

Timber Permitting E&I Research Plan

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Team

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Research at a Glance

Research in the Path Analysis created an understanding of the processes and legacy systems that enable the sale of timber contracts and forest product permits. For this round of research, we'll be focusing on developing prototypes for timber permitting and bringing them to the field.

Current design hypotheses

[Prior \(and current\) design hypotheses are available here.](#)

Self-generated load tags

Based on:

- Observing fuelwood permit purchasers in ranger district offices
- Studying the hunting e-tag / e-reporting service flow

We believe that building/creating:

- A way to tag your own load with a tag you create yourself with a unique code provided by the FS
- A way to report your “wood harvest” back to the forest service, including location and amount

For:

- Permit purchasers
- Forest management

Creating this will result in:

- Removing the need to get a physical card stock tag
- Better location information for LEOs
- Better, more precise data to the FS on where and how much wood was harvest
- Access to wood permits outside of typical business hours

We’ll know if we’re right if:

- LEOs can enforce the new tag easily
- Permit purchasers access the new system
- Our tag instructions help purchasers create tags as we expect them to

Who could be harmed by this?

- LEOs, if the tag is hard to read
- The forest, if the system is easy to manipulate
- The public, if it causes more unnecessary LEO stops

Provide online access to required documents

Based on

- Observing fuelwood permit purchasers

We believe that building/creating

- A place with “day of” firewood information like
 - Current firewood cutting status
 - Interactive cutting maps that users can manipulate
 - The latest wood sheets with active timber sales
 - Other required documents

For

- Fuelwood permit purchasers

Will result in

- Fewer trips to the office for updated wood sheets
- Fewer questions about how to read the map

We’ll know if we’re right if

- Frontliners refer permit purchasers to the website
- We observe permit purchasers using the online resources to plan their trip

Who could be harmed by this?

- Web administrators who have to update the website frequently, if the process is arduous.
- Permit purchasers, if online information and printed information is inconsistent.

Online interactive maps

Based on

- Observing fuelwood permit purchasers and frontliners struggle to use multiple existing paper maps to understand where it's ok to get wood,

We believe that building/creating

- An online interactive map with
 - The ability to pinpoint the user’s current location
 - Boundaries between Federal, state, tribal, and private land

- Areas where it is/is not legal to cut (sales)
- Where decks are located
- Forest roads and other landmarks clearly labeled
- Current fire conditions

For

- Fuelwood permit purchasers
- Frontliners

Will result in

- Fewer people harvesting wood illegally
- Shorter in-office transactions and thus less waiting time for permit purchasers
- Freeing up time frontliners spend figuring out maps to spend on more productive work.

We'll know if we're right if

- Participants in usability tests report feeling confident that they know where they can/can't go
- Participants in usability tests are able to determine whether they can/can't go to a certain location.
- Fewer law enforcement contacts with people who've harvested wood from a place they shouldn't have

Who could be harmed by this?

- Permittees, if the maps are misleading or inaccurate

Creating a single online system that both frontliners and the public can use

Based on

- Interviewing and observing frontliners, permit purchasers, and administrators

We believe that building/creating

- A single online system with the same workflow for both permit purchasers and frontliners to complete permit purchases

For

- Fuelwood permit purchasers
- Frontliners
- Administrators

Will result in

- A more streamlined roll out process for frontliners and permit purchasers.
- Eliminating the need for manual permits and physical load tags in offices, which will in turn result in:
 - Less stress for frontliners
 - Fewer errors on manual permits
 - Less time administrators need to spend creating, destroying, and preparing for audits
 - Less money spend on paying third party auditors
 - Removing the financial impact on frontliners who are accountable for lost or stolen load tags

We'll know if we're right if

- Permit purchasers and frontliners participating in usability tests are equally able to achieve their goals and complete their tasks using the online system.

Who could be harmed by this?

- Frontliners who may need to switch between the fuelwood permit system and TIM to sell permits for other products.
- Permit purchasers who may not be able to get permits if there are FS server connectivity issues (if we completely eliminate the manual process as a backup)

Schedule

Research will be conducted over four sprints of the E&I's six total.

- **Sprint 1:** 10/15-10/25 - onboarding, desk research, discovery research planning, prototyping
- **Sprint 2:** 10/28-11/8 - field research, data collection, and analysis
- **Sprint 3:** 11/12-11/22 - ongoing design, research, and usability testing to refine concepts
- **Sprint 4:** 11/25-12/13 (3-week sprint b/c holidays) - ongoing design, research, and usability testing to refine concepts

- **Sprint 5:** 12/16-1/3/19 (3-week sprint b/c holidays) - ongoing design, research, and usability testing to refine concepts
- **Sprint 6:** 1/6-1/17 - prepare final deliverables

The first round of research will likely be conducted in Region 6 with further field research likely conducted in the home region of the Product Owner once they're identified.

User types

- Permit purchasers
 - Prior purchasers
 - New purchasers
- Frontliners
- Resource specialists
- LEOs
- Vendors

Participants

All in Region 6:

- Permit purchasers
- Front liners
- Law enforcement officers

Recruiting

We'll draw heavily on introductions from contacts made in prior Open Forest and Path Analysis research.

Methods

18F will use semi-structured interviews, cognitive walkthroughs, contextual inquiry, and prototype tests to better understand how the selected user groups interact with the proposed functionality in timber management technology. These methods work well to

uncover behavior and implied needs that will help inform the potential direction for forest product modernization.

PRA and privacy

This type of research is exempt from any Paperwork Reduction Act implications, as the PRA explicitly exempts direct observation and non-standardized conversation, 5 CFR 1320.3(h)3.

Basics of research sessions for discovery and exploration:

1. Sessions will be mostly in the field. Field session participants will sign the [**Design Research Participant Agreement for Forest Product Permitting**](#).
2. We'll capture interviews in pairs via note-taking making sure to remove any [personally identifiable information \(PII\)](#) from our final documentation. (If a remote interview is understaffed, it will be rescheduled in lieu of recording.)
3. Sessions will be held either via teleconference, video chat/screen sharing or in person, depending on the locations and connections of individual interviewees.
4. All remote non-federal-government participants will sign an Electronic Consent Form prior to sessions. If remote participants are government employees, we don't technically need the Electronic Consent Form, but we may use it anyway as it explains details about the research effort.
5. At the start of each session, we'll remind participants the conversation is voluntary — participants are free to discontinue the conversation at any time.

User interviews with FS frontliners

While our interviews are non-standardized, we do plan for the kinds of experiences that are important to elicit, and brainstorm prompts—both verbal and visual—that might help draw them out. The conversation guide helps us see all the parts of every participant's process.

Areas to understand and answer

- Why frontliners do their work.
- How they see success.
- Pain points

Brief introduction

Hello! Thanks for agreeing to talk with us — I really appreciate it. My name is [...], and I'm joined by my colleague(s) [...]. Before we get started, I'd like to give you an overview of what we'll cover in the interview.

I work for 18F, which is part of the GSA's Technology Transformation Service. Right now, I'm researching how to improve the experience of people purchasing and issuing fuelwood permits. Over the next hour, we'll talk about your role, the work you've been doing, and what you've learned along the way. Your stories will help us understand what might be useful for other people doing your kind of work.

Your participation is totally voluntary, and you're free to wrap things up at any time. If it's okay, we're going to type some notes and maybe capture a few images of what you share with us. We'll only use the information you share with us for research and analysis, and we'll make sure not to include your name in our notes or images. We take your confidentiality seriously, so if you have any particular concerns about the information you share, please let us know. If you say something that we want to quote directly, I'll follow up with you to ask for your permission. Does that sound okay?

The interview should take about an hour. If you need a break or have questions at any point in the process, let me know.

Do you have any questions before we get started?

Work and goals

- *Tell us a little bit about your district and role.*
- *How did you end up in your current role?*
- *How has your role changed over time?*
- *What do you most often work on?*

[Dig into specific examples.]

- *What makes the job rewarding?*
- *What do the people who rely on your work value most about it?*
- *Do you have any work-related goals for this year?*

Workflow and capacity

[replace w/ contextual inquiry, if possible]

Next, we'd like to learn about your workflow.

- *Sometimes it's helpful for us to walk through a recent instance that shows us how you work. Can you think of any recent examples?*

[Step through workflow.]

[Dig into specific tools.]

-

[Introduce prototypes.]

Closing and referrals

- *What else should we know about your processes and needs?*
- *Is there anything you haven't shown me that it would be helpful for me to see?*
- *If you had a magic wand and were allowed to make the timber permitting process whatever you wanted, what would you do? Why?*

- *[research partner], you've been taking notes this whole time. Do you have any questions?*
- *[participant], do you have any questions for me?*
- *One last request: do you know folks you might introduce us to that would be instructive to talk to? If so, could you connect us with them?*

Thanks for your time and insight! This conversation, along with others, will help inform the direction of timber permitting process improvements. Please drop me an email if anything else comes to mind.

Post-session

- Ensure any typed notes use an alias and all personally identifiable information is excluded.
- Blur or crop-out personally identifiable information from all screenshots.
- Research pair holds post-session chat for debrief.
- Create Google Doc with sanitized notes & images.

Appendix: Parking lot for other questions

-

Cognitive walkthrough with purchasers

Express protocol (5 minutes?)

Intro and DRPA

Recent experience

- Did you harvest firewood last year?
- What was your process? [get into specifics about usage over the course of the year]

Quick prototypes

Have you ever used the FS website?

[introduce product search P3]

- What do you think is going on here?
- Is any of this information new?
- Is any of it useful? How?
- What do you want to do from here?

[introduce purchase details P1]

- What do you think is going on here?
- What do you expect to happen next?
- Can you walk me through making that happen?

Extended protocol

Intro and DRPA

Awareness & interest

- How did you first learn about firewood permits?
- Did you have any concerns about getting a permit the first time?
 - About harvesting firewood?
- Did anything about the process end up being different than you imagined?
- How did you first find a place to go to find firewood?
- Have you mentioned to anyone that you get firewood from the national forest?

Recent experience

Did you harvest firewood last year? What was your process? [get into specifics about usage over the course of the year]

Have you ever used the FS website?

Product search

[think out loud prompt]

[introduce product search P1]

Let's say you are on the FS website to [activity] and see this. (The big X is a map of the country.)

- What do you think is going on?
- What do you expect to happen next?

[introduce product search P2]

- Is that what you expected?
- Is any of this information new?
- Is any of it useful? How?
- What do you want to do from here?

[introduce product search P3]

Let's say you saw this instead.

- Is any of this information new?
- Is any of it useful? How?
- What do you want to do from here?

Purchase details

Let's say you were allowed to purchase your firewood permits online. Would that change your process for getting firewood at all?

[introduce purchase details P1]

- What do you think is going on here?
- Is that what you expected when I mentioned purchasing a permit online?
- What do you expect to happen next?
- Can you walk me through making that happen?

[introduce purchase details P2]

- Is that what you expected?

Interested in participating in future research?

Contextual inquiry with frontliners

Bracket with user interview.

Research questions

Awareness

- How are purchasers learning about fuelwood harvesting?

Interest

- What was the deciding aspect that brings purchasers into the office for the first time?

First fuelwood permit visit to FS office

- Are any misperceptions being addressed?

First fuelwood harvesting visit to the forest

- Does how the permittee imagine harvesting happening differ from how it actually works?

Regular fuelwood harvesting

- How are people choosing where in the forest to visit?

Frontlines permit entry

- What are frontliners' barriers to permit processing?

Advocacy

- How are permit purchasers describing the purchase and harvest processes to their friends and family?

Observation protocol // notes template

How we'll get informed consent from members of the public

LEO (Xmas tree pilot; no load tag)

Research questions

- How do LEOs enforce firewood cutting compliance in areas that don't require load tags?
 - Are there opportunities to extend this way of working to other regions to enable a tag-less firewood permitting system?
- What do we need to consider in designing a user-generated permit that LEOs can validate without having to make a traffic stop?
- How did moving from a load tag to a print-at-home permit impact Christmas tree enforcement? What are the implications for the design of a similar firewood permitting system?

Stops

- How is fuelwood harvesting currently enforced?
- What determines whether to make a stop?
- What would help them from making unnecessary stops?
- Do you come across people while they're harvesting firewood? Xmas trees?
- What kinds of fraud do they see with fuelwood permitting?
 - What are common fraud scenarios? What's the context?
- What opportunities are there to limit/reduce this fraud?
- What might we need to consider in rolling out a new permit option (i.e., socialization and training for LEOs)
- What are their reporting requirements?

Potential load tags (if time)

- What would the ideal load tag tell you?
 - How would that affect your work?
- How might adding a self-generated fuelwood permit impact LEOs' work?

- What is the hierarchy of information on a self-generated permit?
- How might permit holders display/show self-generated permits to support LEOs in their enforcement/compliance role?

Interview protocol

Intro

Thanks for taking the time to talk with us today. [introductions]. We're here to learn more about how you help ensure that people who cut their own Christmas trees do so legally and safely.

I want to go over a bit of housekeeping before we dive into the interview. What you say will be confidential. Any reports we make will anonymize the information. If we want to get a direct quote and attribute it to you, we will come back to get your approval.

This is just a conversation and we are coming into it with an open mind. We want your honest thoughts and opinions and there are no "right" and "wrong" answers.

So that we don't forget anything, we will also be taking notes. Is that ok?

Do you have any immediate questions for us?

Questions

1. In a typical day on patrol, how does forest products enforcement typically fit in?
 - How does it start?
 - What information do you need?
 - Where do you get it?
 - Can you show me an example?
2. What happens when you come across a vehicle full of what looks like fuelwood?
 - What do you look for?
 - What information do you need to determine whether you will stop them?
 - Do you ever look up license plate numbers? If so, how? What, if any, other information do you look up?
 - What could make this better?
3. What happens when you stop someone to do a compliance check related to fuelwood? Can you tell me about a recent example?
 - What information did you need/look for/ask for?

- What information did you share with them?
 - What are their questions? Is there any information fuelwood purchasers seem like they should have but typically don't?
 - Is there any information you need to collect? How do you do it?
 - What do you do with this information?
 - What happens when you've returned back to the office from your patrol?
4. Do you see much fraud or abuse of the fuelwood permitting system?
 - Can you tell me about a recent example? How might that kind of situation be prevented?
 5. How do you verify that a permit-holder understands the rules of getting fuelwood?
 - How could this be better?
 6. With people printing their permits at home, do you think it's important for them to have a single permit showing the number of trees they're allowed to cut, or multiple unique "permits," one for each tree they're allowed to cut? [examples]
 - Why did you choose that answer?

Picture a future in which there was a tag on firewood loads. What might that look like? If that were the case, how would that change fuelwood enforcement?

7. You come across a truck loaded with wood. What do you do?
8. Do you know of any policy restrictions for removing fuelwood (e.g., do purchasers need to be 18YO)?
 - How do you currently ensure permit holders comply with these policies?
9. Is there anything I should have asked you that I didn't?

LEO (load tag forests)

Research questions

- What kinds of fraud do they see with fuelwood permitting?
 - What are common fraud scenarios? What's the context?
- What opportunities are there to limit/reduce this fraud?
- How might a self-generated fuelwood permit impact LEOs' work?
 - What is the hierarchy of information on a print at home permit?
 - How might permit holders display/show print-at-home permits to support LEOs in their enforcement/compliance role?

- What might we need to consider in rolling out a new permit option (i.e., socialization and training for LEOs)
- What are their reporting requirements?
- What information do they need in order to determine whether to make a stop?
- What would help them from making unnecessary stops?
- How important is it for you to see the load tag affixed to the load?
- What would the ideal load tag tell you?
 - How would that affect your work?

Interview protocol

Intro

Thanks for taking the time to talk with us today. [introductions]. We're here to learn more about how you help ensure that people who cut their own Christmas trees do so legally and safely.

I want to go over a bit of housekeeping before we dive into the interview. What you say will be confidential. Any reports we make will anonymize the information. If we want to get a direct quote and attribute it to you, we will come back to get your approval.

This is just a conversation and we are coming into it with an open mind. We want your honest thoughts and opinions and there are no "right" and "wrong" answers.

So that we don't forget anything, we will also be taking notes. Is that ok?

Do you have any immediate questions for us?

Questions

10. In a typical day on patrol, how does forest products enforcement typically fit in?

- How does it start?
- What information do you need?
- Where do you get it?
- Can you show me an example?

11. What happens when you come across a vehicle full of what looks like fuelwood?

- What do you look for?
- What information do you need to determine whether you will stop them?
- Do you ever look up license plate numbers? If so, how? What, if any, other information do you look up?
- What could make this better?

12. What happens when you stop someone to do a compliance check related to fuelwood?
Can you tell me about a recent example?
- What information did you need/look for/ask for?
 - What information did you share with them?
 - What are their questions? Is there any information fuelwood purchasers seem like they should have but typically don't?
 - Is there any information you need to collect? How do you do it?
 - What do you do with this information?
 - What happens when you've returned back to the office from your patrol?
13. Do you see much fraud or abuse of the fuelwood permitting system?
- Can you tell me about a recent example? How might that kind of situation be prevented?
14. How do you verify that a permit-holder understands the rules of getting fuelwood?
- How could this be better?
15. With people printing their permits at home, do you think it's important for them to have a single permit showing the number of trees they're allowed to cut, or multiple unique "permits," one for each tree they're allowed to cut? [examples]
- Why did you choose that answer?
- Picture a future in which load tags are no longer needed. What might that look like? If that were the case, what would you need to be able to ensure fuelwood compliance?**
16. What would help you identify a valid print at home permit in the forest?
17. What challenges do you foresee?
18. You come across a truck loaded with wood--where do you look to see a permit displayed?
19. Is it important to you to verify that this permit is not a duplicate?
- How would you go about doing that?
20. Do you know of any policy restrictions for removing fuelwood (e.g., do purchasers need to be 18YO)?
- How do you currently ensure permit holders comply with these policies?
21. Is there anything I should have asked you that I didn't?

Financial reconciliation questions

Research questions

- What does the backend reconciliation process for fuelwood permits look like?
- What triggers the process? (i.e., calendar driven?)
- What information do accounting folks need? Where do they get it? Where does it go?
- How might changes to the process impact the people responsible for accounting?

Interview protocol

Intro

Thanks for taking the time to talk with us today. [introductions]. We are here to learn more about how you help ensure that people who cut their own Christmas trees do so legally and safely.

I want to go over a bit of housekeeping before we dive into the interview. What you say will be confidential. Any reports we make will anonymize the information. If we want to get a direct quote and attribute it to you, we will come back to get your approval.

This is just a conversation and we are coming into it with an open mind. We want your honest thoughts and opinions and there are no “right” and “wrong” answers.

So that we don’t miss anything, I’d like to capture an audio recording of our session. Is that alright with you? We will also be taking notes.

Do you have any immediate questions for us?

Interview questions

- What kicks off your process for reconciling fuelwood permitting transactions?
- Can you walk me through an example? Show me what you do first? What happens next?
- What information do you need? Where does it go?
- Who or what else is involved?
- Is there any information you need that you have a hard time getting? If so, why do you think that is?
- Can you talk us through how it will work for the new Open Forest Christmas tree permitting program?
- How might that work for fuelwood permitting?

An exercise we sometimes go through is to talk about what it would look like to remove different parts of the process.

- What if removed cash, what would that do?
- What if we removed load tags, what would that do?
- If members of the public and frontliners could use the same system to generate permits, either at home or in the district office, what might that look like?
 - What challenges do you foresee?
- If there were one or two things you could change about the process, what would they be?

Desk research questions

- Tell us about the history of the load tag? Has it always been like this? How do you think it came about?
- What changes caused problems in the past?
- What percentage of fuelwood permit purchasers are new each year?
- What is the origin of the \$20// 2 cord minimum? What would it take to sell wood in ½ cord increments?
- What would it take to add a field to enter in the amount toward the 6 cord total that folks had purchased? Or track that in some other way?

Reduction exercise

- How would it change your work if you never had to issue a manual permit?
- How would it change your work if there wasn't a need for physical load tags?
- How would it change your work if there was a single system for the public and the frontliners to use to generate permits?

Teaching

- What's most misunderstood about firewood permits by buyers? By staff?
- How can we help frontliners break free of manual fuelwood permits? What would it take?
- ~~• How can we get rid of the need for load tags?~~
- ~~• What would it take to have a single system for the public and the frontliners to use to generate permits?~~
- How did xmas tree permit change affect you?

Appendix

Open Forest landing page research (from OF project)

Research questions shared from the Open Forest project. Tie in if there's an opportunity.

V1.0

RE: EPIC #604 and Story #1051

To design a landing page for all Open Forest products, we want to know how people seek out forest products to buy, both commercial and non-commercial/recreational buyers. What's their search behavior? What is their experience interacting with Forests and using their websites to gather information? How do they get help if they're "stuck"? And if they could change only one thing to make the current experience more ideal, what would it be?

Assumptions

- 18F will be interviewing people who have bought Forest products.
- 18F can modify questions to fit the circumstances of each interview.
- 18F will talk to commercial and non-commercial purchasers.
- These questions can be modified to include frontliners or POCs if appropriate.

Interview questions

Interview Goal: understand online usage and tolerance for technology

- How many hours are you online each day?
 - What things are doing online?
- Use a smart phone? What for (those key tasks)?

Interview Goal: understand product needs/behaviors (and their high frequency tasks) in the context of a Commercial vs. Non-commercial Forest customer

- Which Forest products have you purchased within the past 5 years?
- How was the experience?
 - Can you recall anything that stood out that you liked?

- Anything that needs improvement/needs changing?

Open Forest landing page questions

- Explore frequency of purchase of each type of product
- How did you know which forest had the product(s) you wanted to purchase?
 - Explore the situation where she knew what she was looking for.
 - How did she go about it?
 - Explore the situation where she didn't know.
 - How did she go about it?
- What do you do if you're stuck (can't find what the product)?
- What one thing must change to make your experience better?

-end-

Examples

[area example]

Based on conversations with [type of people], we believe [hypothesis].

[technology] could help [goal]. We think we'd know this is happening when [signal].

We believe that [service] is falling short of meeting the needs of [who uses it] based on [how we learned this or why you think this]. Specifically, they are experiencing [pain points or unachieved goal].

To better meet their needs, we want to [hope].

To better meet [type of people]'s needs, we aim to learn [research question].

Based on [conversations with or observations of] [type of people], we believe [hypothesis]. To better understand this, we want to know more about [research focus].