Tsunami Evacuation Modeling: Seaside-Gearhart
Exploring evacuation difficulty and mitigations options
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Inputs:
- Land cover
  - Woods & Schmidtlein use full land cover
  - DOGAMI using road network and local input
  - Bridge (retrofitted – y/n)
- Slope
- Tsunami evacuation zone (**XX-Large** and **Large**)
- Data table relating slopes to walking speeds
- Tsunami wave arrival times
Initial LCD Run (with pre-defined constraints)

Step 1. Calculate LCD with SCV
Destination: XXL
Results: Evacuation routes & watershed boundaries
Action: Cut DEM at every decision point to force routing for subsequent iterations to match original

Least Cost Distance (LCD) in feet
Destination: XXL
- High: 12044.9
- Low: 0

Map showing evacuation routes and LCD with marked decision points.
Evacuation Routes & Flow Zones

Visualization of paths leading to most efficient evacuation from every point
Accounting for Wave Arrival Times

Step 3. Calculate LCD without SCV
Destination: East bank of Necanicum River (blue line)
Force evacuation along original routes
Divide LCD by wave arrival time AT EACH BRIDGE & associated watershed to calculate BTW

Wave arrival, sec
- 600
- 680

Beat the wave (BTW) feet/sec
- 0 - 2
- 2 - 4
- 4 - 5.9
Public Products:

- BTW Maps (Distinct but complementary to our existing evacuation maps). Roll out (Seaside/Gearhart): anytime now.

- Tsunami planning web portal (concept right now). Could include the following layers:
  - Detailed evacuation routes
  - BTW Speeds
  - Flow depths
  - Wave arrival times