# Google Earth Outreach Non-profit Geo Strategies

Why Use Maps?

There are many reasons why a non-profit organization (NPO) might want to put a map on their website or to allow people to download a Google Earth layer. The simplest reason might include showing the locations of the sites where they provide services. For instance:

- A **volunteer-based organization** may want to map their entire volunteer base.

- A **service organization** might want to show their service areas and some simple usage statistics for use in fund-raising.

- A **land trust** may want to map the land they're working to protect.

- A **humanitarian organization** may want to transport people across the world virtually to educate them about human rights in a different part of the world.

- An **environmental organization** might want to show complex data visualizations that illustrate their cause. For instance, an environmental organization might want to show areas of contamination due to industrial pollution in their local area.

- A **local historical society** might want to show a map illustrating the development of their town over time.

- A **landmarks organization** might want to show 3D models of the buildings and monuments it maintains.

Whatever the reason, many NPOs don't have the resources in house to do their own mapping, and may not even have control of their own website. This document will walk you through the steps of deciding what you need, what you already have, and how to go about implementing it. While the specific mapping technologies discussed here are Google focused, the steps are generally applicable to non-Google technologies as well.

Once you know you want to integrate maps into your campaign or use maps for decision-making, get started by following 6 steps outlined below.
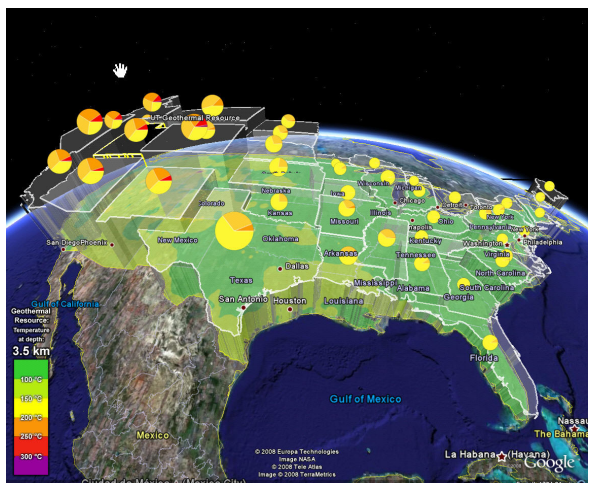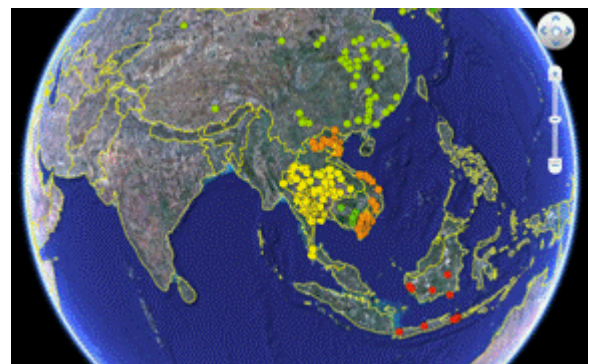
Steps towards *your* Non-profit Geo Strategy

## 1. Define the Goals of Your Map

Decide what you want to map.

What story do you want to tell? Many organizations simply want to map their volunteer base or their donor base and use the map as an internal decision-making tool. Other organizations have GIS data that, once it's displayed in Google Earth, can reach a much wider audience. And some organizations want to take viewers on a virtual tour, flying their audience across the globe to another part of the world and tell their story. Satellite imagery can be a great tool for democratization of information.

What are the calls to action of your map? You can add a button in your popup balloons in both Google Earth and Google Maps to "Donate Now," "Take Action," or sign a petition. You could recruit new volunteers from your map, or you could educate the public about an issue that is in another part of the world.

2. Assemble Your Data

What kind of information do you want to put on the map?
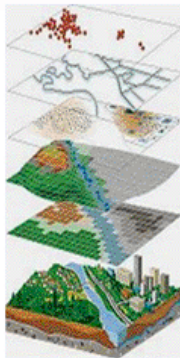
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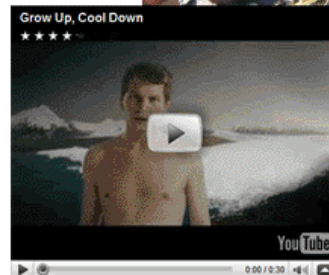
Images & Videos

Spreadsheets

It is important to be aware of what data you already have and how it is formatted. What data format is your data in? Do you have one of the following?

- **Spreadsheets, such as Microsoft Excel or Google Spreadsheets**. Spreadsheets are essentially one-dimensional databases. They have a lower barrier to entry, often less capacity, but are often perfect for a more static deployment of data. They also work well for collaboration, particularly online versions like Google Spreadsheets.

- **Images and videos**. These may be geographically tagged, or they may not be. Images and videos provide a powerful way of getting your information out there. The trick is knowing right where to place them on the map.

- **A database**, such as Microsoft Access, SQL Server, MySQL, a donor database of some kind, PostGreSQL, Oracle. These are often the best to work with, and offer dynamic capability, but require more specialized knowledge. Word docs, text, etc. Generally, unstructured data in these formats are less useful for automatic conversion to a map. However, that isn't to say they're not useful. You will just have to get the data out of them, which might mean some extra work.

- **Specialized geographic data formats**. This kind of data is often the best to work with, giving very precise geographic data about what you're describing. It is also some of the hardest, requiring specialized knowledge of geographic information systems (GIS) applications. This kind of data is most often in shape file (*.shp) or GeoTiff formats, but there are other data formats in specialized areas. By the way, "shape files" always come as a set of several individual files: *.shp, *.shx and *.dbf are required. There is a long list of others that are optional. They are often referred to as "shape files" for convenience.

Next, think about your data.

- How is the location of your data marked? Do you have latitude and longitude data for each of your data points? Or addresses? Cities, neighborhoods? Many NPOs will have a combination of all of these for marking their data. It's fine if you don't have GPS locations for all your data, since there are free services that will help you get that, and tools you can use to mark up your data. Again, this may just be some extra steps and work for you.

- What is the nature of your data? Does each unit of data represent a single point? An area? Is there a time component to it? Some possible ways you may have data: - Point data represent singular locations. This could be the addresses of your clients, the specific location of a human rights violation, or some other data that happens at a specific location.

  o Line data are basically points linked together to form lines. This could be paths that refugees take, locations of rivers and streams, proposed roads, etc.

  o Polygon data describe an area. This could be county, postal code or park boundaries, service areas, rebel-controlled areas in a war-torn country, etc.

- Can you explain your data? Basically this means do you fully understand it? Data without an explanation is generally not very valuable to display. If your organization was given the data, or it was collected by someone who no longer works with you, spend some time understanding it before proceeding any further. It's OK if you don't understand the technical specifics, but you should know what it describes.

- Do you even have data? It is possible that you are at the beginning of data collection. If so, that's great! It gives you the most flexibility to develop the data to meet your needs, and the visualization of your data collection as well as the data itself can be a really powerful process. However, it does mean you'll have to take some time to think about exactly what you want to display and how you format and store your data.

## 3. Assess Your Team's Technical Ability

An important step in planning your project is identifying what human talent you have to make your maps. At the very least, you'll need to have someone devote some time to working with a contractor or volunteer to develop a project. You can't just hand over your data and expect someone to make sense of it. The mistake that a lot of organizations make is assuming that because they don't have anyone who can program code, then they couldn't possibly understand the mapping project. Google My Maps and Google Earth both give you the ability to create a map very quickly and with no programming ability. For something more complex, though, it may take more than one talented person. Also, one person may have more than one of these talents. Here are a few kinds of talent to consider:

- **Artistic or design ability.** While this isn't strictly a requirement, it helps to have someone with a good eye for design who can evaluate the project as it develops. This person should also be involved in the design stages, so they can guide the visualization to have the maximum effect possible. Ugly and confusing visualizations, even if they technically are correct, do not help very much.

- **Programming skills.** Depending on your project, you may need someone with programming skills. Most mapping technologies that work in websites use either JavaScript or Flash to work Google Maps API gives you the option of using either or both in your website. The Google Earth API requires JavaScript skills. To develop a layer for Google Earth, it is easier. It requires XML which is used by a lot of different programming languages, and there are a lot of tools to help even the non-programmers. However, it is best in all these cases to have someone who is not afraid of learning something technical.

- **Database administration skills.** Depending on how your data is stored, you may also need someone with specialized database skills.

- **GIS ability.** If you want to include GIS data in your project, then you might need someone with GIS knowledge. If it is simply converting or importing the data for inclusion in Google Earth and Maps, then it might not be necessary. But if you are interested in created analysis results to show in Google Earth or Maps, then someone with knowledge of GIS software and analysis would be useful for creating the proper map data.

4. Which Technology is Right for You?

This is a more Google-specific section. The most common term in this section is "API" so it bears a bit of explanation. An API is an Application Programming Interface. That simply means that an API is a relatively simple way to program our applications. It is the programming equivalent of buttons on a VCR or DVD player. You can use them without understanding the underlying technology.
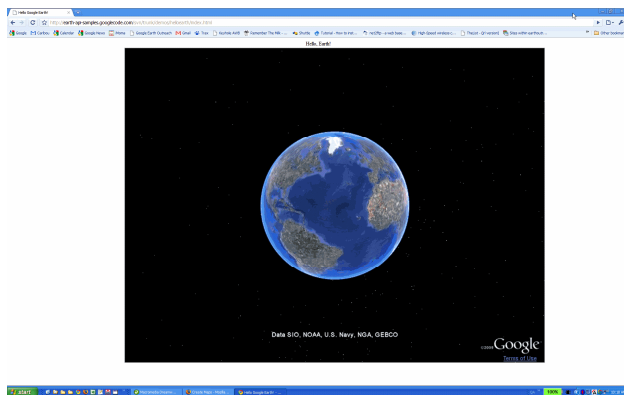
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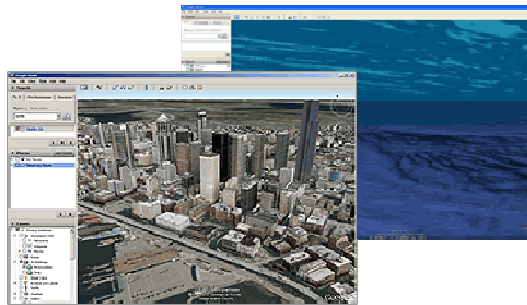
Google Earth is a free, downloadable application which combines satellite imagery, maps, 3D terrain and 3D buildings to create a highly realistic virtual globe.
Examples: earth.google.com/outreach/showcase.html
Tutorials: earth.google.com/outreach/tutorials.html

Google Maps

Google Maps are 2D Maps viewed in your web browser. Choose between Map view, Satellite and Terrain view.
Examples:
earth.google.com/outreach/showcase.html
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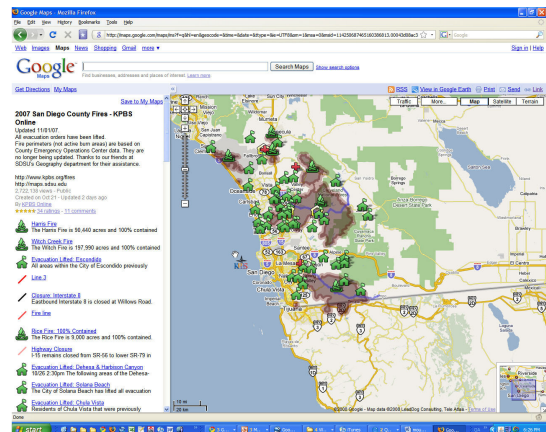
Google Earth API

The Google Earth API is Google Earth in a browser. Embed Google Earth and your Google Earth KML layer into your site using the Google Earth API. Using the plug-in, people don't have to open the separate Google Earth application to view your story in Google Earth. Rather, they can view your annotations to the 3D globe right in your site.
Examples:earth.google.com/outreach/showcase.html
Developer Resources: code.google.com/apis/earth
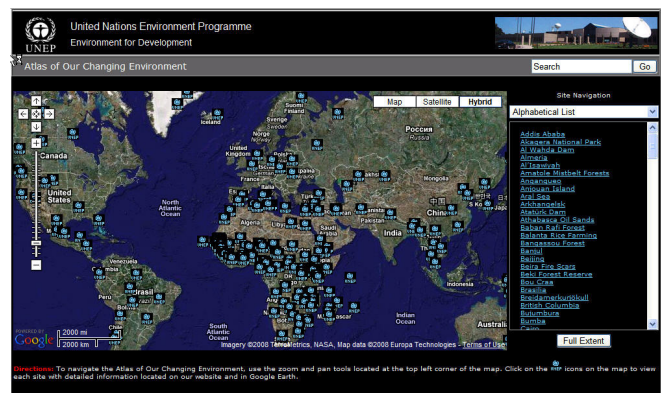
Google Maps API

The Google Maps API is a JavaScript API that lets you embed Google Maps and your annotations to the map into your own site.
Examples:
earth.google.com/outreach/showcase.html
Developer Resources: code.google.com/apis/maps

Static Maps: Allows you to put a simple map on your site. This is a non-interactive map, the equivalent of putting a picture on your site. Learn more at http://code.google.com/apis/maps/documentation/staticmaps/

Mapplets: Maps API applications that run inside maps.google.com. Learn more at http://code.google.com/apis/maps/documentation/mapplets/

Google Maps API for Flash: Similar to the JavaScript API, but uses the Adobe Flash plug-in. It is a bit more complicated to build, because it requires some Flash tools that Adobe puts out, but makes up for it by being a little more powerful because it can take advantage of the power of the Flash plug-in. It does require that the viewer of the map have the Flash plug-in installed. However, the Flash player seems to be nearly ubiquitous today.
http://code.google.com/apis/maps/documentation/flash/

Google Chart API: A very simple, lightweight method for visualizing data on a map. It only really maps geography at the world-country level or the US-state level, but useful for those purposes. Like the Static Maps API, it puts an image on your site. http://code.google.com/apis/chart/

5. Acquiring Talent

Another mistake commonly made by NPOs is to assume that anyone who "knows about computers" can program. Just because someone can connect you to the Internet doesn't mean they can program or run a database. It doesn't mean they can't, but you should be clear about what kinds of projects they have done and what skills they have. For instance, someone without a lot of skills but with a lot of enthusiasm can create a great site, but may suck up a lot of your time and energy. One great resource is someone who has some JavaScript skills (or Flash), but hasn't done Maps before and wants to increase their skills.

One thing you can do is post your opportunity to a variety of sites where people in the Geo world hang out:

http://www.unv.org/

http://neogeojobs.ogleearth.com/a/jbb/find-jobs

http://giscorps.org/

It's important to think about maintenance when working on a mapping project. If the project is a one-off project, something you're doing for an event and it won't be referenced again, that's one thing. But if it is something that goes on your site, and may need to change over time, try to find someone to work on it who will be around for awhile. You may want to add more data. Or change the look and feel, or even take down the site, but if you don't have someone who can do that, you are stuck with a map that is increasingly what you don't want. One option is to make sure that many people know how to do updates and maintenance on the site. This can be done through trainings or documentation that is produced when the map is created. Make sure any passwords are kept in a secure location but also accessible to anyone who needs to make any changes.

6. Publish and Promote Your Map

Once you have a map, there are a number of ways for you to share your map with your donors, volunteers, or the general public.

1. Embed the Map directly in your site. Integrate Google Maps API or Google Earth API into your site, so users can browse your map without having to leave your site. For an example of a site using Maps API, see UNEP's Atlas of Our Changing Environment at http://na.unep.net/digital_atlas2/google.php. To take a 3D virtual tour of alternative energy sources in New Mexico, visit the Dreaming New Mexico Google Earth API integration at http://www.dreamingnewmexico.org/visualize. Or, a simpler method is to use Google My Maps to create a map to embed in your website. Click on the My Map tab from maps.google.com

2. Google Earth Outreach Showcase: share your public-benefit map with viewers of the Google Earth Outreach site at earth.google.com/outreach/showcase.html

3. Google Earth Gallery: post your Google Earth layer to the Gallery at earth.google.com/

4. Create a page on your website for your map or create a landing page where users can download your Google Earth layer.
    View the UNHCR page at http://www.unhcr.org/events/47f48dc92.html or Save the Elephant's Tracking in Google Earth at http://savetheelephants.org/tracking.html for examples.

5. Host your Google Earth layer online: KML and KMZ files are searchable in Google's search engine. Include [filetype: kml or filetype: kmz] in your search query on Google.com to find Google Earth layers.

Visit earth.google.com/outreach