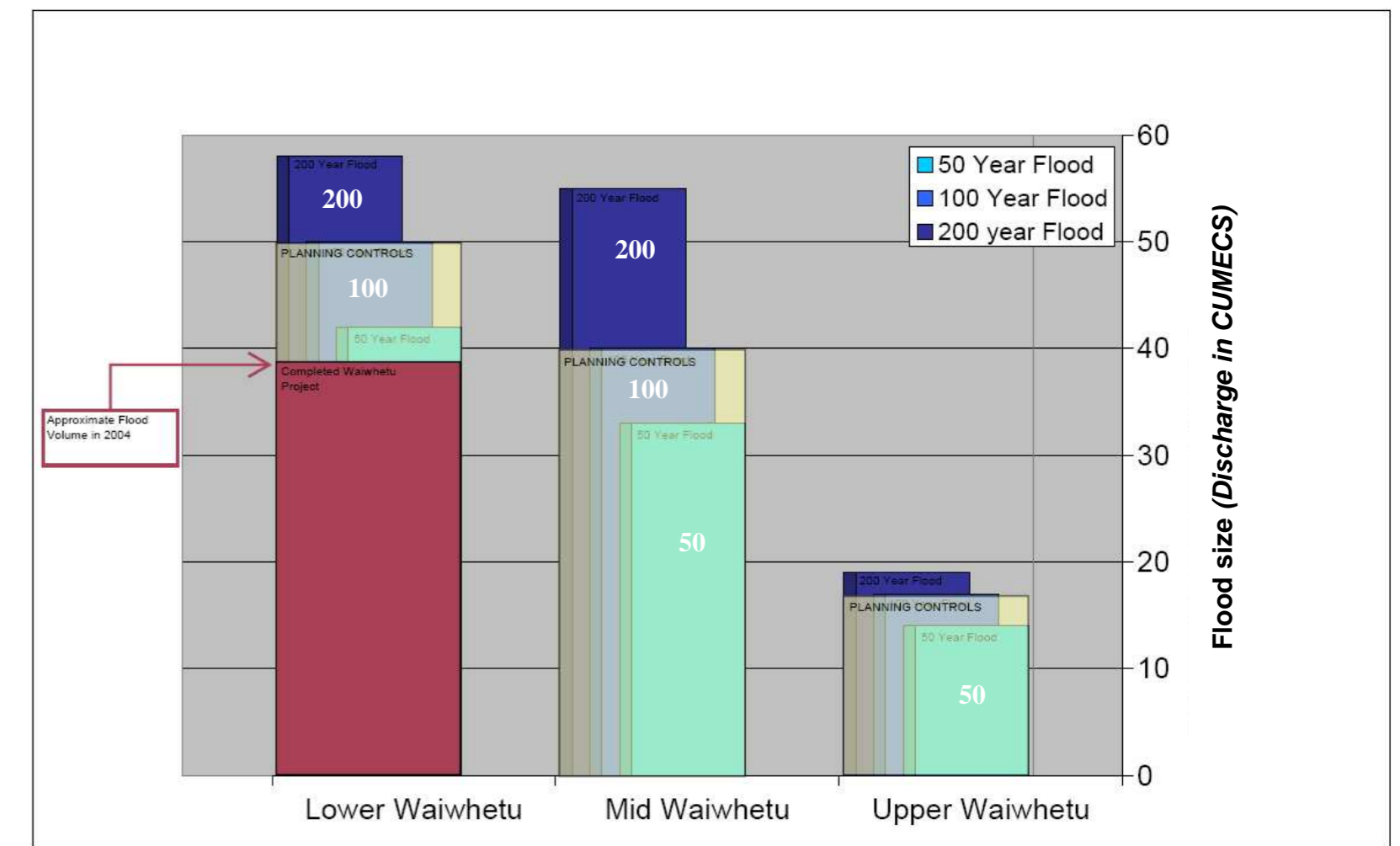
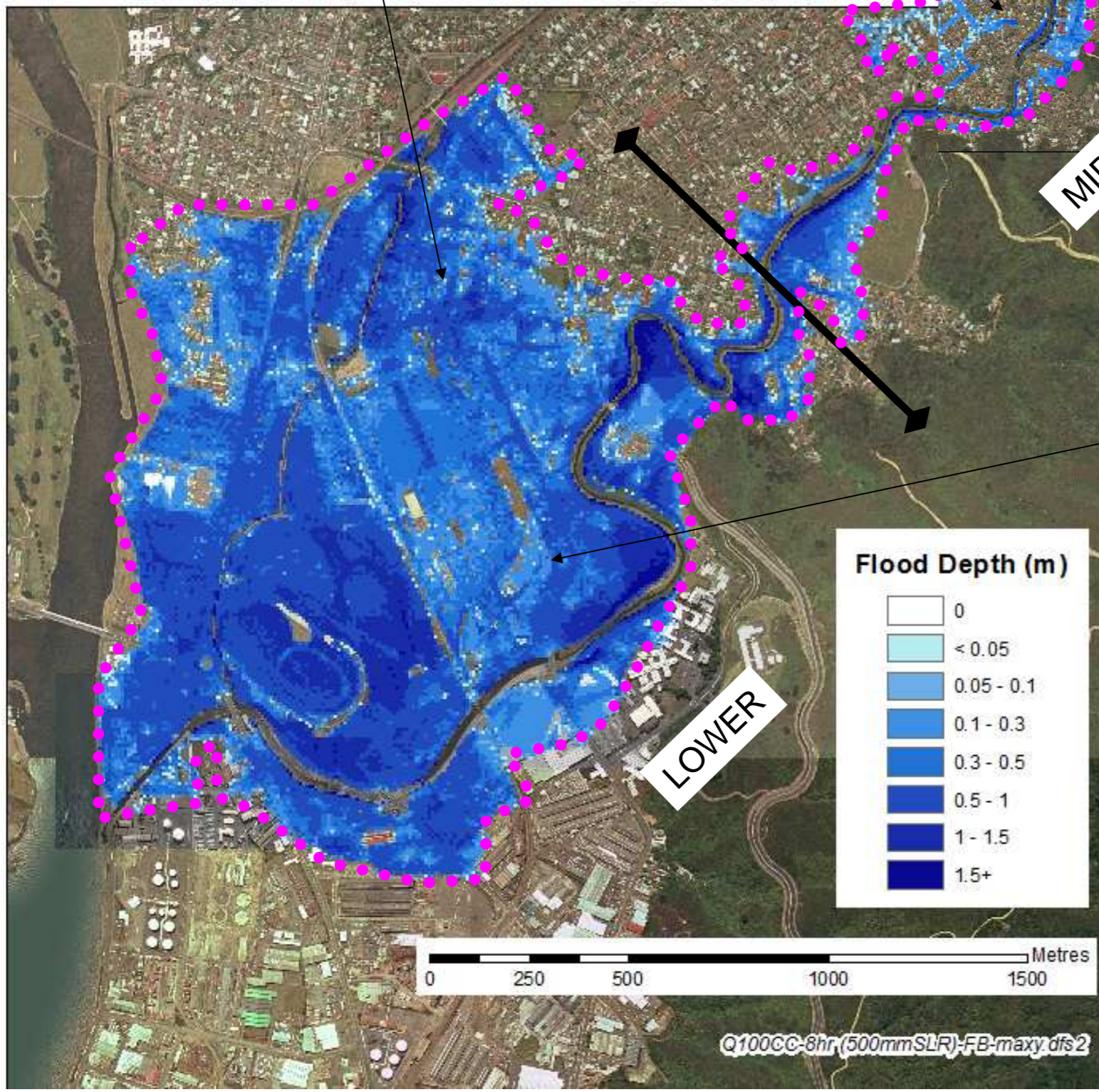
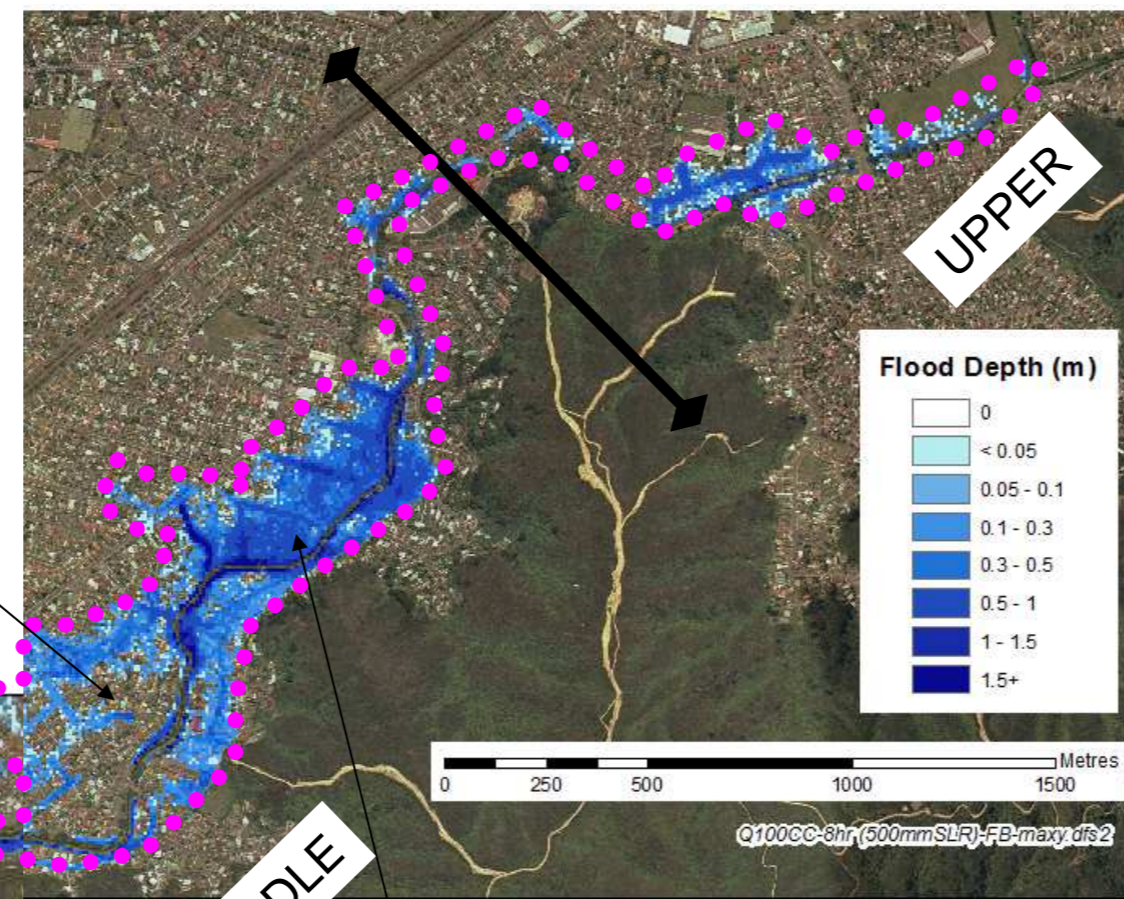


A total of 621 Houses could be expected to have flood water above floor level in this scenario

Option 5 Planning Control Implications;

- Density** - Planning controls how small a section can be in flood prone areas
- Floor Levels** – Control to make minimum floor levels 1-in-100 year flood level for new development
- Access** – Controls to require new developments have safe access in a 1-in-100 year flood event



Option	Description	Estimated Cost
Planning controls	Set minimum floor heights for new development to 1-in-100 year levels	\$0.1 Million
Total costs		\$0.1 Million

Notes on Assumptions to predict benefits

Hutt City saw a population growth of 0.4% in the 10 years from 2000 - 2011. Assuming this statistic is uniform across the Hutt Valley and continues at the same rate into the future, and every one of these new residents creates the need for a new property to be built, would mean an additional 3 flood prone houses being built in the next 10 years. Assuming that this trend continues for the next 100 years, this would mean approximately 30 additional houses would be subject to flooding. This would equate to approximately a 5% increase in total flooded properties. Assuming that these are evenly distributed on the stage damage curve would mean a 5% increase in damages, meaning that a potential \$4.5million dollars of extra damages may be saved by creating planning controls to raise building floor levels above the 1-in-100 year flood event levels.

Total cost	\$0.1 Million
Future damages prevented in a single 1-in-100 year event (see note above)	\$4.5 Million
Individual ratepayer cost per year \$100,000 of property value (HCC ratepayers over a 20 year loan funded works repayment schedule)	\$0.05 p.a./\$100,000

Disclaimer;

All dollar values used are approximations and may change during further detailed investigation; Calculations use the 2007 dollar value; Direct damages saved only consider one occurrence of a 1-in-100 year flood event; Individual rate payer cost is a guideline only and may not reflect final rating values.

Option 5 – Planning Controls

Description – Planning controls are implemented across the catchment to limit development and keep damages at existing levels.

Strengths - Low cost to implement. Maintains existing damage exposure. Can be used in conjunction with every other option type. Default stance for councils.

Weaknesses - Doesn't do anything to remedy existing flooding. Likely to require a plan change. Current planning practices have little control in industrial/business park areas.

Waiwhetu Stream Floodplain Management Plan – Options Development



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