

# IMAGIN'S GIS INNOVATION AWARD

The GIS Innovation Award will be presented to an organization that finds innovative ways to use geospatial solutions to enhance workflow processes. Candidates for this award should have successfully implemented a geospatial technology, service, or application that is new and innovative to their organization. Applicants will be judged on collaborative efforts, contribution to the workflow, and original ideas.



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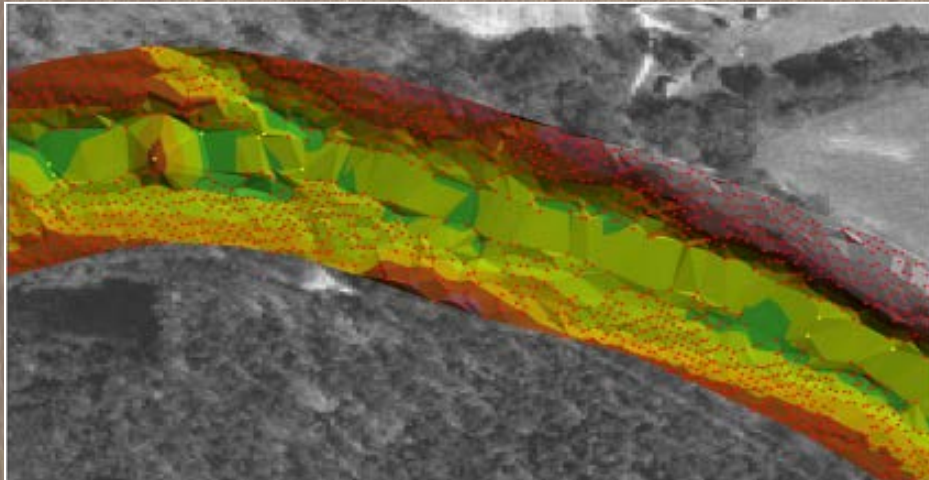
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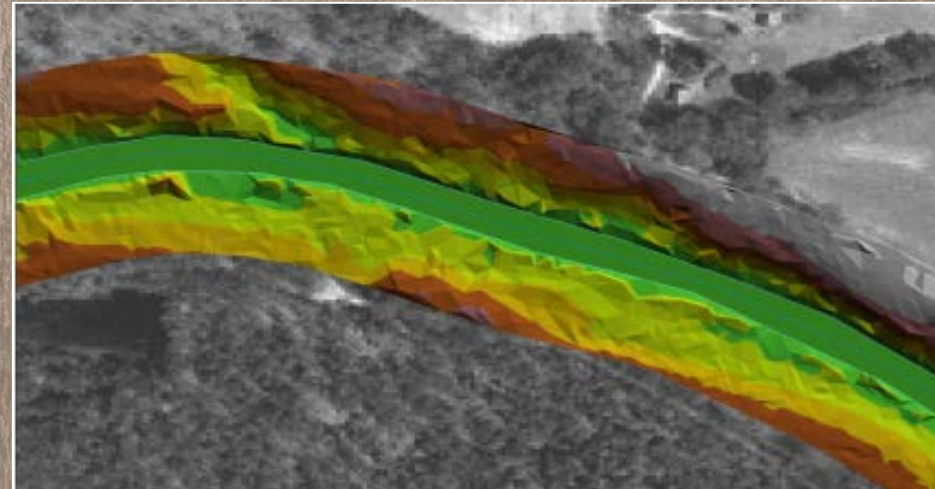
# 2017 IMAGIN GIS INNOVATION AWARD WINNER

Dr. Sagar Deshpande, Ferris State University

Innovative semi-automated workflows to hydro-flatten LiDAR data, extracting water surface elevation at the time of data acquisition.



TIN surface before hydro-flattening



TIN surface after hydro-flattening



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## Surface intersection and Hydro-flattening

Surface intersection: Intersect the bare ground surface with the intersection-VWS

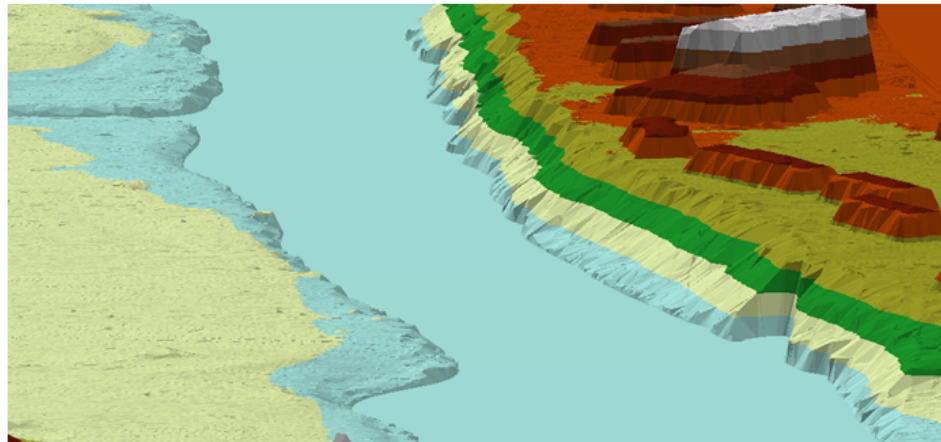
Use the polygons identified as below the VWS as tentative bank shoreline

Set threshold for minimum polygon area. Using GIS implement following:

- Fill polygons < threshold
- Delete polygons < threshold
- Smooth boundary using PAEK method with tolerance.

Manual editing of polygons may be needed to retain certain features

**3D bank shoreline:** Extract elevation information from Base-VWS to convert 2D bank shoreline to 3D



### • Modification of the method for ponds

- Workflow similar to that for rivers
- Pond boundary was buffered by 10m and minimum elevation was determined
- I-VWS was created using minimum elevation + 0.5m
- A single elevation I-VWS was intersected with the CBGS



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## CONTRATULATIONS

Sagar Deshpande, PhD  
Ferris State University

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View the IMAGIN Awards Website for additional  
information about this LiDAR Work



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