This GPS WIZ APP is designed to enhance your MAP usage and experience with the iPhone and/or iPad. It has many features to assist pilots in customizing and optimizing their flight planning and fuel estimates. It has been upgraded to add search capabilities and driving details for point to point navigation with automobiles or walking trails.

It is also useful for many other applications such as hiking, walking tours, geocaching or obtaining accurate map distance measurements and magnetic bearings for a variety of detailed planning purposes. This version has been upgraded to include and display your airport zones on the map.

When the MAP button is pressed, a scaled map will automatically open with your location in the middle of the map target. Pinching the map with 2 fingers allows you to scale the map as per standard Apple finger gestures. You can also pan the map by pushing and moving your finger on the map. When the map is moved, a line is automatically drawn from your current location to the middle of the map target. By placing the map target directly on a point of interest you will get the straight-line distance and magnetic bearing displayed based on automatic geocalculations from your current location to this new point of interest.

Pressing the ACTION icon (on the upper right hand corner of the map) brings up a window with several action choices, namely:

> Fetch Site
> Save Site
> Edit Site
> Save Route
> Edit Route
> Show My Location
> Show Specified Location
> Place Pin1 at MAP target
> Place Pin2 at MAP target
> Send Email
> Cancel

"Fetch Site" will open a list all of your saved sites (e.g. from your own data base) and will take you directly to the site you choose. A yellow line will be drawn from your current location to this selected site and the display will show the distance and magnetic bearing from you to this site. As an example, if you save the location of your car when you park it, this feature will help you to navigate back to your car from a crowded mall or an unfamiliar town, or even a forest by showing you the distance and direction to your car.

If you are currently located at an airport and you pan the map to another airport as your point of interest, accurate flight distance and magnetic bearing calculations are done automatically and the results are displayed to help you in

estimating the flight time and fuel requirements for a flight to this selected airport, as well as providing you with an initial heading on takeoff. By placing pin 1 at the new airport in the middle of the map target, you can now pan to place the map target on a second airport and you will get the distance and magnetic bearing between these two airports automatically, regardless of your current location. Of course these features also apply to any other map features of interest and have valuable potential for estimating distance and direction measurements for a wide variety of applications. For example, if you pan and zoom your map in on the pyramid of Giza in Egypt and place pin 1 on one corner of the pyramid, then pan to the other corner of the pyramid, you will see the actual distance between these corners and the magnetic bearing to that corner displayed on your screen.

"Save Site" will open a detailed display at your current map coordinates and will permit you to name this site. You now also have an Airport Switch which will initialize in the "off" position. If left "off", only the site name and coordinates are saved. If the Airport Switch is turned "on", then Zone Radius and Zone Type settings will be shown. The new site will automatically preselect the most common radius of 5 nautical miles and type of UniCom. These can both be changed by simply tapping the selection that you want to apply. There are 3 zone types available, namely: UniCom, MF (mandatory frequency) and Class-C (controlled airspace). These will be displayed on the map at the specified coordinates with a coloured and shaded circle of green (Unicom), yellow (MF) and red (Class-C). Zone Radius selections are: 5 nm, 7 nm, 10 nm and "Other". "Other" will be displayed in orange. 5, 7 and 10 nm radius values are all common. The "Other" selection allows you to specify the zone radius for major airports or special sites for your own needs. For example, some control zones (e.g. CYYZ - Toronto) have multiple radius values depending on altitude. You can set the Zone Radius to any value from 3 nm to 99 nm. To show 4 zone radius values at a single airport (e.g. CYYZ), you simply define 4 airports at the same coordinates and set the zone radius using "Other" to the appropriate values for each lower or base altitude for each zone radius. For example, one will have a zone radius of 12 nm with a base altitude of 1700 feet. Name this as CYYZ 1700. The next one will have a zone radius of 15 nm for a base of 2000 feet. Name this CYYZ 2000. Similarly for 20 nm and 2500 feet, and 35 nm at 3500 feet. When the map loads it will show 4 rings around CYYZ, one at each of these defined zone radius values. The "Save" button on the top right will save each of the displayed sites to your site table, one at a time. Note that site tables and route tables are fully editable so the cell values can be changed, moved or deleted. These values are safely saved in the iPhone's or iPad's core data to provide secure long term storage within your iPhone. Upgrades will permit safe migration of your data to prevent loss during any upgrade process.

"Edit Site" will open a detailed display for your selected site and will display the same data that you had selected when the site was first saved. You can change any of the settings and save it to overwrite the previous values. Note: With this upgrade, zones have been added so you will need to edit all of your previous

airports to select the airport switch "ON" and set appropriate values for Zone Radius and Zone Type since they did not have these choices in the original release. The original coordinates will be preserved.

"Save Route" is used to place a new route point into your route list. To do this you should use "Fetch Site" for the point of interest, one at a time. When the map settles on this selected point immediately select Save Route to place this point from your database into your route list. Repeat this process for each point on your route. Then use Edit Route to move these points into the correct sequence for your trip. This last step is redundant if you have added them in the correct sequence from the start of your planned trip.

"Edit Route" will open a list of all of your saved route locations and will permit you to rename or edit the name and sequence of these locations. Note: The other details are not editable in the "Edit Route" mode since they came from your database. If they need changing, use "Edit site" to modify them. The "Save" button on the top right will save the current selection to your route table. The "Show" button will generate a map view that plots all of your saved route locations. The map will automatically scale in size so your route list will fit on a single view. You can zoom and pan using finger gestures. If you tap a pin it will show the Site name. Tapping the map away from a pin will hide the Site name. Tapping the bottom right button will remove zones from the map display. Tapping it again will redisplay them. The total route distance is calculated for you and is displayed at the bottom for flight planning. The "Leg" button will highlight the route legs (in green) in sequence and will calculate each leg distance at the bottom. This is a very useful feature for aircraft fuel estimates for each leg. It will also calculate and display the great circle starting true bearing (°T) to the next point and the magnetic bearing (°M) to the next point. Note: On long distance legs this will be the correct great circle starting bearing. Great circle navigation is the shortest distance between two points on a spherical surface. Pilots will find this Route feature invaluable for flight planning a specific sequence of waypoints. Take the time to learn how to use its powerful features.

Once you have created and saved new sites in your table, then simply fetching an airport from your Site list will display this airport at the middle of your display and will automatically calculate the distance and magnetic bearing to this airport from your current location. Pin 1 will be placed at this airport automatically on the first fetch. If you do another fetch, a second location will be placed on your display with the distance and heading from the first selection to the second selection clearly shown. This is a handy feature for initial flight planning. Each time you select another site the distance and magnetic bearing from the first airport is recalculated and displayed. This is a great feature for determining optimum waypoints for flight planning.

"Show My Location" will auto-locate your current coordinates to the middle of the map and will place a pin and a target at this location. If you move the map, by

panning with your finger, the distance "From me to Target" will change, as will the magnetic bearing since the target is now in a new location. Note: If you wish to hide the control zones on the map, simply select Show My Location". To redisplay the control zones, tap the GPS WIZ button on the top left to return to the starting MAP button. This will clear your map. Press the MAP button to start with your location again showing all your control zones on the map.

"Show Specified Location" allows you to enter specific coordinates in either decimal degrees, degree decimal minutes (used in geocaching) or degree-minute-second (DMS) formats. The selected coordinates will be placed in the middle of the map. Remember that west longitudes and south latitudes must be negative. (For example, enter -62.123456 for 62.123456 degrees west longitude, or -62 degrees 7.4 minutes (degree decimal minutes) or -62 degrees 7 minutes 24 seconds in DMS format.) This feature is your best choice if you are creating new sites in your own site table using known coordinates for airport latitude and longitude from a formal publication such as the current Canadian Flight Supplement (CFS) for all Canadian airports. It bypasses the need for unique finger panning and zooming to each point of interest.

"Place Pin1 at MAP target" removes all pins from the map then places a new pin in the middle of the target marker. If you wish to search the map for a unique location, simply use normal finger gestures for zooming in or out and/or moving the map on your screen. Place the point of interest on the centre of the target and select "Place Pin1 at MAP target" to place a pin on that location. You can zoom in to place the pin precisely on your point of interest. The pin's latitude and longitude coordinates are displayed at the bottom of the map in both degree decimal and degree-minute-second (DMS) formats for your convenience. A line is automatically drawn from your current location to this new pin. The distance and magnetic bearing from your current location to this new point will be displayed in the top left upper window.

"Place Pin2 at MAP target" also places a pin in the middle of the target marker. Using normal finger gestures to pan and zoom the map to any desired location allows precise control of this pin's location using the target again. The distance and magnetic bearing from pin 1 to this new pin will be displayed in the top left lower window. This feature is very useful in determining accurate distances between any two points on the map, such as airport to airport. On a global scale you can determine distances between cities anywhere on the planet. On this scale the magnetic bearing represents your initial heading from pin 1 to reach this new location. On a small scale you can use this feature to measure the size of buildings, the length of runways, lengths or widths of lakes or any other feature that interests you. Floatplane pilots will find this feature very useful to see if they can safely land or takeoff from remote lakes and rivers. Walking or hiking paths can be measured accurately by placing pins close together along your chosen route.

You can send an email screenshot by simply selecting "Send Email". A message will be automatically generated with the coordinates in both decimal and DMS formats as well as the actual map with all lines, distances, magnetic bearings and pin locations. You must enter the email addresses as normal. Your contacts within your address book will also be searched to simplify entering the address as in the normal iPhone or iPad email app. A snapshot of the screen will be automatically added to the email to optimize the information transfer. This feature permits quick communication and data sharing of your specific location, a unique map measurement or a full route depending when you select "Send Email".

The Search button will place a SearchBar at the top of the map. When you enter the name of the place of interest into this SearchBar the built-in automatic search capability will list the choices found through this search tool. For example, if you enter CYOW you will see the Ottawa International Airport in the table with an address. If you tap this choice in the table, the map will center on this location and the direct distance and magnetic heading to this location from your location will be calculated and displayed in the top left window. The latitude and longitude of this choice will be also displayed at the bottom of the map.

If you tap the pin at this location you will see the name and location of this choice. A small windup car icon on the left is also seen. If you tap the car icon you will now see the route calculations showing alternate routes and times from your current position to this selected location on the map. These are drive time estimates. At the bottom you can also select Walk, Transit or Ride options. Tapping Walk
will calculate walking times. Transit and ride options may be available in some urban areas and transit details will be shown.

Tapping the GO button will now place the APP into the navigation mode to provide you step by step instructions on how to get to your location. These functions are similar to commercial GPS devices in cars.

The "Aux" button will give you the choice of "Change Map Type" and "Change Map Units".

The "Change Map Type" button changes the map type in sequence between Standard, Satellite and Satellite Hybrid modes. The route line colours will change in the Standard map mode to better highlight the route lines.

The "Change Map Units" button will recalculate the distances to display correctly in meters/Kilometers, feet/Statute Miles or feet/Nautical Miles to suit your needs. These apply to the normal map distances and the route and leg distances in the two operating modes.

Should you wish to take a photo of your current location and attach it to this email, simply step out of the APP and use the iPhone or iPad camera in a normal

way. Then select this photo from your Photo Camera Roll. Press and hold to "copy" the photo then return to this APP to "paste" it into your email.

Enjoy and be creative!

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Note: The World Magnetic Model (WMM) from the National Geophysical Data Center of the National Oceanic and Atmospheric Administration is used to calculate the magnetic declination at the selected latitudes and longitudes to determine magnetic bearing. This software has been updated for the new 2015 model.

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