For known, resolved, and unresolved issues, please visit the topoBuilder Application and click on the Help tab located on the left side of the application, or go to Known Issues - topoBuilder and OnDemand Topo. For other technical questions, please contact The National Map Help Desk (tnm_help@usgs.gov).

U.S. Department of the Interior
U.S. Geological Survey
Overview

The topoBuilder Application allows users to select a location and generate OnDemand topo maps that are delivered via email. There may be a pop-up notification when you first launch the application that provides important information, such as planned downtime. The process takes three major steps:

1) **Select a Map Type**: Select the Map Type that best suit your intended purpose.

2) **Select desired Map(s) & Move to Cart**: Select maps based on an existing grid or a custom area. Edit map properties for selected maps and move them to the cart.

3) **Confirm Cart Contents and Submit for Processing**: Confirm desired maps are added to the cart, edit map properties as needed, and submit for processing.

When using a mobile device, the workflow and interface have enhancements to make it more mobile friendly such as: auto-expansion of the Task and Map panels, a smaller icon for the selection tools, more guidance for selecting maps, and auto-advancing the workflow. Page 15 shows these changes in more detail.

The application has two distinct sections: **Task Panel** and **Map Panel**.
**Task Panel**: Select Map Type(s), select and view list of selected maps, edit map options, move maps to the cart, and submit for processing.

**Map Panel**: Contains a map of the United States and its’ territories. Users can pan, zoom, search for places, change the basemap, and select maps.

**User Guide**: A link to this downloadable User Guide.

**Find address or Place Bar** (a in Figure 1): type a location or address to zoom to in the map.

**Zoom** (b in Figure 1): use the + and - icons to zoom in and out of the map.

**Home** (c in Figure 1): use this icon to navigate to the default extent of the map.

**Basemap Gallery** (d in Figure 1): use this menu to choose between various basemap options.

**Numbered Steps**: The workflow for selecting, editing, and submit Maps.

**Help**: Links to informative sites and contact information for questions and feedback on the application and OnDemand Topo products.

**Hide/Expand Task Panel**: The green arrows button that hides or expands the Task Panel.
Definitions

**On-Grid Map**: Maps bounded by the provided grid layout. On-Grid maps will have an official name.

**Custom Map**: Maps centered on a point placed by the user. The Move tool allows a user to adjust the placement. A default name is provided.

**Move tool**: Adjusts the location of a Custom Map. The Move tool does not work with On-Grid Maps.

**Map Type**: The Map Type shows the scale of the On-Grid or Custom Map being requested.

**Watchlist**: The list of maps in the Maps tab. These are selected maps that have not been added to the cart.

**Contour Smoothing**: Contour smoothing is a setting to change the level of detail of Contours. Contours can be set from high detail (low smoothing) to low detail (high smoothing), while maintaining elevation accuracy. An information icon in the application contains more detailed information.

**Format**: topoBuilder lets you choose between two file formats for OnDemand Topo products: geospatial layered PDFs or TIFFs/GeoTIFFs. See the OnDemand Topo User Guide for more detailed information about both formats. PDFs are available in all areas. GeoTIFFs are only available in the conterminous U.S. and the Pacific Territories. Alaska, Hawaii, Puerto Rico, and the U.S. Virgin Islands are available as TIFFs.

**Edit Layers**: This option allows you to select data layers you wish to include in your OnDemand Topo products. This customization is implemented globally, meaning that the setting will apply to all maps in the Watchlist and/or Cart. By default, all data layers are turned on.

**Note**: this is different than turning layers off in a PDF. The map product will ONLY include the data layers selected if they are present in the map extents.
Step 1: Map Types

Upon launch, there may be a pop-up notification that provides important information, such as planned downtime. After closing the pop-up, the Map Types tab appears. The tab shows different scales and styles of maps, although currently only 7.5-Minute Topo products (1:24,000-scale) are offered. Click the “i” icon for more information.

1) Select a Map Type by checking the checkbox. 7.5-Minute Topo is selected by default.
   - A blue checkmark appears in the checkbox, along with a blue box around the map thumbnail showing a selection has been made. The Next button at the bottom of the Task Panel becomes active.

2) Click Next to proceed to the Map Selection step.
Step 2: Map Selection

The Maps tab shows the selected Map Type from Step 1. The Custom Select option lets you choose where to center the map, the Custom Select tool is activated by default. Alternatively, you can choose to select a map on the regular grid by clicking Select by Grid(s).

To see the standard 7.5-minute extent grid, zoom in on the Map Panel (where the scale bar is 20-mile distance) or closer. The Zoom in to display Grid button will take you to the minimum zoom level where the grid is displayed. Once zoomed in this button transitions to a toggle to Display Grids on or off. Next you will left click within the Map Panel to add Maps to your Map Watchlist. More details on best practices are below.

Custom Select

Use this option to make a Custom Map anywhere off the grid. This option is selected by default when you progress the workflow from Step 1: Map Types to Step 2: Map Selection.

1) Click Custom Select and zoom to your desired location on the map.
   a. Grids will not be displayed until zoomed in to 1:20 miles or greater. Grids can be turned on or off with the Display Grid toggle.
   b. Grid Names will appear when zoomed in to 1:4 miles or greater. These are official USGS map names. These names are applied to On-Grid maps only (created with the Select by Grid(s) tool, next section).

2) Click anywhere within the United States and its territories to set the center point of your map. A transparent blue rectangle appears.
   a. The map will be added to your Watchlist in the Maps panel.

3) Move your Custom Map with the Move tool. Click the Move tool, then left click and drag the blue rectangle to your desired location.
Select by Grid

Use the Select by Grid(s) tool to create On-Grid maps that are bounded by the USGS standard 7.5-minute grid.

1) Click Select by Grid(s) and zoom to your desired location on the map.
   a. Grids will not be displayed until zoomed in to 1:20 miles or greater. Grids can be turned on or off with the Display Grid toggle.
   b. Grid Names will appear when zoomed in to 1:4 miles or greater. These are official USGS map names and will be applied to On-Grid maps.

2) Click anywhere within the desired grid to make an On-Grid map in that quadrangle. A transparent blue rectangle with a hatch pattern appears.
   a. The map will be added to the Watchlist in the Maps panel.
Tips for Selecting Maps

- **Moving**: Hold down the left mouse button and drag the mouse or use your keyboard arrow keys to pan around the Map Panel.
- **Zooming**: Use either the mouse scroll wheel or the Zoom tools (+ and -)
- **Searching**: Type an address, city, or landmark into the Find address or place search bar. The map will zoom to the location and add a dot to the basemap. Only locations within the U.S. and its territories can be searched.

**Note:**
- Maps must, at minimum, intersect a grid line to be processed properly. Any maps completely outside the U.S. are not available.

*Figure 8* demonstrates the symbology and name differentiation between On-Grid and Custom Maps for Selected and Unselected maps in the Watchlist.

*Figure 8 Custom and On-Grid Map Polygons: Selected and Unselected Polygons. The two maps on the right are On-Grid and the two maps on the left are Custom maps.*
Map Customization Options
Every map can have its **Format**, **Contour Smoothness**, and **Layers** customized.

1) Click the plus sign in the **Task Panel Tools**. The Map Options will expand.

2) **Format** can be PDF or TIFF/GeoTIFF; this is a dropdown menu. **Contour Smoothing** can be Low, Medium, or High; this is a sliding option. See full definitions [above](#).

3) **Edit Layers** allows you to select data layers you wish to include in your OnDemand Topo products. This customization is implemented globally, meaning that the setting will apply to all maps in the **Watchlist** and/or **Cart**. By default, all data layers are included in the product.
Task Panel Tools

Figure 13 Task Panel Tools Overview

Select/Unselect All: Select/Unselect all the maps in the Watchlist at once. Maps will have a blue checkbox, and the map(s) in the Map Panel will have an orange outline.

Show/Hide Options: Expand or collapse the Map Customization Options (details below) for all maps in the Watchlist at once.

Select/Unselect Map (a in Figure 11): Select/Unselect the desired map in the Watchlist. Maps will have a blue checkbox and the map(s) in the Map Panel will have an orange outline.

Zoom to Map (b in Figure 11): The magnifying glass will zoom to the map extent and center it on the Map Panel.

Delete Map (c in Figure 11): The trashcan icon will delete the selected map from the list. A Warning pop-up will appear. Click Confirm to delete or Cancel to cancel the deletion. Check the box “Do not show this message again” if you do not want this warning to appear again.

Hide/Show Map Options (d in Figure 11): The map options are expanded by default when a map is added to the Watchlist. These options can be collapsed or expanded for each map individually by clicking the minus or plus button, as opposed to the Show/Hide Options button that applies to all maps in the Watchlist.

Back To Top: Brings the Maps panel back to the top of the Map Watchlist.
Adding Maps to the Cart

Users must select which maps within their **Watchlist** they want to add to the **Cart**.

1) Select one or more maps using the checkboxes next to each map name. You can also select all maps at once with the **Select All button**. Once at least one map in the **Watchlist** is selected, the **Add** button becomes active.

![Figure 14 Two Maps selected in the Watchlist, the Add button is activated.](image)

2) Click the **Add** button. Selected maps are removed from the **Watchlist** and added to the **Cart**. The Cart count increases by the number of maps that were added.

3) The **Go to Cart** button becomes active and can be clicked to progress the workflow to the Cart. **Step 2: Map Selection workflow** can be repeated until the desired maps have been added to the cart.

![Figure 15 Cart count increased by two maps and the Go to Cart button is activated.](image)
Step 3: Finalize Selection and Checkout

Finalize your selections and complete your requests in the Cart. The Cart shares the same editing capabilities as the ones described in Task Panel Tools and Map Customization Options above.

1) Click on the Cart tab in the Task Panel or the Go to Cart button in Step 2: Map Selection.

2) Check list for accuracy: Each map will have a list of unique details based on what was added.
   - Map Type (E.g., 7.5-Minute Topo)
     - On-Grid or Custom Extent
     - Contour Smoothing option
     - Format

3) Maps can be edited using the Edit Maps button at the bottom of the Cart Task Panel.
Editing Cart Maps
Editing maps in the **Cart** is the same as editing maps in the **Watchlist**.

1) Expand or collapse the map options as necessary. Map options are expanded by default.

2) Update the map **Format** and **Contour Smoothing** as desired.

3) Click the **Save** button at the bottom of the Task Panel to save the edits. To discard changes click **Cancel**.
   - **Warning!** Edits will be lost if **Save** is not clicked.

4) After edits are **Saved** or **Canceled**, the Task Panel returns to the Cart tab.

![Figure 18 Editing Cart Maps. Make sure to Save your edits.](image-url)
Checking Out

Once the Cart is complete, click the **Checkout** button at the bottom of the Task Panel Cart Tab.

![Cart Checkout Button](image)

*Figure 19 Cart Checkout Button*

1) Enter an email address in the pop-up window. Once a valid email is entered, the Checkout button becomes active. A warning will appear if there is an invalid submission.

2) Click **Checkout**.

![Checkout Email submission pop-up.](image)

*Figure 20 Checkout Email submission pop-up.*

3) When the request is complete, the “Export Succeeded” pop-up window shows details about how to access the maps. The map(s) are now being processed.

![Export Succeeded pop-up.](image)

*Figure 21 Export Succeeded pop-up.*

4) Click **Close** to return to the application.
Mobile Workflow

Step 1: Map Types
Select a Map Type by checking the checkbox. 7.5-Minute Topo is selected by default. Click Next to proceed to the Map Selection step.

Figure 22 Mobile workflow landing page
Step 2: Map Selection
The mobile workflow automatically collapses the Task Panel and expands the Map Panel. The selection tools are docked on the bottom righthand corner of the screen. The Custom Select tool is activated by default.
1) To see the standard 7.5-minute extent grid, zoom in on the Map Panel (where the scale bar is 20-mile distance) or closer. Next you will left click within the Map Panel to add Maps to your Map Watchlist. After clicking, a pop-up will appear asking you: “Would you like to select more maps?”.

Figure 24 Mobile workflow Map Added pop-up
2) Click **Yes** to continue with map selection. Click **No** to progress the workflow to the **Map Watchlist** for map customization options. These options are identical to the normal workflow.

![Figure 25 Mobile workflow map customization options](image)

3) Click the **Add** button. Selected maps are removed from the Watchlist and added to the **Cart**. The **Task Panel** will automatically progress to the **Cart**.
Step 3: Finalize Selection and Checkout
This works the same as the normal workflow. See above for details.

Figure 26 Mobile workflow Cart
Email Notifications

After a successful checkout, an email with a list of requested maps is sent to the email address submitted at checkout.

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**Figure 27 Map Request Email example.**

1) When each map is ready, a separate “Complete Map Request” email with a link to download the map is sent.

2) For best results, download and view maps on a desktop or laptop computer.

3) Maps appear best in PDF reading software (for PDFs), or image viewing software (for TIFFs).

4) This link is shareable for others to use but is set to expire 60 days after delivery.

5) Make sure to download the map before the expiration date.

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**Figure 28 Completed Map Request Email example.**

6) Please refer to the [USGS OnDemand Topo User Guide](https://www.usgs.gov/) for guidance on best viewing practice and more details on OnDemand Topo maps and map content.