

Channel Routing

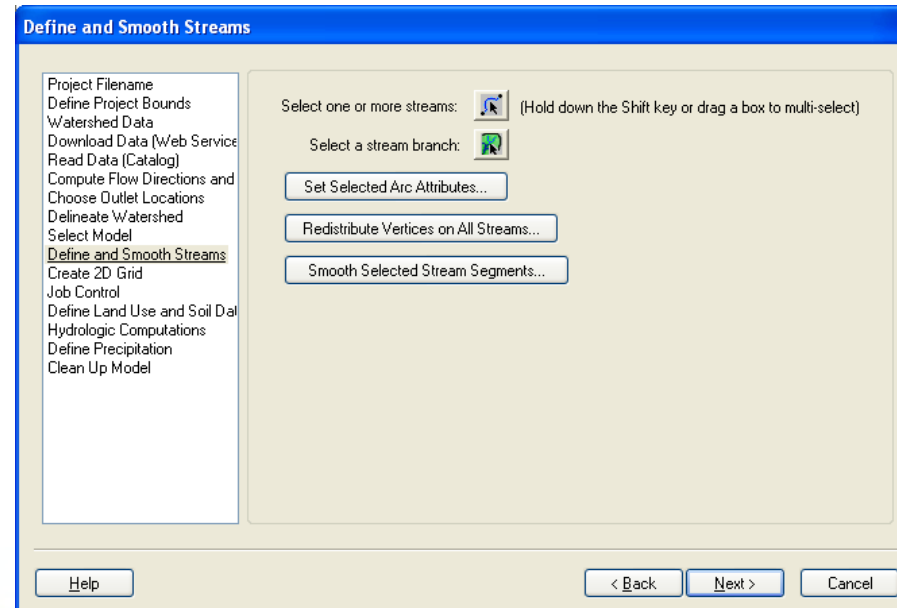


Setting up 1D Stream Routing for GSSHA Models

- Define channel cross section properties
- Redistribute vertices
- Smooth stream thalwegs
- Turn on channel simulation in the GSSHA job control
- Adjust output control as necessary
- Save and run
- Visualize results



- The first three steps are handled in the “Define and Smooth Streams” step of the hydrologic modeling wizard:
 - Define channel cross section properties
 - Redistribute vertices
 - Smooth stream thalwegs



Define Channel Cross Section Properties

Properties

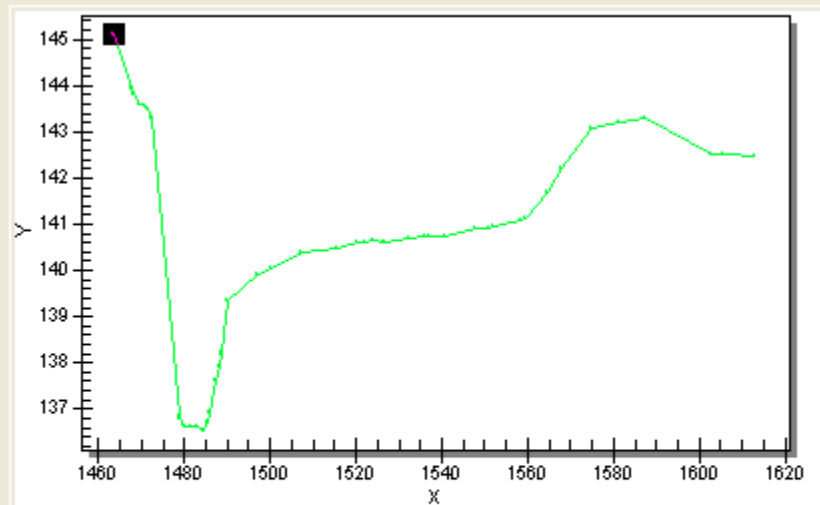
Feature type: Arcs Show: Selected Filter using: Column: None Value:

ID	Type	Link/Superlink	Manning's n	Depth (m)	Bottom width (m)	Side slope (H:V)
All						
2	Trapezoidal channel	2	0.043	1.0	3.0	1.0

Help...

XY Series Editor

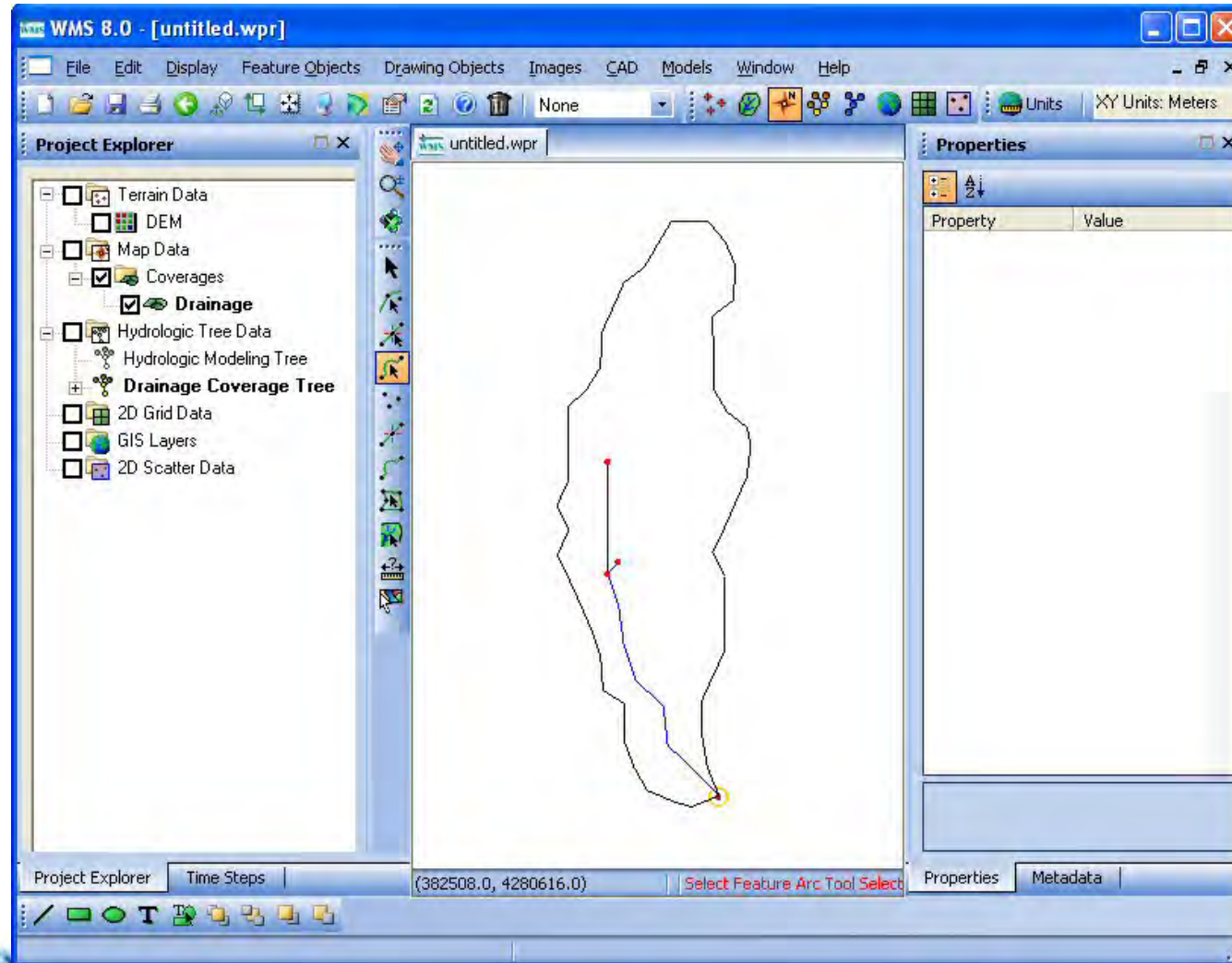
	X	Y
1	1463.369	145.1
2	1467.56	143.96
3	1468.1	143.814
4	1469.709	143.591
5	1471.209	143.564
6	1471.605	143.509
7	1472.407	143.302
8	1478.816	136.846
9	1478.923	136.788
10	1478.938	136.779
11	1479.834	136.66
12	1480.45	136.645
13	1481.663	136.621
14	1483.126	136.636
15	1484.385	136.553
16	1485.519	136.703
17	1485.97	136.913



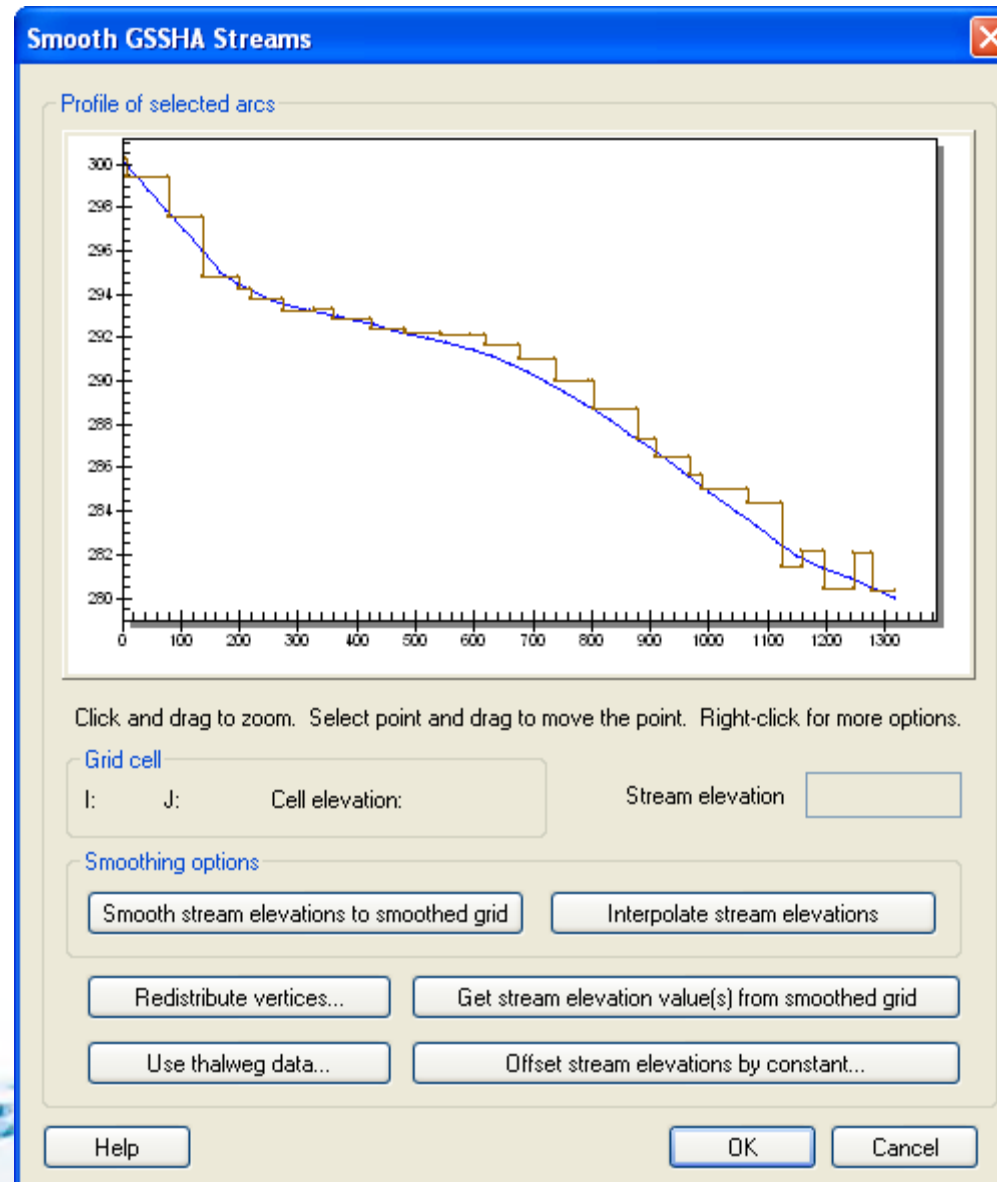
Curve Name: New Curve
Selected Curve: New Curve [v] [New] [Delete]

Help Default Values Import... Export... OK Cancel

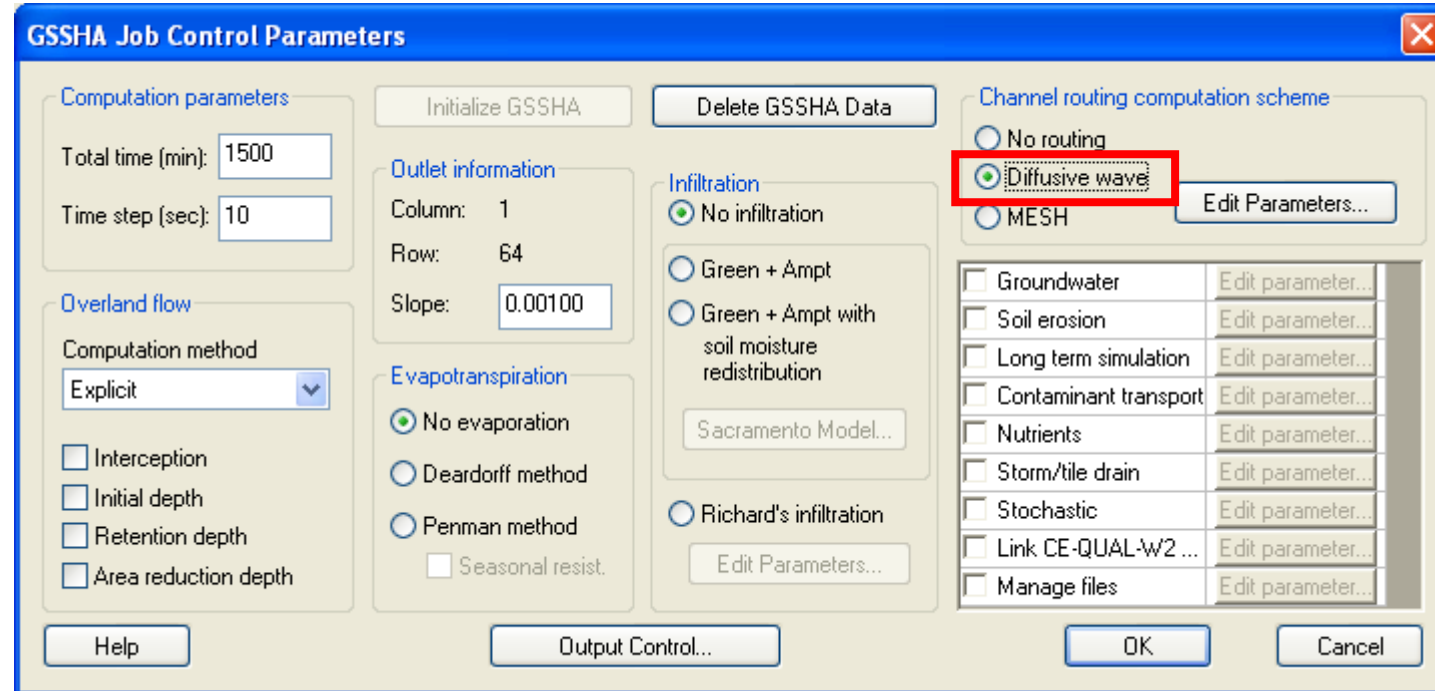
Redistribute Vertices



Smooth Stream Thalwegs



Turn on Channel Simulation in the Job Control



GSSHA Job Control Parameters

Computation parameters

Total time (min): 1500
Time step (sec): 10

Outlet information

Column: 1
Row: 64
Slope: 0.00100

Infiltration

No infiltration
 Green + Ampt
 Green + Ampt with soil moisture redistribution
 Richard's infiltration

Evapotranspiration

No evaporation
 Deardorff method
 Penman method
 Seasonal resist.

Channel routing computation scheme

No routing
 Diffusive wave
 MESH

Overland flow

Computation method: Explicit

Interception
 Initial depth
 Retention depth
 Area reduction depth

Simulation Options:

<input type="checkbox"/> Groundwater	Edit parameter...
<input type="checkbox"/> Soil erosion	Edit parameter...
<input type="checkbox"/> Long term simulation	Edit parameter...
<input type="checkbox"/> Contaminant transport	Edit parameter...
<input type="checkbox"/> Nutrients	Edit parameter...
<input type="checkbox"/> Storm/tile drain	Edit parameter...
<input type="checkbox"/> Stochastic	Edit parameter...
<input type="checkbox"/> Link CE-QUAL-W2 ...	Edit parameter...
<input type="checkbox"/> Manage files	Edit parameter...

Buttons: Help, Output Control..., OK, Cancel



Adjust Output Control

GSSHA Output Control

Gridded data sets

Data type:

- Distributed rainfall intensity
- Surface depth
- Cumulative infiltration depth
- Infiltration rate
- Surface soil moisture
- Groundwater elevations
- Volume suspended sediment
- Sediment flux
- Net sediment transfer

Link / Node data sets

- Channel depth
- Channel flow
- Channel velocity (avg)
- Sediment flux
- Net sediment transfer
- Flood (max) depth
- Water surface elev
- Pipe flow
- Pipe node depths
- Pipe node in/out flow
- Stream nitrite (NO2-)

Write frequency

Write frequency: (min)

Gridded data set output format

Binary ASCII GRASS X MDF

Hydrograph

Write frequency: (min)

Output units: Metric (cms) English (cfs)

Other

- Suppress screen printing
- Strict Julian dates

