ChiSail: Executive Summary

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ChiSail was created to fill an important need for sailors in the Chicago area. Satellite weather forecasts are accurate most of the time; but occasionally they differ significantly from actual on-the-water conditions. It is impossible to know without going to the harbor, which poses a major inconvenience. ChiSail utilizes the City of Chicago's network of [weather](#) and [water](#) sensors and combines the data with satellite weather forecasts from Open Weather Map to allow users to make more informed decisions about sailing conditions. Conveniently, many of the sensors happen to be very close to the major hotspots of sailing in the city. Unfortunately, the sensors are only turned on during the spring/summer season, so synthetic sensor data has been included with this app. The app does request real time data from Open Weather Map, however.

Users can add waypoints for locations of interest like "Jackson Park Yacht Club" or "Columbia Yacht Club", using the geographic picker tool. Waypoints are matched with the closest weather and water sensors (which is signified by water/weather "badges" for each waypoint on the home screen). ChiSail will prevent users from selecting locations more than 20km from Chicago because these results will not benefit from nearby sensor data.

From the home screen, users can tap on any waypoint, water or weather sensor to view the latest data from that position. The waypoint section conveniently groups and displays data from its associated sensors in addition to the latest satellite forecast. The home screen also provides visual indications for current conditions: the compass heading on weather sensors shows the current heading of the wind, and the "swiveling" of the compass shows the relative wind speed (higher gusts indicated by more swiveling). Sensors are also color coded to show the data point of greatest interest at that sensor: water sensors are icy blue when temperatures are frigid. Otherwise, the color scales with the height of waves (lighter blue for no waves, darker blue for high waves), and red for hazardous conditions. Likewise, weather sensors are light green for light wind conditions and scale to dark green for heavy wind—and again, red for hazardous conditions.

The home screen is completely customizable; users can sort by category or proximity, disable or enable categories, and delete waypoints. In Settings, users have full control over the units of measurement ChiSail will display.

Finally, users can quickly add a new waypoint by Force Touching the ChiSail icon from their iOS device's home screen.

Given more time, I would like to more richly integrate data from the OpenWeatherMap API; possibly creating map overlays, and showing users data points that have occurred in the recent past (e.g. last 24 hours).