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# A Field Guide to Mobile Applications for U.S. Army Corps of Engineers Civil Works

*Making the Most of Mobile Apps*

2014-R-01



APP ICON	App Cost
Average Rating out of 5	Corps Topic Areas





# A Field Guide to Mobile Applications for U.S. Army Corps of Engineers Civil Works

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Making the Most of Mobile Apps

**INSTITUTE FOR WATER RESOURCES**

January 2014

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US Army Corps  
of Engineers®





## U.S. ARMY INSTITUTE FOR WATER RESOURCES

The Institute for Water Resources (IWR) is a Corps of Engineers Field Operating Activity located within the Washington D.C. National Capital Region (NCR), in Alexandria, Virginia and with the main satellite centers in New Orleans - Louisiana, Davis - California and Denver - Colorado. IWR was created in 1969 to analyze and anticipate changing water resources management conditions, and to develop planning methods and analytical tools to address economic, social, institutional, and environmental needs in water resources planning and policy. Since its inception, IWR has been a leader in the development of strategies and tools for planning and executing the Corps water resources planning and water management programs.

IWR strives to improve the performance of the Corps water resources program by examining water resources problems and offering practical solutions through a wide variety of technology transfer mechanisms. In addition to hosting and leading Corps participation in national forums, these include the production of white papers, reports, workshops, training courses, guidance and manuals of practice; the development of new planning, socio-economic, and risk-based decision-support methodologies, improved hydrologic engineering methods and software tools; and the management of national waterborne commerce statistics and other Civil Works information systems. IWR serves as the Corps expertise center for integrated water resources planning and management; hydrologic engineering; collaborative planning and environmental conflict resolution; and waterborne commerce data and marine transportation systems.

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For further information on the Institute's activities, please go to <http://www.iwr.usace.army.mil/>

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## *Preface*

The authors of this report recognize that this field and accompanying policy is changing rapidly and therefore, we invite further comments to inputs for future work. One may contact us via the Institute for Water Resources homepage located at <http://www.iwr.usace.army.mil/> and clicking “Contact Us.” For those within the Army, one can also contact the authors using the Army address book for U.S. Army Corps of Engineers’ employees. We recommend that Corps employees with questions on the latest information technology policy should contact their appropriate Corps IT representative.

## *Contributors*

This field guide was co-authored and edited by Erin Rooks, Brian Tobin and Laura Vicinie of the U.S. Army Corps of Engineers – Institute for Water Resources (IWR). Reviewers and contributors included Vince Moody P.E. (IWR), Steven Friederich (USACE Headquarters, CECI-E), Brian Harper (IWR), Maria Wegner-Johnson (Headquarters) and Donna Wood (IWR). Please note that, unless otherwise stated, the app screenshots, app icons, and all other app images referenced in this paper were taken from the Apple iTunes App Store, the Google Play Store, the Windows Phone Store, or BlackBerry App World.

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## **A Field Guide to Mobile Applications for U.S. Army Corps of Engineers Civil Works**

### **I. Introduction**

The U.S. Army Corps of Engineers (“Corps”) is currently faced with the opportunity to further adopt mobile technologies for an immediate, inexpensive and revolutionary change in water resources management and planning. The purpose of this guide is to provide information and instruction to Corps employees on how smartphone and tablet applications can enhance their Civil Works tasks, as well as to explore which aspects of this technology would most seamlessly integrate into our current policies and capabilities in the future. This paper is primarily directed toward those who observe, measure, and record data in the field (such as planners, emergency managers, etc.); but, it is also meant to generally inform those who work in natural resources management about existing tools offered by mobile applications.

The U.S. Army Corps of Engineers has benefited from mobile technologies in the past, but in order to fully benefit from them in the future the Corps must further embrace the existing capabilities. The Corps carries out many field activities (such as site visits, study management, problem and opportunity identification, project planning, and data collection and analysis) that could be enhanced through further mobile technology use. Some common examples of mobile technologies include smartphones, tablets, GPS devices, and high-tech cameras. This guide focuses on how a worker’s smart phone or tablet can be used to accomplish work more easily throughout workplaces. A study by the non-profit organization *CTIA – The Wireless Association* found that – regardless of work policies – more than half of employees are likely to use personal devices for work (CTIA - The Wireless Association 2013). While this guides notes some policy limitations that one may encounter within the Corps, these policies do not strictly limit potential for many uses described.

This guide presents basic information about mobile applications (“apps”), provides a categorical review of mobile apps for various devices, and offers some examples of apps that are potentially useful to Corps employees.

#### **A. Guide Assumptions**

This guide assumes that Corps employees will likely use their personal smartphone or tablet to assist them with some of the business processes they perform. This practice is known as BYOD, or “Bring Your Own Device”. The BYOD practice is readily supported by several government agencies (for example: GSA, Homeland Security, and the Department of the Interior), and is more informally practiced by workers throughout the country and around the world. The

assumption that Corps employees will participate in the BYOD practice frees this guide from ongoing policy and device changes within the Corps, and also opens the door to anticipate future government-device uses. This assumption is considered to be realistic based on the following factors:

- (1) Surveys of government employees reflect a desire to use personal devices and people generally want to use what they are familiar with. In March 2013, 51% of USACE employees surveyed said that they use personal devices for work.
- (2) The lack of readily-available and government-provided mobile devices to employees, and the limited availability of apps compels employees to use their own devices. Many non-senior staffers are not provided work devices.
- (3) There have been substantial increases in smartphone and tablet use in the U.S. In 2013, 91% of adults had cell phones. 81% of those adults used these devices for more than phone calls, and 60% used their phone to access the internet (Duggan, Cell Phone Activities 2013 2013).
- (4) Over half of employees already use their own personal devices for work (CTIA - The Wireless Association 2013)
- (5) Employees are willing to ensure that their personal devices are secure for work use and 57% of those surveyed said that they would be willing to pay their agency to update their devices or certify them as safe (Ballenstedt 2013).

From 2009 to 2013 the percentage of smartphone users who downloaded apps increased from 22% (Pew Internet and American Life Project 2012) to 50% (Duggan, Cell Phone Activities 2013 2013). Because the use of mobile technologies is substantial and increasing, it is plausible that Corps employees will follow this trend and apply their personal mobile technology habits to their work. Since Corps employees with personal smartphones and tablets are familiar and comfortable with their personal devices, they are likely to find utility in using them for work in the absence of similar government provided technology.

A study conducted in October 2013 provides additional support for this idea. The study showed that out of a sample of 3,200 employees\*, 45% felt that BYOD policies empowered them. Further, “51% stated they would contravene any policy in place banning the use of personal devices at work or for work purposes” (Fortinet 2013). This suggests that Corps employees, like much of today’s workforce, are likely to use their personal devices for work purposes. This paper is built from that assumption.

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\* The employees surveyed were between the ages of 21 and 32, and worked for various organizations across the world.

## **B. Smartphone and Tablet Main Operating Systems**

There are currently four main operating systems for smartphones and tablets that use apps: BlackBerry, Windows Phone, Google Android, and Apple iOS. Each of these is available on a variety of devices from different manufacturers and cellular service carriers. Apple and Android are the two most popular systems, commanding 13% and 81% of the US smartphone market share, respectively (Bradley 2013). BlackBerry devices are used heavily by the federal government, and many Corps employees are likely familiar with them. Microsoft commands a small, but growing share of smartphone market share and the introduction of its Surface tablet may make it a larger player in the coming years. In the spring of 2013, the Department of Defense (DoD) conducted a pilot for Apple and Android devices on the NIPRNet (Non-Classified Network). Although the Corps of Engineers has not officially shifted to these devices, their use is being piloted by the Corps during the third quarter of the 2014 Fiscal Year.

BlackBerry smartphones are sometimes provided to Corps employees, but the distribution of these devices is typically limited to those in senior positions. In addition, these devices have limitations in usage, and many of the mobile apps for traditional BlackBerry devices are limited by the lack of a touch screen. The new BlackBerry tablet has been approved by the Army, but the Corps had not approved tablets yet. The Corps approved the Blackberry 10, Z and Q10 to release within the month. This or any future release would announced through the Corps Information Technology Chiefs (ITCs). More detailed information on BlackBerry apps and devices is provided in Section D: *BlackBerry Devices*.

This guide does not serve as an endorsement of any associated products and services. While certain apps are highlighted, the availability and longevity of any particular application cannot be guaranteed, as they are subject to change and/or discontinuation. Some apps require a connection to the internet (which means Wi-Fi or a cellular data plan are necessary for use) while others are completely loaded on the device and will work offline (while out of range of cell service). Apps that access the cellular network require a data usage subscription; this guide primarily assumes that users will have some kind of reliable internet/data coverage. Each app consumes a varying amount of data, and most data plans limit the amount of total data available for each billing cycle. A reader hoping to try the apps listed in this guide or others should evaluate data options prior to downloading and using these apps.

## **C. Army Implications and the Corps Mobile Computing Project Delivery Team**

The assumption that workers will use their personal mobile devices frees the concepts introduced in this guide from the many of the restrictions set forth by Army policies which limit the use of tablets, apps, and non-BlackBerry smartphones on official Army networks. Army policies do not stop people from using personal devices for business; however, they do set

some limits on what data can be collected, transmitted, and connected to Army computers and networks (Please see CECI-E Memo on Internet Site Restrictions, 26 April 2013). For example, an app that can be used to collect or record data on a personal device may not be allowed to be accessed from a network server. Even within the limits set by Army policies, there is enough latitude to allow users to take advantage of personal devices to enhance business practices.

Recently, a number of Army agencies have been working on developing their own mobile apps, which indicates a movement towards greater app use on official Army networks. Within the Corps, there is a Mobile Computing Project Delivery Team (PDT), which is currently being led by Steven Friederich. IWR is one member of this diverse civil and military team. The Corps' Mobile Computing PDT has several ongoing activities (a few of which are highlighted in this paper), and is currently examining how to create and use mobile apps within the Corps. They are also examining the future acquisition of devices and apps in the future and the distribution of both. In a DRAFT Mobile Strategy document, the team states its primary goals are to:

- Improve delivery of government information, products and services
- Engage customers, supporting contractors and agencies, and employees in the Corps
- Reduce the cost of operations
- Increase workforce productivity.

One of the most recent challenges faced by the Corps' Mobile Computing PDT is navigating the future transition from BlackBerry to other devices. More information behind this transition is covered in the next section.

#### *D. [BlackBerry Devices](#)*

BlackBerry smartphones and tablets are currently the only mobile devices that are authorized to connect to the USACE network; therefore, this guide gives special attention to the BlackBerry operating system. For many years, BlackBerry has been the standard choice of the DoD because the mobile security offered by the BlackBerry platform was superior to that which could be offered by other mobile devices. Although Apple and Android devices were approved for use by the DoD via the DoD pilot in May 2013 (Stock 2013), BlackBerry devices are still used heavily by the federal government and are the only devices provided to Corps employees for official use. In regards to the scope of this paper, there are two major topics that are relevant: (1) the accessibility of useful apps on official Corps-provided BlackBerry devices, and (2) the availability of useful apps to Corps employees on their personal (unregulated) BlackBerry devices.

At the time of this publication, official Corps-provided BlackBerry devices are useful to Corps employees mainly for accessing the internet and their work email accounts. Current legacy blackberry devices are blocked from downloading apps. The BYOD assumption (the assumption that Corps workers are willing to use their personal smartphone or tablet in place of a work-

provided device) made in this paper permits us to analyze the potential use of unrestricted BlackBerry devices in the field. BlackBerry currently has over 100,000 mobile apps available (Covert 2013). In comparison to the apps that are available on the more popular Apple and Android devices, BlackBerry apps have been noted for being more expensive and of lower quality. In addition, many of the most popular mobile apps (such as Skype, Instagram, Google Maps, and YouTube) are not available on BlackBerry devices.

Since 2012, BlackBerry has introduced new touch screen devices such as the Q10 smartphone, Z10 smartphone, and the PlayBook tablet. BlackBerry users are hopeful that these new devices will incentivize app designers to update and create more useful and high quality mobile apps for the BlackBerry operating system. Until that happens, the potential for app use in the field is much smaller for BlackBerry devices than for the more popular Apple and Android devices.

In September 2013, the BlackBerry company – Research In Motion Ltd. (RIM) – announced its intention to be acquired by Fairfax Financial, a Canadian insurance company. Some analysts have speculated that after the buyout, BlackBerry would change from a primarily device-driven company to an enterprise security company (Rowinski 2013). This speculation is likely generated from a statement made by Prem Watsa, the Chairman and CEO of the company expected to acquire BlackBerry. Regarding the BlackBerry transition, Watsa stated that “We can deliver immediate value to shareholders, while we continue the execution of a long-term strategy in a private company with a focus on delivering superior and secure enterprise solutions to BlackBerry customers around the world” (BlackBerry Media Relations 2013). In November 2013, however, the company announced that “it was no longer trying to sell itself (after failing to land a buyer) and it was taking a \$1 billion investment from Fairfax Financial Holdings Inc., in exchange for issuing convertible debt. The deal was seen as buying the smartphone company some time while it tries to figure out if it can sell itself off for parts or focus on providing mobile email as a service” (Poletti 2013). Because the future of BlackBerry is so unclear, the Corps’ Mobile Computing PDT is preparing for possibility that BlackBerry devices may become unavailable over the next year. The team is currently planning to pilot the use of Apple and Android devices within the Corps.

#### *E. Microsoft Devices*

In addition to Apple, Android, and BlackBerry devices, Microsoft also offers smartphones and tablets with app capabilities. Currently, these devices are less commonly used than Apple and Android devices. According to IDC estimates, although Windows Phone has had the most substantial growth from 2012 to 2013, the operating system claims only 3.6% of total market share as of November 2013 (IDC 2013). The Windows Phone operating system is currently offered on a variety of Nokia, Samsung, and HTC devices.

One thing that currently sets Windows mobile devices apart from other mobile devices covered in this report is that there are different app marketplaces for Windows smartphones and Windows tablets and computers. It has been reported that Microsoft plans to combine these app marketplaces in the future (Foley 2013). Apps for smartphones with the Windows Phone operating system are currently available from the Windows Phone Store, which was launched in October 2009.

Windows Phone devices have many of the favorite apps from iOS and Android, as well as some that are exclusive to the Windows Phone operating system. In addition to many native apps, Windows Phone also offers “live apps”, which are mobile versions of the websites for various companies and brands. These “live apps” offer the ability to “pin” a given website onto the home screen of your device. The live apps are designed to automatically retrieve updates when available. While this can be useful to get up to the minute updates, it is also known to deplete the phone’s battery and data usage quicker than normal.

A unique feature of the Windows Phone store is the ability to test the full version of most paid apps before you buy them. The service is called “try before you buy” and has the potential to be useful, however not likely enough to encourage many Apple and Android users to change service providers.

#### *F. Corps Use of Mobile Devices and Applications*

It is important to remember that while Corps employees are able to use their personal devices for work, there are still rules that must be followed. Employees should be familiar with these rules. The following list provides some standard guidelines regarding the use of mobile devices for Corps applications:

- Employees will be responsible for verifying that sensitive or secret data is never stored or used on a personal device.
- Any information transmitted from a personal device to a government computer for work purposes will be done responsibly and will follow standard policies and procedures.
- In order to comply with Department of Defense (DoD) information assurance policies and protect personally identifiable information, app users will confirm that they fully understand the information collected by all apps on their devices.
- App users will adjust settings appropriately to comply with any Corps policies.
- Employees will not directly connect his or her personal mobile device to the Army network, as it is prohibited.

Given that policies and technologies are changing quickly, it is also best to check with your local IT support and supervisors to ensure that potential problems do not arise.

## **G. [The Basics of Mobile Applications](#)**

In order to address some common questions about apps and mobile technologies, this section provides an overview of basic concepts associated with the topic. This section may be useful for those who do not have much experience using smartphones or tablet devices.

### ***What is a mobile application (“app”)?***

A mobile application, or “app” as they are commonly called, is a software application that can be loaded onto a mobile device to provide the device with additional functions. Each app provides a new function for the mobile device, such as an additional tool or information portal. The app appears on one’s mobile device (smartphone, iPad, tablet, etc.) typically as an icon or a folder with icons, as seen in Figure 1. There are thousands of different apps that users can choose from depending on one’s needs. Apps can quickly find, manipulate, and display specific information or calculations with simplicity.

### ***What is a widget?***

The word “widget” is a generic term for something that is typically displayed larger than a typical app icon and has more immediate/useful information readily displayed on your screen without additional prompts. Technically, it is a bit of self-contained code that displays a program, or a piece of a program, that is also (usually) a shortcut to a larger application. Some apps can also be in the form of a widget and vice versa. Widgets come in all shapes and sizes and range from the simple shortcut style to full-page widgets. A full-page widget, like a weather widget, displays a more detailed description of current conditions, and is also a quick gateway to the weather app for more info. At the other end of the spectrum, a shortcut widget could monitor a user’s email folder and notify the user of unread items; a shortcut widget opens the full application when activated. Most smartphones come with a handful of built-in widgets that users can choose from. Examples of widgets are shown in Figure 2 and Figure 3.



**Figure 1: Screenshot from Samsung Galaxy II of app icons and app folders (Note: views may differ between devices).**



Figure 2: Example of a weather/time widget



Figure 3: Example of widgets for phone settings monitor, Dictionary.com, Evernote, and a stock watcher (listed in order from top to bottom)

### ***Where does someone obtain these apps or widgets?***

The most common place to acquire apps or widgets is on one's mobile device through a built-in "app marketplace." Each system has its own app marketplace, which is basically a virtual app store that comes preloaded on a user's device. Figure 4 shows the icon for the "Google Play Store" which is the app used to purchase additional apps for Google Android devices. Figure 5 shows the icon for the Apple "App Store" available on Apple iPads and iPhones. Figure 6 and Figure 7 show the icons for the Windows and BlackBerry app marketplaces, respectively. Additional applications, such as the Presidential Documents App, are available through websites like data.gov (Data.gov 2013). The U.S. Army has developed an Army Marketplace prototype; however, it hasn't appeared to have gone live at the time of this documents publication. It also appears that many Army-related apps can be directly downloaded using the Google Play Store and Apple Apps Store as listed on the Army mobile site (<http://www.army.mil/mobile/>). The Department of Defense may soon be launching its own App Store<sup>\*</sup>; however, the contract to create this store was just issued in June 2013 (American Forces Press Services 2013).

<sup>\*</sup> <https://storefront.mil/army/> or the draft version can be seen by CAC card holders at <https://enterprisestorefront.csd.disa.mil/owf/>. (Accessed August 2013)

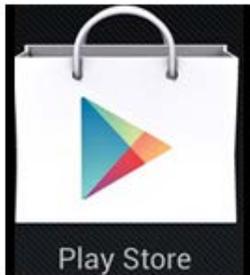


Figure 4: Android App Marketplace Icon



Figure 5: Apple App Marketplace Icon



Figure 6: Windows Phone App Marketplace Icon



Figure 7: BlackBerry App Marketplace Icon

### ***How much does an app cost?***

Each app varies in function and cost. Many apps are free to download and use, while others have associated purchase or usage fees. Some apps are free for a limited time, or free if the user agrees to advertisements or fewer features. Costs of apps vary, however the cost of most apps typically ranges between one and three dollars. The more extensive and highly specialized apps can be \$25 or more under certain circumstances. An example of these higher priced apps is a marine navigation app which accesses detailed marine navigation charts across various regions of the globe. Each app cost is also subject to change over time. For example, an app may originally be available at no cost, but after popularity of the app increases, the app designer(s) may begin to increase the price of the app.

### ***How do you download an app?***

It is fairly easy to download an app once you have located the app marketplace icon on your device. Each app marketplace allows users to search for specific apps, view a list of suggested or popular apps, and also narrow available app options by category. Common categories include games, tools, entertainment, and media. A detailed description of each app that highlights features such as functions and capabilities, changes from the last version, user reviews, and sample screen shots are available for each app. A user may need to set-up an account for paid apps or know their usernames and passwords from their cellular phone service provider, Google Play, or iTunes (for the Apple App Store). Most apps have a separate version of an app for a tablet computer or iPad, but if they do not, it is possible to download an app written for a phone onto a tablet, with the result being a smaller viewing window on the tablet.

### ***What is the difference between a smartphone and tablet?***

A tablet performs basic computing functions, typically in a single panel construction, making it far more mobile than even a laptop computer, but with some functionality of a laptop. The iPad and BlackBerry Playbook are two examples of a tablet. The tablets, however, usually lack

the ability to place phone calls, and often have limitations on the programs or software that it can run, depending on the specific device. Tablet computers are controlled through the use of touch screens or a stylus.

A smartphone that has many of the same functions as a tablet, but the primary difference is that a smartphone is much smaller and is often used as a phone. Smartphones require a monthly plan for cellular minutes and any non-Wi-Fi data accessed. The smartphone models currently have comparable or less storage than the tablets with some being able to add more through SD cards. Almost all apps are available for both the smartphones and tablets, with a specific version for each. Tablets often come in a two screen sizes which are around 7 inches and 10 inches in size with various hardware and memory configurations.

### ***What is Google Android?***

Google Android is an alternative to the Apple iOS operating system for mobile devices. Android is a mobile operating system developed by Google primarily for touch screen mobile devices such as smartphones and tablets. It is based upon the Linux kernel. It was initially developed by Android Inc. (a firm purchased by Google). Google Android is now one of the three largest providers of phone and tablet operating systems, along with Apple and BlackBerry. As opposed to Apple iOS, Google Android is available on a variety of devices from different manufacturers for both smartphones and tablets.

### ***Can smartphones and tablets get viruses?***

While it is not as prevalent as it is for desktop computers and laptops, it is possible that smartphones and tablets may become infected with viruses or other malicious software. As with desktop computers, viruses are not the only worry; a user could mistakenly download spyware, fake apps, or be fooled into a phishing operation. One example of this is the “MyPay DFAS LES” app that is available for Android devices. This app gives users the ability to control their pay information after entering their MyPay login; however, this app was neither designed nor supported by the DoD or US government (Affairs 2013). As is the case with all electronic devices, it is important to be careful in one’s browsing and downloading habits to avoid potentially harmful threats. Additionally, anti-virus software is commercially available for mobile devices, a number of which already have built in security features.

## II. Categorical Analysis

In November 2013, there were about 875,000 apps available for Android devices and over 1,000,000 apps available for apple devices (AppBrain.com 2013, Apple.com 2013). Windows Phone had over 120,000 apps available as of November 2013 (WinBeta.com 2013), and BlackBerry had over 100,000 as of March 2013 (Epstein 2013). Since it would be impossible to examine all apps for even one system, this guide separates some useful and popular apps into the categories most relevant to Corps employees. Although many apps have functions that qualify them to fit more than one of the designated categories, this guide attempts to select the best representative category for each app. Many apps also have similar counterparts for use on your work or home computer via a log-in or other means.



Figure 8: A wide range of app functions are easily available for use.

This section provides an overview of the designated categories, while the following section provides more specific and detailed examples. The apps with an asterisk (\*) are analyzed in greater detail in Section III. A more extensive, but yet still limited, list of apps is available in Appendix A, which provides a list of potentially useful apps by business lines, rating, operating system, and associated profession.

The following categories are examined in this guide include, in order of appearance and relevance to planning:

- a) Camera and Photo Editing
- b) Project Research and Investigations
- c) Team Organization
- d) Regional Apps
- e) Flood or Storm Risk Management Planning
- f) News and RSS
- g) Rulers, Unit Converters, and Calculators
- h) Basic Business Functions
- i) Bar Code and Photo Readers
- j) Social Media
- k) Recreation
- l) Basic Utility
- m) Department of Defense Apps

## **A. Camera and Photo Editing**

The camera and photo editing apps are likely to be very useful for Corps projects. Of all internet users, 63% post images online (Duggan and Smith, Cell Internet Use 2013 2013). Corps users are likely to adopt this practice and make use of camera and photo editing apps quickly, if they haven't already. Mobile cameras easily beat standard digital cameras in terms of portability and convenience, and many recent smartphones and tablets have high resolution cameras, sharing capabilities, and functions such as video, editing, note taking, annotation, and geo-location features. Mobile devices provide instantaneous and flexible sharing of digital media via email, Facebook, Twitter, Instagram, and more. The more complex apps will enable geo-location of where and in what direction the photo was taken. Other apps make editing and sharing images simpler and may even offer measurement features. The options available for camera-related apps are many and continually increasing.

### **TIP**

Try using a geo-location app to record images, notes and latitude/longitude information. This information can be used for presentations, and combined with GIS software or mapping applications to better understand the study area.

Capturing images with the high level of detail provided by various mobile devices can be a powerful tool for conducting smarter and faster analysis. These camera apps can be used for field visits, recording key stakeholder events, quickly capturing documents and taking notes. Waterproof cases and ruggedized devices can also be used so that weather, accidental drops, and other mishaps will not affect their functionality. Specifically, here are a few applications within various Corps business lines for which camera apps may be useful:

- Flood risk management studies could photograph or record structures at risk, channel configurations, water levels, levee conditions, species spotted, ongoing recreation, access to facilities, species at risk, and more.
- Navigation studies could photograph or record ships, loading devices, lock conditions, port capacities, nearby transportation nodes, types of cargo, nearby wildlife or recreation facilities, and more.
- Ecosystem Restoration projects could photograph or record existing biological conditions, critical species in the area, and survey vegetation and other biologically important water features.
- Many other projects could photograph or record water levels, record dates, and make notes of the surrounding weather conditions. Species and cultural resources can also be identified and surveyed.

Site visits will likely benefit the most from these apps. Historically, field data collection has been done with paper forms and clipboards. While easier in the short term, stacks of paper forms must then be transposed into some sort of digital system for analysis or archiving. This leads not only to untimely data, but also additional labor costs and transcription errors. These apps can provide an efficient, cost-effective method for capturing, analyzing, and transmitting the data that allows decision makers to begin analysis of the data immediately.

Example Apps:

- **Adobe Photoshop Express:** This app allows users to easily edit their photos
- **Camera Awesome** and **Camera Zoom FX:** These apps provide users with the tools to maximize the camera on their smartphone or mobile device.
- **ColorSplash:** This app lets users to convert photos to black and white, while keeping their chosen details in color.
- **DocScan:** This app functions as a scanner, in that it allows users to scan documents to their smartphone or mobile device and save as PDFs
- **Easy Measure:** This app has the potential to function as a tape measure – it shows the distance to objects seen through the camera of a user’s smartphone or mobile device.
- **GeoTag IT and Geotag Photos Pro:** This app uses GPS to mark the locations in which a user’s photos are taken.
- **Flickr:** This popular app allows users to capture, edit, geo-tag, and share their photos.
- **Instagram:** Users of this app can easily capture, edit, and share their photos on this image-oriented social media site.
- **Pano:** This app allows users to take panorama photos.
- **Photo Editor by Aviary:** This app is a popular photo editing app that is simple and powerful.

## **B. [Project Research and Investigations](#)**

There is a variety of apps that have the potential to be very powerful tools in the work that Corps employees do every day; however, many people are currently unaware of their existence and accessibility. In recent years, apps have grown from a focus on entertainment to include some very technical, powerful, and useful tools for Corps employees, especially planners and field workers. There are several potential uses of these apps:

- Field guides help identify birds, insects, mammals, trees and more and also provide insights on which endangered species could exist in one's location. Many of these guides also offer the latest spotting information, which can help to ensure that any Corps projects have some of the latest information on species to avoid negative impacts and pursue restoration opportunities.
- Flood tools can help to identify floodplains and one's current location while on site visits where data is available. Added, other apps can locate stream gages and relevant information to better understand the riverine system and receive alerts about extreme events in one's study location.
- Ship information and vessel location information is available instantaneously (without a subscription) which can help Corps workers to better understand the ships that a port may mention in a site visit. Planners could monitor movements within ports to better understand port operations and potential opportunities.

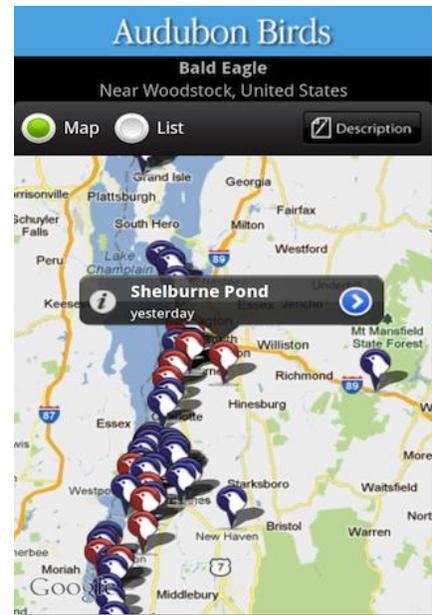


Figure 9: Audubon Birds App

Example Apps:

- **Audubon Mammals, Wildflowers, Trees, Mushrooms, Insects and Spiders, Butterflies, Birds:** There are many types of Audubon Guides that help a user identify species, but also track and report sighting. There are also regional guides available for more specific information.
- **Currents:** This app will display coastal tide currents on Google Maps.
- **Dwellr:** This app, designed by the US Census Bureau, provides users with easy access to key demographic, socio-economic and housing statistics for thousands of places across the nation. The app can utilize a user's GPS feature in their mobile device to provide statistics for their current location, or a location of their choice. The statistics are driven by the American Community Survey, which provides information on over 40 topics for every neighborhood in the nation.
- **Marine Charts HD or Marine Navigation:** These apps provide seamless charts, user waypoints, and real-time navigation. This could be helpful to navigation studies and also those that want to understand the recreational or commercial waterway routes.
- **Marine Traffic:** This app display the real-time positions of ships worldwide and also provides more detailed information about ship arrivals, departures, port conditions,

historical data, vessel info, and more. Navigation planners could track key vessels for their studies and learn more about shipping.

- **RiverFlows:** This app offers a quick and easy way to view data from USGS and NOAA gauge sites using an Android device.
- **Ship Finder:** This app uses AIS maps to track various vessels with information about the ships, routes, and much more. This could be helpful to Navigation planners.
- **ShipVault\***: This app has a maritime ship database of over 150,000 units of active and historic ships and would be helpful to Navigation planners.
- **SoilWeb for the iPhone:** These apps appear to be very helpful in understanding soils in a project area and other features of the land.
- **Species Finder:** This app helps users find species listed under the Federal Endangered Species Act.
- **Stream Gauges Map:** Users of this app can find stream gauge information from USGS for about 5,000 sampling stations.
- **The Sea Turtle App\*:** Track turtle news and migrations.
- **Tide Prediction:** This app provides information for more than 3,000 tide and current stations worldwide.
- **Water Tracker Beta\*:** Retrieval current data on water levels, temperatures, flow and more from the USGS from a user's mobile device is made possible by this app.
- **Zillow Real Estate & Rentals\*:** Helps users to find structural information and estimated housing values.



Figure 10: Species Finder App

### C. [Team Organization](#)

Many apps are created to aid users with organizational efforts. Planning and other Corps tasks are often made easier through the use of these types of apps because they are designed to help users organize and easily access documents, schedules, pictures, files, and data. Please note that some of these apps' corresponding websites are blocked on Corps' computers (i.e. Evernote). Corps employees should be aware that personal network storage and backup is

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\* Apps with a "\*" are discussed in more detail in the following chapter

prohibited (see CECI-E Memo from the Director of Corporate Information on Internet Site Restrictions, dated 26 April 2013).

Example Apps:

- **Evernote:** This app allows users to take notes, capture photos, create to-do lists, and record voice reminders. In addition, the app provides users access to all of these files regardless of their location or the mobile device they use to access the app.
- **Doodle:** This app specializes in scheduling meetings with multiple people. It helps users to find the best date and time for a group to meet by using a virtual scheduling poll to find common available times. By using the Doodle app, users are also able to track meeting requests, communicate with participants, and initiate meetings from a mobile device.
- **Dropbox:** Most people could use a little help staying organized while on the road and/or working in the field. People often face situations in which a document they need is saved on another device in a different location. Apps like Dropbox allow users to access their files from any device.
- **Do Social Productivity\*** : This app keeps its users and the people they are working with in sync, organized and productive. It facilitates the sharing of tasks, projects and notes with anyone, and its real-time alerts help users to stay on track.
- **Workflow:** This app may be best understood through viewing a demo on YouTube. However, this app enables improved note-taking and list-creation for tasks. It can be used for solving individual or collective problems. The app could also aid users in figuring out what the necessary tasks and the workflow of a problem.
- **Pros & Cons:** By employing this app, users are able to easily list important decisions in an organized fashion and identify the potential pros and cons are of each of these decisions. Planning teams may find this app useful for considering risks involved in their decision making process or which analytical techniques to use for a project.

#### **D.** [Regional](#)

Many apps are created with the intent of helping users focus on a particular area or project. These apps often contain a large amount of specific information about a given region or subject matter. Many datasets are also available via apps, such as fish counts at each dam in the Columbia River. Such datasets could help provide information on potential endangered species in a study area or other datasets could be used to supplement traditional data sources. Of

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Apps with a "\*" are discussed in more detail in the following chapter

course, a researcher would want to use good research practices and verify the quality of information provided.

One should be aware of any apps created specifically for the region or project that they are working on. Additionally, many apps can indirectly provide assistance on a project. For example, recreational apps that monitor kayaking conditions provide useful data such as temperature and river conditions.

Example Apps:

- **Audubon Regional Nature Guides:** This app provides guides for a variety of regions in the U.S. that are able to identify animal and plant species in a project area. Look to your regional guide for help.
- **Colorado Fishing Maps:** This app provides more than 12,000 links to lakes, river and reservoirs in Colorado along with fishing locations. Journaling about locations and sharing the location is also available.
- **Columbia Fish Counts or FishCount:** Columbia River fish app that shares the fish count by date.
- **Cruise Schedule – Port Everglades:** A reference guide to cruise ship schedules, boarding, and info about cruise ships in Port Everglades with an interactive map to see more information.
- **IveGot1:** Identify and Report Invasive Animals and Plants in Florida
- **Lake Okeechobee Levels\*:** This app provides information about historical water level averages and more. The information is provided from the Corps Jacksonville District.
- **LCRA (Lower Colorado River Authority)\*:** This app provides information on weather, news and events in this area including lake levels, boat ramp info, and social media.
- **Marine Matters:** Reporting on marine commerce on the Great Lakes and Maritimes, this app brings embedded video, audio and slide shows to its content. It is free and can be downloaded or viewed on any tablet, iPad or smartphone as well as on any type of computer.
- **Missouri Fishing Maps:** Provides information on fish in the Missouri River

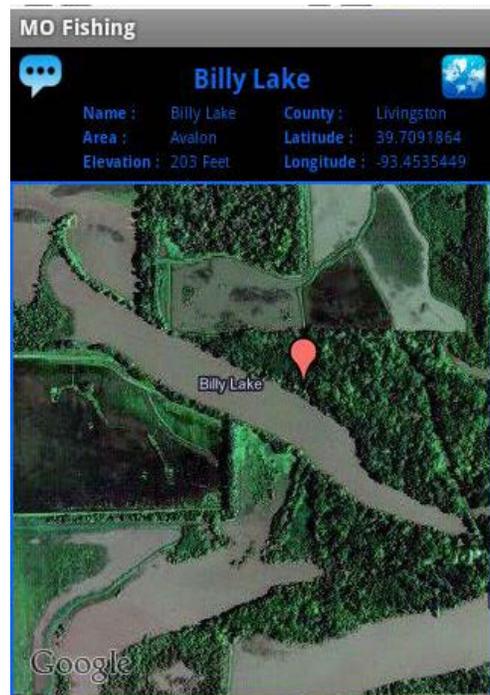


Figure 11: Missouri Fishing App

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\* Apps with a "\*" are discussed in more detail in the following chapter

- **Missouri River Watershed Coalition:** Provide information on invasive species on the Missouri River
- **Play Potomac\*:** Provides weather conditions, water levels and temperatures, and other information about the Potomac watershed.
- **Prime Marine Ltd.:** Provides information on Georgia ports.
- **Texas Lake Levels\*:** Provides daily data from USGS and feeds from the Corps. Information includes lake levels, recreation info and weather.
- **Valley Flood Watch:** Includes Red, Sheyenne, Wild, Buffalo and Rice Rivers in North Dakota.

### [E. Flood or Storm Risk Management](#)

Flood and storm risk management and planning requires a specific type of knowledge and understanding of a project area. Several apps can improve this understanding and thereby improve flood and storm risk management and planning overall. These apps can generally be grouped into three categories: data gathering, monitoring, and emergency management.

First, one may want to gather data about river or tidal levels, precipitation, storm occurrences, flood zones, and more. Apps such as *FEMA 100 Year Flood Zones Map* or *FloodMap Mobile* will locate some of the flood zones in relationship to a chosen location or a user's current location. Alternatively, there are many apps with stream gage information. These types of apps can be very useful for site visits and understanding the floodplain better. Apps like *Zillow*, *SoilWeb*, and *Google Maps* can help one understand the land use, type of soils, and other related characteristics of an area. While many apps are not intended explicitly for Corps use, there is no reason why they cannot be taken advantage of for Corps purposes.

Next, there are several types of apps that monitor weather, river conditions, and potential tropical storms. These monitoring apps could help a planner understand the ebbs and flows of an area better and anticipate potential solutions.

Finally, emergency management apps serve multiple purposes. These apps provide points of contact to the public when disasters occur and therefore the information they provide could be incorporated into non-structural/emergency management plans. Additionally, these apps can identify other key agencies for coordination and help workers to more thoroughly understand some of the public needs for information and services during disasters.

Example Apps:

- **FEMA:** This is an emergency app for those impacted by natural disasters or other events. This app could help a planner understand the resiliency of a community or build robust emergency management plans with communication strategies that include this app or similar apps.
- **FEMA 100 Year Flood Zones Map<sup>\*</sup>:** The map represents Flood Insurance Rate Map (FIRM) data important for floodplain management, mitigation, and insurance activities for the National Flood Insurance Program (NFIP).
- **FloodMap Mobile:** Using a user's location or the location of a chosen point on the map, FloodMap Mobile provides a map of the FEMA flood hazard zones, help identify the flood risk, stream gauge data, USGS elevation, and approximate insurance costs.
- **Hurricane – American Red Cross:** A user can be ready for severe weather and understand a project area's resiliency and emergency management plans. The app monitors conditions in a chosen area or throughout the storm track, offers advice on preparations, enables users to find assistance and to inform others of their safety.
- **Measure Your Land<sup>\*</sup>:** Enables users to measure roads, buildings or lands from the bird's eye view. This could be helpful for quick estimates of structure footage, project area, and more.
- **RiverFlows:** This app provides information from USGS and NOAA gauge stations.
- **SeaStorm:** SeaStorm allows users to keep track of tropical storm and hurricane activity in the Atlantic and Eastern Pacific basins
- **SoilWeb for the iPhone:** This app retrieves graphical summaries of soil types, official soil series descriptions, and sketches of soil profiles by a designated location.
- **Stream Gauges Map:** A map app with real-time streamflow information from the USGS for about 5,000 of the 6,900 U.S. Geological Survey sampling stations that measure streamflow, temperature, and other parameters.
- **Tide Prediction:** Provides information about tides for over 3000 tide and current stations world-wide.
- **Water Tracker Beta<sup>†</sup>:** Users can retrieve current data like water level, temperature, and stream flow from USGS servers for rivers, reservoirs, lakes and more. Features include ability to search by current location, user selected location, view graph of last 5 days activity, view data source on map, set alerts for any available condition.
- **Zillow Real Estate & Rentals<sup>\*</sup>:** Land use information including structural features and estimated values could be useful for a rough estimate of potential economic damages in a project area.

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\* Apps with a “\*” are discussed in more detail in the following chapter

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- **USACE MICA:** This app is from USACE Engineer Research and Development Center (ERDC) and is used to capture and store combinations of data; such as taking a picture with a geo tag (lat/long data associated with image), giving it a categorization, description, overlay, transmission, and more. It is currently used in Emergency Planning, but could have planning implications in the future.

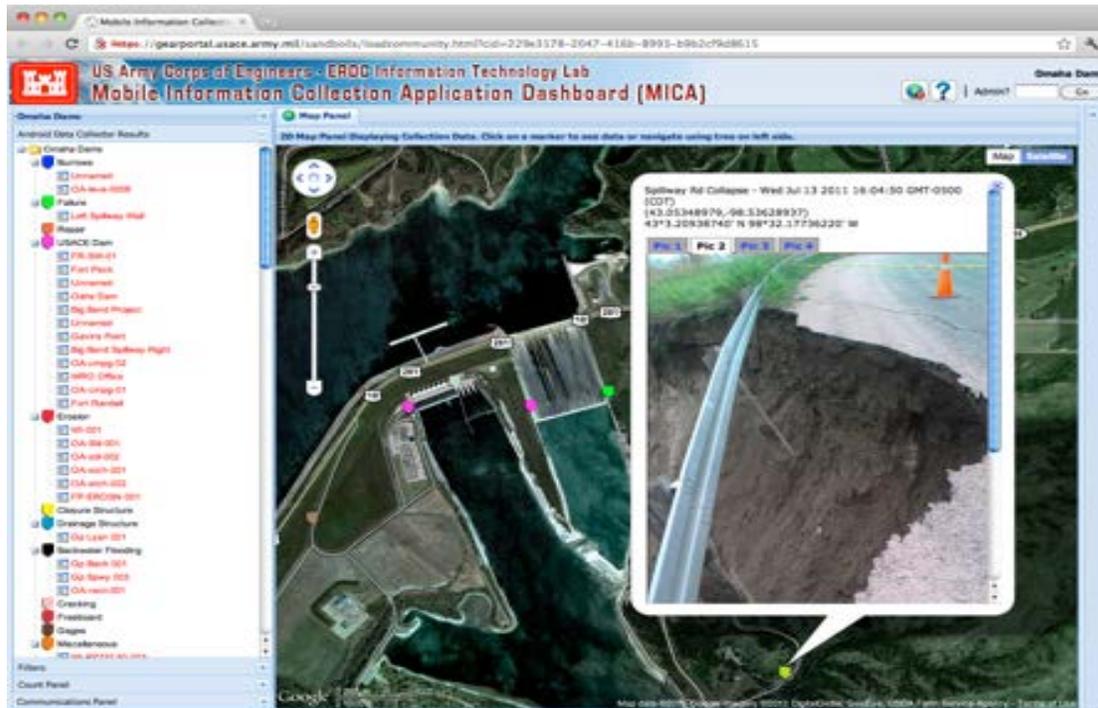


Figure 12: The main database for USACE MICA App

#### F. News and RSS Feeds

There is a vast selection of news-related apps, which can be customized to the user based on factors such as their location, affiliations, and interests. The apps include specific magazine and newspaper subscriptions, as well as compilations of headlines and articles from various news sources. They are useful to employees in that they find and deliver specific information and display it in a user friendly manner. Rich site summary (RSS) feeds are also available through apps. RSS feed apps are valuable because they provide the most recent web syndication from a particular source directly to the user's mobile device. RSS feed apps help users to stay informed by retrieving the latest content from the sites they are most interested in and making all of the information available in one place on a user's mobile device. This can promote efficiency since users can avoid having to visit each of their top sites individually. Figure 13 shows a common icon used on website to indicate RSS feeds. Web syndication refers to making



Figure 13: RSS Feed Icon

web feeds available from a site in order to provide other people with a summary or update of the website's recently added content (for example, the latest news article, forum posts or website change). Without subscribing to a web syndication or RSS feed, users are required to visit the desired sites or blogs and search for any new content. By subscribing to an RSS feed app, users can be assured that they will receive a notification as soon as any new content has been added to the given feed. RSS Feeds could be useful to get the latest information provided from the U.S. Army Corps of Engineers website, Government Exec or another website that you commonly visit like [www.corpsplanning.us](http://www.corpsplanning.us).

Example Apps:

- **Any RSS reader + widget:** A user can choose which news feeds that they would like to see and have a custom view of the latest news for that nation, their project area, the government, etc.
- **Feedly RSS:** Search, save, and organize RSS feeds from website or organization, and find Google news on a keyword. The latest feeds can be formatted to remove ads and improve readability, organized and saved.
- **Government Executive:** This newspaper has an app for the latest Federal government headlines.
- **CNN:** A national news app that provides updates.



Figure 14: Feedly App showing the RSS feed for USACE Headquarters.

### G. [Rulers, Unit Converters, and Calculators](#)

There are several apps that act as powerful calculation, conversion, and measurement tools, capable of performing hundreds of complex functions. There are a variety of ruler and measurement applications that range in capabilities from that of a simple ruler capable of measuring in a variety of units, to a complex measuring tool that uses trigonometry to measure anything from distance, to height, width, and area of any given target. Because these tools take the forms of apps on a user's mobile device, they are easily transportable and accessible. In this sense, these apps provide Corps workers with a light, accessible, high-powered and easily portable toolbox – thereby increasing their ability to be more efficient workers.

Example Apps:

- **Civil Calculator:** This app provides users with a collection of Civil Engineering calculations for Civil Engineers and Students to calculate different types of civil related units.
- **Civil Engineering Calculations:** Civil Engineering Calculations such as Pipe Flow, Channel Flow, Vertical Curve, Tangents, Traverse, Area Calculations, etc. are all made simple with this easy-to-use tool that is specifically programmed to streamline these processes.
- **Easy Measure:** This app employs the user's camera to estimate distances from the camera to a given object or target. It saves pictures of the object and distance to the user's mobile device.
- **Graph It!:** This app is a user-friendly graphing calculator.
- **HF Scientific Calculator:** HF Scientific Calculator - formerly called "Scientific Calculator" is an advanced Scientific Calculator. This functions as a fully featured calculator which supports matrix, complex numbers and equation solver.
- **Measure Your Land<sup>\*</sup>:** Enables users to measure roads, buildings or lands from the bird's eye view.
- **Open Channel Flow Calculator:** This app calculates the flows for various configurations of open channels for the user inputs, under uniform steady flow. This is most useful for sanity checks and quick in-meeting calculations for multiple channel types. This app also includes a material selector for fast Manning's "n" lookups, which can be useful to engineers working on a planning project.
- **Planimeter:** This app functions as a GPS area distance calculator and measure, GPS measure by tracking on Google Map. It also has a manual option in real-time tracking.
- **QuickCivil:** The QuickCivil app is designed to provide fast results for common civil engineering calculations. The program currently includes open channel flow, weir, orifice and time of concentration calculations. Various Manning's n tables are also included.
- **Quick Graph: Your Scientific Graphing Calculator:** This app provides users with a graphic calculator on their mobile device. The app is capable of displaying explicit and implicit (opt) equations as well as inequalities (opt) in both 2D and 3D, in all standard coordinate systems: Cartesian, polar, spherical and cylindrical, all with amazing speed and beautiful results, which can be copied, emailed or saved to the photo library.
- **Smart Measure:** This app acts as a rangefinder (telemeter) that measures distance, height, width, and area of a target with your phone by trigonometry.

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\* Apps with a "\*" are discussed in more detail in the following chapter

## **H.** [Basic Business Functions](#)

There are many apps that can help make life easier for Corps employees by simplifying some everyday tasks. These basic business apps focus on specific organization efforts, such as the organization of group meetings, personal documents, schedules, pictures, files, and data. These types of apps can also make information or documents available in various locations and on different devices. They can help store schedules, reminders, and information from business cards, resumes, notes, and recorded meetings. There is an impressively long list of apps that are useful for common tasks throughout your day. They are not all directly related to Corps business or planning, however, they are tools that can make a user's life easier and their days more efficient.

Example Apps:

- **Adobe Reader:** Allows PDF files to be viewed on devices
- **Business Calendar Free:** Calendar application with scroll- and zoomable multi-day view and can sync to Google calendars.
- **Business Card Composer:** This app helps create business cards, name badges and more which can be helpful to preparing for a meeting.
- **Business Card Reader:** Take a picture of a business card and this app automatically organizes the card data and information on the card.
- **Doodle:** Find meeting times when everyone is available.
- **DocScan:** Use the device camera to take a picture of anything and then turn these pictures into a pdf, add notes, and more.
- **Evernote Hello:** Evernote Hello helps users to remember everyone they meet. It is easier to remember all aspects of their meetings: location, notes, photos, and faces. Connect to Linked-in.
- **HoursTracker - Timesheet & Time Tracker or Time Clock:** Apps like this could help employees keep track of which projects that they work on and for what amount of time.
- **GNotes:** A note-taking app that syncs with Gmail.
- **Office Suite Pro 6 +:** Users can view, edit, print and share their office documents on the go.
- **Optimum WiFi Hotspot Finder:** helps find Wi-Fi hotspots and get directions to the spot.
- **Paper:** Capture your ideas as sketches, diagrams, notes and illustrations.
- **PDF Creator:** Creates pdf documents from text on a mobile device.
- **Pocket Resume or Resume or Resume Builder Pro:** These apps allow you to create, save and send a quality looking resume directly from your mobile device.

- **Spell Checker Apps:** There are many apps that assist with any writing on a mobile device.
- **To Do List Voice Memo Pro:** This app translates the user's voice into words.
- **USB Audio Recorder PRO:** Connect USB recording device to smart phone to record.
- **Memo Pro:** To do lists, voice memo, sync with Google calendar

## *I. Bar Code and Photo Readers*

Smartphones are capable of providing a user with information simply by recognizing various image types. These apps have been called the brochures of the future. There are several forms of code and image recognition that are made available through the use of apps. For example, some apps that highlight this capability are able to scan barcodes from consumer products and consequently provide the user with locations where similar or identical products can be purchased near their location. Employees could use these barcodes to identify magazine or books that are relevant to their study area and save the book name and information for later use.

Quick Response (QR) codes are another form of the barcode/photo reader capability. QR codes are typically a square design with a modern bar code looking pattern in it (see left picture below in Figure 15). When scanned with a smartphone using a barcode reader app, these codes lead the user to websites with more information on whatever the topic or product scanned may be. Many barcode/photo reading apps are able to link a mobile device to a website or data feed of choice simply by recognizing the image within the given QR code. Apps such as Digimarc Discover are capable of recognizing the type of code used and properly access the associated information. Digimarc Discover also enables images or watermarks to be read, which could become more useful as a greater number of people take advantage of this technology. For example, *Cooking Light* recently began using images that correspond with the Digimarc Discover app to enable readers to scan a food photo, access the recipes for the pictures online, and then save the recipe with more detailed information that was not printed in the magazine.

Corps employees should generally be aware that these apps exist so that they can recognize them in local communities and on media that is related to their projects. In addition, employees may want to create their own QR code or image for scanning that would provide a user access to a public webpage for more information. QR code readers are an interesting and modern way to promote public interest and knowledge about a Corps project.



Figure 15: Smartphone using an app to read a Quick Response code (left), and to read a bar code (right).

#### Example Apps:

- **QR Droid:** Scan, save and organize QR codes from your camera, SD card or saved image. Create and share QR codes from maps, contacts, bookmarks, installed apps and more.
- **ScanLife Barcode & QR Reader:** Scan 2D barcodes (QR code, Datamatrix, EZcode) to launch websites, videos, contact info and more. Design and create a personalized QR code to share.
- **Digimarc Discover:** Apps such as Digimarc can recognize a variety of media, such as music, barcodes, Quick Response (QR) Codes and watermarks, and bring you to a site that can give you more information regarding that piece of media. This app is also used in magazines to hover over pictures and provide more information on certain pictures.
- **Barcode Scanner:** A simple barcode scanner.

#### *J.* [Social Media](#)

Some of the most popular types of apps are those related to social media. Social media apps could be useful to a project for many reasons, including but not limited to: (1) updating the public, (2) announcing public meetings, (3) having digital chat sessions, (4) sharing and learning information, (5) finding out about project-related events, and (6) identifying stakeholders. According to the Pew Research Center's Internet and American Life Project survey, social networking site use by online adults has increased from 8% in February 2005 to 72% in May 2013 (Brenner and Smith 2013). The figures below provide more insight into this trend.

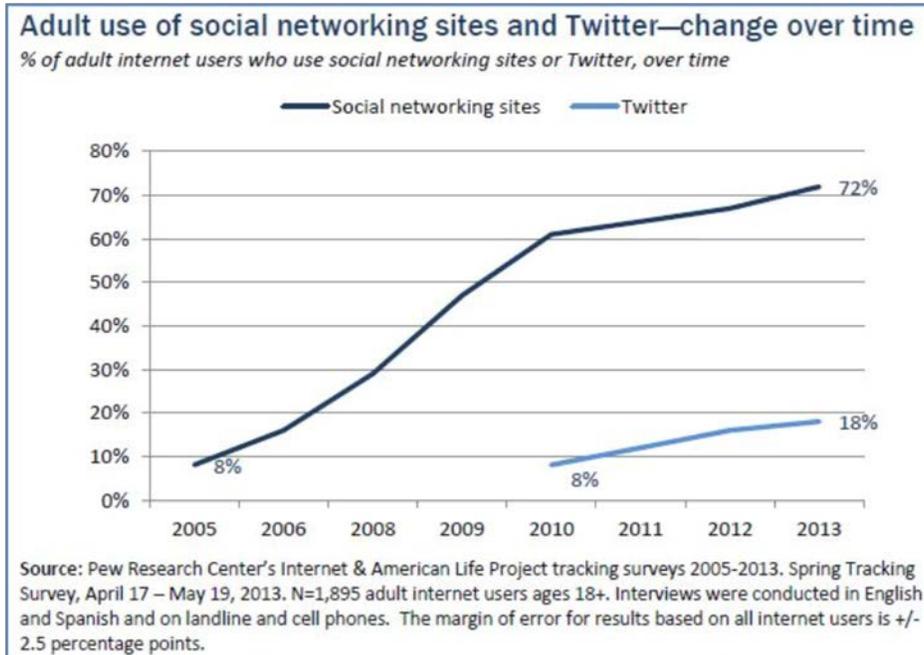


Figure 16: Social networking has increased dramatically over time.

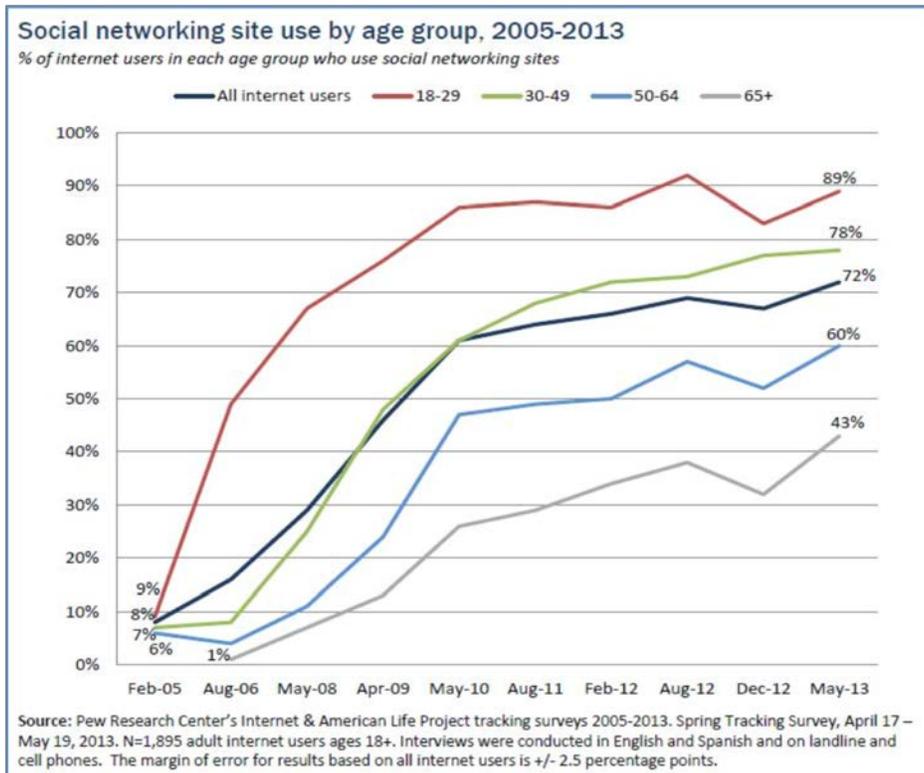


Figure 17: The use of social networking sites is increasing for nearly all age groups, even those 65 and older.

As shown in the figures above, social media is becoming very popular and reaches a great number of people. Therefore, social media apps show great potential for use as a communication tool for projects. Stakeholder meetings, public communication, and community feedback can benefit from these technologies. Some social media apps, such as

Twitter, also have meet-up groups or live message chats, which allow an open question and answer session with a moderator. Many local stakeholders have social network sites on which they post news related to study areas and provide insights into the communities in which employees work. Additionally, employees may want to post related articles to other's social media pages to gain publicity, attention, or input. These are just a few illustrations of the countless ways in which social media apps can be used.

Prominent examples within this category include Facebook, Twitter, Instagram, Linked-In, YouTube, Yammer, Flickr, and more. Here are some additional ways that Corps employees may want to use this technology:

- Many Corps offices use these to communicate with their stakeholders or among themselves. It is recommended that you check with your office, district or division to see if you should join one of their groups or feeds. Corps Headquarters has a Facebook page at <https://www.facebook.com/USACEHQ>. Corps Headquarters also tweets under the name “@USACE HQ” and is available online at [https://twitter.com/USACE\\_HQ](https://twitter.com/USACE_HQ).
- Stakeholders and local newspapers may cover a project area or even a project or even have a dedicated social media site for a project.
- A team may also want to use social media to get public comments, advertise public meetings, and communicate with stakeholders better.
- SimSuite (<http://simsuite.usace.army.mil/simsuite>) is not an app, but the tool can be used to find out what people are saying/posting about keywords within a geographical area and designated time on Flickr, YouTube, and Twitter.
- The Corps has a YouTube channel, “Corps Connection”, and many training videos for planning are posted there (<http://www.youtube.com/user/CORPSCONNECTION>)
- Corps’ Waterborne Commerce Center uses Facebook and Twitter for the latest lock status listings. This could be helpful for inland navigation projects.
- Join the Yammer group on “Corps Public Participation and Conflict Resolution”

As a personal user of these systems, a Corps employee can follow and comment on other's sites with minimal restrictions. To “follow” means to have various site or organizations on a favorite list with live feeds of website changes or new blog posts. A key thing to remember for Corps employees who are using social media is that personal social media accounts must not give the impression of being in an official capacity. Users should not make use of icons, their title with Corps recognition, or statements that appear official. Most importantly, it is important to stress the use of common sense and discretion to Corps employees who are using social media for the powerful communication capabilities it offers. While it is possible for Corps employees to use social media in their official capacities; they should always check with the Public Affairs

Officers for the latest training, templates, and policies. The training is reasonable and can be done online.

Example Apps:

- **Twitter:** A microblog service that allows one to post or read/see short message, links and images.
- **Facebook:** A social utility to connect people with friends, coworkers, organization, government and more.
- **Google Plus+:** This network ties into Google Mail and other Google products. It offers “circles, events, and hangouts.”
- **GovLoop:** Social network for federal, state, and local government.
- **LinkedIn:** Professional networking tool for finding jobs, contacts, experts, and more. This is similar to Facebook, but more professionally oriented.
- **Pinterest:** “Pin” images, video, and other digital objects to your pin board.
- **Yammer:** An enterprise social network application for businesses. This is a business version of Facebook.



Figure 18: GovLoop App

### K. Recreation

Recreational apps can assist to identify key recreation features, raise awareness of recreation features and also be used for other purposes. It is important for Corps employees to have a situational awareness of recreation in their study area regardless of the study type. This is because recreation can modify what project could be built or how it is built, help employees understand recreational stakeholders’ concerns, and understand how recreation could impact critical project features or endanger critical species in some cases. Additionally, those working on existing multi-purpose projects can access certain data from these recreational apps. Several apps in this category contain information about recreational sites and facilities at Corps of Engineers reservoirs along with nearby recreational sites. Many also have other information, data, or maps that could also be helpful for other purposes. For planners, recreation planning is typically an incidental benefit to other projects that we are working on. Therefore, understanding existing recreation could be helpful in determining the significance of any recreation being proposed. There are many apps available that provide recreational information.

Example Apps:

- **ACK Kayak Launch:** Enables users to locate or list kayak launch points.
- **AllTrails:** This app provides hiking trail information with topographical maps.
- **BackCountry Navigator:** Contains a variety of maps such as OpenStreets, OpenCycle, topographical maps and more
- **Boat Ramps:** This app will locate ramps near the user’s position or a chosen area and directions to the ramp.
- **Camp and RV - Campground Plus:** This app has information on parking lots, resorts, RV and camp sites including Corps locations and more.
- **Camp and Tent:** This app helps users find camping locations provided by USACE, private, state, and other Federal locations.



Figure 19: AllTrails App



Figure 20: BackCountry Navigator App

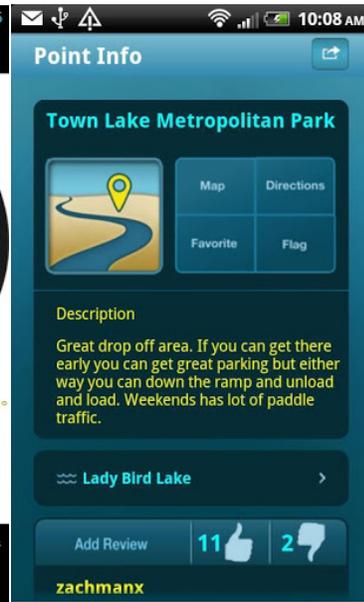


Figure 21: ACK Kayak Launch App

## L. Basic Utility

There are several basic apps that are included with most mobile device by default. These are listed below and can be useful in a variety of circumstances or for basic functions such as telling time.

App Type	Usefulness	Examples
<b>Calendar</b>	Personal calendar that sync with email and other devices, provide alerts and import/export to other calendars, change views, show tides, search, share events with QR barcode, add images, and more.	<ul style="list-style-type: none"> <li>• Google</li> <li>• Jorte Calendar</li> <li>• aCalendar</li> <li>• Calendars by Readdle</li> <li>• PocketLife Calendar</li> </ul>

<b>Clock</b>	Time display, sleep clock, alarm, time zone management, weather, flashlight, and more in one view.	<ul style="list-style-type: none"> <li>• Sense Analog Clock Widget (Android)</li> <li>• The Clocks (Apple)</li> </ul>
<b>Email</b>	User your personal email to share information, photos, and more from your mobile device to your work email for unofficial correspondence.	<ul style="list-style-type: none"> <li>• Gmail</li> <li>• AOL</li> <li>• Yahoo</li> </ul>
<b>Maps</b>	Turn on your GPS for more precision and navigate to project sites by road or trail, learn about the study area, use social media integration, avoid traffic, mark your parking spot, and more. Many map view are available.	<ul style="list-style-type: none"> <li>• Google Maps</li> <li>• Mapquest</li> <li>• BackCountry Navigator</li> <li>• Trimble Outdoors Navigator</li> <li>• Motion X GPS Drive/ MotionX GPS</li> </ul>
<b>Reference Guides</b>	Books, guides, study guides, and interactive magazines are available via apps and come in many varieties.	<ul style="list-style-type: none"> <li>• Math Ref</li> <li>• Civil Engineering E-Book</li> <li>• Engineering Libraries</li> </ul>
<b>Search</b>	Direct access to your favorite search engine for all uses.	<ul style="list-style-type: none"> <li>• Google</li> <li>• Bing</li> </ul>
<b>Travel</b>	Apps can provide the latest transportation schedules along with hotel rooms.	<ul style="list-style-type: none"> <li>• Kayak</li> <li>• Hotel.com</li> <li>• GSA Per Diem App*</li> </ul>
<b>Weather</b>	Get local and project area weather, storm alerts, and more.	<ul style="list-style-type: none"> <li>• The Weather Channel</li> <li>• WeatherBug</li> <li>• Disaster Alert</li> </ul>

### *M. Department of Defense*

In addition to using some of the popular and independently developed mobile apps, many DoD agencies have begun to design and produce their own apps. The Army, Navy, Air Force, Marines, and National Guard have created mobile apps available to the public. Currently, these apps are available on Apple and/or Android devices. The functionality of DoD-designed apps ranges from informative to entertaining. The USAF Tech Hangar app, for example, is a popular Air Force-designed app that allows users to view facts, specs, images and videos of the US AF fleet of aviation technology. Another popular DoD app is the Army One Source Services Locator app, which is a useful tool for military families. This app provides users with a fast and easy way to locate services in their geographical area (see Figure 22). The design and creation of DoD mobile apps continues to grow, providing more and more useful tools to DoD workers and

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\* Apps with a “\*” are discussed in more detail in the following chapter

families. Further, the increase in DoD-designed mobile apps suggests that many agencies within the Department see the value and potential of using mobile apps.

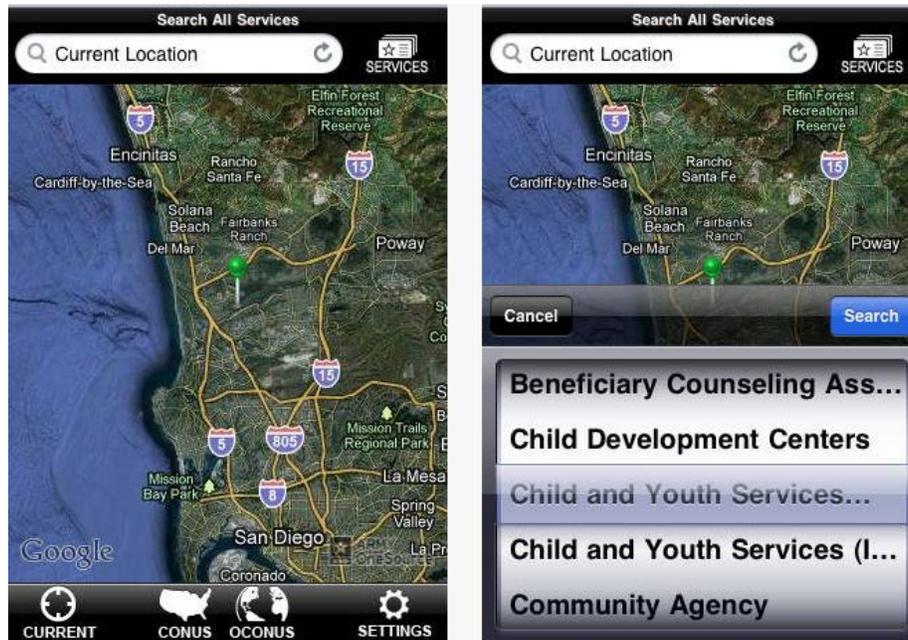


Figure 22: Screenshot of the Army One Source Services Locator App

Example Apps:

- **Air Force Tech Hangar:** Allows users to view facts, specs, images and videos of the USAF fleet of aviation technology
- **Arlington National Cemetery (ANC Explorer):** This app will allow users to lock up events, locate gravesites or other points of interests throughout the cemetery.
- **Army One Source Services Locator:** Search local Army programs, services, or resources with the Army One Source Services Locator.
- **Army Strong Stories:** The Army Strong Stories app gives soldiers, spouses, parents, and other Army supporters on-the-go access to blogs about the life in the military.
- **Army Training Network Control Army (CARMA):** Search the Control Army Registry for training products and download found materials and view them on your mobile device.
- **Army Virtual Exhibit:** The Army Virtual Exhibit app provides a virtual exhibit experience, scheduling capabilities, and Army exhibit pathfinder games focused on the Army's priorities.
- **DOD Compensation & Benefits Handbook:** This app from DOD allows DOD employees and users to have access to the Compensation & Benefits Handbook on-the-go.
- **Joint Electronic Library:** Made to give easy access to Joint Electronic Libraries publications and information on-the-go.

- **Military 24/7:** Military 24/7 delivers the latest news from each branch of the U.S. Military featuring top news stories, photo galleries, and on- demand content.
- **National Guard News:** Read articles, view pictures, and watch the latest Minuteman videos direct from your mobile phone from the National Guard.
- **Navy Life:** This app contains information about the life resources available for Navy personnel, retirees and their families.
- **Navy Seabee Mobile:** Seabee Mobile provides coverage of Seabee contributions to global security, maritime strategy and humanitarian efforts.
- **USACE Mobile Information Collection Application (MICA):** This app is used to assist with Blue Roof duties and to record flooding damage and it can be helpful for flood damage and flood control projects.
- **USAF Rapid Strike:** Rapid Strike gives users an interactive experience of what life is like on an Air Force mission.

### III. Detailed Descriptions

This section offers more detailed potential uses for several apps and aims to give a better idea of the scope of information that each app is capable of conveying. Each detailed description was developed from a combination of advertised capabilities and, in some instances, firsthand user experience with the app. Each description also lists the version of the app that was reviewed, date of last update, app developer, number of downloads, and the operating system(s) on which the app is available.

#### Quadrant Chart

In the examples provided, you will see a chart that looks similar to Figure 23. The screen shots of the example apps were either created by IWR or were copied from one of the various app marketplaces. Figure 23 displays the four quadrant app guide, which is used in this document to inform readers of the usefulness and applicability of each app explored. The upper left quadrant will display the app icon that is shown on the app stores to identify the app. The upper right quadrant will show the app cost. The lower left quadrant will show any available ratings ranging from zero to five out of five stars. Average ratings are used when the app is available for multiple device operating systems; however, the rating for from each marketplace is available in Appendix A. Finally, the lower right quadrant will display the related topical areas that may be of interest to the Corps.

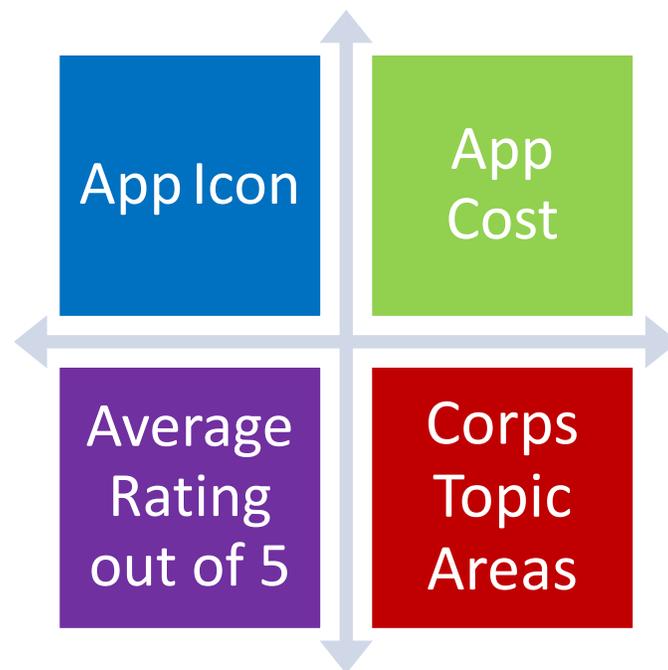


Figure 23: Example Quadrant Chart

A. Civil Calculator (Version 1.0.1)

- Available for: Android
- Maker: Fitzgerald Engineering
- Related Website: N/A
- Updated: July 23, 2011
- Downloads: 50,000 – 100,000

*Description:*

This app represents one of many apps that assist in calculations, more specifically, engineering calculations. This app has fifteen functions, unit conversion, calculations with parameters that can provide detailed area measurements for different types of materials, air flow, and circular volume. This tool seems very general in nature. There is no supporting documentation for this specific tool and the developer’s website is unavailable. However, an engineer may be able to recognize and understand the functions as part of their routine calculations. Note: A similar app created by a different designer is also available for download on Apple devices for \$4.99.



Figure 24: Screenshot of Air Flow Conversion Function on the Civil Calculator App

**B. FEMA (Version 2.3.0)**

- Available for: Android, Apple, BlackBerry
- Maker: FEMA
- Related Website: <http://www.fema.gov/app>
- Updated: November 19, 2013
- Downloads: 50,000 – 100,000

*Description:*

This app is targeted to the public user; however, it could be important for emergency management planning and communication. The app has important information if one was to lose power after a disaster and had only cell phone access. This includes contact information for recovery services, locations for assistance centers, information on volunteering, a blog written by FEMA on current events, and connections to social media for more information. People working on planning for emergencies, such as flood risk reduction, should be aware of this app and similar ones as these could be part of a nonstructural solution. A communication strategy could help ensure that information is relied to these types of apps to increase community resiliency, reduce community exposure to risks, and respond to risks. Please note that the versions of this app available may differ across devices.

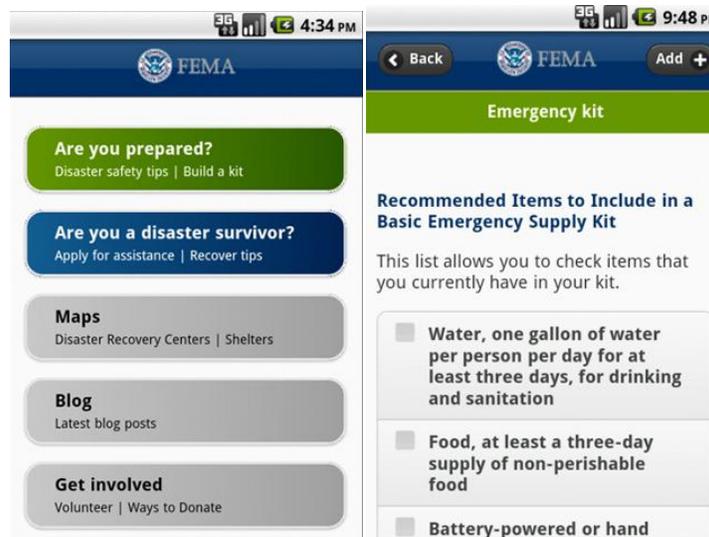


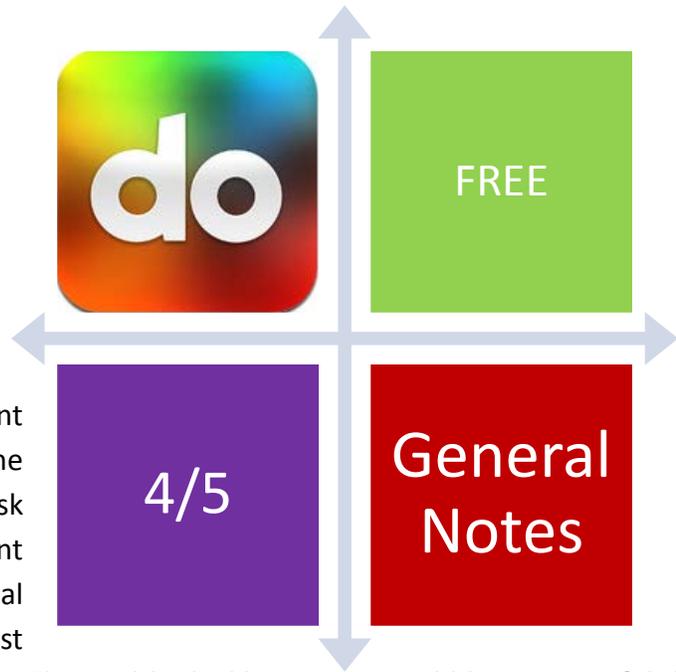
Figure 25: Screenshots of the FEMA App

C. [Do Social Productivity \(Version 1.0.27 for Android , 2.6.5 for Apple\)](#)

- Available for: Android, Apple
- Maker: Do (by Salesforce.com)
- Related Website: <https://do.com/>
- Updated: October 25, 2013
- Downloads: 10,000 – 50,000

*Description:*

This app combines mobile access with a computer cloud sharing system that is meant for group projects. It seems to combine social media, contact book, file sharing, task manager, and project management software. The free version offers minimal functions; however, it appears that one must



pay for privacy options and larger storage. The tool looks like it could be very useful if all team members are dedicated and willing to learn the system. Reviews reflect that users either “love it or hate it”. Some potential uses for this app include: (1) team discussion and coordination, (2) task management and assignment, and (3) organization of products by task and person with deadlines.

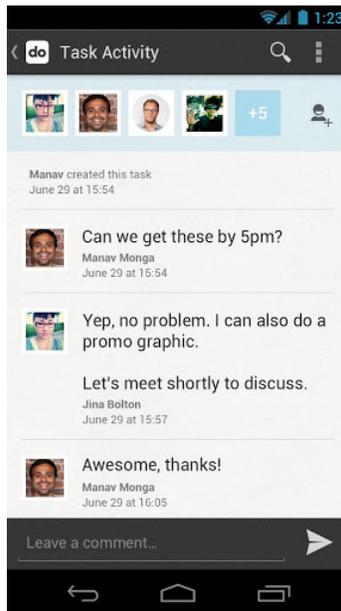


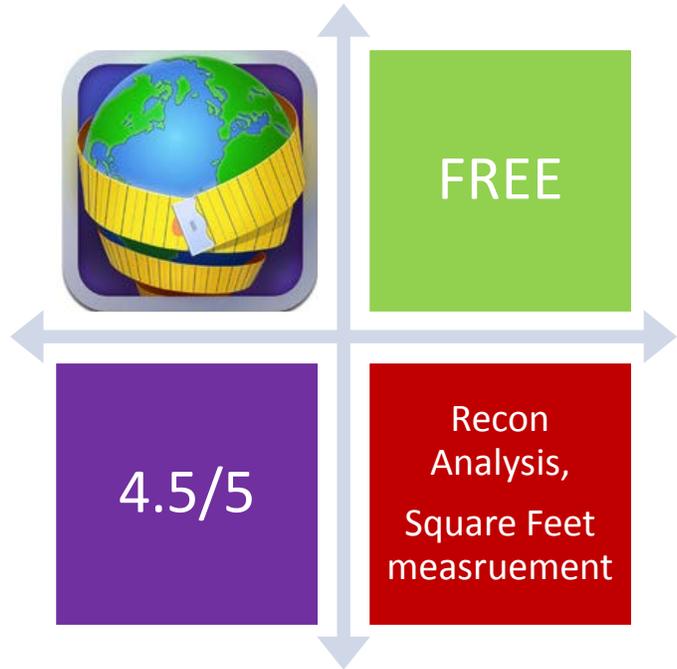
Figure 26: Screenshot of the Do Social Productivity App

D. [Measure Your Land \(Version 3.1.0\)](#)

- Available for: Apple
- Maker: Ribaba IS
- Related Website:  
<https://itunes.apple.com/us/app/measure-your-land-get-area/id520183630?mt=8>
- Updated: February 7, 2013
- Installs: >50,000

*Description:*

Data is from USGS at <http://wdr.water.usgs.gov/nwisgmap/>. This could be helpful for rough estimations of building footprints, project areas, mitigation, channel widths and lengths.



**Related Apps:**

**Planimeter – Measure Distance and Land Area on a Map:** This is a more detailed and advanced tool that measure line length in feet, yards, miles, acres, and includes area measurements in square meter, square kilometer, and hectare.

**Maps Ruler:** This app allows users to measure distances from maps.

**Easy Measure:** This app uses the mobile device camera to estimate distances of objects.



Figure 27: Example image of Easy Measure's distance estimation tool

E. [DocScan \(Version 7.7\)](#)

- Available for: Apple
- Maker: IFUNPLAY Co., LTD
- Related Website:  
<https://itunes.apple.com/us/app/doc-scan-pdf-document-fax/id453312964?mt=8>
- Updated: October 31, 2013
- Downloads: Unknown

*Description:*

This app will enable one to take pictures on anything and create an editable photo or PDF file. This could be useful in recording notes or taking a pictures and adding notes to the picture.

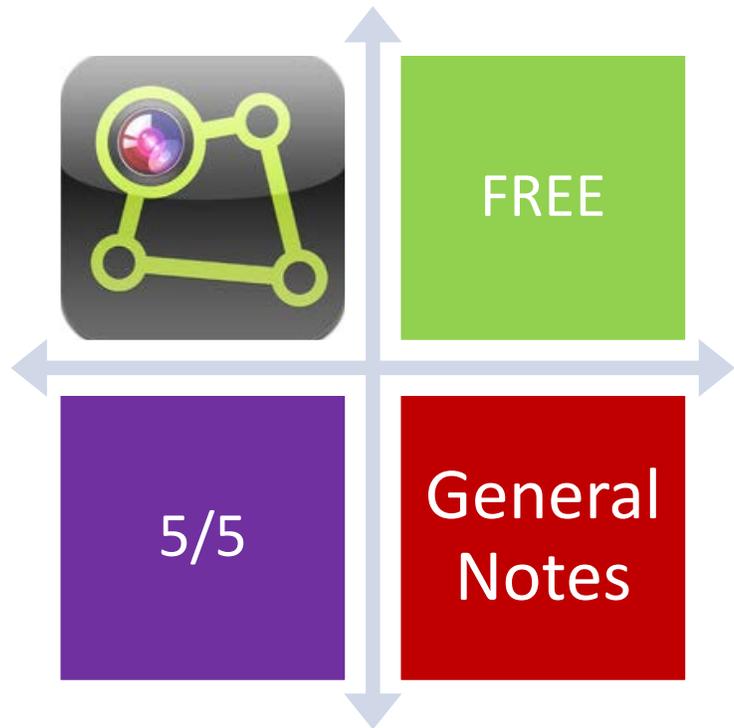


Figure 28: Example image of DocScan App output with notes

F. [Per Diem for U.S./Continental – Federal \(Version 1.1 Apple, Version 1.0 Android\)](#)

- Available for: Android, Apple, BlackBerry
- Maker: General Services Administration - CIO
- Related Website: <http://www.gsa.gov/portal/content/302273>
- Updated: November 15, 2011
- Downloads: 10,000 - 50,000



*Description:*

This app is targeted to government employees traveling TDY. It looks up lodging and meal allowances. State or zip lookup function. Data is from GSA.

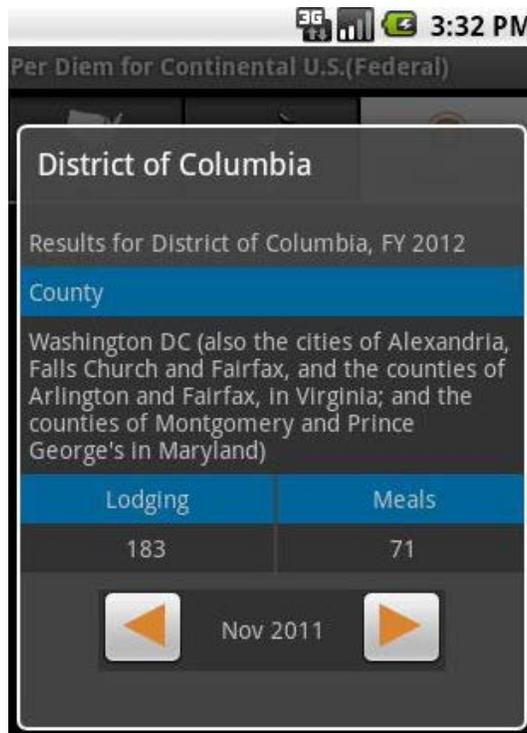
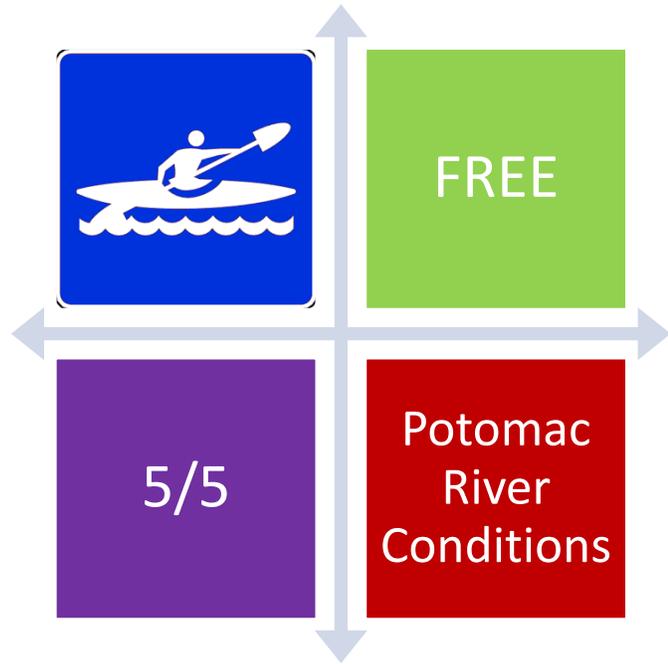


Figure 29: Screenshot of the Per Diem App

G. [Play Potomac \(Version 2.8\)](#)

- Available for: Android
- Maker: Vadim Shun
- Related Website: <https://sites.google.com/site/vadimshun/playpotomac>
- Updated: March 25, 2013
- Downloads: 500 - 1,000



*Description:*

This application provides NOAA forecasted water levels for the Potomac River based on tides, water surface temperatures and weather in the area.

This app is intended for recreational boaters; however, this could be useful for those Corps projects in the Potomac watershed, such as the Baltimore District. The data provided helps one to understand the watershed characteristics and recreation in the area.

Potomac conditions at Little Falls @20:45		Name	From	To	Best	Class
Level	2.87	Bloody Good	2.8	3.3	2.9	4
Water temperature:	87°F	Horseshoe	2.6	2.8	2.8	3
Air temperature:	78°F	Wet Bottom	2.5	4.2	4.0	3
Skies:		O-Deck 3	2.7	3.0	2.8	3
Forecast conditions		Virginia Chute	2.7	4.2	3.9	2
Day	Level Air temp (HI/Low)	Maryland Chute	2.7	4.0	3.7	2
Sat	2.9 91/73	O-Deck 2	3.3	3.6	3.5	3
Sun	2.8 96/77	S-Turn	3.5	3.9	3.6	4
Mon	2.8 95/74	O-Deck 1	3.6	3.8	3.7	3
Tue	88/69	Portage Hole	3.9	4.1	2.9	2
		Rocky Island	3.9	4.8	4.8	3
		Upper Center Chute Ledge	4.1	4.6	4.4	3
		Offut Wave	4.1	5.4	4.9	1
		Central Chute	5.2	6.2	5.3	3
		Skull Island Wave	6.0	7.6	6.3	3
		Dave's Wave	6.2	6.6	6.5	4
		Dead Cow Hole	7.3	8.0	8.0	3

Figure 30: Play Potomac App Screenshots

### H. North Texas Lake Levels (Version 2.6)

- Available for: Android
- Maker: Chaos SGI
- Related Website:  
<http://www.chaossoftware.com/>
- Updated: June 12, 2012
- Downloads: 1,000 - 5,000

#### Description:

This application provides current water levels for some of the popular North Texas lakes. It also includes a speed forecast for sailing. This app may be useful for those in the Southwestern Division that monitor or plan on these lakes.

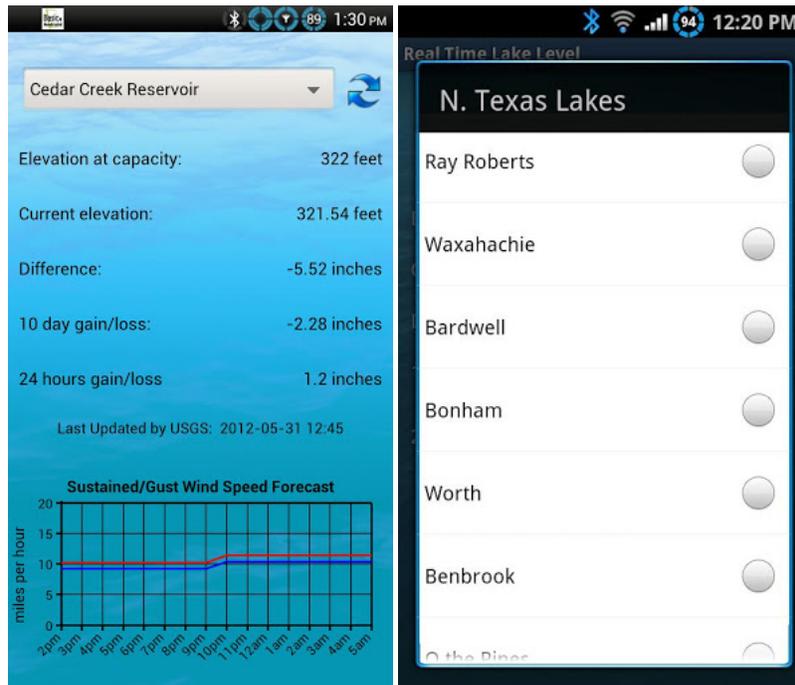
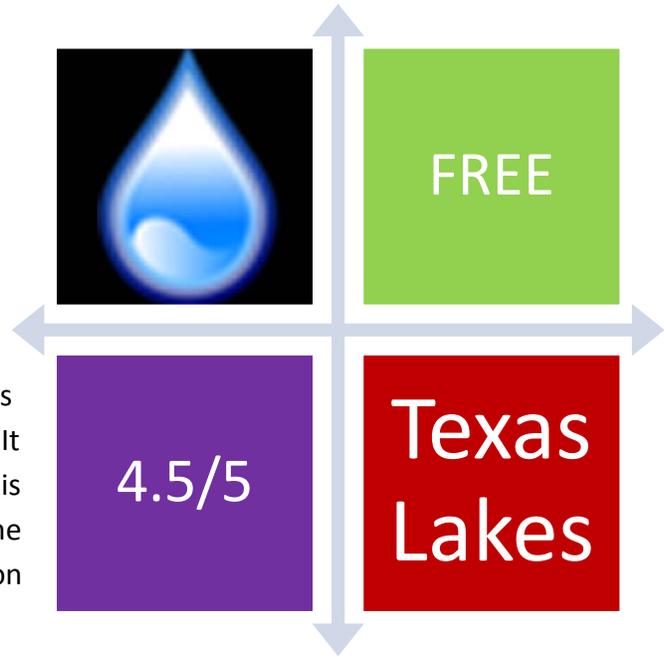


Figure 31: Texas Lake Levels App Screenshots

I. [Lake Okeechobee Levels \(Version 1.0.0 for Android, 1.0.2 for Apple\)](#)

- Available for: Android, Apple
- Maker: Brindleware
- Related Website:  
<http://brindleware.com/portal/>
- Updated: April 21, 2013
- Downloads: 10 - 50

*Description:*

This app provides information from the Corps Jacksonville District. The information includes current water level, graphic view of trends, and average water levels from 1965 to 2007. Those working within the Lake Okeechobee watershed may find this insightful and useful to monitor the lake and understand how weather and water usage affect lake levels.

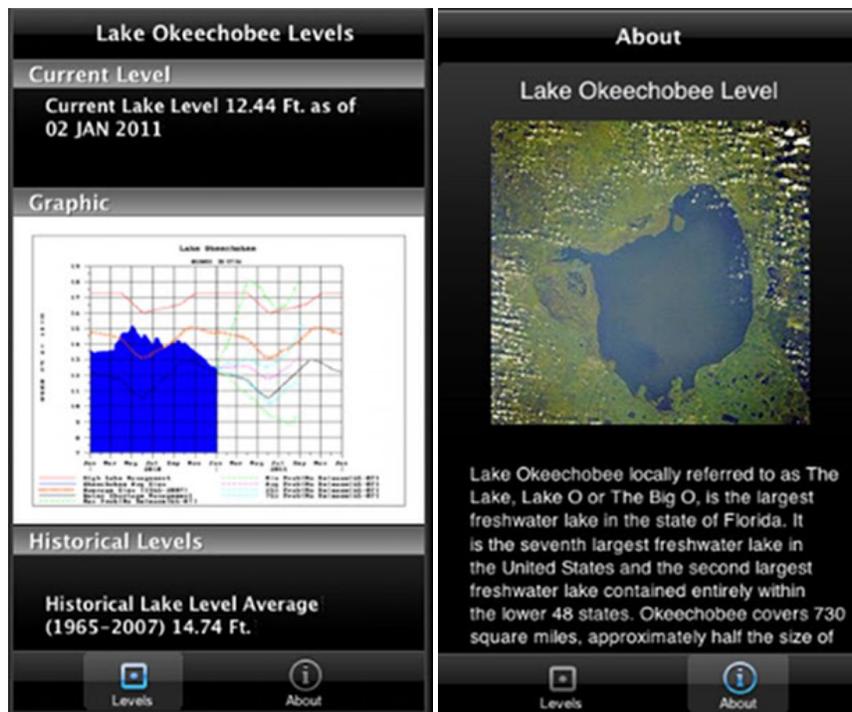


Figure 32: Lake Okeechobee Levels App Screenshots

J. [LCRA \(Lower Colorado River Authority\) \(Version 1.2.2\)](#)

- Available for: Apple
- Maker: Lower Colorado River Authority
- Related Website: <http://lcra.org/>
- Updated: December 21, 2011
- Downloads: 10 - 50

*Description:*

This app provides information on the Lower Colorado River watershed. This app is intended for recreationalists and has data on parks, activities, weather, boat ramps, lake levels for all Highland Lakes, social media posts, and alerts for the region.



Figure 33: LRCA App Screenshots

K. [Ship Vault \(Version 1.0.2\)](#)

- Available for: Android, Apple, Windows
- Maker: Eureka Apps
- Related Website: <http://www.shipvault.com/>
- Updated: July 20, 2012
- Downloads: 500-1,000

*Description:*

This app is helpful to those working on navigation studies and trying to learn more about the ships entering the ports that are being analyzed. The app allows for users to search for commercial ships by name; information available depends on the ship. The image below displays some available data.

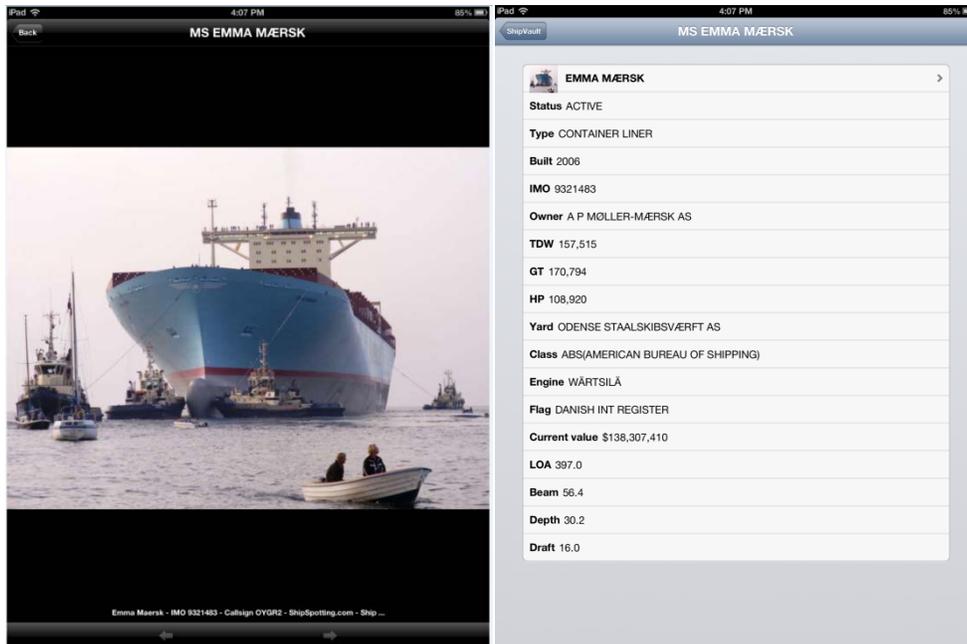


Figure 34: Ship Vault App Screenshots

L. [Sea Turtle App \(Version 1.5\)](#)

- Available for: Android, Windows
- Maker: Sea Turtle Conservancy
- Related Website: [www.conserveturtles.org](http://www.conserveturtles.org)
- Updated: January 25, 2012
- Installs: 1,000 – 5,000

*Description:*

This app has five main sections: news, events, get involved, cool stuff, donate and turtle tracker. The news is from around the world and provides feeds on when and where turtles are hatching, turtles at risk, and other information. App reviews were mixed and show some shortcomings on various devices. Dredging or construction activities that require sea turtle monitoring may find this helpful or those trying to identify sea turtle locations and mitigate impacts to sea turtles.



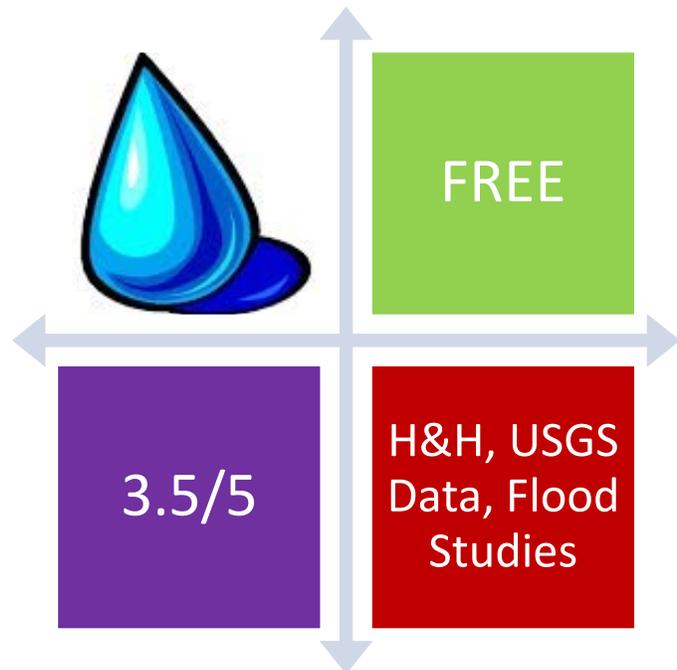
Figure 35: Sea Turtle Conservancy App Screenshots

M. [Water Tracker \(Beta\) \(Version 1.0.7\)](#)

- Available for: Android
- Maker: Grant M Defayette
- Related Website:  
[www.grantdefayette.com](http://www.grantdefayette.com)
- Updated: January 11, 2011
- Installs: 10,000 – 50,000

*Description:*

This app will retrieve data from USGS servers for rivers, reservoirs, lakes and more. A user can search by location or select by location. The app will display activity in the last five days for a location, present data on a map and enable alerts to be set for any available condition. Data is different from gage to gage. Some data that is available is depth to water level, feet below land surface, water temperature, precipitation total, gage height, tide elevation, streamflow, and USGS station number. Data is from locations that USGS monitors and is at <http://wdr.water.usgs.gov/nwisgmap/>; however not all rivers and streams have data. App instructions are available at the Google Play store under the apps description along with an email to the developer for assistance. While this app seemed like it would be helpful, it does require some patience. Users may want to look at similar apps. This type of app would be helpful for flood studies primarily, but also any other studies that require USGS stream gage information.



**Related Apps:**

- FloodWatch (Apple), Rivercast (Apple), River Navigo (Apple), Stream Gages Map (Android)



Figure 36: Rivercast App Screenshots (Gage locations on left, stage data on right)



Figure 37: FloodWatch App Screenshots

**N. Zillow (Versions vary with device)**

- For: Android, Apple, Windows, Blackberry
- Maker: Zillow.com
- Related Website: [www.zillow.com](http://www.zillow.com)
- Updated: October/November 2013
- Installs: 5,000,000 – 10,000,000



**Description:**

This app could be helpful to teams trying to understand the type of homes in a project area. Also, the website contains information about nearby schools that could be helpful for public meetings, understanding a community and more. It also appears that users can log-in and add notes to specific properties as well, which could be useful for field visits. Specifically, economists could use this app to get pictures of homes, identify structural information, such as square feet and more which commonly used in structural inventories of flood risk management analyses.

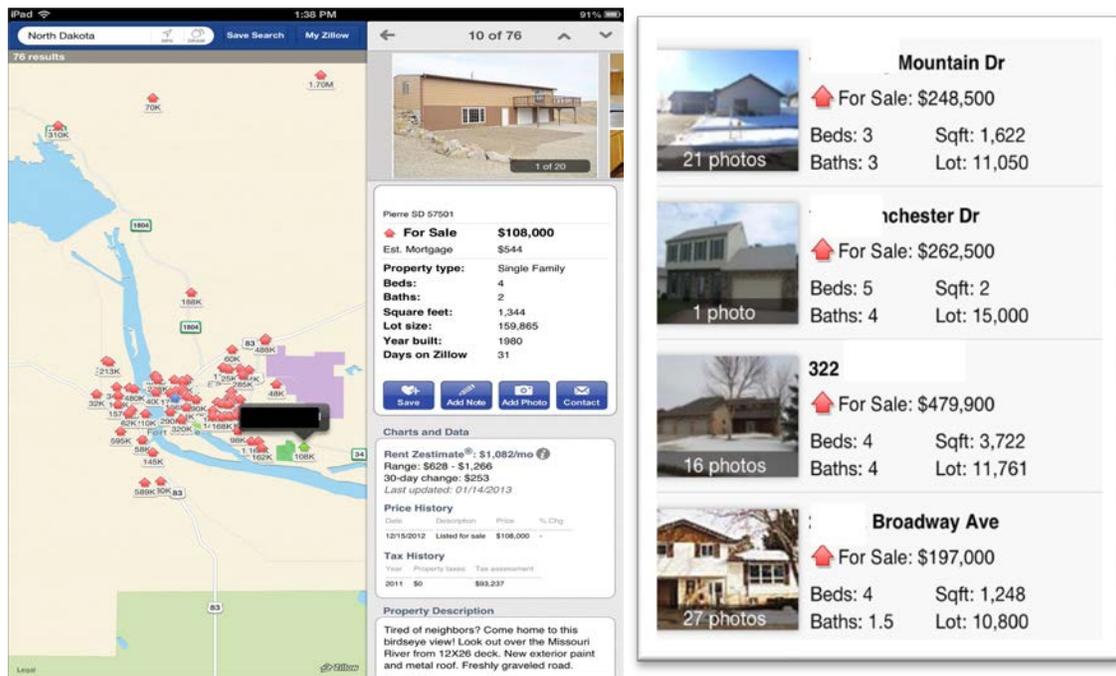


Figure 38: Zillow App Screenshots

## **IV. Conclusions and Feedback**

Recent technological advancement in mobile devices has provided users of smartphones and tablets with an easily accessible and cost-effective way to increase productivity and efficiency. This paper has highlighted some of the ways that Corps workers can use apps on their mobile devices to help them do their work more efficiently. As we have demonstrated through the use of examples in this paper, apps have great potential to help Corps employees obtain and share up-to-date information about their project, to organize and access their files, to connect with shareholders and the public, to more easily and thoroughly complete their research in the field, to obtain and analyze data, and to stay connected with their project team.

In a broader context, it is undeniable that many businesses (both public and private) have realized the value in using mobile technologies and social media to help them achieve their goals. We believe that the Corps is no exception to this rule. We hope this paper has demonstrated and inspired you to explore the vast benefits that are available through increased exposure to and use of mobile technologies within the Corps' work. We are eager to hear any feedback or questions you may have about how the Corps can further employ and benefit from increased use in mobile technologies.

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# **Appendix A: App List**



App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
aCalendar	Free calendar app that provides users with daily, weekly, and monthly calendars. It can help individuals stay organized and keep track of their multiple tasks and upcoming events.	x			
ACK Kayak Launch Points PRO	Provides information on over 16,000 marked kayak and canoe launch points. Users can find the launch points nearest to their location or to any area they search for. In addition, they can submit, save, rate, review and share their favorite launch point with other users of this app.	x	x		
Adobe Photoshop Express	On-the-go photo editing app. Users can crop, rotate, adjust color, and add artistic effects to their photos. These updated photos can be shared with others using Facebook, Twitter, Tumblr, or email.	x	x		
Adobe Reader	Adobe Reader app allows users to work with and view PDF documents on Android, iPod, iPhone, and iPod touch devices. Users can access, manage, and share a wide variety of PDF types from their mobile devices including PDF Portfolios, password-protected documents, fillable forms, and Adobe Live Cycle rights-managed PDF.	x	x	x	x
Air Force Tech Hangar	With the Tech Hangar app, anyone can explore the U.S. Air Force collection aviation technology.	x	x		
AllTrails	AllTrails app helps users find trails nearest to their location. It provides them with the ability to browse and search through 50,000 trail guides, topographical maps, and routes.	x	x		
American Red Cross - Hurricane, Earthquakes, Wildfires, First Aid	The American Red Cross has multiple apps that allow users to monitor recent disasters, find assistance, get news, inform others of their safety, and obtain helpful information about crisis preparation.	x	x		
Any RSS reader + widget	This app provides its users with a fast, simple, news reader that appears on their home screen. It has the ability to put any RSS feed that a user chooses directly onto their home screen for easier and more immediate viewing of the information they are likely to be interested in.	x			

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Apzilla 3: 150 in 1!	As the name suggests, this app can function as 150 apps in 1. Some of its features include dot-lock protection for apps, Timer, Contact Backup, Census, Zip Code, Chronoclock, Photo Cloak, Journal, Tally Tracker, Date Calculator, Vintage Cam, Secret Microphone, Protractor, Ruler, Price Calculator, Area Code Search, games and more.		x		
Arlington National Cemetery (ANC Explorer)	This app will allow users to lock up events, locate gravesites or other points of interests throughout the cemetery.	x	x		
Army AL&T Magazine	This app functions as a mobile version of the Army AL&T Magazine.	x	x		
Army Family Action Plan Issue Search for iPhone	On-the-go app from the Army Family Action Plan that allows users to view the states and resolution of AFAP Issues.		x		
Army Mobile MWR	Receive all the latest info at Fort Riley and the surrounding Flint Hill Area.	x	x		
Army One Source Services Locator	Search local Army programs, services, or resources with the Army One Source Services Locator.		x		
Army Social Media	The Army Social Media Handbook (January 2013) is provided as an on-the-go publication.	x	x		
Army Strong Stories	The Army Strong Stories app gives soldiers, spouses, parents, and other Army supporters on-the-go access to blogs about the life in the military.		x		
Army Training Network Control Army (CARMA)	Search the Control Army Registry for training products and download found materials and view them on your mobile device.	x			
Army Virtual Exhibit	The Army Virtual Exhibit app provides a virtual exhibit experience, scheduling capabilities, and Army exhibit pathfinder games focused on the Army's priorities.	x	x		
Audubon Birds – A Field Guide	Audubon Birds app is an essential guide to the North American birds. The app features information on over 819 species. This app includes complete information on identification, habitat, range, nesting, mating, migration, endangered status and other details relating to birds. Users of this app are also able to find birds via eBird technology, which allows them to locate birds in real time.	x	x		

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Audubon Birds and Butterflies	The Audubon Birds and Butterflies app functions as a reference for North American bird and butterflies, featuring identification information for 771 birds and 627 butterflies. The "Find Birds with eBird" function helps users to find birds in real time with quick access to recent sightings, locations of notable and rare birds, and maps with directions to the birding hotspots across North America. eBird is a citizen-science project of the Cornell Lab of Ornithology and the National Audubon Society, with eBirders filing millions bird observation reports each month. This app also includes Google Bird reference app.		x		
Audubon Mammals, Wildflowers, Trees, Mushrooms, Insects and Spiders, Butterflies	Audubon has designed multiple apps that are designed to help users identify and track species in your their area.	x	x		
Barcode Scanner	With this app, users can scan any retail barcode and get product pricing while on-the-go.	x		x	x
Bing	Use this app to access Bing search engine on a mobile device. Bing search engine provides users with internet search capabilities, as well as amazing daily images on the Bing home page. Its capabilities include voice-activated search, information on deals, shops, restaurants, and more, that are near the user's location, directions, and image sharing (of search results).	x		x	x
Boat Ramps	Boat Ramps app from TakeMeFishing.org lets users locate and get directions to more than 35,000 boat ramps throughout the U.S.	x	x	x	
Built-in Camera Functions	Most smartphones come with built-in cameras for video and pictures that can be shared via email, social media and more. The camera quality is typically quite high. The iPhone 5, for example, has a camera that can take pictures up to 28 megapixels.	x	x	x	x
Business Calendar Free	This calendar app provides users with scroll- and zoomable multi-day view options for their calendar. It is a complete calendar application that can synchronize with users' Google calendars.	x			
Business Card Composer	This app can be used for creating business cards, name badges, and other related items.		x	x	

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Business Card Reader	When users take a picture of a business card, CamCard recognizes the business card and saves contact information in Card Holder or the user's Address Book.	x		x	x
Calendars by Readdle	The Calendars by Readdle app works with Google Calendar and iOS Calendar. Calendars allow users to manage events online and offline.		x		
Camera Awesome	Camera Awesome improves a user's image capturing capabilities by shooting fast and taking sharper photos. This app can be useful for project site documentation and providing images for project notes.		x		
Camera Zoom FX	This app's capabilities include, but are not limited to, optical/digital zoom up to 6x, multiple shooting modes, and multiple post processing features. This easily accessible app can be useful for projects where higher quality pictures are helpful.	x			
Camp and RV - Campground Plus	This app lets users find and filter places and services (no internet connection necessary) in order to locate the campground that best fits their needs. This app includes information on more than 24,000 sites from USACE, private, state, and Federal locations.	x	x		
Camp and Tent	This app helps users to find campgrounds that accept tents from a database of campsites that includes USACE, private, state, and Federal locations.	x	x		
Cisco WebEx Meetings	This app enables users to join, start, schedule, and participate in Cisco WebEx meetings.	x			x
Civil Calculator	This app is a collection of Civil Engineering calculations. It provides users with an easier way to calculate different types of civil related units.	x			
Civil Engineering Calculations	Civil Engineering calculations app offers Pipe Flow, Channel Flow, Vertical Curve, Tangents, Traverse, and Area Calculations which are made easy to use for users.	x	x		
Civil Engineering E-Book	Browse through a list of Civil Engineering e-books. Also, users are able to buy the e-books through this app.	x	x	x	
Civil Engineering Magazine	This app functions as a mobile version of the Civil Engineering Magazine from the American Society of Civil Engineers.	x	x		
CNN (multiple apps)	CNN has multiple apps that serve as news feeds and update users to the latest breaking stories and headlines.	x	x	x	x

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Colorado Fishing Maps	Colorado Fishing Maps offers links to over 12,000 fishing Lakes, Rivers, and Reservoirs in the state of Colorado.	x			
ColorSplash	Color Splash allows users to give photos a dramatic look by converting them to black and white, while keeping the user's chosen details in color. It could be a useful tool for highlighting certain elements in an image of a study or project area.	x	x		
Columbia Fish Counts	This app allows users to view fish counts for all the dams in the Columbia river system. They can search the database by the latest count or by date selection. This is useful for better understanding the project areas near the Columbia river system.	x			
Computer/Electronic Accomadation Program (CAP)	This app provides reasonable accommodations to federal employees with disabilities.	x	x		
Container Managemnet Smartbook	The Container Mangement Smartbook used by students of Country Container Authorities and Container Control Officers has been transitioned into an app on-the-go booklet.	x			
Cruise Schedule -- Port Everglades	CruiseSchedule provides users with a comprehensive cruise ship schedule for Port Everglades (Fort Lauderdale, FL). It is designed as an easy-to-use reference guide, and is a fully searchable cruise calendar including daily, multi-day and port of call cruises serving Port Everglades. Each ship's voyage includes a complete itinerary with an interactive route map. Easy access to ship details and cruise line contact information is provided in this app. This can be useful in better understanding Port Everglades' project areas.		x		
Currents	This app displays coastal tide currents as an overlay on Google Maps. Users are able to quickly find the tidal current at any location on the Atlantic, Gulf, or Pacific US coastline.	x	x		
Dictionary.com	This app features trusted reference content from Dictionary.com and Thesaurus.com with over 2,000,000 definitions, synonyms and antonyms. This provides workers with an easy-to-use, powerful mobile reference.	x	x	x	x

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Digimarc Discover	Digimarc Discover enables users to detect imperceptible digital watermarks, QR codes or barcodes in printed materials and to identify songs through their smartphones. The app can read a watermark or QR code to link the user to information, video, and related content through many different types of network services. It can also scan barcodes to get product info, compare prices, find related products, and read user reviews. In addition, it has the ability to identify songs to learn the title and artist, see cover art, and shop for the song online. These types of QR codes, bar code, and digital watermark identifiers enable popular forms of advertising.	x	x		
Disaster Alert	This app shows active hazards on an interactive map and lists them as they are occurring around the globe. Additional hazard information can be viewed and shared by using this app. The Disaster Alert app provides hazard updates and information on hurricanes, earthquakes, flood, specific weather alerts for Hawaii, manmade, marine, storm, tsunami, volcano and wildlife hazards.	x	x		x
Do Social Productivity	This app connects users with the people they are working with, and helps them to stay in sync, organized and productive. Users are able to share tasks, projects and notes with anyone. Real-time alerts to help users stay on track.	x	x		
Doc Scan	Users can scan all of their documents, even if they are curled, with their smartphones. By simply taking a picture, the app produces a sharp image by the black & white process. This is useful for record keeping and organization.		x		
Document Scanning Apps	There are many highly rated apps such as Mobile Doc Scanner (Google) or Doc Scan (Apple) that will enable scanning. Most apps can transform everything from invoices to whiteboards and class notes, magazine articles and more into a PDF format in order to easily export them or share them through multiple means. Many automatically detect borders, correct distortion, and equalize brightness to create clear, legible documents.	x	x	x	x
DOD Compensation & Benefits Handbook	This app from DOD allows DOD employees and users to have access to the Compensation & Benefits Handbook on-the-go.	x			

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Doodle: Easy Scheduling	The Doodle app easily records people's availability, making it easier to find the best date and time for a group of people to meet. This helps to make scheduling meetings and group events nearly effortless for those involved.	x			
Dropbox	Dropbox is a free service that lets users bring all their photos, documents, and videos anywhere. After users install Dropbox on their computer, any file they save to their Dropbox will automatically save to all their computers, their Android device, and the Dropbox website.	x	x	x	x
Dwellr	Dwellr -- an app from the US Census Bureau -- delivers on-the-go access to key demographic, socio-economic and housing statistics for thousands of places across the nation. Some of the features of this app include: (1) it creates a list of the top 25 places for you to visit based on your preferences, (2) gives you information about each of the top 25 places on your list, (3) uses the GPS feature in your phone to provide you with statistics for your current location, (4) uses statistics that are powered by the American Community Survey, which provides information on more than 40 topics for every neighborhood in the nation, ranging from education to commuting.	x	x		
EasyMeasure	EasyMeasure measures the distance of an object to the camera. The distance is shown on your smart phone through the camera lens. A user can simply aim their iPhone/iPad to any object in their surroundings, and EasyMeasure will display the distance from that object on the camera image.		x		
Ebook Converter	The eBook Converter app enables users with the ability to convert their files to eBook formats.	x	x		x
ELERTS	The ELERTS app allows people on the street to share what they see during an emergency. By using smartphones with cameras, GPS and mapping, average citizens can become Citizen Reporters in an emergency or disaster. This app also provides alerts from NOAA, USGS (earthquakes), EPA (radiation) and crowd sourcing reports.	x	x		

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Engineering Libraries	The Engineering Libraries app is a civil/structural engineering app that bundles information for the construction industry. It provides useful information on a number of popular construction materials (steel, wood, soil, concrete, etc.) based on the user's inputs regarding dimensions of the given material.	x			x
Evernote	Evernote is an app that helps users remember everything across all of the mobile devices they use. It can help people to stay organized, save their ideas and improve productivity. Evernote lets users take notes, capture photos, create to-do lists, record voice reminders on-the-go.	x	x	x	x
Evernote Hello	Evernote Hello helps users to remember everyone they meet. It is easier to remember all aspects of their meetings: location, notes, photos, and faces. The app can also connect to Linked-in.	x	x		
Facebook	Facebook users can connect with "friends" to view and share updates, photos and videos; get notified when friends like and comment on their posts; and text, chat and have group conversations.	x	x	x	x
Feedly RSS	Feedly RSS is a customizable Google Reader client that stays in sync with Google and presents RSS stories in an easy-to-ready interface. Feedly aggregates content from RSS feeds, Youtube channels, Tumblr blogs and podcasts and organizes them into a beautiful magazine-like experience. It also supports tagging, copying/pasting, and more.	x	x		
FEMA	The FEMA App contains preparedness information for different types of disasters, an interactive checklist for emergency kits, a section to plan emergency meeting locations, information on how to stay safe and recover after a disaster, a map with FEMA Disaster Recovery Center and shelter locations (one-stop centers where disaster survivors can access key relief services), general ways the public can get involved before and after a disaster, and the FEMA blog.	x	x		x
Flickr	Use the Flickr app to take beautiful photos with the in-app camera, enhance with filters, then share on Facebook, Twitter and more. This app is useful for taking and posting photos on multiple social media outlets.	x	x	x	

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
FloodMap Mobile	Using a user's location or the location of a point on the map (chosen by the user), FloodMap Mobile provides a map of the FEMA flood hazard zones, help identify the flood risk, stream gauge data, USGS elevation, and approximate insurance costs.	x	x	x	
GeoTag Photos Pro	This iPhone app works like GPS Data Logger - it logs a user's positions during their trip. There are various logging modes designed to fit the specific needs of different travelers. This is a useful tool because, after returning from a trip, a user can synchronize logged data with their desktop application and geotag photos taken by their camera.		x		
GeoTagIT	The GeoTag app allows users to mark the location of their photos, update the GPS tag of .jpg exit manually, and copy photos from their DSLR/DC to Android device SD Card and tag it with location. This is a useful tool for those working in the field. They can take pictures and be provided with all of the location details (lat, long, etc.) for later review.	x			
Gmail	Gmail is built on the idea that email can be more intuitive, efficient, and useful. This app enables users with the ability to get their email instantly via push notifications, read and respond to their conversations online & offline, and search and find any email. Gmail also lets users manage multiple accounts and view and save attachments.	x	x	x	
GNotes - Sync Notes with Gmail	GNotes is an easy-to-use note taking app that synchronizes with GMail.	x			
Google Calendar	This calendar app displays events from each of a user's Google Accounts that synchronizes with their Android device. The app makes it possible for users to create, edit, and delete events; view all of their calendars at the same time (including non-Google calendars); and quickly email all event guests from a notification with a customizable message.	x			
Google Earth	With this app, users with the ability to search by voice for cities, places, and businesses; browse layers including roads, borders, places, photos and more; and visit the Earth Gallery to find exciting maps such as real-time earthquakes, planes in flight, hiking trails, city tours, and more.	x	x		

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Google Maps	Google Maps has detailed maps with 3D buildings; voice guided turn-by-turn GPS navigation; driving, public transit, biking, and walking directions; live traffic information to avoid congestion; and local search and business reviews (and many more functions).	x	x		
Government Executive	The Government Executive app is a mobile resource for federal managers featuring all the updates and tools for those with a career in government. This app provides users with federal news and TSP fund updates.	x	x		
GovLoop	GovLoop provides top blogs and discussions from GovLoop, top government articles, and engage in the community with 50,000+ government leaders.	x	x		
Graph It!	This app is a user-friendly graphing calculator. It has a fast mathematical engine that enables features such as: real-time smooth scrolling with acceleration, integrals with precision, intersections and much more. Some of these features, such as the real-time smooth scrolling, are not even present on advanced graphing calculators for desktop computers. When entering new functions or expressions all input is handled by user-friendly custom keyboards designed specifically for this app.	x			
HF Scientific Calculator	HF Scientific Calculator is an advanced Scientific Calculator. It functions as a fully featured calculator which supports matrix, complex numbers and equation solver. It provides users with an easily accessible, fully functional scientific calculator in their smartphone.	x			
HipGeo - Trip Blog and Journal	This app is designed to help users plan and share their trip adventures and details.	x	x		
HoursTracker - Timesheet & Time Tracker	This app makes it easy for users to keep track of their time and earnings at an hourly job.		x		
Hurricane - American Red Cross	A user can be ready for severe weather with this app and a planner can be aware of their own project areas resiliency and emergency management plans. The app monitors conditions in a chosen area or throughout the storm track, offers advice on preparations, enables users to find assistance and to inform others of their safety.	x	x		

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Imageotag	Imageotag is a precision field camera app for Android devices. This app's most useful features include: 16:9 geo-tagged image capabilities, embedded GPS & NET location, accelerometer, bearing, compass, date, light lux, magnetic field, pitch, proximity, roll, speed, temperature & time data.	x			
iMap Weather Radio	Users of this app can receive critical alerts regarding life-threatening weather events in the area they are in. The app can track the user's location in order to provide them with weather and emergency alerts nearby.	x	x		
Instagram	The Instagram app is a popular way for users to take, edit and share photos with others.	x	x		
iScanner	iScanner allows users to bring a portable police/fire/EMS scanner with them wherever they go.	x	x		
IveGot1	This app allows users to identify and report invasive animals and plants in Florida. It brings the power of EDDMapS to a user's iPhone, thereby enabling them to submit invasive species observations directly with their iPhone from the field. These reports are uploaded to EDDMapS and emailed directly to local and state verifiers for review.		x		
JaxReady	Designed to help users monitor weather threats in Jacksonville, FL, and to plan for evacuation in the event of a natural disaster in the area. This app provides access to current threat levels, weather reports, and wildfire updates in the Jacksonville area.	x	x		
Joint Base San Antonio (JBSA)	The JBSA app provides users with a list of key installation support services at all three primary Joint Base San Antonio Locations: Fort Sam Houston, LACKland, and Randolph.	x	x		
Joint Electronic Library	Made to give easy access to Joint Electronic Libraries publications and information on-the-go.	x	x		
Jorte Calendar	The app is designed to look as close to a real personal organizer as possible. It is a highly customizable app that is easy to use and has many functions.	x			x

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Lake Okeechobee Levels	The Lake Okeechobee Levels app displays the most current water level, a graphic view of the trends, and historical water level average (1965-2007), and past water levels (down to the day, week, month, and year for the past two year). Information for this app is provided by the Jacksonville District.	x	x		
LCRA (Lower Colorado River Authority)	This app provides users with information on parks, weather, boat ramps, lake levels, social media, and alerts for the Lower Colorado River area.		x		
LinkedIn	The LinkedIn app provides users with on-the-go access to their professional network. LinkedIn is used as a more professional way of social networking.	x	x	x	x
Marine Charts HD	EarthNC Marine Charts provides users with seamless NOAA marine charts for US waters, user waypoints, and real-time navigation.	x	x		
Marine Matters	This app features reporting on marine commerce on the Great Lakes and Maritimes. In addition, it brings embedded video, audio and slide shows to its content. It is free and can be downloaded or viewed on any tablet, iPad or smart phone as well as on any type of computer.	x	x		
Marine Navigation	This app indicates the directions and the places of a user's location worldwide. It also has an offline GPS navigator for sea, rivers and lakes.	x	x		
Marine Traffic	Marine Traffic displays real-time positions of ships worldwide. It also provides users with real time positions, arrivals, departures, current conditions in ports, and historical data. They are able to search for vessels, create list of watched vessels, and browse picture gallery.	x	x	x	
Math Ref	This app provides users with a way to browse over 1,400 formulas, figures, and examples to help them with math, physics, chemistry and more. It has an expanding list of helpful tools such as a unit converter, quadratic solver, and triangle solver to perform common calculations.	x	x		
Measure Your Land: get area and distance using a satellite map	This app enables users to measure roads, buildings or lands from a bird's eye view.		x		
Memo Pro	Using this app, users can create to-do lists and voice memos that will sync with their Google Calendars		x		

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Military 24/7	Military 24/7 delivers the latest news from each branch of the U.S. Military featuring top news stories, photo galleries, and on- demand content.		x		
Missouri Fishing Maps	The Missouri Fishing Maps app includes links to over 12,500 fishing lakes, rivers, and reservoirs in the state of Missouri. Each fishing location can be searched by name or by selecting a county and reviewing all lakes, rivers, reservoirs, and wetlands in the area. This is useful in that it provides easily accessible and detailed information in the Missouri water resources.	x			
MTBI Pocket Guide by The National Center for Telehealth and Technology	This app serves as a quick reference on the treatment and management of patients with mild TBI and related symptoms		x		
MyWarn	This app delivers critical National Weather Service severe weather risks, watches, and warnings to a user's smartphone (based on their location). It only alerts users about weather where they are (not just county, but exact location) and/or where they want (any other user-designated areas of interest).	x	x		
National Geospatial - Intelligence Agency App Store	Explore the National Geospatial- Intelligence Agency app store with various apps at hand. To access the app store you have to visit this link to view the apps: <a href="https://apps.nga.mil/">https://apps.nga.mil/</a>				
National Guard News	Read articles, view pictures, and watch the latest Minuteman videos direct from your mobile phone from the National Guard.		x		
Navy Individual Augmentee (IA)	This app provides the latest information and resources for U.S. Navy Individual Augmentee sailors, families, commands, and civilian employers. Also, covers the entire IA Process, from NMPS and INCONUS training to Boots on Ground to returning home	x	x		
Navy Life	This app contains information about the life resources available for Navy personnel, retirees and their families.		x		
Navy Seabee Mobile	Seabee Mobile provides coverage of Seabee contributions to global security, maritime strategy and humanitarian efforts.	x	x		

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Normalize	The smart algorithm that powers the Normalize app automatically improves photos without requiring the user to make tedious manual corrections. It will improve various types of photos - even those that are dark, yellow, or already have filters applied to them. This is a helpful tool for improving images.		x		
Office Suite Pro 7	Users can view, edit, print and share their office documents on the go by using this app.	x			
Open Channel Flow Calculator	The Open Channel Flow Calculator app calculates the flows for various configurations of open channels (based on the user's inputs) under uniform steady flow. This app is most useful for sanity checks and quick in-meeting calculations for multiple channel types. It also includes a material selector for fast Manning's "n" lookups.	x	x	x	
Optimum WiFi Hotspot Finder	This app helps users to locate WiFi hotspots near their current location and also provides directions to the chosen WiFi hotspot.		x		
Pano	Pano app allows its users to seamless panoramic photos straight from your phone.	x	x	x	
Paper	This app enables users to capture their ideas as sketches, diagrams, illustrations, notes or drawings and share them across the web.		x		
PDF Creator	This app is capable of creating a PDF document from text. It makes it easy for workers to create PDFs even when they are not at their computer.	x	x		x
PE Civil Engineering Exam Prep Apps	There are several apps designed to help prepare oneself for the PE Civil Engineering Exam.	x	x	x	x
Per Diem for U.S./Continental (Federal)	This app allows travelers to look up Federal government per diem rates by city/state and ZIP code in locations throughout the United States and its territories. Per diem is the daily allowance for lodging (excluding taxes), meals and incidental expenses.		x	x	x
Photo Editor by Aviary	This app provides users with a quick and easy way to edit photos on the go. Workers can find it useful to edit photos on their mobile device in order to improve their pictures and, therefore, oftentimes improve their final product.	x	x	x	
Planimeter - GPS area measure	This app functions as a GPS area distance calculator and measure by tracking distances using Google Maps. It also has a manual option with real-time tracking.	x	x		

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
Play Potomac	Play Potomac is an app created for kayakers who like to play on Potomac river in DC vicinity. The app's features include water level, water and air temperature, and weather information.	x			
Pocket Resume	Users can create, save, and email their resumes with this easily accessible app.	x	x		x
PocketLife Calendar	The PocketLife app has been designed for people who want an easy to use, visually appealing calendar in their pocket. The app has a simple interface that promotes quick intuitive operation. PocketLife's functionality is similar to the built in Calendar app, but with added features and many different looks.		x		
Prime Marine Ltd.	This app includes a list of company services, contact details, a short glossary of shipping terms, information about Georgian port berths, handling rates, etc. It is useful in that it provides the user with information about Georgian ports.	x			
Prime Maritime Ltd.	The Prime Maritime Ltd. app provides information about Georgian ports and also features a shipping glossary.	x			
Pros & Cons	Users can use this app to help them with decision making tasks by listing important decisions and easily organizing the pros and cons of those decisions.	x	x	x	
QR Droid	This app is the ultimate QR code solution. Using the app, users have the ability to scan a QR code in a magazine and watch a video immediately, create a code from a Contact or Bookmark and let a friend scan it to their device—no typing needed. This is a popular form of sharing information.	x			
Quick Graph: Your Scientific Graphing Calculator	This app functions as a graphic calculator capable of displaying explicit and implicit equations as well as inequalities (in both 2D and 3D) in all standard coordinate systems, such as: Cartesian, polar, spherical and cylindrical. This app permits these capabilities all with high speed and visually appealing results, which can be copied, emailed or saved to the photo library.		x		

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
QuickCivil	Quick Civil is designed to provide fast results for common civil engineering calculations. The program currently includes open channel flow, weir, orifice and time of concentration calculations. Various Manning's n tables are also included.	x			
Radiation Map Tracker	The Radiation Map Tracker app lets users determine the levels of radiation that are being reported at various locations around the world.	x	x		
Ready Georgia	An interactive tool designed to help Georgia residents prepare for emergencies in their area.	x	x		
Resume Builder Pro	This app can be used to manage the important details of a user's resume. It also allows users to generate a Microsoft Word file of their resume. The file is automatically sent to the user's e-mail. In addition, this app saves important resume-related details in the cloud for future use.	x			
RiverFlows	RiverFlows offers a quick and easy way to view data from USGS and NOAA gauge sites using an Android device.	x	x	x	
ScanLife Barcode and QR Reader	ScanLife app turns a user's smartphone into an all-in-one, fast QR and barcode reader. It is programmed to make it easy to share information via Facebook and to receive recommendations on other popular barcodes to scan from other users of this app. This app is useful for retrieving and sharing information and connecting with others who wish to do the same.	x		x	x
SeaStorm	SeaStorm allows users to keep track of tropical storm and hurricane activity in the Atlantic and Eastern Pacific basins.	x			
Sense Analog Clock Widget	This app provides users with a digital clock widget that has calendar, time, system info, and weather & forecast information.	x			
Ship Finder	Ship Finder provides near real time "virtual radar" AIS maps. This app works by picking up AIS ship feeds used by all passenger vessels, vessels over 300 tons and increasingly smaller pleasure craft. Info includes information on live moving ships, ship route trails, search by vessel name, port of registration, destination, ETA, MMSI, IMO, Callsign, Heading, Length, Width and Depth.	x	x	x	

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
ShipVault	ShipVault app functions as a free search application with full access to the ship database. Users are able to search ships by IMO number, name or ex-name. The app includes information on ship type, status, IMO, year built, flag, owner, classification, TDW, GT, price, estimated value, ex-names, events and photos.	x	x	x	
Smart Measure	This rangefinder (telemeter) measures the distance, height, width and area of a target with a user's smartphone by using trigonometry.	x		x	
Soil Classify	This app is useful for civil engineers. The USCS provides the user with the soil's symbol and name. The AASHTO classification system shows the user the soil type and G-index.	x	x		
SoilWeb for the iPhone	This app provides users with GPS-based, real-time access to USDA-NRCS soil survey data. It is able to retrieve graphical summaries of soil types associated with the user's current geographic location. This app is useful for understanding the soil composition in a given area.	x	x		
Species Finder	This app from the Center for Biological Diversity allows users to find species listed under the federal Endangered Species Act. Users can find out which endangered species are typically located around the user's location, or anywhere in the US.	x			
Spell Checker Apps	There are many highly rated apps that will assist users with spell checking.	x	x	x	x
Storm Spotter	This app is designed for weather reporting information. It provides users with data from 155 radar sites around the continental U.S., Alaska, Hawaii, Puerto Rico and Guam. Includes weather, satellite, maps, radar and more.		x		
Texas Lake Levels	This app shows water levels for over 100 lakes across Texas. It also includes major Texas water supplies from Lake Texoma to Lake Amistad. Users can access daily data from the Texas Water Development Board and near real time data from the USGS, including feeds from the U.S. Army Corps of Engineers and the Lower Colorado River Authority.	x			
The Clocks	This app features three fundamental types of clocks with iPod music alarm and world clock. It presents another way for users to personalize their smartphones or mobile device to best fit their needs and preferences.		x		

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
The Sea Turtle App	The Sea Turtle app is an interactive app that is useful for tracking endangered sea turtles.	x		x	
The Weather Channel	This app provides users with information on weather, severe weather, social media, and more.	x	x	x	x
Tide Graph	Tide Graph uses the harmonic predictions from thousands of US coastal stations and presents them in an interactive graph. Users can also view an intuitive graph that shows sunrise, sunset, moonrise, moonset, and moon phase at a glance. Users can save recent locations, find locations using their GPS location, and save graphs for later. This app is useful for obtaining tide information for coastal studies.		x		
Tide Prediction	The Tide Prediction app provides information about tides for over 3000 tide and current stations world-wide. It is useful for obtaining information for coastal studies through mobile devices.	x			
TimeClock Free – Time Tracker	The TimeClock app makes it easy to track billable hours and expenses. This data can then be formulated to generate invoices or spreadsheets. It can help workers to stay organized and to be more efficient and accurate with their time.	x		x	
To Do List Voice Memo Pro	This app enables users to create their entries through voice input without the hassle of typing	x			
Tree Identification PRO	Users can use this guide as a tree identifier application for trees in North America. It has the potential to help field workers to identify plant species in their project area.	x			
Twitter	Users can share media, news, events, and information in an organized fashion. The popularity of this app makes it a great marketing/PR tool and a great way to reach the public. It can be used to share information with the public, and also to better understand public perception.	x	x	x	x
U.S. Army Europe	Learn more about U.S. Army Europe to advance U.S. strategic interests across Eurasia.		x		
Unit Conversion Apps	There are many highly rated apps that can easily produce unit conversions for temperature, weight, length, acceleration and more.	x	x	x	x

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
US Army News & Information	Provides users with all Army news sections from www.Army.mil, and thousands of images, videos, and updates from other official US Army social media accounts (Flickr, Twitter, and Facebook).		x		
USACE MICA (Android Only)	US Army Corps of Engineers Mobile Information Collection Application. This app is used to assist with Blue Roof duties and to record flooding damage; Therefore, it can be especially helpful for flood damage and flood control projects.	x			
USAF Rapid Strike	Rapid Strike gives users an interactive experience of what life is like on an Air Force mission.	x	x		
USB Audio Recorder PRO	This app allows users to connect USB recording device to smartphone to record. It can be useful for note taking and speech/meeting recording.	x			
Valley Flood Watch	Users can stay up-to-date with the latest flood information with Fargo-Moorhead's only flood information app, Valley Flood Watch Mobile. The app has the latest from ValleyFloodWatch.com, as well as local radio stations. It has the potential to provide users with basic flood information in the Fargo-Moorhead (ND-MN) area.	x			
Water Tracker Beta	Users can retrieve current data like water level, temperature, and stream flow from USGS servers for rivers, reservoirs, lakes and more. Features include ability to search by current location, user selected location, view graph of last 5 days activity, view data source on map, set alerts for any available condition.	x			
WEA (Wireless Emergency Alerts)	GCI wireless customers can receive Wireless Emergency Alerts (WEA) issued by FEMA. This application notifies a user with the following type of alerts: Presidential, Extreme or Severe Imminent Alerts, Amber Alerts and the Required Monthly Tests.	x			x
Weather HD	This app enables a user to see the weather in high-definition videos, get accurate weather forecasts all around the world, with 7-day and hourly forecasts, and also provides them with an on-screen clock.	x			
WeatherBug	Using this app, people are able to find the latest current weather conditions, forecasts, weather alerts, radar images and more.	x	x	x	x

App Examples	Descriptions (From Google Play or Mac App Stores)	Google Play	Mac App	Windows	BlackBerry
WiFi Hotspot & USB Tether by SVTP	This app provides users with portable mobile Wi-Fi Hotspot and USB Tether, allowing them to share 3G/4G Internet.	x			
Wiki Encyclopedia	The Wiki Encyclopedia app gives users access to Wikipedia online encyclopedia. This is useful in that it serves as a quick look-up or reference for basically any question or concept.	x		x	
Wiki Offline - A Wikipedia Experience	This app allows users to search and browse through the content of all articles even when users are offline.		x	x	
Wildfire Pro	This app provides detailed wildfire incident information from FireWhat.com, and also has active fire perimeter mapping capabilities. This is a useful app for following and understanding wildfire incidents.	x	x		
Workflowy	This app is a useful tool for taking notes and making lists. It can help employees become more organized and efficient.	x	x		
Yahoo	Users are able to view the up-to-the-minute news and information, including stunning photos and high quality videos with Yahoo. With social features built in, this app makes sharing content fun and easy.	x	x	x	
Yammer	Yammer enables users to stay connected to their business wherever they go. It is a private, secure social network for companies. This app offers on-the-go access to real-time conversations happening inside a user's organization.	x	x	x	
YouTube	This app makes it easier for users to access and share videos on YouTube channels. YouTube's incredibly large group of users makes it a useful place for Corps workers to share promotional or informative videos.	x	x	x	
Zillow	Users of this app are able to access real estate & home values on nearly all US homes that could assist with a simplified economic analysis and understanding one's project area.	x	x	x	x





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