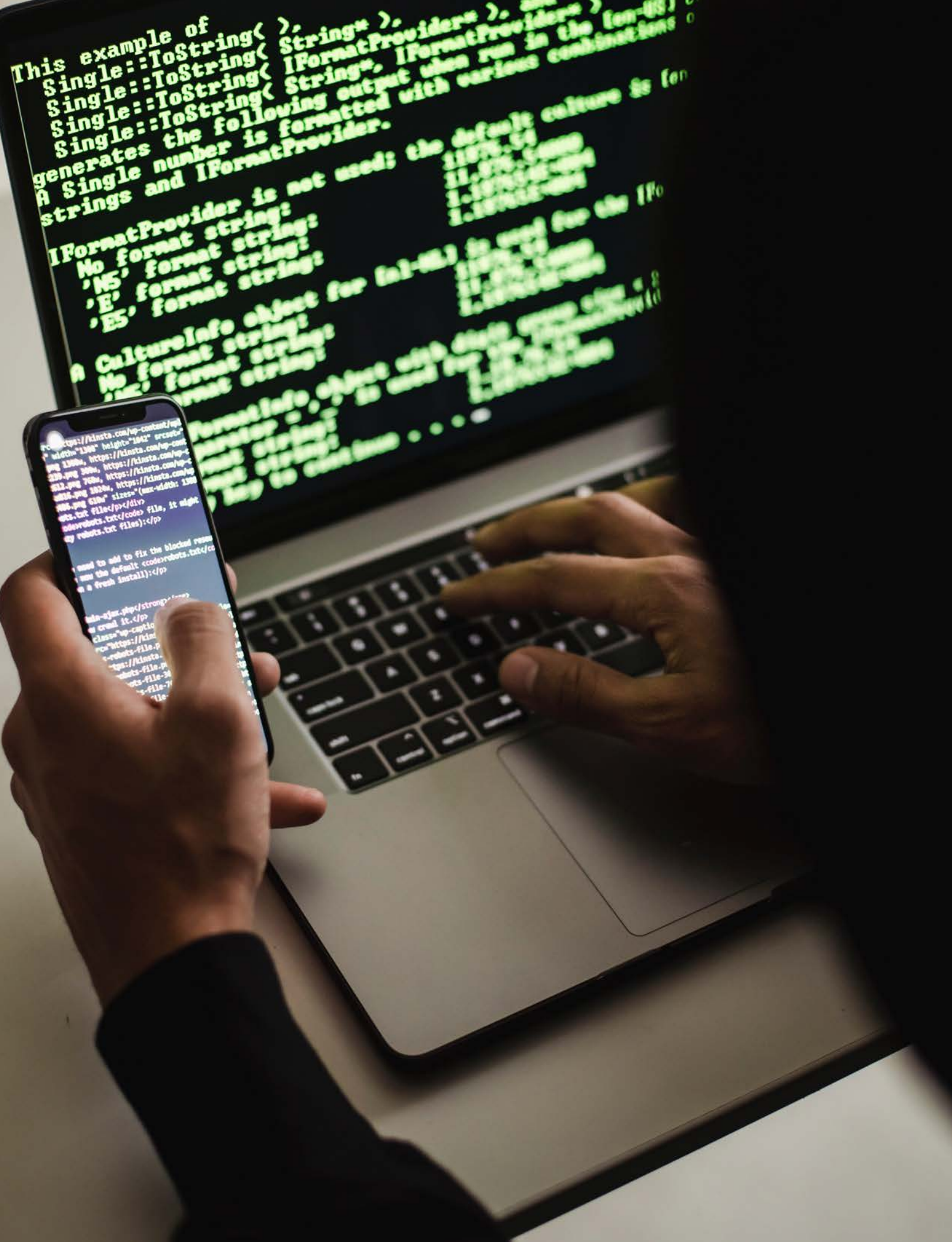
USER JOURNEY THROUGH THE APPROVAL PROCESS USING THE PALPRO PLANNER

The PALPro Planner includes a tracking dashboard with an overarching program view that shows all current projects, along with which stage they have reached in the approval process. Project owners can track PAL stages to budget timelines for individual projects. If a particular project is going off schedule, the PALPro Planner will notify and alert the project owner. Approvers are able to approve, reject, or delegate approvals and/or provide feedback.

USER JOURNEY: PROJECT OWNER	USER JOURNEY: PROJECT APPROVER
Project Owner Goals:	**Approver Goals:**
‣ The tool provides project owners with visibility into their own projects.	‣ The tool provides the approver with visibility into project details they are asked to approve.
‣ The tool provides clarity around the approval process, and shows the progress of the approval at any stage of the process.	‣ The tool shows the approver what needs to be approved, why, and by when.
‣ The tool allows schedules to be shared, distributed, and collaborated on more easily.	‣ The tool enables approvers to ask for a business justification as needed.
‣ The tool houses best practices and provides templates for completion of various milestones of the PAL process.	‣ The tool allows approvers to manage approvals, rejections, and delegations, and to provide detailed feedback.
‣ The tool allows users to understand the consequences of missing key deadlines and helps project owners manage expectations.	

PALPRO PLANNER REQUIREMENTS

New Project Configuration

Using the new project configuration functionality, users fill out a questionnaire that gathers information about important characteristics of the project, including predicted project size, target budget cycle year, and whether funds are needed for project planning.

New Project
PAL Alignment

Is your proposed project likely to cost over $5M
○ Yes
● No

Has your PAL process already begun?
● Yes
○ No

When did you begin your Stage 1 analysis? [April 2020]

Will you need to request funds to complete your PAL process?
○ Yes
● No

What is the target budget cycle for your project's funding? [July 2021 ▾]

[Next]

Figure 5: A sample new project questionnaire

After providing this information, users are presented with a suggested schedule for their PAL deliverables, with the option to interactively edit the duration or time frame for any of the milestones. This is especially important for teams that decide to use the tool mid-project.

New Project Configuration Requirements

The PALPro Planner should be able to:

Enable project owners to configure new projects for management within the tool.

▸ Project owners should be able to provide project details, including:
  ▸ Predicted project size (measured in cost, duration, staffing, etc.);
  ▸ Whether the project has already begun or not;
  ▸ Which budget cycle the project is targeting for its funding; and
  ▸ Whether the project needs funds to complete its planning work.
▸ Project owners should be presented with a suggested PAL deliverable schedule based on information provided.
▸ Project owners should be able to interactively edit the suggested schedule to meet their individual project needs. Possible edits include:
  ▸ Changing the start date of any given milestone;
  ▸ Changing the duration of any given milestone; and
  ▸ Realigning the start or completion of the entire process.

Enable project owners to configure in-progress PAL projects for management within the tool.

▸ Project owners should be able to provide the project details listed above, as well as additional details relevant to in-progress projects, including:
  ▸ The timeframe in which the project team began their PAL process; and
  ▸ Which stage the team is currently executing.
▸ Project owners should be presented with a suggested schedule for their remaining PAL deliverables based on the information provided.
▸ Project owners should be able to interactively edit the suggested schedule, including for deliverables that have already begun (i.e. for which start dates may be in the past).

Enable project owners to add team members to each project.

▸ Project owners should be able to add team members to provide them visibility into the project within the tool.
▸ Project owners should be able to invite external users (e.g., contractors/consultants).
▸ Project owners should be able to configure the role for each project team member. These roles may include:
  ▸ Project owner/administrator;
  ▸ Project team member; and
  ▸ Approvers (CIO, enterprise architects, etc.).

Project Dashboard

Using the project dashboard functionality, project owners, approvers, and regular team members should see an overview of their workflows.

For project owners, the tool should provide visibility over the project and the approval process, and should alert the owner to any impending deadlines. For approvers, the tool should provide visibility into project details, the overall approval process, and the underlying business justification. Approvers should also have the ability to approve, reject, delegate, or provide quick feedback.

Upon accessing the tool, a project owner should be presented with a list of projects for which they are an owner or participant, along with clear indication of any project deliverables that are off track or require attention. A project deliverable may require attention if the user needs to approve a document, respond to comments from another user, or realign a project that is off track. Similarly, other project team members and approvers should see a list of projects in which they participate, as well as calls to action for any deliverables needing attention or pending approvals.

Project Dashboard Requirements

Below, we list all of the features required for the project dashboard in the PAL-Pro Planner. In the project dashboard:

All users should see a list of projects in which they are a participant or owner.
- All users should see a summary of the current status of each project. For example, the dashboard should at least show:
  - The current PAL stage of the project;
  - The project size;
  - Whether the project is pending approval, and if so, who owns that approval;
  - The deadline of the next milestone; and
  - An assessment of whether the project is on track to reach the next milestone.

All users should be provided a link to view more details about a project.
- All users should be alerted to items needing their review.
  - All users should see whether they have comments that need their review.
  - All users should see whether they have pending approvals assigned to them.
  - All project owners should clearly see whether they have projects that require schedule adjustments due to missed milestones.
  - All users should see details of any items that might need their review.

All users should be able to initiate a new project via a link on the dashboard. This link would lead to the new project configuration workflow described above.

Good morning, Matt

Here is a look at your projects:

[New Project]

0 - Projects Need Approval	2 - Comments That Mention You	2 - Outstanding Requests
	Simm45 Appendix A	Simm45 Appendix A

Attention Required

Stage	Your Project	Amount >$5M	Current approver	Days in Queue	Days Before to Start of Next Stage
Stage 1	Business Modernization—California Board of Accountancy	Y	Pari	12	45 - **SAFE**
Stage 2	Business Modernization—California State Board of Pharmacy	N	Greg	76	10 - **HIGH RISK**
Stage 4	Business Modernization - California State Accountancy	Y	Rebecca	n/a	complete

Figure 6: An example of a project dashboard

Project Detail View

Using the project detail view feature, users should see a summary view of any individual project. This project detail view should make clear where the project stands in the PAL cycle across various stages.

The project detail view should include:
- A schedule overview, a visually display of the schedule milestones;
- A list of schedule milestones;
- A document repository that provides all key documents associated with a particular project, along with indicators of outstanding comments or actions; and
- A discussion feature that allows approvers to comment on the project, message other stakeholders, or track specific areas for attention.
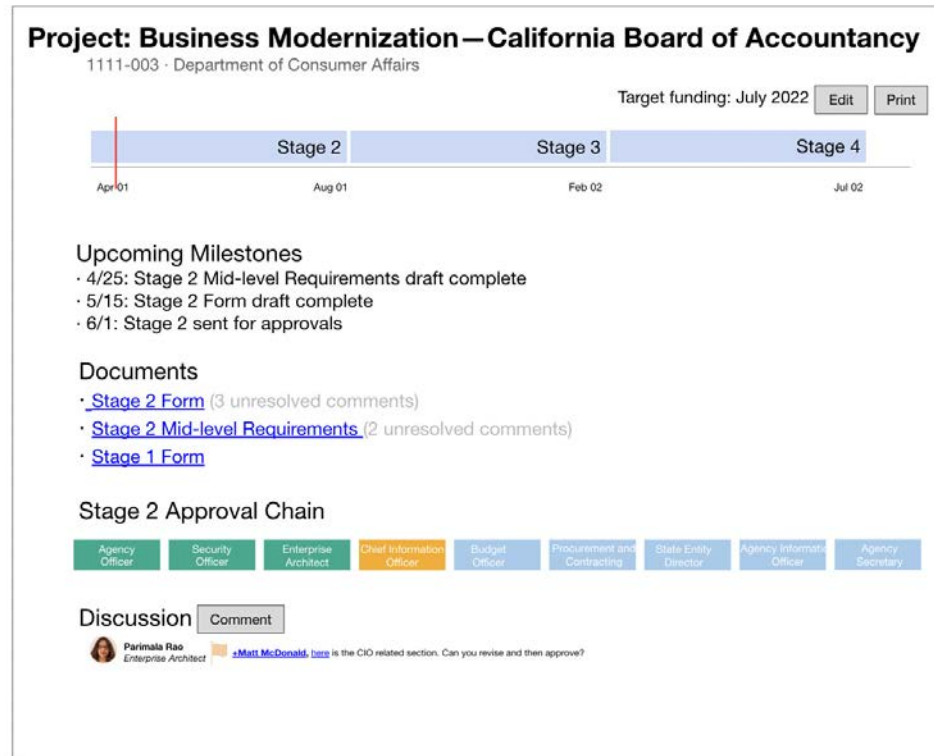
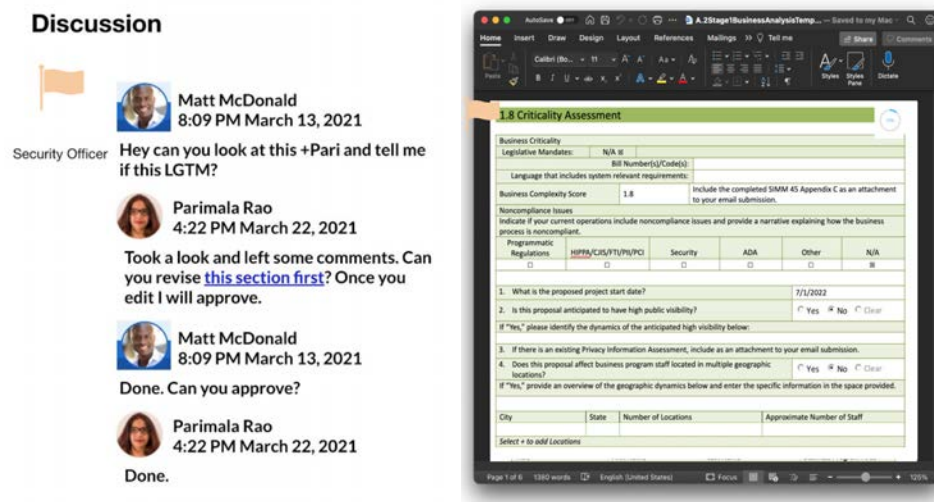*Figure 7: An example of the project detail view*

Figure 8: An example of a discussion and document repository feature in the project detail view

Project Detail View Requirements

Below are all of the features required for the project detail view in the PALPro Planner. Using the project detail view feature:

All users should see a visual representation of the PAL schedule for the project

▸ All users should click the visual representation of the project to see more details.

▸ All project owners should have a link to edit the project's PAL schedule.

▸ All users should be able to print a longer and more complete version of the project's PAL schedule.

All users should be able to view a list of PAL milestones for the project.

All users should be able to view a list of documents associated with the project, and be able to view the documents by clicking on them individually.

All users should be able to view any pending approvals required for the current PAL milestone.

All users should be able to view and contribute to the project discussion.

Interactive Schedule Planner View

Using the interactive schedule planner view, users should be able to view a detailed schedule for the PAL deliverables for a project. There should be different views available, depending on the user's role.

View 1: Using view 1, the project owner can align PAL stages to relevant budget timelines for individual projects. This could be achieved by allowing project owners to interactively drag milestones on a timeline.

View 2: Using view 2, a project owner can see when any particular project is at risk for not making the targeted budget cycle.
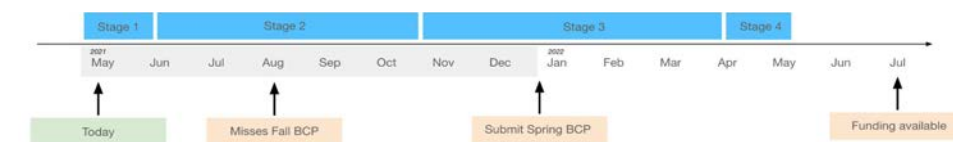
View 3: Using view 3, a Project Owner can review historical data and per-project sizing to estimate stage lengths.

View 4: Using view 4, a project team member can use the printed version of the schedule to understand deliverables and milestones:

View 5: Using view 5, a project owner is alerted about any potentially at-risk milestones.

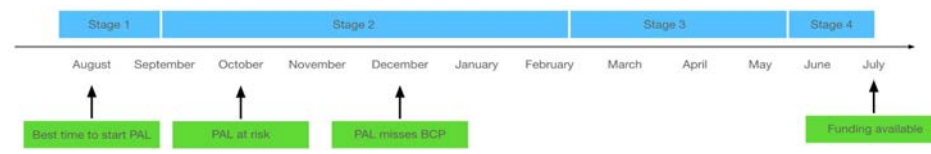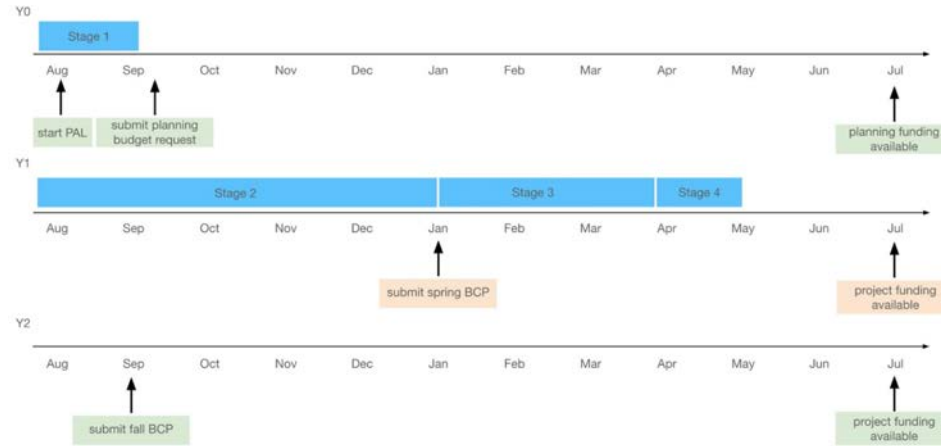## Interactive Schedule Planner View Requirements

Below is a list of features required for the interactive schedule view feature in the PALPro Planner. Using the interactive schedule view feature:

All users should be able to see a full, visual representation of the milestones associated with the project's PAL process.

- All users should see key budget deadlines.
- All users should see a visual indication of milestones that are at risk, either because the deliverables are not on track or because the proposed schedule is unlikely to happen on time (for example, if the project relies on using the state's spring budget change proposal process, which typically does not fund new requests).

All users should be able to print a full-size visual schedule.

Project owners should be able to modify the schedule interactively, for example by dragging project phases across a timeline.

- Any updates to the schedule should trigger a notification that is sent to alert all project team members.

Collaboration Features

A core functionality of PALPro is enabling collaboration among team members. The tool should send notifications about required actions across stakeholder groups, and should allow for the direct commenting and review of documents. Approvers who are due to approve a document should receive automated email notifications (and potentially mobile notifications, if a mobile version of the proposed solution is deployed). Approvers should also receive notifications for all other key events including:

- Comments that are made in the Discussion tab;
- Action items that are assigned within documents;
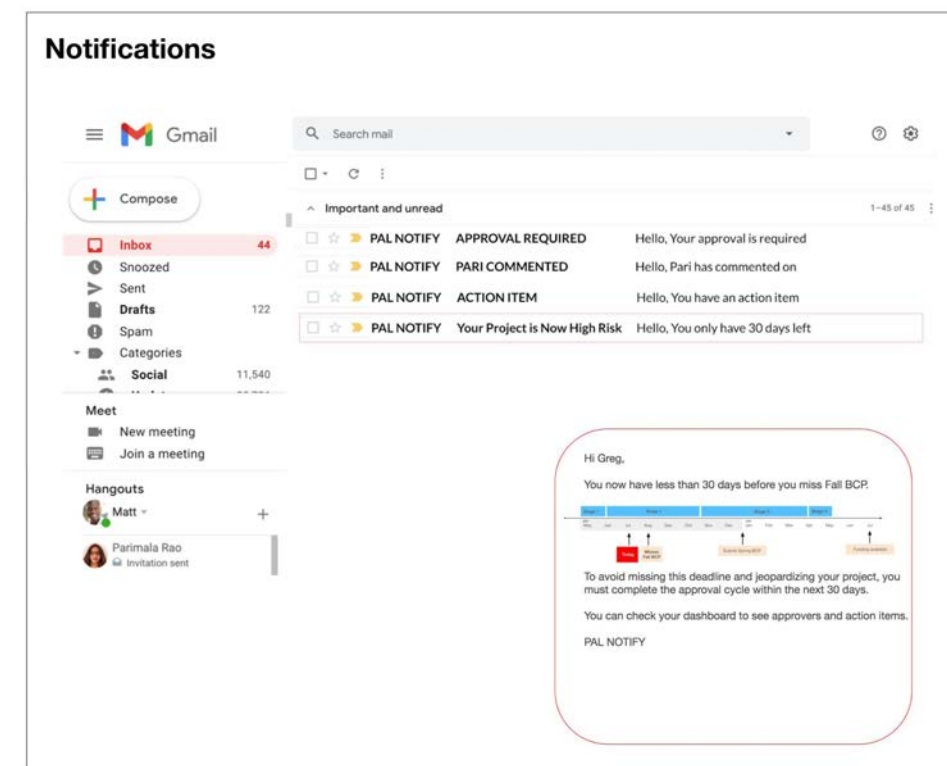- Any upcoming milestones; and
- Any final approvals.

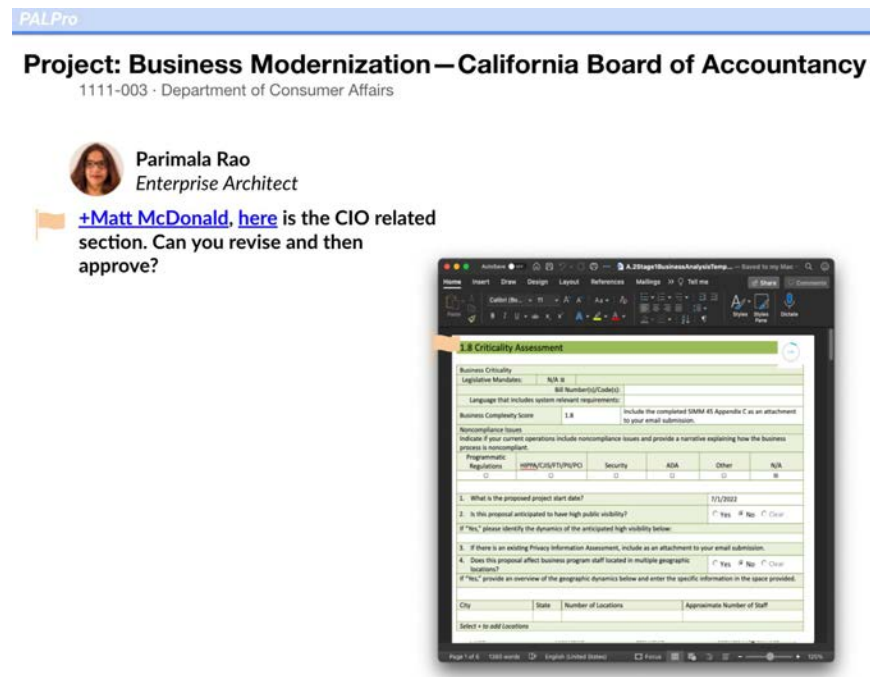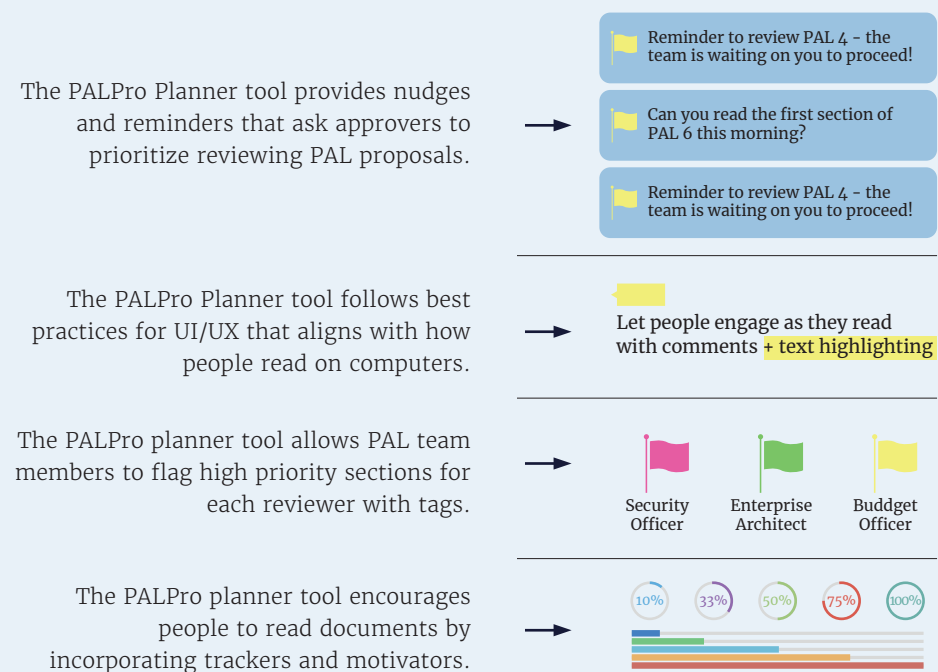*Figure 9: Example of email notifications*

Figure 10: Example of notification and commenting features

These collaboration features will motivate the completion of PAL steps by nudging and reminding approvers to prioritize PAL proposals, allowing PAL team members to flag highest-priority sections for each reviewer, providing the ability to tag users in documents, and helping keep team members updated on project status. These collaboration features should also follow best practices for user interface and user experience by allowing for text highlighting.

The PALPro Planner tool provides nudges and reminders that ask approvers to prioritize reviewing PAL proposals.

Reminder to review PAL 4 - the team is waiting on you to proceed!

Can you read the first section of PAL 6 this morning?

Reminder to review PAL 4 - the team is waiting on you to proceed!

The PALPro Planner tool follows best practices for UI/UX that aligns with how people read on computers.

Let people engage as they read with comments + text highlighting

The PALPro planner tool allows PAL team members to flag high priority sections for each reviewer with tags.

Security Officer   Enterprise Architect   Budget Officer

The PALPro planner tool encourages people to read documents by incorporating trackers and motivators.

10% 33% 50% 75% 100%

When a project is submitted for approval, the relevant approver will also get a mobile notification that reminds them about a pending approval request. Notifying approvers over both email and mobile may make them more likely to complete their tasks on time.

Figure 11: Example of a mobile notification

Approval Workflow

Approvers should be able to click on any notification they receive and land on a page that provides them with additional resources, such as details on a specific request or a tool to delegate the desired approval to someone else. When viewing each approval request, the approver should also have access to associated documentation, including any business forms, details, or appendices. The tool should also provide visibility over which approvers are in the approval chain.

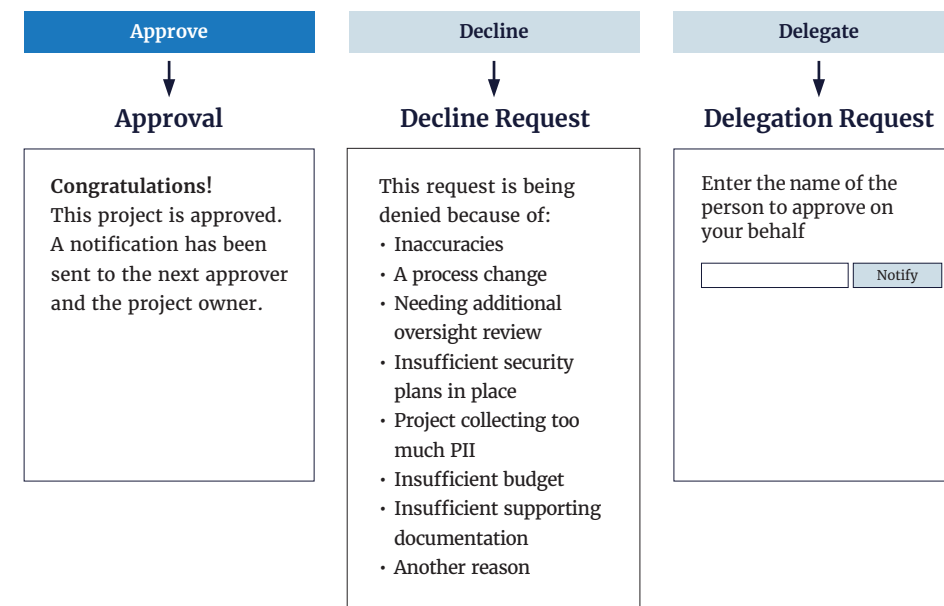| Approve	Decline	Delegate
↓	↓	↓
Approval	**Decline Request**	**Delegation Request**
Congratulations! This project is approved. A notification has been sent to the next approver and the project owner.	This request is being denied because of: · Inaccuracies · A process change · Needing additional oversight review · Insufficient security plans in place · Project collecting too much PII · Insufficient budget · Insufficient supporting documentation · Another reason	Enter the name of the person to approve on your behalf [____] Notify

Figure 12: Approval workflow diagram

An approver should also be able to easily review all the documents associated with a project.

Line	Description
1	Stage 1 Business Form
2	Simm 45
3	Appendix A
	Total

Approval Chain
1. Matt McDonald
2. Parimala Rao
3. Rebecca Kantar

Figure 13: Documents associated with a sample project

Approval Workflow Requirements

Below are all of the features required for approval workflows:

Approvers should, at minimum, receive notifications via email (and mobile, if available) for:

‣ A new approval request;

‣ Pending approvals that have been sitting without action for a certain time threshold; and

‣ Milestones that are contingent on pending approvals.

All project team members should, at minimum, receive notifications via email (and mobile, if available) when:

‣ An approval request is rejected by the approver;

‣ A comment from an approver is added to an approval request or document;

‣ A team member posts a comment that tags the notification recipient; and

‣ All approvals are completed for a document and/or PAL stage.

All users receiving a notification should be able to click/tap on a link to view details about the notification event.

All users should be able to view details about a notification event, including relevant documents and calls to action.

Approval notifications should provide approvers with:

‣ Affordances to approve or reject the documents;

‣ The ability to comment on the request, including tagging other project team members;

‣ The ability to select a reason when rejecting a request from a predetermined list and/or free text entry; and

‣ The ability to view comments about a request.

Comment notifications should display the discussion in which the comment occurred and provide an option for responding.

All users should be able to flag sections of a document for review by a specific project team member.

FUTURE ENHANCEMENTS TO PALPRO PLANNER

This product requirement document details key features that Version 1.0 of a PALPro Planner tool should include. Once a successful first version of a PALPro Planner tool has been deployed, CDT should consider adding additional features that include: allowing team members to source information from previous projects; ensuring that all approvals can occur digitally rather than through manual paperwork; and building a mobile app that supports push notification functionality for approvers to be regularly updated on a project's status.

GLOSSARY

PAL	Project Approval Lifecycle	The State of California's technology approval and oversight process, by which all state agencies and entities are expected to abide. The PAL process consists of four stages.
AA	Alternative Analysis	The second stage of the current Project Approval Lifecycle process.
BA	Business Analysis	The first stage of the current Project Approval Lifecycle process.
BCP	Budget Change Proposal	A formal budget request to the California legislature when a project needs additional funding.
CBP	California Budget Process	The State of California's annual budget process. The State must approve its annual budget by June 15 of every year.
CDT	California Department of Technology	The state agency responsible for overseeing the PAL process.
PRA	Project Readiness and Approval	The fourth and final stage of the current Project Approval Lifecycle process.
PRD	Product Requirements Document	A document that defines the requirements of a particular product, including its purpose and features.
SD	Solution Development	The third stage of the current Project Approval Lifecycle process.

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