



United States Department of Agriculture

RD Apply–Electronic Preliminary Engineering Report (ePER)

User Guide

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WELCOME TO ePER

1. WHAT IS EPER?

The electronic Preliminary Engineering Report (ePER) is an online tool designed to allow consulting engineers to enter and upload analyses, data, and technical information and produce a report that can accompany an application for funding from Rural Utilities Service's (RUS) Water and Waste Disposal Loan and Grant program. The system uses as its baseline the interagency template for Preliminary Engineering Reports as detailed in RUS Bulletin 1780-2. It includes automated features, such as life cycle cost analysis and population projection, while retaining the engineer's control over the report and the proposal through a secure website.

2. ENHANCED SECURITY USING EAUTHENTICATION

USDA eAuthentication is the system used by USDA agencies to enable engineers to obtain accounts that will allow them to access USDA Web ePER and services via the Internet.

USDA will only accept eAuthentication Accounts from individuals; USDA eAuthentication does not have the mechanism to issue accounts to businesses, corporations or other entities. To apply, visit [Create an Account](#).

3. WHO CAN CREATE A REPORT?

Engineers can create an ePER if they have a Level 2 eAuth ID. Once you have obtained a Level 2 eAuth ID you will be able to access ePER. Depending on the report you are creating, you may need/want to add additional users to your report

GETTING STARTED

4. IDENTITY, CREDENTIAL, AND ACCESS MANAGEMENT (ICAM)

A Level 2 eAuthentication account allows RUS stakeholders to gain access to USDA Web site portals and applications such as RD Apply. Historically, this process could only be completed by physically meeting with a Local Registration Authority (LRA) to have your User ID and profile verified. However, we are now offering a new service called Identity, Credential and Access Management (ICAM) that allows you to apply for a Level 2 account online through a secure web interaction.

To register for a Level 2 account using ICAM, you can click [here](#) and select "Register for Level 2 Account." You will enter in your personal information, making sure to complete all the required fields. Once finished, click "Continue." A verification email will be sent to the email address provided.

Once the email is received, click the link to activate your account. Another email will populate prompting you to verify your identity. You will verify the information you input into the system when registering as well as entering your Social Security Number (SSN).

Note: The Social Security Number is not saved in this process. It is solely used so the system can present you with a series of four identifying questions.

After answering all the questions, the system will automatically verify the information and either approve or deny your request for a Level 2 account. If you cannot verify your identity, you will need to visit a LRA in order to continue.

If you do not have sufficient data for a level 2 request, you will need to finish filling out your information before you can continue.

Note: You will need to see an LRA if you live outside of the fifty states. If you live inside the United States, a LRA is not necessarily needed in order to successfully register for, and receive, your level 2 eAuth account.

Electing to verify online will navigate you to a web page where the system will generate a series of four questions that you will need to answer successfully before your account is allowed access to RD Apply.

5. WHO CAN I CONTACT FOR HELP?

If you are experiencing problems with ePER, please contact the Help Desk.

Email: RD.HD@STL.USDA.GOV

Phone: (800)-457-3642; Select USDA Applications (Press 2); then select Rural Development (Press 2)

Hours: Monday through Friday – 7 a.m. to 5 p.m. (Central Standard Time)

PLEASE BE PREPARED TO PROVIDE THE FOLLOWING INFORMATION:

- ü Legal Name of Organization
- ü eAuth ID
- ü Report ID Nbr
- ü Contact Person
- ü Phone Number
- ü Description of the specific problem

Program you are applying for: ePER, Water & Environment

CREATING A REPORT

6. HOME PAGE



Once you log into ePER, you will be taken to the Home Page. There, you are given three options, which are:

- ü "Register",
- ü "Add New PER", or
- ü "Search" for an account.

From the Home Page you can also "Copy" an existing PER to create a new one

If you are logging into ePER for the first time, then you will have to register by simply clicking the "Register" button. Once you register this one time, you should not have to register again.

Report Number	Client	Lead Engineer	Firm Name	Date Initiated
930	legal	Nathan Merrell	name	12/13/2016

If you have already created a report, you can find it in the Search Results section.

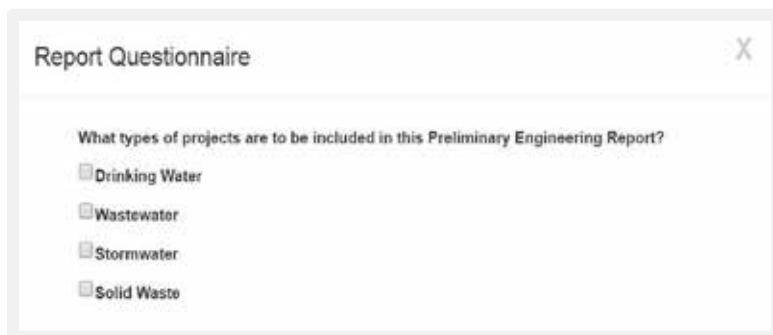
To open your report, click the hyperlinked Report Number. You will be redirected to your report's "Engineer" screen.

The Preliminary Engineering Report will consist of fifteen (15) parts which include:

- ü Interview
- ü Engineer
- ü Engineering Firm
- ü Client

- ü Executive Summary
- ü Project Type/System Component
- ü Project Planning
- ü Existing Facilities
- ü Need for Project
- ü Alternatives Considered
- ü Selection of Alternative
- ü Proposed Project
- ü Standard Attachments
- ü Conclusions and Recommendations
- ü Summary/Complete

7. REPORT QUESTIONNAIRE



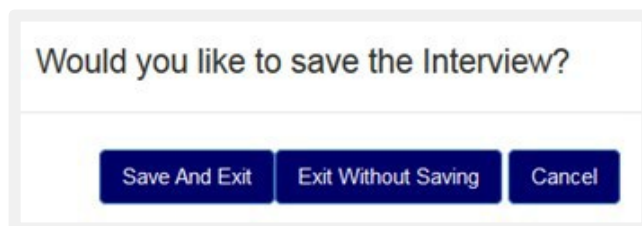
The screenshot shows a window titled "Report Questionnaire" with a close button (X) in the top right corner. The main content area contains the question: "What types of projects are to be included in this Preliminary Engineering Report?". Below the question are four checkboxes, all of which are currently unchecked: "Drinking Water", "Wastewater", "Stormwater", and "Solid Waste".

After you have clicked, "Add New PER" a pop-up window will appear:

You can select one (1) or multiple project types to complete within the same Engineering Report.

As you progress through the Questionnaire, your answers will drive new questions. Your answers are also drive which screens will appear on your ePER, and which documents you are required to submit with your ePER.

If you are unable to complete the interview, click the "X" button in the upper right hand corner. This will create a new pop- up window with three options. You can save and exit, exit your interview without saving, or cancel the exit process and return to your current interview.



The screenshot shows a window titled "Would you like to save the Interview?". At the bottom of the window, there are three buttons: "Save And Exit", "Exit Without Saving", and "Cancel".

8. INTERVIEW RECAP

Interview Recap is where you can see your interview answers. This is also the place where you can modify your answers, to correct any mistakes or update an old report.



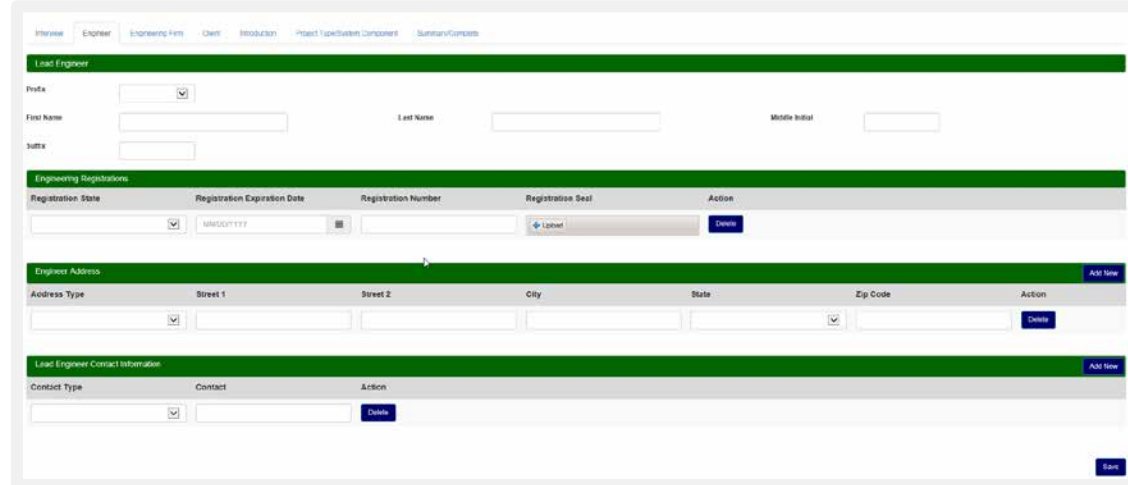
What types of projects are to be included in this Preliminary Engineering Report?

Drinking Water

Modify

9. ENGINEER

On this screen, you will be able to supply the Lead Engineer's contact and registration information.



The screenshot shows a web form for adding an engineer. It includes sections for Lead Engineer (Name, Title), Engineering Registrations (State, Expiration Date, Number, Seal), Engineer Address (Street, City, State, Zip), and Lead Engineer Contact Information (Type, Contact, Action). Each section has an 'Add New' button on the right and a 'Delete' button for existing entries.

Note: You must provide both a telephone number and email address for the Lead Engineer.

The Engineering Registrations section allows the Engineer to enter their Registration State, Registration Expiration Date, and Registration Number. These are required fields. The Registration Seal is optional.

Note that there is an "Add User" section listed under the "Lead Engineer Contact Information" section. This is where the Lead Engineer can add other engineers' information to assist with the ePER. You can have multiple users added by simply pressing the "Add New" button listed on the right side of the green bar. In order for a user to be added, they must first request and obtain a Level 2 eAuthentication Account (see section regarding eAuth accounts). The email entered must match the email the user entered when they created their account. You can also delete users who no longer need access by clicking on the "Delete" button next to their name.

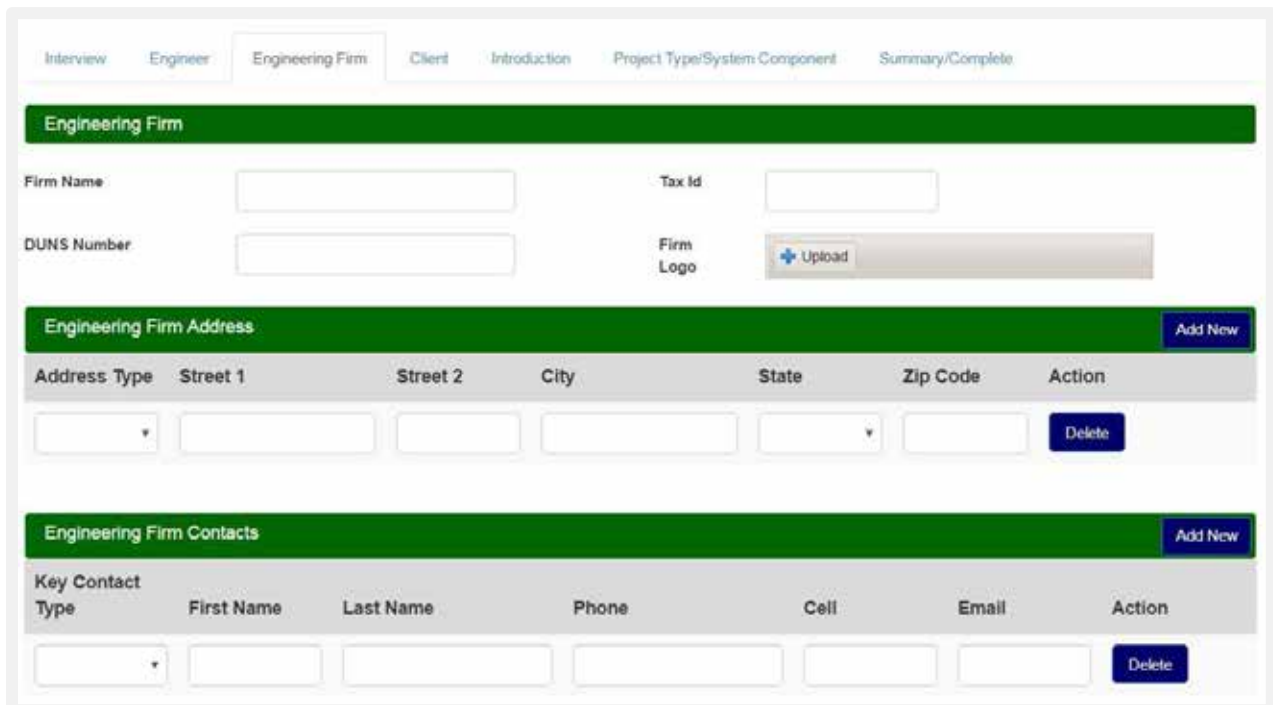
10. ENGINEERING FIRM

On the screen titled “*Engineering Firm*” the user will need to fill out the information regarding the Lead Engineer’s place of employment.



A dialog box titled "Add User to View or Edit PER" with a close button (X) in the top right corner. Below the title bar, there is a text prompt: "Enter the email address of the user to add". Underneath this prompt is a text input field labeled "Email". At the bottom right of the dialog box, there are two buttons: "Save" and "Cancel".

On this screen, you will provide the DUNS number and the tax id for the Engineering Firm, as well as the logo the firm uses. A Dun & Bradstreet (D&B) provides a D-U-N-S Number, a unique nine digit identification number, for each physical location of your business. D-U-N-S Number assignment is FREE for all businesses required to register with the US Federal government for contracts or grants.



The screenshot shows a web form with a navigation bar at the top containing tabs: Interview, Engineer, Engineering Firm (selected), Client, Introduction, Project Type/System Component, and Summary/Complete. Below the navigation bar is a green header for "Engineering Firm". The form contains several input fields: "Firm Name", "Tax Id", "DUNS Number", and "Firm Logo" with an "Upload" button. Below these is a section for "Engineering Firm Address" with a table of address entries and an "Add New" button. The table has columns for Address Type, Street 1, Street 2, City, State, Zip Code, and Action. Below that is a section for "Engineering Firm Contacts" with a table of key contacts and an "Add New" button. The table has columns for Key Contact Type, First Name, Last Name, Phone, Cell, Email, and Action.

You will also need to add firm contacts to this screen (other than the Lead Engineer) who will be knowledgeable about the project. You can add multiple contacts by clicking on the “*Add New*” button on the right hand side of the green banner.

11. CLIENT

This will be where you enter the information pertaining to the engineering firm's client.

A primary contact is required in order to add additional contacts; simply press the "Add New" button. Select a contact type from the drop down menu. You can delete contacts simply by pressing the "Delete" button.

The screenshot shows a web application interface for entering client information. At the top, there is a navigation bar with tabs: Interview, Engineer, Engineering Firm, Client (selected), Introduction, Project Type/System Component, and Summary/Complete. Below the navigation bar is a green header for the "General Information" section. This section contains several input fields: Client Legal Name, DUNS Number, Tax Id, and Customer Id. To the right of these fields are a Client Type dropdown menu and a Client Logo upload button. Below the General Information section is another green header for the "Address" section, which includes an "Add New" button. Underneath is a table with columns: Address Type, Street 1, Street 2, City, State, Zip Code, and Action. The Action column contains a "Delete" button. Below the Address section is a third green header for the "Key Contacts" section, also with an "Add New" button. This section contains a table with columns: Key Contact Type, First Name, Last Name, Phone, Cell, Email, and Action. The Action column contains a "Delete" button.

General Information						
Client Legal Name	<input type="text"/>	Client Type	<input type="text"/>			
DUNS Number	<input type="text"/>	Client Logo	<input type="text"/>			
Tax Id	<input type="text"/>					
Customer Id	<input type="text"/>					

Address							Add New
Address Type	Street 1	Street 2	City	State	Zip Code	Action	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Delete	

Key Contacts							Add New
Key Contact Type	First Name	Last Name	Phone	Cell	Email	Action	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Delete	

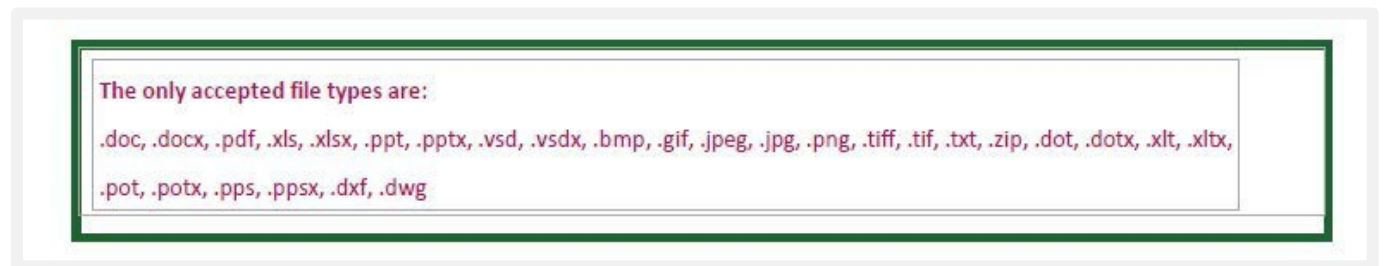
You will then select the location where you wish the upload to be placed. There are three (3) options:

- ü Below This Section
- ü Above This Section
- ü Appendix

These options are for the final report under the Summary/Complete tab and will determine the location of the uploaded file, which will be displayed below or above the text box. For the Appendix option, the uploaded file will show at the end of the report.

Just like the paragraph, you can add multiple files to the report and specify their sequence in whichever order you wish. The engineer can upload files here, but does not have to do so.

To add a file, simply click on the *“Upload”* button and browse your computer for the appropriate file. To delete a file, simply click on the *“Delete”* button.



13. EXECUTIVE SUMMARY

On this screen, the engineer will explain the benefit of the proposal, what they hope to accomplish, and provide an overall summary of the engineering report.

14. PROJECT TYPE/SYSTEM COMPONENT

On this screen, you will select the Project Type and System Component you wish to work on.

A **Project Type** is a category of work described in an ePER, such as Drinking Water, Wastewater, Storm Water, or Solid Waste. Up to four Project Types may be included in a single ePER.

System Components are aspects of a project under a Project Type. Available System Components under the Drinking Water Project Types are Treatment, Distribution, Storage, Source, and Other. The selection of System Components from the Project Type/System Component Tab helps set up the analyses of alternatives that the ePER will require. There will be one analysis of alternatives for each System Component. There must be at least one feasible alternative under any given System Component. It is through the Project Type/System Component screen that you select the specific System Component you wish to work on.

The Project Types available will vary depending on what was selected on the interview screen. If you have

forgotten to add a Project Type, or no longer need one, you can edit the interview back on the "Interview" tab.

The screenshot shows a navigation bar with tabs: Interview, Engineer, Engineering Firm, Client, Introduction, Project Type/System Component (active), and Summary/Complete. Below the tabs, there is a section titled "Select the Project Type you want to work on now" with a radio button selected for "Drinking Water". A green bar labeled "System Components" contains an "Add New" button. Below this bar, a text prompt reads: "Select a previously created System Component for this Project Type or add a new System Component or select another Project Type". A table with columns "Type", "Name", and "Action" is visible, along with a "Submit" button at the bottom right.

Once selected, you will have to click on "Add New" under "System Components" to get started.

Here, you will select the "Component Type" desired. The drop down menu will include all System Components included for a given Project Type.

The screenshot shows a dialog box titled "Add System Component" with a close button (X) in the top right corner. It contains a "Component Type" dropdown menu with "Treatment" selected. Below the dropdown is a "Component Description" text area. At the bottom of the dialog are "Save" and "Cancel" buttons.

Once you have the system component type selected, an individual name, and a description, you can click on save and return back to the "Project Type/System Component" screen. Once you have returned to the System Components page, you select the radio button of the file that is chosen and the option to delete or update the file that is available. When finished and the file has been updated--, click save to save this page. Once the project type is saved, there are additional tabs that populate to further explain the project selected.

15. PROJECT PLANNING

Under project planning, there will be five (5) screens requiring data.

The five (5) screens requiring data are:

- ü Project Summary
- ü Location
- ü Environmental Resources Present
- ü Population Trends
- ü Community Engagement

15.1 PROJECT SUMMARY

Provide a description of the current facility as well as the proposed facility. If there is no current facility, describe the current situation (the scope of the project, what the PER is aiming to improve, etc.).

15.2 LOCATION

Provide scale maps and photographs of the project planning area and any existing service areas. Include legal and natural boundaries as well as a topographical map of the service area.

Service Area(s)				Add New	View All
Service Area Name	Population	Square Miles	Actions		
Area name - Existing Area	7,081	7.9	Edit / View Map Edit / View Data Delete		
SA2 - Existing Area	11,953	5.34	Map 	Edit / View Map	Edit / View Data Delete

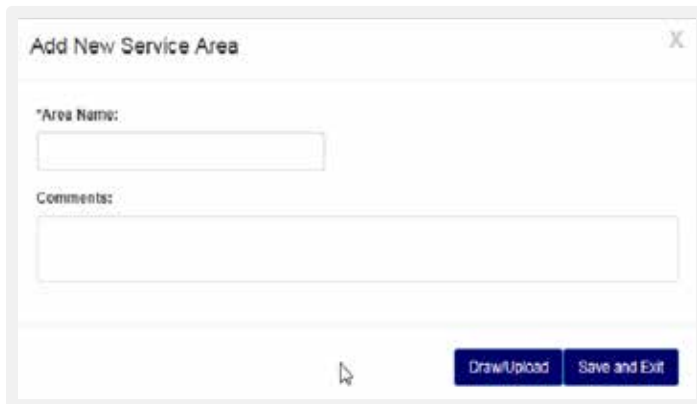
Like the *“Project Summary”* section, a paragraph must be added and one (1) or more files may be uploaded. The paragraph and related files must address the question(s)/concern(s) listed under the *“Project Planning: Location”* section.

The location screen is where you can draw your Service Area(s). You will have option to either draw your Service Area(s) or upload an existing Shapefile.

15.2.1 DRAWING A SERVICE AREA

To create a Service Area Map, click on *“Add New”* button and provide the information requested in the *“Add New Service Area”* pop-up window. After entering your data, if you select *“Save and Exit”*, you will be re-directed back to the Service Area screen.

If you click on “Draw/Upload”, the initial drawing page will load and several tools will appear across the top of the screen: Draw, Upload, Layers, Legend, Instructions, Save, Save and Exit, and Exit.



You are now ready to create your Service Area.

To draw your service area, select the “Draw feature” function in the upper left-hand corner of the screen. Once you have a done so, the following Editing Tools will be displayed: Polygon, FreeHand, Select, Cut, Delete, and Edit.



You will also see three “Select Tools” options: Select City, Select Blocks, and Create Polygon.

The Polygon tool allows you to draw a point-by-point polygon by clicking the left mouse button to create polygon points on the map. To begin, click the Polygon button under Editing Tools. Use the mouse to select your desired polygon points on the map. When you are finished, double-click the left mouse button to close the shape.

Note: It is important to click slowly so that the application properly registers each point/vortex that is clicked on the map.



The Polygon tool also has a Census Block precision feature. Once you are zoomed in enough to see the Census Blocks, you can hold down the Control Button. This will allow the Map pointers to connect to a Census Block. You will see a Cross-hairs pointer appear that indicates that the functionality is enabled.

The FreeHand allows you to draw a Service Area by clicking and holding the left mouse button while dragging the mouse. To begin, click the FreeHand button under Editing Tools. Use the mouse to draw your proposed service area.

Once you are finished free-hand drawing your Service Area shape, release the left mouse button.

When drawing a Map, please do not cross/overlap lines or try to connect the start and end points. This may result in your map not drawing or loading properly, which may yield an error message. The map will auto-connect the start and end points for you.

The Select Blocks tool allows you to include specific census blocks in a polygon. The feature only works when zoomed in enough to see the Census Blocks appear on the map. To begin, zoom in on the area you wish to include. Once the census blocks appear, the *"Select Blocks"* Button will become enabled. Click the *"Select Blocks"* button under *"Select Tools"*. Use the left mouse button to click on the census blocks that you want to include in your polygon. Once you are finished, click the *"Create Polygon"* button Select Tools.

After you are finished drawing your Service Area, a *"Loading"* Page will appear as the Map is rendered. Please wait, as rendering maps may take some time.

15.2.2 EDITING A SERVICE AREA

If you need to edit your map, click on the *"Select"* button under the Editing Tools and then left click on the Service Area you wish to edit. Once you have the Service Area selected, click on the *"Edit"* button under the Editing Tools. To edit the polygon, simply move the mapping pointers as needed. When you are finished editing your map, you will need to click the *"Stop Edit"* button under the Editing Tools.



If you need to cut a shape out of your polygon, click on the “*Select*” button under the Editing Tools and then left click on the service area you wish to edit. Once you have the Service Area selected, click on the “*Cut*” button under the Editing Tools. The Cut function works similar to the Free-hand function, in that you must click and hold the left mouse button while dragging the mouse to select the area you wish to cut from the polygon.

Note: If you intend to make edits to the Existing layer of your Service Area, you must make those edits prior to drawing/ editing any proposed layers.

15.2.3 UPLOADING A SHAPEFILE

To upload a Shapefile, click on the “*Upload*” button at the top of the screen, select the Area Type (Base or Unserved) and then browse for the .zip file you want to upload. Select the file to upload and click on the “*Upload*” Button. The “*Loading*” page will appear while the Shapefile is being uploaded. If the Shapefile loads successfully, the Map will render the Service Area(s), which can then be edited by using the Draw feature.

Below are the file specifications for zipped Shapefiles:

- ü All map areas must be closed, non-overlapping polygons with a single, unique identifier.
- ü The Shapefile must have an assigned projection with an accompanying .prj file.
- ü The Shapefile must be submitted as a *.zip file. This can be done with a WinZip or in Windows by selecting the files associated with a Shapefile, right-clicking the files, then clicking “*Send*” to Compressed (zipped) folder. Be sure that your .zip file contains only one Shapefile. Zip file size must not exceed 2GB

15.2.4 DRAWING PROPOSED AREAS

Proposed areas are created much the same way as Existing areas are created. Click on the “Draw” feature in the upper left-hand corner of the screen and select “Proposed” as the Area Type. Select the tool you wish to use to draw the proposed area. Please note that the system will not allow you to create Proposed Areas without first creating an Existing Layer. When drawing Proposed Areas, any portion that is drawn inside/overlapped of the Existing Service Area will be cut to fit within the Existing Service Area.



15.2.5 TOOL BAR ITEMS

Layers: Allow users to access the display layers.

Note: As more layers are activated, more data must be collected, causing the system to take longer to display your drawn Service Areas. Sometimes, you may need to zoom in closer to the map in order to see the Layers appear on the screen.



Legend: Holds the colors the users will see on the map as Layers are applied.

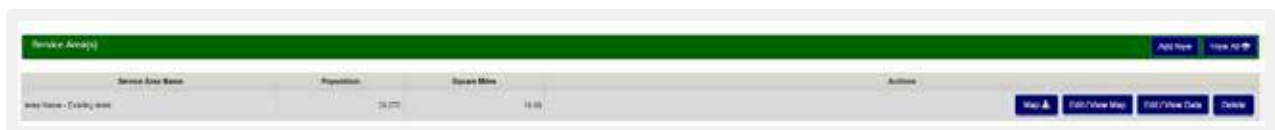
Instructions: This shows the Instructions for using Service Area Mapping.

Hide: Clicking the “Hide” button will collapse the toolbar.

Save, Save and Exit, Exit: Once you are finished drawing, you may click “Save”, “Save and Exit”, or “Exit”. Save will save your progress without exiting. Save and Exit will save your progress and return you to the Service Area(s) Tab. Exit will return you to the Service Area(s) tab without saving your progress.

15.2.6 VIEWING CENSUS DATA

ePER allows you to view the census data for each Service Area that you draw/upload.



Edit/View Data: Allows you to review the data you entered on the Add New Screen and enter Comments

Edit Service Area X

Service Area

Area Name:

Comments:

Total Population

Total Square Miles

[Save changes](#) [Close](#)

15.3 ENVIRONMENTAL RESOURCES PRESENT

Provide maps, photographs, and/or a narrative description of environmental resources present in the project planning area that affect design of the project. Environmental review information that has already been developed to meet requirements of NEPA or a state equivalent review process can be used here.

15.4 POPULATION TRENDS

Provide U.S. Census or other population data (including references) for the service area for at least the past two decades if available. Population projections for the project planning area and concentrated growth areas should be provided for the project design period. Base projections on historical records with justification from recognized sources.

Service Area	1990	2000	2010	Annual Growth	2020	2030	2040	2050
Area name	6,884	7,003	7,081	0.0985	7,186	7,285	7,383	7,482
SA2	11,944	11,976	11,953	0.0045	11,967	11,971	11,976	11,980
Total	18,828	18,979	19,034		19,153	19,256	19,359	19,462

15.5 COMMUNITY ENGAGEMENT

Describe the Applicant's approach used (or proposed for use) to engage the community in the project planning process. The project planning process should help the community develop an understanding of the need for the project, the Applicant operational service levels required, funding and revenue strategies to meet these requirements, along with other considerations.

16. EXISTING FACILITIES

Under Existing Facilities, there will be four screens requiring data. The four screens requiring data are:

- ü Location Map
- ü History
- ü Existing Conditions
- ü Financial Status

Note that if the Interview Question regarding Water/Energy/Waste Audits is answered yes then a fifth screen will appear labeled "Water/Energy/Waste Audits."

16.1 LOCATION MAP

Provide a map and a schematic process layout of all existing facilities. Identify facilities that are no longer in use or abandoned. Include photographs of existing facilities.

16.2 HISTORY

Indicate when major system components were constructed, renovated, expanded, or removed from service. Discuss any component failures and the cause for the failure. Provide a history of any applicable violations of regulatory requirements.

16.3 EXISTING CONDITIONS

Describe present condition; suitability for continued use; adequacy of current facilities; and their conveyance, treatment, storage, and disposal capabilities. Describe the existing capacity of each component. Describe and reference compliance with applicable federal, state, and local laws. Include a brief analysis of overall current energy consumption.

Reference an asset management plan if applicable

16.4 FINANCIAL STATUS

(Note: Some agencies require the owner of the utility to submit the most recent audit or financial statement as part of the application package.) Provide information regarding current rate schedules, annual O&M cost (with a breakout of current energy costs), other capital improvement programs, and tabulation of users by monthly usage categories for the most recent typical fiscal year. Give status of existing debts and required reserve accounts.

16.5 WATER/ENERGY/WASTE AUDITS

Note: This Section may not appear depending on how the Interview Questions are answered.

This section should discuss any water, energy, and/or waste audits that have been conducted and the main outcomes. The audits can be attached to this section.

17. NEED FOR PROJECT

This section varies in length, depending on your answers to questions in the interview. You may see only one screen to fill out or as many as four. If you need to add or remove a screen, revisit the Interview screen and update your answer.

The four (4) screens requiring data are:

- ü Health & Sanitation
- ü Security
- ü Aging Infrastructure
- ü Reasonable Growth

Again, not all screens may appear, it all depends on how you answered the interview.

17.1 HEALTH & SANITATION

Describe concerns and include relevant regulations and correspondence from/to federal and state regulatory agencies. Include copies of such correspondence as an attachment to the Report.

17.2 SECURITY

Describe any security related items.

17.3 AGING INFRASTRUCTURE

Describe the concerns and indicate those with the greatest impact. Describe water loss, inflow and infiltration, treatment or storage needs, management adequacy, inefficient designs, and other problems. Describe any safety concerns.

17.4 REASONABLE GROWTH

Describe the reasonable growth capacity that is necessary to meet needs during the planning period. Facilities proposed to be constructed to meet future growth needs should generally be supported by additional revenues. Consideration should be given to designing for phased capacity increases. Provide number of new customers committed to this project.

18. ALTERNATIVES CONSIDERED

This section is enabled once you select a system component and hit "Submit" on the Project Type/System Component screen. Until then you will not be able to see the Alternatives Considered Tab.

For each System Component, you will need to identify, evaluate, and upload information about alternatives, including the proposal. You can add multiple alternatives that you have considered, whether feasible or not, to help demonstrate why the proposed project is the best option to pursue. At least one alternative identified must be feasible.

You will be able to see each of the alternatives you've started/completed on the "Alternatives List" screen.



Alternative #	Alternative Name	Construction Cost	Non-Construction Cost	Annual O&M	Total Project Cost	Created By	Lack of Technical Feasibility	Action
661	Alternativ	\$0.00	\$0.00	\$0.0	\$0.0	M Clt	<input type="checkbox"/>	Delete
641	Alt Name	\$1,000.00	\$1,000.00	\$1,0	\$2,0	M Clt	<input type="checkbox"/>	

On this screen you start by clicking on "Add New Alternative". Once alternatives are created, you can select the Alternative you wish to edit by clicking on it on the left hand side. When you select an alternative, the subtabs for entering a variety of information about each alternative will appear. You may also establish whether an alternative is feasible or not using the second box from the right. You must have at least one feasible alternative listed in order to submit the report. You will need to upload one or more alternatives for each System Component identified. The box on the far right allows you to delete an alternative.

18.1 DESCRIPTION

Describe the facilities associated with every technically feasible alternative. Describe the source, conveyance, treatment, storage and distribution facilities for each alternative. A feasible system may include a combination of centralized and decentralized (on-site or cluster) facilities.

Description

Alternative Name

Alt Name

Is this alternate solution feasible or is it not feasible?

Feasibility

Yes No

18.2 DESIGN CRITERIA

State the design parameters used for evaluation purposes. These parameters should comply with federal, state, and agency design policies and regulatory requirements.

18.3 MAP

Provide a schematic layout map to scale and a process diagram if applicable. If applicable, include future expansion of the facility.

18.4 ENVIRONMENTAL IMPACTS

Provide information about how the specific alternative may impact the environment. Describe only those unique direct and indirect impacts on floodplains, wetlands, other important land resources, endangered species, historical and archaeological properties, etc., as they relate to each specific alternative evaluated. Include generation and management of residuals and wastes.

18.5 LAND REQUIREMENTS

Identify sites and easements required. Further specify whether these properties are currently owned, to be acquired, leased, or have access agreements.

18.6 POTENTIAL CONSTRUCTION PROBLEMS

Discuss concerns such as subsurface rock, high water table, limited access, existing resource or site impairment, or other conditions which may affect the cost of construction or operation of the facility.

18.7 WATER AND ENERGY EFFICIENCY

Discuss water reuse, water efficiency, water conservation, energy efficient design (i.e. reduction in electrical demand), and/ or renewable generation of energy, and/or minimization of carbon footprint, if applicable to the alternative. Alternatively, discuss the water and energy usage for this option as compared to other alternatives.

18.8 GREEN INFRASTRUCTURE

Discuss aspects of project that preserve or mimic natural processes to manage storm water, if applicable to the alternative. Address management of runoff volume and peak flows through infiltration, evapotranspiration, and/or harvest and use, if applicable.

18.9 SUSTAINABILITY–OTHER

Discuss any other aspects of sustainability (such as resiliency or operational simplicity) that are incorporated into the alternative, if applicable.

18.10 ANNUAL O&M

On this screen, you need to enter the expected O&M costs by subcategory for the Alternative selected. You will need to specify the expense type, with at least one item being required. Multiples of the same category of expense can be added if needed. Note these costs will be used in the life cycle cost analysis. Therefore, O&M expense items added here cannot be deleted later in the Proposed Project tab, but additional O&M expenses can be added there. The reason for this is that the expenses included here cannot be modified without affecting that analysis.

The twelve Expense Item types are:

- ü Administrative/Office
- ü Contract Services–Other
- ü Contract Waste Treatment
- ü Contract Water Purchase
- ü Engineering
- ü Insurance
- ü Legal
- ü Other
- ü Repairs/Maintenance
- ü Salaries/Benefits
- ü Supplies
- ü Utilities

18.11 PROJECT COST

On this screen, you need to enter the expected Construction Costs as well as the expected Non Construction Costs. These values will reflect onto the Total Project Cost screen.

Construction Costs consist of one item: Development (Construction). Detailed construction cost estimates including unit cost breakdowns should be uploaded on this tab.

If you need to add more Construction/Non Construction Costs, simply click on the “Add New” button. To delete a field, click on the “Delete” button.

Non Construction Costs consists of fourteen Item Types. The Item types are:

- ü Contingencies
- ü Engineering – Preliminary Engineering Report
- ü Engineering – Design
- ü Engineering – Construction Administration
- ü Engineering – Resident Project Representative
- ü Engineering – Additional Services
- ü Environmental
- ü Land & Rights
- ü Legal Services
- ü Bond Counsel
- ü Architectural, Engineering & Planning
- ü Equipment
- ü Interest
- ü Other

Required Attachment							
Upload Status	Subsection	Standard Attachment Name	Description	Suggested Format	File Name	Updated	Action
	Project Costs	Detailed Cost Estimate	<input type="text"/>	No Format			<input type="button" value="+ Upload"/>

You will also find a Required Attachment section before the text box. Here you must upload a document to satisfy the requirement.

Note: Once finished with this Alternative, return to the Alternatives List and select or add another Alternative if needed.

19. PROPOSED PROJECT

This section is dependent on the Interview. This will change with the Project Type Selected under the “Project Type/System Component” screen. Once finished with one Project Type, going into a second, third, or fourth Project Type will require each of these screens to be completed once for each project type. There will be 10 screens to complete, plus one or more for a summary of the proposed design of the specific components.

Note: Even if there are multiple System Components of the same type (two treatment System Components for example) that there will still be only one screen for Treatment within a given Project Type.

The eleven screens requiring data are:

- ü Preliminary Design Summary
- ü Treatment (or other System Components)
- ü Project Schedule
- ü Land Rights
- ü Permit Requirements
- ü Sustainability Considerations
- ü Total Project Cost
- ü Income
- ü O&M Costs
- ü Debt Repayments
- ü Short Lived Asset Reserves

19.1 PRELIMINARY DESIGN SUMMARY

The Preliminary Design Summary uses the Standard Template and requires a text to be entered.

19.2 TREATMENT (OR OTHER SYSTEM COMPONENT SCREENS)

On this screen, you will first check any boxes that should be associated with the System Components. Multiple items can be selected. The example below shows choices for the Drinking Water Project Type and Treatment System Component.

Note that if there were are multiple System Components of the same type, such as two drinking water treatment plants, one that included filtration and another that included membranes that were considered different System Components, they would both then the checkboxes for all should be entered on the same screen by checking the Filtration and Membrane Processes and details should be added on the same screen below the check boxed.

Preliminary Design Summary **Treatment** Project Schedule Land Rights Permit Requirements Sustainability Considerations Total Project Cost

Income O&M Costs Debt Repayments Short Lived Asset Reserves

Proposed Project - Drinking Water - Treatment

Water Treatment Type

<input type="checkbox"/> Aeration	<input type="checkbox"/> Disinfection	<input type="checkbox"/> Chemical Oxidation	<input type="checkbox"/> Other <input type="text"/>
<input type="checkbox"/> Mixing/Coagulation/Flocculation	<input type="checkbox"/> Softening	<input type="checkbox"/> Ozone Disinfection	
<input type="checkbox"/> Clarification	<input type="checkbox"/> Reverse Osmosis	<input type="checkbox"/> Membrane Processes	
<input type="checkbox"/> Filtration	<input type="checkbox"/> Electrodialysis	<input type="checkbox"/> Activated Carbon	

You also have to address the quality of the water you are concerned with. Again, you can select multiple items

Water Quality Concerns

<input checked="" type="checkbox"/> Pathogens	<input checked="" type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> Disinfectants and Disinfection By-Products	<input checked="" type="checkbox"/> Iron/Manganese
<input checked="" type="checkbox"/> Organic Contaminants	<input checked="" type="checkbox"/> Nitrates	<input checked="" type="checkbox"/> Radionuclides	<input checked="" type="checkbox"/> Taste/Odor
<input checked="" type="checkbox"/> Inorganic Contaminants			<input type="checkbox"/> Other <input type="text"/>

Describe process in detail (including whether adding, replacing, or rehabilitating a process) and identify the location of the plant and site of any process discharges. Identify the capacity of treatment plant (i.e. Maximum Daily Demand).

19.3 PROJECT SCHEDULE

On this screen, you will need to define a proposed start of construction, a proposed end of construction, and at least one milestone date. Only one milestone displays on the screen at first; you will need to click on "Add New" to populate at least the other two fields. You must add a dates for each row.

These rows consist of:

- ü Proposed Start of Construction
- ü Milestone Date
- ü Proposed End of Construction

Identify proposed dates for submittal and anticipated approval of all required documents, land and easement acquisition, permit applications, advertisement for bids, loan closing, contract award, initiation of construction, substantial completion, final completion, and initiation of operation.

19.4 LAND RIGHTS

On this screen, you will enter information regarding the land being required.

Land Rights	
Number of Acres To Be Acquired - Fee Simple	<input type="text" value="7"/>
Number of Acres To Be Acquired - Lease	<input type="text" value="7"/>
Acres To Be Acquired - Purchase Price	<input type="text" value="\$7"/>
Acres To Be Acquired - Value	<input type="text" value="\$7"/>
Number of Acres Now Owned - Fee Simple	<input type="text" value="7"/>
Number of Acres Now Owned - Lease	<input type="text" value="7"/>
Acres Now Owned - Purchase Price	<input type="text" value="\$7"/>
Acres Now Owned - Value	<input type="text" value="\$7"/>
Describe Other Rights (such as water rights or rights-of-way)	<input type="text" value="7"/>

The first field is the number of acres to be acquired on a fee simple basis. The second is the number of acres of land to be acquired via lease. The third is the purchase price of the acres to be acquired. Like the "Introduction" section, at least one

Paragraph must be added and at least one file must be uploaded. The paragraph and related files must address the questions/concerns listed under the "Details for Proposed Project–Land Rights" section.

19.5 PERMIT REQUIREMENTS

Identify any construction, discharge and capacity permits that will/may be required as a result of the project.

19.6 SUSTAINABILITY CONSIDERATIONS

Water and Energy Efficiency. Describe aspects of the proposed project addressing water reuse, water efficiency, and water conservation, energy efficient design, and/or renewable generation of energy, if incorporated into the selected alternative.

Green Infrastructure. Describe aspects of project that preserve or mimic natural processes to manage storm water, if applicable to the selected alternative. Address management of runoff volume and peak flows through infiltration, evapotranspiration, and/or harvest and use, if applicable.

Other. Describe other aspects of sustainability (such as resiliency or operational simplicity) that are incorporated into the selected alternative, if incorporated into the selected alternative.

19.7 TOTAL PROJECT COST

This screen shows the Total Project Cost for all System Components for a given Project Type.

Note: The Total Project Cost for all Project Types combined is shown on the Conclusions and Recommendations tab.

The screen has fillable fields for adding new project costs, as well as auto-populated fields driven from other pages inside the application. The fields that can be added are for those costs that would not affect the life cycle cost analysis, such as refinancing of other debt (see below). Auto-populated fields obtain their values entered as project costs under the Alternatives Considered Tab.

The screenshot displays a web application interface for 'Total Project Cost'. At the top, there are navigation tabs: 'Preliminary Design Summary', 'Treatment', 'Project Schedule', 'Land Rights', 'Permit Requirements', 'Sustainability Considerations', and 'Total Project Cost' (which is highlighted). Below these are sub-tabs: 'Income', 'O&M Costs', 'Debt Repayments', and 'Short Lived Asset Reserves'. The main content area has a green header bar with the text 'Total Project Cost (Engineer's Opinion of Probable Cost)' and an 'Add New' button. Below this is a table with the following structure:

Cost Classification	Description	Cost	Action
Initial Operation	Nate Treatment-Development (Construction)- descrip	\$1,000	Delete
Initial Reserve	Nate Treatment-Interest-description	\$1,000	Delete
Refinancing (Ot	description	\$1,000	Delete
		Total	\$3,000.00

At the bottom of the interface, there is a green bar with the text 'Details for Proposed Project - Total Project Cost' and an 'Add Paragraph' button.

19.8 SHORT LIVED ASSET RESERVES

On this screen, you will state whether or not the client has any Short Lived Assets. A Short Lived Asset is an item needing replacement in up to 15 years. Examples include pumps, UV lamps, and small equipment. If "Yes", an editable field will appear (see below). If "No" is selected, then the field doesn't appear.

Does the client have any Short Lived Assets to report?

Yes No

A table of short lived assets should be included for the system (See Appendix A for examples). The table should include the asset, the expected year of replacement, and the anticipated cost of each. Prepare a recommended annual reserve deposit to fund replacement of short-lived assets, such as pumps, paint, and small equipment. Short-lived assets include those items not covered under O&M, however, this does not include facilities such as a water tank or treatment facility replacement that are usually funded with long-term capital financing.

Annual Operating Budget - Short Lived Asset Reserves Add New				
Description	Replacement Cost	Useful Life	Annual Reserve	Action
<input type="text"/>	<input type="text"/>	<input type="text" value="v"/>	<input type="text" value="\$0.00"/>	<input type="button" value="Delete"/>
Total			<input type="text" value="\$0.00"/>	

20. DOCUMENTS

The Documents Tab is where you can upload attachments and sign certifications. Some attachments and certifications are required, based on your interview questions. Until you have uploaded/signed the required document, you will not be able to submit your application.

When a document has a red "X" next to it, it means it has not been completed. When a document has a green checkmark next to it, it means it has been completed successfully. If there is no red "X" or green checkmark, then that document is optional. If you decided to update that document, then the status will change to either a red "X" or a green checkmark.

All Sub-tabs under the Documents Tab must be completed in order for the Documents Tab to be marked as finished.

20.1 ATTACHMENTS

The Attachments Pill is located under the Documents Tab. This is where you can upload any required attachments as well as upload any additional attachments that you may have.

Uploading a Required Attachment

To upload an attachment, click on the *“Upload”* button to open a dialog box to search for your file. Once you have selected your file, the dialog box will close and your file will be uploaded.

Upload Status	Category	Document Type	Description	File Name	Date	Uploaded By	Action
X	Application	Notice of Intent to File Application				NA	Upload

Note: If you want to add a description to your attachment, you must enter it before uploading your document. Once you have uploaded the document, the field will be locked down and you must delete your attachment to enter a description.

To delete an attachment, you must click the *“Delete”* button next to that attachment. A message will appear, asking if you are certain you wish to delete this attachment. You must confirm that you are certain in order to delete your attachment.

Uploading Multiple Attachments

After you have uploaded your initial attachment, you will have the optional to upload multiple attachments for that same Category and Document Type. Click the *“Add”* button next to the initial document you uploaded.

A pop-up window will appear, with the same Category and Document Type as the initial attachment.

Upload Document

Category: Board Resolutions

Document Type: Approval of Ten Year Financial Forecast

Description:

File Input: Upload

If you want to add a description, do so before you upload your attachment. Click the *“Upload”* button to browse for your file. Once you have selected it, the modal will close and you will see your uploaded attachment.

Uploading an Additional Attachment

To upload an Additional Attachment you must click on the *“Upload”* Button in the Additional Attachments header. Clicking it will open a modal that lets you select the Category, the Document Type, and then browse for the attachment.

The Document Type dropdown box is dependent on the Category dropdown. If you change your choice in the Category dropdown then it will change the choices available in the Document Type dropdown.

After uploading your attachment it will appear under the Additional Attachments with a green checkmark. If you want to delete this attachment, you must click the *“Delete”* button next to it.

The only accepted file types are:

.doc, .pdf, .xls, .ppt, .xlsx, .docx, .vsd, .bmp, .gif, .jpeg, .jpg, .png, .tiff, .tif, .txt, .zip, .dot, .dotx, .xlt, .xltx, .pot, .potx,

.ppsx, .vsdx, pptx, .pps

20.2 CERTIFICATION

The Certifications Pill is located under the Documents Tab. This is where you can sign any required certifications, as well as any optional certifications. To sign a certification, you can click on either the hyperlinked name of the certification or the *“Edit”* button. This will open up a modal with the certification text in it. You must fill out any input fields and click the *“I sign”* checkbox in order for that certification to receive a green checkmark. Saving without signing will result in the certification receiving an incomplete status.

To clear out a signed certification, you must click the *“Delete”* button next to a certification. This will delete all data inside the certification and set its status back to a red *“X.”*

WATER AND WASTE ELIGIBILITY CERTIFICATION

Certification for commercial credit and outstanding judgments

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. The organization is unable to finance the proposed project from its own resources or through commercial credit at reasonable rates and terms.
2. No outstanding judgment has been obtained and recorded by the United States of America in a Federal Court (other than in the United States Tax Court)

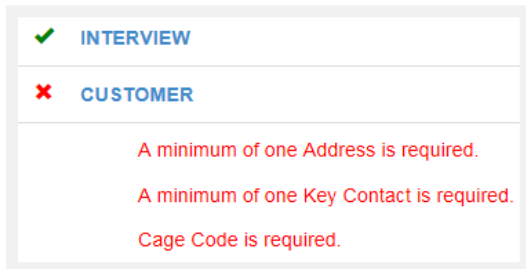
I sign that everything above is correct to the best of my knowledge.

Save Print

Note: In order to edit, sign, or delete a certification you must have the Representative-Signature-Certify security role. You can only receive this role by submitting an Authorized Representative Request, and having RUS Staff assign you the role.

21. SUMMARY/ SUBMIT

The Summary/Submit screen will show you a list of all your tabs and sub-tabs, along with their status. This is where you can track your application to see what is needed to submit. When a Tab or Pill has a green checkmark, you know that that screen is complete. If it has a red "X" instead, you know that it still needs some work



The Summary/Submit screen is also where you can see error messages next to any screen marked with a red "X." These error messages tell you specifically what is needed in order to submit your application. You can click on a hyperlinked Tab or Pill name to be taken back to that screen.

21.1 SUBMITTING AN APPLICATION

Once all you receive all green checkmarks on the "Summary/Submit" screen, the "Submit" Button will become enabled. You will receive a message asking if you are sure you want to submit. After you say yes, your application will be submitted. All of the fields and screens inside your application will be greyed out; you will no longer be able to edit them unless Rural Utilities Services Staff returns your application.

What does "Returned Application" mean?

A "Returned Application" means Rural Utilities Services Staff looked over your submitted application and noticed that something was either incorrect or missing something. Whenever an application is returned, you will receive a message telling you why it was returned. After you update your application, you will have to resubmit your application.

MISCELLANEOUS

22. PRINT SCREENS

At the bottom of each screen there is a “Print” button that will let you open a print-friendly PDF of that screen.

Some screens, such as Certifications and Board Resolutions, do not have “Print” buttons at the bottom of the screen. Instead, you have to click to open the individual certification or Board Resolution to access the print button.

23. EXPORT TO EXCEL

On some screens there is an “Export to Excel” Button that will let you download an Excel copy of that screen.

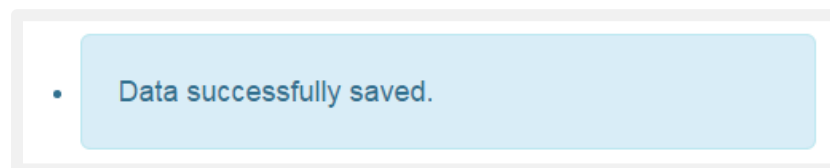
Note: If you export the Excel sheet and make changes in the workbook, it will not affect the screen. If you export the Excel sheet and then make changes in the screen, you have to re-download the Excel sheet for it to show the changes.

24. INFORMATION MESSAGES

While completing your application, you might see several different informational messages. These messages are to help notify you if you are missing any required data. Some messages just let you know whether or not your screen saved successfully or not. The messages are color-coordinated to help you quickly determine their meaning.

The different statuses are as follows:

Blue Status



If you receive a blue status, it means you have saved your data successfully and that there are no issues for you to look at. A blue status is the equivalent of a green checkmark.

Yellow Status

- The data has been successfully saved but there are errors you need to fix before you can submit:

If you receive a yellow status, it means that there are errors or data is missing from the screen. While you can save your screen, you will not be able to submit your application.

Red Status

- Selling Company Name is required.

If you have received a yellow status, you will also receive red statuses. Red statuses tell you what is needed in order to save your screen and submit your application. A red status is the equivalent of a red "X".

25. CONNECTION TIME-OUT

If you have been inactive for thirty minutes, the system will prompt you to select either "Stay Active" or "Log Out". If you do not respond, the system will automatically log you out. You will need to log back into RD Apply, to continue your application.