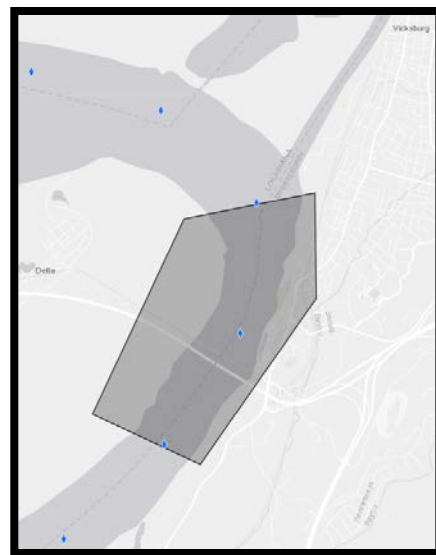
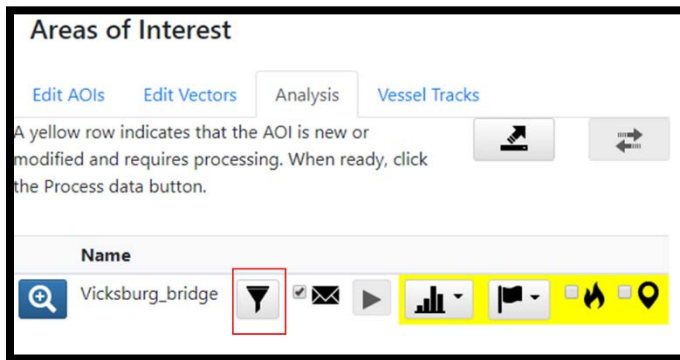


Before Starting: Users should know how to create a project and add data to it.

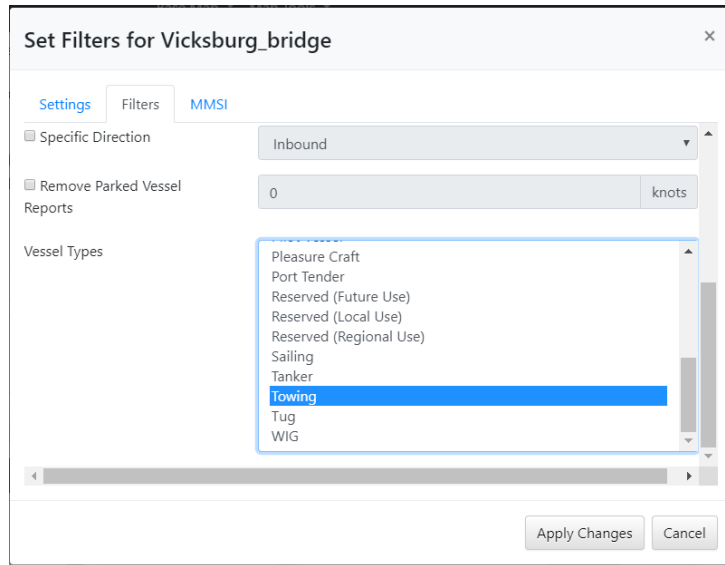
Exercise Goal: Learn how to determine when, and for how long, vessels transited or dwelled within a user-defined area, set direction of travel filter, and use the heat maps built-in function.


For this exercise, we'll examine tow boat traffic near the Vicksburg Bridge on the Lower Mississippi River.

1. Log on to your AISAP account.
2. Create a new project named **"AISAP Training – Vicksburg Bridge"**. Save it by clicking on the blue floppy disc icon.
3. Add a data source. Do you remember which icon to use? (*hint: writing utensil*) This will bring to you the **Find Previous Requests** page.
4. In the **Request ID** field, enter **105606** for the AISAP-USACE site.
5. Click on the **Retrieve Data** button. The page will refresh. Scroll down on the left screen panel to see the results. What location and time period is the data for? _____
6. **Check the box** next to the correct Request ID to select this data source.
7. Click the **Add** button to add this data source to your project. You will be redirected back to your project page.
8. Add an AOI at Vicksburg, from river mile 435 to river mile 437 (Hint: Turn on Map Tools → USACE layers → River Mile Markers). Name it "Vicksburg_bridge" and click on the blue save icon next to the name.
9. Let's filter the AOI so we only see results for tow boats. Proceed to the **Analysis** tab, and click on the Set Filters Icon.



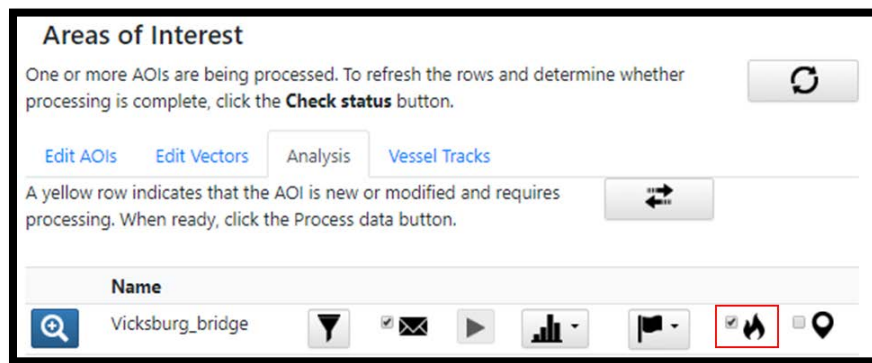
10. A pop up Set Filters box will open. Proceed to the **Filters** tab, scroll down to **Vessel Types**, and select **Towing**. Click on **Apply Changes**. You will be brought back to your project screen.



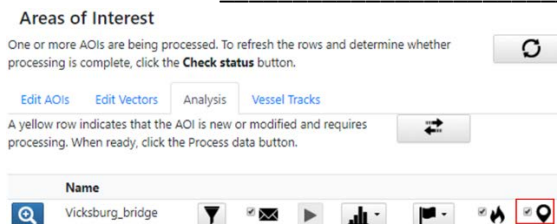
11. In the **Analysis** tab, click the **Play button icon** in the yellow row to process the data.
12. You will receive an email when processing is complete. If your AOI row is still grayed out, click on the refresh button. 

Heat Map


13. Turn on the heat map for your AOI by clicking on the **flame icon**.




14. What happens as you zoom in and out? _____
15. Turn on the point cluster map for your AOI by clicking on the **bubble icon**. What happens as you zoom in and out? _____



16. Unclick the flame and bubble icon to turn off the heat map and point cluster map.

17. Now let's see what vessels were in our area of interest. On the **Analysis** tab, click on the **Statistics** icon  and select **Time Spent in Area**.

18. A new tab called 'Time Spent in Area' will open.

19. Click on the Export Data to CSV File icon  located in the top right corner.

20. How many vessels were recorded in the area? _____

21. Bonus question: What is the average vessel dwell time? _____

22. Which vessel had the longest dwell time? _____

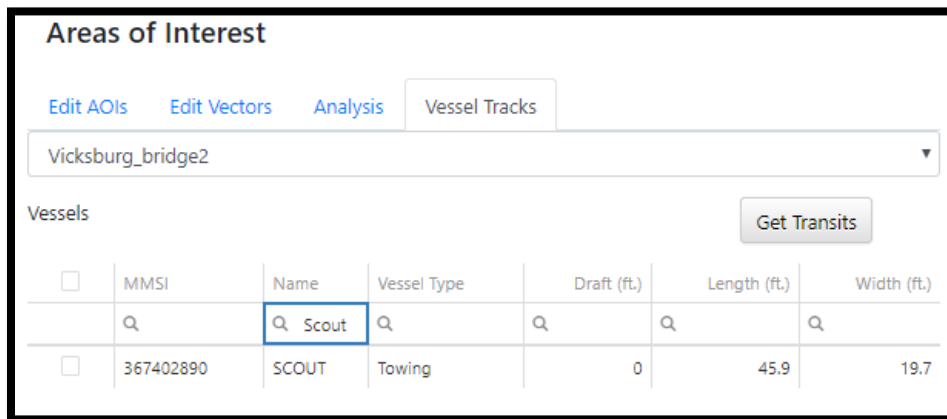
Finding a Vessel's Track Line

23. Let's look at the vessel track for **Scout**, which had the longest dwell time, so that we can investigate what it was doing.

24. Go back into your AISAP project.

25. Go to the **Vessel Tracks** tab, in the **Select an AOI** field select "**Vicksburg bridge**".

26. In the **Name** field, type "Scout". A record for SCOUT should appear.

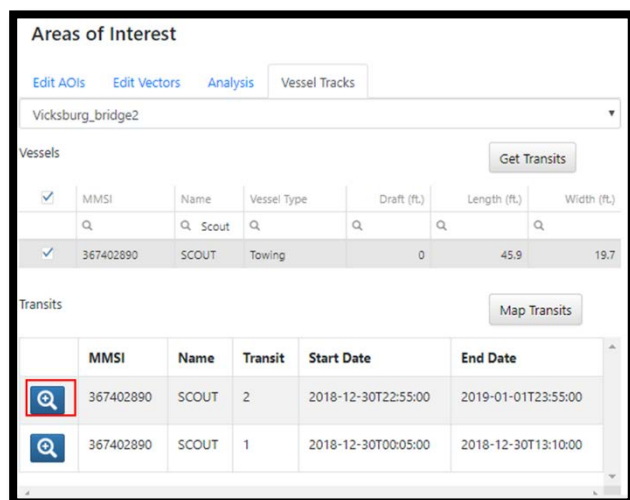


27. **Check the box** to the left of the record, and then click on **Get Transits**.

28. We see that Scout made two transits (scroll down if needed). Click on the magnifying glass next to **Transit 2**, or the transit that has a start date of 12.30.18 and an end date of 1.1.19. A transit track will appear on your map.

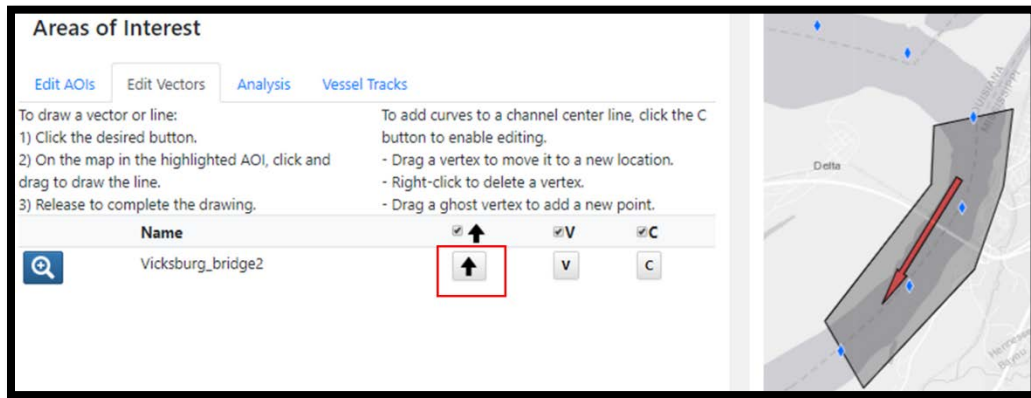
29. What can you infer from the transit track? _____

30. Clear the track by going to the **Analysis Tab**, selecting the **flag icon** to the right of our AOI, and selecting **Clear Transits**.



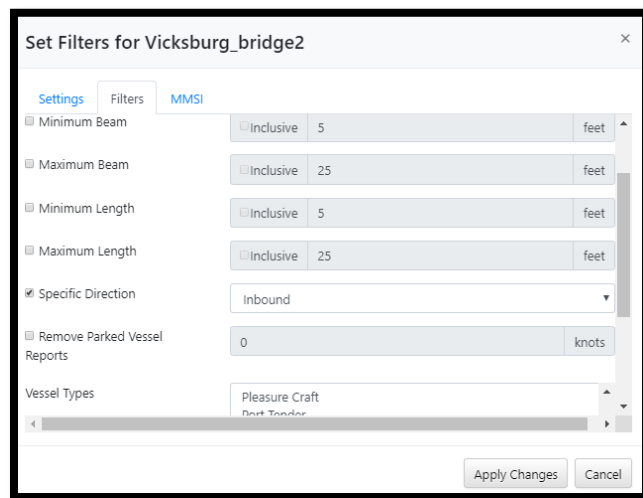
Adding a Directional Filter

31. Let's study only downstream traffic (i.e., vessels heading south).
32. Go to the **Edit Vectors** tab and click on the **add inbound vector button** (up arrow).
33. On the map, click within your AOI, and drag your mouse south to draw an arrow that points downbound. To edit the arrow, double click on it.



34. Proceed to the **Analysis** tab, and click on the **Set Filters Icon**.

35. A pop up Set Filters box will open. Proceed to the **Filters** tab, scroll down to **Specific Direction**, and select **Inbound** (in this tool, Inbound refers to the direction of the arrow, Outbound refers to the opposite direction of the arrow). Click on **Apply Changes**. You will be brought back to your project screen.



36. Bonus Question: If you had chosen Specific Direction Outbound, what direction of travel would you have set for the filter?

37. In the **Analysis** tab, click the **Play button icon** in the yellow row to process the data. You will receive an email when processing is complete. If your AOI row is still grayed out, click on the refresh button.

38. Turn on **Show All Transits** (Click on the **Flag Icon** and select **Show All Transits**) to see the downbound tracks.

39. Bonus Question: How many transits were downbound? _____

End of Exercise.