



Rebuilding the streets of Kaiapoi after the Canterbury Earthquake (s)

Jeanette Ward – IPENZ Transport Conference 2011

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Today

- The earthquake (4 September)
- The road damage
- The recovery team & process
- Funding the rebuild
- Scheme design & consultation
- Design outcomes so far
- Conclusions
- Engineers role in the recovery



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The earthquake (4 Sept)



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The damage



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The damage



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The damage



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The damage



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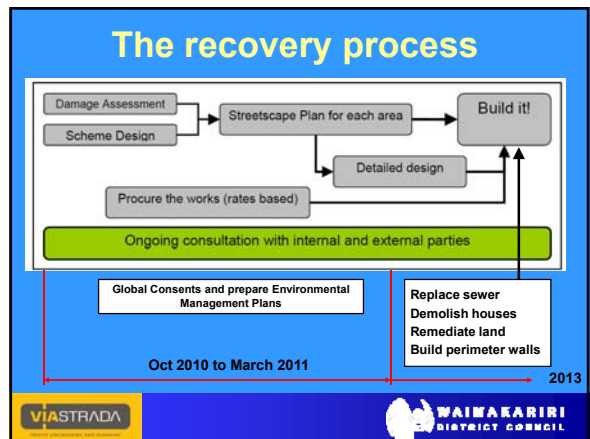
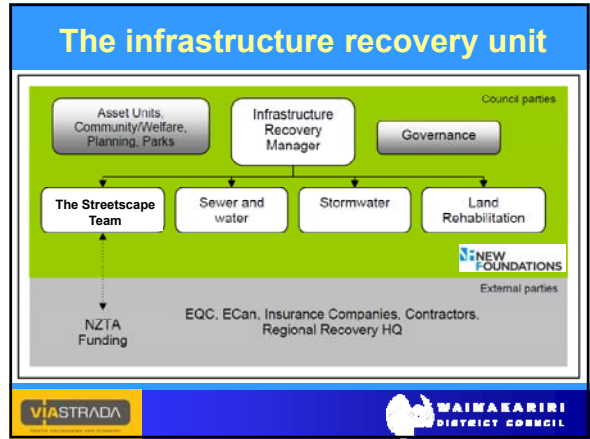
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The damage



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The recovery areas

The map shows several recovery areas in Salapou, New Zealand. The areas are color-coded: Salapou West (yellow), Town Centre (red), Salapou East (purple), Salapou South (red), Pines (yellow), and Karahi (yellow). A scale bar and north arrow are also present.

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Funding (≈ \$15mill)

- Damaged roads
 - NZTA Emergency Reinstatement Funding (≈ 80-90%)
 - Council existing budgets/rates increase (≈ 10-20%)
- Opportunities within and adjacent to damaged roads
 - Council Minor Improvements, Drainage renewals etc

The first photograph shows a newly paved road with a red-paved shoulder and a drainage ditch. The second photograph shows a road with a drainage ditch and some vegetation.

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Assessing the damage

- Kerb and channel - Topo survey and water tanker
- Pavement – Falling weight deflectometer (FWD)

The image shows a truck with a falling weight deflectometer (FWD) on the back, used for assessing pavement damage. The graph shows Remaining Life (years) on the y-axis (0 to 20) and Change (mm) on the x-axis (0.00 to 0.10). The graph is divided into three layers: Layer Depth (mm) and Change (mm).

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Scheme design approach

- Why not rebuild as it is now? PROSPERITY!
- How to tackle this given not all damage known?
- Need to be flexible so new will fit with old
- Asset management considerations
- Walking and Cycling Strategy etc
- Town Centre project

The first photograph shows a road with a drainage ditch and some vegetation. The second photograph shows a road with a drainage ditch and some vegetation.

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Consultation approach

- Issues with timing– in the right headspace?
- Consultation / information overload?
- Absentee residents because house damaged
- Decided to engage as much as possible



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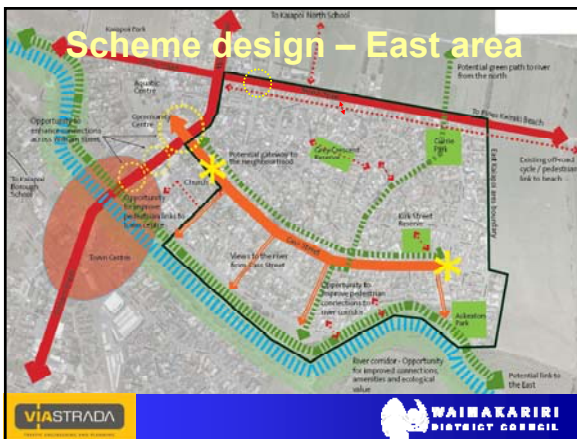
Scheme design – East area



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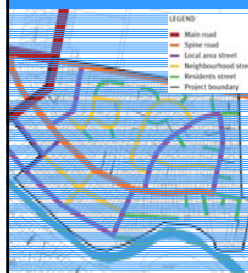
Scheme design – East area



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Scheme design – East area




- Test the proposed Selwyn District local road hierarchy
- Ask the people what they want at Street Ideas BBQs (next slide)
- Develop typical design template for each street type
- Apply template once extent of damage known
- Good alignment with NZS 4404

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Scheme design – East area


- Asked for preference on ideas for different road types



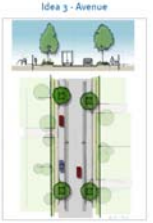
Idea 1 - Greenway

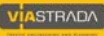



Idea 2 - Boulevard



Idea 3 - Avenue




Consultation feedback



- People embraced the chance to be involved
- Education opportunity at Street Idea BBQs
- Desire to address issues through rebuild
 - Sense of 'place' – liveability
 - Speed
 - Severance
 - Walking and cycling environment
 - Lots of mobility scooters
- Allowed design objectives to be set
- Input to 'Streetscape Plans'



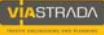




Design outcomes so far

- Reinforce low speed environment – narrower roads, better intersections, traffic calming features

- Future proofing potential bus routes and 40km/h speed limit zones, neighbourhood gateways
- Potential link between cul de sac and Kirk St

Design outcomes so far

- Off road cycle paths - better access to schools







Conclusions

- Very rare opportunity to rebuild on such a scale
- Required fast track process – consider risks
- A template approach worked well for Kaiapoi East
- Consulting on concepts rather than detail gets better buy-in
- Key opportunities - addressing speed, better walking & cycling environment, accessibility and attractive streets

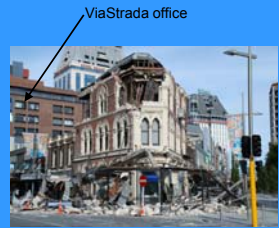


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Transport Engineers role in the recovery

- Leadership roles?
- Work with other disciplines
- Technical direction - advise
- What about the IPENZ Transportation Group?
- Watch this space!



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Any questions?

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for further information



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