topoBuilder Application

User Guide

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

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Overview

Introduction

The topoBuilder web application (https://topobuilder.nationalmap.gov/) allows users to request free, customized U.S. Geological Survey topographic maps. These maps, known as OnDemand Topos, are made to order and delivered via email.

For more about topoBuilder please visit the topoBuilder home page. Release Notes and Known Issues documentation is also available online.

Additional information on U.S. Geological Survey topographic maps can be found at USGS.gov/TopoMaps.
For other questions or to provide feedback, please contact The National Map Help Desk at tnm_help@usgs.gov.

Summary of topoBuilder Workflow

Creating your unique OnDemand Topo takes three major steps:

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

2) Customize Maps Select maps based on an existing grid or a custom area. Edit map properties for selected maps and add them for Review.

3) Submit Maps for Processing: Confirm desired maps have been added for Reivew, edit map properties as needed, and submit for processing.

After your map request is successfully submitted, you may also monitor the progress of your order using the provided Order Confirmation Number. See Track Orders section for details.

It is recommended that you access topoBuilder via desktop computer, but the application is also accessible on mobile devices. The Mobile Workflow section highlights differences in functionality and layout.

Application Layout

The application has two distinct sections: the Task Panel and the Map Panel.

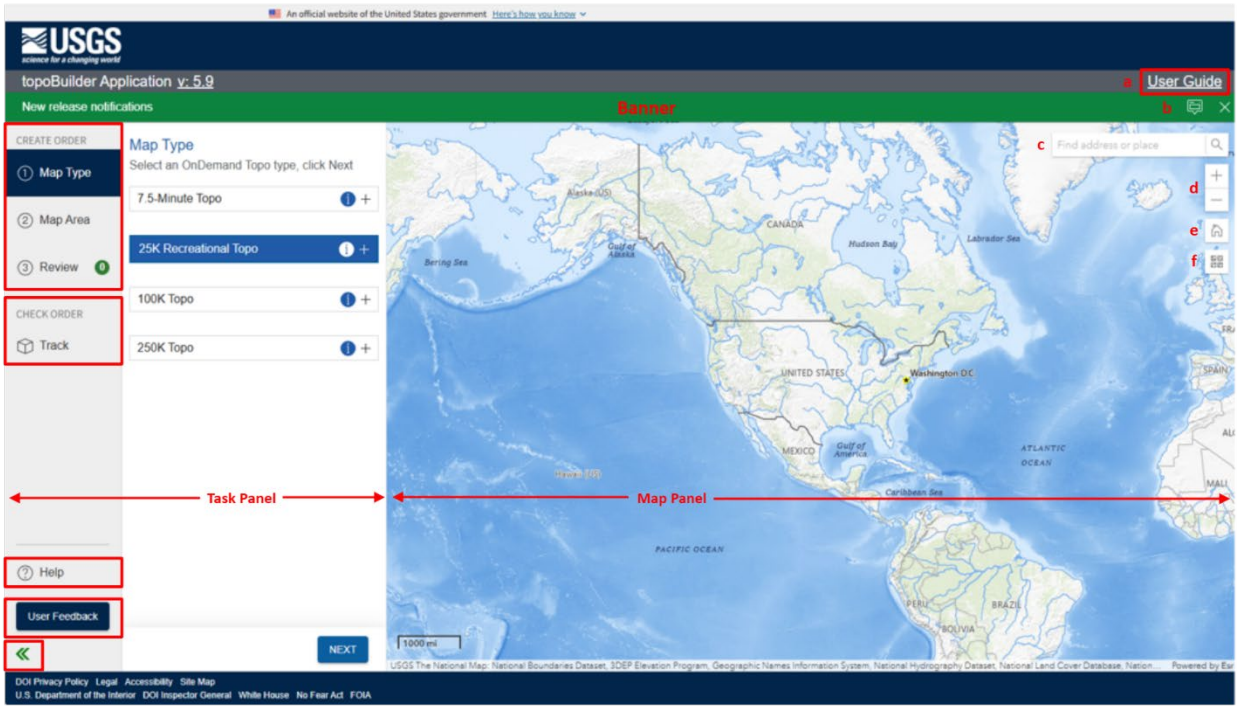

Figure 1. topoBuilder User Interface Overview

Task Panel: Select Map Type(s), select and view list of selected maps, edit map options, move maps to the cart, submit for processing, and track order status.

Map Panel: This is the web map interface where users can pan, zoom, search for places, change the basemap, and select maps.

Banner: Brief description of application notifications, such as new releases, upcoming downtime, etc.

User Guide (a in *Figure 1*): A link to the downloadable topoBuilder Application User Guide (this document).

Banner Pop-up (b in *Figure 1*)**:** Click this button to see the full banner notification pop-up which will include a more detailed description of updates that are expected to impact users.

Find address or place Search Bar (c in *Figure 1*): Type a location or address to zoom to in the map.

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

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

Basemap Gallery (f in *Figure 1*): Use this menu to switch between basemaps. The default basemap is The National Map Topo Basemap.

Numbered Steps: The workflow for selecting map type, map area, and reviewing selected maps.

Track: Track the status of order requests and map deliveries.

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

User Feedback: Opens an optional form allowing users to provide feedback

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 often have an official name.

Custom Extent 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 Extent map. The Move tool does not work with On-Grid maps.

Map Type: OnDemand Topos are available in different scales and styles. Each distinct product is its own Map Type and is represented in the Map Type tab.

Watchlist: The list of maps in the Maps tab. These are selected maps that have not been added for Review.

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.

> *Note:* Contour smoothing is only available for the 7.5-Minute Topo.

Format: 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.

Customization: This option allows you to select data layers you wish to include in your OnDemand Topo products. This customization is implemented within each map type individually, meaning that the setting will apply to all maps in the Watchlist and/or My Maps that are the same map type (7.5-Minute Edits, 25K Recreational Topo Edits, 100K Topo Edits, 250K Topo Edits, etc.). 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.

Track: This tab can be used to track order status by entering an Order Confirmation Number (included in the USGS Map Request confirmation). Details of the order are included in the Track tab, including the overall progress of the order, individual map request progress status, and the map details for each request. Multiple orders can be tracked at once. Maps can be filtered within each order based upon the status and a search against map name is available. Each delivered map includes a Download Link and Copy URL option for easy access.

Step 1: Select A Map Type

When the topoBuilder application is first launched, the Map Type tab is selected by default. This tab shows default OnDemand Topo product configurations available through topoBuilder. Currently, 7.5-Minute Topo, 25K Recreational Topo, 100K Topo, and 250K Topo products are offered.

7.5-Minute Topos closely resemble historical 7.5-minute U.S. Geological Survey maps, as well as US Topo maps, and provide a high level of detail over approximately 50 to 70 square miles per map. 25K Recreational Topos cover an area of between 50 and 70 square miles, and highlight recreational datasets within the selected map area for use in activities such as hiking, camping, picnicking, snowmobiling, biking, and hunting. 100K Topos are similar to the historical 30- by 60- minute U.S. Geological survey maps and are ideal for any application where information across a larger area (approximately 1500 to 2200 square miles) is needed. The 250K Topo closely resembles the traditional 1 by 2- or 3- degree map series and cover an area of approximately 4,500 to 8,700 square miles.

The Map Type product cards are collapsed by default when the application is launched. The product cards can be expanded by clicking the "+" icon on the right-hand side of the card, by the "i" icon. The image below each Map Type title is a map thumbnail showing sample content and design of that OnDemand Topo type to help guide your decision. Click the "i" icon for more information on each Map Type.

1) Select a Map Type by clicking the Map Type box.
    - A blue box around the map thumbnail shows a selection has been made. The Next button at the bottom of the Task Panel becomes active.

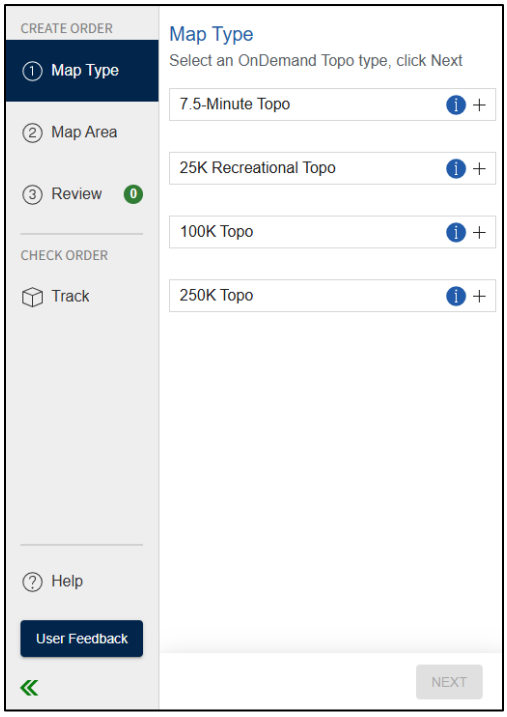

Figure 2. Map Type unselected

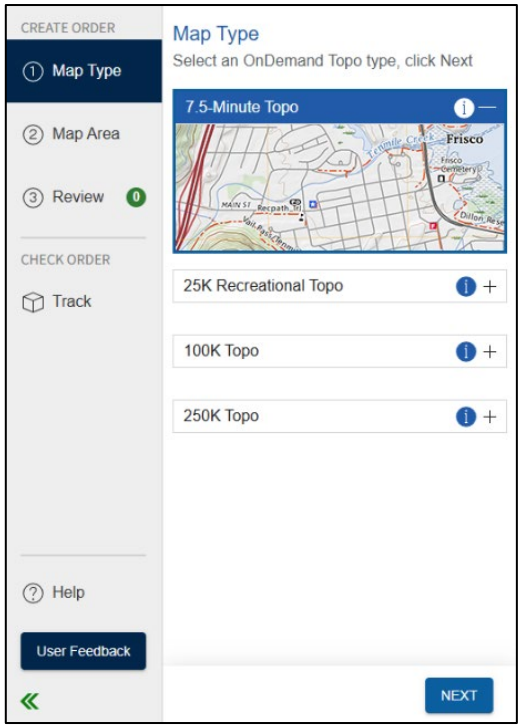

Figure 3. Map Type selected and Next button activated

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

Step 2: Customize Maps

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).

Each Map Type has its own standard extent grid. These grids are based on historical U.S. Geological Survey map indexes that subdivide the United States and its territories along lines of latitude and longitude. For Custom Extent maps, these grids are available to aid in navigating to your area of interest. For On-Grid maps, the grid serves as the boundaries to which your OnDemand Topo will align.

To see the grid, zoom in on the Map Panel. 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 Watchlist. More details on best practices are below.

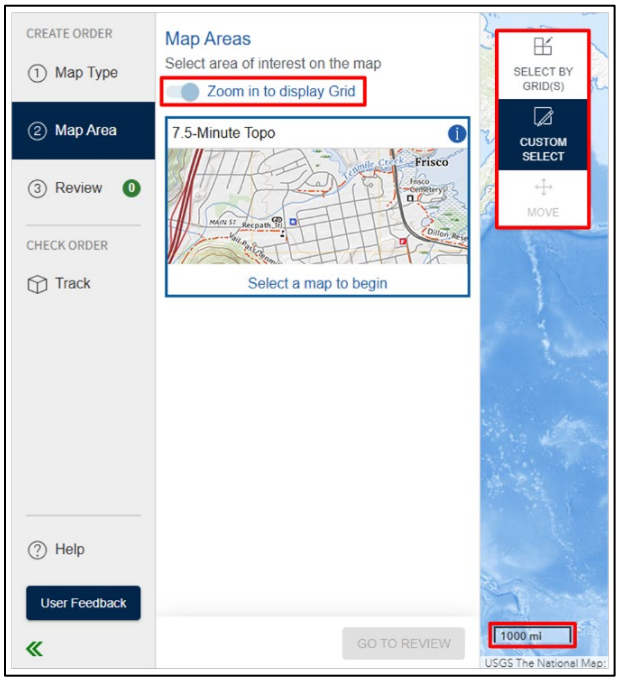

Figure 4. Maps Tab Overview

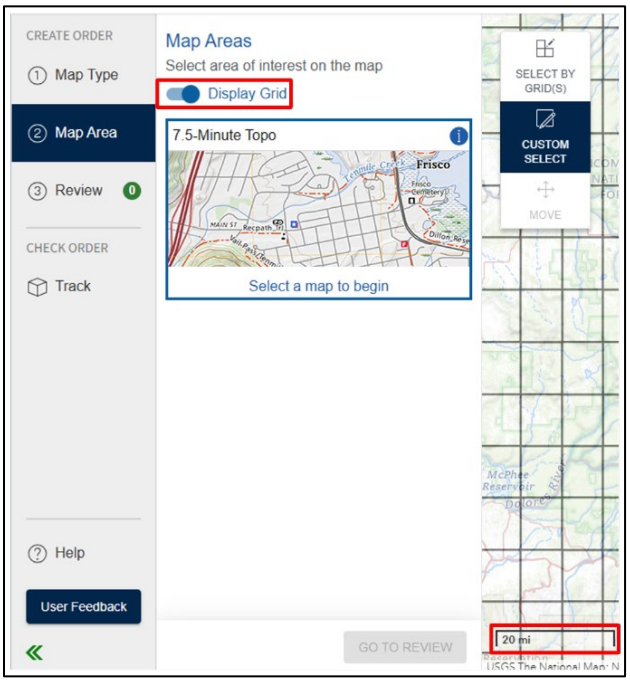

Figure 5. Maps Tab Grids Displayed

Map Type	Grid Display Range	Grid Labels Display Range
7.5-Minute Topo	20 mi or less	4 mi or less
25K Recreational Topo	20 mi or less	4 mi or less
100K Topo	60 mi or less	20 mi or less
250K Topo	100 mi or less	60 mi or less

Table 1. Map Grids Display Information. See scale bar in the bottom left corner of the Map Panel.

Custom Select

Use this option to make a Custom Extent map. Custom Extent maps allow the greatest flexibility in your map location. 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 their display range, which varies between Map Types (see Table 1). Grids can be turned on or off with the Display Grid toggle.
    b. Grid Labels will appear when zoomed in to their display range, which varies between Map Types (see Table 1). 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 Map Panel.

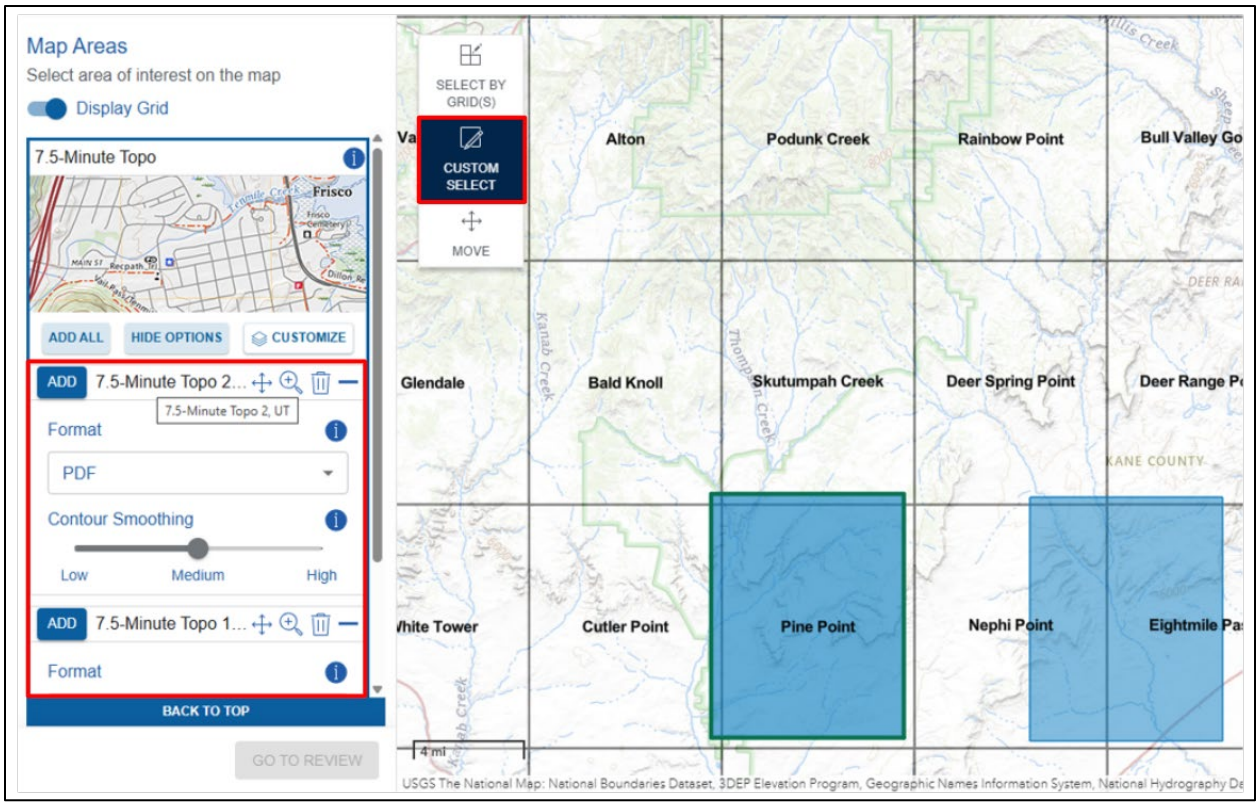

Figure 6. Custom Extent Map Selection

3) Move your Custom Extent map with the Move tool. Click the Move tool, then left click and drag the blue rectangle to your desired location.

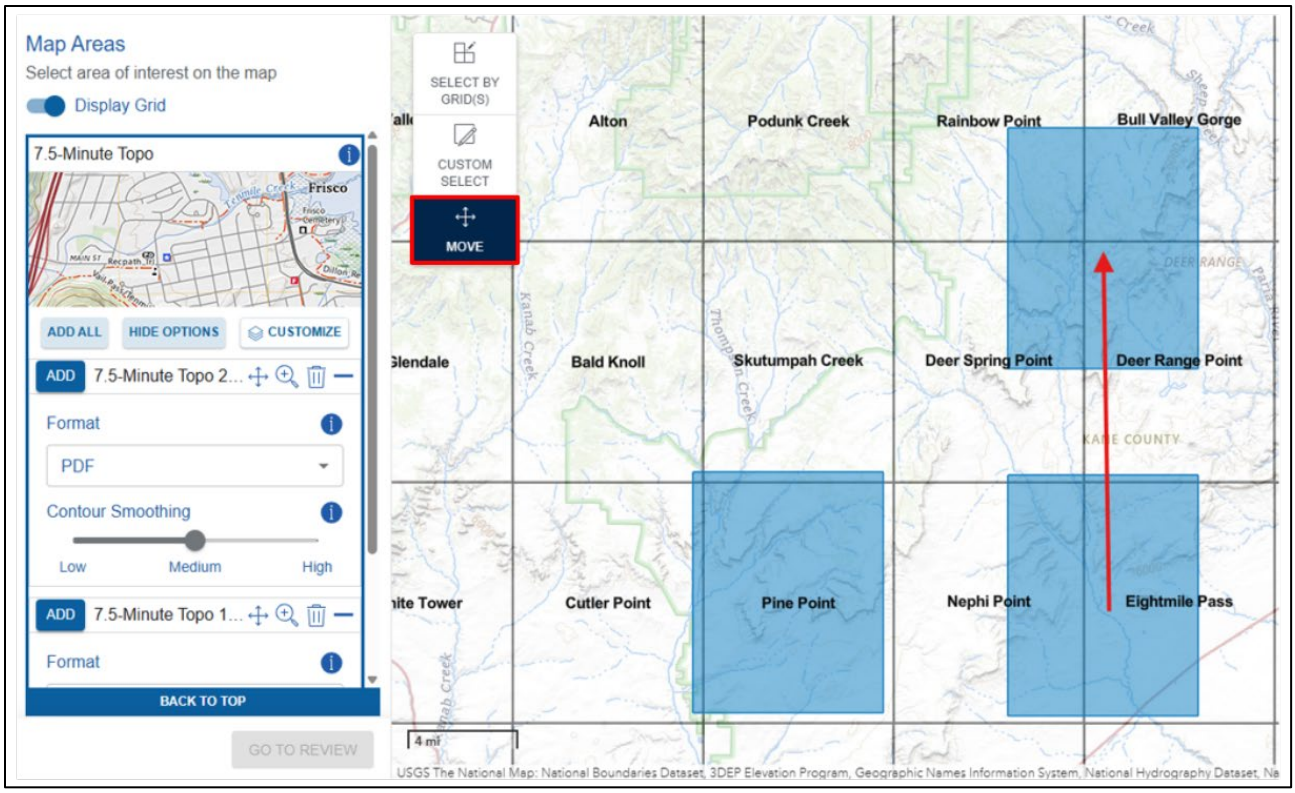

Figure 7. Custom Extent Map Move

Select by Grid

Use the Select by Grid(s) tool to create On-Grid maps that are bounded by a U.S. Geological Survey 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 their display range (see Table 1). Grids can be turned on or off with the Display Grid toggle.
    b. Grid Labels will appear when zoomed in to their display range (see Table 1). These names 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 orange rectangle appears.
    a. The map will be added to the Watchlist in the Map 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 Map Panel search bar in the upper right-hand corner. 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 Extent maps as well as when a map is hovered over in the Watchlist. Maps that are hovered over with the cursor will have a green outline and appear less transparent than the other maps.

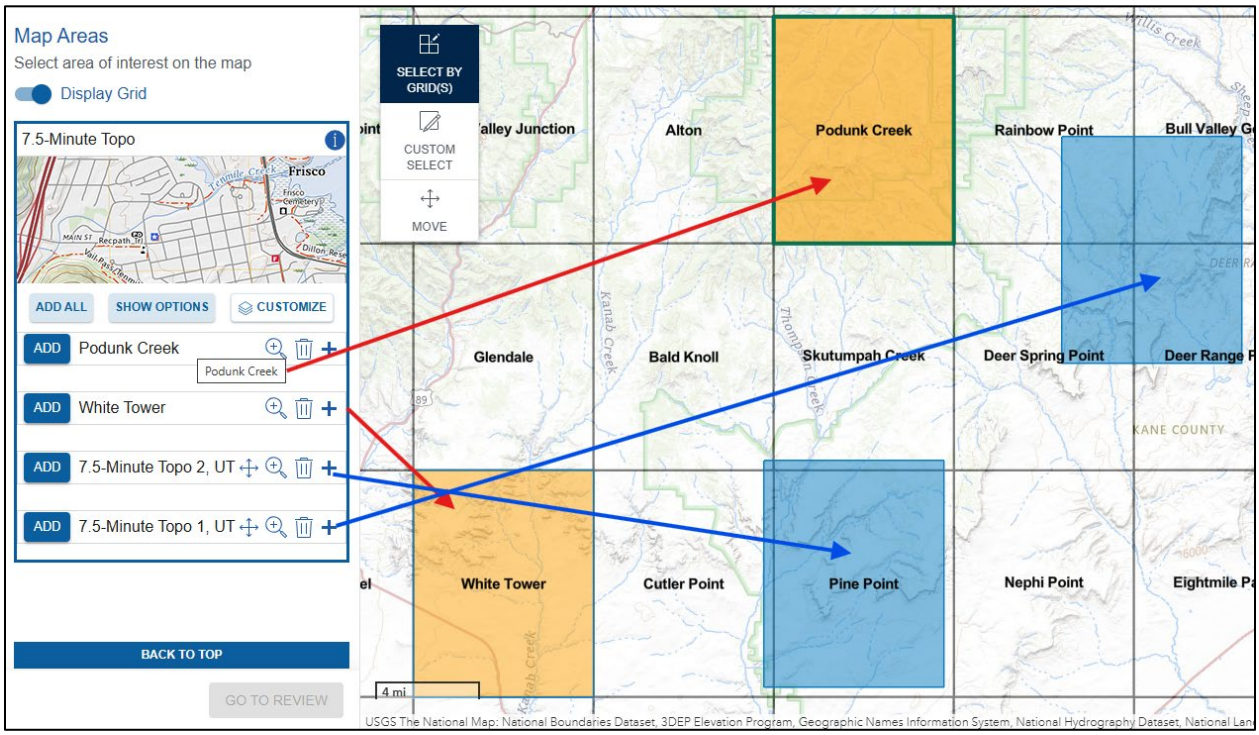

Figure 8. Custom Extent and On-Grid Map Polygons. The two yellow maps are On-Grid and the two blue maps are Custom Extent maps. The cursor is hovering over Podunk Creek in the Watchlist.

Map Customization Options

Every map can have its Format and Layers customized. Contour Smoothness is available for customization for the 7.5-Minute Topo Map Type only.

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

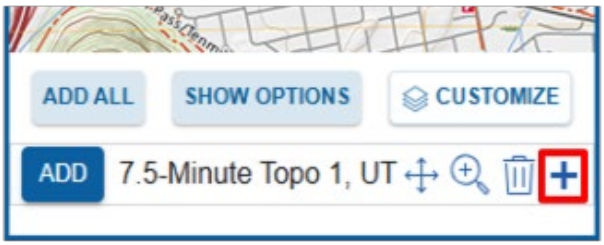

Figure 9. Show Map Options

2) Format can be PDF or TIFF/GeoTIFF; this is a dropdown menu. For the 7.5-Minute Topo Map Type, Contour Smoothing can be Low, Medium, or High; this is a sliding option. See full definitions by clicking the "i" icon.

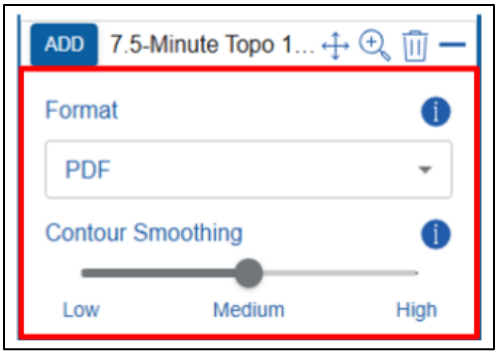

Figure 10. Map Options: Format and Contour Smoothing

3) Clicking the Customize button brings up the Customization interface which allows you to select data layers you wish to include in your OnDemand Topo products. This customization will apply to all maps in your order per Map Type (7.5-Minute, 25K Recreational Topo, 100K Topo, 250K Topo, etc.). By default, all data layers are included in the product. The layers are organized the same way they appear in the PDF and some data is combined into groups that can be toggled on or off. If any changes are made in the Customize interface, a green User Defined Content note will appear in the Map Customization Options section of each map. Changes made in the Customize interface will not be reflected in the legend or map symbols document.

Note: Orthoimagery is only available for the 7.5-Minute Topo product.

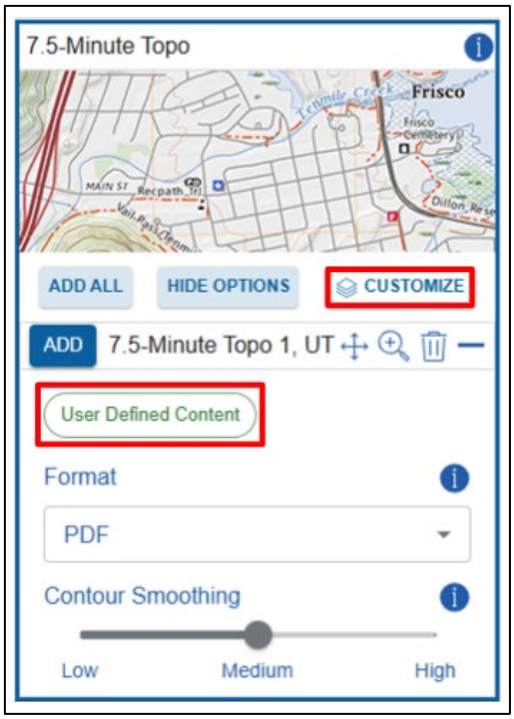

Figure 11. Customize option

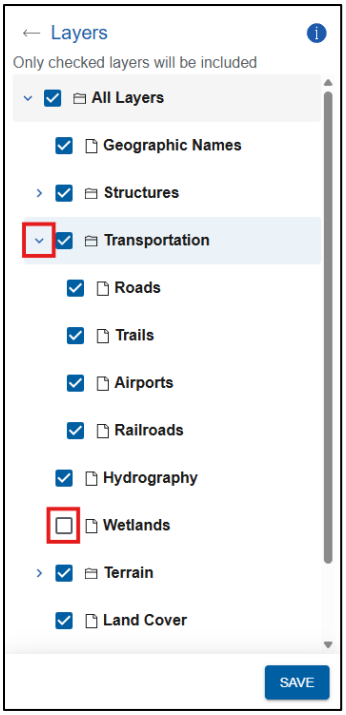

Figure 12. Customize Interface

4) Click Save to have the layer customization saved, otherwise the changes will be reverted to the default (all layers turned on).

Task Panel Tools

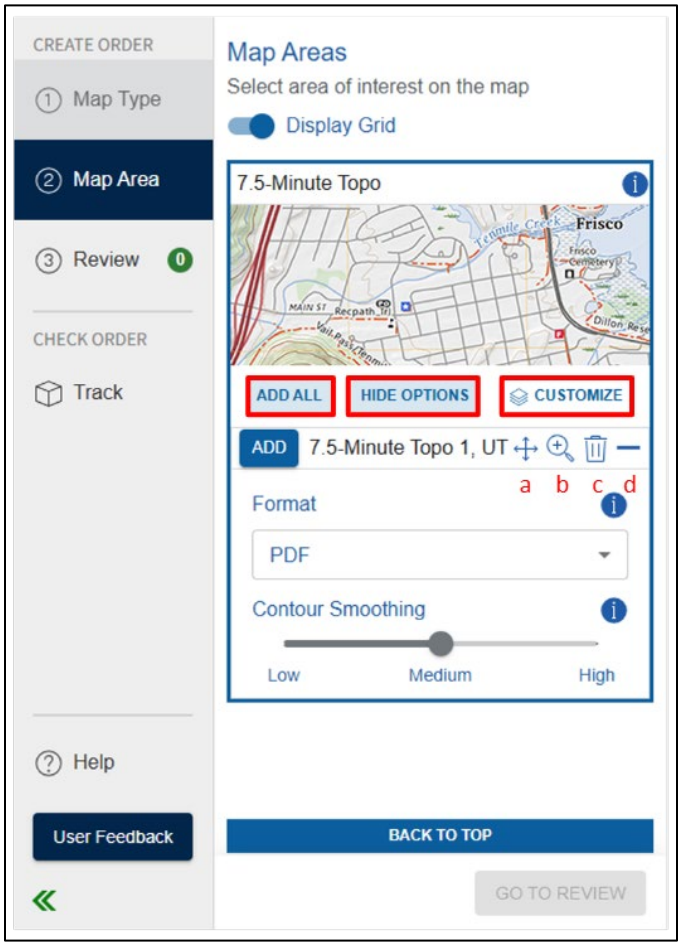

Figure 13. Task Panel Tools Overview

Add All: Add all the maps in the Watchlist to Review.

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

Customize: Customize the layers to be displayed on the map.

Add**:** Add the desired map in the Watchlist to Review.

Move (a in *Figure 13*): Move the map extent; only present for custom extent maps.

Zoom to Map (b in *Figure 13*)**:** The magnifying glass will zoom and center to the map extent.

Delete Map (c in *Figure 13*)**:** The trashcan icon will delete the selected map from the list. The Delete button at the bottom will apply to all selected maps. 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 13*)**:** 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. The Show/Hide Options button that applies to all maps in the Watchlist.

Back To Top: Brings the Maps tab back to the top of the Watchlist.

Adding Maps to My Maps

Users must select which maps within their Watchlist they want to add to Review.

1) Select one or more maps using the Add button next to each map name. You can also choose all maps at once with the Add All button.

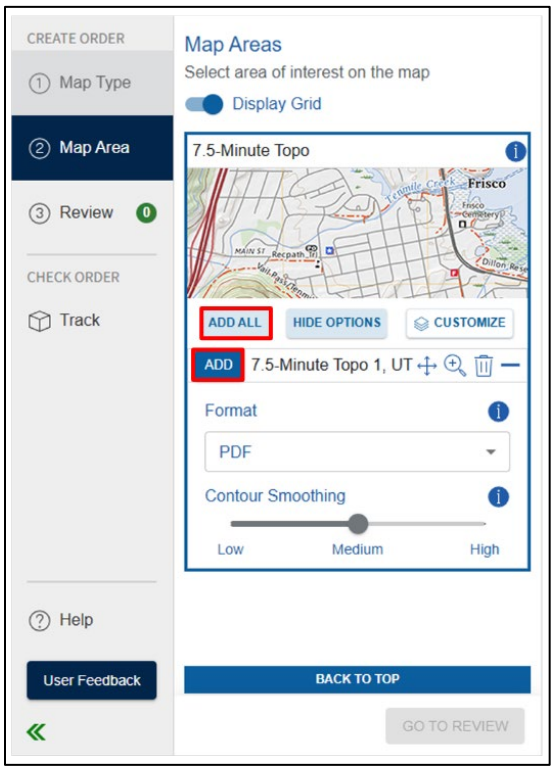

Figure 14. Select Add or Add All to add the specified maps to Review.

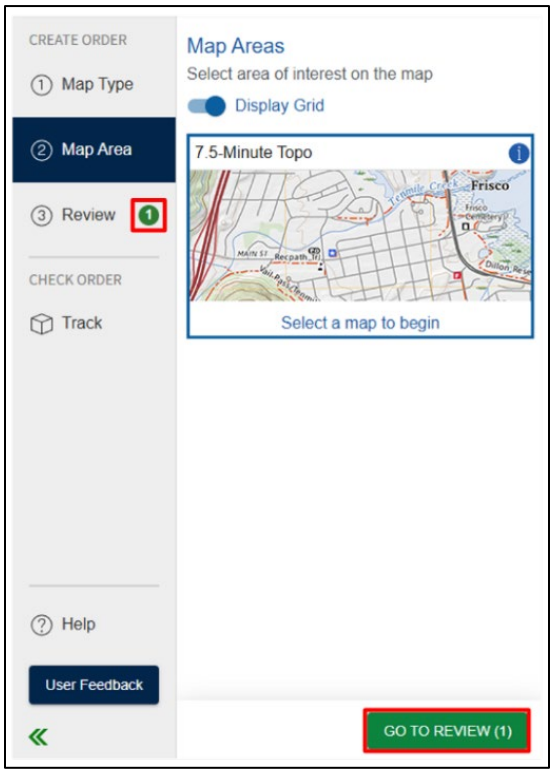

Figure 15. Review count increased by one map and the Go to button is activated.

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

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

Step 3: Submit Maps for Processing

Finalize your selections and complete your requests in Review. Review shares the same editing capabilities as the ones described in Task Panel Tools and Map Customization Options, and will allow you to edit products of any Map Type that you have added to Review.

1) Click on the Review tab in the Task Panel or the Go to Review button as described in Step 2**.**

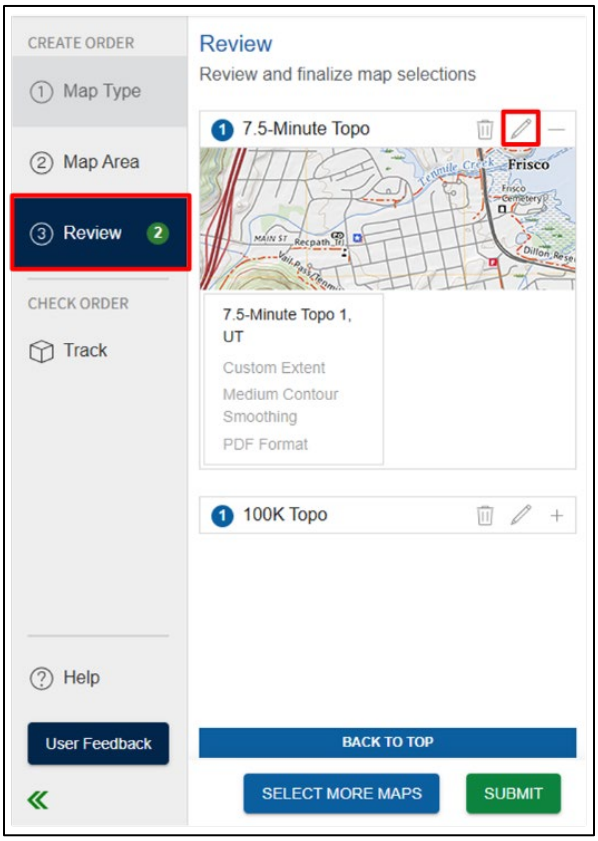

Figure 16. Go to Review and Step 3: My Maps options for navigating to Review in the Task Panel.

2) Check list for accuracy: Maps added from the Watchlist will appear in Review grouped by Map Type. Beneath each map name is the list of customizations that have been applied to that map.
    - Map Name (E.g., 7.5-Minute Topo 1, Stair Canyon, etc.)
        - Selection type (On-Grid or Custom Extent)
        - Contour Smoothing option (Low, Medium, High)
        - Format (PDF or TIFF)
        - Customization (User Defined Content or blank)
3) Maps can be edited using the pencil icon in the top right corner of each Map Type.

Editing Maps in Review

Editing maps in Review 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, Contour Smoothing (7.5-Minute Topo only), and Customization 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 Review tab.

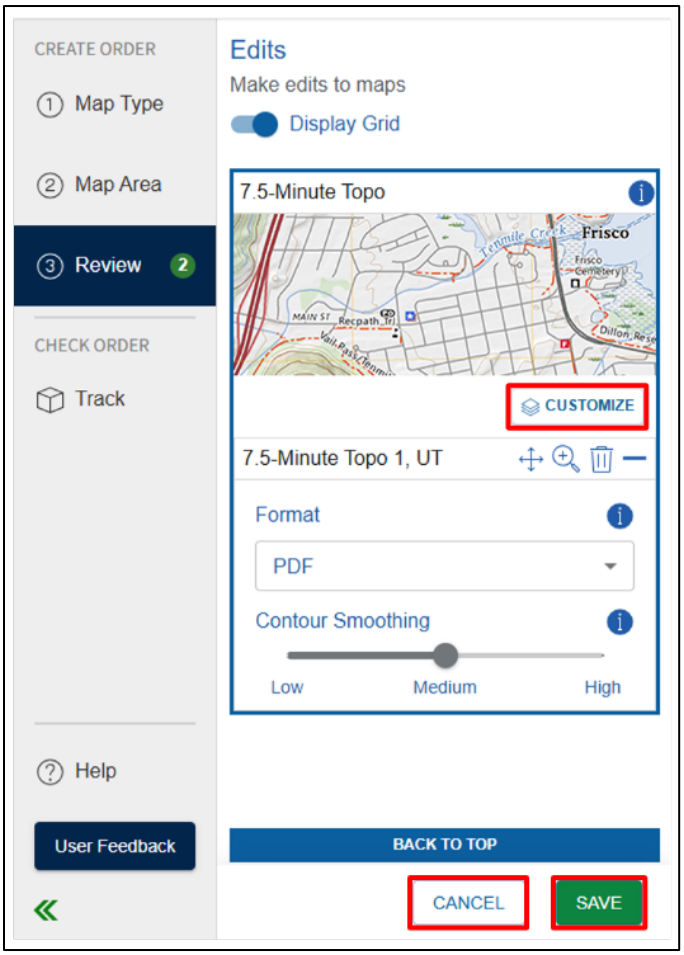

Figure 17. Editing My Maps maps. Make sure to Save your edits.

Submitting Maps

If additional map exports are needed, use the Select More Maps button at the bottom of the Task Panel Review tab to return to the Map Types tab. Once the selection of maps in Review is complete, click the Submit button.



Figure 18. Review tab's Select More Maps and Submit buttons

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

2) Click Submit**.**

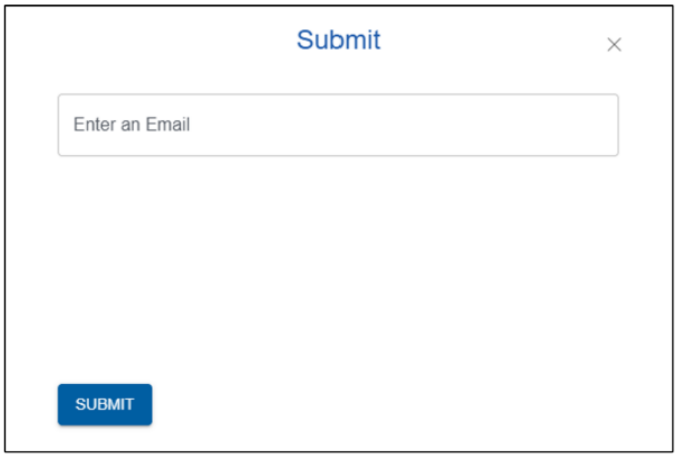

Figure 19. Submission email pop-up.

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. The Order Confirmation Number will be provided in this message. This number can be used to track the order status (see directions below).

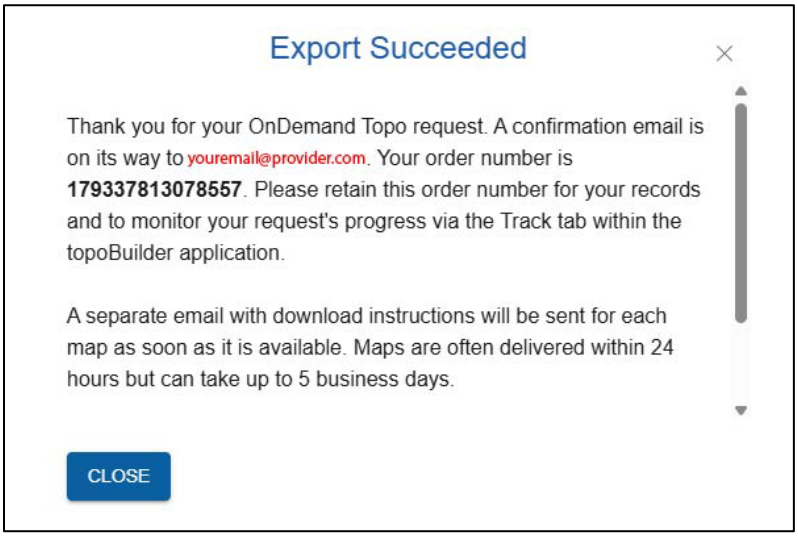

Figure 20. Export Succeeded pop-up.

4) Click Close to return to the application.

Track Orders

Track order status by entering an Order Confirmation Number (included in the USGS Map Request confirmation). Details of the order are included in the Track tab, including overall progress of the order, individual map request progress status, and the map details for each request. Each delivered map includes a Download Link and Copy URL option for easy access. Multiple orders can be tracked at once. Maps can be filtered within each order based upon the status and a search against map name is available. This functionality and workflow is the same in mobile and desktop browsers.

1) Click the Track tab in the Task Panel

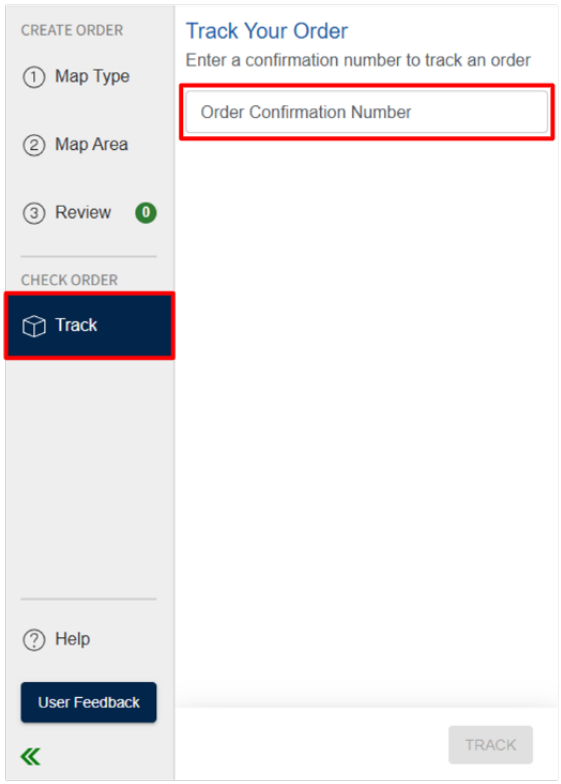

Figure 21. Track Order Overview

2) Enter an Order Confirmation Number provided in the USGS Map Request emails (see the Checkout or Email Notifications section of this user guide). Click Track or hit the Enter key.

3) Order status, map details, and other information is available to review. Completed maps can be downloaded and download URLs can be copied to be shared as needed.

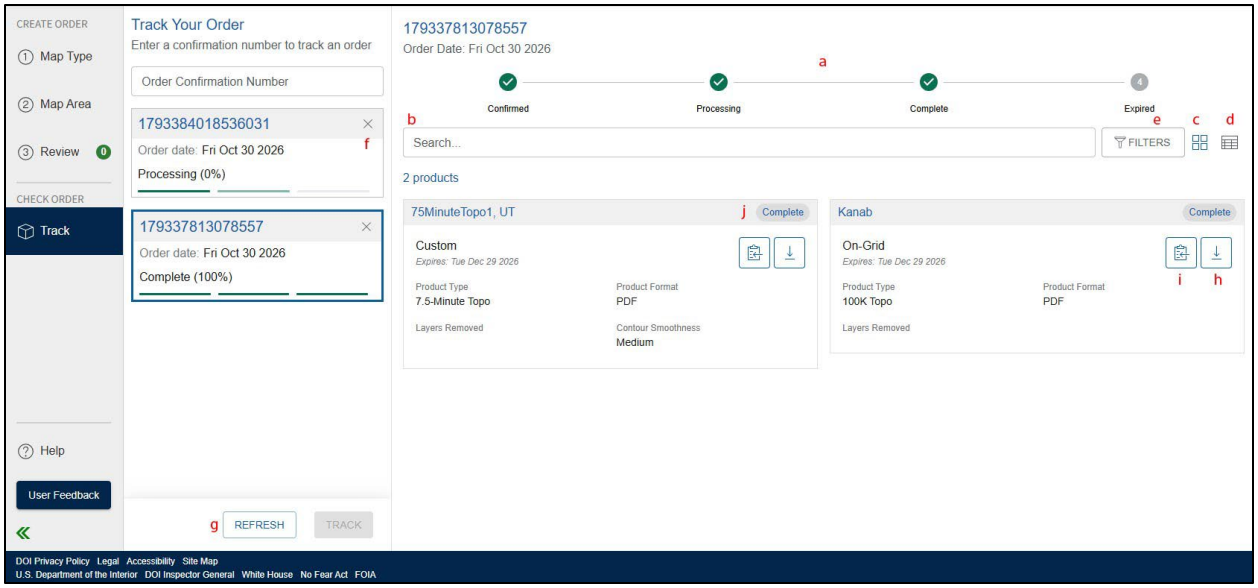

Figure 22. Track Your Order Card View

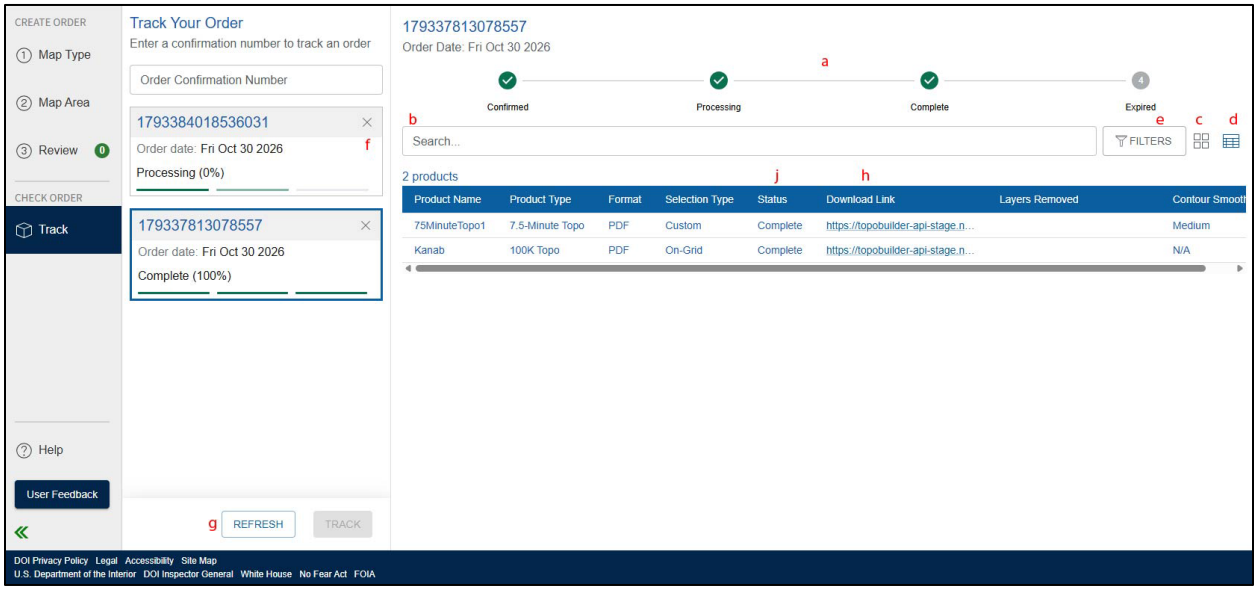

Figure 23. Track Your Order Table View

a) Order status for entire order
b) Search bar for filtering maps against the Map Name field
c) Card View of maps within an order
d) Table View of maps within an order
e) Filtering options
f) Remove Order from list (this does not cancel the order)
g) Refresh Button to get the latest status of tracked orders
h) Download Link button/URL
i) Copy URL button
j) Status of each map

Mobile Workflow

Step 1: Select A Map Type

Select a Map Type by clicking the appropriate Map Type box. Click Next to proceed to the map selection step (Maps tab).

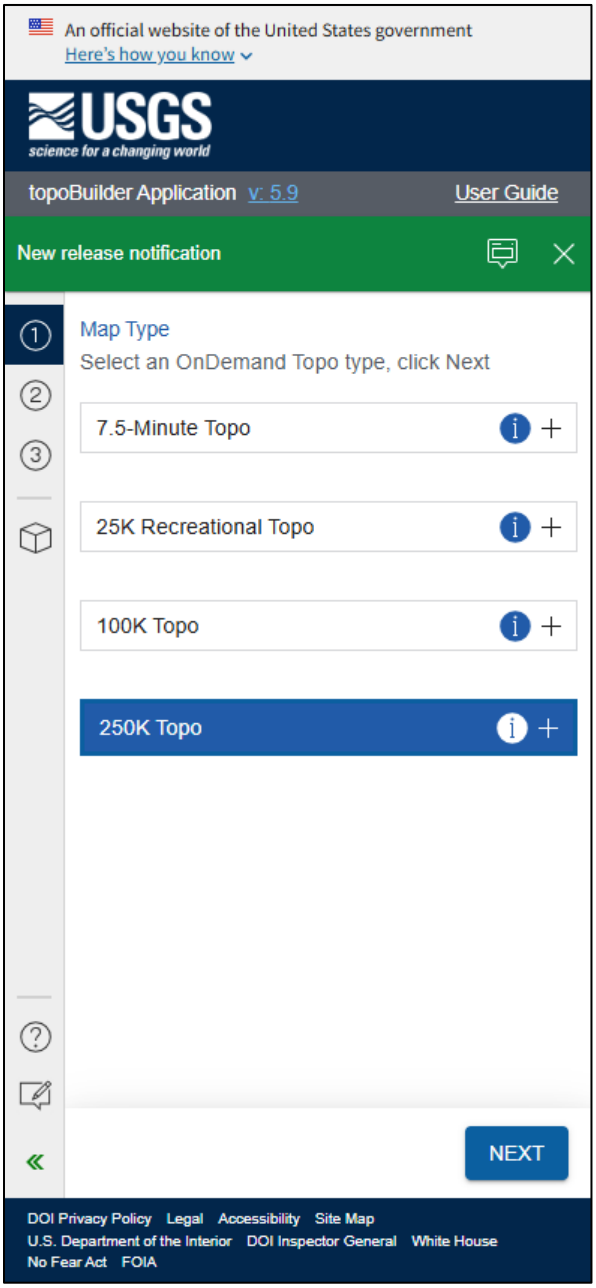

Figure 24. Mobile workflow landing page

Step 2: Customize Maps

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.

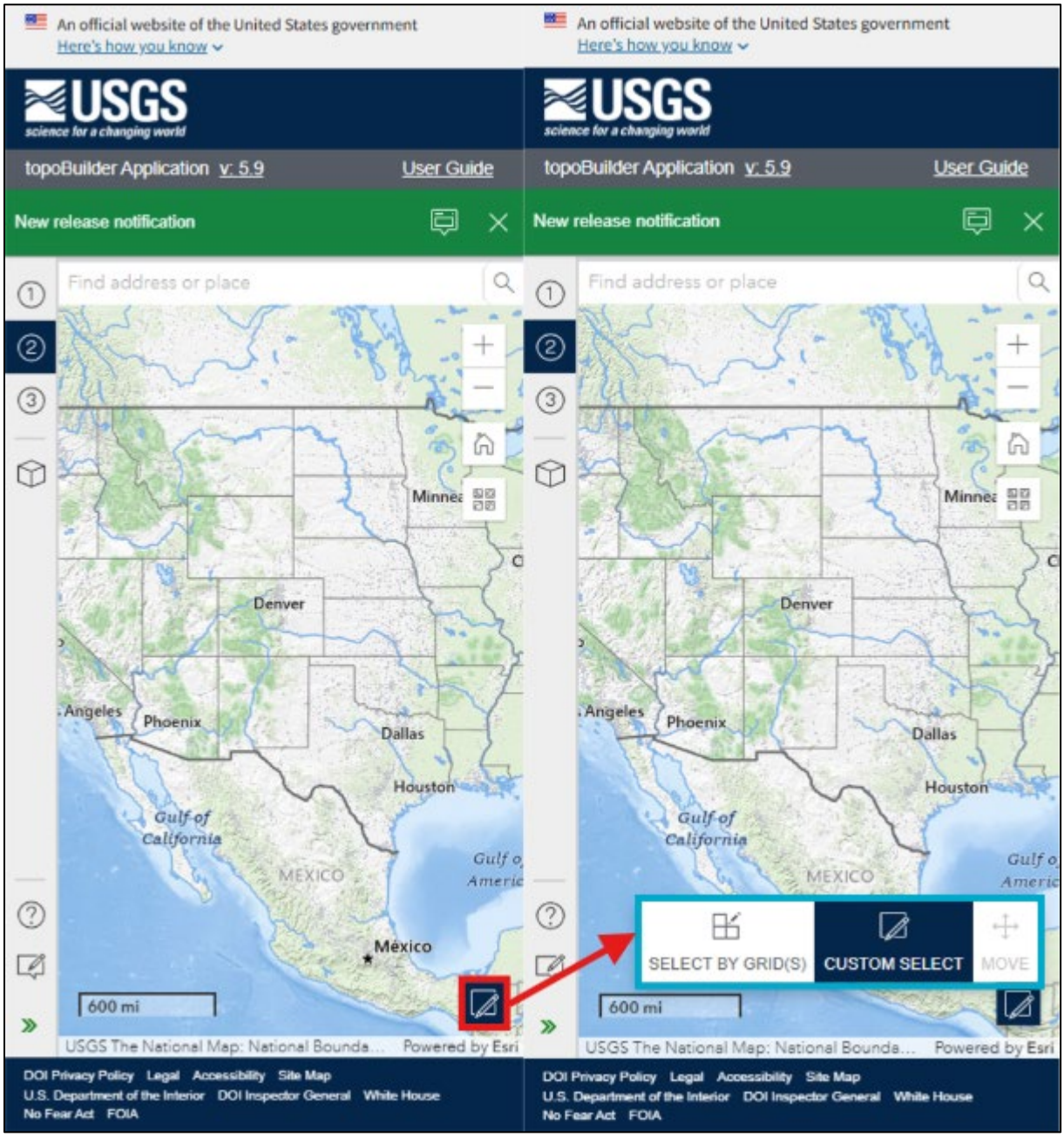

Figure 25. Mobile workflow Tool Selection options

1) To see the standard extent grid, zoom in on the Map Panel to the proper scale (see Table 1). Next you will left click within the Map Panel to add maps to your Watchlist. After clicking, a pop-up will appear asking you: “Would you like to select more maps?”.

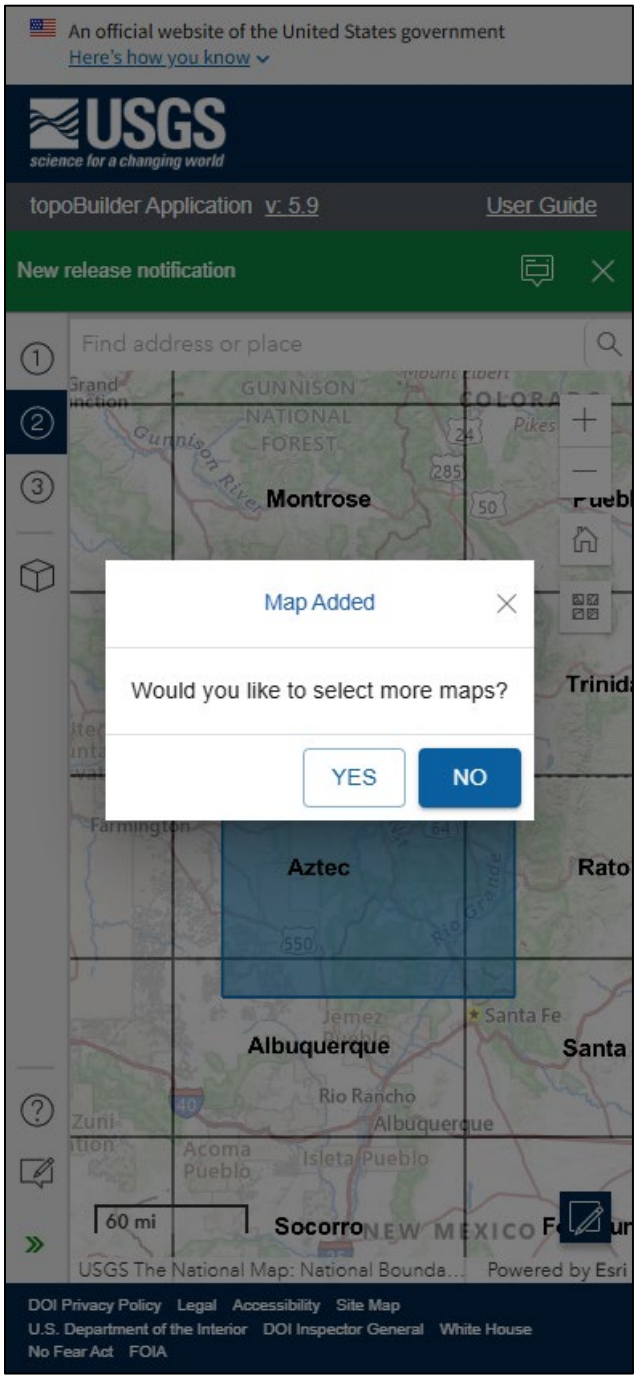

Figure 26. Mobile workflow Map Added pop-up

2) Click Yes to continue with map selection. Click No to progress the workflow to the Watchlist for map customization options. These options are identical to the normal workflow. See Step 2: Map Selection.

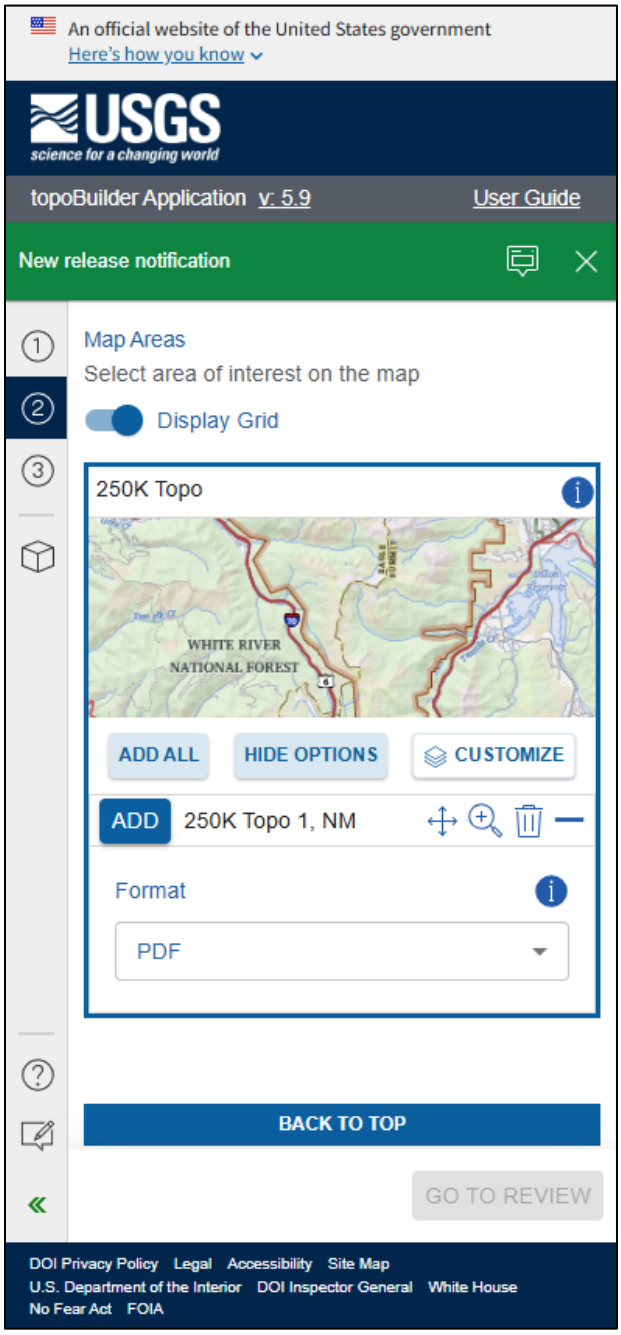

Figure 27. Mobile workflow map customization options

3) Click the Add button. Selected maps are removed from the Watchlist and added to Review.

4) Click Go to Review to proceed to Review.

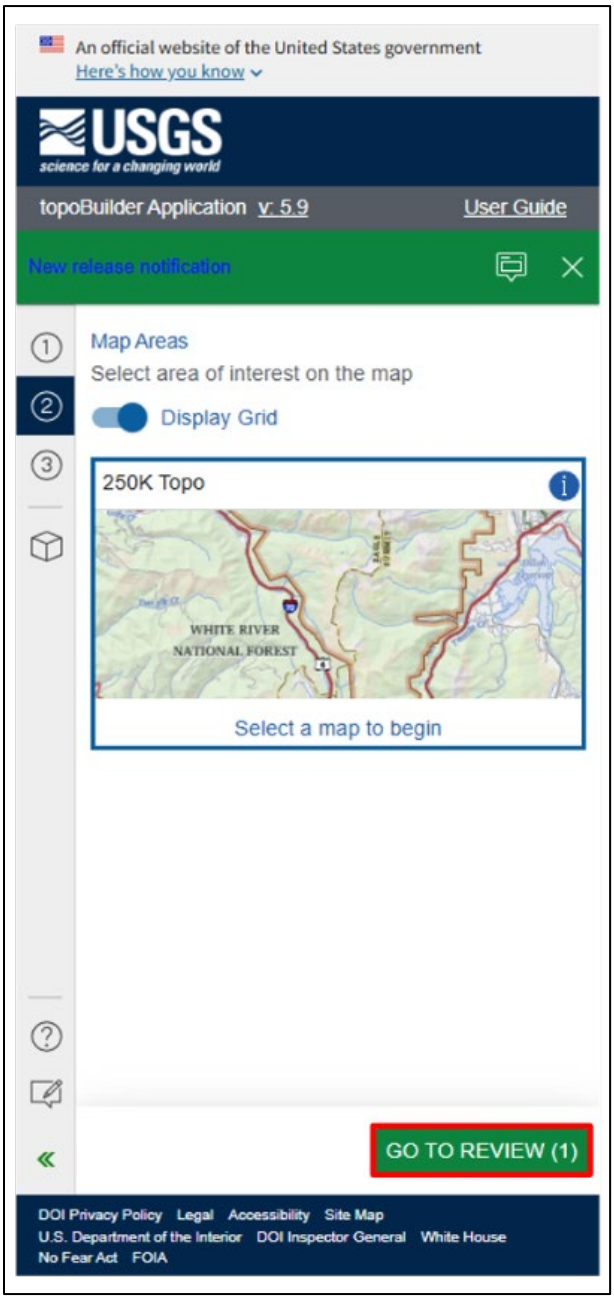

Figure 28. Go to Review to proceed to map submission

Step 3: Submit Maps for Processing

This works the same as the normal workflow. See Step 3: Finalize Selection and Checkout.

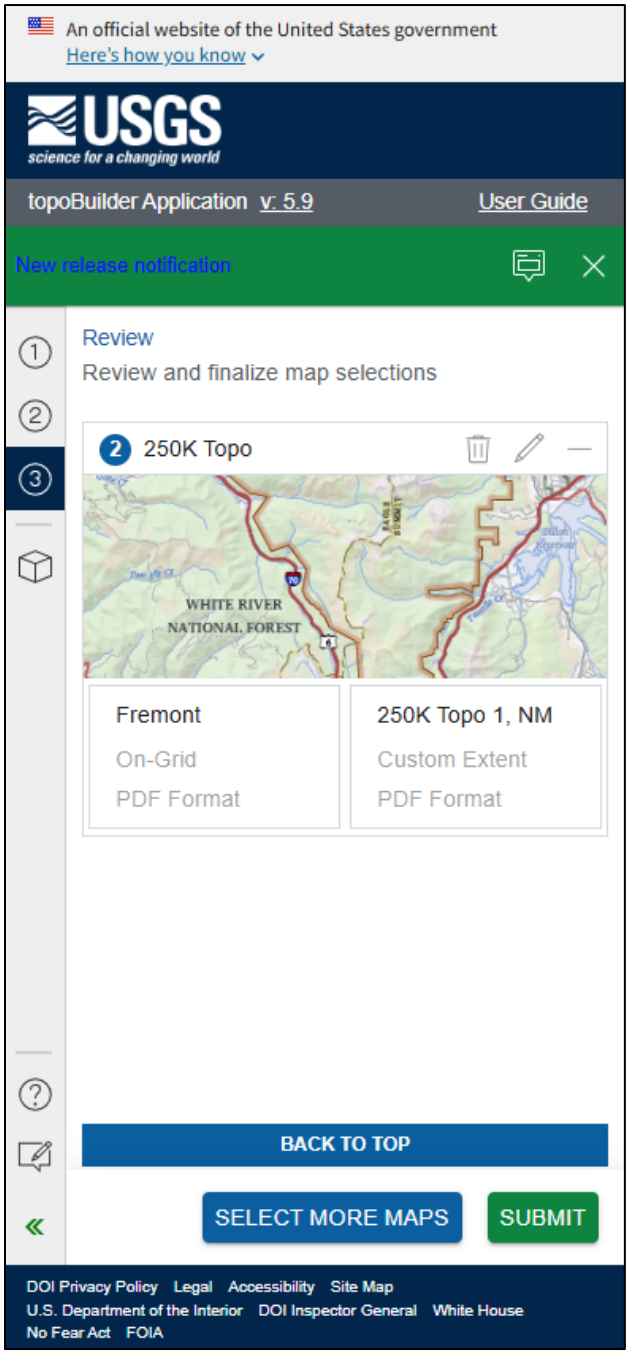

Figure 29. Mobile workflow Review tab

Email Notifications

After a successful checkout, an email with a list of requested maps, including the customizations applied to each product, is sent to the email address submitted at checkout with the subject "USGS Map Request". This email also contains the Order Confirmation Number that may be used to check the progress of the order in the Track tab.

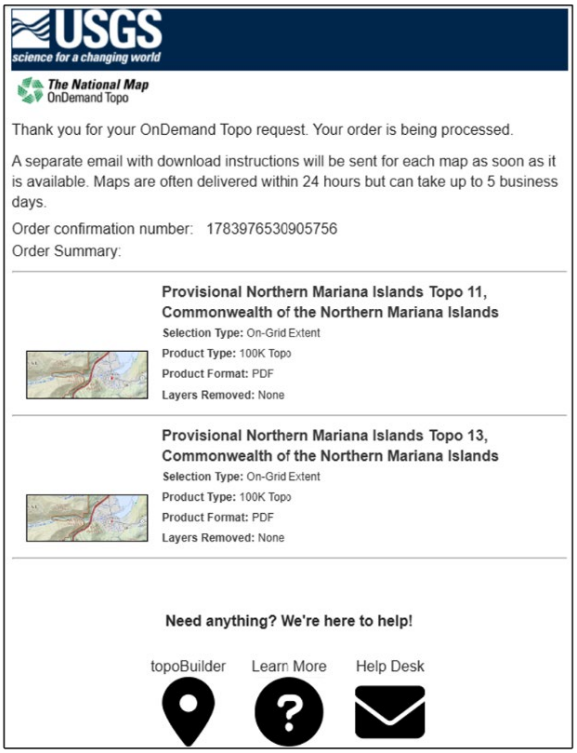

Figure 30. topoBuilder Map Request Email example.

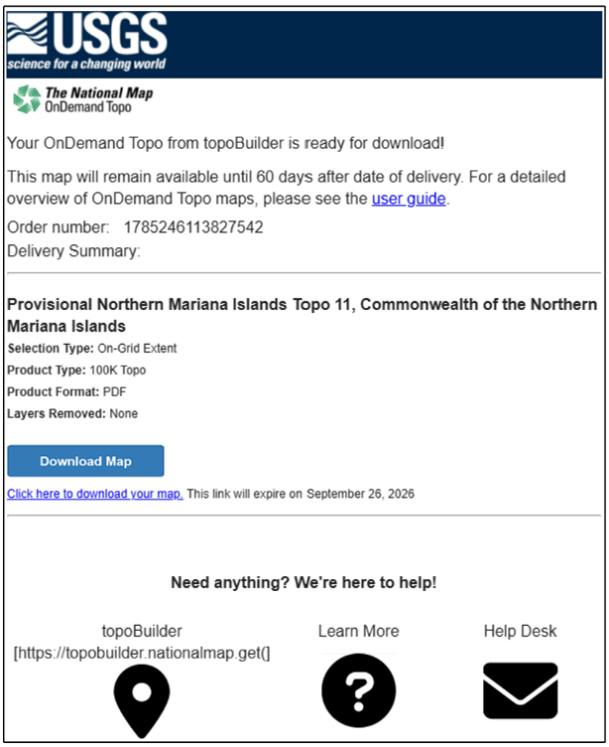

Figure 31. topoBuilder Map Delivery Email example.

1) When each map is ready, a separate "USGS topoBuilder Map Delivery" 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.

6) Please refer to the USGS OnDemand Topo User Guide for guidance on best viewing practices and more details on OnDemand Topo maps and map content.