HINCHINBROOK
SHIRE COUNCIL

Palm Creek Culvert Crossing
Dutton St, Ingham

Community Consultation Session
Thursday 2 December 2021

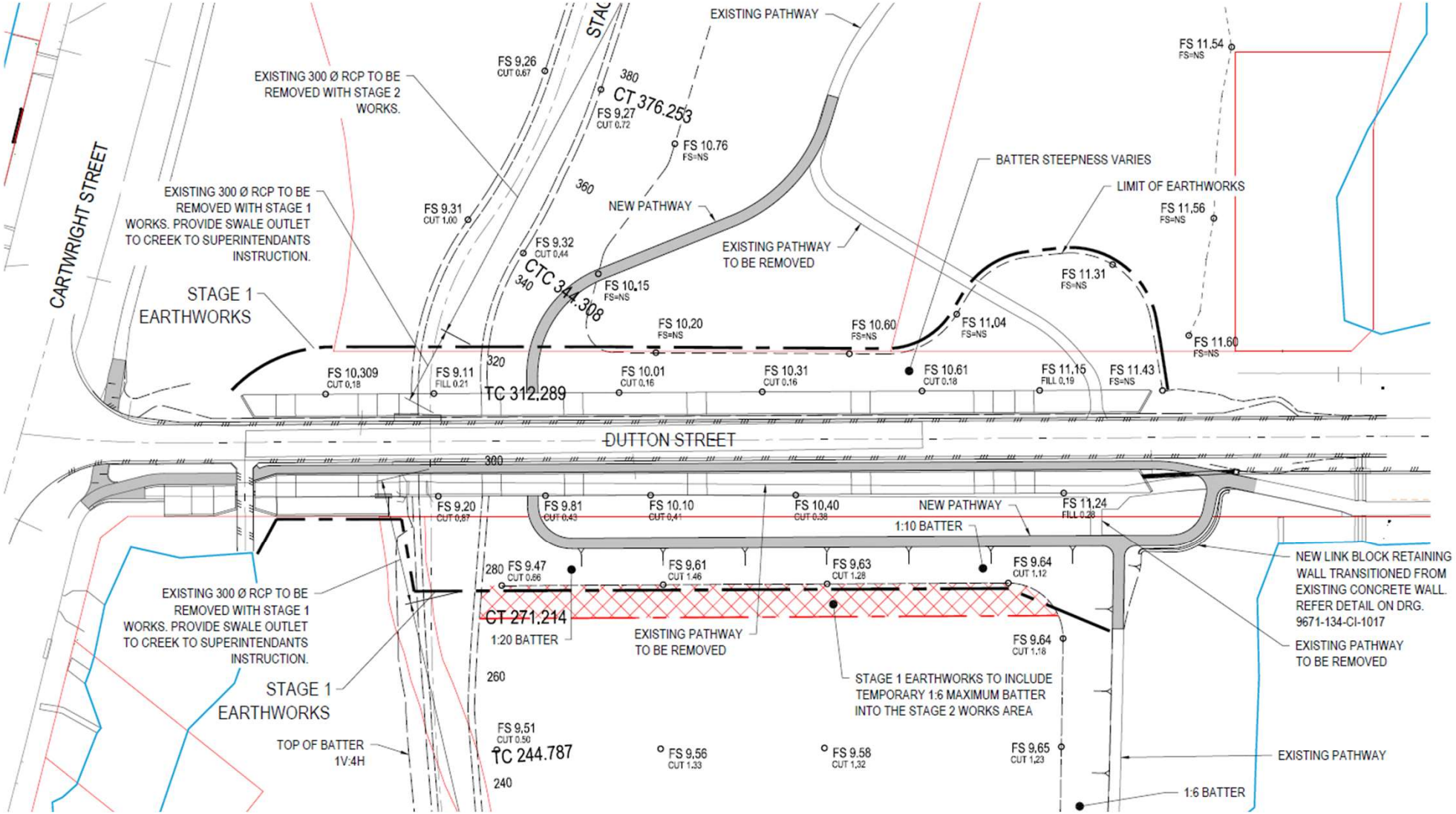
Project Scope

- Fully funded under the National Flood Mitigation Infrastructure Program;
- Total Project Value of $5.75 million;
- The design of the bridge will provide immunity in a 1 in 10 year flood event and it is expected to be overtopped by approximately 200mm in a 1 in 25 year flood event;
- For a previous comparison, in 1977 there was approximately 100mm of water at the Dutton and McIlwraith Streets intersection;
- Contract has been awarded to local contractor Keita Services;
- Keita Services provided an alternative design allowing the culvert walls and link slab units to be manufactured locally, increasing local content spend on this project by approximately $1.5 million.

Project Scope

- This is a major culvert crossing involving 43 cells of 3600mm wide culverts and link slabs ranging from 900mm to 3000mm tall. Each of the main culvert cells being 10.8 or 12m wide;
- Dual lane bridge with pedestrian pathway including guardrails and pedestrian barriers;
- Reconstruction of water and sewer infrastructure;
- Relocation of electrical services by Ergon;
- Bulk earthworks upstream of the bridge to improve flow of water;
- Removal of trees within the earthworks area; and
- Reinstatement of area with hydro-seeding and replanting of suitable tree species.

Project Scope



Why Dutton Street?

- In 2015 SMEC was engaged by Council to investigate options and undertake a feasibility study for north-south solutions that would alleviate the problem of the north side of Ingham being cut off from the south side during flood times. Key considerations include the flow-on effects associated with the flooding including;
  - Inability for people to get to work;
  - Residents regularly being isolated from emergency services and supplies, due to services being located on one side of the Creek; and
  - A reduction in Council's ability to be of service to the community.
- Eleanor, Dutton and Menzies Street were all considered as possible locations for a crossing to provide immunity for a 10 year ARI flood.
- Each option was scored against the following criteria:
  - Environment;
  - Economic;
  - Flooding Benefits;
  - Social;
  - Safety; and
  - Ease of Approvals.
- The location for Dutton Street was the highest scoring in comparison to Eleanor and Menzies Street.

Extent of Earthworks

Bulk Earthworks

- To improve the flow of water during flooding, the project will include substantial earthworks upstream of the culvert.
- This will require the removal of fill in varying heights up to 1.5m.
- Due to the depth of fill removal, 33 trees have been identified for removal.
- The earthworks will reprofile waterway area upstream between Eleanor and Dutton St.
- Upon completion of the earthworks, the area will be spread with topsoil and it will be hydro-seeded.
- Suitable tree species will be replanted across the site to reinstate shade to the area.
- It is estimated that 20,000m3 of soil will be removed from the site.
- Extensive testing is currently being undertaken to ensure the soil does not contain any contaminates. Once results have been received, it is anticipated that the earthworks will commence early in 2022, weather permitting.

Extent of Earthworks

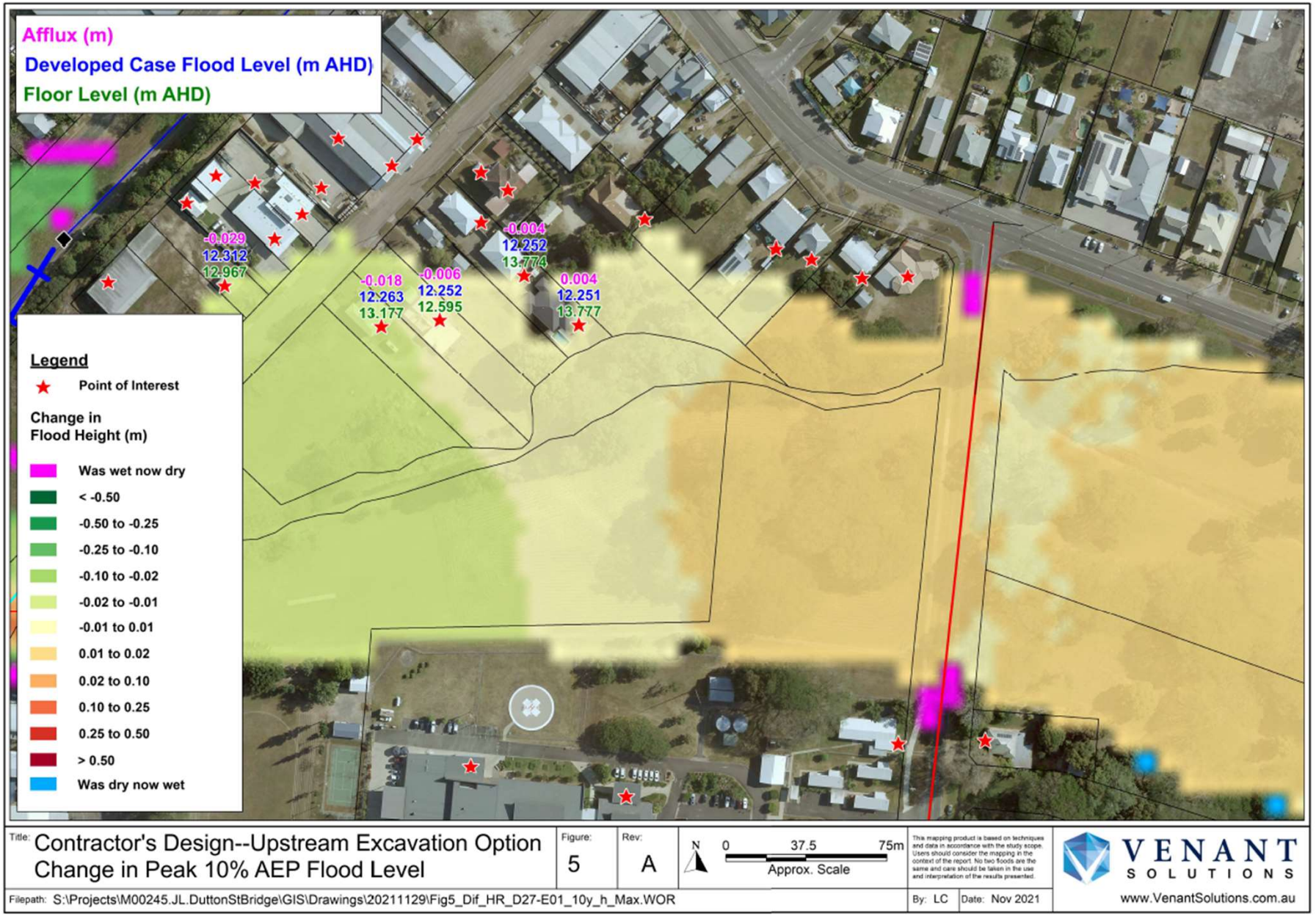
Extent of Earthworks

Replanting of Trees

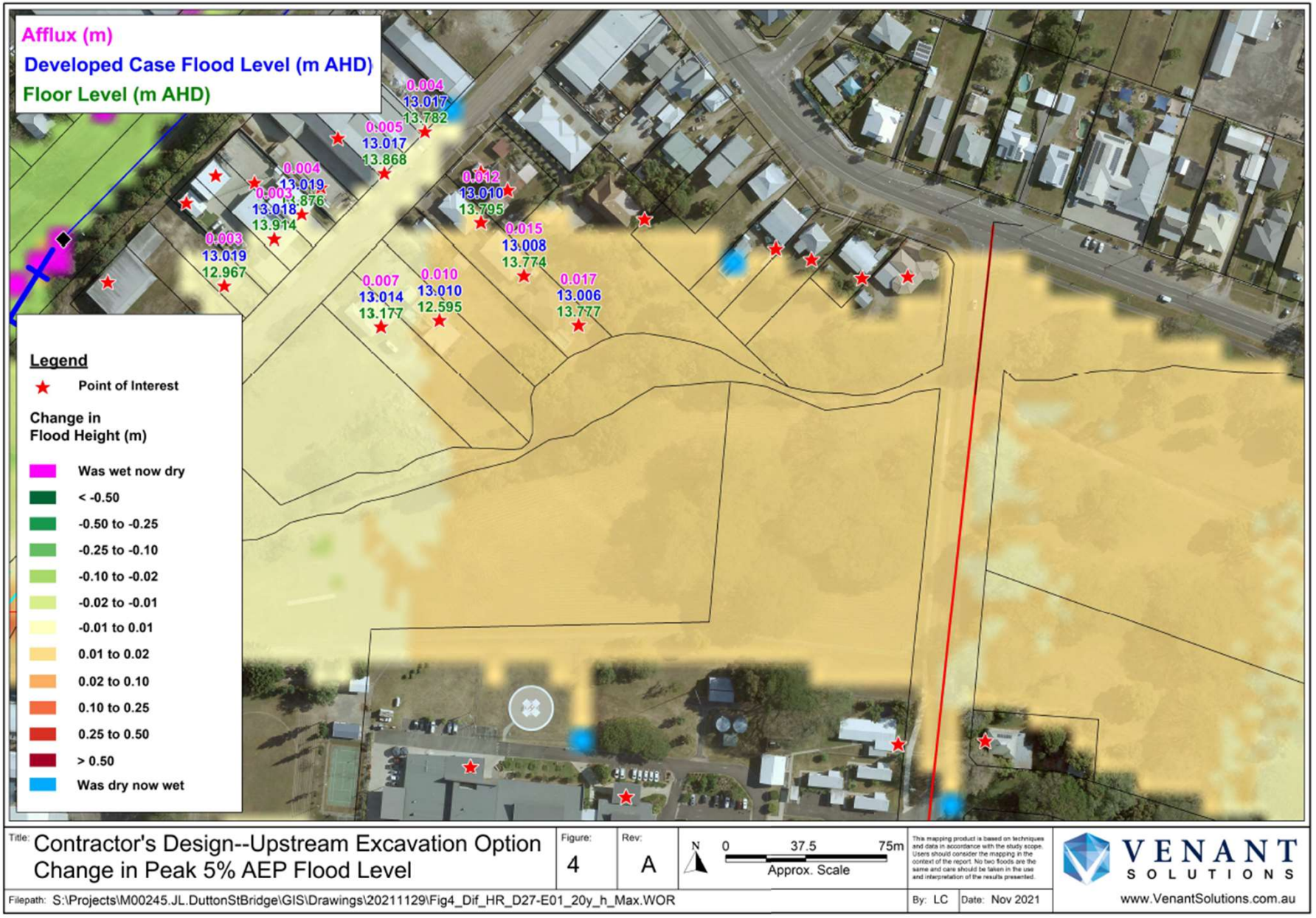
Hydraulic Assessment

- Venant Solutions Pty Ltd was commissioned to undertake a flood assessment of the proposed design.
- The purpose of the assessment was to assist in the design iteration and to assess for flood impact for the 5, 10, 20, 50 and 100 year flood events.
- Installing a culvert in a waterway can cause elevated water levels upstream and higher velocities downstream of the structure. This has been reviewed as part of the modelling, which has determined that the effects are minimal.

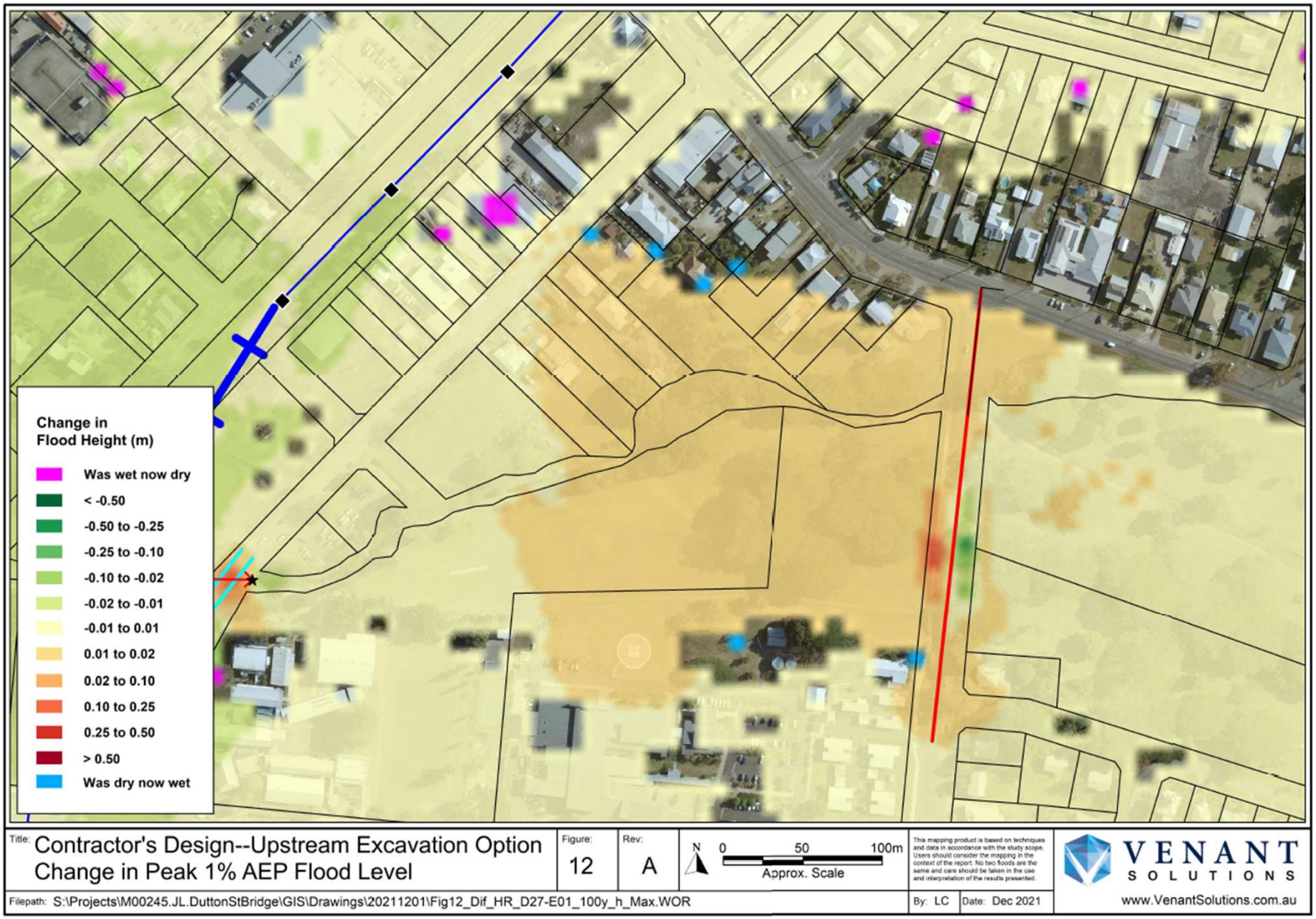
Hydraulic Assessment
1 in 10 Year Event



Hydraulic Assessment
1 in 20 Year Event



Hydraulic Assessment
1 in 100 Year Event



Project Timelines

- Works programmed to commence Monday 6 December, weather permitting;
- Works will initially commence on the Cartwright St end of Dutton St to construct a new access to the corner property, with Dutton St being open only to local traffic from McIlwraith St side;
- Once the driveway works are completed Dutton Street will be closed at the Cartwright St end.
- Access to the properties on Dutton St will be maintained at all times.
- Contractor will commence construction of the culvert base slabs;
- The construction program is 37 weeks, weather permitting.
- Council aims to have the project fully completed by November 2022.

Road Closure – Driveway Construction

Road Closure – Culvert Construction


QUESTIONS
ANSWERS


Thank You