**Get oriented on the map fast**

**Screenshot placeholder:** “Map with SA3 boundaries and Topographic style.”  
**Alt text:** Aged-care map centered on Australia with SA3 boundary overlay and style picker expanded.

**1) Pan, zoom, and read distances**

**Pan & zoom**

1. **Zoom** using the **+ / –** buttons in the **top-right** (Navigation control).
2. **Pan** by click-dragging the map canvas (standard map interaction).
3. The map opens **centered on Australia** at **zoom 4**; zoom range is **3–18**.

**Note:** If the map is still loading, you’ll see a **“Loading Australian map.”** overlay.

**Distances & scale**

* Use the **scale bar** in the **bottom-right** to estimate real-world distances.

**2) Change Map Style (Basic / Topographic / Satellite / Terrain / Streets)**

**Open Map Settings**

1. Click **Map Settings** to expand the panel.

**Pick a style**

1. In the **Map Style** section, open the dropdown and choose one of:
   * **Basic**, **Topographic**, **Satellite**, **Terrain**, **Streets**.
2. While a change is in progress, the selector shows **“(Changing…)”** and temporarily disables inputs; the currently selected style in the list shows **“(Loading.)”**.

**What each option loads under the hood (for reference):**  
Basic → MapStyle.BASIC; Satellite → MapStyle.SATELLITE; Terrain → MapStyle.OUTDOOR; Streets → MapStyle.STREETS; Topographic (default fallback) → MapStyle.TOPO.

**After a style change**

* The map **restores any boundary overlays and facility markers** that were on the map before the change (styles reload the base map and clear layers; the app re-adds them automatically).

**Note:** The app also **preloads styles in the background** so later switches are faster (see Section 4).

**3) Pick Boundary Controls (SA2 / SA3 / SA4 / LGA / Postcode / Locality / ACPR / MMM)**

**Open Boundary Controls**

1. In **Map Settings**, the **first** section is the boundary picker. Select the geographic layer you need:
   * **SA2**, **SA3**, **SA4**, **LGA**, **Postcode**, **Locality**, **ACPR**, **MMM**.

**What happens when you pick a boundary**

1. The app clears old boundary sources/layers, **loads the selected boundary GeoJSON**, and draws **outlines** (with a separate hidden **highlight** layer used when you click).
2. While the file loads, a **“Loading boundary data…”** banner appears at the bottom-left. If something fails, you’ll see an error with **Try Again**.

**Warning:** **SA2** is a **large** dataset; the app logs that SA2 may take longer to fetch (≈170 MB). If your network is slow, expect a pause the first time.

**Click to highlight a boundary**

* Click inside a polygon to **highlight** it. The app applies a filter on the \*-highlight layer and stores the **feature code + friendly name** (e.g., SA3 name).

**Tips for useful zoom levels**

* For legibility, these **minimum practical zooms** are used internally when deciding if a zoom-in suggestion is needed:  
  SA4 = 5, SA3 = 6, LGA = 7, SA2 = 8, Postcode = 9, Locality = 11, ACPR = 6, MMM = 7.

**4) Understand preloading banners for boundaries & styles**

When **Map Settings** is expanded, you may see one or both banners at the top of the panel:

**A) Loading Boundary Data**

* Text: **“Preloading X/Y boundary files”** and a progress bar.
* Meaning: The app is **downloading and caching** each boundary dataset (SA4 → … → SA2). When **X=Y**, boundary preloading is complete.
* Behind the scenes, each file is fetched and stored in a **boundary data cache**; the overall banner ends when all are cached.

**B) Loading Map Styles**

* Text: **“Preloading X/Y map styles.”**
* Meaning: The app is **downloading and caching** the five base styles so switching later is instant. The banner disappears when all styles are ready.

**Note:** The app **starts both preloads as soon as the map loads**. You don’t need to do anything; the banners are just status indicators.

**5) FAQ & troubleshooting**

**Q1. Where are the zoom buttons and scale bar?**  
Top-right (**Navigation control**) and bottom-right (**Scale bar**) respectively.

**Q2. The map looks empty—am I in the right place?**  
Yes. The default view is **center Australia**, **zoom 4** (you’ll see the continent outline first). Zoom in or add a boundary overlay.

**Q3. I changed the style and my boundary lines disappeared.**  
That’s expected while the base style reloads; the app **re-adds** your boundary overlay and **facility markers** automatically once the style is ready.

**Q4. What do the preloading banners mean?**

* **Boundary** banner = caching all boundary files (progress **X/Y**).
* **Styles** banner = caching all map styles (progress **X/Y**).

**Q5. How do I know a boundary is still loading?**  
Look for **“Loading boundary data…”** at bottom-left. If there’s a problem, you’ll see **Boundary Loading Error** with **Try Again**.

**Q6. Clicking a polygon didn’t highlight anything. Why?**  
Highlighting works on the **currently selected** boundary layer only. Ensure you picked the right layer in **Map Settings**, then click inside the polygon.

**Q7. Which boundary should I use for quick orientation?**

* **SA3** or **SA4**: good for national context (coarser).
* **SA2** or **LGA**: better for local planning.  
  For readability, use the **minimum practical zooms** listed above.

**Q8. Why is SA2 slower the first time?**  
The SA2 file is large; the app logs it may be ~**170 MB**, so the first load can take longer. Subsequent loads use the cache.

**Q9. Can the app switch my boundary layer automatically when I search?**  
Yes. If you search an **LGA/SA2/SA3/SA4/Postcode/Locality**, the app **auto-switches** the boundary type to match the search result.

**Q10. What are the defaults on first load?**

* **Boundary layer**: **SA2**.
* **Map style**: **Basic**.
* **Heatmap** and facility layers can be present elsewhere in the app; they don’t affect the basics here.

**6) Quick reference (actions)**

1. **Zoom & pan** → Use **top-right +/–** and drag the map.
2. **Change style** → **Map Settings → Map Style →** pick **Basic/Topographic/Satellite/Terrain/Streets**.
3. **Show boundaries** → **Map Settings →** choose **SA2/SA3/SA4/LGA/Postcode/Locality/ACPR/MMM**.
4. **Highlight an area** → Click inside the polygon to highlight and capture its name/code.
5. **Watch preload status** → Check the **blue (boundaries)** and **purple (styles)** banners in **Map Settings**.

**Accessibility tip:** The **Map Style** control also shows the current style as a small **capsule label** (e.g., topo, basic), which is helpful when you’re reviewing screenshots or recordings.

**Find a place or facility by name (or code)**

**Screenshot placeholder**: “Search bar with mixed geo results.”  
**Alt**: Search UI showing SA2, LGA, and Facility suggestions for a query.

**What you can search**

You can search **SA2 / SA3 / SA4**, **LGA**, **Postcode**, **Locality**, and **specific facilities** (residential, home care, retirement, multipurpose) — including by **codes** where available (e.g., SA2 code).

**Note**: Saving a search or facility requires you to be signed in (the search bar requires a userId, and bulk facility save explicitly checks login).

**Step-by-step**

**A) Start a search**

1. Click the search input (placeholder shows **“Search map”**).
2. Type **2+ characters**. After a 300 ms debounce, the **Locations** list appears with up to **6** matches.

**Tip**: Results include LGAs, postcodes, localities, SA2/3/4 areas, and facilities with type badges.

**B) Use live suggestions & history**

1. If there are no matching locations, you’ll see **Suggestions** (smart defaults); when the input is empty, you’ll see **Recent Searches** (last 5).
2. Click a suggestion or a recent item to search immediately.

**Note**: You can clear **Recent Searches** from the dropdown (trash icon).

**C) Open a result (applies center & bounds)**

1. Click a row under **Locations** to move the map to that place/facility. The app passes the **center** and (if available) **bounds** to the map, and stores the result as your **last search**.
2. Press **Enter** to search; press **Escape** to close the dropdown.

**Tip**: Exact matches work by **name**, **id**, **code**, or **area**. When there’s an exact match, the map recenters using its center/bounds; otherwise it falls back to a service lookup and, if still no location, a general search.

**D) See and clear “Currently showing”**

1. After a search, the search card shows **Currently showing:** with the selected name. Click **×** to clear it.
2. Clearing also resets the map’s last search result/highlight.

**E) Save / unsave a search (or facility)**

1. Use the **Save this search** (bookmark) button next to the input. It disables while saving, shows a spinner, and changes to a **check** with title **Remove from saved searches** when saved.
2. You can save up to **100** searches; beyond that you’ll see an alert.
3. Saved items appear in **Saved Searches** and restore using stored **center/bounds**. **Clear all** removes them (and clears the search bar).

**Tip**: Your **search history** saves the display name (e.g., Name (Area)) for clarity.

**What happens on the map after a search**

* The map **auto-switches** to the matching boundary layer (e.g., SA2 → SA2 layer).
* The map moves using the **center** and optional **bounds**. Facilities zoom in closer (**zoom 15**); otherwise **zoom 10** if no bounds were provided.

**Behavioral notes (loading, disabled, defaults)**

* **Debounce**: Search requests fire after **300 ms** of inactivity.
* **Minimum input**: No results until **2+ characters**.
* **Dropdown states**:
  + **Loading…** panel appears while fetching.
  + **No locations found** message when nothing matches.
  + **Click outside** closes the dropdown.
* **Save button**: Disabled and semi-transparent while saving; toggles bookmark/check icons.
* **“Currently showing”** always displays the active selection and a **Saved** tag if applicable.

**FAQ**

1. **Which geographies and entities can I search?**  
   SA2, SA3, SA4, LGA, Postcode, Locality, and Facilities.
2. **Can I search by codes (e.g., SA2 code)?**  
   Yes — exact match checks include id, name, code, or area. Code examples are supported in the code field.
3. **How many live results are shown?**  
   Up to **6** location results per query.
4. **When do results appear?**  
   After at least **2 characters** and a **300 ms** debounce.
5. **What’s the difference between “Locations”, “Suggestions”, and “Recent Searches”?**

* **Locations** = exact geo/facility matches.
* **Suggestions** = defaults when no locations match.
* **Recent Searches** = last 5; can be cleared.

1. **What do Enter / Escape do?**  
   **Enter** runs the search; **Escape** closes the dropdown.
2. **How does the map move after I pick a result?**  
   It uses the **center** and **bounds** from the result; facilities zoom to **15**, otherwise **10** if no bounds.
3. **Will the data layer switch automatically (e.g., SA2 vs LGA)?**  
   Yes — the app auto-switches to the relevant boundary layer for the result type.
4. **What is “Currently showing”?**  
   A post-search banner that displays the active selection and lets you **clear (×)** it.
5. **Does clearing “Currently showing” also clear highlights?**  
   Yes — it resets the last search result and clears map highlight.
6. **How do I save a search or facility?**  
   Use the bookmark button. It’s disabled while saving and flips to a checkmark when saved; there’s a **100-item** limit.
7. **How do Saved Searches behave when I select / clear items?**  
   Selecting a saved item restores its **center/bounds**; **Clear all** empties the list and clears the search bar via an app event.

**Troubleshooting**

* **No locations found**  
  You’ll see a “No locations found” panel; try alternate names or a facility name.
* **Search feels laggy**  
  Input is intentionally **debounced by 300 ms** to improve performance; pause briefly while typing.
* **Enter doesn’t work**  
  Make sure the input has text (Enter only fires when there’s a non-blank query).
* **Dropdown closes unexpectedly**  
  Clicking outside closes it by design; refocus the input to reopen.
* **Can’t save search / facility**  
  You must be signed in; saving enforces login and a **100-item** saved limit.
* **Saved item removed but still visible in search bar**  
  Deleting from **Saved Searches** dispatches an event that clears the search bar when it matches the deleted term.
* **Bounds/zoom feel off after selecting a facility**  
  Facilities zoom to **15** by default; larger areas may rely on bounds or default zoom **10**.

**Quick reference (checklist)**

* Type in **Search map** → wait for **Locations**.
* Pick a result (or press **Enter**).
* Use **Suggestions** or **Recent Searches** if no match.
* Check **Currently showing**; **×** to clear.
* **Save** (bookmark) to keep it; manage in **Saved Searches**.

**Open questions for PM/Eng**

1. **Keyboard navigation in dropdown**: Are Up/Down arrows supported to move through results? (Not visible in code.)
2. **Search history retention**: Is the history capped beyond the last **5** shown? (We only see fetch of 5.)
3. **Code matching scope**: Which types populate the code field besides SA2 (e.g., SA3/SA4/LGA codes)?
4. **Empty/guest userId**: How is userId handled when not signed in for the search bar (since it’s required in props)?
5. **Clear history confirmation**: Should clearing **Recent Searches** ask for confirmation? (Currently appears immediate.)
6. **“Suggestions” source**: Any backend limits or relevance rules for getSearchSuggestions? (Not defined here.)

**3) Explore facilities at a location**

**Screenshot placeholder:** *“Facility table over the map.”*  
**Alt text:** Draggable **Facility Information** panel showing a list with capacity and address columns.

**Step-by-step**

1. **Find a marker to inspect**  
   Look for small, coloured circular markers. They scale up slightly on hover so you can target them more easily.
2. **Understand cluster markers**  
   If facilities overlap (≈100 m tolerance), you’ll see a **numbered marker** that shows how many facilities are at that spot.
3. **Open the Facility Information table**  
   Click a **single marker** to open the table with **one row**. Click a **numbered (cluster) marker** to open the table with **multiple rows** for side-by-side review.
4. **Scan key details**  
   In the table, you’ll see service name, facility type, full address, capacity (e.g., “120 residential”), provider, and an **Actions** column. The header reads **Facility Information** and shows a count like “*N facilities at …*” when applicable.
5. **Drag the panel where you want it**  
   Grab the table header (cursor changes to “grab”) and drag to reposition. Press **Esc** or click the dimmed background to close.
6. **Open facility actions**  
   Use the **Actions** column to trigger available actions (e.g., see details, save, etc.).

**Tip:** For dense areas, clicking a **numbered marker** loads **all facilities** into the table, making comparisons quick.

**What the markers & popups show**

* **Marker colour & type:** Marker colour maps to facility type (e.g., RESIDENTIAL CARE, HOME CARE).
* **Cluster style:** Numbered, larger circle with coloured border and count in the centre.
* **Contact actions (when popups are used):** Phone, email, and website links appear directly in the popup; **See Details** may also appear depending on facility type.

**Note:** In this build, **marker clicks open the table** (not popups). Popup contact links are still available in fallback mode.

**Behavioral notes**

* **Loading states**
  + On initial load, the map shows **“Loading Australian map.”** overlay.
  + Facility loading has built-in retries with exponential backoff on failure.
* **Clusters vs. table**
  + With table enabled, clicking a **cluster** opens **multiple rows** in the table. If the table callback isn’t available (fallback), clicking a cluster toggles **multiple popups on/off**.
* **Drag & close**
  + Table is draggable by its header; close via **Esc**, **Close** button, or clicking the backdrop.
* **Saving facilities (when popups are shown)**
  + Signed-in users see **Save Location / Remove from Saved** and the button state updates automatically.

**FAQ**

1. **How do I open the Facility Information table?**  
   Click a map marker. Single marker → one row; numbered marker → multiple rows.
2. **What does the number on a marker mean?**  
   It’s a cluster count showing how many facilities are co-located; click to see all in the table.
3. **Can I move the table?**  
   Yes—drag the header (grab cursor).
4. **How do I close the table?**  
   Press **Esc**, click the **Close** button, or click the backdrop.
5. **What columns are shown?**  
   Service name, type, address, capacity, provider, and **Actions**.
6. **Where do contact actions live (call/email/website)?**  
   They’re in the **popup** UI (when popups are used). Tel, mailto, and website links are included.
7. **When do I see “See Details”?**  
   In popups, it appears for certain types (e.g., residential/home).
8. **Why didn’t a marker click open a popup?**  
   This build routes marker clicks to the table (table-only system).
9. **Why don’t I see Save/Remove buttons?**  
   Save controls in popups require that you’re signed in.
10. **What if facilities don’t appear or take a long time?**  
    There’s a retry mechanism with exponential backoff; wait a moment and try again if needed.
11. **What does the facility type badge mean in the table?**  
    It shows the human-friendly type (e.g., Residential Care, Home Care).
12. **Is the table consistent with marker counts?**  
    Yes—cluster click → same number of rows in the table.

**Troubleshooting**

* **Clicking a marker does nothing**
  + Ensure the map finished loading (watch for the loading overlay to disappear).
* **Too many popups after a cluster click (fallback mode)**
  + Click the **same cluster marker again** to toggle all popups closed.
* **No Save button in popup**
  + You must be signed in; Save is only wired when a userId exists.
* **Facilities outside Australia not showing**
  + Points outside AU bounds are ignored by design.
* **After changing map style my markers vanished briefly**
  + They are automatically restored after style load completes.

**Quick reference (checklist)**

* Click **marker** → open table (single or multiple rows).
* **Numbered marker** = cluster; click to review all at once.
* **Drag** the table by its header; **Esc/backdrop/Close** to dismiss.
* Use **Actions** in the table for available follow-ups.
* (Fallback) Popups include **call/email/website** and **See Details**.

**Open questions for PM/Eng**

1. **“See Details” eligibility is inconsistent.** One code path enables it for residential/home only, another includes multipurpose\_others and retirement. Confirm the intended set.
2. **Contact actions in the table.** The table renders an **Actions** column via FacilityTableActions, but we don’t see whether tel/mailto/website are exposed there or only in popups. Please clarify.
3. **Cluster “group” label.** The table header can show “*N facilities at {markerGroup}*” when markerGroup is provided. Confirm what value is passed for cluster clicks.
4. **Save from table.** Are Save/Remove actions available from the table’s Actions column, or only via popups? (We only see popup Save wiring.)
5. **“Close all popups” control.** Page comments show a (now commented) bulk close & save UI for popups. Should any of that surface when using table-only mode?

**Analyse demand & supply with Data Layers (heatmaps)**

**Screenshot placeholder:** Heatmap with legend  
**Alt text:** Heatmap layer visible over SA2 regions with horizontal gradient legend and min/max badges.

**What you can do**

* Toggle the heatmap on/off.
* Pick a category and variable: **Health Sector**, **Demographics**, **Economics**, or **Health Stats**. Each shows “Click to select” and opens a dropdown of options.
* Read the legend with the current variable name and **Min/Max** values. Clear the selection with ×.
* Watch loading status: you’ll see **Updating.** with a spinner while the map refreshes.

**Step-by-step**

**1) Open the Data Layers panel**

1. Find **Data Layers** at the **bottom-left** of the map.
2. Click the header to expand/collapse (chevron icon changes).
3. While a change is rendering, the header shows **Updating.** and hides the eye toggle.

**Note:** The map itself shows **Loading Australian map.** on initial load, and boundary loading/errors appear as bottom-left toasts with a **Try Again** button.

**2) Toggle the heatmap**

1. Use the **eye** icon in the panel header to show/hide the heatmap. Tooltip reads **Show heatmap** / **Hide heatmap**.
2. Toggling **does not clear** the selected metric or min/max; it only changes visibility.

**Tip:** The heatmap is **on by default**.

**3) Pick a category & variable**

1. Click a category tile: **Economics**, **Demographics**, **Health Sector**, or **Health Stats** (tiles show **Click to select**).
2. A dropdown opens with options. Click an option to apply it; the panel shows the variable name with a type icon, and an **×** to clear.
3. Selecting data **auto-enables** the heatmap if it was hidden.

**Default on load:** Data type **healthcare**, category **Commonwealth Home Support Program**, subcategory **Number of Participants** (already selected and visible).

**4) Read the legend & min/max**

1. When a variable is selected and min/max are available, the legend shows a **horizontal gradient bar** plus **Min** and **Max** badges with formatted values.
2. Click **×** beside the name to clear the selection.

**5) Understand “Updating.” status (how loading finishes)**

* When you choose an option, the panel sets a loading flag and registers a **completion callback**; this shows **Updating.** in the header.
* The map renders the SA2 heatmap and calls **onHeatmapRenderComplete**, which triggers that callback and clears the loading state.

**How min–max and rankings are produced**

* The map’s **LayerManager** renders the **SA2 heatmap** and reports the **min and max** via onHeatmapMinMaxCalculated. These values are stored and passed into Data Layers for the legend.
* **Ranked outputs** (e.g., top/bottom SA2s) are computed by **HeatmapDataService** and delivered via onRankedDataCalculated. The page stores this but does **not auto-open** the rankings panel; you can show it with **Top/Bottom Panel** next to Data Layers.

**Behavioral notes**

* **Panel placement & size:** bottom-left container; Data Layers width ~w-64.
* **Default geography:** the app starts on **SA2**; the heatmap layer is specifically SA2-based (sa2HeatmapData / sa2HeatmapVisible).
* **Default selection:** Healthcare → CHSP → Number of Participants.
* **Loading & disabled states:** while **Updating.** shows, the eye toggle is hidden; once the render completes, it reappears.
* **Clearing resets:** Clear removes the selection, hides heatmap, and clears min/max and rankings.
* **Icons:** variable row icon reflects data type (heart/economics/demographics/health stats).

**FAQ**

1. **Where is the Data Layers panel?** Bottom-left of the map.
2. **How do I show/hide the heatmap?** Use the eye icon in the panel header (Show/Hide heatmap).
3. **Will hiding the heatmap wipe my selection?** No—toggling visibility doesn’t clear min/max or the chosen variable.
4. **What does “Updating.” mean?** The map is re-rendering the heatmap; it finishes when the render-complete callback runs.
5. **How are Min/Max numbers calculated?** The map’s LayerManager calculates from the active SA2 data and emits them via onHeatmapMinMaxCalculated.
6. **Why don’t I see the legend?** The legend appears only when a variable is selected **and** min/max exist.
7. **How do I clear the current metric?** Click **×** next to the variable name in the panel.
8. **Does choosing a variable turn the heatmap on automatically?** Yes; selection auto-enables the heatmap.
9. **What geography is used for the heatmap?** SA2 regions.
10. **Can I view top/bottom ranked areas?** Yes—rankings are computed and stored; open the **Top/Bottom Panel** to view.
11. **Why do the icons change beside the variable name?** They adapt to data type (e.g., heart for health, chart for stats).
12. **Are any categories disabled?** All four are enabled in the UI.

**Troubleshooting**

* **Legend isn’t showing.** Ensure you’ve selected a variable and the map has finished updating; the legend renders only when selectedVariableName and both heatmapMinValue and heatmapMaxValue are set.
* **Stuck on “Updating.”** Wait for the render-complete callback—this is triggered by the map’s onHeatmapRenderComplete, which then clears the loading indicator in Data Layers. If the base map/boundaries are still loading or errored, resolve those first (use **Try Again** if shown).
* **Eye toggle not visible.** It’s hidden during updates; it reappears once rendering completes.
* **Clearing doesn’t just hide—everything reset.** That’s expected: clear removes the variable, hides heatmap, resets min/max, and clears rankings.
* **I don’t see rankings.** Rankings are computed and stored, but the **Top/Bottom Panel** doesn’t auto-open—toggle it manually.

**Quick reference (checklist)**

* Open **Data Layers** (bottom-left) and expand.
* Toggle heatmap with the eye icon (Show/Hide).
* Click a category → choose an option.
* Watch for **Updating.**, then read the legend and Min/Max.
* Clear with **×** if needed.
* Open **Top/Bottom Panel** to view rankings.

**Open questions for PM/Eng**

1. **Legend units/scale:** The legend shows Min/Max values but no unit label—should units be displayed, and where do they come from? (Not present in files.)
2. **Color ramp configuration:** The gradient is fixed (from-red-100 via-red-300 to-red-600). Is this customizable per variable or data type?
3. **Data availability counts:** Headers show counts like “Healthcare Data Categories (X options).” Confirm if these counts reflect dynamic data loading or static lists.
4. **Map Settings interplay:** If the user changes the boundary layer (e.g., SA3), should the heatmap aggregate to that geography, or is heatmap locked to SA2? (Files show SA2-only heatmap.)
5. **Error states for HeatmapDataService:** How are backend or fetch errors surfaced to the user during heatmap computation? (Not visible in current UI code.)

# **Save and reuse locations/facilities**

Screenshot placeholder: “Saved Locations panel open.”  
Alt: Saved list showing a mix of locations and facilities with action menu.

**Step-by-step**

**A) Save the current search/location (from the search bar)**

1. Search for a place/facility, then press Enter. The search bar handles Enter/Escape keys.
2. When a search is active, a Save/Remove button appears (Bookmark/Check icon). It’s disabled while saving and shows a spinner. Hover text reads “Save this search” or “Remove from saved searches.”
3. Click to **save**. The app persists it and marks the current item as saved; the “Currently showing” strip also adds a green “Saved” badge.
4. Click again to **remove**. The app looks up the saved entry and deletes it, then updates the saved state.
5. To clear the on-screen context, use the **×** in “Currently showing.” This resets the saved badge and notifies the parent view.

Tip: The Save/Remove button only appears when there’s a last search term or “Currently showing” value.

**B) Save a facility (from popup or the Facility Table)**

1. On a facility popup, use the blue **“📍 Save Location”** button; once saved it becomes red **“🗑️ Remove from Saved.”** The button state also updates automatically when the popup opens.
2. Removing from a popup first shows **“⏳ Removing...”**, then reverts to **“📍 Save Location.”**
3. From the **Facility Table**, use its save action. The app requires sign-in, then toggles between save and remove, returning { success, isSaved } to reflect state.

Note: If a facility was already saved, the popup will handle the “already saved” case and switch to the red remove state.

**C) Reuse, delete, or clear in the saved list**

1. Open the saved list (collapses/expands; it starts collapsed).
2. Click a saved item to jump back to it; when location data is present, the component passes center/bounds to the map.
3. Delete one saved item via the **three-dots** (⋯) menu. The list updates and a custom event is emitted so the rest of the UI (search bar, popups) stays in sync.
4. **Clear all** saved items. After confirmation, the list clears and a custom event tells the app to clear the search bar too.

Tip: Clicking a saved item uses the navigation object (center/bounds) so the map recenters appropriately.

**Behavioral notes (what to expect)**

* **Save button visibility & states (search bar):** Shown only when a search is active; disabled while saving; shows spinner; tooltip text changes per state.
* **“Saved” badge:** Appears inline in the “Currently showing” strip when the current item is saved.
* **Saved status auto-checks:** Whenever “Currently showing” or the last search term changes, the bar re-checks the backend to set the saved icon/badge.
* **Facility popups stay in sync:** Popups listen for facilitySaved, facilityUnsaved, and savedSearchDeleted events and update their buttons accordingly.
* **Saved list loading:** The saved list fetches items for the user and shows a loading lifecycle; it starts collapsed (isExpanded=false).
* **Deleting/clearing keeps UI consistent:** Deleting one item or clearing all dispatches custom events that clear the search bar when appropriate.
* **Sign-in required for facility saving (table & bulk):** The table and “Save All” require a signed-in user; otherwise an alert is shown.
* **Limits:** If you’ve reached **100 saved** entries, saving shows a clear alert.

**FAQ**

1. **Where is the Save button in the search bar?**  
   It appears to the right of the input once there’s a last search or “Currently showing” value, with Bookmark/Check icons.
2. **Why is the Save button disabled/spinning?**  
   The app is saving or removing your item (isSaving), then re-enables the button.
3. **How do I know if the current item is already saved?**  
   Look for the green **Saved** badge in the “Currently showing” strip.
4. **How do I remove a saved search from the bar?**  
   Click the same button; it finds the saved record and deletes it.
5. **Can I save a facility directly from the map?**  
   Yes—use the popup’s **“📍 Save Location”** (turns into **“🗑️ Remove from Saved”** when saved).
6. **What if the popup says the facility is already saved?**  
   The code handles duplicates and flips to the saved state automatically.
7. **How do I save/remove from the Facility Table?**  
   Use the table’s save action; if you’re not signed in you’ll see “Please sign in to save facilities.”
8. **Is there a limit to saved items?**  
   Yes, you’ll be alerted at **100 saved** entries.
9. **How do I jump back to a saved place/facility later?**  
   Click it in the saved list; the app passes center/bounds to the map for navigation.
10. **How do I delete one saved item?**  
    Open the item’s ⋯ menu and choose delete; the list updates and the rest of the UI stays in sync via events.
11. **How do I clear everything?**  
    Use **Clear all**; after confirming, the list empties and the search bar is cleared.
12. **Can I save/remove many facilities at once?**  
    Yes—when facility popups are open and you’re signed in, a button toggles between **“Save All (N)”** and **“Unsave All (N)”** with contextual titles.

**Troubleshooting**

* **“Could not find the saved search to remove.”**  
  The app couldn’t find the saved record; try refreshing the saved list and removing again.
* **Hit the 100-item limit.**  
  Delete some items (⋯ menu or **Clear all**) and try again.
* **Saved list didn’t reflect my change.**  
  The list fetches and tracks state; deletions/clear emit events that also clear the search bar if needed.
* **Popup button looks out of sync.**  
  Popups listen to facilitySaved/Unsaved and savedSearchDeleted; closing and reopening a popup also re-checks the backend.
* **“Please sign in to save facilities.”**  
  Sign in is required when saving from the table or bulk saving open popups.
* **Accidentally saved the wrong thing.**  
  Use the search bar’s **×** to clear context, then save the correct item; the bar prevents mismatched saves by clearing stale results.

**Quick reference (checklist)**

* Save from search bar → Click Bookmark (then Check when saved).
* Remove from search bar → Click again (deletes the saved entry).
* Save from popup → “📍 Save Location” → becomes red “🗑️ Remove from Saved.”
* Save from Facility Table → use its save action (sign-in required).
* Open saved list → expand (starts collapsed), click item to navigate.
* Delete one → ⋯ → Delete.
* Clear all → confirm → search bar also cleared.

**Open questions for PM/Eng**

* What exact label is shown for the saved list header in the UI (guide currently refers to it generically as “saved list”)? (The component state shows isExpanded, default false.)
* In the Facility Table, what is the exact text/icon of the save action button presented to users? (We only see the onSaveFacility contract.)
* Is saving from the **search bar** allowed when not signed in, or is the page gated to authenticated users? (The code assumes a userId but doesn’t show the gating here.)
* Where in the layout is the saved list mounted (panel position/trigger)? The file shows expand/collapse logic, but not placement.
* Should there be a visible loading indicator in the saved list during getUserSavedSearches? (The state is tracked but the visual isn’t specified here.)

Warning: This guide avoids inventing labels or flows not present in the code. Any missing UI text/placement should be confirmed before finalizing.

# 6) Compare multiple facilities quickly

Screenshot placeholder: “Cluster selection results.”  
Alt: Facility table listing several providers from the same map location.

## How to do it

1. Click a cluster marker  
   When facilities overlap at the same spot, the map shows a numbered **cluster marker**. Click it to load **all facilities in that cluster** into the Facility table for side-by-side review.

Tip: Clicking a **single** marker also opens the table with that one facility, so you can compare one-by-one as well.

1. Review in the Facility table  
   The table shows key fields to compare: **Service name, Type, Address, Capacity, Provider**, plus an **Actions** column.
2. Use table actions to shortlist  
   Use the **action buttons** in the last column to **open details** or **save** a facility. These actions are wired via onFacilityDetails and onSaveFacility, and respect the isLoading state.
3. Move or close the table  
   • **Drag to move**: long-press (≈200ms) the header area labeled **Facility Information**, then drag.   
   • **Close** with **Esc** or by clicking the **backdrop**.
4. See what you loaded  
   When multiple facilities are shown from the same click, the header displays “X facilities at marker location” so you know you’re comparing items from a single place.
5. Save picks (optional)  
   Saving from the table requires being **signed in**; saved items refresh the “Saved Locations” list automatically after a save/unsave.   
   **Warning:** You can save up to **100** locations; you’ll see an alert if you hit the limit.

## Behavioral notes

* **Cluster vs single click:** Clicking a **cluster** opens the table with **all facilities in that cluster**; clicking a **single** marker opens the table with that one facility.
* **Header & count:** The table header reads **Facility Information** and shows a count when multiple items load from one marker.
* **Drag behavior:** Dragging is optimized (no re-renders), respects viewport **constraints**, and supports **long-press** to start drag.
* **Visibility & closing:** The table only renders when **visible**, and closes via **Esc**, backdrop click, or the close button.
* **Loading/disabled states:** Actions receive isLoading; buttons may be disabled while a save is processing.
* **Sign-in requirement for saving:** The page guards save actions when no user is signed in.
* **Auto-refresh of Saved Locations:** After saves/unsaves, the Saved Locations panel refreshes; deletions also broadcast events to clear the search bar if needed.

## FAQ

1. How do I load many facilities at once?  
   Click a **cluster marker**—the table fills with all facilities from that cluster.
2. Can I compare just one facility?  
   Yes. Clicking a **single** marker opens the table with that facility.
3. What columns are in the table?  
   Service name, Type, Address, Capacity, Provider, and Actions.
4. How do I open full details?  
   Use the **Details** action. It triggers the app’s facility details (modal or routed page, depending on type).
5. How do I save facilities to a shortlist?  
   Click **Save** in the Actions column. You must be signed in.
6. Is there a save limit?  
   Yes, up to **100** saved locations; alerts show if you reach the limit.
7. Do saved items appear immediately in “Saved Locations”?  
   Yes—saving triggers a refresh of the Saved Locations panel.
8. What if a facility has missing data?  
   The table uses safe defaults (e.g., **“Address not available”**, **“Unknown”**) when fields are missing.
9. Can I move the table out of the way?  
   Yes. Long-press the header and drag; movement is constrained to the viewport.
10. How do I close the table?  
    Press **Esc** or click outside the table (backdrop).
11. Can I compare facilities across a wider area?  
    Use the app’s **Bulk Selection** to load all facilities in your viewport (by type) into the table.

## Troubleshooting

* **Clicking a cluster doesn’t open the table:** Ensure the marker shows a **number** (cluster). Clustering is based on facilities within ~100m; zoom in/out to form clusters where appropriate.
* **Actions are disabled/spinning:** The table passes an isLoading flag to actions while save operations are in flight.
* **“Please sign in to save facilities” appears:** You must be signed in before saving.
* **“Save limit reached” alert:** You have 100 saved items; delete some in Saved Locations, then try again.
* **Saved list didn’t update:** The app refreshes the list after saves/unsaves; if you deleted from Saved Locations, the app also broadcasts events to clear any now-invalid “currently showing” items.

## Quick reference (checklist)

* Click **cluster marker** → table opens with all facilities.
* Review fields: **Name, Type, Address, Capacity, Provider**.
* Use **Actions** → **Details** / **Save**.
* **Drag** header to reposition; **Esc/backdrop** to close.
* **Sign in** to save; max **100** saved.

## Open questions for PM/Eng

1. **Sort order** of facilities in the table (distance? name? capacity?) isn’t specified in code.
2. **Max number** of facilities allowed in the table at once is not defined.
3. Whether the table supports **multi-select** or **bulk save** for table rows (distinct from popup “Save All”) isn’t shown.
4. Exact **labels/icons** for the table action buttons (we reference generic “Details/Save”) aren’t visible in the provided files.
5. Should table **state persist** when clicking a different marker/cluster, or always replace? Not specified.
6. Any **export** (CSV) or **print** actions for the table? Not present in provided files.

# 7) Tune the map for presentation (styles & boundaries)

Screenshot placeholder: “Style dropdown expanded.”  
Alt text: Map Settings card with the Map Style dropdown open.

## Why use this

Switching base styles and adjusting boundary overlays helps you produce clearer screenshots for reports (e.g., labels on “Streets,” imagery on “Satellite,” relief on “Topographic”). Choose the simplest style that still supports your message, and use broader boundaries (SA3/SA4) when you want less clutter.

Note: The specific boundary toggle UI (“Boundary Controls”) exists in the app, but its exact labels/options are defined outside the files provided here. This guide describes what is in the code and flags any gaps.

## Step-by-step

### A) Open Map Settings

1. Click Map Settings to expand the card.

Tip: Map Settings shows progress banners for data/style preloads while the map warms up.

### B) Change the base map style (for cleaner screenshots)

1. In Map Settings, find “Map Style.” Available styles: Basic, Topographic, Satellite, Terrain, Streets.
2. Click the Map Style button to open the dropdown, then pick a style. The current style is shown on the right (lowercase token), and the readable label appears on the button.
3. While a style change is applying, the control is disabled and shows “Changing…”. It re-enables automatically after a short delay.

Note: Styles are preloaded in the background to prevent disruptive setStyle calls. You’ll also see a “Loading Map Styles” progress bar until preloading completes.

### C) Show or reduce boundaries (to cut visual noise)

1. In Map Settings, use Boundary Controls to choose which geography layer to draw (e.g., SA2, SA3, SA4, LGA, Postcode, Locality, ACPR, MMM).
2. Boundaries render as **outlines by default** (no fills), which is ideal for clean screenshots.
3. Large/complex layers (notably SA2) can take longer to load; the app shows a boundary preload banner with a progress bar if preloading is active.
4. If you switch boundary layers mid-load, the app **cancels the previous request** to avoid stalls.

Tip: If you’re zoomed out, switching to a very detailed layer may be hard to see. The code defines minimum zoom suggestions per layer (SA4 ≈5 … Locality ≈11). Zoom in if needed for clarity.

### D) Collapse Map Settings

1. Click the header again to collapse the card once you’re happy with the look.

## Behavioral notes (what you’ll see)

* **Defaults:** The page opens with SA2 as the selected boundary layer and “basic” as the selected map style.
* **Map UI:** Navigation (zoom) is in the top-right; scale is bottom-right. Initial zoom ≈ 4 (min 3, max 18).
* **Preloading banners:**
  + “Loading Boundary Data” with file count/progress.
  + “Loading Map Styles” with style count/progress.
* **Style change UX:** The Map Style button disables and shows “Changing…” while applying; it re-enables automatically.
* **Performance protections:**
  + All base styles are preloaded and cached.
  + When switching boundaries, previous layers/sources are removed and in-flight loads are aborted.

## FAQ

1. **Where do I change the map style?**  
   Open Map Settings → Map Style dropdown.
2. **Which styles are available?**  
   Basic, Topographic, Satellite, Terrain, Streets.
3. **What’s the default style and boundary layer?**  
   Default style: basic; default boundary: sa2.
4. **Why is the style button greyed out with “Changing…”?**  
   It locks during a style switch and then re-enables automatically.
5. **What does “Loading Map Styles” mean?**  
   Styles are being preloaded; a progress bar shows how many are done.
6. **How do I show or hide boundaries?**  
   Use Boundary Controls in Map Settings to choose a geo layer (SA2/SA3/SA4/LGA/Postcode/Locality/ACPR/MMM). The map draws outlines by default. (If an “off” option exists, it’s not present in the provided files.)
7. **Why do SA2 boundaries sometimes take a while?**  
   SA2 data is large (~170 MB). Expect longer fetch times.
8. **What if I change boundaries while one is loading?**  
   The app cancels the previous request to keep things responsive.
9. **Will the map zoom adjust for different boundary layers?**  
   The code defines minimum zoom suggestions per layer (e.g., SA4≈5, Locality≈11); zoom in for visibility.
10. **Are styles downloaded every time I switch?**  
    No. Styles are preloaded and cached to avoid disruptive switches.
11. **Why do I see progress for “Boundary Data”?**  
    Map Settings shows a boundary preload banner with counts and a progress bar.
12. **Where are zoom/scale controls for precise framing?**  
    Zoom controls are top-right; the scale bar is bottom-right.
13. **Does searching a location change my boundary layer?**  
    Yes—if you jump to a specific type (e.g., LGA, SA3), the app auto-switches the layer to match.

## Troubleshooting

* **Style dropdown won’t open / is disabled**  
  A switch is in progress. Wait for the “Changing…” state to clear (the control re-enables automatically).
* **“Loading Map Styles” won’t go away**  
  The map is still preloading style JSONs; once done, the banner disappears. Preloading is initiated on map load.
* **Boundary outlines not visible**  
  Ensure a boundary layer is selected in Boundary Controls and zoom in to the layer’s recommended range. Boundaries render as outlines only.
* **Boundary load feels stuck**  
  Large layers (SA2) can be heavy. If you switch layers, the app aborts the previous load to recover.
* **Map flashes/loses overlays after style switch**  
  Styles are preloaded & cached to avoid destructive switching, then applied. If a remote style fetch fails, the code falls back gracefully. Try switching again.

## Quick reference checklist

* Open Map Settings.
* Pick a base style (Basic/Topographic/Satellite/Terrain/Streets).
* If “Changing…” appears, let it finish.
* Select a boundary layer via Boundary Controls (SA2/SA3/SA4/LGA/Postcode/Locality/ACPR/MMM).
* Watch for “Loading Boundary Data” / “Loading Map Styles” progress.
* Zoom to the layer’s useful range before taking the screenshot.

## Open questions for PM/Eng (from missing details in provided files)

1. Boundary Controls: What are the **exact** visible labels and is there an **“Off/Hide boundaries”** option? (Only the prop names/types are visible in MapSettings.tsx; the underlying component is not in the provided files.)
2. Are there **filled** boundary styles or only outlines? (Code states outlines by default, but no user toggle is shown.)
3. Should the “Changing…” lockout match an explicit backend signal rather than a fixed timeout? (Currently a 4-second UI timer.)
4. Any guidance on recommended **style–boundary pairs** for reporting (e.g., Topographic + SA3), or is that left to user preference?

# 8) Manage saved items at scale (admin hygiene)

This section shows how to bulk-tidy the Saved Locations list: remove one item via the three-dot menu and clear the entire list—plus exactly what the search bar does in each case.

Screenshot placeholder: **“Saved item menu.”**  
**Alt text**: Context menu for a saved location showing a Delete action.

## Step-by-step

### A) Open the Saved Locations panel

1. Make sure you’re signed in; otherwise the panel won’t render.
2. Expand the panel by clicking the chevron on the header “Saved Locations (N)”. The count shows how many are saved.

### B) Delete a single saved item (three-dot menu)

1. Hover a row to reveal the three-dot button, then click it.
2. In the dropdown, choose **Delete**. The item is removed immediately from the list.
3. If the deleted item matches what’s currently showing in the search bar, the app **clears “Currently showing” and map highlight** automatically.
   * Behind the scenes this is triggered via a savedSearchDeleted event.

### C) Clear all saved locations

1. Click **Clear all** at the top of the list.
2. Confirm in the popover by clicking **Clear all** (or Cancel).
3. The list empties, and the app **clears “Currently showing” and map highlight**.

### D) Jump to a saved item (optional, to review before deleting)

* Click any saved row to load its map location (center/bounds) and set the search bar text to the item’s display name.

## Behavioral notes

* Visibility: The panel returns null when no userId is present (not signed in).
* Loading/empty states: You’ll see a spinner while loading; “No saved locations yet” if the list is empty.
* Count: The header shows the live count: “Saved Locations (N)”.
* Hover-only control: The three-dot menu is hidden until you hover a row.
* Click-outside to close popovers: The dropdowns/popovers close when you click elsewhere.
* Search bar sync after deletes:
  + Single delete clears the bar **only if** the deleted term equals “Currently showing”.
  + Clear all always clears the bar.
* Saved badge in the search bar updates automatically based on backend state.
* Facility type icons/colors shown in the list mirror map logic (e.g., residential=red, home care=green, retirement=purple).
* Saved list refreshes when saves/unsaves happen elsewhere (e.g., from the search bar or facility table).
* Limit: Attempts to save beyond 100 items show an alert; delete items to proceed.

## FAQ

1. Where is the Saved Locations panel if I can’t see it?  
   It’s hidden when you’re not signed in.
2. How do I expand/collapse the panel?  
   Use the chevron on the header.
3. What does “Saved Locations (N)” mean?  
   N is the number of saved items currently stored.
4. How do I delete one saved item?  
   Hover the row → three dots → Delete.
5. Will deleting a saved item clear the search bar?  
   Only if the deleted item equals “Currently showing”; otherwise the search bar stays as-is.
6. What exactly happens on “Clear all”?  
   All saved items are removed, **and** the search bar + map highlight are cleared.
7. Can I undo a delete or clear-all?  
   There’s no undo in the code; re-save items if needed. (No undo behavior found in files.)
8. Why doesn’t the three-dot menu appear?  
   It’s designed to show on hover. Move your cursor over the row.
9. Does deleting a saved **facility** update other open facility popups?  
   Yes. The app emits a facilityUnsaved event so other UI can reflect the change.
10. How does the Save/Saved badge in the search bar stay accurate?  
    The search bar checks backend state (isSearchSaved) whenever the shown term changes.
11. Is there a maximum number of saved items?  
    Yes—alerts show when you try to save more than 100.
12. What if the list says “No saved locations yet”?  
    That’s the empty state when you have none saved.

## Troubleshooting

* I clicked Delete but nothing happened  
  • Ensure you clicked the three-dot menu **Delete** inside the dropdown (not the row).   
  • Check sign-in status; the panel depends on userId.
* I cleared all, but “Currently showing” didn’t clear  
  • This should clear unconditionally via allSavedSearchesCleared → the page clears the search bar and highlight. Try again and check console if developing.
* The dropdown/confirmation keeps closing unexpectedly  
  • Click-outside behavior closes them by design. Keep the cursor within the popover to confirm.
* I can’t save more items  
  • You’ve likely hit the limit (100). Delete some saved items first.

## Quick reference checklist

* Expand **Saved Locations (N)**.
* Delete one: hover row → **…** → **Delete**.
* Clear all: **Clear all** → confirm **Clear all**.
* Expect search bar to clear when:  
  • You delete the item that’s currently showing, or  
  • You clear all.

## Open questions for PM/Eng

* Should single-item Delete have a confirmation step (it currently does not)?
* What’s the intended cap for saved items (code alerts at 100)—is that configurable per tenant?
* Any accessibility alternative to hover-to-reveal the three-dot menu?
* Should the panel display a signed-out hint instead of returning null?
* Do we intend a bulk-multi-select delete (beyond Clear all), or is Clear all the only bulk action? (No multi-select found in files.)

# 9) Troubleshooting & performance

Screenshot placeholder: “Loading banners.”  
Alt: Map Settings with boundary/style preload progress bars.

## What the loading banners mean

1. Open Map Settings  
   Expand Map Settings. If data or styles are still preloading, you’ll see compact banners at the top of the panel.  
   • Loading Boundary Data shows a spinner, file count, and a progress bar.   
   • Loading Map Styles shows a spinner, style count, and a progress bar until stylesPreloaded is true.
2. Watch for the boundary toast  
   While a boundary layer is loading (e.g., switching SA3→LGA), a small toast appears bottom-left: Loading boundary data…. If something fails, it switches to a Boundary Loading Error card with a Try Again button.
3. Style changes temporarily lock the dropdown  
   When you change Map Style, the dropdown disables, the label shows (Changing…), and the chevron pulses. This auto-clears after a short delay.   
   Under the hood, the map holds a “style-change lock” and then restores boundaries and markers after the style loads; a 10s fallback unlock prevents getting stuck.

Tip: You can still pan/zoom the map and use other controls while banners are visible. The banners are informational; only the style dropdown is temporarily disabled during a change.

## Heatmap “Updating…” indicator and retries

• When you pick a heatmap variable (category/subcategory), Data Layers shows Updating… with a spinner. That state is set immediately on selection.   
• It clears only after the map signals render complete back to Data Layers (wired via onHeatmapRenderComplete and a safe async callback).   
• There’s no explicit auto-retry loop for heatmap data in these files; re-selecting a variable or toggling the heatmap re-triggers loading.

Note: You can Clear the heatmap selection from the page logic, which hides the layer and resets related state.

## If saving fails (not signed in or at limit)

• Not signed in  
Attempting to save from the table or “Save All” prompts an alert: Please sign in to save facilities.

• At limit  
If you hit the cap, alerts explain the limit:  
– You have reached the maximum of 100 saved searches (for search saves).   
– You have reached the maximum of 100 saved locations (for facility saves).

• Already saved  
Saving a facility that’s already saved shows: This facility is already saved to your locations.

• Generic errors and partial success  
Errors surface via alerts (e.g., Failed to save facility or An error occurred…). Partial success messages include counts and keep UI state consistent.

• Delete/clear errors for saved items  
Deleting a saved item or clearing all shows alerts on failure; success also triggers events to keep the search bar and facility states in sync.

Warning: If you’re redirected to sign-in on page load (no current user), saves won’t work until you complete sign-in.

## Behavioral notes (loading, disabled states, defaults)

• Initial map load shows Loading Australian map. overlay until ready.   
• Map preloads boundary data and map styles in the background after load; progress appears in Map Settings.   
• Style dropdown is disabled and marked (Changing…) during style transitions.   
• Boundary switch shows a bottom-left loading toast; on error, you get a retry button.   
• Heatmap Updating… appears on selection and clears on render completion.

## FAQ

1. Where do I see preload progress?  
   In Map Settings, under Preload Progress Banners for boundaries and styles.
2. Can I interact with the map while banners are visible?  
   Yes. Only the style dropdown is temporarily disabled during a change.
3. The style dropdown says (Changing…)—is that normal?  
   Yes. It auto-clears after a short delay, and a 10s fallback unlock prevents it from getting stuck.
4. I switched boundaries and now see Loading boundary data…—what next?  
   That’s expected; let it finish. If it errors, a Boundary Loading Error card appears with Try Again.
5. Heatmap stuck on Updating…—how do I clear it?  
   Wait for render complete, or pick the variable again, or use Clear to reset.
6. Does the heatmap auto-retry if data fails?  
   Not in these files; reselecting variables re-triggers loading.
7. Why can’t I save facilities?  
   You must be signed in. Otherwise you’ll see an alert.
8. I hit a save limit—what is it?  
   Alerts indicate a maximum of 100 saved searches or 100 saved locations.
9. What happens if I try to save a facility that’s already saved?  
   You’ll get an alert that it’s already saved.
10. I deleted a saved item—does the UI update?  
    Yes. The list updates and events notify other components (e.g., search bar) to clear or unsave.
11. What if a delete or clear-all fails?  
    You’ll see an alert explaining the issue.
12. Does the map restore layers after a style change?  
    Yes—boundaries and markers are re-added after the new style loads.

## Troubleshooting (errors, edge cases, performance)

• Boundary Loading Error: click Try Again on the toast to retry the layer load.   
• Style change feels stuck: the lock auto-releases even if the style event is delayed. After 10s the lock is forced open.   
• Heatmap not clearing Updating…: the clear action resets selection and hides the layer.   
• Save All partial failures: you’ll get a single alert showing how many saved vs. total; the list still refreshes.   
• Not signed in: the page may redirect to sign-in on load; saving shows an alert until you sign in.

## Quick reference checklist

* See preload status in Map Settings (banners at top).
* Boundary loading toast and retry appear bottom-left.
* Style dropdown disables and shows (Changing…) during changes.
* Heatmap shows Updating… until render complete callback fires.
* Saving requires sign-in; watch for limit and already-saved alerts.

## Open questions for PM/Eng

1. Heatmap retries: should Data Layers auto-retry failed loads, and with what backoff? (No explicit retry found.)
2. Save caps: are “100 saved searches” and “100 saved locations” separate quotas or the same global limit?
3. Style preload completion: what exactly flips stylesPreloaded to true—successful fetch of all style variants, or first-use caching? (Banner logic depends on it.)
4. Boundary preload totals: can we document typical preloadProgress.total values per layer to set user expectations?

Note: Map loads with a simple overlay at start, then kicks off background preloads for boundaries and styles—this design spreads work to keep the UI responsive.

# 10) Handy gestures & controls

Screenshot placeholder: “Dragging the table.”  
Alt: Cursor over the Facility Table with a subtle movement shadow indicating drag.

## Drag the Facility Table (mouse & touch)

1. Open the Facility Table  
   • Click a single facility marker to load its details into the table. The page wires map clicks to onFacilityTableSelection, which shows the table when there are facilities.
2. Drag with a mouse/trackpad  
   • Click-drag the table to reposition it (dragging starts on pointer down; position updates on move).
3. Drag on touch  
   • Long-press, then drag. A 200ms touch long-press starts the drag.
4. Close the table quickly  
   • Press Esc (global key handler).   
   • Or click the dark backdrop to dismiss.

Tip: Clicking a cluster can load multiple facilities at once into the table for side-by-side review.

## Search dropdown shortcuts (Enter / Escape)

1. Run the search  
   • Press Enter when the search box has text. (Empty input won’t trigger a search.)
2. Close suggestions  
   • Press Escape to close the suggestions list and blur the input.

Note: The “Currently showing” chip and its Clear action live in the search bar; use Clear to reset the state.

## Click-outside to close dropdowns

• Search suggestions close when you click outside the dropdown.   
• Saved items menus also close on any outside click.

Warning: The Map Style dropdown disables itself and shows “(Changing…)” while styles apply—rapid clicks are blocked until the lock clears.

## Behavioral notes (what you’ll see)

• Map loading overlay: “Loading Australian map.” appears until the base map is ready.   
• Boundary preload banner: “Loading boundary data…” with a progress bar.   
• Style preload banner: “Loading Map Styles” with progress.   
• Map Style switching: button is disabled, label shows “(Changing…)”; lock auto-releases after style load (and also after a 10s fallback).   
• Facility “Save all” actions show disabled/“Processing…” states while running.   
• If you’re not signed in, the page routes to the sign-in screen; saving from the table also prompts sign-in.

## FAQ

1. How do I open the Facility Table?  
   Click a facility marker (single) or a cluster; the page sends the selected facilities to the table and shows it.
2. Can I drag the table anywhere?  
   Yes—dragging begins on pointer down and updates as you move.
3. How do I drag on phones/tablets?  
   Long-press for ~200ms, then drag.
4. How do I close the table fast?  
   Press Esc or click the backdrop.
5. Does Enter run a search?  
   Yes—when the input isn’t empty.
6. What does Escape do in the search box?  
   Closes the suggestions and blurs focus.
7. Do dropdowns close if I click outside?  
   Yes—for search suggestions and saved-item menus.
8. What are the loading banners?  
   “Loading Australian map.” overlay; boundary and style preload progress banners in Map Settings.
9. Why can’t I click the Map Style dropdown sometimes?  
   It’s disabled during a style change (“(Changing…)” shows), and re-enables after the change or the 10s safety timeout.
10. Can I save facilities from the table if I’m not signed in?  
    No—the UI prompts sign-in first.
11. How do clusters behave when clicked?  
    They toggle many popups, but when the table callback is provided the cluster can populate the table in one go.

## Troubleshooting

• The table won’t move on touch  
Long-press first (≈200ms), then drag.

• Enter doesn’t start the search  
Make sure the input has text; blank inputs are ignored.

• The suggestions/menu won’t close  
Click outside the dropdown (the app listens for outside clicks).

• Can’t close the table  
Press Esc or click the backdrop.

• Map Style looks “stuck” on Changing…  
It auto-unlocks after the style loads—or after a 10s fallback. Try again once the lock clears.

• “Please sign in to save facilities” appears  
Sign in, then retry the save from the table.

## Quick reference (checklist)

* Drag table: mouse drag or touch long-press → drag.
* Close table: Esc or backdrop.
* Search: Enter to run (with text), Escape to close suggestions.
* Click outside to close dropdowns (search/saved).
* Map Style switching: expect disabled state + “(Changing…)”.

## Open questions for PM/Eng

1. Drag handle scope: Is the entire table draggable, or only a specific “grab” region? (Code shows pointer/long-press initiation but not the exact handle element exposed in UI.)
2. Map Style dropdown: Should it close on outside click like other dropdowns? (No outside-click handler observed.)
3. Additional keyboard shortcuts: Any planned (e.g., close all popups with a key, focus search, etc.)? (Not found in current files.)

# 11) Go back to the main workspace

Return to your main workspace from the Maps page using the **Back to Main Menu** control in the header.

**Screenshot placeholder:** “Back to Main button.”  
**Alt text:** Header area with a Back to Main Menu button.

## Steps

1. **Find the header bar.** It includes optional sidebar controls (☰) and the back control.
2. **If the sidebar is expanded (default):** Click **Back to Main Menu** (with an arrow icon). This navigates to /main.
3. **If the sidebar is collapsed and your layout shows the sidebar toggle:** Click the **arrow-only** back button (it shows a tooltip “Back to Main Menu” on hover). This also navigates to /main.

**Note:** The back control **routes to /main**; it doesn’t itself modify your map, searches, or data. Any persistence is handled elsewhere in the app.

**Tip:** If you see only an arrow icon for the back control, your sidebar is likely collapsed; you’ll still go to the same place.

**Warning:** In some layouts **without** a sidebar toggle, the back control may be unavailable when the sidebar is collapsed. Expand the sidebar (if your layout supports it) or use your product’s standard navigation to reach “Main”.

## Behavioral notes

* **Navigation target:** Clicking the control pushes the app to **/main**.
* **Two visual states:**
  + **Expanded sidebar:** Text button **“Back to Main Menu”** with an arrow.
  + **Collapsed sidebar (with toggle available):** **Icon-only** arrow button with title="Back to Main Menu".
* **Sidebar toggle (optional):** A **Menu** (☰) button is shown **only if** a toggle handler is provided by the layout.
* **Defaults:** sidebarCollapsed defaults to **false**; pageTitle defaults to **"Page"** (not displayed by this control).
* **Loading/disabled states:** None implemented in this control.

## FAQ

1. **What happens when I click Back to Main Menu?**  
   You’re routed to the **/main** workspace.
2. **Why do I sometimes see only an arrow instead of the full “Back to Main Menu” text?**  
   That’s the **collapsed-sidebar** mode; the button is icon-only. Hover shows a tooltip.
3. **Where is the Back control located?**  
   In the **header bar** of the Maps page (same row as the optional sidebar toggle).
4. **Will I lose my map view or selections when I go back?**  
   This control **only performs navigation**. It doesn’t clear or save state by itself. Persistence is handled elsewhere.
5. **I don’t see the Back control—what should I do?**  
   If your sidebar is collapsed **and** the layout doesn’t expose a sidebar toggle, the icon-only Back control may not render. Use your app’s navigation (e.g., a global menu) to reach Main.
6. **Is there a keyboard shortcut?**  
   None in this control.
7. **Does the control show any loading spinners?**  
   No loading or disabled states are implemented here.
8. **Can the destination be changed from /main?**  
   The destination is **hardcoded** to /main in this control.
9. **What’s the menu (☰) icon for?**  
   If your layout provides a handler, it toggles the sidebar visibility. It’s separate from the back action.
10. **Is the page title shown in this header?**  
    A pageTitle prop exists with default "Page", but it’s **not displayed** by this control.
11. **Will hovering the icon-only button tell me where it goes?**  
    Yes—its title attribute is **“Back to Main Menu.”**

## Troubleshooting

* **Clicking does nothing:**  
  Ensure you have network access and that navigation isn’t blocked by your environment. The control calls the app router to **push /main**.
* **Back control missing in collapsed mode:**  
  Your layout might not provide a sidebar toggle; the icon-only back button renders **only when** a toggle handler exists. Use other in-app navigation to reach Main.
* **Unexpected page after clicking:**  
  The destination is fixed to /main; if you arrive elsewhere, check your app’s routing configuration.

## Quick reference (checklist)

* Locate header bar on Maps page.
* If sidebar expanded, click **Back to Main Menu**.
* If sidebar collapsed (with toggle available), click **arrow icon** (tooltip “Back to Main Menu”).
* You’ll be routed to **/main**.

## Open questions for PM/Eng

1. Should map state (viewport, selections) **persist** after returning from /main, and where is that handled? This control performs only navigation.
2. In collapsed-sidebar layouts **without** a toggle, should the back control still be visible? (Currently it won’t render.)
3. Is /main the final route name, or should it be configurable?
4. Should pageTitle be displayed in this header? (It’s defined but unused.)

# 12) Reference: geography & codes used in the app (enhanced with ABS/DoHAC definitions)

This section explains **where** you’ll see SA2/SA3/SA4, LGA, Postcode, Locality, **ACPR**, and **MMM** in the Maps page — and **why** they matter for aged-care analysis. UI behavior is grounded in the codebase; definitions below are from ABS and the Australian Department of Health and Aged Care (DoHAC), cited inline.

**Note**  
Boundary layers the app can show are: sa2, sa3, sa4, lga, postcode, locality, acpr, mmm (see GeoLayerType). The app loads matching GeoJSON files (e.g., SA2.geojson, POA.geojson, SAL.geojson, DOH\_simplified.geojson, MMM\_simplified.geojson) and uses the correct feature properties for labels (e.g., sa2\_name\_2021, SAL\_NAME21, ACPR\_Name, MMM\_NAME23).

## What each geography means (authoritative definitions)

* **SA2 (Statistical Area Level 2)** — Core building block for presenting regional statistics, built from SA1s, designed to represent communities and suburbs/towns. Typical use includes Census outputs and many ABS releases. ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/main-structure-and-greater-capital-city-statistical-areas/statistical-area-level-2?utm_source=chatgpt.com))
* **SA3** — Aggregations of whole SA2s to provide a standard regional breakdown (there are ~359 SA3s nationally). ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/main-structure-and-greater-capital-city-statistical-areas/statistical-area-level-3?utm_source=chatgpt.com))
* **SA4** — Aggregations of whole SA3s, the largest sub-state regions representing labour markets or capital-city functional areas; designed for stable time-series like the Labour Force series. ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/main-structure-and-greater-capital-city-statistical-areas/statistical-area-level-4?utm_source=chatgpt.com))
* **LGA (Local Government Area)** — ABS **mesh-block approximations** of gazetted council boundaries; good for statistics but not legal boundary substitutes. ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/non-abs-structures/local-government-areas?utm_source=chatgpt.com))
* **Postcode (POA)** — ABS **mesh-block approximations** of Australia Post postcodes for statistical comparison; not legal postcode polygons. ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/non-abs-structures/postal-areas?utm_source=chatgpt.com))
* **Locality (SAL — Suburbs and Localities)** — ABS approximations of **officially recognized suburbs (urban) and localities (rural)** defined by states/territories. ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/non-abs-structures/suburbs-and-localities?utm_source=chatgpt.com))
* **ACPR (Aged Care Planning Region)** — DoHAC planning regions built from **ASGS SA2 boundaries (2016)**; current ACPR maps and SA2 correspondences are published by DoHAC. ([Health, Disability and Ageing](https://www.health.gov.au/sites/default/files/documents/2020/01/2018-act-aged-care-planning-region-act-overview-map.pdf?utm_source=chatgpt.com))
* **MMM (Modified Monash Model)** — A 7-category classification (MM 1–MM 7) that defines whether a location is metropolitan, regional, rural, remote or very remote; updated in **MMM 2023** to align with 2021 Census data and widely used in health and aged-care programs. ([Health, Disability and Ageing](https://www.health.gov.au/topics/rural-health-workforce/classifications/mmm?utm_source=chatgpt.com))

**Tip**  
ABS boundaries are revised periodically (ASGS Edition 3 covers **July 2021–June 2026**), and ABS also publishes review outcomes — useful context when comparing datasets across years. ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/latest-release?utm_source=chatgpt.com))

## Where you’ll see these in the app

1. **Change the boundary layer shown on the map**  
   Open **Map Settings** and choose the geography layer (SA2, SA3, SA4, LGA, Postcode, Locality, ACPR, MMM). The app fetches and draws the chosen layer with an outline, a (transparent) fill for clicks, and a hidden highlight layer for selections.
2. **Know which codes/labels you’re looking at**
   * SA/POA/LGA layers use **2021** code/name fields (e.g., sa2\_code\_2021, lga\_name\_2021, poa\_name\_2021).
   * Locality uses **SAL\_CODE21 / SAL\_NAME21**.
   * ACPR uses **ACPR\_Code / ACPR\_Name**.
   * MMM uses **MMM\_CODE23 / MMM\_NAME23**.  
     These determine what’s displayed and highlighted.
3. **Search and highlight areas/facilities**  
   Type at least two characters to search; the app searches local GeoJSON for locations (SA2/3/4, LGA, Postcode, Locality) and facilities. “Currently showing:” appears beneath the bar; clearing it resets highlights. Saved-search controls appear to the right (with disabled and loading states handled).
4. **Heatmap & rankings (by SA2)**  
   Heatmap data and Top/Bottom rankings are managed at **SA2** granularity. Turning on variables computes min/max and ranked lists without forcing the panel to auto-open. Clearing the heatmap resets the selection.

## Why these geographies matter for aged-care analysis

* **SA2** is the sweet spot for resident catchments, demand heatmaps, and needs-based ranking. It’s a core ASGS unit designed for community-level analysis, aligning with common ABS outputs. ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/main-structure-and-greater-capital-city-statistical-areas/statistical-area-level-2?utm_source=chatgpt.com))
* **ACPR** is how DoHAC allocates and plans aged-care services; it’s built from SA2s, so SA2 <→ ACPR comparison is straightforward (the app includes both layers). ([Health, Disability and Ageing](https://www.health.gov.au/resources/publications/correspondence-of-2018-aged-care-planning-regions-and-2016-sa2s?language=en&utm_source=chatgpt.com))
* **MMM** influences program eligibility and pricing uplifts in rural/remote areas; understanding MM categories helps when comparing facility distribution and service viability. ([Health, Disability and Ageing](https://www.health.gov.au/topics/rural-health-workforce/classifications/mmm?utm_source=chatgpt.com))
* **LGA/Postcode/Locality** are familiar to operations teams and referral data; remember ABS uses **approximations** for these (statistical, not legal). ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/non-abs-structures/local-government-areas?utm_source=chatgpt.com))
* **SA3/SA4** support higher-level regional rollups (workforce planning, market summaries) while still aligning with SA2-level detail underneath. ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/main-structure-and-greater-capital-city-statistical-areas/statistical-area-level-3?utm_source=chatgpt.com))

## Behavioral notes (loading, disabled states, defaults)

* **Default layer**: SA2 is the initial selectedGeoLayer.
* **Boundary loading**: Switching layers clears previous sources, fetches the new file, and shows **“Loading boundary data…”**. Errors surface as **“Boundary Loading Error”** with a **Try Again** button.
* **Large files**: SA2 is explicitly flagged as large (~170MB), which can take time to load; the app preloads boundaries in an optimal order to reduce waits later.
* **Saving searches**: The “save” button disables/spins while saving; a max of **100 saved searches** is enforced with an alert when exceeded.
* **MapTiler key**: If the API key is missing, the map shows a blocking warning.

## FAQ (for business users & analysts)

1. **Why are postcode/LGA boundaries “approximate”?**  
   ABS creates statistical approximations from mesh blocks so you can compare data, but they’re **not legal boundaries**. ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/non-abs-structures/local-government-areas?utm_source=chatgpt.com))
2. **How do I switch from SA2 to ACPR to see planning regions?**  
   Open **Map Settings** → choose **ACPR**. The app loads DOH\_simplified.geojson and uses ACPR\_Name/ACPR\_Code for labels.
3. **Why does “Currently showing:” appear under the search?**  
   It reflects the last selection and shows its display name; clearing it resets highlights.
4. **Do heatmaps use SA2 or ACPR?**  
   SA2. Min/max and rankings are computed/stored at SA2, and the UI doesn’t auto-open the rankings panel.
5. **What’s MMM and where does it come from?**  
   A 7-level remoteness model (MM 1–MM 7) maintained by DoHAC; **MMM 2023** aligns with 2021 Census. ([Health, Disability and Ageing](https://www.health.gov.au/topics/rural-health-workforce/classifications/mmm?utm_source=chatgpt.com))
6. **How are ACPR boundaries defined?**  
   Based on **ASGS 2016 SA2s**; DoHAC publishes SA2 ↔ ACPR correspondences. ([Health, Disability and Ageing](https://www.health.gov.au/resources/publications/correspondence-of-2018-aged-care-planning-regions-and-2016-sa2s?language=en&utm_source=chatgpt.com))
7. **Why did my layer switch take a while?**  
   SA2 files are large; the app shows a loading badge and preloads layers in a small→large order to help.
8. **Can I save an area or facility search?**  
   Yes. Saved searches support both **locations** and **facilities**; the save button shows disabled/spinner states and enforces limits.
9. **What happens if I remove a saved search that’s currently showing?**  
   The app clears the search bar and map highlight.
10. **What properties does the map use to find/highlight a feature after I click/search?**  
    It uses the appropriate code field for the active layer (e.g., sa2\_code\_2021, SAL\_CODE21, ACPR\_Code, MMM\_CODE23) to filter the highlight layer.
11. **Do ABS updates affect my analysis?**  
    Yes. Boundary updates (e.g., ASGS Edition 3) can shift counts across areas; check the vintage of your data and layer. ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/latest-release?utm_source=chatgpt.com))
12. **Is SA3/SA4 useful for workforce or market summaries?**  
    Yes — they’re designed for broader regional analysis, aggregating SA2s. ([Australian Bureau of Statistics](https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/main-structure-and-greater-capital-city-statistical-areas/statistical-area-level-3?utm_source=chatgpt.com))

## Troubleshooting

* **“Loading boundary data…” never ends**  
  Try switching layers again; the loader cancels prior fetches and restarts cleanly. If an error banner appears, click **Try Again**.
* **SA2 loads are very slow**  
  Expected for a ~170 MB file. Preloading helps, but initial fetch can still take time. Consider using SA3/SA4 for overview, then drill to SA2.
* **Map shows “MapTiler API Key Required” overlay**  
  Add NEXT\_PUBLIC\_MAPTILER\_API\_KEY.
* **Can’t save more searches**  
  You’ve hit the **100 saved searches** limit. Delete some in **Saved Searches** and try again.
* **Click doesn’t highlight the area**  
  Ensure the current layer matches the thing you clicked/searched (e.g., Locality vs Postcode). Highlighting is layer-typed.

## Quick reference checklist

* Pick your **boundary layer** in **Map Settings** (SA2/3/4, LGA, Postcode, Locality, ACPR, MMM).
* Use the **Search** bar; confirm **Currently showing** and/or **Save** if needed.
* Turn on **Heatmap** (SA2-based) and review **Top/Bottom** rankings when ready.
* If boundaries hang, **switch layer** or **Try Again**.
* For rural/remote context, toggle **MMM**; for planning context, toggle **ACPR**.

## Screenshot (placeholder)

[Screenshot goes here: “Maps page with ACPR layer active — ‘Boundary Loading…’ badge shown, and ‘Currently showing: Wagga Wagga (ACPR)’ under the search bar.”]

## Open questions for PM/Eng

1. **UI control text & placement** — Confirm the exact control in **Map Settings** for selecting between SA2/SA3/SA4/LGA/Postcode/Locality/ACPR/MMM (component shows states and preload banners, but the explicit selector isn’t in the provided files). What are the final labels?
2. **ACPR & MMM data vintages** — We surface ACPR\_Code/Name and MMM\_CODE23/NAME23. Please confirm expected vintages going forward (e.g., ACPR 2018, MMM 2023) and when to update the shipped GeoJSONs.
3. **Search result typing** — We highlight when the search result type matches the current layer; do we want cross-walk highlights (e.g., Locality → POA) beyond what’s already allowed for POA/Locality?

Authoritative sources used for definitions: ABS ASGS Edition 3 pages for SA2/SA3/SA4, LGA, POA, SAL; and DoHAC for ACPR and MMM (see citations above).