Green Lending Platform – Requirements Document

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Summary

Michigan Saves (based in Michigan) and *Inclusive Prosperity Capital* (based in Connecticut) are two green bank organizations interested in developing a shared digital platform to manage their energy lending programs. Green banks negotiate favorable terms with lenders around the country to provide financial products in their local state or municipality focused around energy improvements that may not otherwise be available. In exchange for more favorable rates and terms, green banks provide additional protection to lenders by funding their own "loss reserve". These financial products are then made accessible to homeowners and contractors who are performing qualifying energy improvements to their home or business. Contractors must apply and be accepted into the program in order to participate and must also submit documentation throughout various stages of each job.

The fundamental goal of the platform is to track the status of jobs and loans throughout their lifetime and facilitate and automate communication between all parties involved. In addition, the platform should be flexible enough so that it can be provided or licensed to other green banks and municipalities to manage their energy lending programs as a turn-key software application.

Platform Goals

- Web-based online system to manage energy lending programs across multiple organizations
- Track and manage contractor applications and contractor program status
- Track and manage jobs and loans throughout their lifetime
- Facilitate online communication around contractors, jobs, loans, lenders, and programs
- User-friendly interface that is easy to use while providing advanced functionality
- Responsive user interface that is accessible on desktop, laptop, and mobile devices (phone and tablet)
- Modern technology stack that is efficient to maintain and update over time as data grows
- Flexible and configurable enough to handle variations in workflow and data requirements across organizations, programs, and municipalities (e.g. contractor licensing requirements vary by US State, qualifying energy measures can vary by program)
- Automated email notifications triggered by workflow events
- Integrations with external data sources and APIs
- Online payment processing for capturing contractor fees and/or platform usage fees
- Electronic signatures
- Adhere to security best practices, including SOC II, for data storage and processing

Terminology and Definitions

Platform

General term for the entire online system and technology stack needed to implement the various screens, features, and workflows to satisfy the project requirements.

Platform Administrator

A “super user” level account with permissions to administer all facets of the Platform.

Organization

Examples: Michigan Saves, Inclusive Prosperity Capital, Rhode Island, etc.

A top-level entity for organizing settings, configuration, rules, policies, workflows, and users within the platform. There is usually only 1 of these per US State, but some states (e.g. Rhode Island) may have multiple Organizations within a single state. Data for each Organization will be kept logically separated in terms of reports and user access.

Program

Examples: Residential, Multi-Family, Commercial

Programs are associated with a single Organization, but an Organization can have many programs. Programs determine the settings, configuration, and workflow for Jobs within the platform. For example, the “Residential” program for the “Michigan Saves” Organization can be configured separately from the “Residential” program for the “Inclusive Prosperity Capital” Organization, even though they may have the same name.

Campaign

Campaigns are special offers, promotions, or “sub-programs” within a single Program within an Organization. A single Program could have multiple Campaigns active at the same time, however.

Examples: interest rate buydowns, gas utility rebate offer, special loan offer from a lender

Lender

Examples: Lake Michigan Credit Union, MSUFCU, Nutmeg State Financial Credit Union

Financial partner that is providing the actual loan product to the Homeowner, usually at a special reduced rate or more favorable terms for participating in the program. The majority of current Lenders are credit unions, not banks.

Loan Application Center

Examples: LSI Solutions, Inc

An entity providing centralized loan application services on behalf of Lenders. The current provider (LSI Solutions) offers 24/7 phone access for accepting applications, and online application forms customized for each participating Lender.

Contractor

Any residential or commercial contractor participating in the program or applying to the program. Contractors are responsible for actually performing the work for the Homeowner and providing proof of completion in order to satisfy the terms of the loan. A single Contractor may participate in multiple Programs at the same time (e.g. Residential and Commercial).

Subcontractor

A Subcontractor is simply a regular Contractor acting as a subcontractor on a specific Job. Subcontractors can update the equipment they installed on a Job, and they can participate in discussions on their Jobs, but they cannot submit Jobs or edit other Job details (e.g. Homeowner, Loan). A Contractor can have their own jobs at the same time they are a Subcontractor on other Jobs.

Contractor Application

The online form to capture data about the Contractor's business, qualifications, licenses, etc the Organization uses to determine eligibility for participation in the platform and its programs. Contractors usually only submit this once to apply to the program, or they may update it over time as their licenses or services change. The questions asked on this form may vary by Organization and should be configurable by each Organization.

Customer / Property Owner

Examples: homeowner, business owner
The individual having the work done or equipment installed in their home or building. This person is also the one who applies for financing from a participating Lender.

Job

The details of the work being done by a Contractor for a Customer, including the equipment installed and the associated loan details. Jobs may also be referred to as "spec sheets" or "project sheets". Jobs and Loans are two of the critical and foundational components of the platform.

Eligible Equipment / Measure

The equipment or measure installed as part of a Job, normally to increase the energy efficiency of the building. Each piece of equipment will be associated with a specific amount of energy savings based on its efficiency rating.

The platform will maintain a database of eligible equipment types and measures for each Program within an Organization. Each equipment type or measure should have a category (e.g. Lighting, HVAC, Appliances), name (e.g. "T8 Bulb"), and enough additional metadata so the platform can ask the contractor the appropriate additional questions applicable to the equipment or measure. Different measures may require different

amounts of additional data in order for the Organization to make an eligibility decision on that equipment or measure.

Examples: furnace, hot water heater, windows, roofing, insulation, solar panels, LED bulbs

Energy Savings

The specific impact on energy savings that installed or updated equipment or measures will have on a home or building. These numbers usually come from another data source (e.g. State of Michigan MEMD). The units are normally specified in terms of kWh, therms, or MMBTU. The platform will need to perform calculations to determine the total energy savings for the entire Job based on the quantity and types of Equipment installed for a specific Job. In order to support energy savings calculations, the platform will need a way to import external energy savings data sources as well as update it within the platform as needed. Aggregated energy savings data is important to the Organization for both internal and external reporting purposes.

Certification of Completion (COC)

A document signed by both the Contractor and the Customer that the work was completed as described and with a satisfactory level of quality. The COC is a standard document template across the entire Organization, with fillable fields for the Job, Customer, and Contractor information.

Additional Completion Document

Some Green Banks (Organizations), may require additional completion documents, depending on Job type, including: utility approval to energize (for solar projects), verification of performance (for geothermal projects), municipal inspection report, permit or a final invoice signed by the homeowner.

Utility Data Release Form

A document required by some Green Banks (Organizations) that is signed by the homeowner giving the Organization access to the homeowner's utility data. Utility data is occasionally aggregated for verification of performance of Jobs at the portfolio level.

Quality Assurance Inspector

Person responsible for following up with customers and contractors after work is performed to ensure that quality standards have been met for a specific job. This person could be an internal employee of an Organization or an external hired contractor for this specific purpose. This person may use a mixture of communication channels such as phone calls, emails, surveys, and on-site visits to perform their duties.

Corrective Action Request (CAR)

A set of instructions or a description of steps the Contractor must take to remedy one or more issues with a Job. CARs are created by either the QA Inspector or a Platform Administrator within the Organization performing QA on a Job. The platform should define a set of 5-10 common CAR "types" that QA inspectors

can choose from, and also allow freeform text comments or notes to accompany a CAR. CARs are always attached to a single Job.

Loan

The loan provided by the Lender to the Customer to finance a Job. Loan payments are made by the Lender to the Contractor on behalf of the Customer at various stages of a Job. Application status and loan payment status is tracked within the platform for the benefit of all parties involved on a Job. Jobs and Loans are two of the critical and foundational components of the platform.

Organization Portal

An online destination that is branded and customized for each Organization in the platform. The Organization Portal is the entry point for almost all online interactions for users of the platform. Each Organization Portal should be accessible via a custom subdomain (org1.platform.com, org2.platform.com), or custom top-level domains (org1.com, org2.net)

Contractor Search

Examples: https://michigansaves.org/contractor-locator
https://ctgreenbank.com/programs/find-a-contractor

A function within the Organization Portal where Customers can search for participating Contractors in the Program. This could be provided as a hosted page and/or a "plugin" for popular content management systems, such as WordPress. Customers should be able to search for contractors based on criteria such as: name, distance, services provided, customer reviews, etc.

Contractor - Apply for Membership

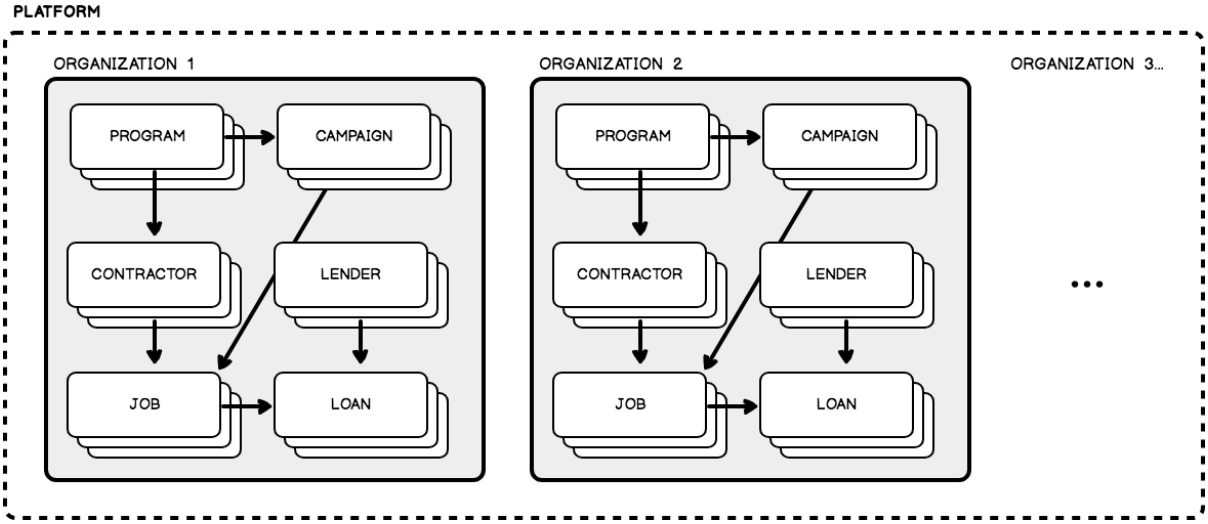
A function within the Organization Portal where Contractors can fill out the Contractor Application form to apply to join the Organization and one or more Programs.

Customer - Apply for a Loan

A function within the Organization Portal where Customers can start the loan application process. This process will vary by Organization, and even within an Organization depending on their participating Lenders. This function should at least provide a list of the participating Lenders and their contact info. If a Lender has any special online application pages for accepting loans for the program, then the platform should include these direct links as well. The platform may also link to the Loan Application Center intake forms, if configured.

Data Segmentation

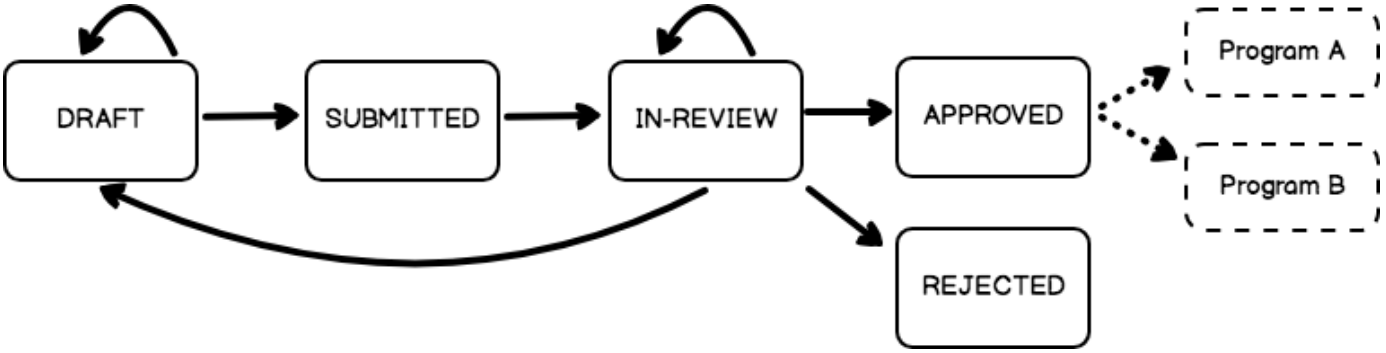
Platform data should be logically isolated between Organizations, meaning data from "Organization 1" will not be visible to users in "Organization 2". The only users that can see data across Organizations are Platform Administrators.



High Level Workflows

Contractor Application Workflow

Contractors must apply online to participate in the program. Their applications are reviewed by Organization staff and either approved, rejected, or sent back to the Contractor to provide additional information.



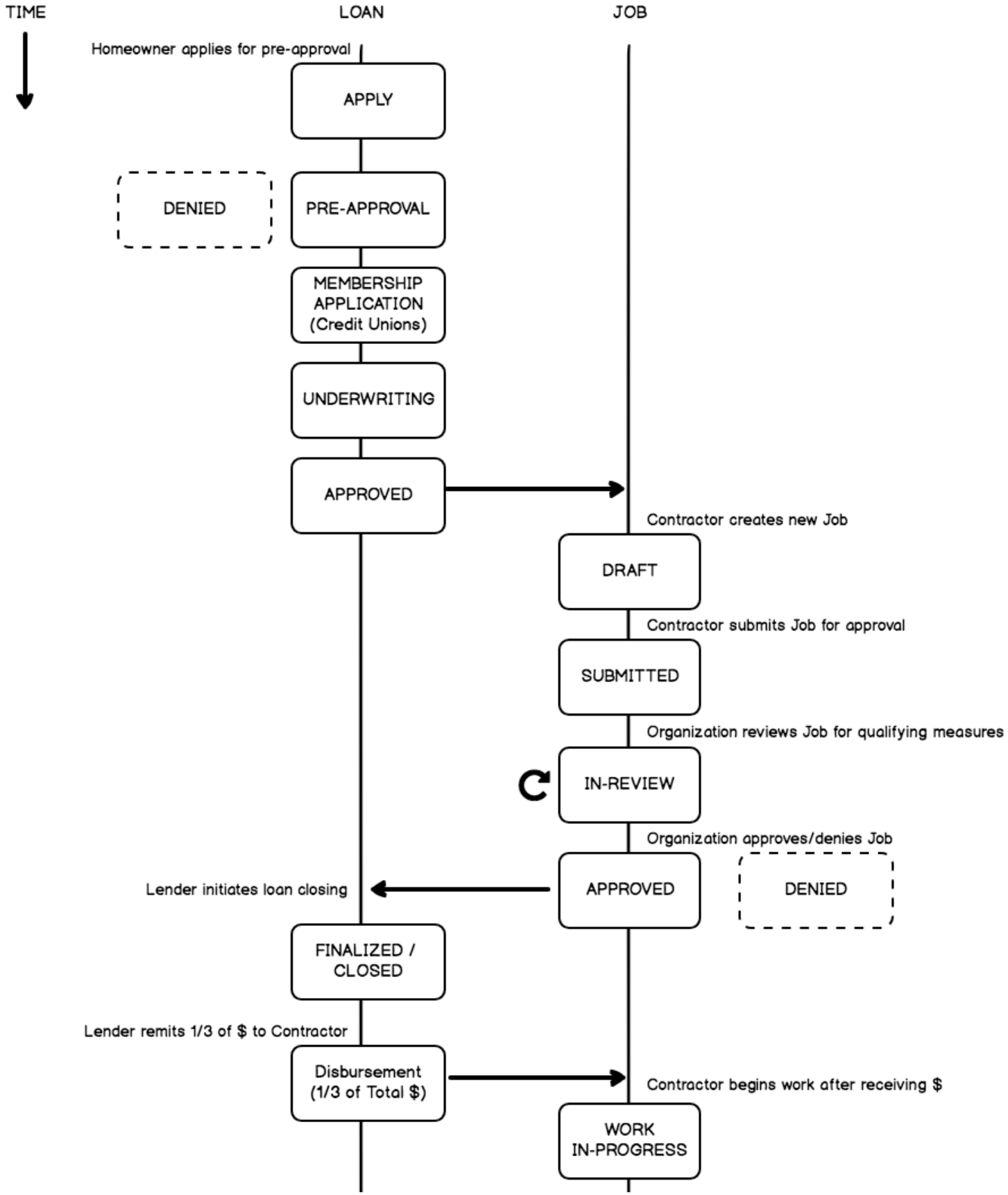
Loan and Job Workflows

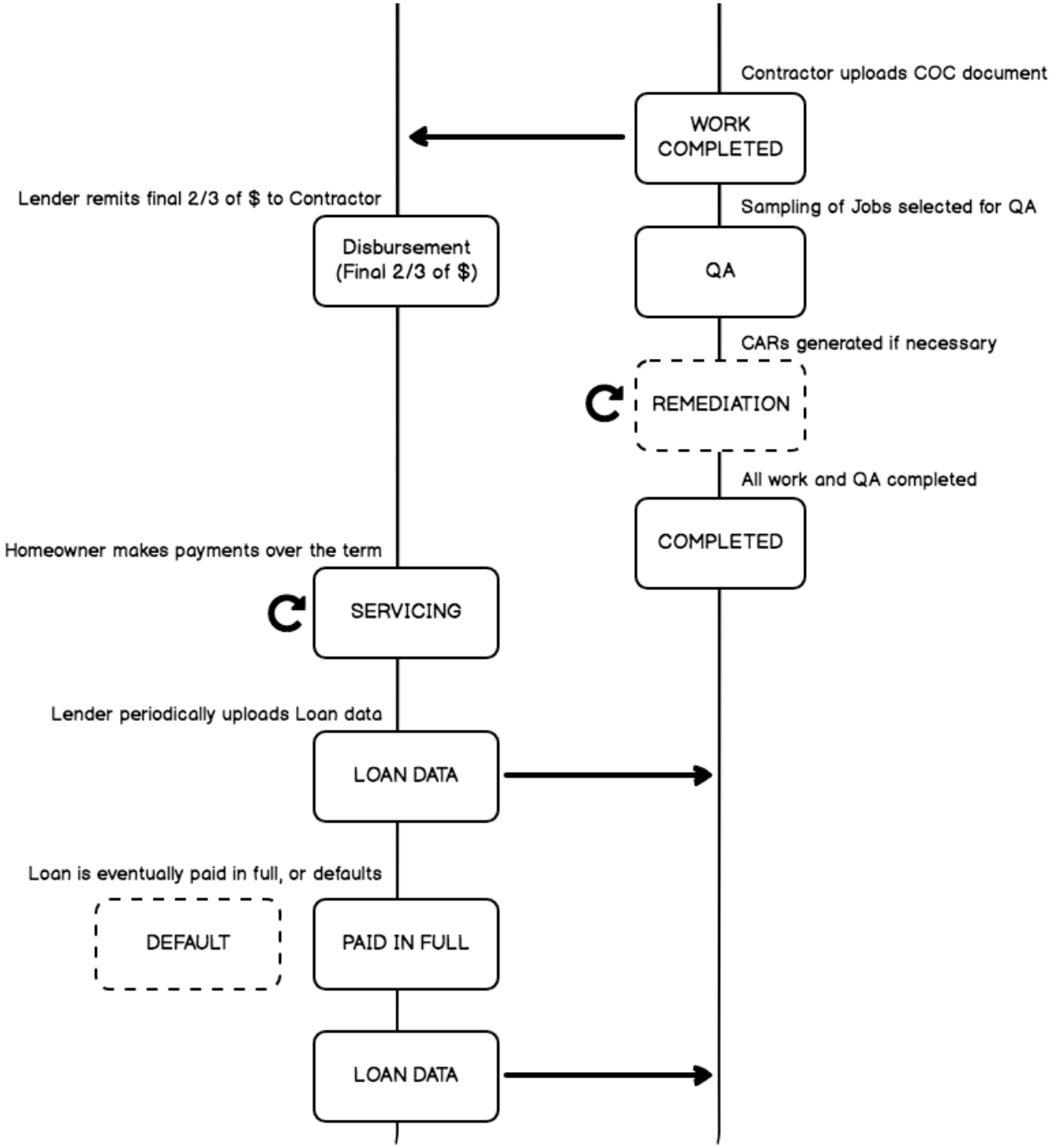
The platform should support 2 different workflows for handling Loans and Jobs, which are configurable at the Organization level. There can only be one workflow configured within a single Organization, however. In other words, each Organization must choose exactly one workflow and cannot have both workflows active at the same time.

Loan and Job Workflow “A” - Pre-Approved Jobs

In this configuration, the Organization must approve all Jobs before work can begin and the loan can close. Contractors receive a one-third payment from the Lender at the start of the project, and the final two-thirds upon completion. The Organization has information about each Job before the Contractor starts work.

1. Customer applies for a Loan (pre-approval) using one of the following methods:
    a. Directly with their Lender of choice
    b. Centralized Loan Application Center
2. Lender responds with a decision
3. Lender responds with member application (for credit unions)
4. Lender conducts underwriting on the loan, resulting in an approval, or request for more information
5. Lender approves the Loan
6. Contractor creates a new Job in the platform and submits it for review
    a. Some Organizations may also require Additional Completion Documents, Utility Data Release Form, or other customer-signed contracts at the time of Job submission
7. Organization reviews new Job and either approves, denies, or sends it back to Contractor to collect additional information
8. Organization approves the Job, which triggers the Lender to initiate Loan closing
9. Lender closes the Loan with the Homeowner, which triggers the first disbursement payment to the contractor (one-third of total project amount)
10. Contractor begins work on the Job
11. Contractor completes work on the Job
12. Contractor and Homeowner sign the Certificate of Completion (COC)
13. Contractor uploads the Certification of Completion and the required Additional Completion Documents, which triggers the final two-thirds disbursement from the Lender to the Contractor
14. The Organization may conduct additional Quality Assurance (QA) on this Job
15. If any issues are found during QA, the Organization may issue one or more Corrective Action Requests (CARs) to the Contractor
16. Organization marks the Job “completed” once it has passed QA (or QA was not necessary)
17. Lender begins servicing the loan (Homeowner starts making payments)
18. Lender periodically (at least monthly) uploads Loan data file to update the platform with status information
19. At some point in the future, the Loan is either “paid in full” or it “defaults”, and the final status is recorded in the platform

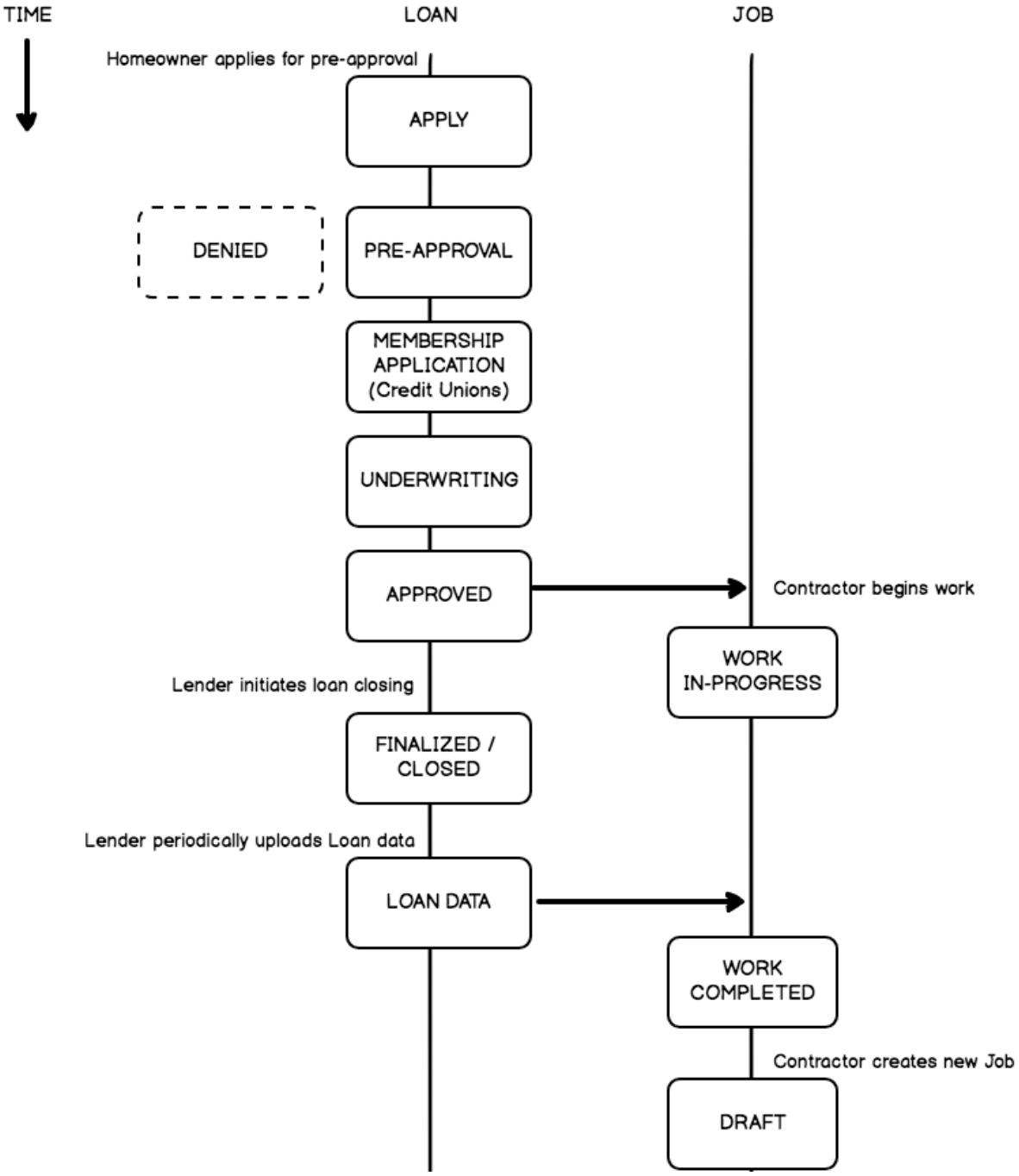

TIME
LOAN
JOB
Homeowner applies for pre-approval
APPLY
DENIED
PRE-APPROVAL
MEMBERSHIP APPLICATION (Credit Unions)
UNDERWRITING
APPROVED
Contractor creates new Job
DRAFT
Contractor submits Job for approval
SUBMITTED
Organization reviews Job for qualifying measures
IN-REVIEW
Organization approves/denies Job
APPROVED
DENIED
Lender initiates loan closing
FINALIZED / CLOSED
Lender remits 1/3 of $ to Contractor
Disbursement (1/3 of Total $)
Contractor begins work after receiving $
WORK IN-PROGRESS


Contractor uploads COC document
WORK COMPLETED
Lender remits final 2/3 of $ to Contractor
Sampling of Jobs selected for QA
Disbursement (Final 2/3 of $)
QA
CARs generated if necessary
REMEDIATION
All work and QA completed
COMPLETED
Homeowner makes payments over the term
SERVICING
Lender periodically uploads Loan data
LOAN DATA
Loan is eventually paid in full, or defaults
DEFAULT
PAID IN FULL
LOAN DATA

Loan and Job Workflow "B" - Post-Approved Jobs

In this configuration, the Contractor can begin work any time after the Loan is pre-approved, without requiring input or approval from the Organization. However, the Lender does not disburse any payments to the Contractor until the Contractor creates the Job in the platform, attaches the signed COC, and submits the Job. Once the Lender receives the COC, they disburse a single payment for the full project amount to the Contractor. In this configuration, the Organization does not usually "see" the Job until after work has been completed.

1. Customer applies for a Loan (pre-approval) using one of the following methods:
    a. Directly with their Lender of choice
    b. Centralized Loan Application Center
2. Lender or Loan Application Center responds with application decision
3. Lender responds with member application (for credit unions)
4. Lender conducts underwriting on the loan, resulting in an approval, or request for more information
5. Lender approves the Loan
6. Contractor begins work on the Job
7. Contractor completes work on the Job
8. Contractor and Customer sign the Certificate of Completion (COC)
9. Contractor creates the Job in the platform, or updates an existing Job
10. Contractor uploads the COC to the Job and submits the Job, which triggers the lender's loan closing process
11. Platform triggers the automated customer satisfaction survey email, asking the Customer for a simple 1-5 star rating of their Contractor's performance on this Job, with the ability to add additional freeform comments
12. Lender closes loan with customer and disburses payment to the Contractor for the project amount (minus any withheld contractor fees)
13. The Organization may conduct additional Quality Assurance (QA) on this Job
14. If any issues are found during QA, the Organization may issue one or more Corrective Action Requests (CARs) to the Contractor
15. Organization marks the Job "completed" once it has passed QA (or QA was not necessary)
16. Lender begins servicing the loan (Customer starts making payments)
17. Lender periodically (at least monthly) uploads Loan data file to update the platform with status information, including the outstanding balance on each active loan
18. At some point in the future, the Loan is either "paid in full" or it "defaults", and the final status is recorded in the platform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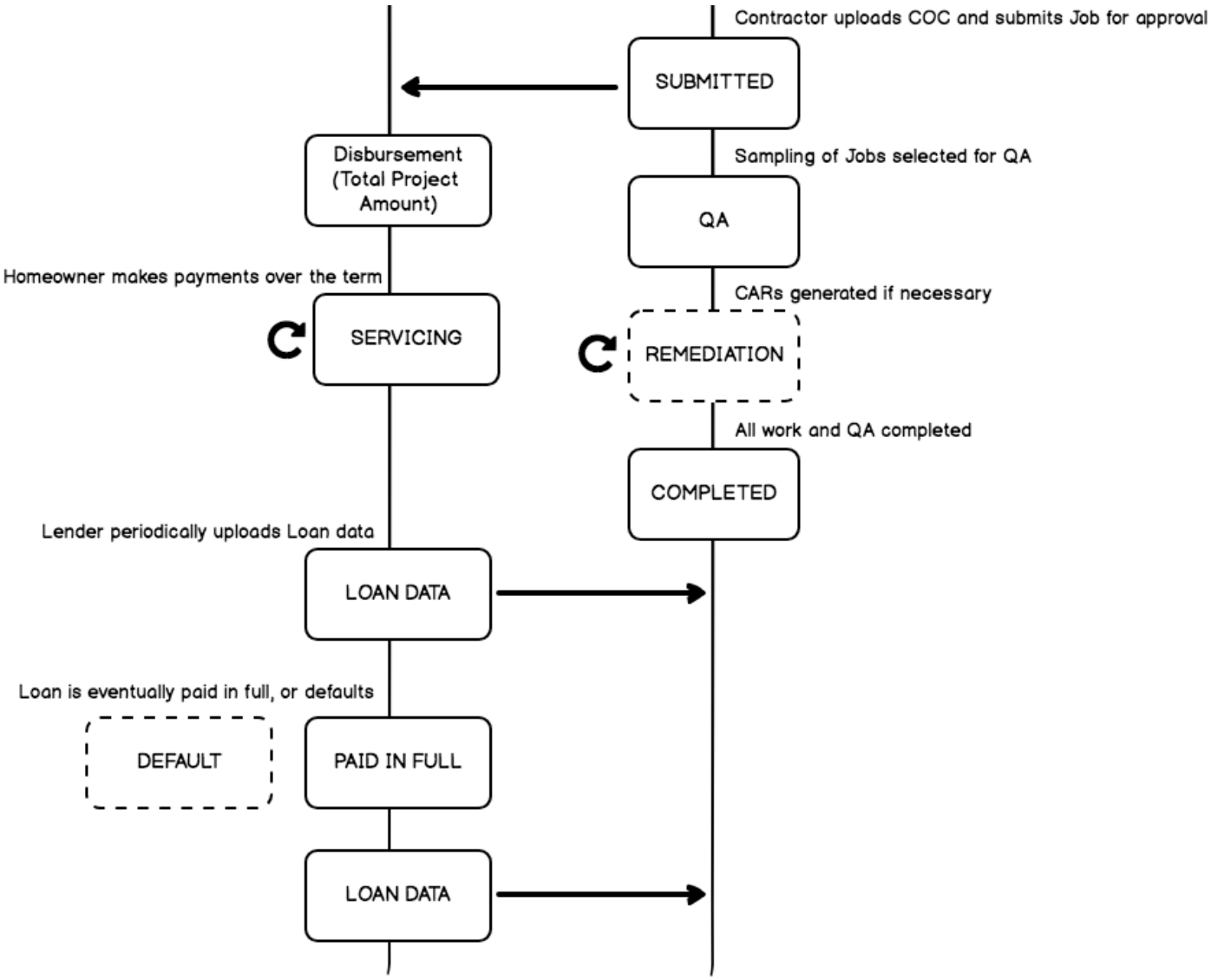
WORK COMPLETED
Contractor creates new Job
DRAFT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Disbursement (Total Project Amount)
Sampling of Jobs selected for QA
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Homeowner makes payments over the term
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SERVICING
REMEDIATION
All work and QA completed
COMPLETED
Lender periodically uploads Loan data
LOAN DATA
Loan is eventually paid in full, or defaults
DEFAULT
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User Stories and Requirements

This section outlines the functionality the platform should provide in the form of user stories or user journeys. The aggregated user stories help to describe the features and requirements of the platform. Some portions of a user story are initiated by the user (visiting a page, clicking a button, etc.) while other portions are automated actions the platform will perform based on various business logic and configuration rules.

Unless otherwise specified, all user stories assume the user is currently signed-in to their account.

Customer

Although customers do not have user accounts and do not login to the platform, they can still perform functions within the platform (anonymously).

Customer - Search for a Contractor

1. Visit Organization Portal
2. Click on “find a contractor”
3. Specify search criteria
    a. Program (e.g. Residential, Commercial)
    b. My Location
    c. Services desired
4. View search results
    a. Contractor name
    b. Star rating
    c. Customer reviews
    d. Number of jobs completed
    e. Distance away and service radius
    f. Services provided
5. Sort results by: name, distance, stars/ratings
6. Click to contact a Contractor
    a. Phone # (click to call)
    b. “Send a message” through the platform (online form)
        i. Platform sends an email to the Contractor on behalf of the Customer
        ii. Contractors can opt-out of this option if they choose to only display their phone #)

Customer - Apply for a Loan

There are 2 ways a Customer could apply for a loan: directly with a lender or using the Loan Application Center. Which choice the Customer makes depends on a variety of factors and could also be determined by the Contractor they have selected for the Job (who might recommend one over the other).

Applying direct with Lender

1. Contractor provides Customer with instructions on how and where to apply with a specific Lender
2. Customer applies directly on Lender’s website, in-person, or via phone (depending on the Lender)

    a. The Organization Portal may also facilitate Lender and Loan selection by providing a list of participating Lenders with links to Lender websites or application pages
3. Lender provides Customer with a pre-approval decision (timeline varies by Lender)

Applying via the Loan Application Center

1. Contractor provides Customer with instructions on how and where to apply with the centralized Loan Application Center (LAC)
2. Customer contacts the LAC via phone call (24/7 access) or online form
3. LAC provides an “instant” application decision (within 10 minutes usually)

Customer - Sign Certificate of Completion (COC)

1. Contractor presents the Customer with the COC
    a. Contractor can print the COC document from within the platform for paper signature
    b. Contractor can display the COC for electronic signature on their phone or tablet device
    c. Contractor could also click a button to send the Customer a digital link to the COC (in cases where the Contractor and Customer cannot meet in person)
2. Customer signs the COC
3. Contractor captures the signed COC and uploads to the specification sheet by
    a. Browsing for file to attach
    b. Taking a picture for attachment
    c. If obtaining electronic signatures, file is automatically saved and attached to specification sheet

Homeowner - Rate and Review Contractor

1. Customer receives an automated email from the platform after the COC has been submitted on their Job
2. Customer can click a link in the email to visit the rating and review page on the platform
    a. Does not require customer to login
    b. Their Job and Contractor are automatically displayed
    c. Customer can rate their Contractor on a 1-5 scale
    d. Can also provide additional freeform notes or comments
    e. Customer name, phone, email
        i. Customer can choose to remain publicly anonymous (but trackable through Program Administrator for follow up purposes)
3. Customer submits the review form
4. Platform
    a. Notifies the Organizer that a new review has been submitted
    b. Keeps the review in a “moderation queue”
    c. Organizer approves the review
    d. Review is now publicly visible on the “Contractor Search” page
        i. Customer First Name is displayed, along with date of their review (unless they opted to remain anonymous)

Contractor

Contractor - Apply to join the platform

1. Contractor visits the Organization Portal
2. Contractor clicks “Apply”
3. Contractor is prompted to either login or create an account
    a. Login
        i. Email address
        ii. Password
    b. Create Account
        i. First and last name
        ii. Email address
        iii. Password
4. Contractor fills out the online application form:
    a. Select which programs they are interested in (e.g. Residential, Commercial, Multi-Family)
    b. Background Information
        i. Legal business name
        ii. DBA name
        iii. Federal Tax ID (EIN) or SSN
        iv. Business entity type (corporation, partnership, etc.)
        v. Primary business address, city, state, zip
        vi. Primary mailing address
        vii. Phone number
        viii. Fax number
        ix. Email address
        x. Website URL
        xi. State business license number
    c. Locations and Offices
        i. Street, City, State, Zip for each additional office location
    d. Insurance
        i. General liability insurance
            1. Expiration date
            2. Proof of insurance (document upload)
        ii. Workers compensation insurance
            1. Expiration date
            2. Proof of insurance (document upload)
    e. Licenses
        i. The licenses required will vary by Organization (US State) so this section must be configurable within the platform for each Organization
        ii. For each license, collect the following:
            1. License type (e.g. mechanical, electrical, plumbing, etc.)
            2. License #
            3. Expiration date
            4. Contractor of record

f. Services
    i. This is where the contractor indicates which services they provide, in order to assist homeowners searching for contractors with specific skills. This list of options should be configurable for each Organization. The platform should also enforce licensing validations as needed (i.e. you cannot select a mechanical service if you have not provided mechanical license information)
    ii. Checkbox or multiple-select list of services the contractor provides
g. Additional Questions
    i. This section should be configurable for each Organization. Each Organization may want to collect different pieces of additional data from their Contractors over time. For example, information about trainings attended, disciplinary actions, etc.
h. Application Fee
    i. Some Organizations may wish to collect an application fee directly from Contractors, others may not. Therefore, this section should be configurable within the platform for each Organization. If configured, the platform should accept online payments via credit card using a processor such as Stripe or PayPal and keep track of payment status within the platform.
    ii. Example: $50 one-time fee for Residential program, $50 fee for Commercial, or $75 for both
i. Signature Agreements
    i. The content and terms required in a contractor agreement may vary by Organization, so this section should be configurable within the platform.
    ii. In additional to a general "Contractor Agreement", each Program within an Organization could also have its own agreement that requires separate acknowledgement and signature
    iii. Should accept an electronic signature (or attach photo of signature or scanned document)

5. Contractor can save the application in a draft or in-progress state and come back to finish it later
    a. Ideally, the online form auto-saves continuously as it's being filled out, to alleviate Contractor frustration and prevent lost work if a Contractor closes the page or navigates to a new tab in their web browser
6. Contractor formally "submits" their application when finished, which triggers the automated review process within the Organization

Contractor - Search Jobs

1. Visit the "Jobs" page
2. Search for a Job
    a. Search criteria
        i. Job # (assigned by platform)
        ii. Job status
        iii. Customer name
        iv. Customer address
        v. Program name
        vi. Campaign name
        vii. Lender name

viii. Loan #
ix. Loan status

3. Click on a Job in search results to view/edit

Contractor - Create/Update/Submit Job

1. Contractor clicks “New Job” button / link (or searches to find an existing Job)
2. Contractor selects the relevant Program
3. Contractor fills out the Job form:
    a. Customer information
        i. First and last name
        ii. Address, city, state, zip
        iii. Phone #
        iv. Square footage of building (if required by the Program)
    b. Loan Information
        i. The platform should auto-populate this field whenever possible, based on data from Lenders and Loan Application Center
            1. Lender name
            2. Loan #
            3. Loan amount
    c. Job information
        i. Date work completed
        ii. Job notes
        iii. Campaign(s)
            1. Contractor can select one or more campaigns that apply to this Job, for tracking purposes by the Organization (similar to a “tags” concept)
    d. Subcontractors
        i. Contractor can select one or more contractors that are acting as subcontractors on this job. Only participating and approved contractors already in the platform will be shown in the list.
        ii. If any Subcontractors are selected, then each Subcontractor will be given access to this Job, so they can specify their own list of “Equipment Installed” below
        iii. Each Job will have a single “primary contractor” who is the Contractor responsible for the overall Job and has the ability to submit the job for approval.
    e. Equipment Installed (section repeated if there are Subcontractors on the Job)
        i. Each Contractor on the Job is responsible for entering data on the equipment or measures they installed.
        ii. Contractor will specify each piece of equipment they installed as part of the Job by clicking an “add equipment / measure” button and entering the following for each piece of equipment:
            1. Category (dropdown) - e.g. “Lighting”
            2. Name (dropdown w/search) – e.g. “T8 Bulb”
            3. Quantity (number)
            4. *Additional attributes (dynamic, based on previous selections for category and name). There can be multiple additional attributes/inputs required depending on the type of equipment. Multiple inputs might be required to capture enough data*

about the measure to determine its eligibility within the program, normally based on efficiency ratings.

a. *Examples:*
    i. *Length (ft)*
    ii. *SEER rating*
    iii. *AFUE rating*
    iv. U-Factor
    v. R-Factor
    vi. Square Feet

iii. Contractor can also select an "Other" option if their equipment types or measure is not listed in the equipment database. In this case they will enter all details manually and the platform will automatically "flag" these Jobs for further manual review by a Platform Administrator or QA Inspector.

f. Job Cost
    i. Total cost
    ii. Customer cash / down payment amount
    iii. Total amount financed
g. Certificate of Completion (COC)
    i. Each Contractor on the Job is responsible for submitting their own COC by:
        1. Filling out and electronically signing the COC online
        2. Printing the COC document with signature fields
        3. Attaching a signed COC document (e.g. from a scanner or photo)
h. Additional Documents
    i. Ability to upload any additional relevant documents / files

4. Contractor can save the Job as draft / in-progress
5. Contractor eventually "submits" the Job (only the primary contractor can do this)
    a. All COC documents are required to be attached before the platform allows a Job to be "submitted"
        i. All contractors listed on a project are required to fill out a separate COC
    b. There are 2 separate workflows that should be supported here, see the earlier "Loan and Job Workflow" section for details.

Contractor/Subcontractor - Submit Certificate of Completion

1. Contractor has finished work on a Job
2. Contractors visits the Jobs page on the platform
3. They see a list of their Jobs
4. Click on the specific Job
5. Attach COC (online or upload) and any required Additional Completion Documents
    a. Fill out and e-sign the COC online
    b. Print the COC document with signature lines
    c. Attach a signed COC document (e.g. from a scanner or photo)
    d. Attach Additional Completion Documents, if required

Contractor/Subcontractor - Check Status of Payments

Contractors are mostly only interested in the status of their payments from the Lender. All of their other work and actions in the platform are to support them getting paid for their work on a Job.

1. Contractors visits the Jobs page on the platform
2. They see a list of their Jobs
3. Click on the specific Job
4. Click on or view a “loan status” section
    a. Displays the current loan status (pending, underwriting, approved, closed, etc.)
    b. Displays their payment status and date of the loan

Contractor/Subcontractor, Lender, Organization - Comment on Jobs

Jobs will have a discussion thread / commenting feature to facilitate online discussions about a Job between the Contractor, Subcontractors (if any), Lender, and Organization.

Commenting inside the platform

1. Contractors visits the Jobs page on the platform
2. They see a list of their Jobs
3. Click on the specific Job
4. Click on a discussions section/tab
5. View a list of past messages
6. Post a new message and select the recipients (Lender, Organization, Contractor, or any combination)

Commenting via email

1. Contractor receives an email notification about a new comment posted on one of their Jobs
2. Contractor can reply to the email directly within their email client and write a reply
3. The reply is automatically imported by the platform into the Job’s discussion thread
4. Relevant participants on the thread are also notified via email

Loan Application Center (LAC)

1. Accepts loan applications on behalf of participating lenders
2. Provides customers with an “instant” decision (within 10 minutes)
3. Sends approved loan application data to the Lender
4. Uploads loan application data to the platform
    a. The platform should provide a way for the LAC to import or upload loan application data into the platform. This data should contain the Customer and Contractor information so that a new Job can be created on behalf of the Contractor automatically, to save the Contractor time during data entry.

The platform will also need to export the current list of approved participating Contractors and automatically send it to the LAC via a custom data integration.

Lender

Lender - Update Loans

Participating Lenders are required to update loan status information in the platform as often as possible. The platform should facilitate this via:

- Manual user actions
    - Updating Jobs and Loans individually
    - Updating multiple Jobs and Loans using a bulk-edit function
    - Sending reminder or "tickler" emails to Lenders to update stale Loan data
- Automated integrations
    - Custom back-end data integrations with participating lenders

Lender - Verify Contractor

Lenders may wish to do their own verification on Contractors involved in the program.

1. Visit the "Contractors" page
2. Search for a contractor
    a. Contractor name (legal or DBA)
    b. Contractor # (assigned by platform)
3. Click on a Contractor
4. View Contractor status and basic information

Lender - Verify Job and COC

Lenders may wish to do their own verification on Jobs and COCs in the platform. Lenders should only be shown basic information about a Job, such as the Contractor name, Contractor address, and the COC documents, as well as the discussion thread.

4. Visit the "Jobs" page
5. Search for a Job
    a. Contractor name (legal or DBA)
    b. Contractor # (assigned by platform)
    c. Job # (assigned by platform)
    d. Customer address
6. Click on a Job
7. View basic Job information
    a. Customer information
    b. Contractor information
    c. COC documents

Lender - Comment on Jobs

It's important for the platform to facilitate communication on Jobs (and the attached Loans) between Lender, Contractor, and Organization.

1. Visit the “Jobs” page
2. Search for a Job
3. Click on a Job
4. View discussion thread
5. Post a new comment / message to the thread
    a. Platform should provide permission and privacy settings so that Lenders can control who sees the comment (Contractor, Organization, or both)
6. Platform sends email notices to all relevant discussion participants
7. Recipients can reply via email (“reply above this line”) or by clicking a link to visit the job and comment via the platform

Lender - Upload Loan Data File

The platform requires Lenders to upload their Loan data as often as possible, at least monthly. This allows the platform to provide status information and notifications to all parties involved on a Job (primarily the Contractor).

1. Visit the “Loans” page
2. View list of current Loans the platform is tracking
3. Click the “upload data file” button
4. Provide a CSV or Excel formatted Loan data file
    a. This should be a standardized format of columns/headers that Lenders adhere to
5. Click the “submit” button to upload the file
6. The platform will process the loan data and update its own database of loans, including status and remaining balance. It will also automatically match up each loan to the appropriate Job in the platform, so that Jobs and Loans are related to each other. To facilitate this, each Loan should contain enough data to match a Job, including a Loan # or some kind of unique identifier (e.g. a scrambled member #). The platform should support “incremental” loan data files that only contain updated data (rather than the entire history of all loans).

QA Inspector

QA inspectors should be able to perform the following high-level functions in the platform:

- See a list of their assigned inspections (list of Jobs)
- Complete an inspection report (static set of questions across the Organization, similar to a survey)
- Create CARs for Jobs
- Participate in discussions on Jobs
- Upload additional documents to Jobs (e.g. results of an inspection)

Organization

Organization users should be able to perform any function in the platform on behalf of any other user, if needed. Organization users can see all data across their entire Organization. Organization users will typically

use the same screens in the platform as the other user types, but they just see more data and have more functionality enabled on each screen.

Organization Administrators should have the ability to manage (create, edit, delete) everything related to their Organization, including:

- Programs
- Campaigns
- Equipment/measures data, and the eligibility rules for each measure or equipment
- Energy savings data
- Contractors and contractor applications
- Jobs
- Lenders
- Loans
- QA Inspectors
- Quality assurance rules
- User accounts

Organization Administrator – Onboard New Program

Organization Administrators should be able to onboard (create) new Programs for their Organization from within the platform. Each Program may have its own set of configuration data for eligible measures, automated QA rules, and contractor application requirements (licenses, etc).

Organization Administrator – Define Program Measures

Organization Administrators will be able to configure the list of eligible measures (equipment) for each Program in their Organization. Each measure consists of:

- Category (selected from a list)
- Name (text input)
- One or more additional attributes
    - Each attribute consists of:
        - Name (text input)
        - Unit of measure (text input - optional)
        - Acceptable options/choices (optional)
    - *Examples of attributes:*
        - *Length (ft)*
        - *SEER rating*
        - *AFUE rating*
        - U-Factor
        - R-Factor
        - Square Feet
    - *Examples of options/choices:*

        - *Fuel Type (electric, gas)*
        - *AFUE (95, 96, 97, 98)*
        - *Size (1 ton, 2 ton, 3 ton)*
- *Examples of measures:*
    - Lighting – T8 Bulb – 6 Feet
    - HVAC – Air Conditioner – 2 Ton – 21 SEER
    - Siding – Insulated Vinyl Siding – 500 SF

Organization Administrator – Define Automated QA Rules

Organization Administrators will be able to configure QA rules that the platform will check automatically on each Job when it is saved or submitted. Automated QA rules are configured based on attributes of the measures (equipment) installed for the Job. The Organization Administrator can set the thresholds allowed for each measure that will trigger an automatic "flag" status for the Job. For example, a particular Organization and a particular Program within that Organization may have a business rule that only accepts furnace equipment installed with an AFUE rating of 95 or better. Another program may require a certain U-factor for windows, or a minimum R-factor for insulation. The Organization Administrator should be able to configure multiple rules within a Program in this way to help their staff identify Jobs and Contractors that may be installing in-eligible equipment. Rules should be configurable based on any of the data attributes from the list of eligible measures. The end goal is that the platform "flags" these Jobs for further review by Organization staff so they can be efficient with their time and only manually review Jobs when potential issues are detected by the platform.

Platform Administrator – Onboard New Organization

Platform Administrators should be able to onboard (create) new Organizations from within the platform. Each Organization will have its own set of configuration options and their data will be virtually "siloed" from other Organizations.

User Accounts and Roles

All non-customer functions in the platform will require a valid user account. Organization administrators can control user accounts within their own Organizations.

User Account Data

The minimum required user account data is:

- Email
- Password
- Name
- Organization (except for Platform Administrators)

User Roles

The role assigned to each user with determine their user type and access permissions. Roles are either auto-assigned by the platform (e.g. filling out the contractor application will create a “Contractor” user role) or set by a Platform or Organization Administrator.

- Platform Administrator
- Organization
    - Administrator
    - Staff
    - Quality Inspector
- Contractor
    - Administrator
    - Staff
- Lender
    - Administrator
    - Staff

Permissions

In general, security permissions will be determined by the user’s role or account type. However, the following additional filters should apply:

- Contractors can only see their own Jobs, Loans, CARs, COCs, etc
- All Contractors on a Job can upload contracts, supporting documents such as the utility release form, site plans, pictures if need be, as well as completion documentation.
- Lenders can only see their own Loans, COCs, and related Jobs
- QA Inspector can only see Jobs they’re assigned to

It’s likely that additional permission rules will be added to the platform over time, therefore the permission system should be flexible enough to handle changes to permissions by organization, program, user, and role as needed.

Reports

The platform should provide a number of “canned” reports to the Organization. In addition, users should be able to export or download a CSV file containing the contents of almost any screen that lists data, for further analysis in tools like MS Excel.

Example Reports

- Contractors
    - Segments: status, location
- Loans
    - Segments: status, lender, contractor, amount

- Loan Loss Reserve
    - Organization-level report that incorporates the balances of current loans, payoff dates, and statuses to help the Organization determine their loan loss reserve amounts
- Jobs
    - Segments: status, lender, contractor, amount
- Energy Savings
    - Segments: location, contractor, equipment, job
- CARs
    - Segments: type, contractor

Additional Features

Audit Trails

Each major data entity (e.g. Job, Contractor, User, Loan, etc.) should have an audit trail feature where the platform keeps track of which user made changes to which entity and at what time, in case a supervisor or administrator needs to review changes that may have been made in error by other users.

Data Recovery

Each major data entity (e.g. Job, Contractor, User, Loan, etc.) should have the ability to be “un-deleted” if it was deleted by mistake by a user in the platform. This feature should be usable by either a Platform Administrator or an Organization Administrator within the platform itself by clicking a special button or link to restore deleted records.

Integration Points

The following are integration points to be developed in the platform. The platform should allow integrations to be enabled/disabled and configured for each Organization independently.

- Loan Application Center (import / export)
    - Loan application data
- Lender (import)
    - Lender’s loan data files
    - Standardized CSV file format (determined by the platform) that all lenders must use
- Energy Savings Databases (import)
    - Michigan’s MEMD (https://www.michigan.gov/mpsc/0,4639,7-159-52495_55129---,00.html)
    - Not all US States or Organizations will have this data (Connecticut does not, for example). If this data is not available, the platform should provide a way for Organization Administrators to manually enter energy savings data for their Organization and Programs
- Payment Processor
    - Stripe, Braintree, Authorize.Net, PayPal, or equivalent
- CRM software (import / export)

    - Sync Contractor contact data (name, email) into CRM lists to enable marketing automations such as email newsletters
    - E.g. Salesforce, HubSpot
- Ad-Hoc Reporting or Business Intelligence tools (export)
    - Make read-only database tables or data views available to external business intelligence tools for more complicated analysis and aggregate reporting within Organizations
    - E.g. Tableau, Chartio, Looker, Grow, Google Data Studio

Data Migration

There are 2 green banks (*Michigan Saves* and *Inclusive Prosperity Capital*) that will need their historical data migrated from their current databases and imported into the new platform, including:

- User accounts
- Programs
- Contractors
    - Contractor applications
    - Customer reviews / ratings
    - Payment status
- Jobs
    - Discussions
    - CARs
    - COC documents
    - Energy savings data
- Loans

Michigan Saves – Online Contractor Portal

Data will need to be migrated from their current database and technology stack:

- Ruby v1.9
- Ruby on Rails v3.2
- MySQL v5.6
- Approximately:
    - 950 contractors
    - 1,000 user accounts
    - 18,000 jobs and their related data (the current primary jobs table has 285 columns)

Inclusive Prosperity Capital – Smart-E Lending Platform

Data will need to be migrated from their current database and technology stack:

- Microsoft .NET Framework
- SQL Server

Training

Training will be provided to platform and green bank staff on how the platform works and how to perform administrative and management functions within the platform. Training may be provided in the form of written documentation, pre-recorded videos, webinars and screen-sharing sessions, and in-person meetings.

Documentation

Documentation will be created in the form of digital user manuals or user guides for the following roles in the platform:

- Platform Administrator User Guide
- Organization Administrator User Guide
- Contractor User Guide
- Lender User Guide

Each user guide should describe the steps to perform the primary and major functions required for each role in the platform.

Information Security

The platform will be processing or storing the following types of data:

- PII - Personally Identifiable Information
    - Contractor business names and Tax IDs
    - Customer names and addresses
- Financial loan information
    - Lender name
    - Customer
        - Name
        - Address
        - Phone
    - Loan
        - Amount
        - Balance
        - Term & interest rate
        - Status

Industry best practices for securing this data should be followed, including secure connections using SSL certificates, and data encryption “at rest” for sensitive data fields. The service provider that is hosting the platform data should comply with at least the following security standards:

- SOC 1 Type II
- SOC 2 Type II
- ISO/IEC 27001:2013

It is strongly recommended that the platform utilizes a 3rd-party payment processor that is PCI-DSS compliant for handling online payments (e.g. Stripe, Braintree, Authorize.Net, PayPal). If the platform is NOT using a PCI-DSS compliant 3rd-party platform, then the platform itself will also need to be PCI-DSS compliant.

Application Server Hosting and Support

The selected vendor should proactively manage both the server hardware and software needed to support the platform, including:

- Applying server security updates and patches
- Maintaining compliance with the "Information Security" section as described earlier in this document
- Performing uptime monitoring and response
- Daily backups of the application files and database to an off-site redundant location
- Proactive and regular upgrades to the technology stack to improve security and performance
- Application error monitoring and notifications to platform staff
- On-call support during business hours with same-day response time
- Maintaining an automated software test suite to keep quality high as features are added and modifications are made over time
- Maintaining a separate staging/dev server for testing new features before they are pushed to production