

QR Code Functionality for Wildland Fire Mapping

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Mobile GIS applications for iPhones, iPads, and other smart devices are a new and progressive way of taking and obtaining geographic information in the field in digital formats. Users with smartphones or tablets can download free applications quickly and easily which enable increased functionality and mobility. This document will discuss a workflow that has proven effective on the Halstead Fire.

[Section I-Website Creation](#)

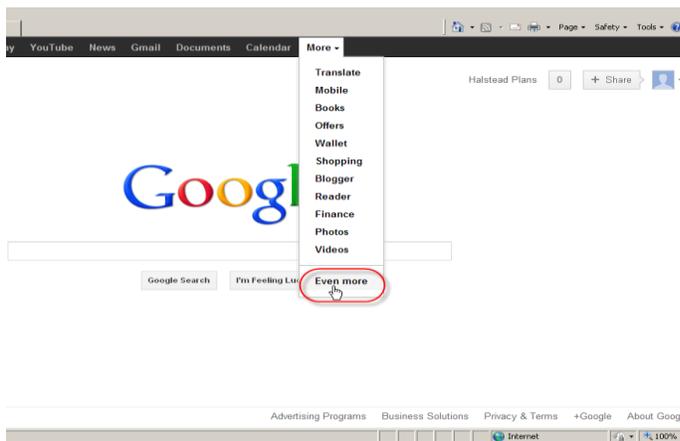
[Section II-QR Creation](#)

[Section III-QR Codes in ArcMap and Export Settings](#)

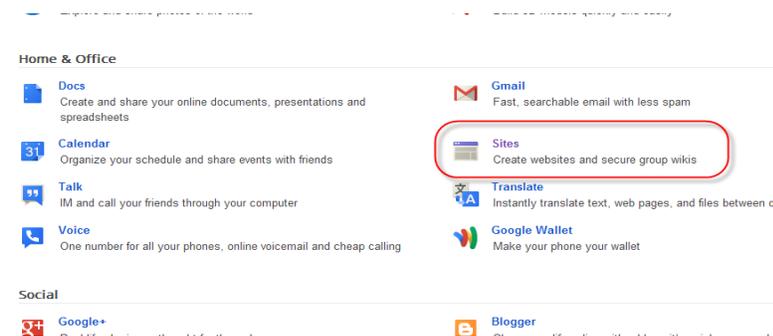
[Section IV-User Device Settings](#)

Section I – Website Creation

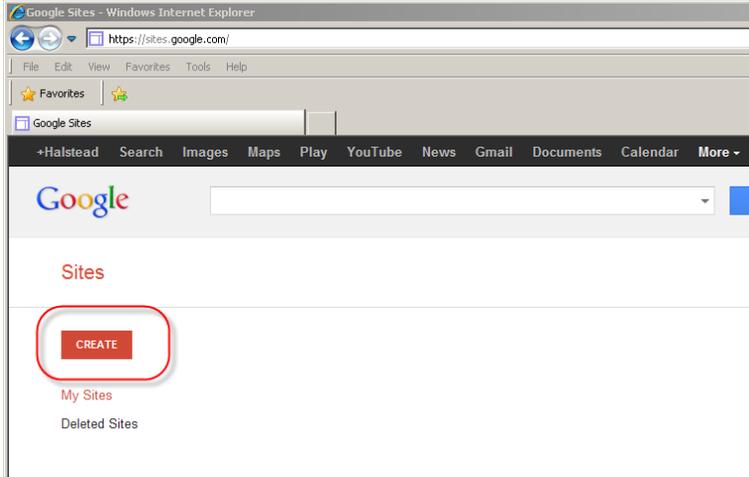
Most incidents setup an incident or even sectional email address using gmail. This is the starting point for utilizing QR codes easily. When logged in, use the drop down menu “More” and select “Even More”



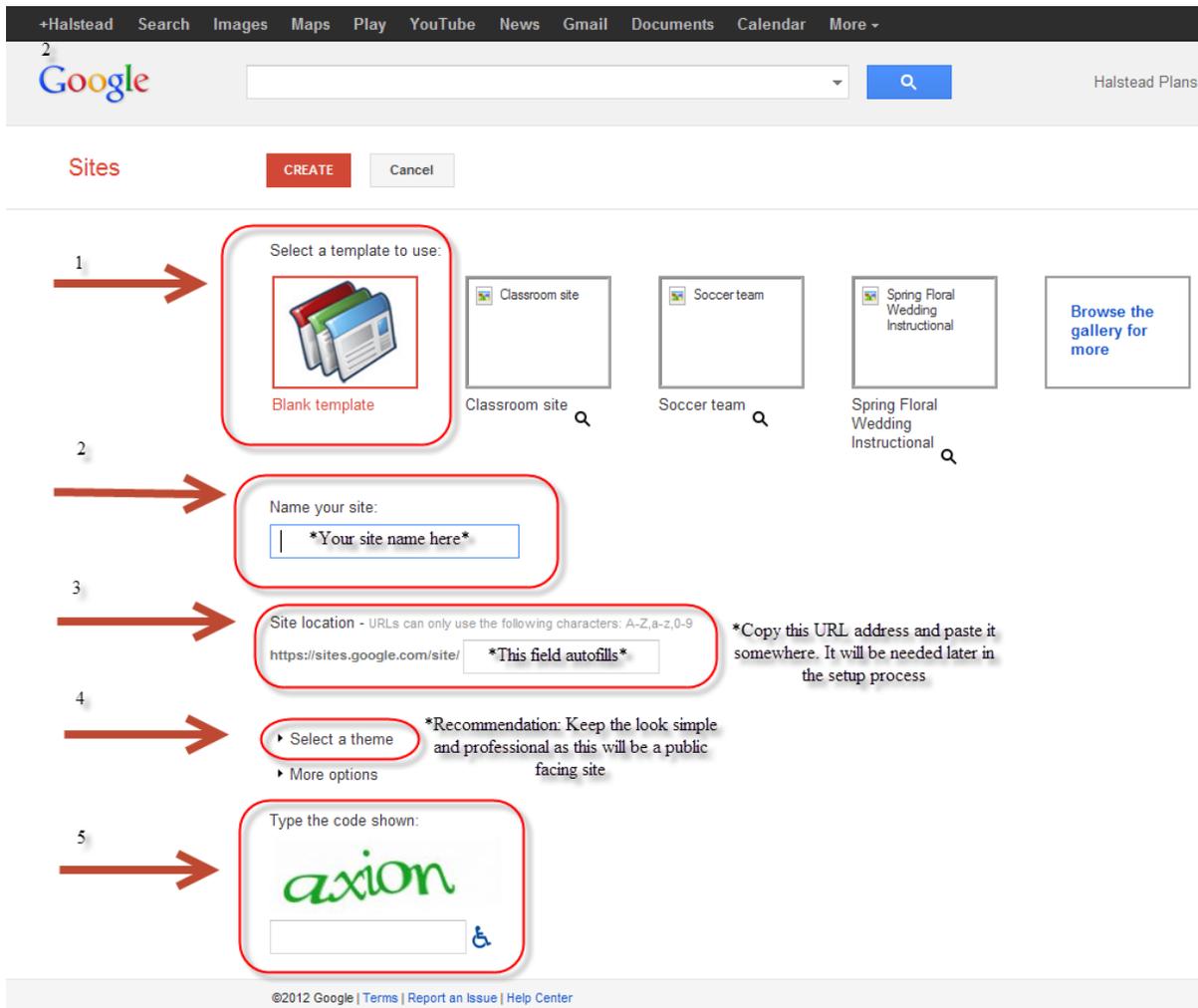
Scroll down to and select “Sites”



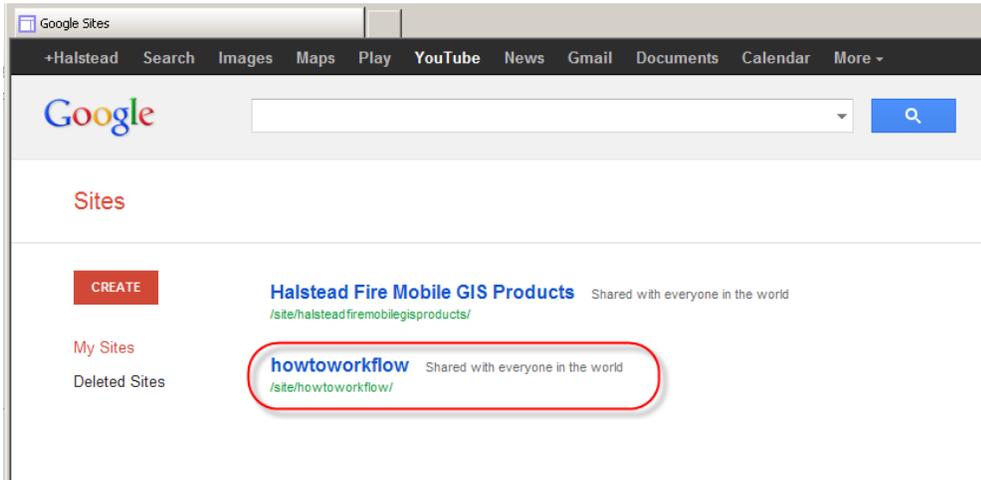
Select "Create"



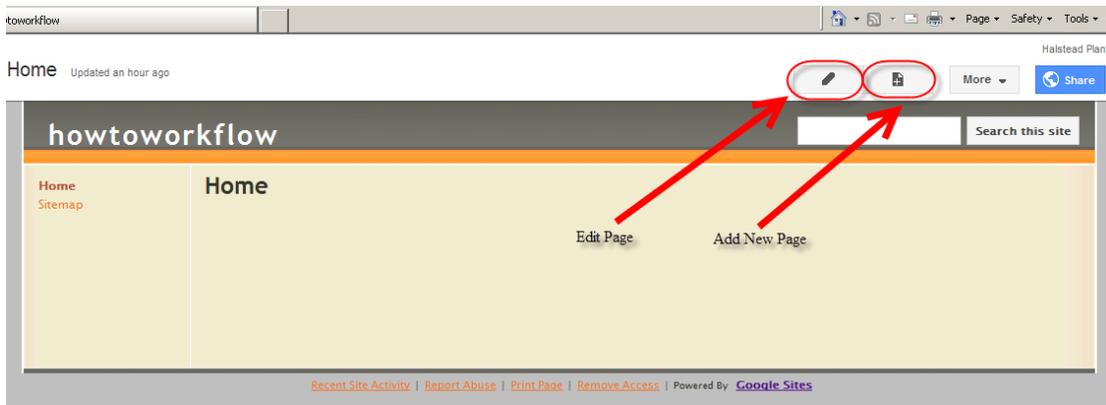
Create the basic look and feel of the website in the following page:



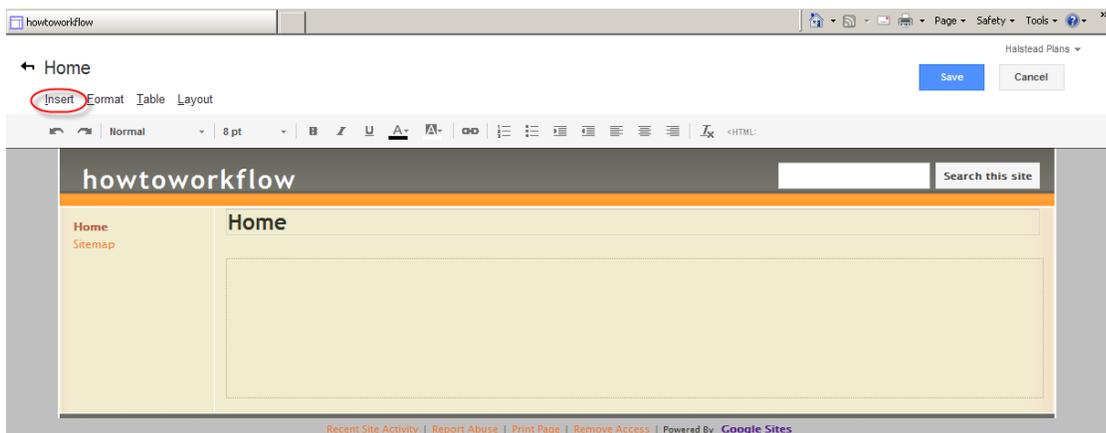
Hit "Create" at the top of the page when all the fields have been satisfied
Return to the "Sites" page to view and manage the different active sites that have been created



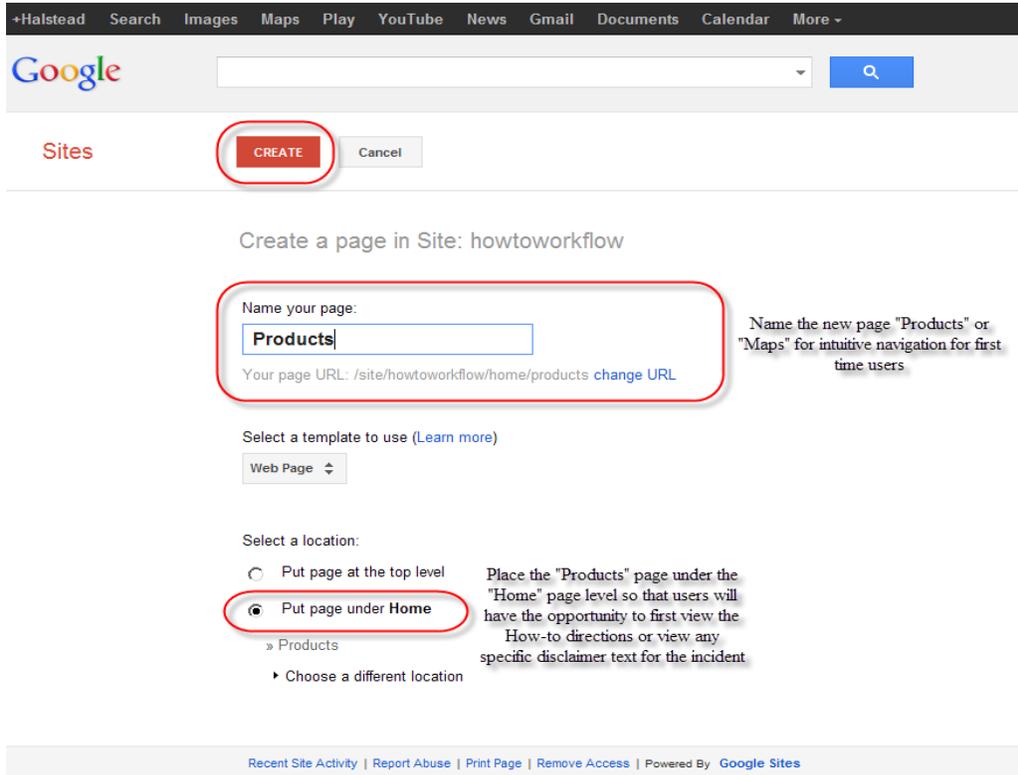
When the administrator is logged into the webpage there are a number of options for how to edit the site.



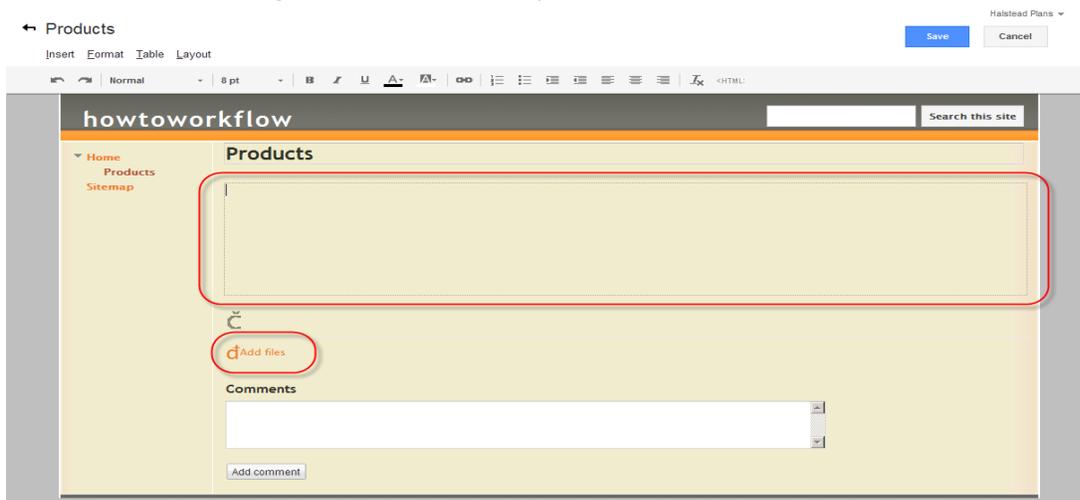
In "Edit Page" it is nice to put a picture of some sort to dress up the page and it is advisable to post a short "how-to" section for new users.

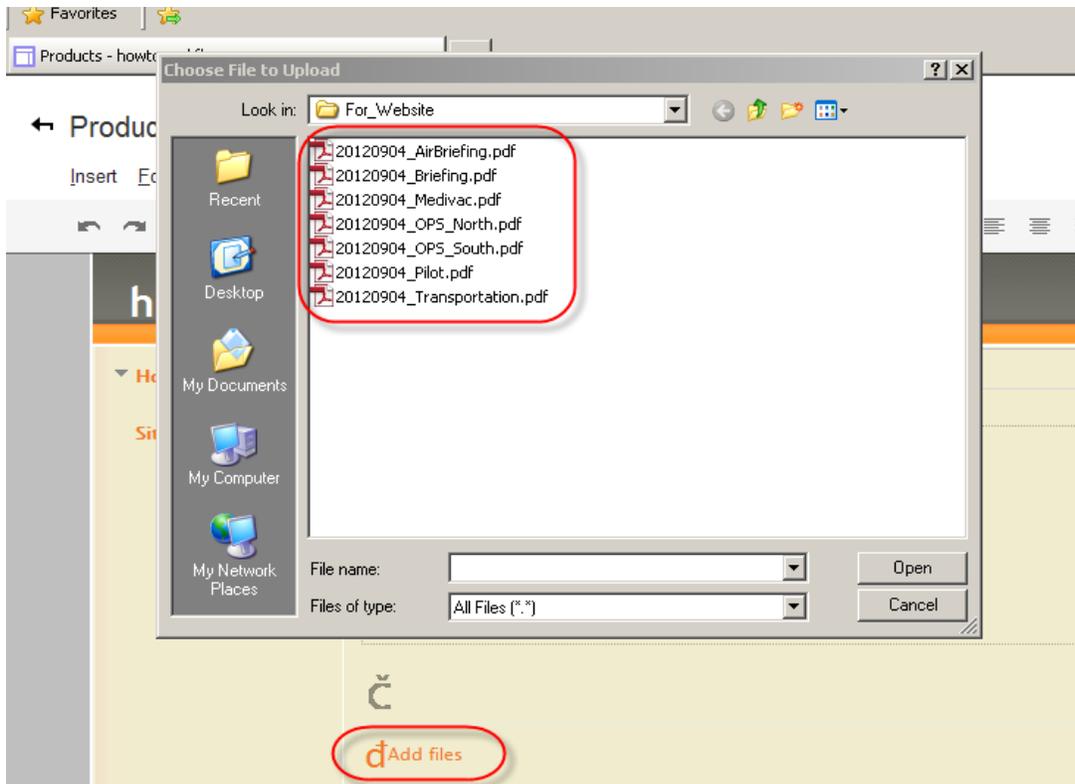


By clicking on the “New Page” button, a page creation setup page will open up. Enter a new name for the page such as “Products” or “Maps” since this will be the new page that users will go to in order to download and consume the products posted to the site. Select the radio button next to “Put page under Home”



After hitting “Create” at the top of the page, the new page will pop up in an editable form. It will also have an “Add files” button near the bottom. This will open a windows explorer dialog box where the administrator can navigate to and select the products that will be available to users.



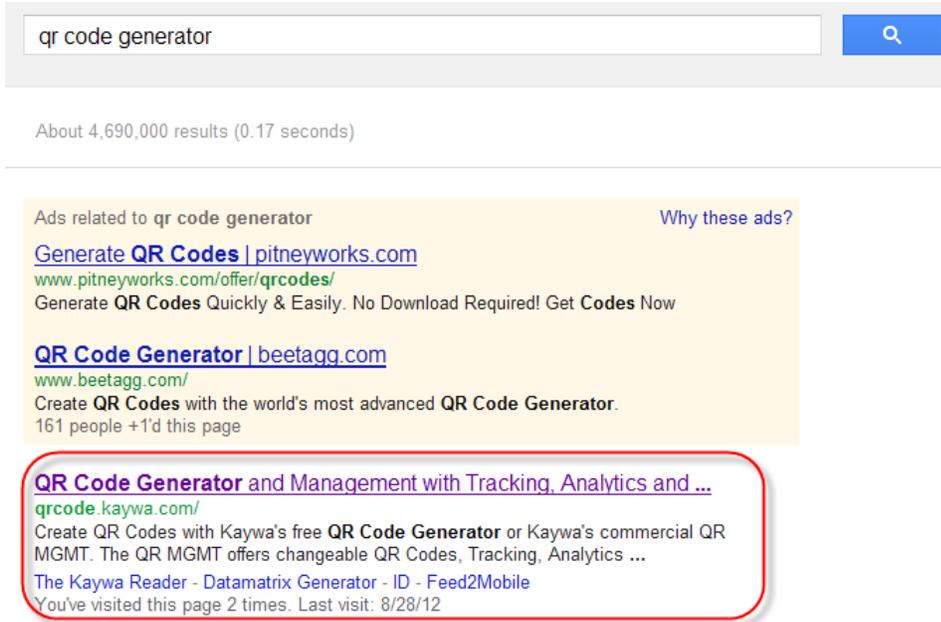


Inside each dated folder for products in the incident database it is helpful to create a directory to house the products that will be posted to the website with shortened names so that mobile phone users with limited viewing extents will easily be able to identify what products are available to them on the site. (seen above and below)



Section II – QR Creation

To create the QR code, simply google a QR code generator



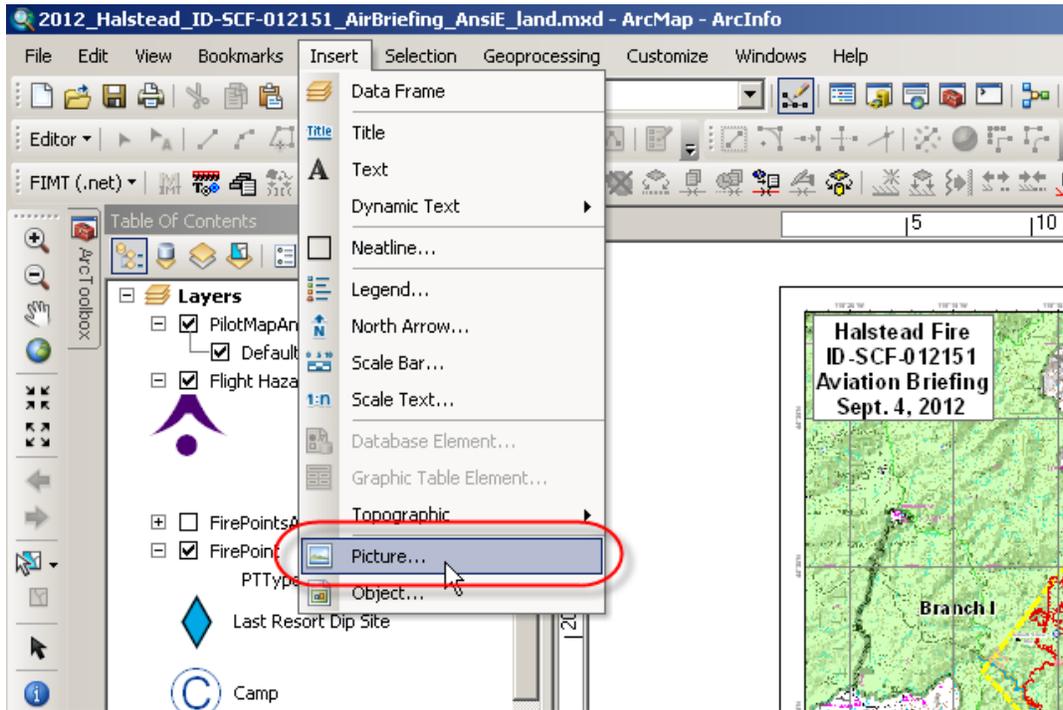
Typically, most QR generator sites will ask for the URL of the site that is being linked to the QR code. This is where the URL for the Home Page of the site just created goes.



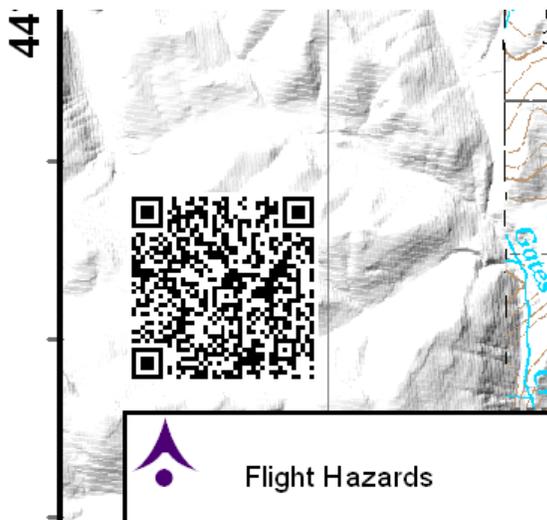
Right click on the image of the QR code that is generated and save the image. Now the image of the QR code is available as a file that can be dropped into word documents such as the Incident Action Plan or maps produced for the incident.

Section III – QR Codes in ArcMap and Export Settings

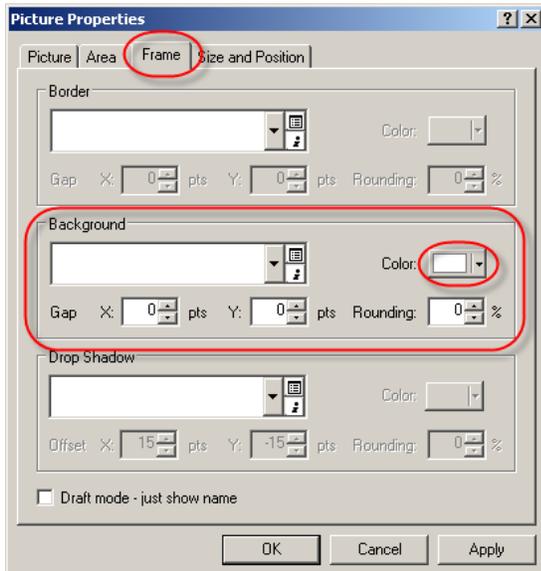
To insert the QR code into the maps, open up the mxd and use the “Insert” menu tab and select “Picture...”. Navigate to the stored location of the QR code and open it up in the map. Resize and place as needed.



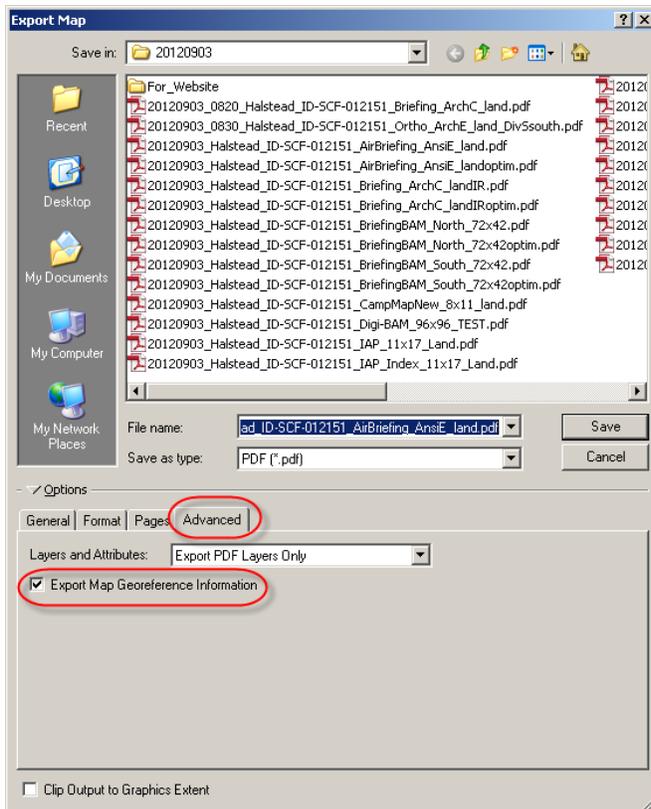
A size of about an inch to an inch and a half is suitable for users to be able to properly scan the QR code.



Right click on the QR code and go to the frame tab in properties. In the “Background” section, set the background color to white so that user’s devices will be able to easily detect the QR code



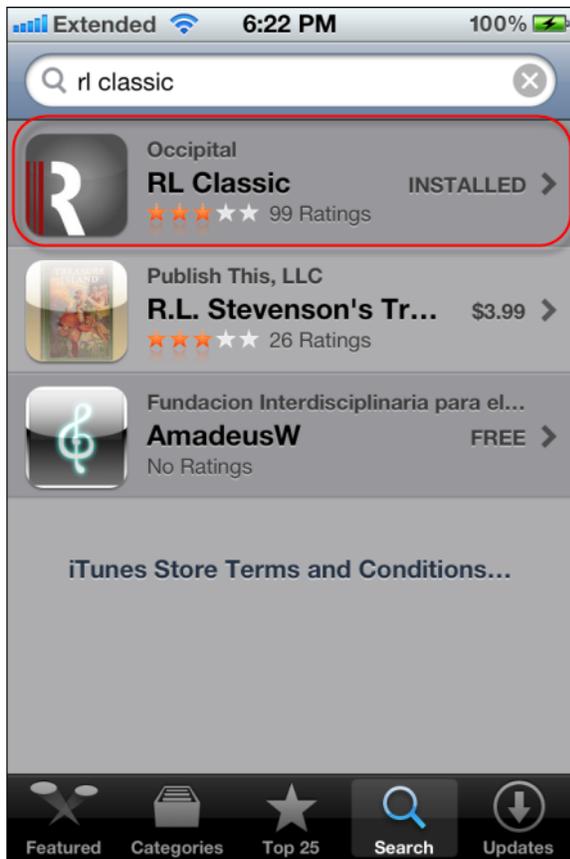
In the export settings, it is important to ensure that the checkbox for “Export Map Georeference Information” is checked so that users with iPads and iPhones with 3G service will be able to utilize the full functionality of the mapping applications.



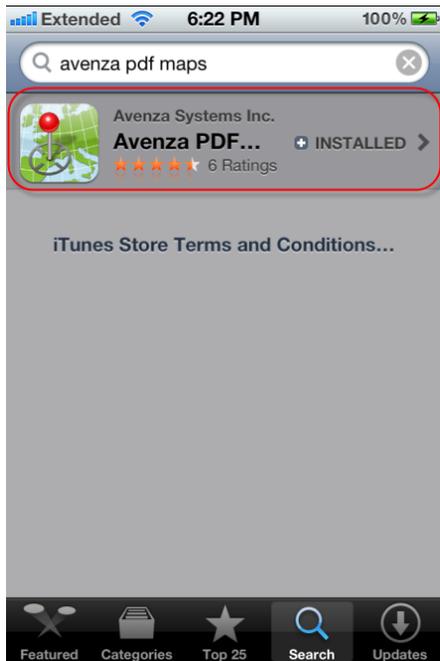
Section IV – User Device Settings

The many different devices that people will be carrying to try and access the products on the website will present the greatest challenge to supporting functionality. Generally speaking there will be two different types of smart devices to work with; Apple products such as iPads and iPhones and generically non-apple products such as Droids, Samsungs, etc.

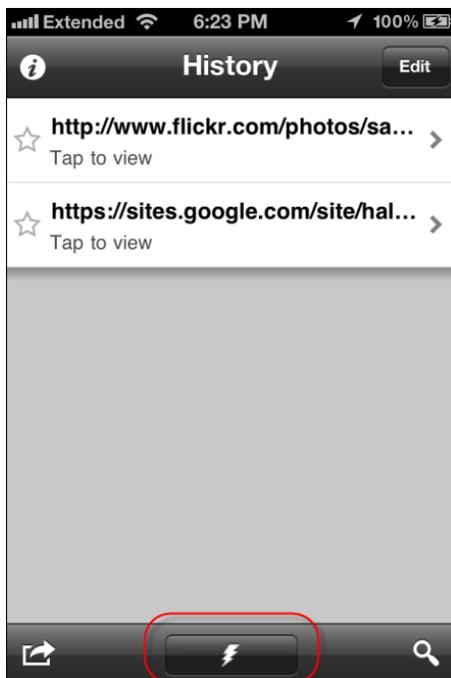
For the Apple products, the user will need to download two applications to fully take advantage of the georeferencing functionality of the maps. The user will need to go to the App Store and search out the QR scanner “RL Scanner” and install it on their device.



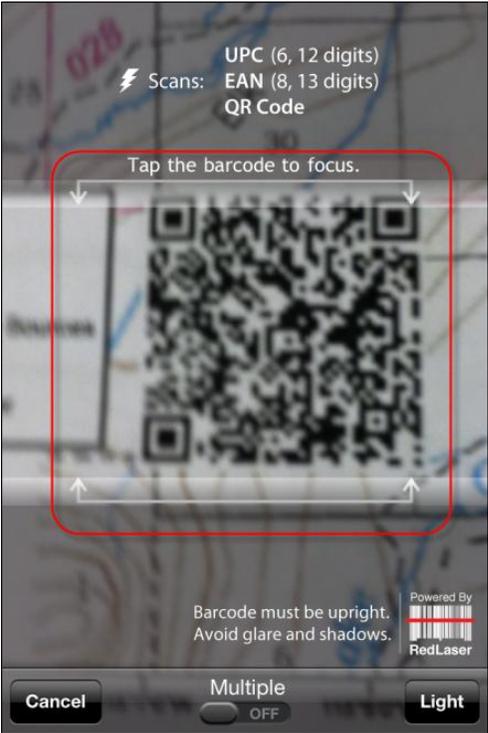
The other application that the user will need to download is “Avenza PDF Maps”



In order to get to the website using an iPhone or iPad, start by opening RL Classic and hitting the button shaped like a lightning bolt.



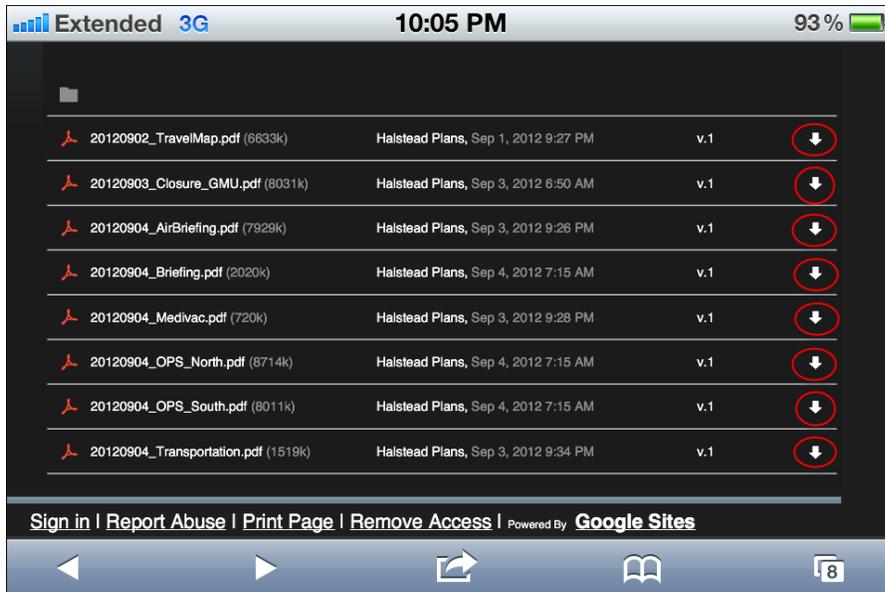
Next, position the QR code within the scanner box and allow the scanner to acquire the image properly.



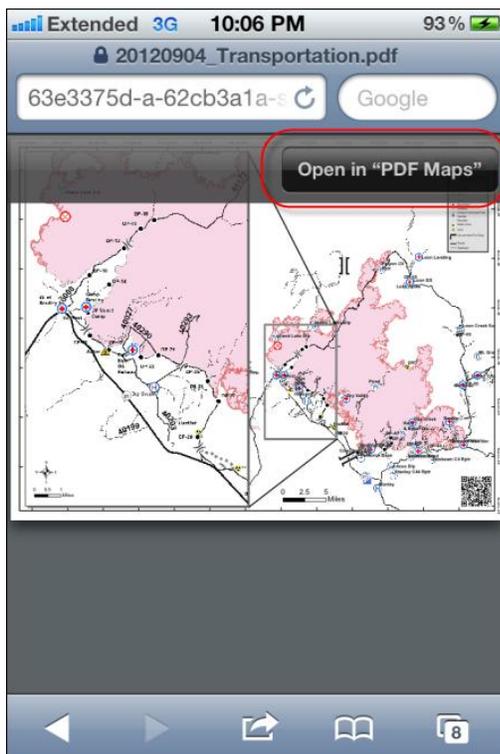
When the scanner has made the link to the website select the link to the “Products” page



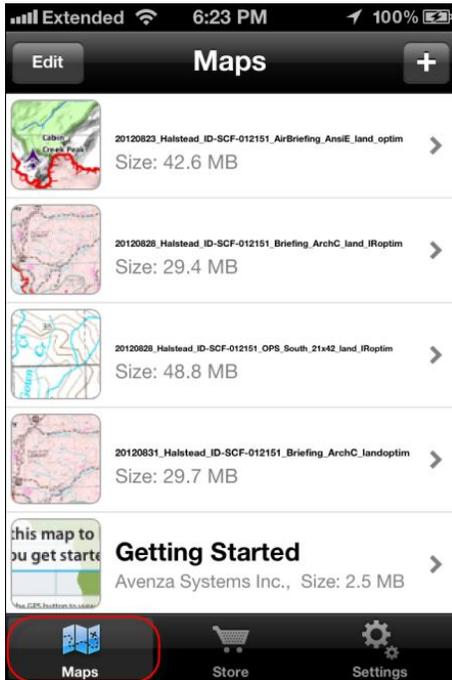
In the “Products” page will be a list of all the different products that are available to the users. Users will select the small arrow pointing down at the right hand side of the screen for each file that they wish to download.



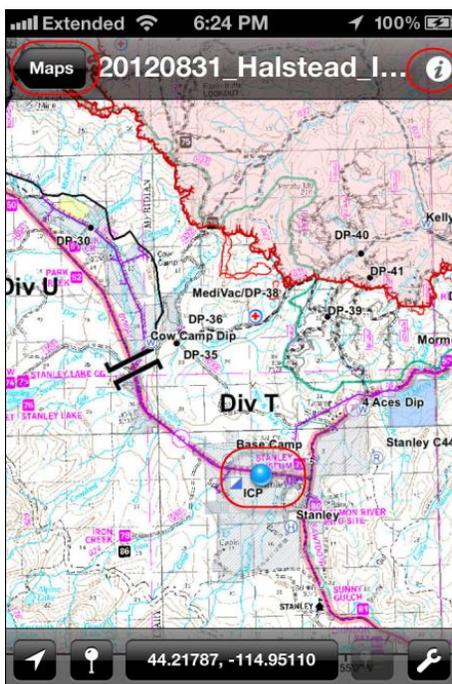
When the map has opened up, there will be a button that appears in the upper right hand corner that will either read “Open In” or “Open in “PDF Maps””. If the it reads “Open In”, press the button and select “PDF Maps” from the drop down menu. This will automatically launch Avenza PDF Maps and begin the processing of the map.



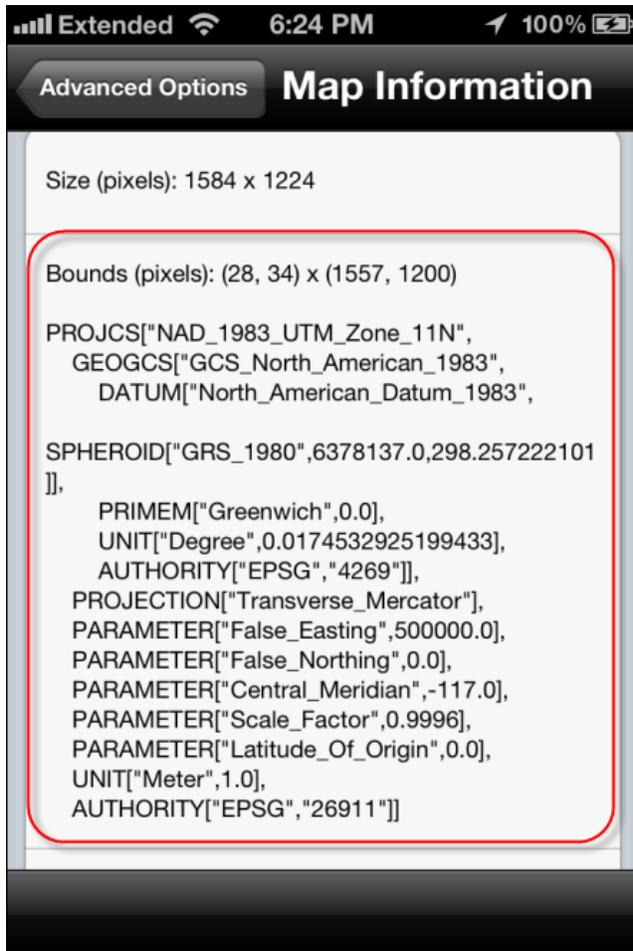
When the map is done processing, it will appear in the “Maps” list along with any other products downloaded.



Select the desired product from the maps list and the product will load up. A blue pin will identify the location of the device on the map surface if the device is within the map extent. To return to the map list, select the “Maps” button in the upper left hand corner. For map information select the “i” in the upper right hand corner.



In the map information there is information such as the title of the map, details, an option to delete the map, and also an “Advanced Options” button. In the advanced options, select the “Map Information” button to view the map geographic referencing information. If this area is blank and there is no blue pin denoting the location of the device on the map even if the device is within the maps geographic extent, then there is no georeferencing information embedded in the map and the positional functionality will not be available. *This will always be the case for iPad and iPod Touch users without 3G coverage because those devices do not possess the GPS functionality required to utilize the georeferencing information embedded in the map.



For people who own other smart devices such as Droids and Samsungs, those users will need to go to their App Store (Droid app store is called “Play House”). Any QR Scanner application available will be suitable to scan the QR codes on the maps and IAP booklets. The other application that is necessary to download is “Adobe Reader”. With these two applications, users with Droids, Samsungs, etc should be able to download the maps and open them up in Adobe to have the maps available on the device for viewing and reference even without access to the network.

*At the time of this documents creation, functionality to utilize the georeferencing embedded in the PDF maps is unavailable.

**It recommended that users utilize access to WiFi networks whenever possible during the downloading of applications and map products for the fastest download times. It is not required but advisable.

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