Fluid Tracking by FlowCommand

Lite User Documentation - v1.6

User definition

The intended users for this application are haulers (truck drivers) contracted by Operator to pick up, transport, and drop off water between various locations.

List of Screens

1. Enter Pin to Start Shift
2. Next Stop
3. Report Transfer
4. Enter Pin to End Shift

How to use (process):

1. User opens application and is immediately prompted with screen to *Enter Pin to Start Shift*. Entering the User's assigned pin will trigger a start to the shift. Once the shift begins GPS background tracking will be turned on. Depending on the settings already in place on the phone, the user will likely be prompted by a series of alerts asking for access to notifications, geolocation capabilities, and Shift-Start confirmation.

Screen 1: Enter Pin to Start Shift
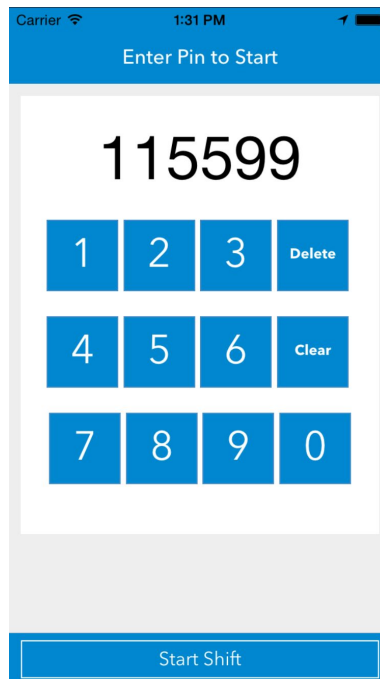
2. The User will be immediately taken to a *Next Stop* screen. Here, the User is assigned the next stop by looking for either (a) the closest disposal or water source calculated by distance and reported waiting times or (b) the assigned location to drop off or pick up water. Some key information about the 'Next Stop' location is shown on this screen for convenience, as well as a button to show this location in the Native Maps application. There is a button/link on the right side of the Navigation Header for the user to manually navigate to the *Report Transfer* page. This navigation option can be disabled in order to prevent Users from reporting erroneous transfers outside a geofence area.

Screen 2: Next Stop
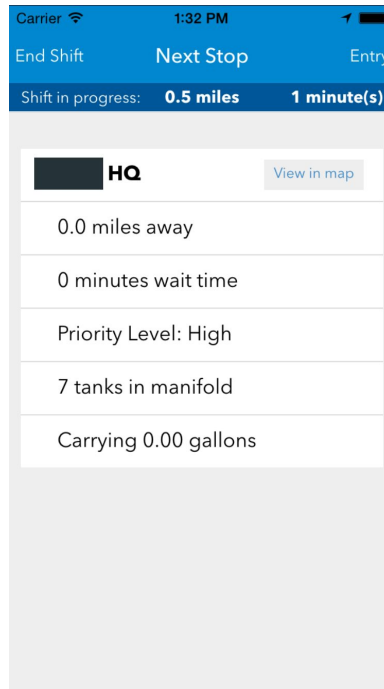
3. Once the User has crossed a geofenced area, they will be automatically prompted with the *Report Transfer* screen. Here they can self report whether they are picking up or dropping off, the volume of their haul, the tank ID (if there are multiple in a battery), and the water quality. Other information such as their vendor company, location, time, etc, is automatically generated and and submitted in the background. **The self-reported options are highly customizable and can be easily changed so that Users can report any variety of other information. There is ability to offer custom dropdowns, auto-completes, calendars, maps, radio buttons, and text boxes.** There is a cancel option on the left hand side of the Navigation Bar if they are not actually completing a transfer.
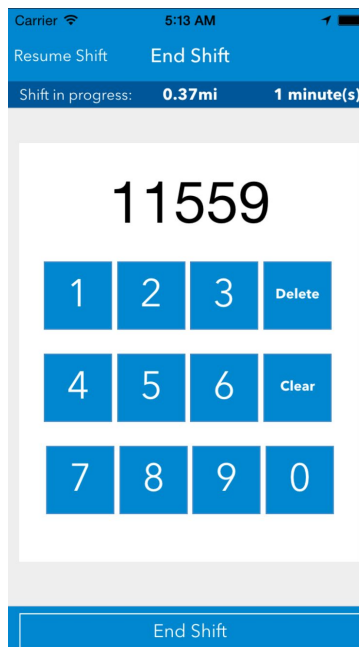
Screen 3: Report Transfer
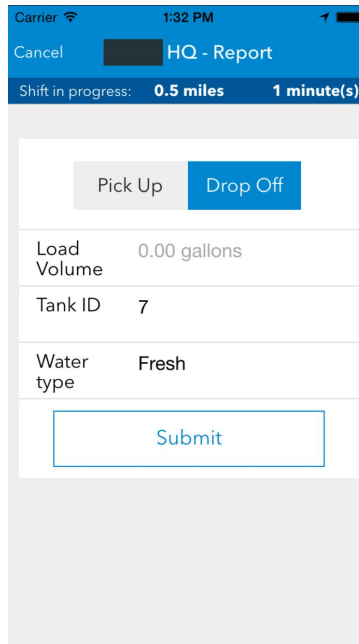
4. When a User is finished with their shift they simply select the End Shift button/link on the left side of the Navigation Bar. This takes them to the *Enter Pin to End Shift* page where they simply re-enter their pin to confirm the end of their shift.

Screen 4: Enter Pin to End Shift

Technical Features

- Once a user has started a shift, their GPS coordinates are tracked regardless of their access to cellular service. If an asynchronous POST request fails, the GPS coordinates are saved to a local SQLite database. That database is synchronized and cleared as soon as the User regains cellular coverage.
- Geofence locations are stored locally so that users can be prompted to self-report transfer information regardless of any particular location's quality of cellular coverage.
- The application maintains a variety of flexibility with respect to settings. Easy options to alter:
    - Custom reporting options
    - Frequency of GPS polling
    - GPS polling as triggered by movement
    - Geofence radius, individual to each location
    - Geofenced locations
    - Accuracy levels (affects power consumption)
    - Activity types (default set to automotive navigation)
    - Alert sounds for crossing or approaching geofences
    - Auto stop tracking after a certain amount of time of no movement
    - Maximum days to persist (how many days of no cellular service before clearing a set of coordinates from the local SQLite db)