

Building Catchment Resilience

Visualisation

2020 Queensland Water Modelling Forum

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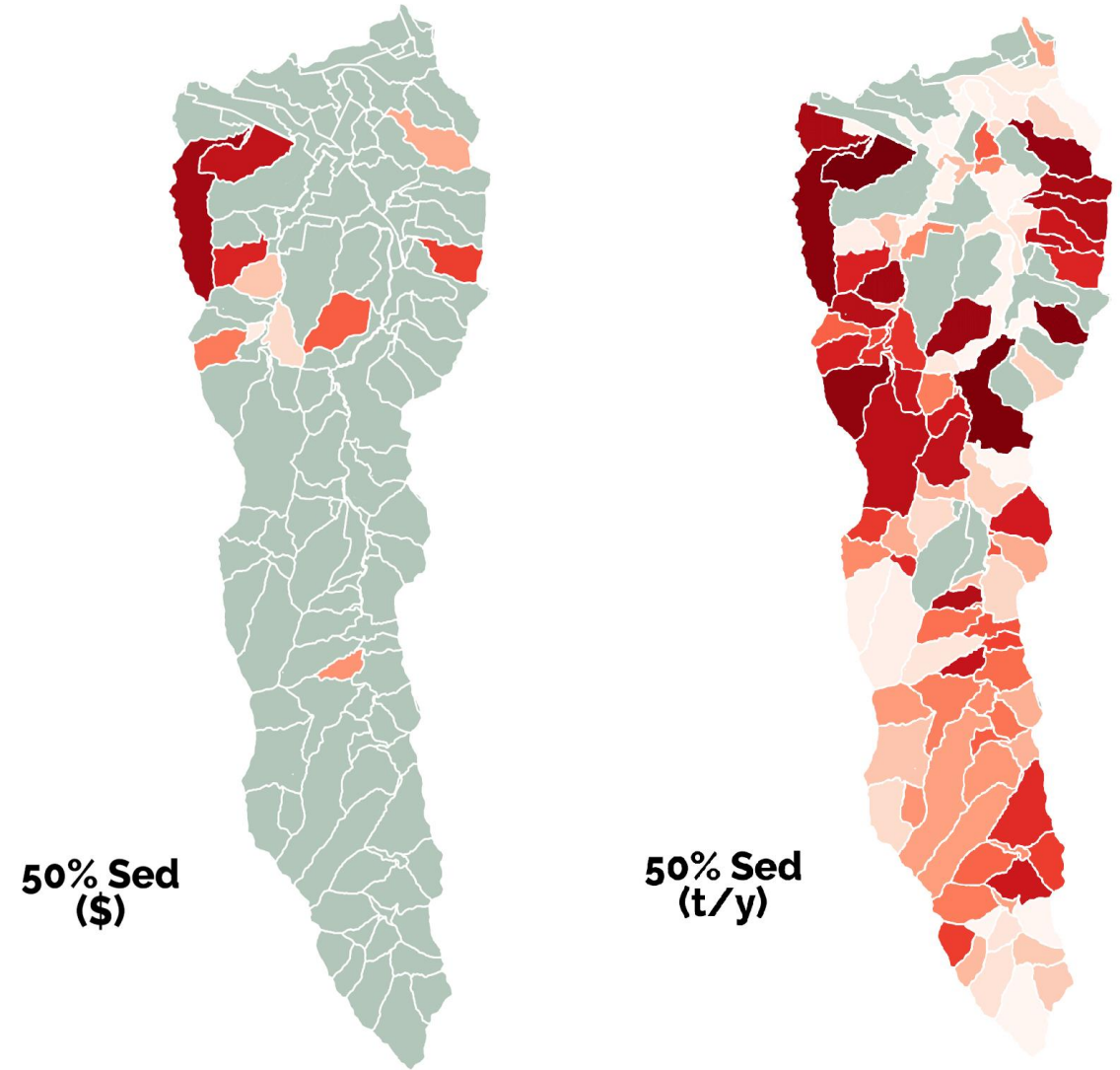
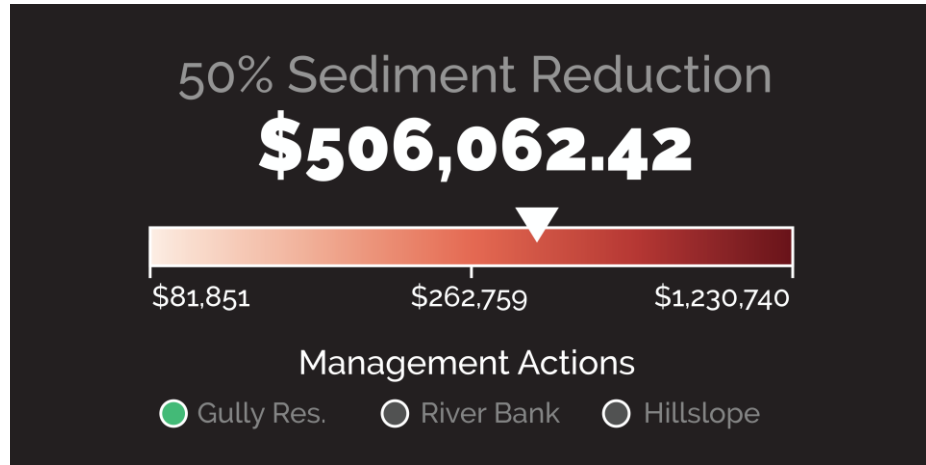
Engagement challenge

- Multiple diverse stakeholders
- Complex concepts
- High-level dynamic modelling
- Use of a scenario planning methodology
- Requirement to change processes and policies
- Asking the right questions
- Using the right technology



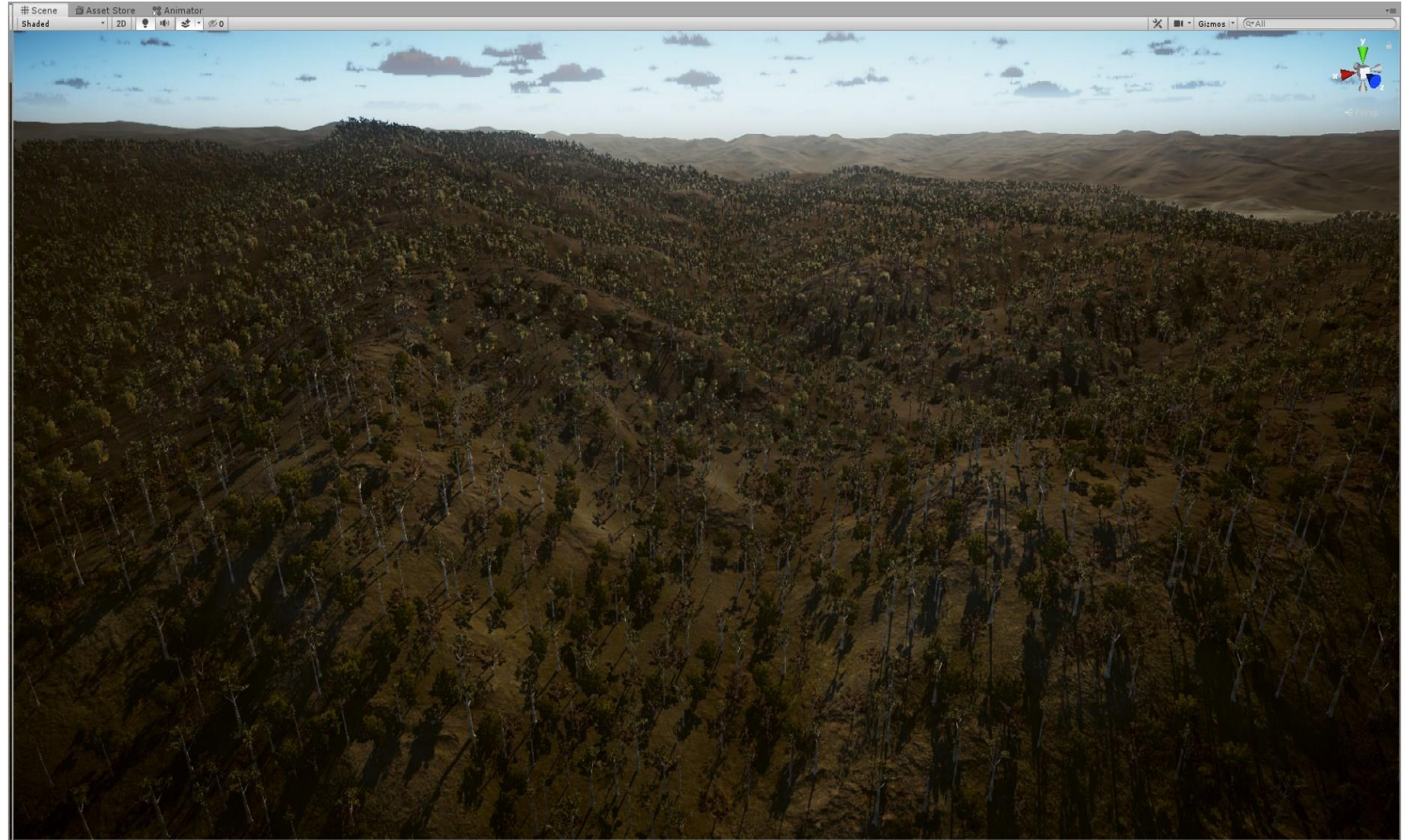
Data investigation

- Explore and understand the modelling process and the generated data
- The key issue is simplicity of presentation
- Users will need to understand and trust the data presented
- High-level of complexity in both the model itself and the understanding of the sediment data



Terrain data and VR

- Is on-the-ground visual realism a window into stakeholder engagement?
- Combination of research, modelling and scenario options presented in a realistic VR experience



Terrain data and VR

- High-resolution satellite terrain imagery vs processing capacity of different headset hardware
- Optimisation of terrain data and tiling of mesh and satellite data



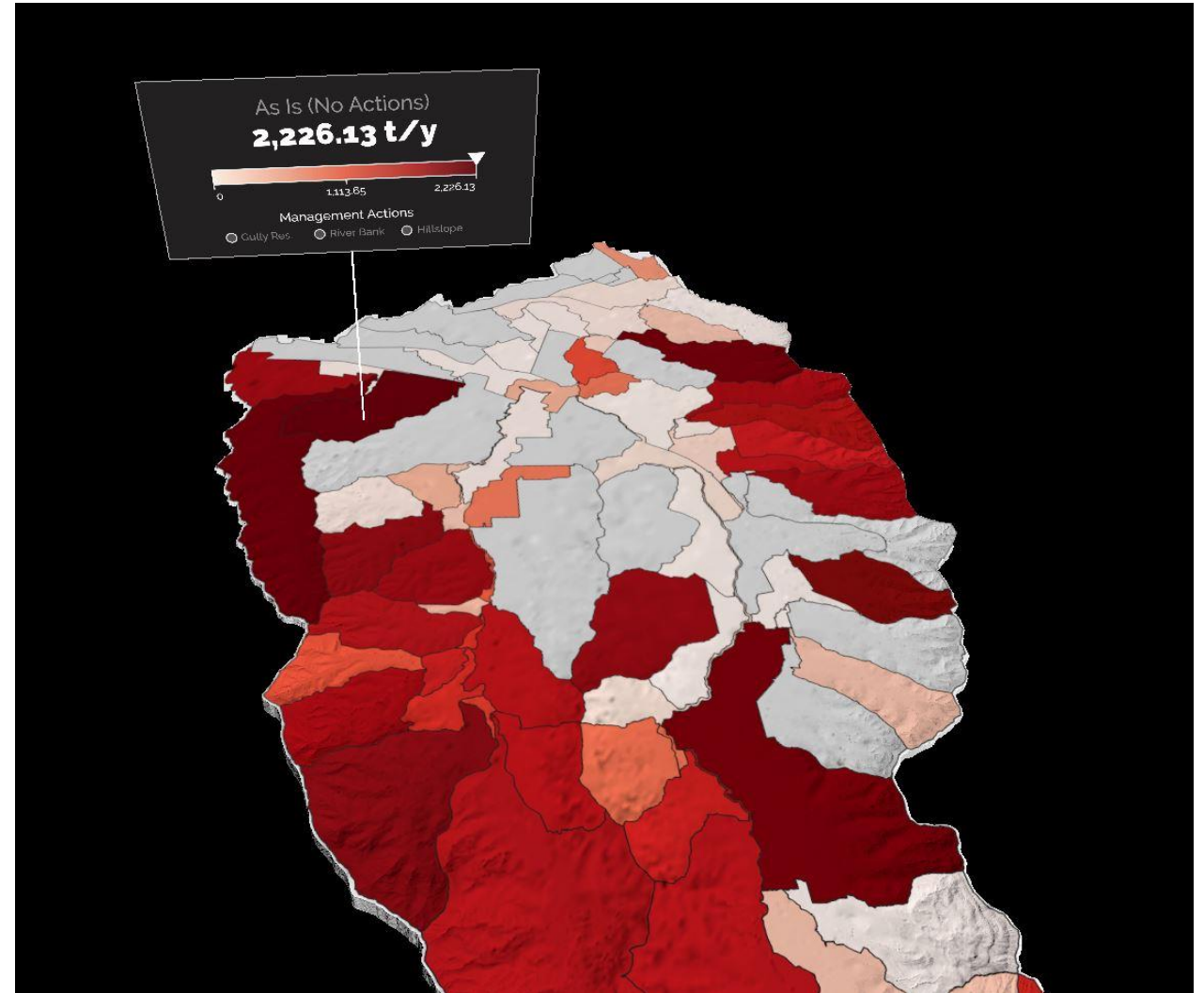
Terrain data and VR

- Option to scan specific catchment locations using drone-based photogrammetry to build up a detailed 3D model of the terrain



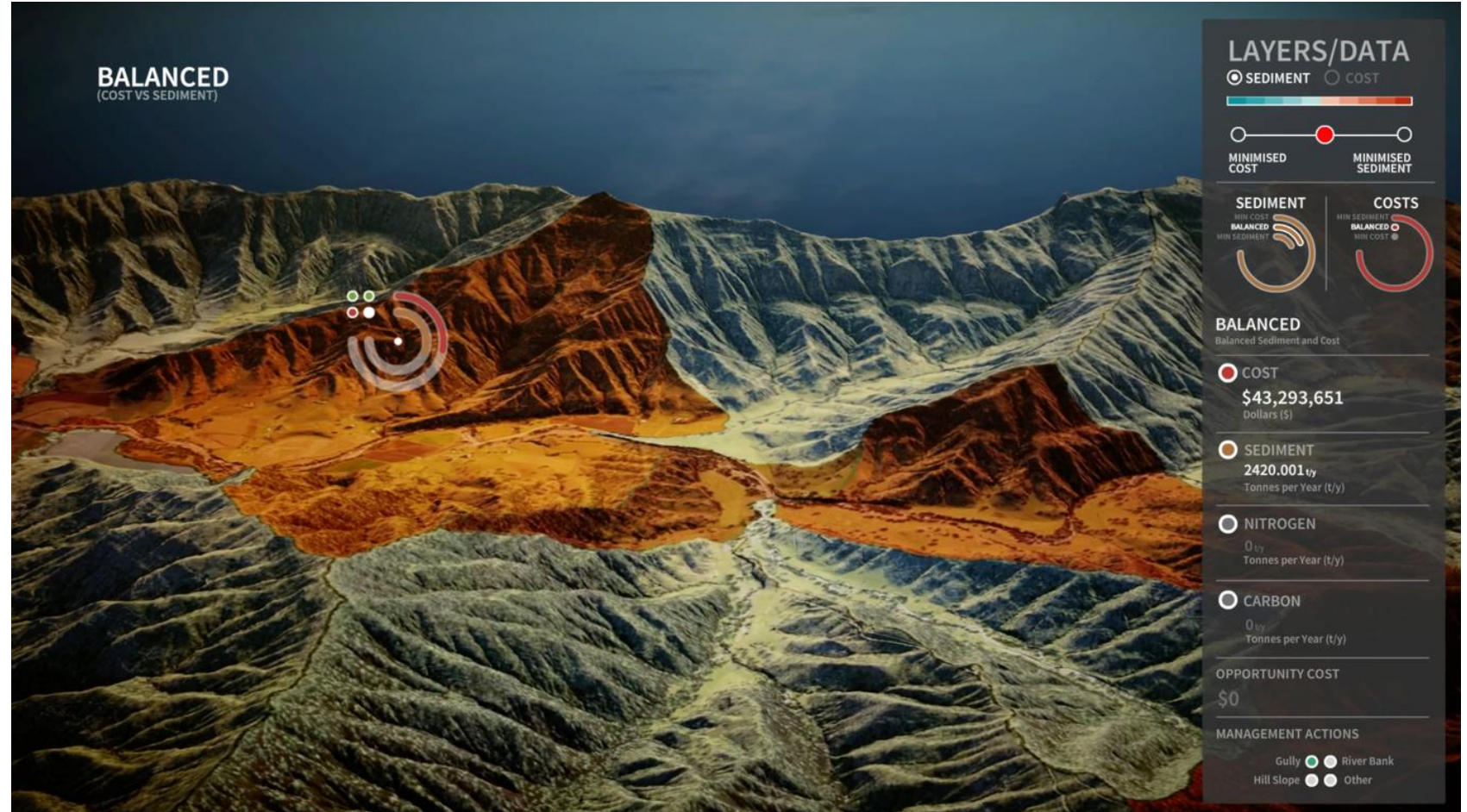
VR Pre-prototype

- To date our pre-prototype VR application uses low-resolution satellite imagery and a scaled down DEM to present an overview of the entire catchment
- We will be continuing work to extend the resolution and functionality of the VR application in line with our research into the different areas of the project
- User navigation system within the VR application



UX (User Experience) Research

- **Discover:** Field studies and user interviews
- **Explore:** Prototype feedback and useability testing
- **Test:** Qualitative useability testing
- **Listen:** Surveys and analytics review



Simulated Annealing Simulation

- Visualising the annealing output logs
- build a basic understanding of how the machine is working
- interpret and trust the results generated

