



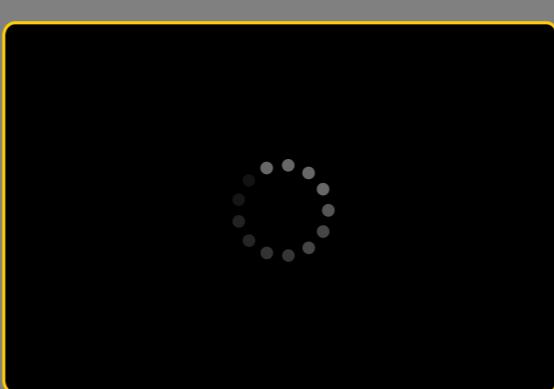
Auto Reference Heuristic Evaluation

ARP: Embedded

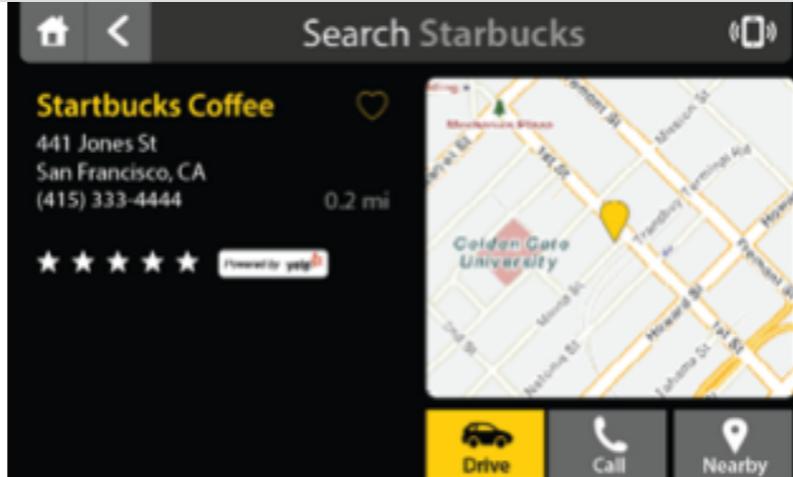
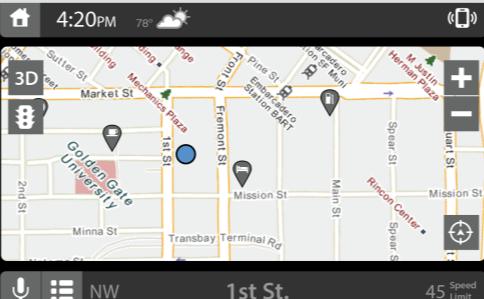
tangible^{ux}

General Observations

Search

| Observations | Screenshots | Recommendations |
|--|--|---|
| Lack of rich and logical search POI pre-existing categories. | | Take a closer look at the IA differences between searching on Yelp (provides business categories) vs. Telenav (provides business listings). |
| During a failed search, spinner screen can hang on the user. |  | Allow the ability to cancel a search (from the wait spinner state) via a cancel button. |
| Why no search in POI section? | | Add search to POI section - This would be very helpful. |

Search Results

| Observations | Screenshots | Recommendations |
|---|---|--|
| Lack of use of UGC Web in order to give rich results. | | Provide richer, more integrated information using Yelp, Foursquare, Google/Zaggat, Michelin Ratings, BazzarVoice etc. |
| Use of Yelp is limited, confusing, and not very useful. |  | Make Yelp integration more apparent and functional. When looking for glass repair places, the temptation was to use Yelp on a smartphone to check out ratings for the top few closest businesses to find the best in the area. We later realized that some business listings DO in fact show some Yelp data. Ideally, the user might be able to filter results on Yelp / other ratings. Having UGC location information is a huge win for people researching POIs. |
| Results list page and single business result are confusing. Hard to discern between two different pages. | | Look for ways (and strong existing patterns) to clarify the differences between a results list page and a result / business / POI detail page. |
| Although helpful to see the associated pins / locations of search results displayed on a map, the Scout map quickly gets inundated with same-sized icons making it hard to discern. |  | Give the user the option to remove visual indicators on the map, and modify map view settings. However, maintain logical display of search results on the map view. |
| Lots of re-entering search data that's already been entered. | | In addition to recent locations, it might be helpful to include ability to view recent searches instead of having to retype the search query. (this intermittently worked for us) |

Look & Feel

| Observations | Screenshots | Recommendations |
|--|---|---|
| <p>The current visual look at feel is heavy and compartmentalized.</p> | | <ul style="list-style-type: none"> • Use dark background judiciously and dynamically (if possible) considering time of day / ambient light. • Continue flattening appearance. Some aspects of the visual design (top and bottom bars, arrows, other glyphs) are flat, while others are skeuomorphic (traffic light, categories). • Simplify the color palette. The yellow gets overused, keep it for your logo. Lots of gray on gray, which is hard to read in direct sunlight. • Lots of strongly competing calls to action (Home, Back, Drive, Info, Nearby) on search results, POI and other pages. • Re-visit certain icons. The Traffic light to indicate traffic is very confusing. The '3D' button is hard to see whether its enabled or not. The Arrows look the same whether they're navigational cues or the lane indicators at the bottom. • Hard to discern whether certain icons are display-only or actual call to actions (e.g. weather icon). |
| <p>The data tether icon seems understandable but rather large and taking up an important corner of the screen real estate.</p> |  | <p>Have icon only appear large when necessary. Keep as small display, but only show larger when applicable; such as when data has been interrupted.</p> |

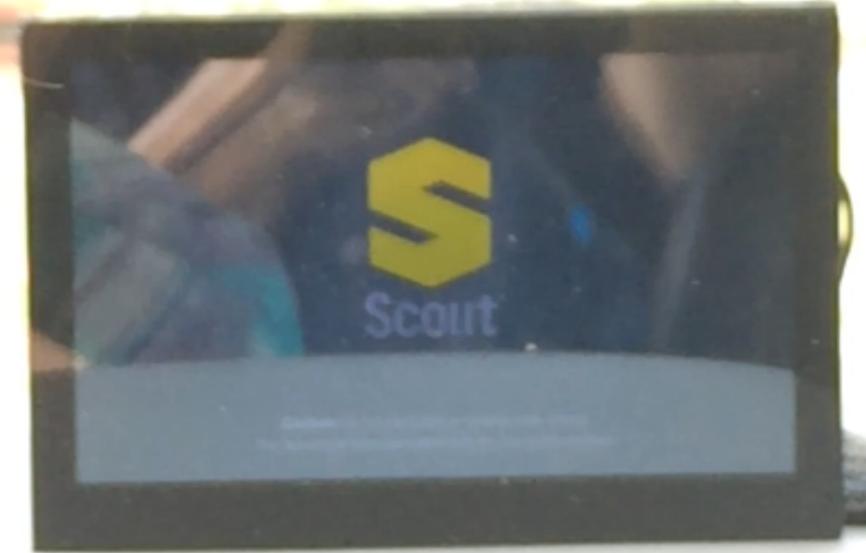
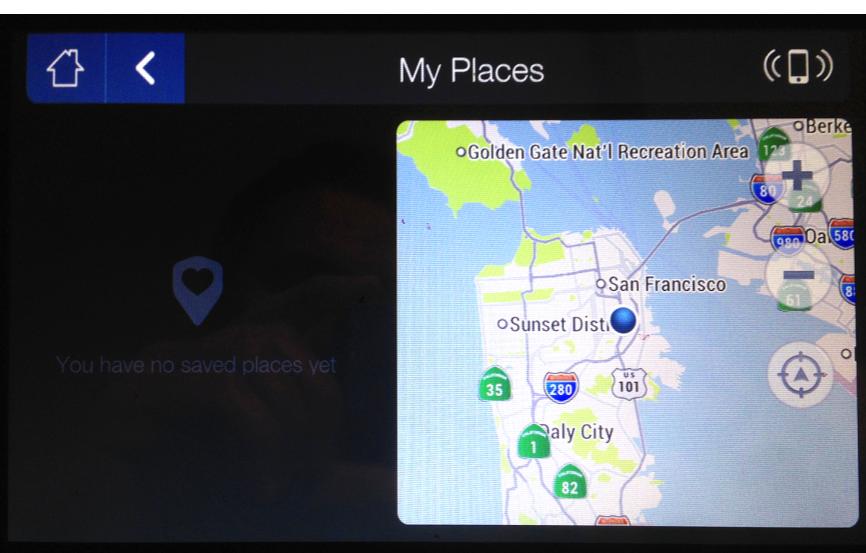
Display Accuracy

| Observations | Screenshots | Recommendations |
|--|-------------|-----------------------|
| GPS issue: Driving near Holy City on 17S the system had me off in the woods and other roads for several miles, even when my indicator crossed over 17. | | Improve GPS accuracy. |
| Wrong split-screen graphic of upcoming split on 17S at the 1S split (the fishhook). | | Improve GPS accuracy. |
| Two instances where GPS told us the destination was on the wrong side of the street. | | Improve GPS accuracy. |
| One instance where system thought we had made a U-turn when we had not. | | Improve GPS accuracy. |
| Multiple instances where turn indicator icons were not displayed correctly (or at all). | | Improve GPS accuracy. |

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Out Of Box Experience

FTUX

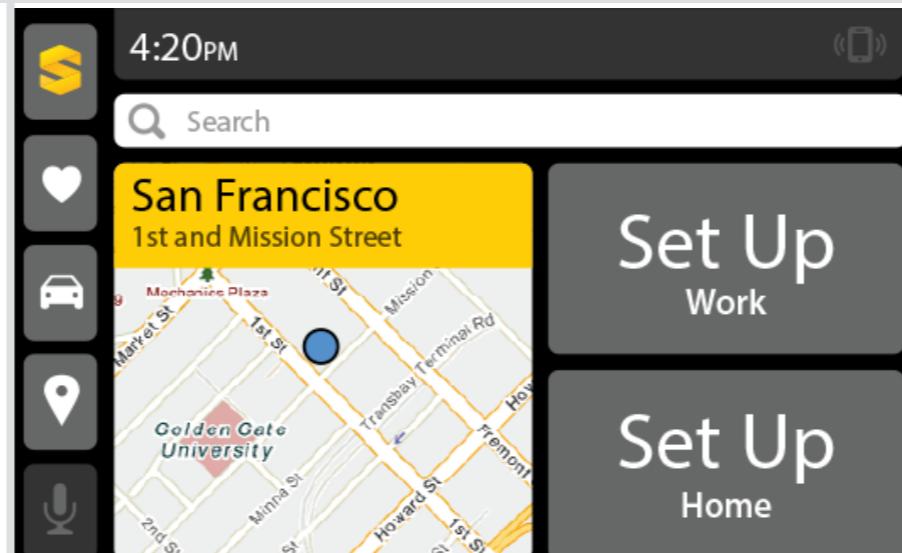
| Observations | Screenshots | Recommendations |
|---|--|--|
| FTU warning message is easy to miss. |  | Make this text larger or otherwise more noticeable to increase the likelihood of first time users to see and understand this important message. |
| FTU warning message may not be as important while vehicle is stationary, but may be incredibly important if vehicle is in motion. | | Set up a conditional to detect if the vehicle is moving and to intelligently display the warning if the vehicle is moving (and not display as prominently if the vehicle is stationary). |
| Empty sections (Such as My Places) don't help the user populate content. |  | Empty sections (such as My Places) should help the user by giving him/her an affordance to take an action, such as a cta that states: "Add new places". |



Overall Dashboard

Embedded Experience

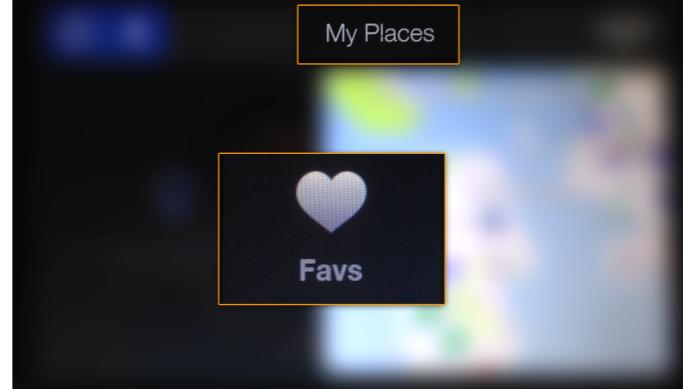
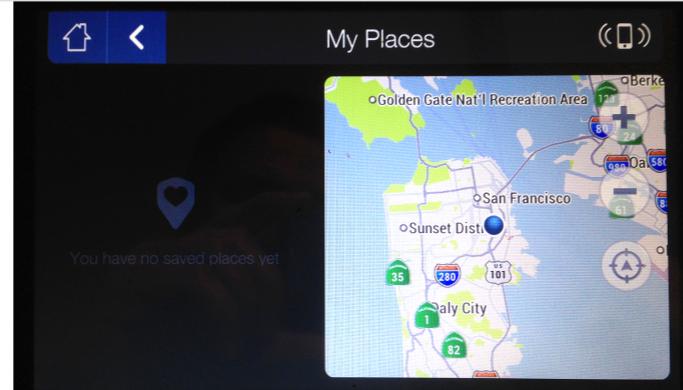
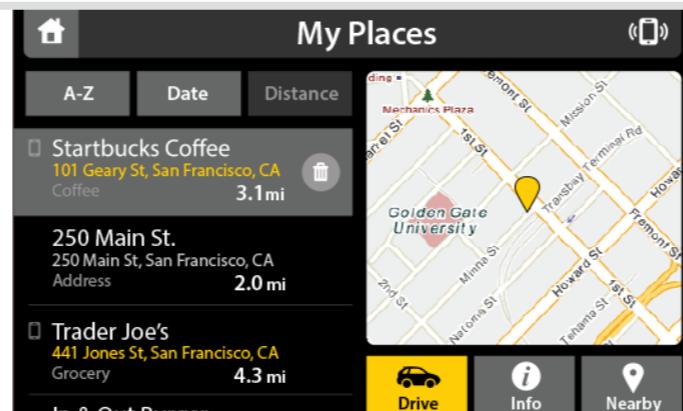
Setting Home & Work

| Observations | Screenshots | Recommendations |
|--|-------------|---|
| <p>Only location to set Home or Work is on Dashboard screen. No way to add location as Home or Work on other location look up screens.</p>  | | <p>Give CTA to “Save location as Home” and “Save location as Work” on location landing screens.</p> |

Resetting Home & Work

| Observations | Screenshots | Recommendations |
|--|---|---|
| <p>Resetting is confusing: If I tapped on the squares on the Navigator screen, why can't I tap them to modify the location? Where to go to reset? (buried in settings)</p> |  | <p>Give easier methods for resetting Work and Home saved locations. Give affordance to un-save locations within location landing screens.</p> |

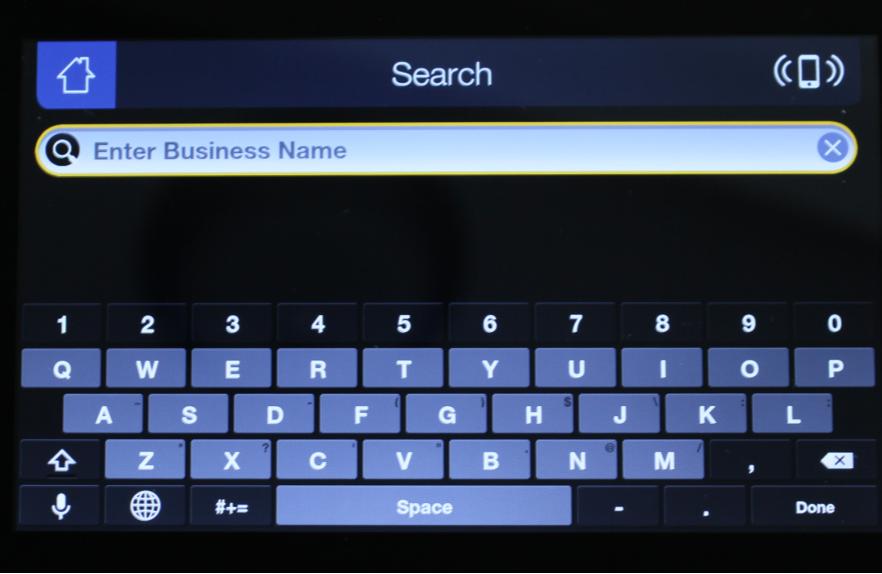
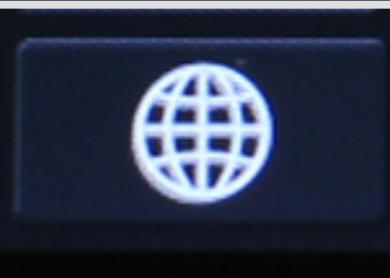
My Places

| Observations | Screenshots | Recommendations |
|--|---|--|
| <p>Two different titles: My Places vs Favs (My places as title of section, but tap on “Favs” to get to “My Places”).</p> |  | <p>Make sure titles are consistent through entire app, regardless of CTA or section title.</p> |
| <p>Empty data scenario: 'My Places' doesn't give the user any affordance to add new places.</p> |  | <p>Empty sections (such as My Places) should help the user by giving him/her an affordance to take an action, such as a cta that states: “Add new places”.</p> |
| <p>Within My Places screen, there's no way to add a new My Place to the existing list.</p> | | <p>Display a prominent call to action to add a new My Place.</p> |
| <p>Stored locations aren't shown in My Places.</p> |  | <p>Favs (/ My Places) seems like a logical place to show a section for the saved locations (Home, Work). They could be displayed and shown in a visually separate space.</p> |

My Recents

| Observations | Screenshots | Recommendations |
|---------------------|-------------|-----------------|
| (works as expected) | | |

Keyboard Layout

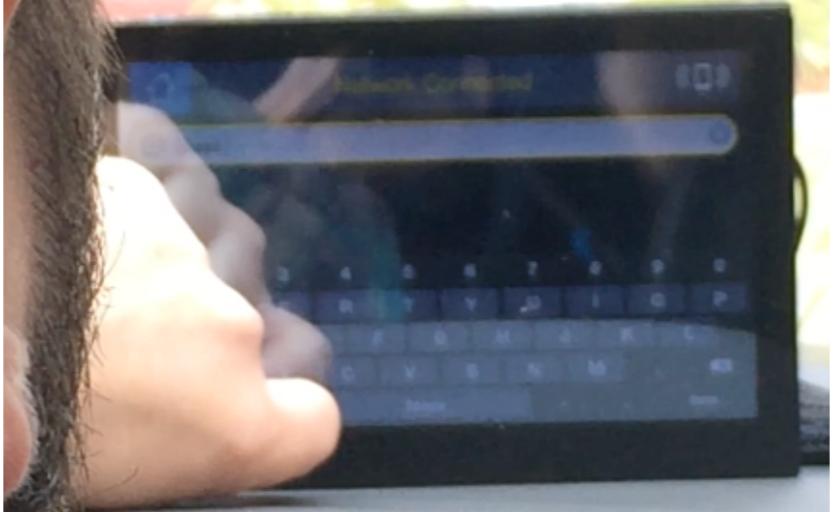
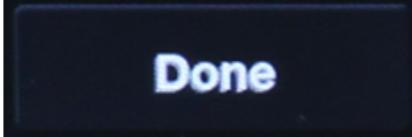
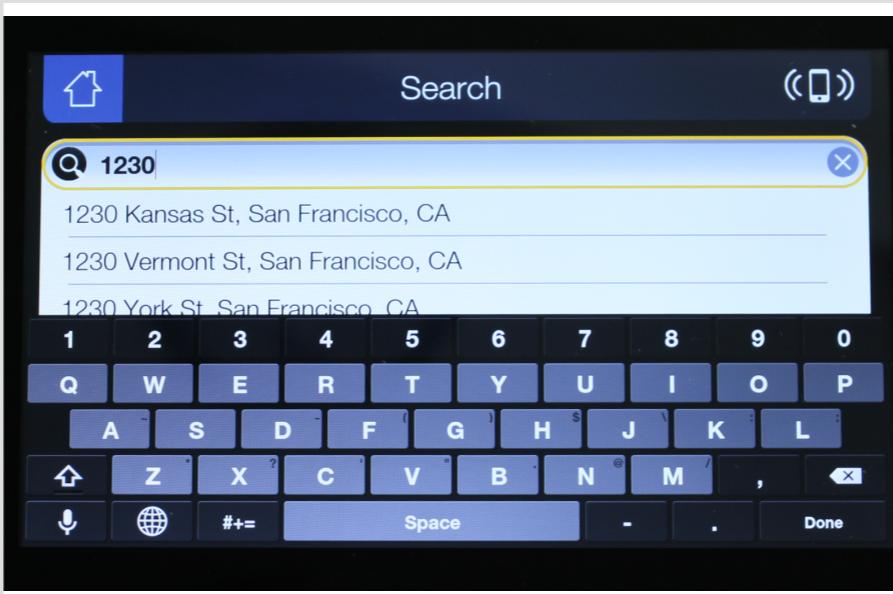
| Observations | Screenshots | Recommendations |
|--|---|--|
| “Done” keyboard CTA is confusing, not explicit to action involved. | | This button CTA label should change, based on the action the user is taking: “Search”, “Save”, etc. |
| Hard to see/find Voice-Mic icon in keyboard. |  | Increase size of Voice Mic Icon, so that if driver needs voice assist, it isn't a struggle to turn on. Also, change appearance of icon to closer resemble specific action. |
| Unresponsive keyboard (Maybe because of prototype unit?). | | Make sure keyboard is responsive and has proper touch sensitivity. |
| QWERTY keyboard layout and only QWERTY keyboard layout. |  | This may be a fine default layout for some markets, but we recommend adding the ability to change keyboard layout and/or language in settings (absent from reference product). If heavy international market then default layout might be ‘orderly’, akin to Volkswagen. |
| Unnecessary buttons clutter keyboard view. |  | Remove anything unnecessary from the keypad (alternate symbols in upper right corners, world icon, etc). |
| The “Intl keyboard” icon doesn't do anything if alt keyboards aren't loaded. | | Either don't display the icon at all (if no alt keyboards are set up), or give the user the option to change or add keyboards. Maybe an interstitial that asks if the user would like to go to prefs to change or add a keyboard? |



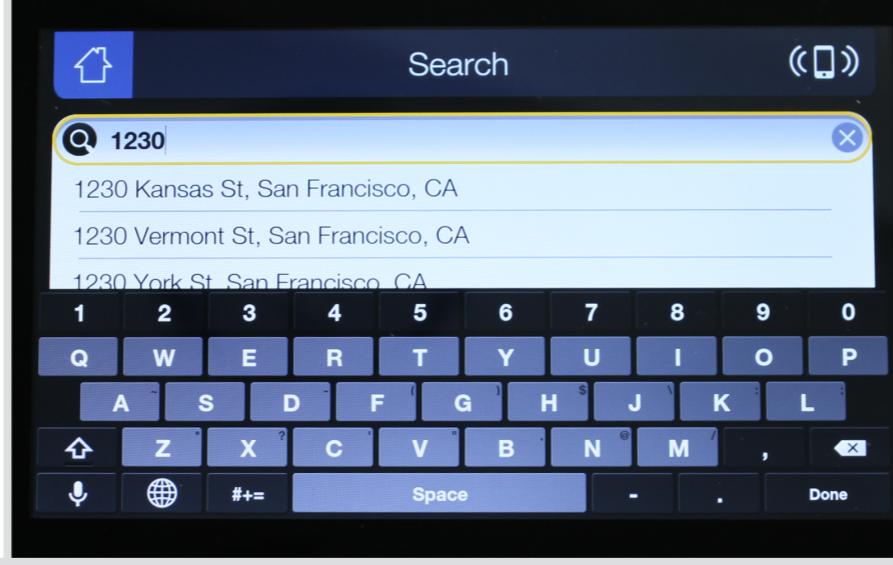
One Box Search

Embedded Experience

Searching POI

| Observations | Screenshots | Recommendations |
|---|---|---|
| Searching for key terms (such as “auto glass” or “glass repair”) did not yield helpful results. |  | Leverage a more intelligent IA data structure so the search yields more helpful and intelligent results. POI search can be rich with smart recommendations. |
| Call to action on keypad is a gray “Done” button. Not very helpful. |  | Use a primary call to action button color and a label that better-reflects action the user should be taking with that button. |
| No relation to saved locations within POI search. (pictured: I entered my work address, which was stored as “Work”, no recommendation or style that indicates that) |  | During POI search, have stored locations, (Home, Work, favs) come up as preferred recommendations. |

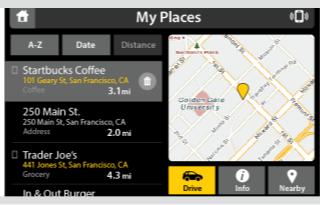
Searching Address

| Observations | Screenshots | Recommendations |
|--|---|---|
| Address search doesn't always actually find the address (may be an issue with prototype?). | | If it's an issue obtaining data, give helpful messaging and next steps. |
| No stored locations displayed on search. (pictured: I entered my work address, which was stored as "Work", no recommendation or style that indicates that) |  | Address search, like POI search, should show stored locations (favs, home, work) when the address is typed. |

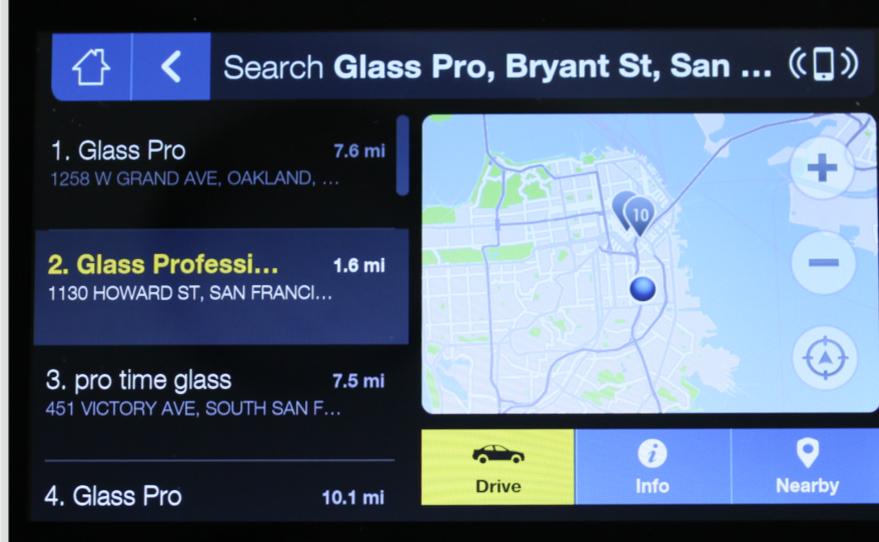
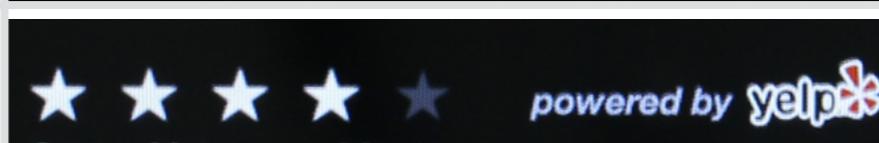
Search results page to Route Planning and Navigation (1)

| Observations | Screenshots | Recommendations |
|--|-------------|---|
| Lots of whitespace within each result line item. | | Improve layout - respect whitespace but don't waste space. |
| Lots of strongly competing CTAs on this screen. | | Decide CTA importance and either eliminate or style based on order of importance. |
| Light gray info text over dark gray background is hard to read during bright sunny days. | | Try to pay attention to more contrasting color palettes. |
| Tapping a business name in the list takes user to a Business Info page with a very limited amount of information. | | This is an opportunity to use UGC-rich APIs such as Yelp and Foursquare. Use good existing content to help users determine answers about their POI. |
| When Yelp rating and Hours are displayed on POI listing screen, the layout is a bit crammed. | | Balance excessive whitespace with rest of layout items. |
| No scrolling on left section is surprising and strange. | | User should be able to swipe to scroll the page, as with most touch devices. |
| Redundant screens with very similar information. | | Try to reduce redundant screens where possible. |
| Once user has scrolled around in the map, it proved difficult to figure out how to get the current business to show centered in the map again. Tapping the My Location (crosshairs) icon centered map on my vehicle, but user must tap "<" (Back) button to return to results list and then tap into business again to see business centered on map. | | Give the user a way to re-center the map with the business as the focus. This could be as a cta or tapping the business title or address could re-center the map. |

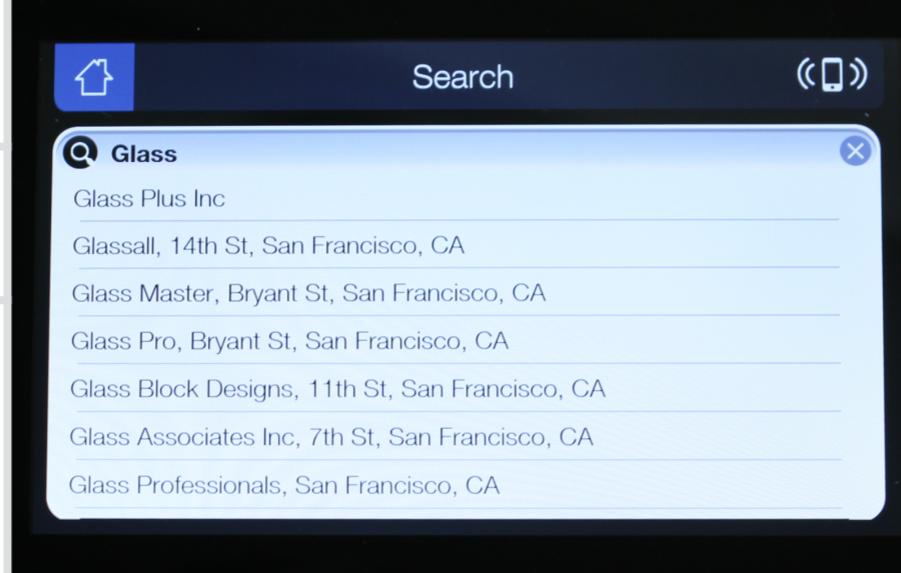
Search results page to Route Planning and Navigation (2)

| Observations | Screenshots | Recommendations |
|--|--|---|
| Not at all apparent that tapping “Info” button is taking user to different “Info” page since most of the page elements (a map with 3-buttons below it) remained largely the same. |  | Display Info as a floating popover. Or provide more rich info on following page to make it worth the tap and load. |
| Didn't initially notice the title bar which outlines the terms that are being searched for within the parameter “Search Nearby:”, so category search feels completely unrelated to the items that were previously searched for. | | Change design/layout to better display the section title, to show that the categories are actually related to the previously entered search term. |
| Within category search, tapping “More” takes user from Nearby’s visual / icon menu to a list menu with 2 additional, vague, categories (without icons): Business and Community. Not immediately clear what types of entities one might find in either category or how these categories differ from the primary categories. |  | Improve IA to make better sense to the end user. |
| Browsing into a business category and then tapping back button returns user to the original search screen and causes search results to be lost. | | Provide users with a path back to search results. |
| Within category search, there's no way to search within the individual categories. | | Provide “Search” as an option at the top of a list of categories akin to VW’s approach. Or instead of a search button, display an open search/POI field, where user can always enter search info. |

Search results page to Route Planning and Navigation (3)

| Observations | Screenshots | Recommendations |
|---|--|---|
| <p>Search results of POIs don't have any Yelp info for comparing one location or another in that list view.</p> |  | <p>Show yelp rating info in list view and maybe other data, such as distance from current location.</p> |
| <p>The yelp rating display on the following "info" screen is really inconsistent. Can't figure out why it only sometimes shows.</p> |  | <p>Make it clear to the user why yelp data is being displayed or not being displayed by using clear labels and visual cues.</p> |

AutoComplete Experience

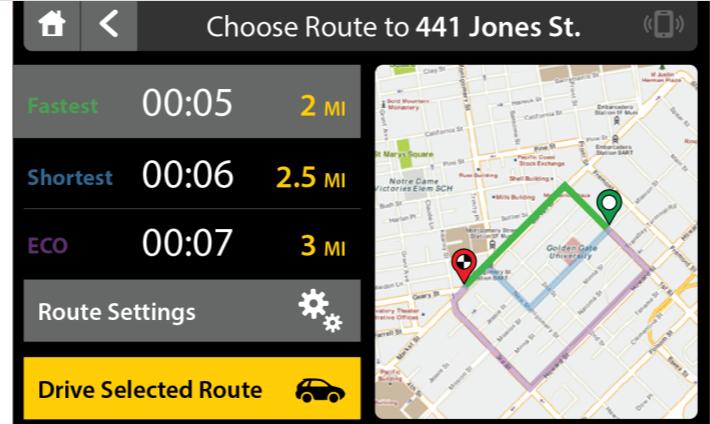
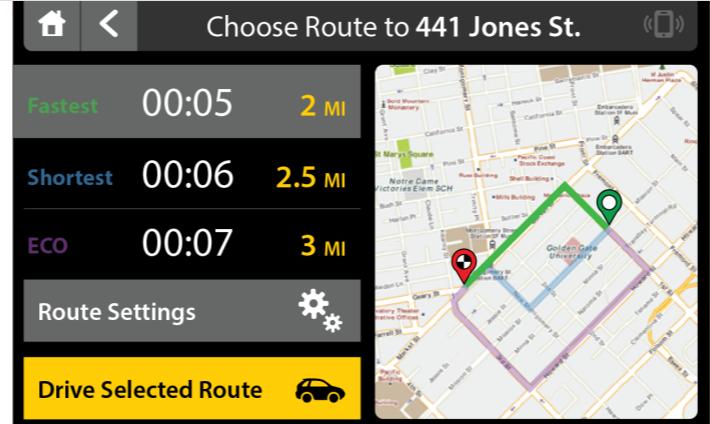
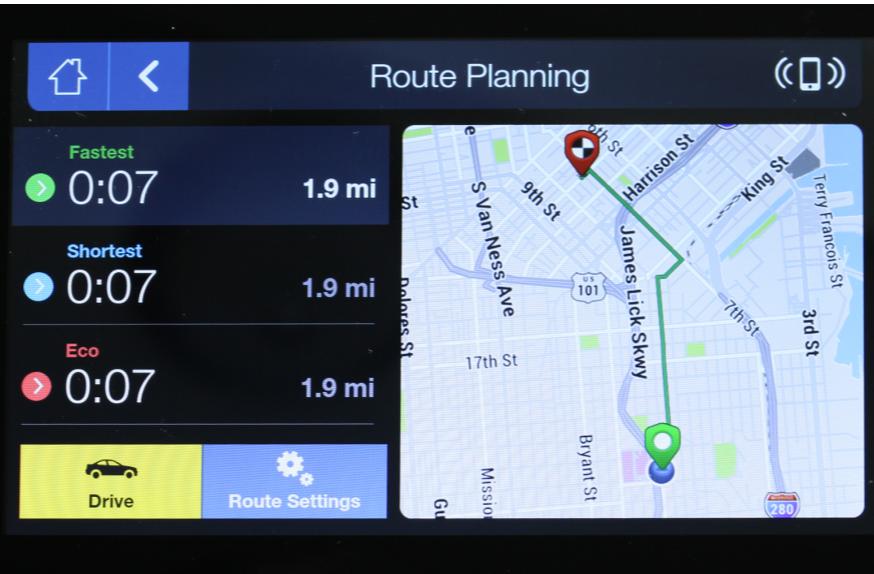
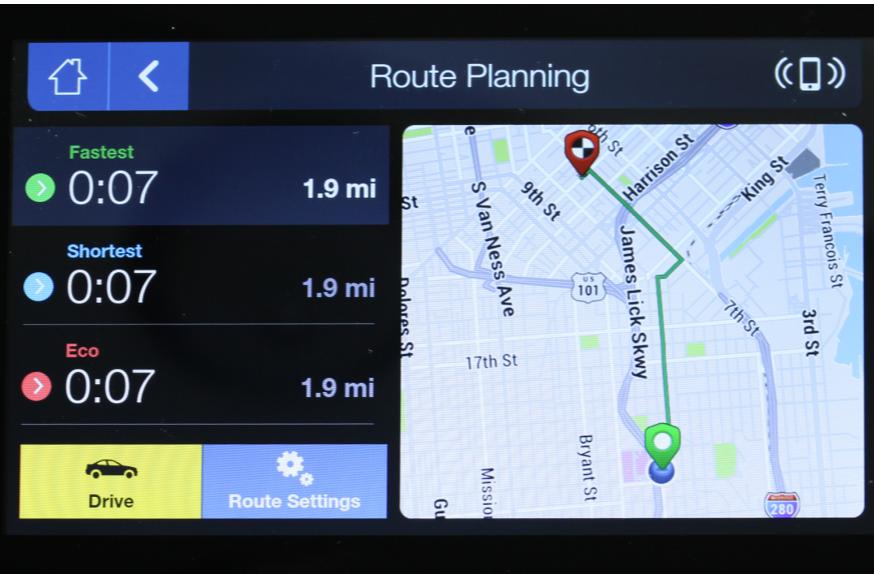
| Observations | Screenshots | Recommendations |
|---|---|--|
| <p>Autocomplete doesn't seem very complete or helpful. (pictured: search for "Glass", hoping to find auto glass as a category, but instead got glass keyword search")</p> |  <p>The screenshot shows a mobile search interface with a dark blue header containing a home icon, a search bar with the text 'Search', and a location services icon. Below the header is a white search results card with a blue header that says 'Glass'. The card lists several search results:</p> <ul style="list-style-type: none"> Glass Plus Inc Glassall, 14th St, San Francisco, CA Glass Master, Bryant St, San Francisco, CA Glass Pro, Bryant St, San Francisco, CA Glass Block Designs, 11th St, San Francisco, CA Glass Associates Inc, 7th St, San Francisco, CA Glass Professionals, San Francisco, CA | <p>Give more intelligent autocomplete listings.</p> |
| <p>Autocomplete listings that show up don't always return listings. If I tap on something in autocomplete, I expect to get a data result.</p> | | <p>Always make sure autocomplete list items match to actual location listing. Don't ever display something that doesn't actually exist.</p> |
| <p>Autocomplete is currently only based on character/word matching.</p> | | <p>Instead, use web APIs to give more intelligent autocomplete suggestions, as well as looking at existing saved items (My Places), and any other stored data.</p> |



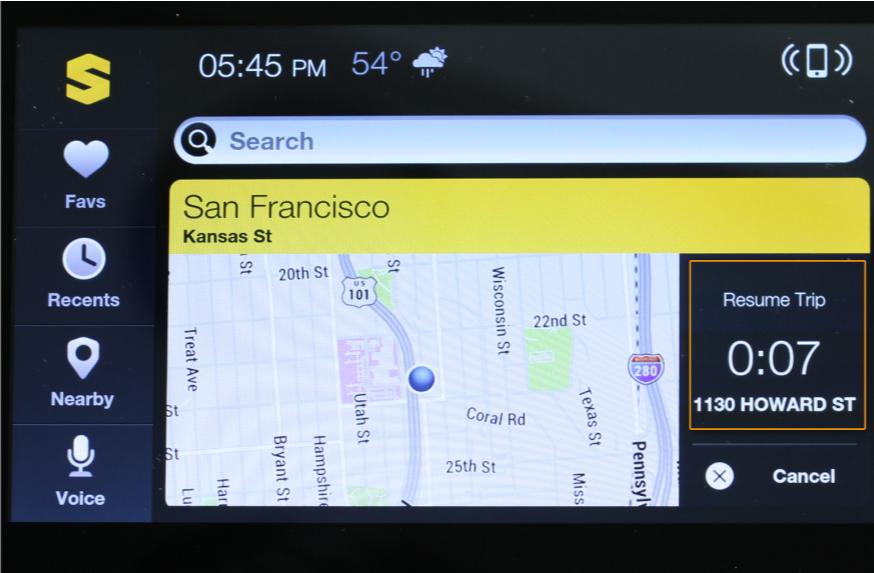
Overall Route Planning

Embedded Experience

Select Route

| Observations | Screenshots | Recommendations | | | | | | | | | | | | |
|---|---|-----------------|------|----------|---------|-------|--------|----------|-------|--------|-----|-------|--------|---|
| <p>The interstitial page that gives 3 options for “route selection” (eco, shortest, fastest) seems unnecessary.</p> |  <table border="1"> <thead> <tr> <th>Route Type</th> <th>Time</th> <th>Distance</th> </tr> </thead> <tbody> <tr> <td>Fastest</td> <td>00:05</td> <td>2 MI</td> </tr> <tr> <td>Shortest</td> <td>00:06</td> <td>2.5 MI</td> </tr> <tr> <td>ECO</td> <td>00:07</td> <td>3 MI</td> </tr> </tbody> </table> | Route Type | Time | Distance | Fastest | 00:05 | 2 MI | Shortest | 00:06 | 2.5 MI | ECO | 00:07 | 3 MI | <p>This page is often times unnecessary. Instead, have this as a user setting that the user can save as a preference. Allow the user to toggle his/her choice in the Route Settings screen.</p> |
| Route Type | Time | Distance | | | | | | | | | | | | |
| Fastest | 00:05 | 2 MI | | | | | | | | | | | | |
| Shortest | 00:06 | 2.5 MI | | | | | | | | | | | | |
| ECO | 00:07 | 3 MI | | | | | | | | | | | | |
| <p>The naming given to these route ‘types’ (Fastest, Shortest, Eco) may not always be accurate and may often be the SAME route.</p> |  <table border="1"> <thead> <tr> <th>Route Type</th> <th>Time</th> <th>Distance</th> </tr> </thead> <tbody> <tr> <td>Fastest</td> <td>00:05</td> <td>2 MI</td> </tr> <tr> <td>Shortest</td> <td>00:06</td> <td>2.5 MI</td> </tr> <tr> <td>ECO</td> <td>00:07</td> <td>3 MI</td> </tr> </tbody> </table> | Route Type | Time | Distance | Fastest | 00:05 | 2 MI | Shortest | 00:06 | 2.5 MI | ECO | 00:07 | 3 MI | <p>Sometimes, we’d get results that had all three options as the same route! If this is the case, don’t show this screen at all. It shouldn’t ask ever ask a question where the answer is three of the same items. If the 3 results are the same, skip this step.</p> |
| Route Type | Time | Distance | | | | | | | | | | | | |
| Fastest | 00:05 | 2 MI | | | | | | | | | | | | |
| Shortest | 00:06 | 2.5 MI | | | | | | | | | | | | |
| ECO | 00:07 | 3 MI | | | | | | | | | | | | |
| <p>The green, yellow, color coding as it is applied to route selection goes against existing stereotypes and meanings for those colors.</p> |  <table border="1"> <thead> <tr> <th>Route Type</th> <th>Time</th> <th>Distance</th> </tr> </thead> <tbody> <tr> <td>Fastest</td> <td>0:07</td> <td>1.9 mi</td> </tr> <tr> <td>Shortest</td> <td>0:07</td> <td>1.9 mi</td> </tr> <tr> <td>Eco</td> <td>0:07</td> <td>1.9 mi</td> </tr> </tbody> </table> | Route Type | Time | Distance | Fastest | 0:07 | 1.9 mi | Shortest | 0:07 | 1.9 mi | Eco | 0:07 | 1.9 mi | <p>This same color scheme is used (more appropriately) to indicate roadway speed elsewhere throughout the Scout experience.</p> <p>Green = Good, Go, Fast Yellow = Caution, Slow Red = Bad, Stop</p> |
| Route Type | Time | Distance | | | | | | | | | | | | |
| Fastest | 0:07 | 1.9 mi | | | | | | | | | | | | |
| Shortest | 0:07 | 1.9 mi | | | | | | | | | | | | |
| Eco | 0:07 | 1.9 mi | | | | | | | | | | | | |
| <p>The color coding scheme for routes is unnecessary for the user to discern between routes and could prove confusing.</p> |  <table border="1"> <thead> <tr> <th>Route Type</th> <th>Time</th> <th>Distance</th> </tr> </thead> <tbody> <tr> <td>Fastest</td> <td>0:07</td> <td>1.9 mi</td> </tr> <tr> <td>Shortest</td> <td>0:07</td> <td>1.9 mi</td> </tr> <tr> <td>Eco</td> <td>0:07</td> <td>1.9 mi</td> </tr> </tbody> </table> | Route Type | Time | Distance | Fastest | 0:07 | 1.9 mi | Shortest | 0:07 | 1.9 mi | Eco | 0:07 | 1.9 mi | <p>The estimated time and distance elements should be prominently displayed to best promote human route comparison (akin to Google Maps and Apple Maps route selection).</p> |
| Route Type | Time | Distance | | | | | | | | | | | | |
| Fastest | 0:07 | 1.9 mi | | | | | | | | | | | | |
| Shortest | 0:07 | 1.9 mi | | | | | | | | | | | | |
| Eco | 0:07 | 1.9 mi | | | | | | | | | | | | |

Resume Trip

| Observations | Screenshots | Recommendations |
|---|---|---|
| Hard to notice Resume Trip on Navigator screen. |  | Improve CTA and/or add CTA on other screens so it's easy to find. **Follow design spec to match larger CTA and more helpful dialogue |

End Trip

| Observations | Screenshots | Recommendations |
|---------------------|-------------|-----------------|
| (works as expected) | | |

Multi-Stop Route Planning

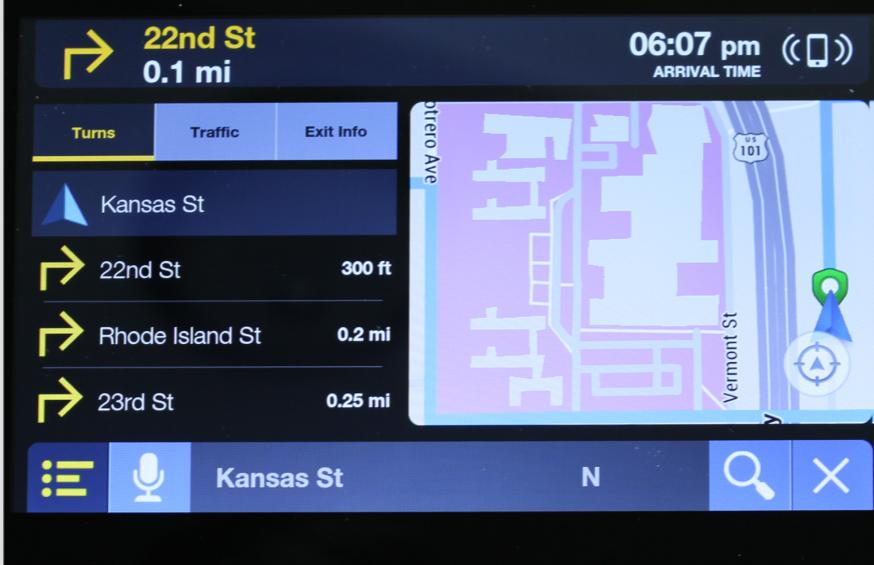
| Observations | Screenshots | Recommendations |
|---|---|--|
| Multi-stop planning is very confusing in its current implementation. Confusing; adding a waypoint isn't entirely clear, fear of wiping out existing route. | | Think about using a "+" to denote "add new destination to existing route". |
| Why can I only add *one* waypoint? |  | Allow user to add more than one waypoint. |
| Once another destination is chosen, a timed dialogue prompts the user if s/he wants to add as waypoint or entirely new route "add as waypoint or set as destination" - neither option looks tappable. Timed interstitial is easy to miss. | | Think about changing timed interstitial to either longer time or non-timed interstitial instead. |



Overall Navigation

Embedded Experience

Navigation Turns View

| Observations | Screenshots | Recommendations |
|---------------------|--|-----------------|
| (works as expected) |  A screenshot of a navigation application interface. At the top, it displays "22nd St" and "0.1 mi". The time "06:07 pm" and arrival time are shown. Below this, there are three tabs: "Turns" (selected), "Traffic", and "Exit Info". A list of turns is provided: "Kansas St" (with a blue arrow icon), "22nd St" (0.1 mi), "Rhode Island St" (0.2 mi), and "23rd St" (0.25 mi). To the right is a map showing the route, with "Ottero Ave" and "Vermont St" labeled. The bottom of the screen includes icons for settings, microphone, and search, followed by the text "Kansas St" and directional indicators (N, S, E, W). | |

Navigation Exit View

| Observations | Screenshots | Recommendations |
|---|---|--|
| Initially thought this was a call to action to “Exit this view” Wondered why this was a blank screen. |  A screenshot of a navigation application interface. At the top, it displays "22nd St" and "0.1 mi". Below this is a navigation bar with three tabs: "Turns" (blue), "Traffic" (white), and "Exit Info" (yellow). The "Exit Info" tab is selected. To its right, the text "06:07 pm ARRIVAL TIME" is shown next to a signal icon. The main area contains a map with several colored routes (purple, blue, green) and street names like "Ottawa Ave" and "Vermont St". A green location marker is placed on the map. At the bottom, there's a toolbar with icons for menu, microphone, search, and cancel, along with the text "Kansas St" and a north arrow. | Think about more relevant label names that might make more sense for this view option. |

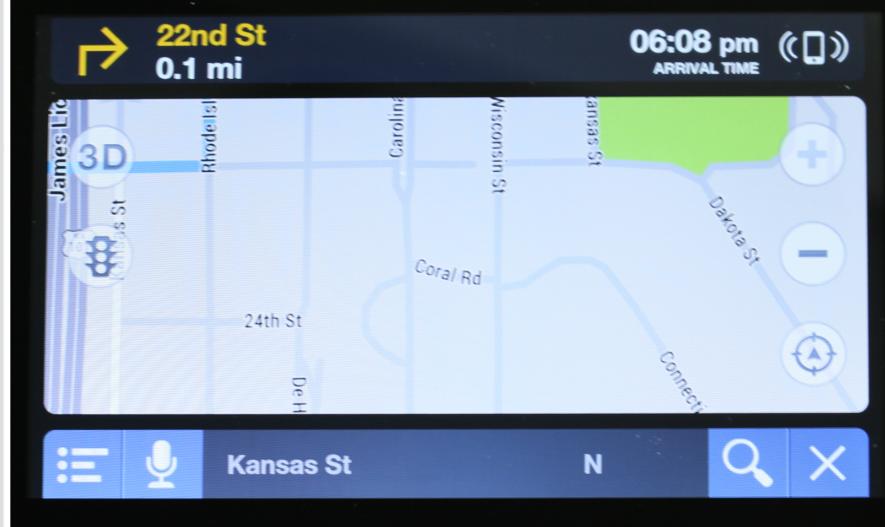
Navigation Junction View

| Observations | Screenshots | Recommendations |
|---------------------|-------------|-----------------|
| (works as expected) | | |

Waypoints in Navigation

| Observations | Screenshots | Recommendations |
|--|--|---|
| Separate icons are confusing as their meaning. |  A screenshot of a navigation application interface. At the top, there's a header with icons for back, forward, and search. Below it, the title "Route with Waypoint" and a signal strength icon. The main area shows a map of San Francisco with a blue route line. Two waypoints are marked: one at "Li Kwai Moon" (1001 POTRERO AVE, SAN FR...) and another at "S F Window Factory" (1130 HOWARD ST, SAN FR...). The route starts at the current location, goes through S Van Ness Ave, 16th St, and Harrison St, then follows I-80, I-101, and I-280. A green location pin is placed on the map near the end of the route. At the bottom, there are two buttons: "Drive" (yellow background) and "Switch Waypoint" (blue background with white arrows). | Improve icons and when adding waypoints, make icons numbers or letters to indicate which waypoint is being pointed out. |

Quality Of Maps

| Observations | Screenshots | Recommendations |
|---|---|---|
| <p>Left-side icons which are laid over the map are not very easy to read.</p> <p>Might be unclear that + is zoom, since it's used as a different icon within the app.</p> |  | <p>Re-work icons so they're flat and contrasty. Also, make sure icons are very clear when they're ON or OFF.</p> <p>Maybe use a different glyph than the "+".</p> |

Traffic Display & Traffic Routing

| Observations | Screenshots | Recommendations |
|---|---|---|
| Traffic icon confusing and unclear. Had no idea what this was until I played with it for a bit. Icon hard to see over map. |  | Use a different icon that makes more sense. Traffic is a bunch of cars on a freeway, not a stoplight. |
| | | Use a flat, more contrasty icon. |

Auto-Zoom & 3D View

| Observations | Screenshots | Recommendations |
|---|---|---|
| 3D toggle is really hard to see over map. |  | Make icon flat and contrasty so it is easier to see layered over the map. |
| Difficult to discern button state for 3D view icon. |  | Make icon flat and contrasty so it is easier to see layered over the map. |

tangible^{ux}

All POI

Embedded Experience

All POI

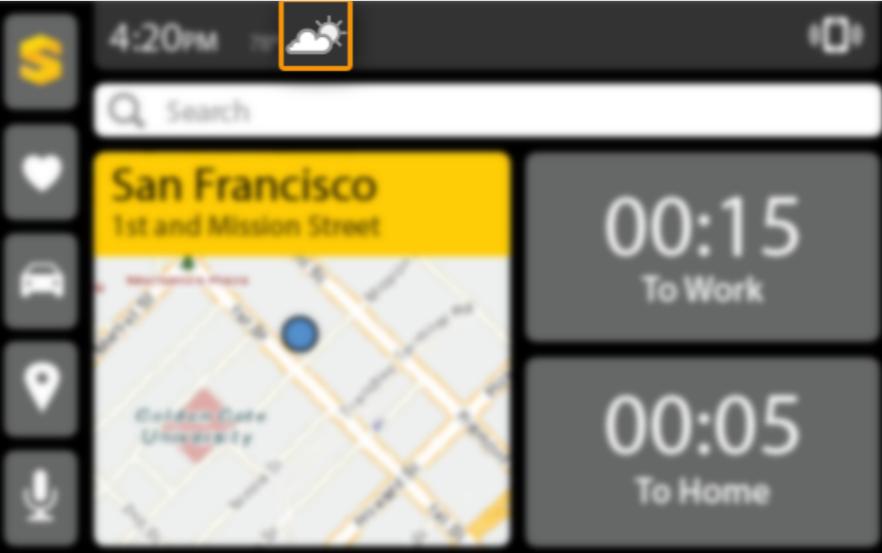
| Observations | Screenshots | Recommendations |
|--|-------------|---|
| POI is not giving rich recommendations: no categories or intelligent search. | | Use UGC-rich APIs to give better recommendations. |



Weather & Weather Page

Embedded Experience

Weather

| Observations | Screenshots | Recommendations |
|--|---|---|
| <p>Hard to notice weather icon is tappable.</p> <p>No Idea weather page even existed, until I tapped on the weather icon on the top of the Navigator screen. I had assumed that icon was for display only. Is that the only way to access it? Seems hard to discover and almost like an easter-egg because the weather icon doesn't look like a CTA.</p> |  A screenshot of the Navigator app interface. At the top, there's a dark header with a yellow 'S' icon, a search bar with the placeholder 'Search', and a weather icon showing a sun partially obscured by clouds. Below the header is a map of San Francisco with a yellow overlay for 'San Francisco 1st and Mission Street'. To the right of the map are two cards: one for 'To Work' (00:15) and one for 'To Home' (00:05). On the far left, there's a vertical sidebar with icons for a heart, a car, a location pin, and a microphone. | <p>Make weather icon look more like a CTA and also make it clear that it is tappable.</p> |