BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric Company for Approval of its Mobile Application and Supporting Systems Pilot. (U 39 E)	Application 19-07-019 (Filed July 29, 2019)

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E) REVISION TO MOBILE APPLICATION PILOT PLAN

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Dated: March 20, 2020

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REVISION TO MOBILE APPLICATION PILOT PLAN

Pacific Gas and Electric Company (PG&E) submits this Revision to Mobile Application Pilot Plan pursuant to the E-Mail Ruling Setting Schedule dated February 7, 2020 by Administrative Law Judge Regina M. DeAngelis.

I. BACKGROUND

On March 13, 2020, PG&E provided Notice of Its Intention to file this Revision to its Mobile Application Pilot Plan.

II. ISSUES FOR REVISION

A. Duration of Pilot.

PG&E proposed in its Pilot Implementation Plan that "the pilot duration would be a minimum of six months or until 384 unique submissions have been received, while the maximum length of the pilot would be 12 months."[1/] Based on suggestions from the Safety and Enforcement Division (SED) at the Workshop No. 2, PG&E will extend the pilot to a minimum of 12 months.[2/]

1/ PG&E Pilot Implementation Plan, p. 29.

2/ PG&E Revised Pilot Implementation Plan, p. 5.

B. Timing of Pilot.

PG&E proposed in its Pilot Implementation Plan that we would "launch the pilot and monitor its use during fire season."[3/] Based on suggestions from the Safety and Enforcement at the Workshop Number 2, PG&E will not launch before or during this upcoming fire season, but will instead launch the pilot after the end of the upcoming fire season, approximately in the first quarter of 2021.[4/]

C. Duplicates to be Counted.

PG&E proposed in its Pilot Implementation Plan that we "collect a minimum of 384 unique submittals of potential issues from members of the public in HFTD Tiers 2 and 3."[5/] However, based on the comments we heard from BBIC at Workshop Number 2, PG&E is revising its Pilot Implementation Plan to include duplicates in the count, and unique reports/submittals will not be required to get to 384.[6/] Additionally, we will assess the cost and time needed to manage duplicate submittals.

III. ISSUES PG&E NOT CONSIDERING REVISING IN PILOT IMPLEMENTION PLAN.

A. Additional Applications.

Although SED suggested that PG&E add additional functions to the mobile application, PG&E would like to point out that it already has other applications on its website that address this request. For example, PG&E already offers ways for mobile users to pay their bill, report an outage, view their usage or set preferences from a mobile phone. In addition, PG&E sends PSPS notifications via text, phone call and email to customers. The notifications for 2020 include information such as estimated shutoff times, estimated restoration times and addresses so that they contain all the information customers need without taking any other action. If customers do want to learn more, links take them to pge.com/pspsupdates which will be on PG&E's new emergency website. The emergency website is being designed for lower bandwidths using a "mobile first" design.

In addition, requiring users to download a native mobile app is appealing to only to a subset of customers. Given that all customers with a mobile phone can currently get the information they need in a "built for mobile" way, PG&E believes that the existing platform is the best way to give the largest number of mobile phone users access to functionality.

IV. CONCLUSION

For the reasons outlined above, PG&E kindly requests the Commission approve its Revised Pilot Implementation Plan as attached as Exhibit 1.

Respectfully Submitted,

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3/ PG&E Pilot Implementation Plan, p. 29.

4/ PG&E Revised Pilot Implementation Plan, p. 29.

5/ PG&E Pilot Implementation Plan, p. 5.

6/ PG&E Revised Pilot Implementation Plan, p. 31.

EXHIBIT 1

PACIFIC GAS AND ELECTRIC COMPANY

REVISED MOBILE APPLICATION PILOT IMPLEMENTATION REPORT

(REDLINE VERSION)

EXHIBIT 1

PACIFIC GAS AND ELECTRIC COMPANY
REVISED MOBILE APPLICATION PILOT IMPLEMENTATION REPORT

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PACIFIC GAS AND ELECTRIC COMPANY
REVISED MOBILE APPLICATION PILOT IMPLEMENTATION REPORT

A. Introduction

On June 27, 2019, the California Public Utilities Commission (CPUC or Commission) issued Investigation (I.) 19-06-015 relating to the maintenance and operation of Pacific Gas and Electric Company's (PG&E or the Company or the Utility) electric facilities that "were involved in igniting fires in its service territory in 2017."[1] As part of that Order Instituting Investigation (OII), the Commission directed PG&E to take certain immediate corrective actions, including filing an Application with the Commission for the development of a mobile application and support system. On July 29, 2019, in response to I.19-06-015, PG&E filed the instant application for approval of its Pilot.

Pursuant to the November 14, 2019 Assigned Commissioner Scoping Memo and Ruling in Application 19-07-019 (Scoping Memo), PG&E now files this Pilot Implementation Plan (the Plan) for review. The Plan describes PG&E's Mobile Application and Supporting Systems Pilot (the Pilot) and addresses:

- Section A – Introduction
- Section B – Program Approach and Objectives
- Section C – Description of Mobile Application
- Section D – Description of PG&E Process for Handling Submittals
- Section E – Implementation Plan
- Section F – Outreach and Communication Plan
- Section G – Assessing Pilot Success
- Section H – Post Pilot Review

B. Program Approach and Objectives

Section B discusses the relationship between a public-facing web-based mobile safety reporting application (Mobile App) and PG&E's existing Wildfire Safety Plan. PG&E proposes to develop and pilot a Mobile App to assess whether and how such a mobile application can improve public safety by reducing the risk of catastrophic wildfire associated with utility infrastructure. While PG&E believes a public-facing Mobile App has the potential to improve safety, it is not a forgone conclusion that a

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1 I.19-06-015, Ordering Paragraph 13.

Mobile App would in fact achieve its intended purpose of wildfire mitigation. Moreover, such a Mobile App could have unintended negative consequences that increase risk by drawing resources away from existing programs and activities. PG&E proposes to pilot this public-facing solution to understand both positive and negative outcomes.

1. Wildfire Risk

The primary focus of the public-facing Mobile App is to further mitigate Wildfire risk. Wildfire risk is defined as the risk that PG&E assets may initiate a wildfire that is not easily contained. This definition of wildfire risk focuses on ignitions in geographic areas with elevated wildfire risk, also known as High Fire Threat Districts (HFTD).[2] Based on PG&E's historical data from 2015 to 2017, within the HFTD, the primary ignition risk drivers are vegetation contact (49 percent) and equipment failure (27 percent).[3] Other risk drivers include third-party contact with conductor (13 percent), animals (8 percent), fuse operation (1 percent), and unknown (3 percent). Additionally, distribution lines present significantly more risk than transmission lines (i.e., 1.5 ignitions per 100 miles for distribution compared to 0.5 ignitions per 100 miles for transmission) and have different risk profiles (e.g., transmission lines have reduced risk of vegetation caused ignitions).[4] PG&E asset maintenance practices, including patrol and inspection activities, vegetation management, corrective maintenance, and proactive asset replacement programs exist, in part, to reduce the risk of equipment failure and vegetation contact resulting in ignitions. The frequency of preventive and corrective maintenance activities is generally accelerated in HFTD, yet PG&E recognizes that actual infrastructure or vegetation conditions may change or degrade between program cycles.

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2 HFTDs and associated maps were approved in CPUC Decision 17-12-024 "Sept. 19, 2018: SED-CAL FIRE Joint Assessment and Recommendation Report on Fire-Wind Map."

3 PG&E, *Pacific Gas and Electric Company Amended 2019 Wildfire Safety Plan* (February 6, 2019), at p. 26, available at: https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/naturaldisaster/wildfires/Wildfire-Safety-Plan.pdf.

4 *Id.* at p. 28.

2. Role of the Mobile App

In concept, the Mobile App would allow members of the public to report potential safety concerns associated with utility infrastructure, primarily including PG&E's above-ground electric distribution and transmission conductors and associated structures and equipment. Existing reporting pathways include 24/7 telephone report lines (800-743-5000) and emergency response (9-1-1), however the Mobile App would provide an alternative for non-emergency issue reporting.

In function, the Mobile App would parallel, but not substitute, PG&E's existing routine inspection and patrols activities and Enhanced Vegetation Management (EVM) programs. PG&E details these two programs, along with other programs and strategies to prevent wildfires, in its 2019 Wildfire Safety Plan.[5] The 2019 Wildfire Safety Plan built on PG&E's 2017 Risk Assessment and Mitigation Phase Report.[6] Through 2019, PG&E inspected approximately 700,000 distribution and 50,000 transmission[7] structures through the Wildfire Safety Inspection Program with enhanced inspection methodologies in the HFTDs. PG&E's EVM Program includes overhang clearing (i.e., removing branches and limbs directly above but outside General Order 95 radial clearance), identifying and trimming or removing at-risk tree species, and fuel reduction through ground to conductor clearance with a focus on assets in HFTDs.

The Mobile App would enable the public to report their observations and photographs of issues emerging anytime between the assets' regularly scheduled preventive maintenance dates. Mobile App users could also report infrastructure concerns known to PG&E, which have degraded more rapidly than expected. In this sense, the public users of the Mobile App would complement the routine preventive maintenance programs by notifying the

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5 PG&E, *Pacific Gas and Electric Company Amended 2019 Wildfire Safety Plan* (February 6, 2019), available at: https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/naturaldisaster/wildfires/Wildfire-Safety-Plan.pdf.

6 PG&E, *2017 Risk Assessment and Mitigation Phase Report of Pacific Gas and Electric Company* (November 30, 2017), report available below the "2017 Milestones" heading at: http://www.pgecorp.com/corp_responsibility/reports/2018/bu03_risk_management.html.

7 See https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/wildfiresafety-inspection-program.page.

Utility of changes in condition. However, as discussed in the initial application, the general public is not trained to identify or distinguish between electric and communication assets, nor is the public trained to identify the potential for an ignition risk related to a PG&E asset. On the contrary, Mobile App users could also mistakenly submit issues with non-PG&E infrastructure (i.e., telecom), non-issues (i.e., constructed to regulation and design), or duplicate issues (i.e., already known to PG&E and prioritized appropriately). Or, Mobile App users could choose to use this pathway to report emergency situations which should have been routed through 9-1-1 emergency response. In such instances, PG&E personnel would have to be dispatched to respond to potential false positives, which would divert highly skilled and limited resources, both in the office and field, from actual fire risk mitigation work. The impact on resources is a significant concern to PG&E, given the likelihood that users will submit misidentified issues, duplicates and false positives. In these ways, the Mobile App may detract from the efficient execution of preventive and corrective maintenance programs.

PG&E anticipates that the Mobile App will have little to no connection to underground assets, like PG&E's gas distribution and transmission systems, or assets where public access is discouraged and prohibited, like PG&E's transmission and distribution substations. However, the Mobile App would permit reports for such assets.

3. Risk Mitigation Value of the Mobile App

Based on the risk framework described above, PG&E anticipates that, for a Mobile App to meaningfully mitigate the risk of catastrophic wildfire, the Mobile App should, at a minimum:

1. Identify genuine safety issues that pose an ignition risk;
2. Be used in areas with wildfire risk; and
3. Identify unique issues of PG&E assets that were not, and would not, have been identified by PG&E's own routine maintenance programs.

A pilot of the Mobile App is proposed to ensure sufficient interest by the public, usefulness in identifying new risks, and assess tradeoffs created via diversion of resources. The pilot will attempt to collect submittals, defined as "report packages including location, photos which retain metadata on Geographic coordinates, along with customer/public communication information

needed to provide status updates." It is anticipated that PG&E will commence and continue a pilot through at least ~~six~~ 12 months, spanning at least one ~~-~~wildfire season.

The Mobile App's utility in reducing the risk of catastrophic wildfire should be measured against the diversion of resources from other wildfire mitigation efforts that may be caused by the Mobile App, namely, to what extent use of the Mobile App would require a response to:

1. Submittals that do not report an ignition risk;
2. Emergencies that require a 9-1-1 response;
3. Issues outside of high fire threat areas; and/or
4. Issues on assets that do not belong to PG&E; and
5. Issues that would have been otherwise identified by PG&E (i.e., potential for duplication and suboptimal resource allocation).

4. Determining Mobile App Pilot Success

PG&E's proposed pilot is designed to ensure that the results would be indicative of how a fully scaled publicly available Mobile App would perform, especially providing insights into the types of utility ignition risks identified, a minimum number of unique submittals is needed. This outcome is essential for PG&E to be able to make inferences about the broader success of the full implementation, including whether crowdsourcing will help or hinder other strategic efforts by the Company to mitigate wildfire risk. Once the pilot achieves a statistically significant sample of the targeted pilot group, PG&E would have sufficient data to analyze regarding interest, usefulness, and capability.

The number of unique reports/submittals is an important measure needed to gauge the public interest of crowdsourcing utility issues. Based on the number of PG&E electric customers in HFTDs, PG&E proposes to collect a minimum of 384 unique submittals of potential issues from members of the public in HFTD Tiers 2 and 3. The minimum number of 384 submittals represents a significant sample of the targeted pilot population. This sample size gives the pilot a margin of error of +/- 5 percent at the 95 percent confidence level, making results of this sample representative of the overall pilot population. If this number is not attained PG&E will modify its outreach

plan to generate sufficient participation. Overall, a lack of participation would be an indication that the public is simply not interested in using the Mobile App.

Once the minimum sample of reports is achieved, PG&E would analyze the risk findings, false positives, improper usage, and user demographics to make a determination on whether to propose further expansion of the Mobile App. Risk findings analysis would include the types, counts, locations, and priorities of valid ignition risks or other safety conditions requiring corrective action that would otherwise not have been identified by PG&E's own routine preventive maintenance programs. False positives analysis would include the proportion of reports that were not PG&E assets or were not abnormal conditions, and therefore required no corrective action by PG&E. Analysis of improper usage would help assess the undesired use of the Mobile App in place of calling emergency services, or 9-1-1 in an emergency situation. Demographics analysis would be used to help target communications outreach for pilot expansion, and determine if there is widespread interest in the Mobile App, versus small local pockets of highly active users.

C. Description of Mobile Application

Section C describes an overview of PG&E's recommended approach in delivering a mobile reporting solution which is based on existing PG&E data as well as benchmarking data from other utilities who offer mobile apps. In summary, PG&E proposes the Mobile App be web-based instead of phone-based because it offers all the necessary functionality of the mobile application ordered in I.19-05-015 and discussed in the instant Application, and is both preferred by and simpler for the end user.

1. Technical Specifications for Mobile Application

As described I.19-05-015 and the instant Application, the Mobile App must: (1) be an open source; (2) be publicly available; (3) allow Geographic Information System (GIS)-Equipped phones to send pictures of utility infrastructure to an asset management system/database maintained by PG&E; and (4) allow general public to access such photos submitted.[8] Additionally, for each photo received, PG&E needs to provide the following information in the asset management system/database within 30 days of receipt of the photo

[8] I.19-06-015, p. 18.

through the Mobile App: (1) whether the photo identifies a problem; (2) whether the problem presents a safety concern or is a violation of safety regulations; (3) actions to remedy the matter; and (4) when the remedial action was or will be taken.

This section describes the mobile application and support systems that would be part of the Mobile App Pilot.

PG&E needs to ensure that the Mobile App provides adequate privacy and security for its users and the Company. The OII states that the mobile application should be "open source." The term open source means that the mobile application's source code would be publicly available, and thus subject to modification and redistribution by third parties. Having such an open and publicly available source code would introduce new cybersecurity risks to PG&E's Information Technology infrastructure. To address these risks while complying with the spirit of the OII, PG&E intends to proceed with developing a mobile application that has an open application programming interface (API). This means there would be a publicly available interface, but PG&E would maintain property ownership over the original source code for the mobile application.

The information received through the Mobile App, including photos and location details, will be updated into PG&E's systems. Within 30 days of an issue being reported, users will be able to access information through a website relating to their submittal (e.g., description of the issue, issue location and photos taken) as well as its status (e.g., whether the reported issue identified a problem and how the issue has been or is being resolved).

PG&E maintains information, including geographic coordinates and operations and maintenance records, about its various infrastructure assets. As part of the Mobile App Pilot, PG&E will consider what, if any, additional capabilities or information may be necessary for responding to issues reported by users of the Mobile App Pilot. PG&E will disclose to Safety and Enforcement Division (SED) the information gathered as part of the Mobile App Pilot and will work with SED staff to identify how this additional information might be incorporated into its existing operations and maintenance records.

2. Web-Based and Phone-Based Mobile Applications

PG&E has two options in designing the mobile application: a web-based application that can be used from any PC, Mac or mobile smart phone, and a phone-based mobile application, which is limited to use on mobile phones.

The primary difference between a web-based and phone-based mobile application is how the user accesses them. To access a web-based mobile application, the user would utilize their native web browser application (e.g., Safari for the iPhone and Chrome for Android) on the user's mobile phone. Through its responsive design, the web page would detect the size of the screen on the phone and automatically size the content to the appropriate layout. In contrast, to access a phone-based mobile application the user must download the application from the app store hosted by their mobile phone provider. For example, Apple's iPhone apps are available for download in the Apple Store and Android apps are available for download in Google Play (Google's app store).

For the functions required of this pilot, web-based and phone-based mobile applications offer similar functionality. For example, the ability for users to take and submit photographs and complete forms can be done via either option. The primary difference is that a phone-based mobile application would allow PG&E to "push" notifications to users and store information on the user's phone in the mobile application software, whereas a web-based application would rely on an email or a text message to send updates to the user.

3. Industry Benchmarking

PG&E compared both its own experience and the experience of other utilities with customer utilization of web-based and phone-based applications. Between June 2011 and November 2017, PG&E offered a mobile payment app to customers. During that period only 6 percent of customers downloaded the PG&E mobile payment app. In comparison, 55 percent of all web traffic to pge.com comes from a mobile device, which customers can use to pay their bill or complete other transactions.

PG&E compared its experience, which shows a strong user preference for web-based mobile applications, with ten other utilities, including California investor-owned utilities. The purpose of this benchmarking was to ascertain

how their respective experiences compared with PG&E. Table 1 presents these results.[9]

Like PG&E, most utilities (i.e., 6 of the 10 contacted) saw mobile app adoption of 3 to 7 percent of their customer base. This level of adoption occurred even though these utilities offered more than one function. A few of the utilities are reconsidering their mobile app strategy in light of the low adoption and extra cost required to maintain a phone-based application. In fact, one utility which had previously responded to the benchmark survey indicating they had a mobile app subsequently responded to state they had already decommissioned their mobile apps. A second utility indicated they will be decommissioning their mobile apps in 2020. In addition, PG&E asked these 10 utilities if they allowed customers to submit safety issues online. Most did not. Only one utility had offered that capability and subsequently chose to disable the feature due to customer safety and liability concerns.

TABLE 1
BENCHMARKING RESULTS

Line No.	Mobile App Adoption Rates	# of Utilities (excluding PG&E)
1	3-7%	6
2	10%	2
3	20%	2

4. Advantages of a Web-Based vs Phone-Based Mobile Application

Both a web-based and phone-based mobile application offer the necessary functionality for PG&E's mobile application. However, the web-based mobile application offers a greater ease of use and fits into the existing PG&E website operations. PG&E summarizes the advantages below.

From an ease of use perspective, a mobile web page:

- Allows the user to report a potential issue online from any web browser (phone, tablet or laptop/desktop);
- Does not require an extra step to download an app;

[9] PG&E has anonymized the results of its benchmarking as it was not authorized to release the names of the utilities that participated.

- Does not require repeated app downloads due to updates;
- Does not require large amounts of storage space on the mobile phone;
- Can have a shortcut placed on the phone home screen as a reminder (just like an app but without the higher storage space of the actual mobile app);
- Can be built on a standard HTML framework; and
- Can be easily found in search engines and in pge.com navigation.

In addition, a mobile web page fits into existing PG&E website operations. For example:

- PG&E uses an online customer satisfaction survey tool to collect customer comments. This feedback link is embedded into every page on pge.com, and would be available for this mobile web page.
- PG&E uses a session replay tool to anonymously review what the user did on each web page screen. In conjunction with the customer satisfaction survey tool, PG&E can better determine if design changes might be needed or if technical issues need to be addressed.
- PG&E has a tool embedded into each web page on pge.com that allows optimization of the customer experience through the testing of different designs. For example: 50 percent of visitors see option A, and 50 percent of visitors see option B. Results are measured for both options, and the option with the better business results can be rolled out to 100 percent of visitors.
- PG&E's existing web site has reporting built in, allowing the team to see the number of unique visitors to a page, how long they spent on the page and what they clicked on.
- Creating a native mobile app for Apple and Android phones requires PG&E to create two additional sets of code. Each set of mobile app software is unique to Apple or Android phone platforms and must be maintained separately over time. PG&E believes that developing the functionality in HTML on the existing mobile web page infrastructure will be more streamlined, as existing operations can be used. If a mobile app were to be created, PG&E would need to stand up separate mobile app support procedures, tools and operations. As a result, PG&E believes creating the reporting functionality on a mobile web page has the potential for a lower support cost over time.

5. Utilizing the Web-Based Mobile Application

In Figures 1 to 12, PG&E presents a draft mock-up of the proposed web-based mobile application and a description of its functionality.

FIGURE 1
EMAIL INVITING SELECT CUSTOMERS TO PARTICIPATE IN THE PILOT

The user receives an email from PG&E inviting them to participate in the pilot.

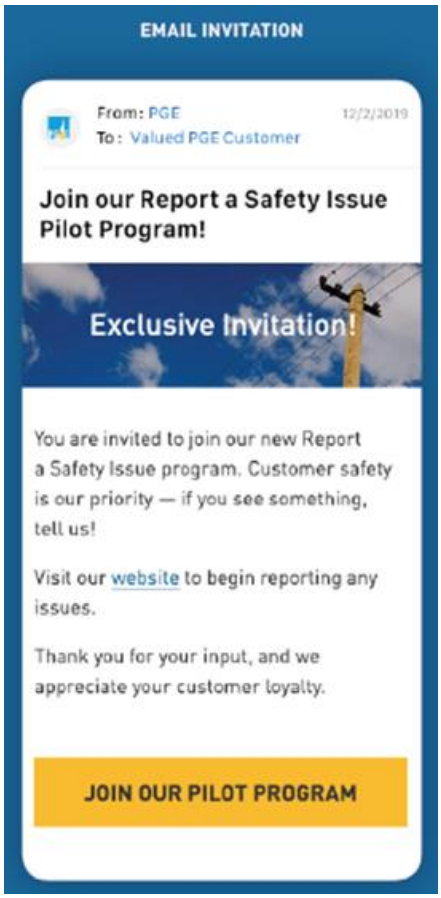


FIGURE 2
LANDING PAGE FROM EMAIL

The user gets to the landing page from the email and is invited to either add a shortcut to the web page to their mobile screen or to submit an issue.

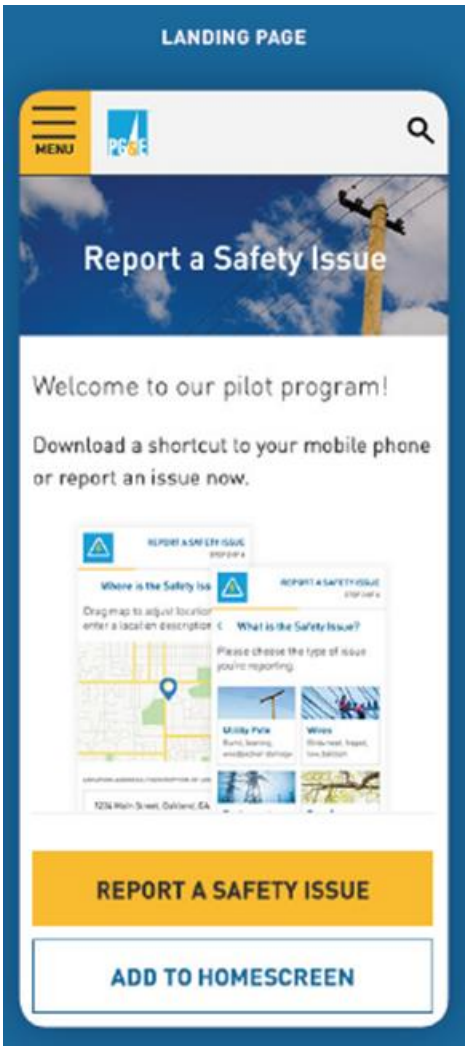


FIGURE 3
SHORTCUT PLACED ON PHONE HOME SCREEN

If the user has saved the shortcut to their mobile phone it would appear on their screen just like a phone based mobile application.

FIGURE 4
STARTING THE SUBMISSION PROCESS

When the user clicks on the shortcut on their home screen, types in the URL or clicks the pilot link in the pge.com navigation they can start the submission process. The first thing they are asked is if they see any type of emergency situation. If so, the user is directed to call.

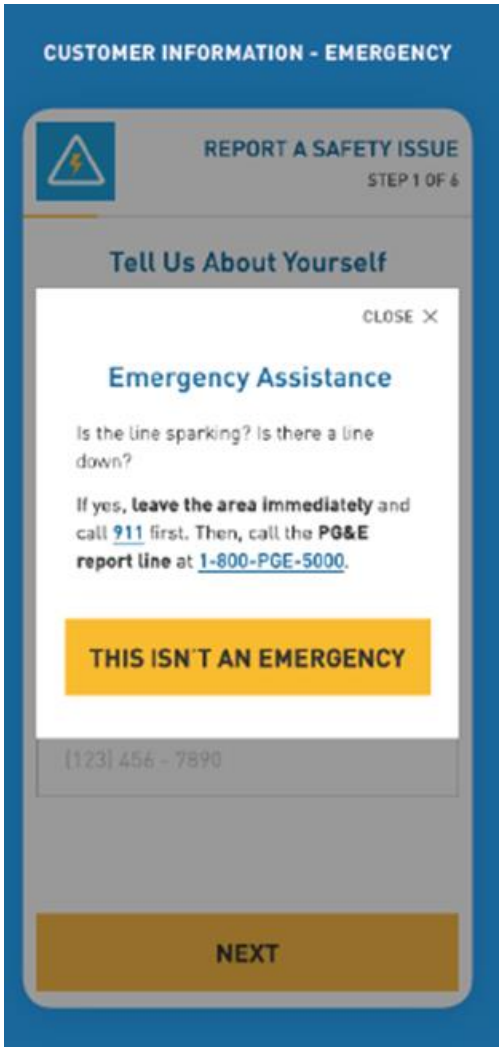


FIGURE 5
PILOT PARTICIPANT VERIFICATION

The user is asked to enter their email address (the same email address used to invite them to the pilot).

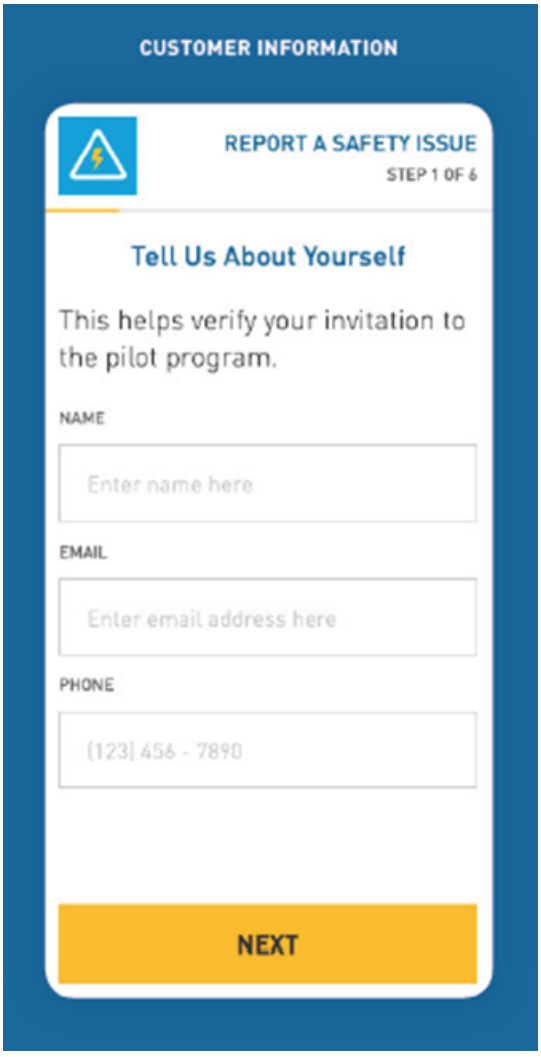


FIGURE 6
IDENTIFY THE LOCATION OF THE SAFETY ISSUE

The user can either type an address or drag the map around to match the pin of the location where the issue is located. They can also click on the arrow to use their current geographic coordinates.

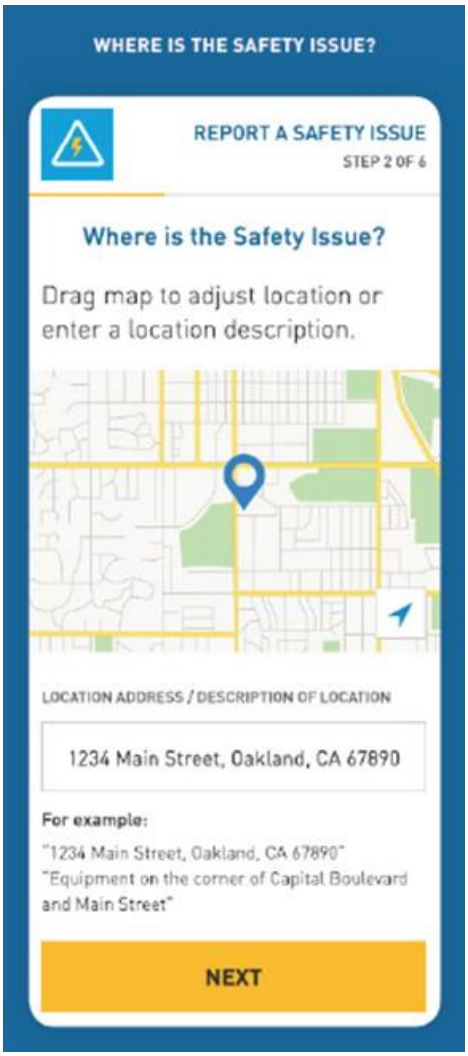


FIGURE 7
DESCRIBE THE SAFETY ISSUE

The user selects the type of safety issue they are reporting.

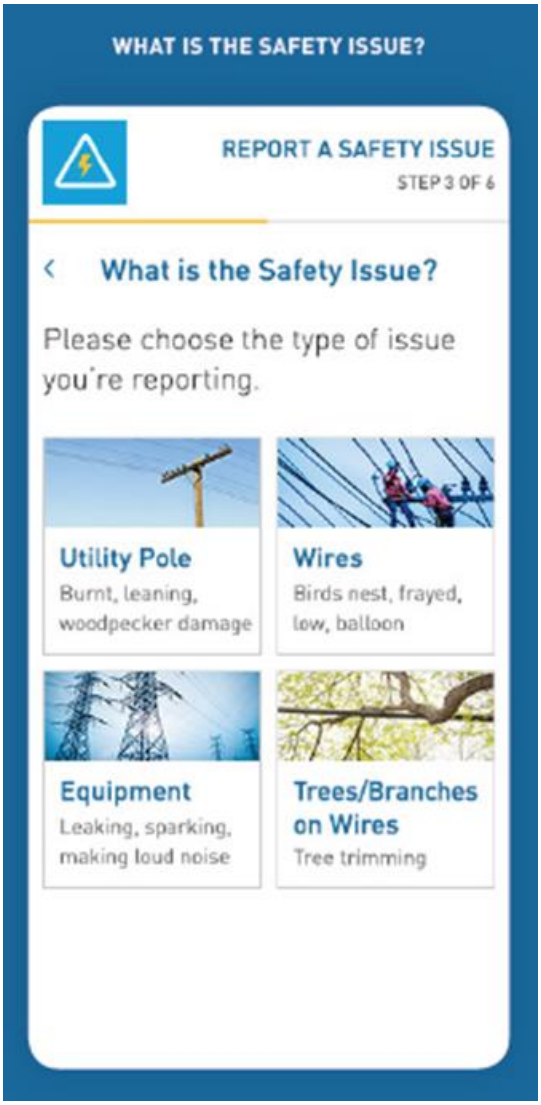


FIGURE 8
ISSUE DETAIL (1 OF 2)

The user provides additional detail about the type of damage within the category selected.

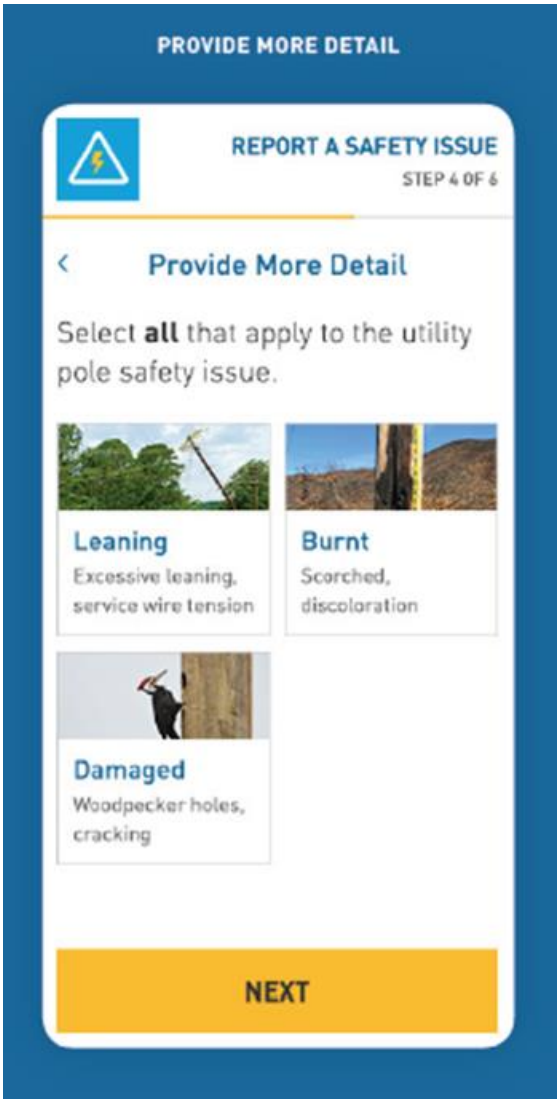


FIGURE 9
ISSUE DETAIL (2 OF 2)

The user provides further detail about the issue type.

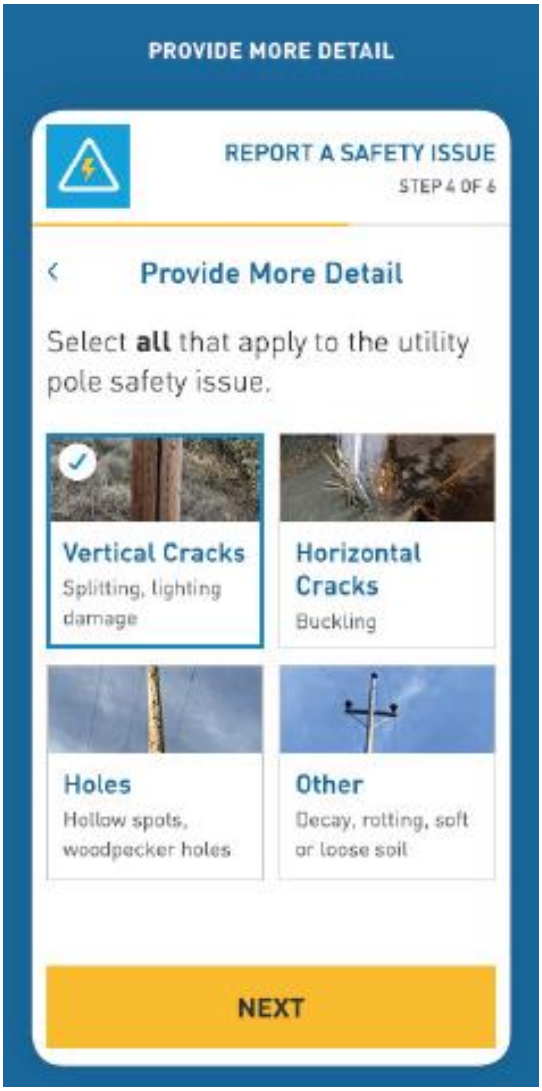
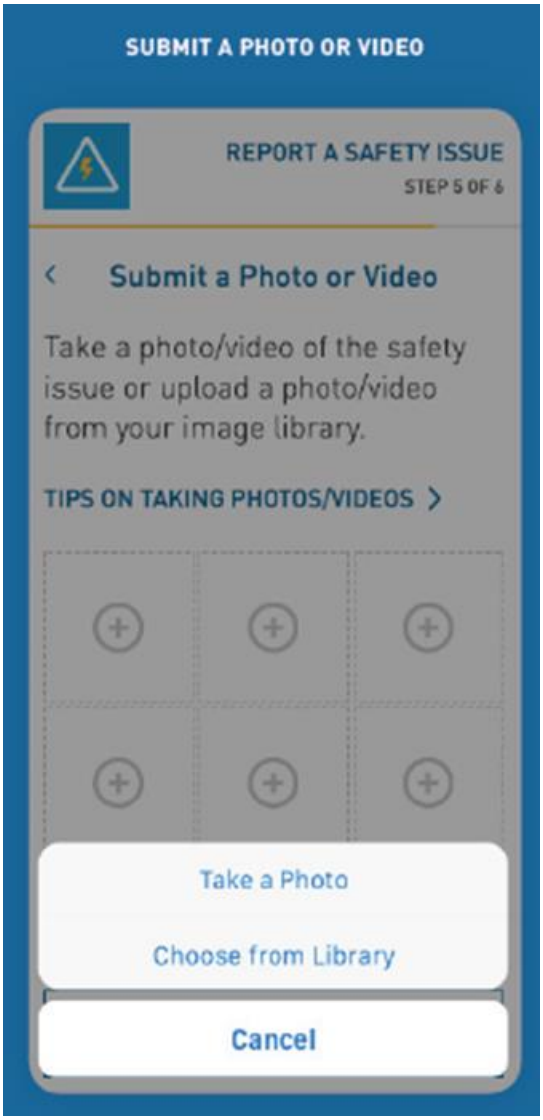


FIGURE 10
SUBMIT A PHOTO OR VIDEO

The user can select multiple photos or videos from the library on their device or they can capture new photos or videos using their phone. If they don't have a photo or video to upload they can skip this step. If needed, tips are provided to help them take a good picture.



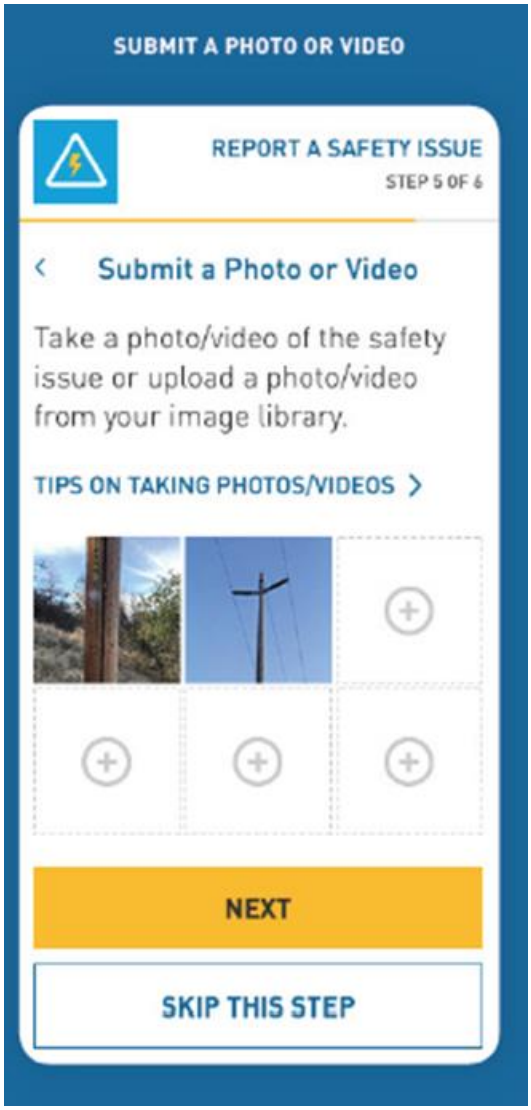


FIGURE 11
SUBMISSION REVIEW

Once the user has uploaded a photo (or chosen not to add one), they receive a confirmation of their entry, and can make edits or corrections if necessary before submitting.

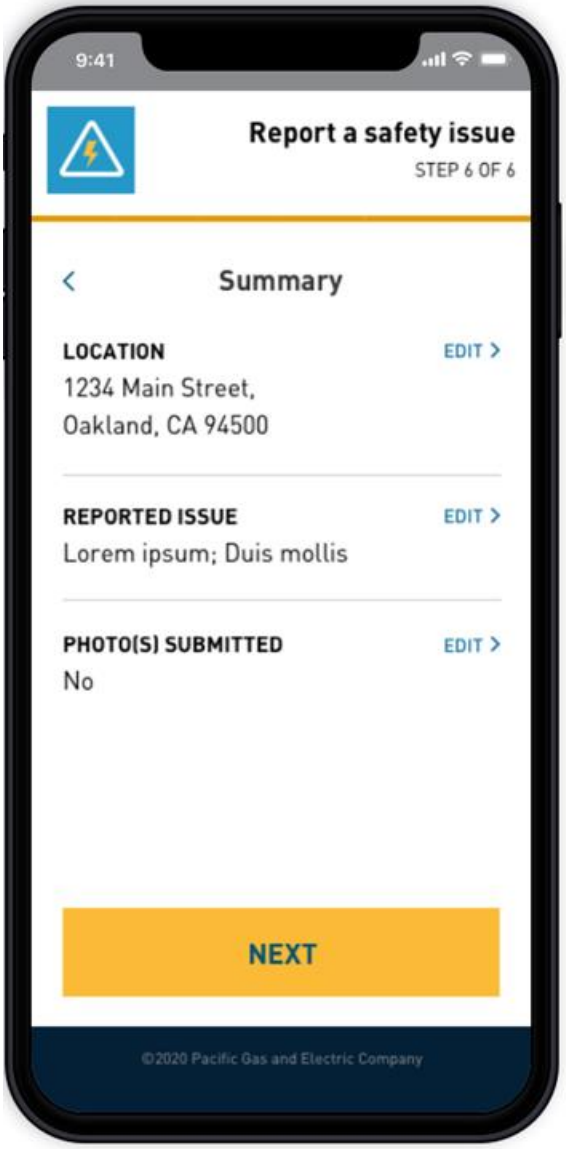
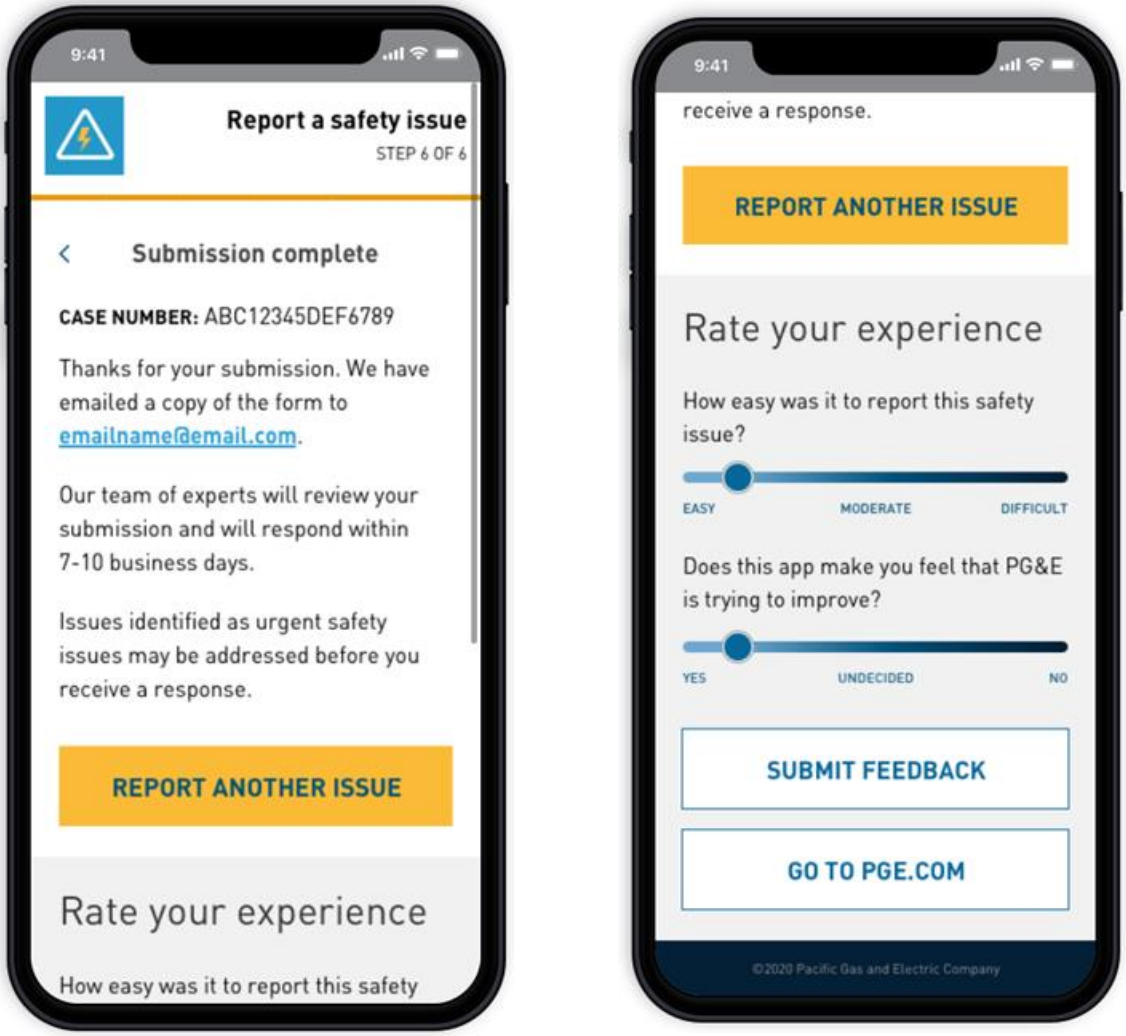


FIGURE 12
CONFIRMATION SCREEN, SURVEY AND ADDITIONAL OPTIONS

After submission, the user gets a confirmation screen, a confirmation email, and a two-question survey to help PG&E gauge how easy it was to submit, and their feelings about PG&E as a result of having this functionality online. From there, the user can report another issue, visit the pge.com home page, or simply close their browser window to end their session.



D. Description of PG&E Process for Handling Submittals

Section D, describes the technical work procedures that ensure employees identify, evaluate and track all issues submitted through the Mobile App and determine the appropriate next steps. This section also discusses the communication triggers that informs the public of PG&Es actions to remedy the matter and when the remedial action is taken or will be taken.

Once a member of the public submits a report via the Mobile App, PG&E will complete the following work procedures which are necessary to screen report

packages for photo clarity, identify immediate hazards, evaluate whether the photo, when available, identifies a problem and whether the problem identified presents a safety concern or is a violation of safety regulations, as set forth below.

PG&E would form a dedicated "triage team" to receive submittals. The Triage team would first conduct an initial review, which would consist of the following steps.

- Notify submitter that the report package has been received and review started and provide a report package tracking number to the submitter.
- Validate that available photos are acceptable and effective in determining the condition, location and potential issue of the asset being reported as a safety concern~~, including:~~ .
  - If photos are not acceptable or effective~~,~~ in determining the location and/or safety issue, the report package will be returned to the submitter for correction and additional information.~~; and~~
  - If no photos are submitted, yet the report indicates a safety hazard, a trouble report will be generated to dispatch a troubleshooter (aligned to current emergency dispatch) to collect further information.
- Confirm ~~that~~whether the equipment issue identified presents an immediate safety hazard and requires an immediate response:
  - If immediate hazard exists a trouble report will be generated to ensure emergency process is initiated and submitter receives an update;
  - If an immediate safety hazard does not exist and the photos are acceptable the initial review team will route to the Centralized Inspection Review Team (CIRT).

  PG&E's existing CIRT would review report package as set forth below.
- Check that the asset belongs to PG&E and confirm the geographic coordinates match a location in PG&E's GIS:
  - If the reported issue is for a non-PG&E asset, follow the existing Third-Party Hazard reporting process to engage appropriate asset owners in resolution (third party).
- If the reported issue is confirmed as PG&E and is asset related:
  - Confirm that the reported issue is a nonconformance with internal or external guidelines, rules, or regulations (validated);
  - Confirm that the reported issue is non-duplicative of existing corrective work (non-duplicative); and

  - Identify new electric corrective maintenance notifications and route to appropriate work group for corrective action (work group assignment).
- If the reported issue is a confirmed vegetation issue on a PG&E asset:
  - Identify vegetation management corrective maintenance tags and route to appropriate work group for corrective action (work group assignment).
- Provide updates to the original submitter through the Mobile App based on the following report package action triggers:
  - Reviewed and redirected to third party;
  - Received and validated as a duplicative PG&E known issue;
  - Received and validated as non-issue with no further action required;
  - Received and validated as a PG&E asset and non-duplicative;
  - Reviewed and assigned to appropriate work group including estimated correction date; and
  - Issue resolution and closure by PG&E.

Submitters will receive notification of report status. Such notifications are loaded to the mobile app during the report review process and set by specific triggers defined by the completion of key steps, as described in the section above. These notifications are only provided to the original submitter.

1. Technical Specifications for Submittal Process

As described I.19-05-015 and the initial Application, PG&E's Mobile App product must meet the following performance requirements:

a) Assign a unique package identification number for tracking;

b) Assign a unique customer or user identification number needed to facilitate accurate tracking and communication back to the customer/submitter;

c) Provide the location of the asset identified as having a safety issues, including street name, city name and cross street information;

d) Capture viable asset photos, used to attain latitude and longitude coordinates required to accurately identify PG&Es equipment or asset number; and

e) House an internal web portal or connection to a database that will be utilized by the CIRT team[10] to post status updates and resolutions for each package identification number.

For the pilot, it is anticipated that PG&E will maintain a standalone database listing of all publicly reported issues and their status to enable communication back to the public submitter. PG&E will evaluate the potential of a later release allowing the public access to the standalone database, should the Commission and PG&E determine the pilot is efficient and effective. All submitted photos deemed appropriate would be posted with-in 30 days of an issue being reported via the web application. Metadata policies would need to be established to ensure compliance with California Consumer Privacy Act code to prevent sharing of Personally Identifying Information.

2. Report Package Manual Validation

Issues and associated photos and data submitted via the Mobile App, otherwise called report packages, will be assigned a unique tracking number generated by the Mobile App. Report packages will be manually validated by a member of the triage team as non-emergency, viewable and actionable.[11] Although the Mobile App is not designed for emergency reporting, PG&E anticipates that some users will disregard that guidance. Emergency report packages of confirmed PG&E assets will be directed to dispatch for trouble report creation and emergency resolution processing, aligned with current phone reporting processes.

Validated, non- emergency report packages, will have case number generated and will be sent to the CIRT Team. The CIRT team will determine which assets are involved in the report package and determine ownership (i.e., PG&E Transmission/Distribution/Substation or external third parties). A confirmation receipt will be sent to the original submitter letting them know that their request has been received and/or processed. The submitter will receive an order number, which they can use to find report information. This number can be referenced if they have any questions or concerns.

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10 To clarify the this is a way for PG&E to communicate back on the progress of each report package received through the crowdsourcing public safety "Mobile App."

11 To clarify actionable is defined by PG&E as able to be done or acted upon; having practical value in mitigating wildfire and improving infrastructure safety.

If the infrastructure owner is not obviously identifiable via the report package, the CIRT team will request the triage team to follow up with the submitter. The CIRT team will also determine if the reported issue is vegetation related and if so, the report will follow the existing vegetation program work management processes. All processes document the assigned internal tracking number in the communication update to the Mobile App for closure and resolution. The Mobile App is periodically updated with status, as the report package moves through the process.

The CIRT team will require accurate latitude and longitude coordinates in order to assign an equipment ID number. The submitted work packages will be validated within PG&E's GIS tool and matched to geographic coordinates of PG&E's equipment locations. This information is needed for asset review and corrective work assignment to the field.

3. Publicly Available Report Information

The OII contemplated that PG&E would create a "asset management/system database" and make submittals "assessable to the general public."[12] PG&E will store the following information within the database associated with each valid report package and/or asset photo received by the public: (1) whether the photo identifies a problem; (2) whether the problem presents a safety concern or is a violation of safety regulations; (3) PG&E actions to remedy the matter; and (4) when the remedial action was or will be taken. Other record keeping information will also be provided such as the date a report package was received, and the geographic coordinates of asset(s) received in a report package. This information will be posted into the asset management database within 30 days of receipt of the photo through the mobile app.

The original submitter will receive a notification of the report package status as it moves through the internal work process described above in the technical work procedures. However, during the Pilot, PG&E is not proposing to make submittals available to the public but could make them available if the Pilot proves successful and is expanded.

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12 I.19-06-015, p. 18.

E. Implementation Plan

Section E provides a high-level pilot implementation plan and describes PG&E's approach for selecting customers to participate in the pilot as well as the timing and duration of the pilot.

1. Pilot Implementation Plan

PG&E estimates that it will take 4-6 months post CPUC authorization to prepare for the launch of the pilot. This will allow PG&E to develop the public facing mobile web application, define the back-end process integration needed to support the pilot and identify a process for reporting status to the submitter. Table 2 below outlines the key milestones and associated durations for the pilot

TABLE 2

Line No.	Milestone	Duration
1	Discovery / Planning & Analysis	2-3 weeks
2	Design	4-6 weeks
3	Build / Development	8-10 weeks
4	Testing	1-2 weeks
5	Pre- Deployment (Soft launch with employees and Refine based on User Feedback)	2-3 weeks

2. Customers to Target

The Pilot will represent a sampling of PG&E customers in Tier 2 and Tier 3 high fire threat areas. PG&E has determined that there are approximately 300,000 customers in Tier 2 or Tier 3 threat districts with email addresses on file. To reach the required number of submissions for the pilot, PG&E's initial approach will be to email all 300,000 Tier ~~1~~2 and Tier ~~2~~3 customers with email addresses on file. Response rates will be monitored and if submissions are insufficient to reach target volumes, PG&E will implement a direct mail campaign to an appropriate number of remaining customers in Tier 2 and Tier 3 threat districts to attempt to generate additional submissions.

Response rates will vary based on the level of consumer interest, so PG&E's forecast models may change once responses start coming in. PG&E's plan is to start with email, and to supplement with direct mail as needed. Based on the history of response rates of PG&E customers to

email,[13] PG&E's estimates that sending out 300,000 invitations should yield roughly 186 submissions.[14]

Historically, PG&E has seen an open rate for PSPS communications of approximately 31 percent. The means that 31 percent of the customers who receive an email from PG&E about PSPS communications will open it and read it. Of those who read the email, typically 1-2 percent will click to go further to read more online. Of those who visit the pilot home page, roughly 10 percent are expected to actually submit an issue using the tool. Projected customer volumes from the email phase to the submission phase is shown in the table below.

TABLE 3

Line No.	Pilot Phase	Quantity[(a)]	Response Rate[(b)]
1	Email Invitations Sent	300,000	31% open rate
2	Emails Read	93,000	2% click rate
3	Landing Page Visits	1,860	10% submissions
4	Submissions Received	186	

(a) All quantities are approximately anticipated.
(b) All response rates are approximately anticipated.

To mitigate against too many responses coming in at once, PG&E may also break the initial 300,000 emails into batches to test response rate assumptions. This will help ensure that the volume of submissions can be handled in a timely manner by pilot staff. Alternatively, if the responses rate is in line with actual response rates from prior PSPS email campaigns, PG&E may need to expand its outreach beyond the initial 300,000 customer emails. PG&E will monitor the pilot response rate and implement a direct mail campaign to an appropriate number of remaining customers in Tier 2 and Tier 3 threat districts, if needed, to

13 To arrive at those estimates of anticipated response rates, PG&E relied on actual email open and click data for prior Public Safety Power Shutoff email campaigns.

14 A submission is defined as "issues and associated photos and data submitted via the Mobile App." Additionally, receiving 384 submissions out of 300,000 invitations represents a statistically significant study and can be relied upon to draw further conclusions about the mobile application.

attempt to generate the additional submissions (totaling 384) needed to call the pilot representative and successful.

PG&E expects the customers invited to include a mix of urban, suburban and rural locations clustered around distinct media markets for better social media outreach targeting.

3. Timing and Duration of Pilot

PG&E would like to launch the pilot and monitor its use during the 2021 fire season~~.~~ in line with SED's recommendation. While the current development timeline would allow for the pilot to launch in 2020, PG&E believes that it is not effective or favorable to launch in the middle of the 2020 fire season. PG&E anticipates the pilot duration would be a minimum of ~~six~~12 months or until 384 ~~-~~unique submissions have been received, ~~while the maximum length of~~ If at any time during the pilot ~~would be 12 months. If after 6 months,~~period the minimum number of unique Submitters/Report Packages have been received, then PG&E will pause the pilot and share it findings with SED to align on an approach for further deployment~~.~~ or determine an alternative go-forward plan. On the other hand, if after ~~12~~ six months, the minimum number of unique Submitters/Report Packages have not been received, then PG&E will pause the pilot and share its findings with SED to determine a go-forward plan.

F. Outreach and Communication Plan

PG&E plans two different communications as part of the mobile pilot: direct to customer outreach and media outreach.

For the direct to customer outreach, PG&E intends to email approximately 300,000 customers to participate in the pilot. Once a customer opens the email and clicks on the email link from a mobile phone, a shortcut will be placed on the user's mobile phone home screen. When the shortcut is clicked, users will be taken to the pge.com mobile web page to start the reporting process. The reporting process will start with the user entering the email address where they received the invitation to participate. Only those who were initially invited will be able to proceed past this step. This will help ensure we can map the customer back to our initial criteria for segmentation, as well as ensure that we have a manageable volume of tickets coming in. While the pilot will be restricted to the customers invited to participate, if an interested party was not on the initial list wants to be part of the pilot, they will be

able to send an email to the program team to be added to the authorized list. Should PG&E receive requests to be added to the authorized list beyond that which our team is capable of supporting, PG&E reserves the ability to discontinue or pause the adding of interested parties to the authorized list.

PG&E believes email is the best suited communication channel because customers with email addresses on file are more likely to use digital channels. In addition, PG&E can release invitations in batches while monitoring response rates and submission quality in order to measure effectiveness and improve the tool during the pilot phase. If response is lower than forecast, PG&E can also send reminder emails to those who haven't submitted a report. Additional participants can also be easily recruited. PG&E also plans to provide media support to the pilot initiative. The media plan will:

- Explain and promote the mobile web page that allows customers to submit details/photos of potentially hazardous conditions;
- Match the footprint of the pilot;
- Include local and/or systemwide news releases, as applicable;
- Use targeted zip codes to promote on social media; and
- Look for success stories that we can share via our news website (www.pgecurrents.com).

G. Assessing Pilot Success

In this section, PG&E will discuss the risk-based framework for assessing the Mobile App Pilot. PG&E intends to ensure that wildfire mitigation efforts are best directed at identified and validated issues of utility infrastructure through the most viable source. The information gathered through the Mobile App Pilot will be assessed via a combination of factors intended to balance public interest and engagement, along with potential fire risk reduction and cost effectiveness.

1. Public Interest and Submission Quality

In order to evaluate public interest and engagement, PG&E will consider the total number of unique submitters along with the total number of unique report packages generated by the public through the Mobile App. PG&E proposes to collect a minimum of 384 unique submittals/reports of potential issues from members of the public in HFTD Zones. Attaining unique reports/submittals is an important measure that will be used to gauge public interest of crowdsourcing utility

issues. The general measure of public interest is based on engagement with a statistically significant section of the public, as defined in Section 2.3. There is a distinction between the number of unique submitters and the number of unique report packages. The number of unique submitters is meant to identify a single user generating multiple reports whereas the number of unique report packages is meant to identify a single issue being identified by multiple users. For example, if only one user submits 384 report packages during the pilot the requirement of 384 unique submitters will not be met and public interest will be considered insufficient to justify operationalizing the pilot.

This measurement of the population will provide a relevant and statistically significant sample needed to determine the value of crowdsourcing, and if such sourcing helps or hinders other strategic efforts by the Company to mitigate wildfire. The quality of report packages will be measured once the volume of required report packages is attained. Quality submissions must provide geographic coordinates, specific risks or violations and the existence of a hazardous condition. The report packages will be considered of quality and counted towards the total minimum report volume if they identify ~~non-duplicative~~ actionable and true issues on a confirmed PG&E asset(s)~~.~~, regardless if they identify duplicative, known issues. The potential to reduce fire risk will determined by the submitted report package contents and the identification of valid issues within each report package. PG&E will assess, and track costs associated with the Mobile App pilot based on; the amount of appropriate non-duplicative report packages, hours spent reviewing and analyzing false positives (e.g., nuisance reports of non-hazard) and the appropriate use of the App as a non-emergency reporting channel.

H. Post Pilot Review

PG&E will evaluate the mobile app pilot against the risk framework discussed and outlined in the Plan. The evaluation will determine if the mobile app pilot meets the criteria set forth. PG&E would then evaluate expanded deployment based on resource needs, PG&E's ability to automate what are currently manual processes, and improved web development. To the extent the results fail to meet the risk framework, PG&E will evaluate if stronger controls, additional public education or other actions might correct the deficiencies.

PACIFIC GAS AND ELECTRIC COMPANY

REVISED MOBILE APPLICATION PILOT IMPLEMENTATION REPORT

(CLEAN VERSION)

EXHIBIT 1

PACIFIC GAS AND ELECTRIC COMPANY
REVISED MOBILE APPLICATION PILOT IMPLEMENTATION REPORT

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PACIFIC GAS AND ELECTRIC COMPANY
REVISED MOBILE APPLICATION PILOT IMPLEMENTATION REPORT

A. Introduction

On June 27, 2019, the California Public Utilities Commission (CPUC or Commission) issued Investigation (I.) 19-06-015 relating to the maintenance and operation of Pacific Gas and Electric Company's (PG&E or the Company or the Utility) electric facilities that "were involved in igniting fires in its service territory in 2017."[1] As part of that Order Instituting Investigation (OII), the Commission directed PG&E to take certain immediate corrective actions, including filing an Application with the Commission for the development of a mobile application and support system. On July 29, 2019, in response to I.19-06-015, PG&E filed the instant application for approval of its Pilot.

Pursuant to the November 14, 2019 Assigned Commissioner Scoping Memo and Ruling in Application 19-07-019 (Scoping Memo), PG&E now files this Pilot Implementation Plan (the Plan) for review. The Plan describes PG&E's Mobile Application and Supporting Systems Pilot (the Pilot) and addresses:

- Section A – Introduction
- Section B – Program Approach and Objectives
- Section C – Description of Mobile Application
- Section D – Description of PG&E Process for Handling Submittals
- Section E – Implementation Plan
- Section F – Outreach and Communication Plan
- Section G – Assessing Pilot Success
- Section H – Post Pilot Review

B. Program Approach and Objectives

Section B discusses the relationship between a public-facing web-based mobile safety reporting application (Mobile App) and PG&E's existing Wildfire Safety Plan. PG&E proposes to develop and pilot a Mobile App to assess whether and how such a mobile application can improve public safety by reducing the risk of catastrophic wildfire associated with utility infrastructure. While PG&E believes a public-facing Mobile App has the potential to improve safety, it is not a forgone conclusion that a

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1 I.19-06-015, Ordering Paragraph 13.

Mobile App would in fact achieve its intended purpose of wildfire mitigation. Moreover, such a Mobile App could have unintended negative consequences that increase risk by drawing resources away from existing programs and activities. PG&E proposes to pilot this public-facing solution to understand both positive and negative outcomes.

1. Wildfire Risk

The primary focus of the public-facing Mobile App is to further mitigate Wildfire risk. Wildfire risk is defined as the risk that PG&E assets may initiate a wildfire that is not easily contained. This definition of wildfire risk focuses on ignitions in geographic areas with elevated wildfire risk, also known as High Fire Threat Districts (HFTD).[2] Based on PG&E's historical data from 2015 to 2017, within the HFTD, the primary ignition risk drivers are vegetation contact (49 percent) and equipment failure (27 percent).[3] Other risk drivers include third-party contact with conductor (13 percent), animals (8 percent), fuse operation (1 percent), and unknown (3 percent). Additionally, distribution lines present significantly more risk than transmission lines (i.e., 1.5 ignitions per 100 miles for distribution compared to 0.5 ignitions per 100 miles for transmission) and have different risk profiles (e.g., transmission lines have reduced risk of vegetation caused ignitions).[4] PG&E asset maintenance practices, including patrol and inspection activities, vegetation management, corrective maintenance, and proactive asset replacement programs exist, in part, to reduce the risk of equipment failure and vegetation contact resulting in ignitions. The frequency of preventive and corrective maintenance activities is generally accelerated in HFTD, yet PG&E recognizes that actual infrastructure or vegetation conditions may change or degrade between program cycles.

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2 HFTDs and associated maps were approved in CPUC Decision 17-12-024 "Sept. 19, 2018: SED-CAL FIRE Joint Assessment and Recommendation Report on Fire-Wind Map."

3 PG&E, *Pacific Gas and Electric Company Amended 2019 Wildfire Safety Plan* (February 6, 2019), at p. 26, available at: https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/naturaldisaster/wildfires/Wildfire-Safety-Plan.pdf.

4 *Id.* at p. 28.

2. Role of the Mobile App

In concept, the Mobile App would allow members of the public to report potential safety concerns associated with utility infrastructure, primarily including PG&E's above-ground electric distribution and transmission conductors and associated structures and equipment. Existing reporting pathways include 24/7 telephone report lines (800-743-5000) and emergency response (9-1-1), however the Mobile App would provide an alternative for non-emergency issue reporting.

In function, the Mobile App would parallel, but not substitute, PG&E's existing routine inspection and patrols activities and Enhanced Vegetation Management (EVM) programs. PG&E details these two programs, along with other programs and strategies to prevent wildfires, in its 2019 Wildfire Safety Plan.[5] The 2019 Wildfire Safety Plan built on PG&E's 2017 Risk Assessment and Mitigation Phase Report.[6] Through 2019, PG&E inspected approximately 700,000 distribution and 50,000 transmission[7] structures through the Wildfire Safety Inspection Program with enhanced inspection methodologies in the HFTDs. PG&E's EVM Program includes overhang clearing (i.e., removing branches and limbs directly above but outside General Order 95 radial clearance), identifying and trimming or removing at-risk tree species, and fuel reduction through ground to conductor clearance with a focus on assets in HFTDs.

The Mobile App would enable the public to report their observations and photographs of issues emerging anytime between the assets' regularly scheduled preventive maintenance dates. Mobile App users could also report infrastructure concerns known to PG&E, which have degraded more rapidly than expected. In this sense, the public users of the Mobile App would complement the routine preventive maintenance programs by notifying the

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5 PG&E, *Pacific Gas and Electric Company Amended 2019 Wildfire Safety Plan* (February 6, 2019), available at: https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/naturaldisaster/wildfires/Wildfire-Safety-Plan.pdf.

6 PG&E, *2017 Risk Assessment and Mitigation Phase Report of Pacific Gas and Electric Company* (November 30, 2017), report available below the "2017 Milestones" heading at: http://www.pgecorp.com/corp_responsibility/reports/2018/bu03_risk_management.html.

7 See https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/wildfiresafety-inspection-program.page.

Utility of changes in condition. However, as discussed in the initial application, the general public is not trained to identify or distinguish between electric and communication assets, nor is the public trained to identify the potential for an ignition risk related to a PG&E asset. On the contrary, Mobile App users could also mistakenly submit issues with non-PG&E infrastructure (i.e., telecom), non-issues (i.e., constructed to regulation and design), or duplicate issues (i.e., already known to PG&E and prioritized appropriately). Or, Mobile App users could choose to use this pathway to report emergency situations which should have been routed through 9-1-1 emergency response. In such instances, PG&E personnel would have to be dispatched to respond to potential false positives, which would divert highly skilled and limited resources, both in the office and field, from actual fire risk mitigation work. The impact on resources is a significant concern to PG&E, given the likelihood that users will submit misidentified issues, duplicates and false positives. In these ways, the Mobile App may detract from the efficient execution of preventive and corrective maintenance programs.

PG&E anticipates that the Mobile App will have little to no connection to underground assets, like PG&E's gas distribution and transmission systems, or assets where public access is discouraged and prohibited, like PG&E's transmission and distribution substations. However, the Mobile App would permit reports for such assets.

3. Risk Mitigation Value of the Mobile App

Based on the risk framework described above, PG&E anticipates that, for a Mobile App to meaningfully mitigate the risk of catastrophic wildfire, the Mobile App should, at a minimum:

1. Identify genuine safety issues that pose an ignition risk;
2. Be used in areas with wildfire risk; and
3. Identify unique issues of PG&E assets that were not, and would not, have been identified by PG&E's own routine maintenance programs.

A pilot of the Mobile App is proposed to ensure sufficient interest by the public, usefulness in identifying new risks, and assess tradeoffs created via diversion of resources. The pilot will attempt to collect submittals, defined as "report packages including location, photos which retain metadata on Geographic coordinates, along with customer/public communication information

needed to provide status updates." It is anticipated that PG&E will commence and continue a pilot through at least 12 months, spanning at least one wildfire season.

The Mobile App's utility in reducing the risk of catastrophic wildfire should be measured against the diversion of resources from other wildfire mitigation efforts that may be caused by the Mobile App, namely, to what extent use of the Mobile App would require a response to:

1. Submittals that do not report an ignition risk;
2. Emergencies that require a 9-1-1 response;
3. Issues outside of high fire threat areas; and/or
4. Issues on assets that do not belong to PG&E; and
5. Issues that would have been otherwise identified by PG&E (i.e., potential for duplication and suboptimal resource allocation).

4. Determining Mobile App Pilot Success

PG&E's proposed pilot is designed to ensure that the results would be indicative of how a fully scaled publicly available Mobile App would perform, especially providing insights into the types of utility ignition risks identified, a minimum number of unique submittals is needed. This outcome is essential for PG&E to be able to make inferences about the broader success of the full implementation, including whether crowdsourcing will help or hinder other strategic efforts by the Company to mitigate wildfire risk. Once the pilot achieves a statistically significant sample of the targeted pilot group, PG&E would have sufficient data to analyze regarding interest, usefulness, and capability.

The number of unique reports/submittals is an important measure needed to gauge the public interest of crowdsourcing utility issues. Based on the number of PG&E electric customers in HFTDs, PG&E proposes to collect a minimum of 384 unique submittals of potential issues from members of the public in HFTD Tiers 2 and 3. The minimum number of 384 submittals represents a significant sample of the targeted pilot population. This sample size gives the pilot a margin of error of +/- 5 percent at the 95 percent confidence level, making results of this sample representative of the overall pilot population. If this number is not attained PG&E will modify its outreach

plan to generate sufficient participation. Overall, a lack of participation would be an indication that the public is simply not interested in using the Mobile App.

Once the minimum sample of reports is achieved, PG&E would analyze the risk findings, false positives, improper usage, and user demographics to make a determination on whether to propose further expansion of the Mobile App. Risk findings analysis would include the types, counts, locations, and priorities of valid ignition risks or other safety conditions requiring corrective action that would otherwise not have been identified by PG&E's own routine preventive maintenance programs. False positives analysis would include the proportion of reports that were not PG&E assets or were not abnormal conditions, and therefore required no corrective action by PG&E. Analysis of improper usage would help assess the undesired use of the Mobile App in place of calling emergency services, or 9-1-1 in an emergency situation. Demographics analysis would be used to help target communications outreach for pilot expansion and determine if there is widespread interest in the Mobile App, versus small local pockets of highly active users.

C. Description of Mobile Application

Section C describes an overview of PG&E's recommended approach in delivering a mobile reporting solution which is based on existing PG&E data as well as benchmarking data from other utilities who offer mobile apps. In summary, PG&E proposes the Mobile App be web-based instead of phone-based because it offers all the necessary functionality of the mobile application ordered in I.19-05-015 and discussed in the instant Application and is both preferred by and simpler for the end user.

1. Technical Specifications for Mobile Application

As described I.19-05-015 and the instant Application, the Mobile App must: (1) be an open source; (2) be publicly available; (3) allow Geographic Information System (GIS)-Equipped phones to send pictures of utility infrastructure to an asset management system/database maintained by PG&E; and (4) allow general public to access such photos submitted.[8] Additionally, for each photo received, PG&E needs to provide the following information in the asset management system/database within 30 days of receipt of the photo

[8] I.19-06-015, p. 18.

through the Mobile App: (1) whether the photo identifies a problem; (2) whether the problem presents a safety concern or is a violation of safety regulations; (3) actions to remedy the matter; and (4) when the remedial action was or will be taken.

This section describes the mobile application and support systems that would be part of the Mobile App Pilot.

PG&E needs to ensure that the Mobile App provides adequate privacy and security for its users and the Company. The OII states that the mobile application should be "open source." The term open source means that the mobile application's source code would be publicly available, and thus subject to modification and redistribution by third parties. Having such an open and publicly available source code would introduce new cybersecurity risks to PG&E's Information Technology infrastructure. To address these risks while complying with the spirit of the OII, PG&E intends to proceed with developing a mobile application that has an open application programming interface (API). This means there would be a publicly available interface, but PG&E would maintain property ownership over the original source code for the mobile application.

The information received through the Mobile App, including photos and location details, will be updated into PG&E's systems. Within 30 days of an issue being reported, users will be able to access information through a website relating to their submittal (e.g., description of the issue, issue location and photos taken) as well as its status (e.g., whether the reported issue identified a problem and how the issue has been or is being resolved).

PG&E maintains information, including geographic coordinates and operations and maintenance records, about its various infrastructure assets. As part of the Mobile App Pilot, PG&E will consider what, if any, additional capabilities or information may be necessary for responding to issues reported by users of the Mobile App Pilot. PG&E will disclose to Safety and Enforcement Division (SED) the information gathered as part of the Mobile App Pilot and will work with SED staff to identify how this additional information might be incorporated into its existing operations and maintenance records.

2. Web-Based and Phone-Based Mobile Applications

PG&E has two options in designing the mobile application: a web-based application that can be used from any PC, Mac or mobile smart phone, and a phone-based mobile application, which is limited to use on mobile phones.

The primary difference between a web-based and phone-based mobile application is how the user accesses them. To access a web-based mobile application, the user would utilize their native web browser application (e.g., Safari for the iPhone and Chrome for Android) on the user's mobile phone. Through its responsive design, the web page would detect the size of the screen on the phone and automatically size the content to the appropriate layout. In contrast, to access a phone-based mobile application the user must download the application from the app store hosted by their mobile phone provider. For example, Apple's iPhone apps are available for download in the Apple Store and Android apps are available for download in Google Play (Google's app store).

For the functions required of this pilot, web-based and phone-based mobile applications offer similar functionality. For example, the ability for users to take and submit photographs and complete forms can be done via either option. The primary difference is that a phone-based mobile application would allow PG&E to "push" notifications to users and store information on the user's phone in the mobile application software, whereas a web-based application would rely on an email or a text message to send updates to the user.

3. Industry Benchmarking

PG&E compared both its own experience and the experience of other utilities with customer utilization of web-based and phone-based applications. Between June 2011 and November 2017, PG&E offered a mobile payment app to customers. During that period only 6 percent of customers downloaded the PG&E mobile payment app. In comparison, 55 percent of all web traffic to pge.com comes from a mobile device, which customers can use to pay their bill or complete other transactions.

PG&E compared its experience, which shows a strong user preference for web-based mobile applications, with ten other utilities, including California investor-owned utilities. The purpose of this benchmarking was to ascertain

how their respective experiences compared with PG&E. Table 1 presents these results.[9]

Like PG&E, most utilities (i.e., 6 of the 10 contacted) saw mobile app adoption of 3 to 7 percent of their customer base. This level of adoption occurred even though these utilities offered more than one function. A few of the utilities are reconsidering their mobile app strategy in light of the low adoption and extra cost required to maintain a phone-based application. In fact, one utility which had previously responded to the benchmark survey indicating they had a mobile app subsequently responded to state they had already decommissioned their mobile apps. A second utility indicated they will be decommissioning their mobile apps in 2020. In addition, PG&E asked these 10 utilities if they allowed customers to submit safety issues online. Most did not. Only one utility had offered that capability and subsequently chose to disable the feature due to customer safety and liability concerns.

TABLE 1
BENCHMARKING RESULTS

Line No.	Mobile App Adoption Rates	# of Utilities (excluding PG&E)
1	3-7%	6
2	10%	2
3	20%	2

4. Advantages of a Web-Based vs Phone-Based Mobile Application

Both a web-based and phone-based mobile application offer the necessary functionality for PG&E's mobile application. However, the web-based mobile application offers a greater ease of use and fits into the existing PG&E website operations. PG&E summarizes the advantages below.

From an ease of use perspective, a mobile web page:

- Allows the user to report a potential issue online from any web browser (phone, tablet or laptop/desktop);
- Does not require an extra step to download an app;

[9] PG&E has anonymized the results of its benchmarking as it was not authorized to release the names of the utilities that participated.

- Does not require repeated app downloads due to updates;
- Does not require large amounts of storage space on the mobile phone;
- Can have a shortcut placed on the phone home screen as a reminder (just like an app but without the higher storage space of the actual mobile app);
- Can be built on a standard HTML framework; and
- Can be easily found in search engines and in pge.com navigation.

In addition, a mobile web page fits into existing PG&E website operations. For example:

- PG&E uses an online customer satisfaction survey tool to collect customer comments. This feedback link is embedded into every page on pge.com and would be available for this mobile web page.
- PG&E uses a session replay tool to anonymously review what the user did on each web page screen. In conjunction with the customer satisfaction survey tool, PG&E can better determine if design changes might be needed or if technical issues need to be addressed.
- PG&E has a tool embedded into each web page on pge.com that allows optimization of the customer experience through the testing of different designs. For example: 50 percent of visitors see option A, and 50 percent of visitors see option B. Results are measured for both options, and the option with the better business results can be rolled out to 100 percent of visitors.
- PG&E's existing web site has reporting built in, allowing the team to see the number of unique visitors to a page, how long they spent on the page and what they clicked on.
- Creating a native mobile app for Apple and Android phones requires PG&E to create two additional sets of code. Each set of mobile app software is unique to Apple or Android phone platforms and must be maintained separately over time. PG&E believes that developing the functionality in HTML on the existing mobile web page infrastructure will be more streamlined, as existing operations can be used. If a mobile app were to be created, PG&E would need to stand up separate mobile app support procedures, tools and operations. As a result, PG&E believes creating the reporting functionality on a mobile web page has the potential for a lower support cost over time.

5. Utilizing the Web-Based Mobile Application

In Figures 1 to 12, PG&E presents a draft mock-up of the proposed web-based mobile application and a description of its functionality.

FIGURE 1
EMAIL INVITING SELECT CUSTOMERS TO PARTICIPATE IN THE PILOT

The user receives an email from PG&E inviting them to participate in the pilot.

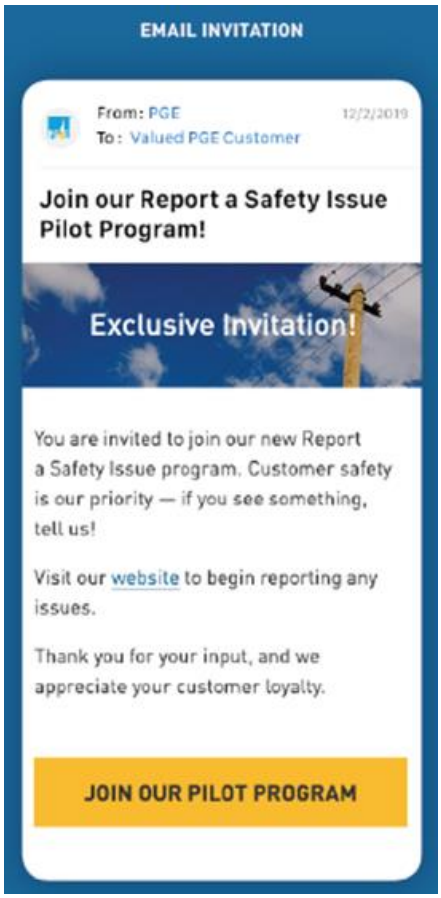


FIGURE 2
LANDING PAGE FROM EMAIL

The user gets to the landing page from the email and is invited to either add a shortcut to the web page to their mobile screen or to submit an issue.

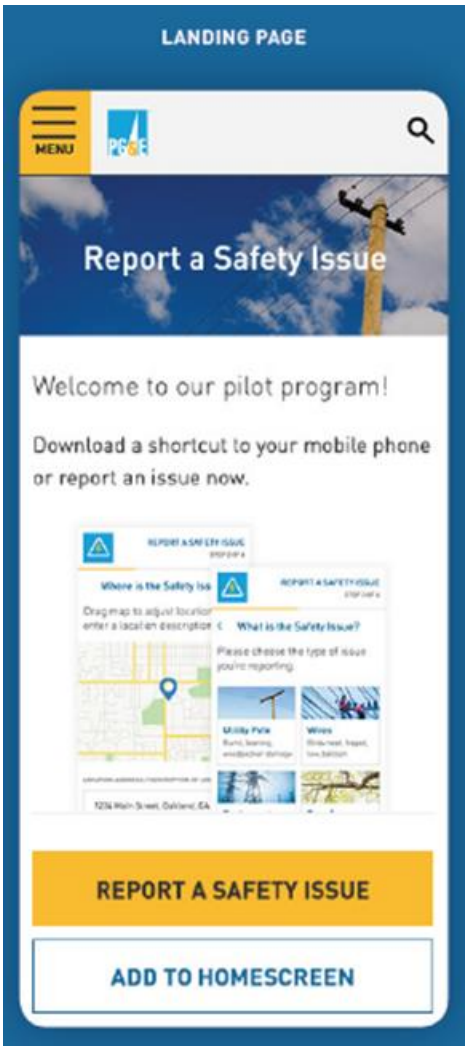


FIGURE 3
SHORTCUT PLACED ON PHONE HOME SCREEN

If the user has saved the shortcut to their mobile phone it would appear on their screen just like a phone based mobile application.

FIGURE 4
STARTING THE SUBMISSION PROCESS

When the user clicks on the shortcut on their home screen, types in the URL or clicks the pilot link in the pge.com navigation they can start the submission process. The first thing they are asked is if they see any type of emergency situation. If so, the user is directed to call.

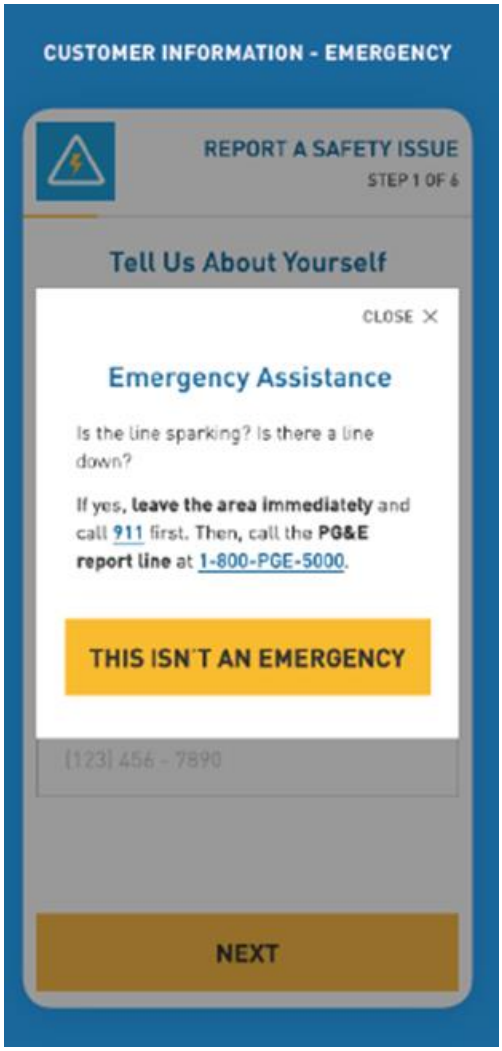


FIGURE 5
PILOT PARTICIPANT VERIFICATION

The user is asked to enter their email address (the same email address used to invite them to the pilot).

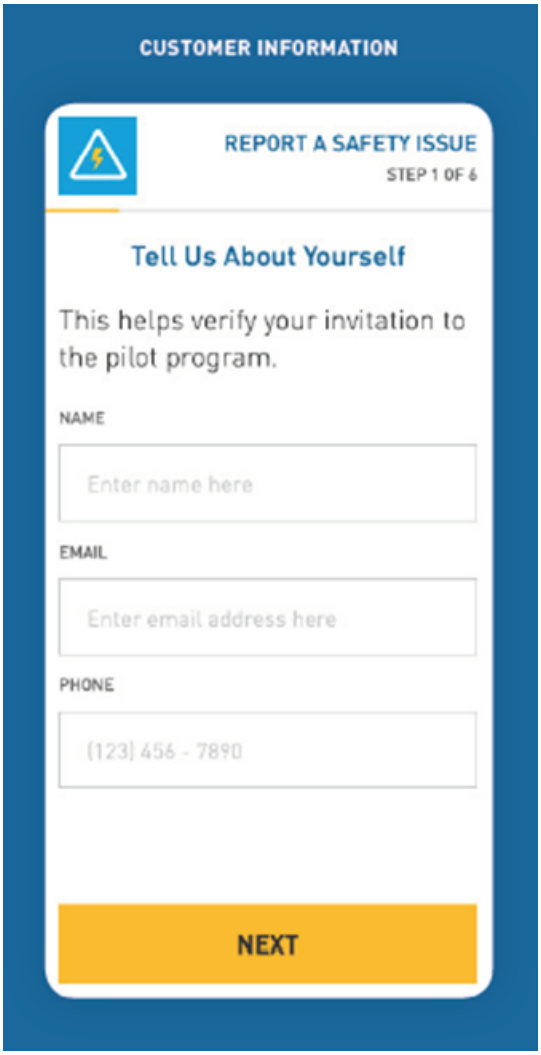


FIGURE 6
IDENTIFY THE LOCATION OF THE SAFETY ISSUE

The user can either type an address or drag the map around to match the pin of the location where the issue is located. They can also click on the arrow to use their current geographic coordinates.

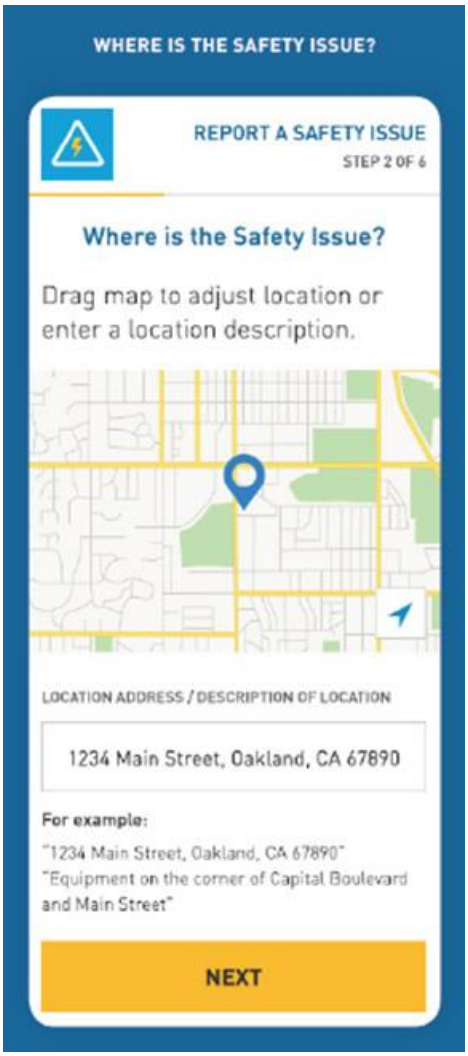


FIGURE 7
DESCRIBE THE SAFETY ISSUE

The user selects the type of safety issue they are reporting.

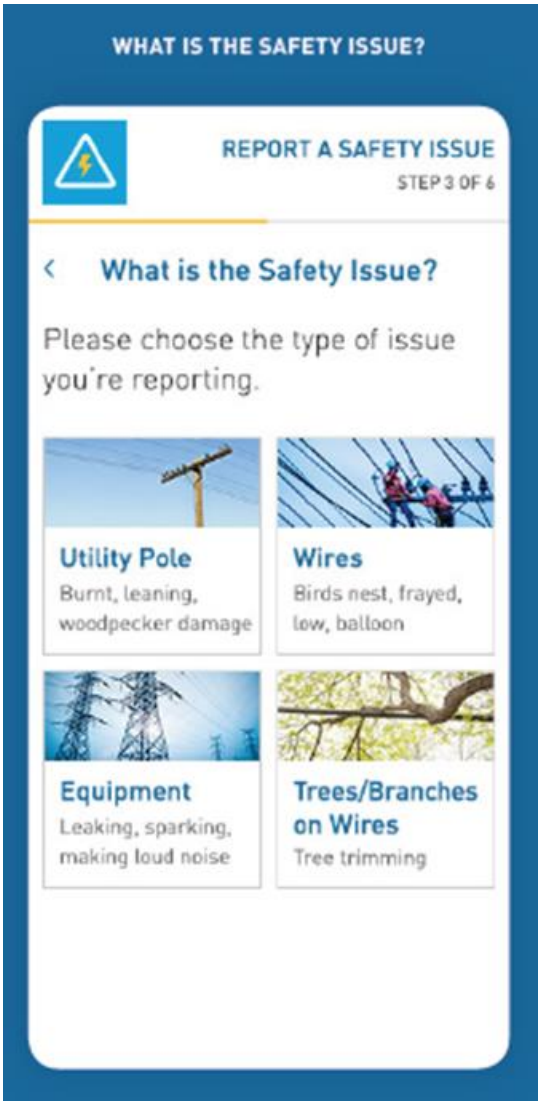


FIGURE 8
ISSUE DETAIL (1 OF 2)

The user provides additional detail about the type of damage within the category selected.

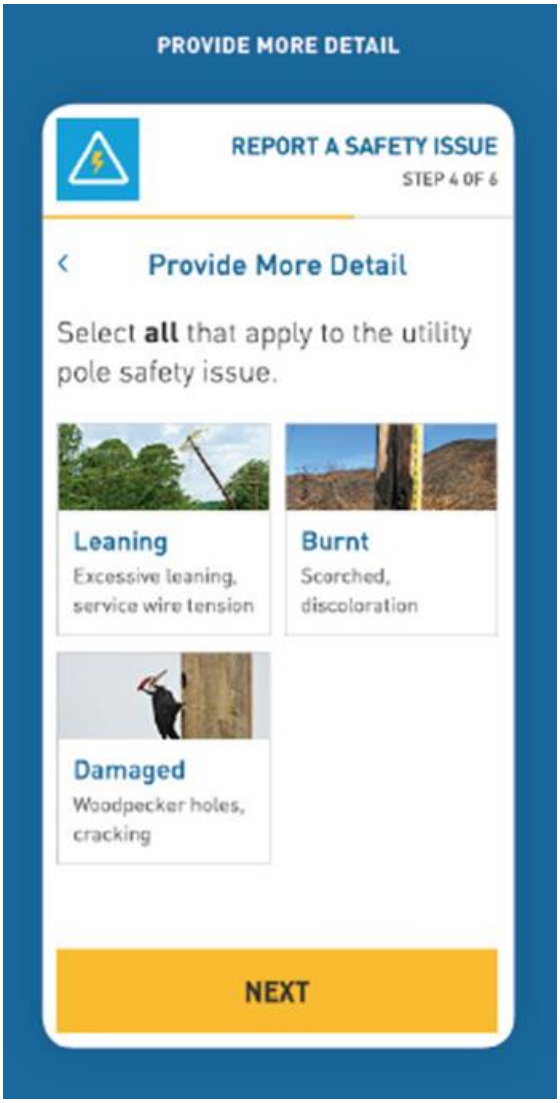


FIGURE 9
ISSUE DETAIL (2 OF 2)

The user provides further detail about the issue type.

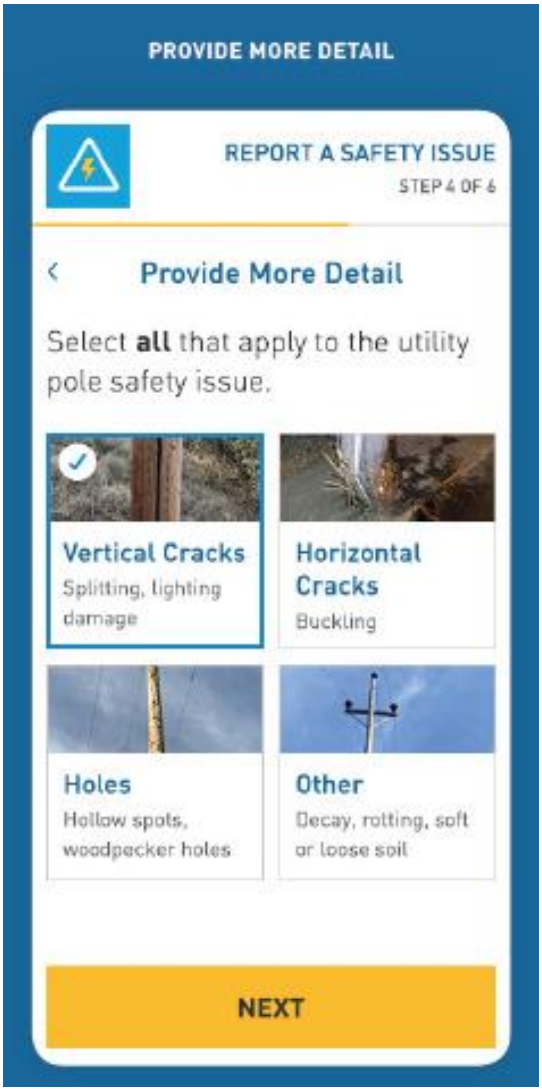
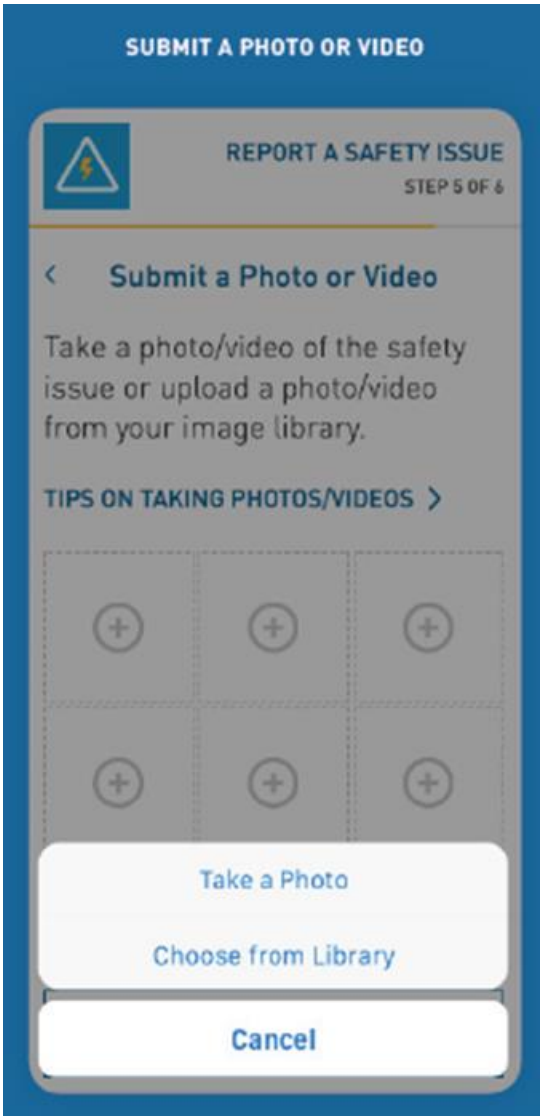


FIGURE 10
SUBMIT A PHOTO OR VIDEO

The user can select multiple photos or videos from the library on their device or they can capture new photos or videos using their phone. If they don't have a photo or video to upload they can skip this step. If needed, tips are provided to help them take a good picture.



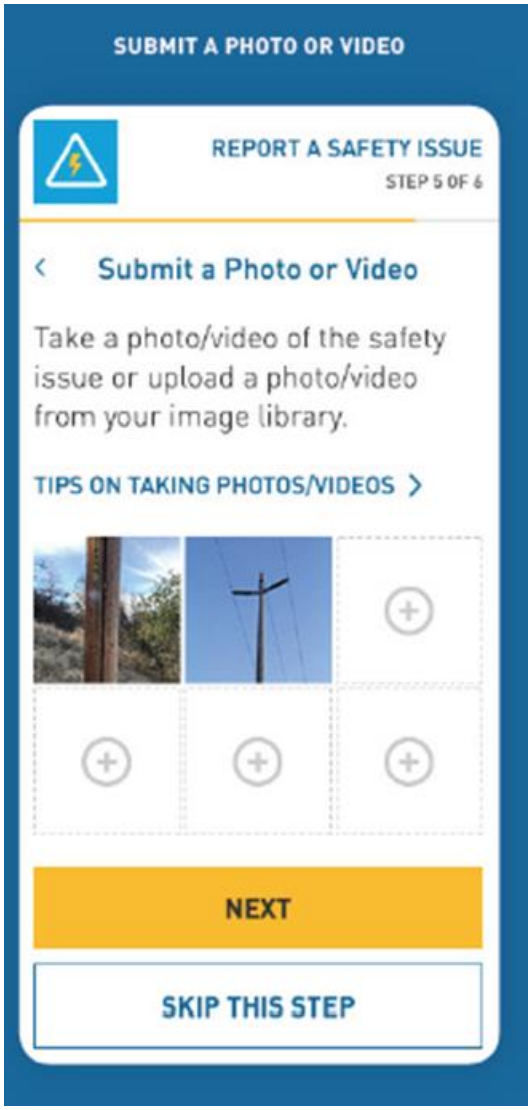


FIGURE 11
SUBMISSION REVIEW

Once the user has uploaded a photo (or chosen not to add one), they receive a confirmation of their entry, and can make edits or corrections if necessary before submitting.

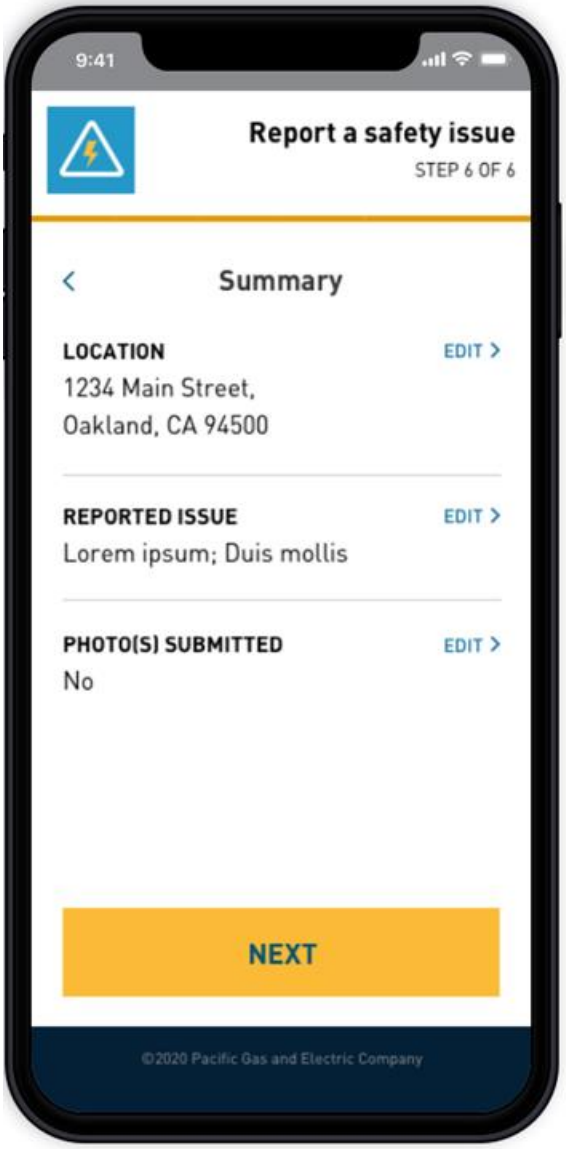
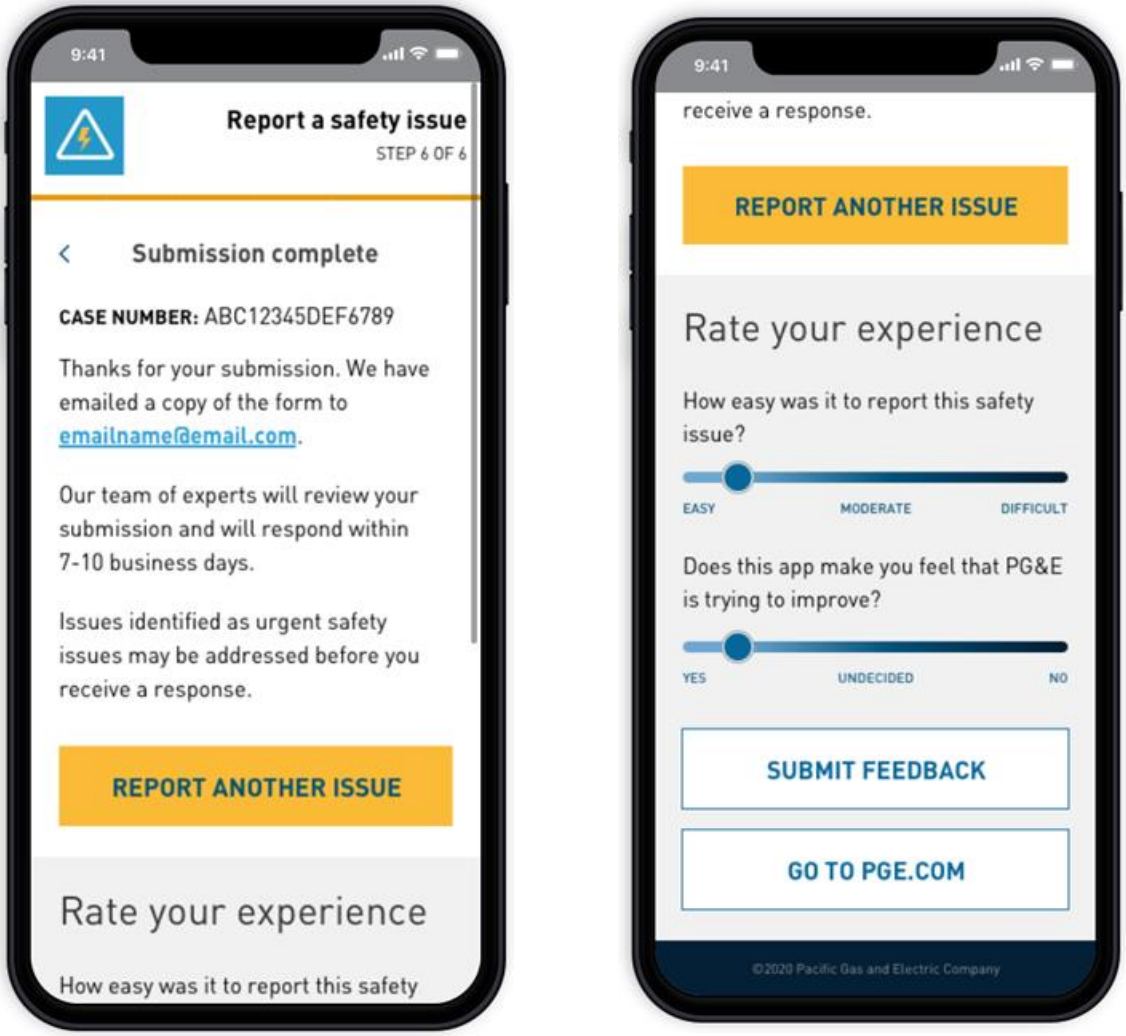


FIGURE 12
CONFIRMATION SCREEN, SURVEY AND ADDITIONAL OPTIONS

After submission, the user gets a confirmation screen, a confirmation email, and a two-question survey to help PG&E gauge how easy it was to submit, and their feelings about PG&E as a result of having this functionality online. From there, the user can report another issue, visit the pge.com home page, or simply close their browser window to end their session.



D. Description of PG&E Process for Handling Submittals

Section D, describes the technical work procedures that ensure employees identify, evaluate and track all issues submitted through the Mobile App and determine the appropriate next steps. This section also discusses the communication triggers that informs the public of PG&Es actions to remedy the matter and when the remedial action is taken or will be taken.

Once a member of the public submits a report via the Mobile App, PG&E will complete the following work procedures which are necessary to screen report

packages for photo clarity, identify immediate hazards, evaluate whether the photo, when available, identifies a problem and whether the problem identified presents a safety concern or is a violation of safety regulations, as set forth below.

PG&E would form a dedicated "triage team" to receive submittals. The Triage team would first conduct an initial review, which would consist of the following steps.

- Notify submitter that the report package has been received and review started and provide a report package tracking number to the submitter.
- Validate that available photos are acceptable and effective in determining the condition, location and potential issue of the asset being reported as a safety concern.
  - If photos are not acceptable or effective in determining the location and/or safety issue, the report package will be returned to the submitter for correction and additional information.
  - If no photos are submitted, yet the report indicates a safety hazard, a trouble report will be generated to dispatch a troubleshooter (aligned to current emergency dispatch) to collect further information.
- Confirm whether the equipment issue identified presents an immediate safety hazard and requires an immediate response:
  - If immediate hazard exists a trouble report will be generated to ensure emergency process is initiated and submitter receives an update;
  - If an immediate safety hazard does not exist and the photos are acceptable the initial review team will route to the Centralized Inspection Review Team (CIRT).

PG&E's existing CIRT would review report package as set forth below.

- Check that the asset belongs to PG&E and confirm the geographic coordinates match a location in PG&E's GIS:
  - If the reported issue is for a non-PG&E asset, follow the existing Third-Party Hazard reporting process to engage appropriate asset owners in resolution (third party).
- If the reported issue is confirmed as PG&E and is asset related:
  - Confirm that the reported issue is a nonconformance with internal or external guidelines, rules, or regulations (validated);
  - Confirm that the reported issue is non-duplicative of existing corrective work (non-duplicative); and

  - Identify new electric corrective maintenance notifications and route to appropriate work group for corrective action (work group assignment).
- If the reported issue is a confirmed vegetation issue on a PG&E asset:
  - Identify vegetation management corrective maintenance tags and route to appropriate work group for corrective action (work group assignment).
- Provide updates to the original submitter through the Mobile App based on the following report package action triggers:
  - Reviewed and redirected to third party;
  - Received and validated as a duplicative PG&E known issue;
  - Received and validated as non-issue with no further action required;
  - Received and validated as a PG&E asset and non-duplicative;
  - Reviewed and assigned to appropriate work group including estimated correction date; and
  - Issue resolution and closure by PG&E.

Submitters will receive notification of report status. Such notifications are loaded to the mobile app during the report review process and set by specific triggers defined by the completion of key steps, as described in the section above. These notifications are only provided to the original submitter.

1. Technical Specifications for Submittal Process

As described I.19-05-015 and the initial Application, PG&E's Mobile App product must meet the following performance requirements:

a) Assign a unique package identification number for tracking;

b) Assign a unique customer or user identification number needed to facilitate accurate tracking and communication back to the customer/submitter;

c) Provide the location of the asset identified as having a safety issues, including street name, city name and cross street information;

d) Capture viable asset photos, used to attain latitude and longitude coordinates required to accurately identify PG&Es equipment or asset number; and

e) House an internal web portal or connection to a database that will be utilized by the CIRT team[10] to post status updates and resolutions for each package identification number.

For the pilot, it is anticipated that PG&E will maintain a standalone database listing of all publicly reported issues and their status to enable communication back to the public submitter. PG&E will evaluate the potential of a later release allowing the public access to the standalone database, should the Commission and PG&E determine the pilot is efficient and effective. All submitted photos deemed appropriate would be posted with-in 30 days of an issue being reported via the web application. Metadata policies would need to be established to ensure compliance with California Consumer Privacy Act code to prevent sharing of Personally Identifying Information.

2. Report Package Manual Validation

Issues and associated photos and data submitted via the Mobile App, otherwise called report packages, will be assigned a unique tracking number generated by the Mobile App. Report packages will be manually validated by a member of the triage team as non-emergency, viewable and actionable.[11] Although the Mobile App is not designed for emergency reporting, PG&E anticipates that some users will disregard that guidance. Emergency report packages of confirmed PG&E assets will be directed to dispatch for trouble report creation and emergency resolution processing, aligned with current phone reporting processes.

Validated, non- emergency report packages, will have case number generated and will be sent to the CIRT Team. The CIRT team will determine which assets are involved in the report package and determine ownership (i.e., PG&E Transmission/Distribution/Substation or external third parties). A confirmation receipt will be sent to the original submitter letting them know that their request has been received and/or processed. The submitter will receive an order number, which they can use to find report information. This number can be referenced if they have any questions or concerns.

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10 To clarify the this is a way for PG&E to communicate back on the progress of each report package received through the crowdsourcing public safety "Mobile App."

11 To clarify actionable is defined by PG&E as able to be done or acted upon; having practical value in mitigating wildfire and improving infrastructure safety.

If the infrastructure owner is not obviously identifiable via the report package, the CIRT team will request the triage team to follow up with the submitter. The CIRT team will also determine if the reported issue is vegetation related and if so, the report will follow the existing vegetation program work management processes. All processes document the assigned internal tracking number in the communication update to the Mobile App for closure and resolution. The Mobile App is periodically updated with status, as the report package moves through the process.

The CIRT team will require accurate latitude and longitude coordinates in order to assign an equipment ID number. The submitted work packages will be validated within PG&E's GIS tool and matched to geographic coordinates of PG&E's equipment locations. This information is needed for asset review and corrective work assignment to the field.

3. Publicly Available Report Information

The OII contemplated that PG&E would create a "asset management/system database" and make submittals "assessable to the general public."[12] PG&E will store the following information within the database associated with each valid report package and/or asset photo received by the public: (1) whether the photo identifies a problem; (2) whether the problem presents a safety concern or is a violation of safety regulations; (3) PG&E actions to remedy the matter; and (4) when the remedial action was or will be taken. Other record keeping information will also be provided such as the date a report package was received, and the geographic coordinates of asset(s) received in a report package. This information will be posted into the asset management database within 30 days of receipt of the photo through the mobile app.

The original submitter will receive a notification of the report package status as it moves through the internal work process described above in the technical work procedures. However, during the Pilot, PG&E is not proposing to make submittals available to the public but could make them available if the Pilot proves successful and is expanded.

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12 I.19-06-015, p. 18.

E. Implementation Plan

Section E provides a high-level pilot implementation plan and describes PG&E's approach for selecting customers to participate in the pilot as well as the timing and duration of the pilot.

1. Pilot Implementation Plan

PG&E estimates that it will take 4-6 months post CPUC authorization to prepare for the launch of the pilot. This will allow PG&E to develop the public facing mobile web application, define the back-end process integration needed to support the pilot and identify a process for reporting status to the submitter. Table 2 below outlines the key milestones and associated durations for the pilot

TABLE 2

Line No.	Milestone	Duration
1	Discovery / Planning & Analysis	2-3 weeks
2	Design	4-6 weeks
3	Build / Development	8-10 weeks
4	Testing	1-2 weeks
5	Pre- Deployment (Soft launch with employees and Refine based on User Feedback)	2-3 weeks

2. Customers to Target

The Pilot will represent a sampling of PG&E customers in Tier 2 and Tier 3 high fire threat areas. PG&E has determined that there are approximately 300,000 customers in Tier 2 or Tier 3 threat districts with email addresses on file. To reach the required number of submissions for the pilot, PG&E's initial approach will be to email all 300,000 Tier 2 and Tier 3 customers with email addresses on file. Response rates will be monitored and if submissions are insufficient to reach target volumes, PG&E will implement a direct mail campaign to an appropriate number of remaining customers in Tier 2 and Tier 3 threat districts to attempt to generate additional submissions.

Response rates will vary based on the level of consumer interest, so PG&E's forecast models may change once responses start coming in. PG&E's plan is to start with email, and to supplement with direct mail as needed. Based on the history of response rates of PG&E customers to

email,[13] PG&E's estimates that sending out 300,000 invitations should yield roughly 186 submissions.[14]

Historically, PG&E has seen an open rate for PSPS communications of approximately 31 percent. The means that 31 percent of the customers who receive an email from PG&E about PSPS communications will open it and read it. Of those who read the email, typically 1-2 percent will click to go further to read more online. Of those who visit the pilot home page, roughly 10 percent are expected to actually submit an issue using the tool. Projected customer volumes from the email phase to the submission phase is shown in the table below.

TABLE 3

Line No.	Pilot Phase	Quantity[(a)]	Response Rate[(b)]
1	Email Invitations Sent	300,000	31% open rate
2	Emails Read	93,000	2% click rate
3	Landing Page Visits	1,860	10% submissions
4	Submissions Received	186	

(a) All quantities are approximately anticipated.
(b) All response rates are approximately anticipated.

To mitigate against too many responses coming in at once, PG&E may also break the initial 300,000 emails into batches to test response rate assumptions. This will help ensure that the volume of submissions can be handled in a timely manner by pilot staff. Alternatively, if the responses rate is in line with actual response rates from prior PSPS email campaigns, PG&E may need to expand its outreach beyond the initial 300,000 customer emails. PG&E will monitor the pilot response rate and implement a direct mail campaign to an appropriate number of remaining customers in Tier 2 and Tier 3 threat districts, if needed, to

13 To arrive at those estimates of anticipated response rates, PG&E relied on actual email open and click data for prior Public Safety Power Shutoff email campaigns.

14 A submission is defined as "issues and associated photos and data submitted via the Mobile App." Additionally, receiving 384 submissions out of 300,000 invitations represents a statistically significant study and can be relied upon to draw further conclusions about the mobile application.

attempt to generate the additional submissions (totaling 384) needed to call the pilot representative and successful.

PG&E expects the customers invited to include a mix of urban, suburban and rural locations clustered around distinct media markets for better social media outreach targeting.

3. Timing and Duration of Pilot

PG&E would like to launch the pilot and monitor its use during the 2021 fire season in line with SED's recommendation. While the current development timeline would allow for the pilot to launch in 2020, PG&E believes that it is not effective or favorable to launch in the middle of the 2020 fire season. PG&E anticipates the pilot duration would be a minimum of 12 months or until 384 unique submissions have been received, If at any time during the pilot period the minimum number of unique Submitters/Report Packages have been received, then PG&E will pause the pilot and share it findings with SED to align on an approach for further deployment or determine an alternative go-forward plan. On the other hand, if after six months, the minimum number of unique Submitters/Report Packages have not been received, then PG&E will pause the pilot and share its findings with SED to determine a go-forward plan.

F. Outreach and Communication Plan

PG&E plans two different communications as part of the mobile pilot: direct to customer outreach and media outreach.

For the direct to customer outreach, PG&E intends to email approximately 300,000 customers to participate in the pilot. Once a customer opens the email and clicks on the email link from a mobile phone, a shortcut will be placed on the user's mobile phone home screen. When the shortcut is clicked, users will be taken to the pge.com mobile web page to start the reporting process. The reporting process will start with the user entering the email address where they received the invitation to participate. Only those who were initially invited will be able to proceed past this step. This will help ensure we can map the customer back to our initial criteria for segmentation, as well as ensure that we have a manageable volume of tickets coming in. While the pilot will be restricted to the customers invited to participate, if an interested party was not on the initial list wants to be part of the pilot, they will be able to send an email to the program team to be added to the authorized list.

Should PG&E receive requests to be added to the authorized list beyond that which our team is capable of supporting, PG&E reserves the ability to discontinue or pause the adding of interested parties to the authorized list.

PG&E believes email is the best suited communication channel because customers with email addresses on file are more likely to use digital channels. In addition, PG&E can release invitations in batches while monitoring response rates and submission quality in order to measure effectiveness and improve the tool during the pilot phase. If response is lower than forecast, PG&E can also send reminder emails to those who haven't submitted a report. Additional participants can also be easily recruited. PG&E also plans to provide media support to the pilot initiative. The media plan will:

- Explain and promote the mobile web page that allows customers to submit details/photos of potentially hazardous conditions;
- Match the footprint of the pilot;
- Include local and/or systemwide news releases, as applicable;
- Use targeted zip codes to promote on social media; and
- Look for success stories that we can share via our news website (www.pgecurrents.com).

G. Assessing Pilot Success

In this section, PG&E will discuss the risk-based framework for assessing the Mobile App Pilot. PG&E intends to ensure that wildfire mitigation efforts are best directed at identified and validated issues of utility infrastructure through the most viable source. The information gathered through the Mobile App Pilot will be assessed via a combination of factors intended to balance public interest and engagement, along with potential fire risk reduction and cost effectiveness.

1. Public Interest and Submission Quality

In order to evaluate public interest and engagement, PG&E will consider the total number of unique submitters along with the total number of unique report packages generated by the public through the Mobile App. PG&E proposes to collect a minimum of 384 unique submittals/reports of potential issues from members of the public in HFTD Zones. Attaining unique reports/submittals is an important measure that will be used to gauge public interest of crowdsourcing utility issues. The general measure of public interest is based on engagement with a

statistically significant section of the public, as defined in Section 2.3. There is a distinction between the number of unique submitters and the number of unique report packages. The number of unique submitters is meant to identify a single user generating multiple reports whereas the number of unique report packages is meant to identify a single issue being identified by multiple users. For example, if only one user submits 384 report packages during the pilot the requirement of 384 unique submitters will not be met and public interest will be considered insufficient to justify operationalizing the pilot.

This measurement of the population will provide a relevant and statistically significant sample needed to determine the value of crowdsourcing, and if such sourcing helps or hinders other strategic efforts by the Company to mitigate wildfire. The quality of report packages will be measured once the volume of required report packages is attained. Quality submissions must provide geographic coordinates, specific risks or violations and the existence of a hazardous condition. The report packages will be considered of quality and counted towards the total minimum report volume if they identify actionable and true issues on a confirmed PG&E asset(s), regardless if they identify duplicative, known issues. The potential to reduce fire risk will determined by the submitted report package contents and the identification of valid issues within each report package. PG&E will assess, and track costs associated with the Mobile App pilot based on; the amount of appropriate non-duplicative report packages, hours spent reviewing and analyzing false positives (e.g., nuisance reports of non-hazard) and the appropriate use of the App as a non-emergency reporting channel.

H. Post Pilot Review

PG&E will evaluate the mobile app pilot against the risk framework discussed and outlined in the Plan. The evaluation will determine if the mobile app pilot meets the criteria set forth. PG&E would then evaluate expanded deployment based on resource needs, PG&E's ability to automate what are currently manual processes, and improved web development. To the extent the results fail to meet the risk framework, PG&E will evaluate if stronger controls, additional public education or other actions might correct the deficiencies.