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Creating a Channel Design with TIN MODEL

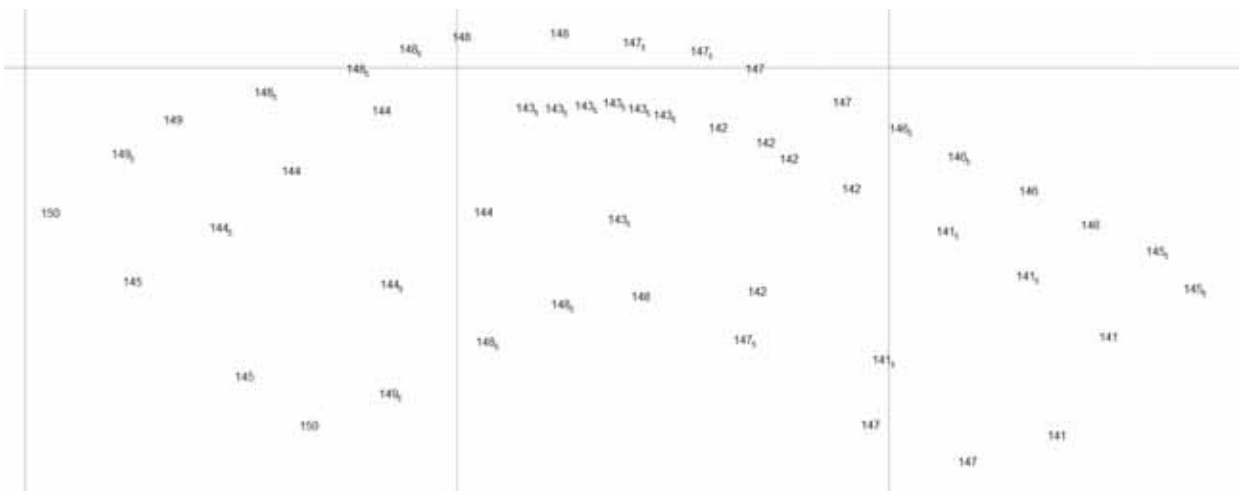
By Christian Bermudez

I received a question from a customer about how to create a channel design for a 500 km river. He had the centerline, so my first thought was to use this line to create the right and left toes; however, this option creates the center of the channel and the top of the bank with a constant depth value. In the design he was trying to create, the height of the center and the tops of the banks change along the river, so creating the toes based on the centerline does not work in this case.

You can create this channel with ADVANCED CHANNEL DESIGN; however it could take a while for a 500 km river. In this article, I describe a quicker solution that could help you.

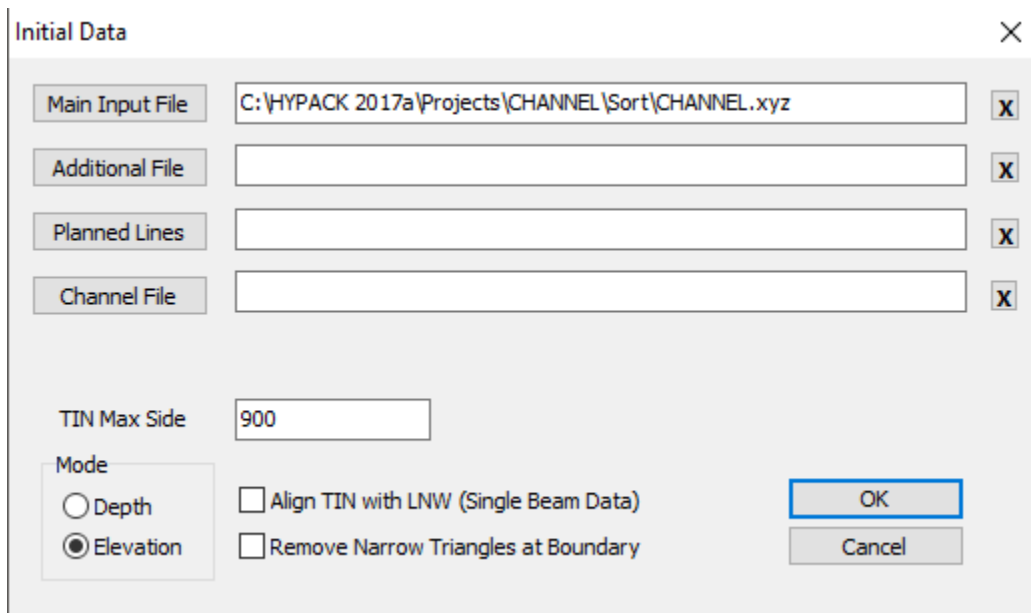
To start this channel, you will need some XYZ points that describe the channel. You need points at the top of the bank and in the left and right toes, as you can see in [Figure 1](#). The TIN MODEL program interpolates your points to build the channel surface.

FIGURE 1. XYZ points for the Channel



1. In TIN MODEL, build your surface model using your XYZ file and a TIN Max Side value of 150% of the max point spacing.

FIGURE 2. Initial Data Dialog

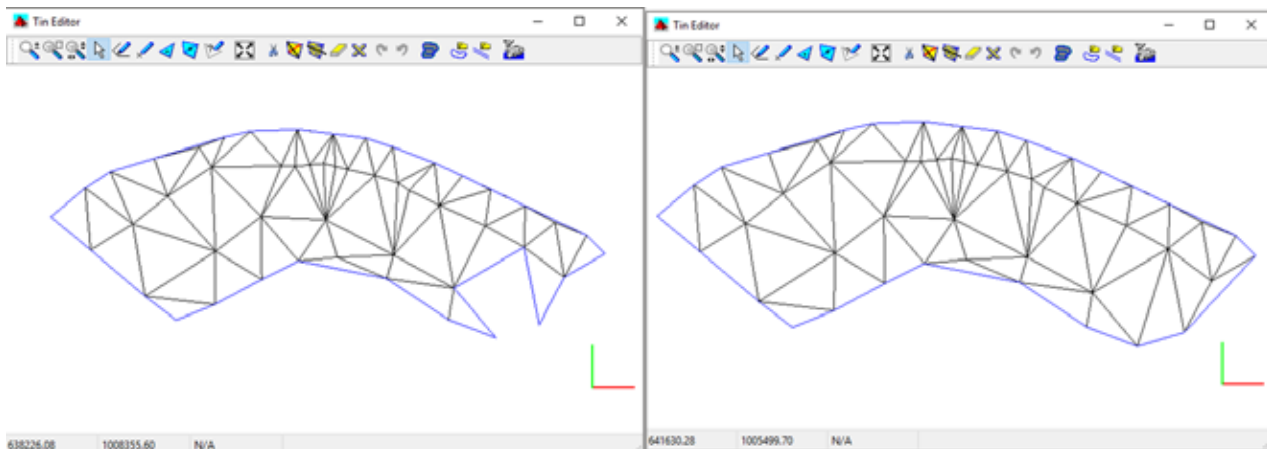


The 'Initial Data' dialog box contains the following fields and options:

- Main Input File:** C:\HYPACK 2017a\Projects\CHANNEL\Sort\CHANNEL.xyz
- Additional File:** (empty)
- Planned Lines:** (empty)
- Channel File:** (empty)
- TIN Max Side:** 900
- Mode:**
 - ☐ Depth
 - ☒ Elevation
- ☐ Align TIN with LNW (Single Beam Data)
- ☐ Remove Narrow Triangles at Boundary
- Buttons:** OK, Cancel

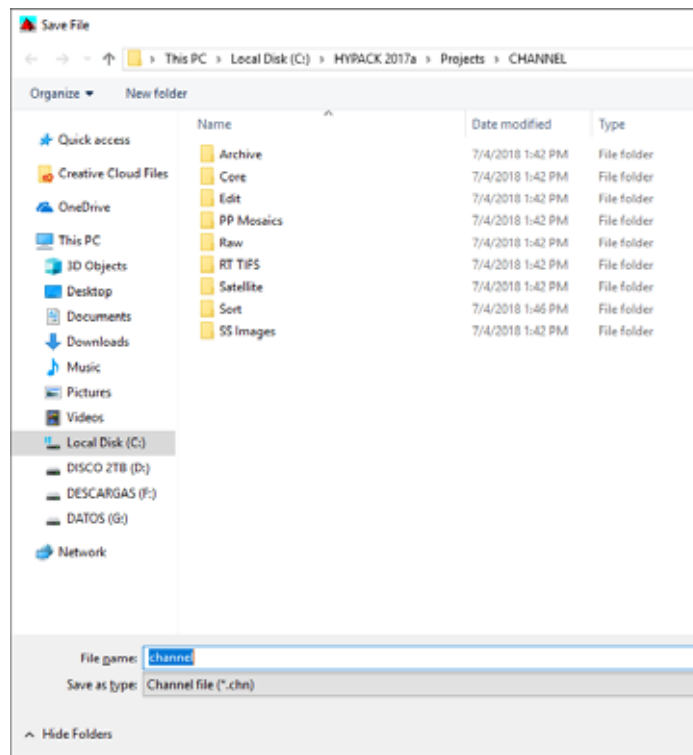
2. **Check the interpolation.** Select MODIFY– EDIT TIN or open a 2D or 3D model. If there are holes in your surface model, you can enter a higher value in TIN Max Side.

FIGURE 3. Max TIN Side = 900 (left) , Max TIN Side = 1000 (right)



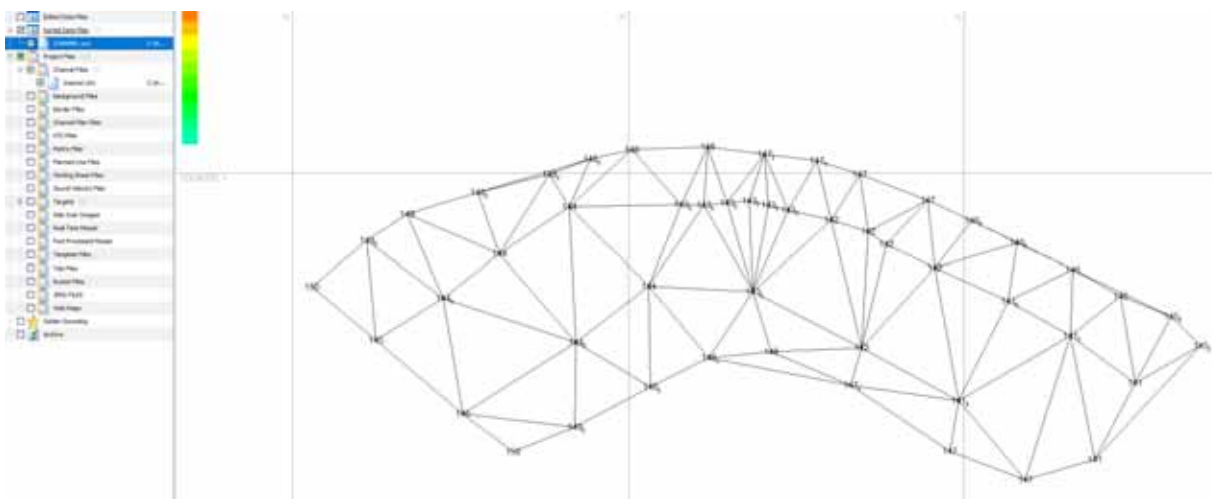
3. If you are happy with the result, **save your channel**:
 - a. **Click FILE - SAVE.**
 - b. **Set the Save as Type field to Channel File (*.chn).**
 - c. **Name your channel file and click [Save].**

FIGURE 4. Saving the Channel Design



Now you can use this channel for any purpose (DREDGEPAK®, calculating volumes, etc.).

FIGURE 5. Channel Design in HYPACK®



To check or modify something in the channel, open the channel file with ADVANCED CHANNEL DESIGN.

FIGURE 6. Channel Design in ADVANCED CHANNEL DESIGN

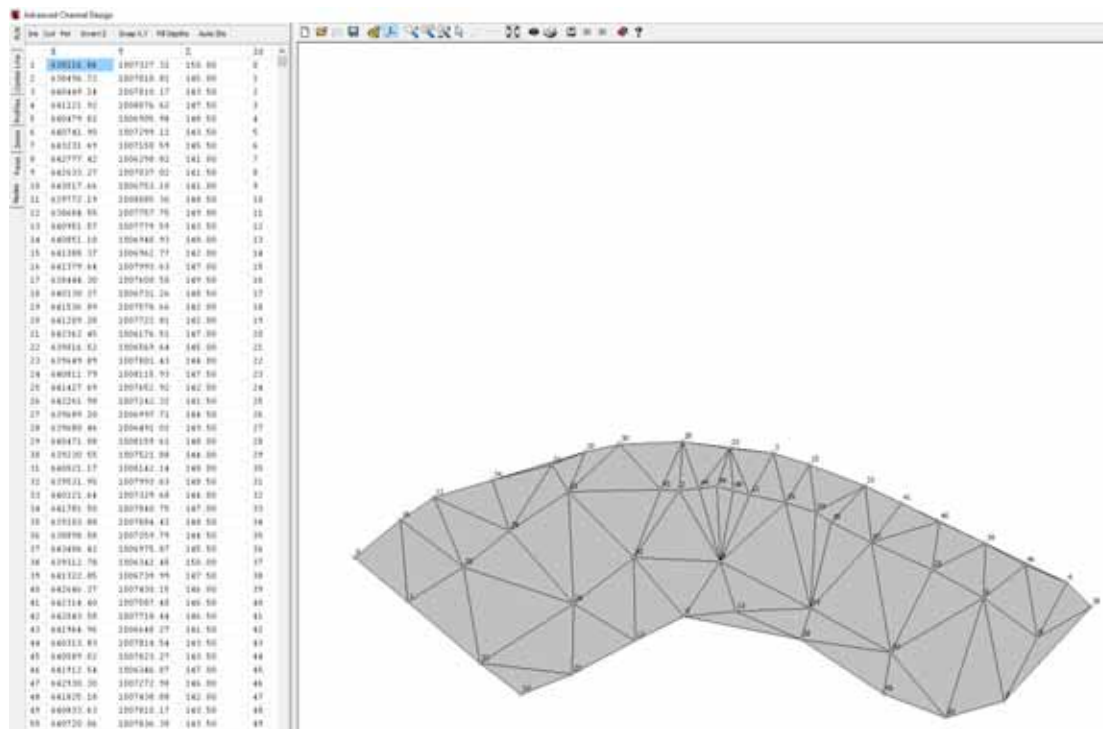


FIGURE 7. 3D View in ADVANCED CHANNEL DESIGN

