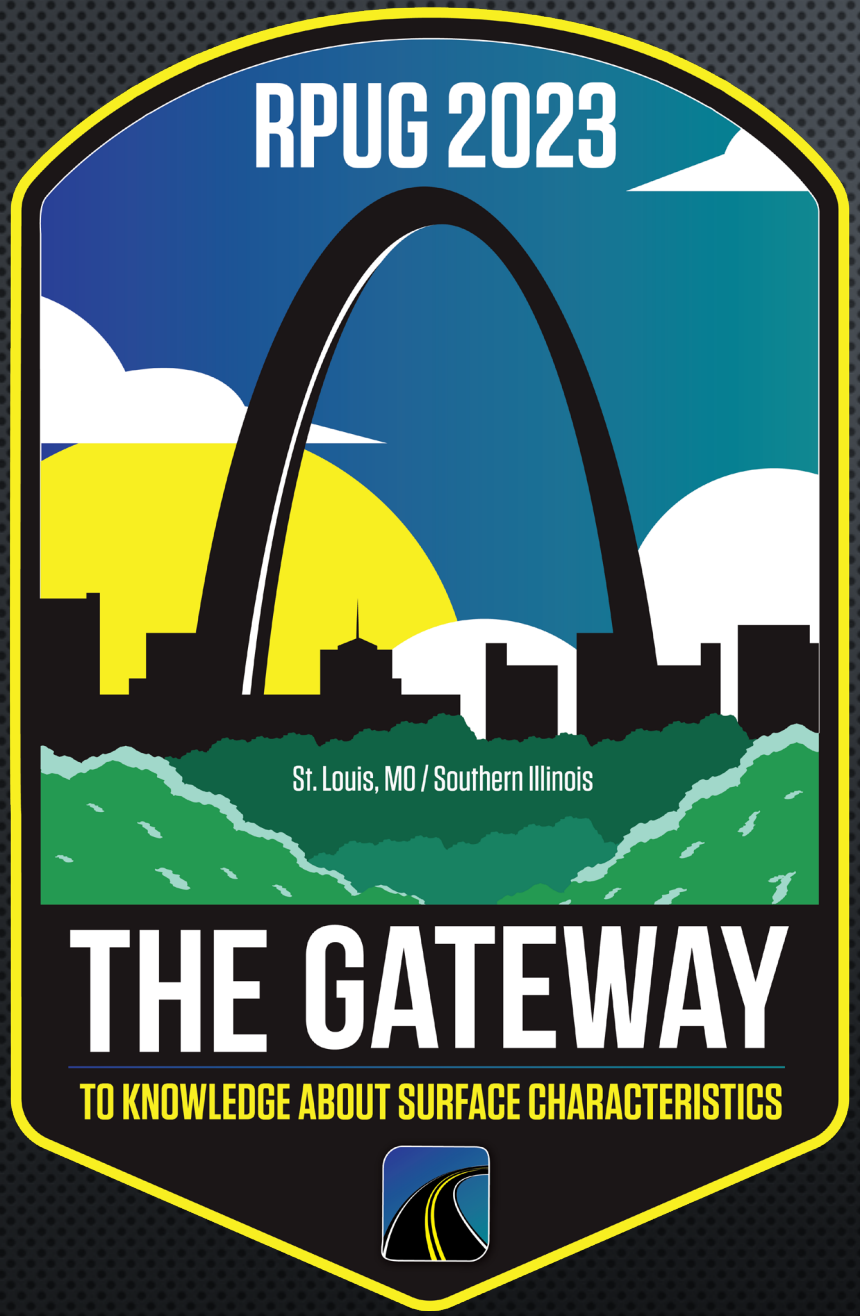

3-D PAVEMENT SURFACE MEASUREMENT TECHNOLOGY

JOHN YEAMAN

PAVEMENT MANAGEMENT SERVICES

Illinois Department of Transportation

RPUG
Road Profile Users' Group

Presentation Outline

1. Background
2. Aim of Project
3. Catastrophic vs Increased Maintenance
4. Initial Study Outcomes
5. Way Forward

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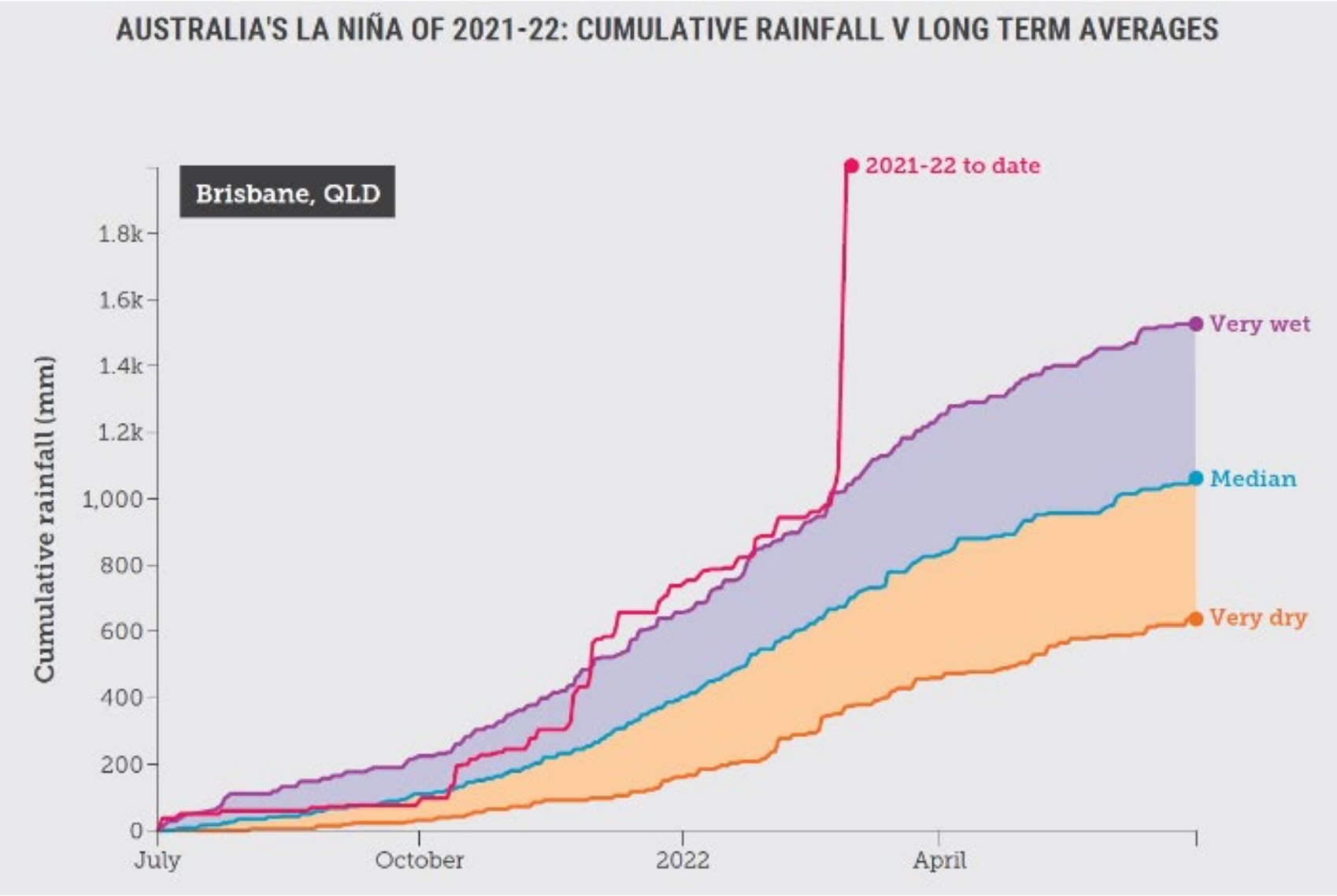
Background

Flooding is more:

- ✓ Frequent
- ✓ Damaging
- ✓ Widespread
- ✓ Inundating
- ✓ Slower in recovery



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CAMPASPE RIVER

FLOOD IMPACT IN BRISBANE EAST

FLOOD IMPACT IN BRISBANE EAST

Brisbane Floods

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Aim

- ✓ Likely maintenance burden on ‘normal’ roads subject to inundation
- ✓ Initial survey of 840km of road soon after reopening
- ✓ 6 months later – same 840km plus adjacent roads = 2,000km
- ✓ Did inundation and early opening cause accelerated deterioration?

  If yes, what is the likely increased cost to maintain overtime?
- ✓ How do we model future needs based if extreme weather events become more frequent?

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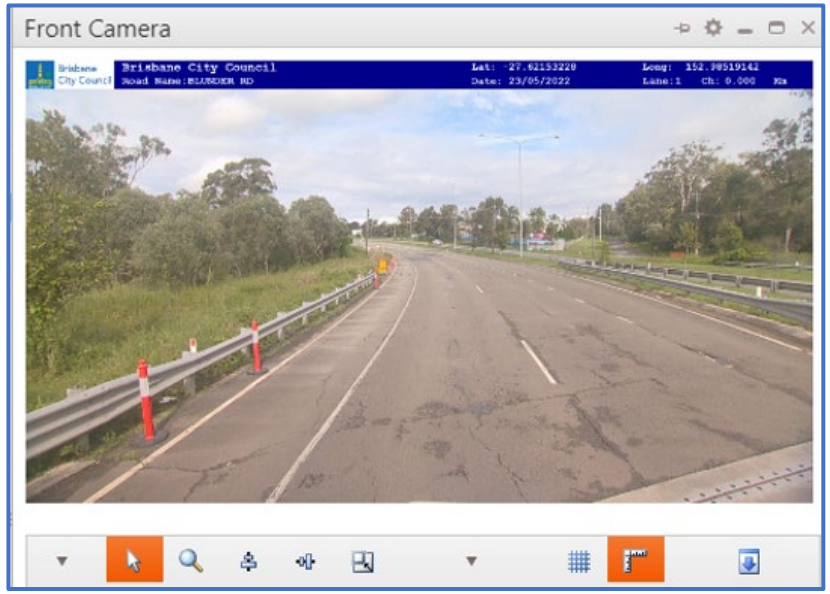
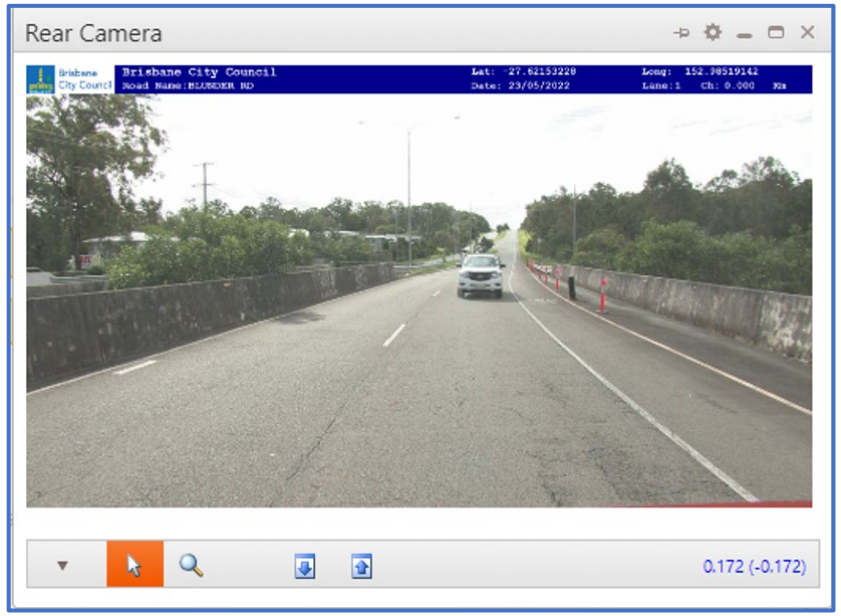
Cracking Was The Key

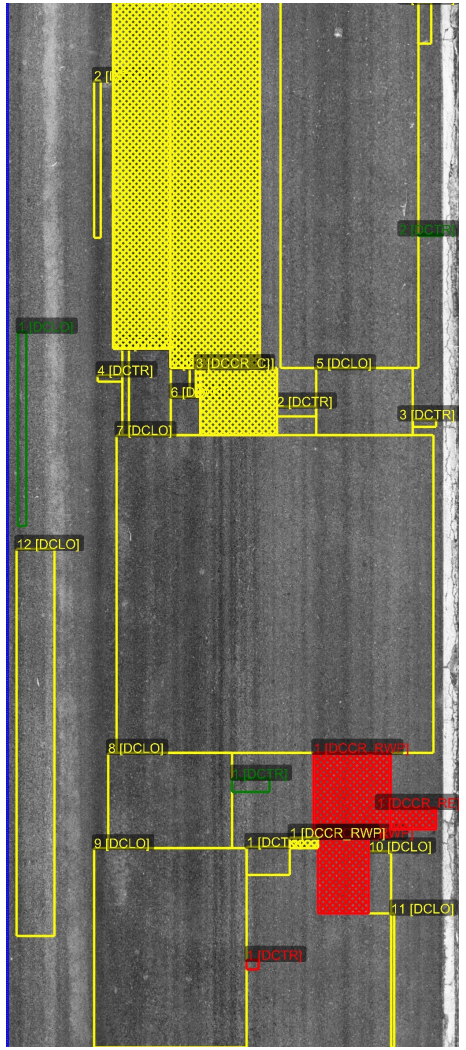


Forward Facing Camera

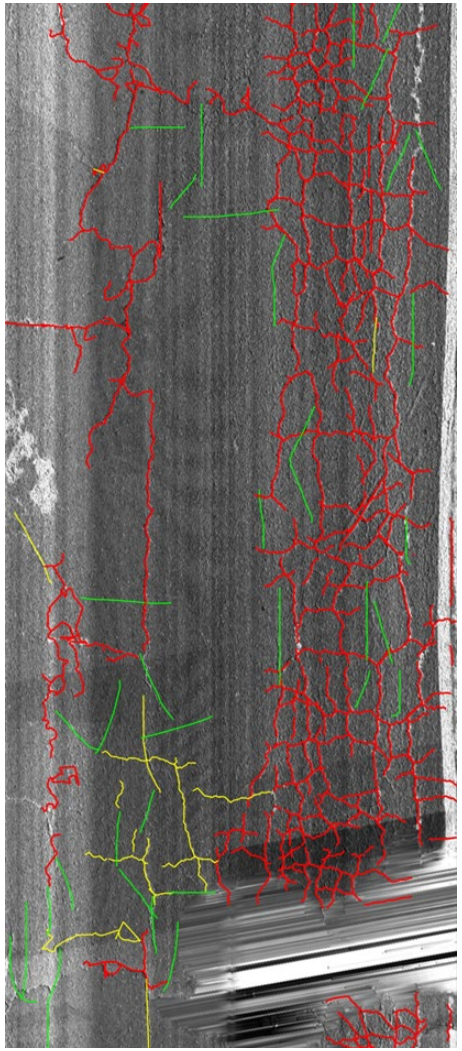


Rear Facing Camera

LCMS 3D Scanning



LCMS Crack Mapping



Why Cracking?

- ✓ Allowed a rapid assessment
- ✓ Proxy for structural capacity – increased fatigue cracking/pumping
- ✓ Still obtain defects but a high degree of accuracy on cracking
- ✓ Cracking as a gestation element for potholes
- ✓ Political imperative to ‘fix-potholes’
- ✓ As pavement engineers we needed to understand changes
- ✓ Move from reactive fixing potholes to pre-emptive maintenance

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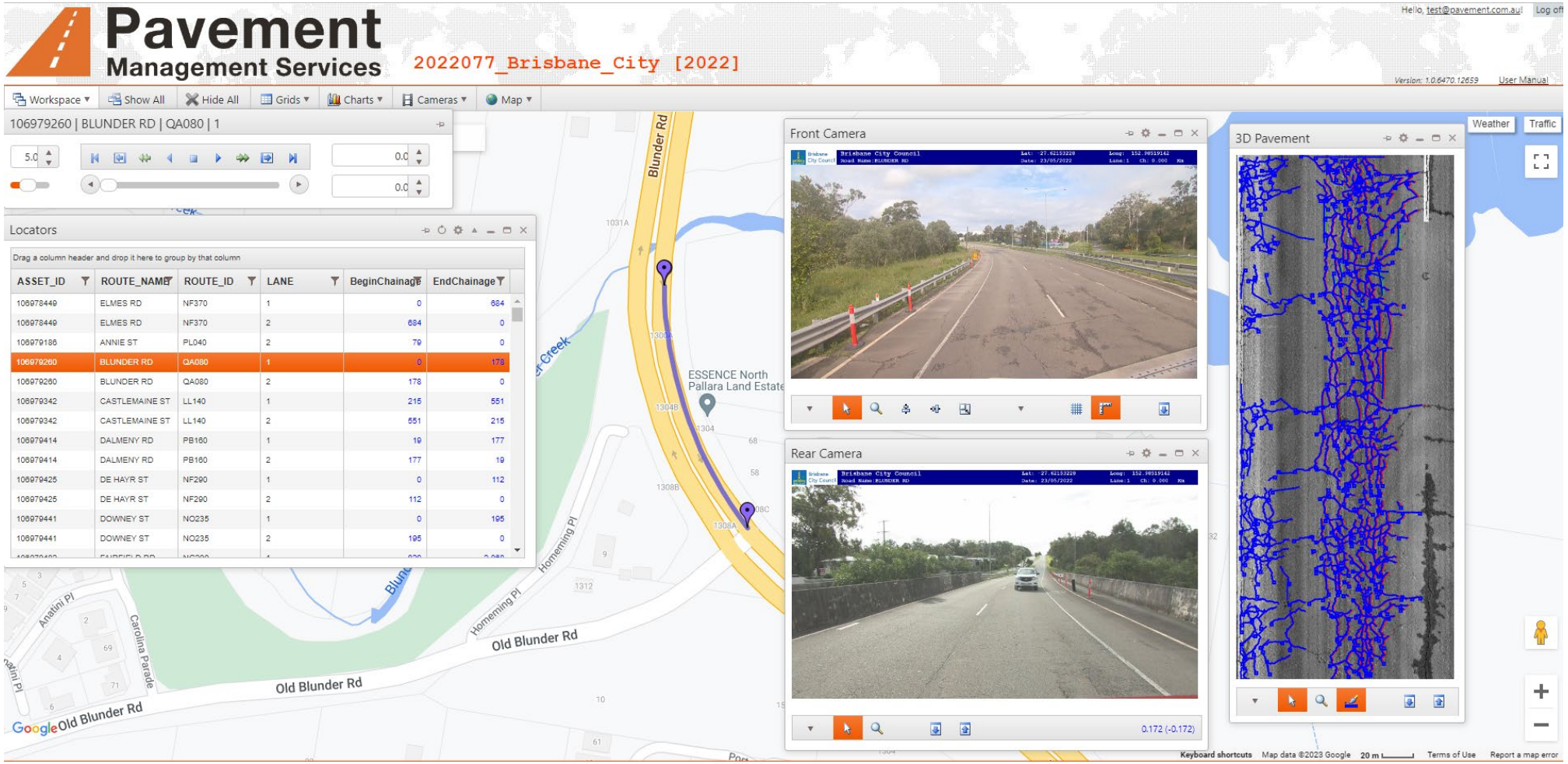
Output

Camera video and cracking view



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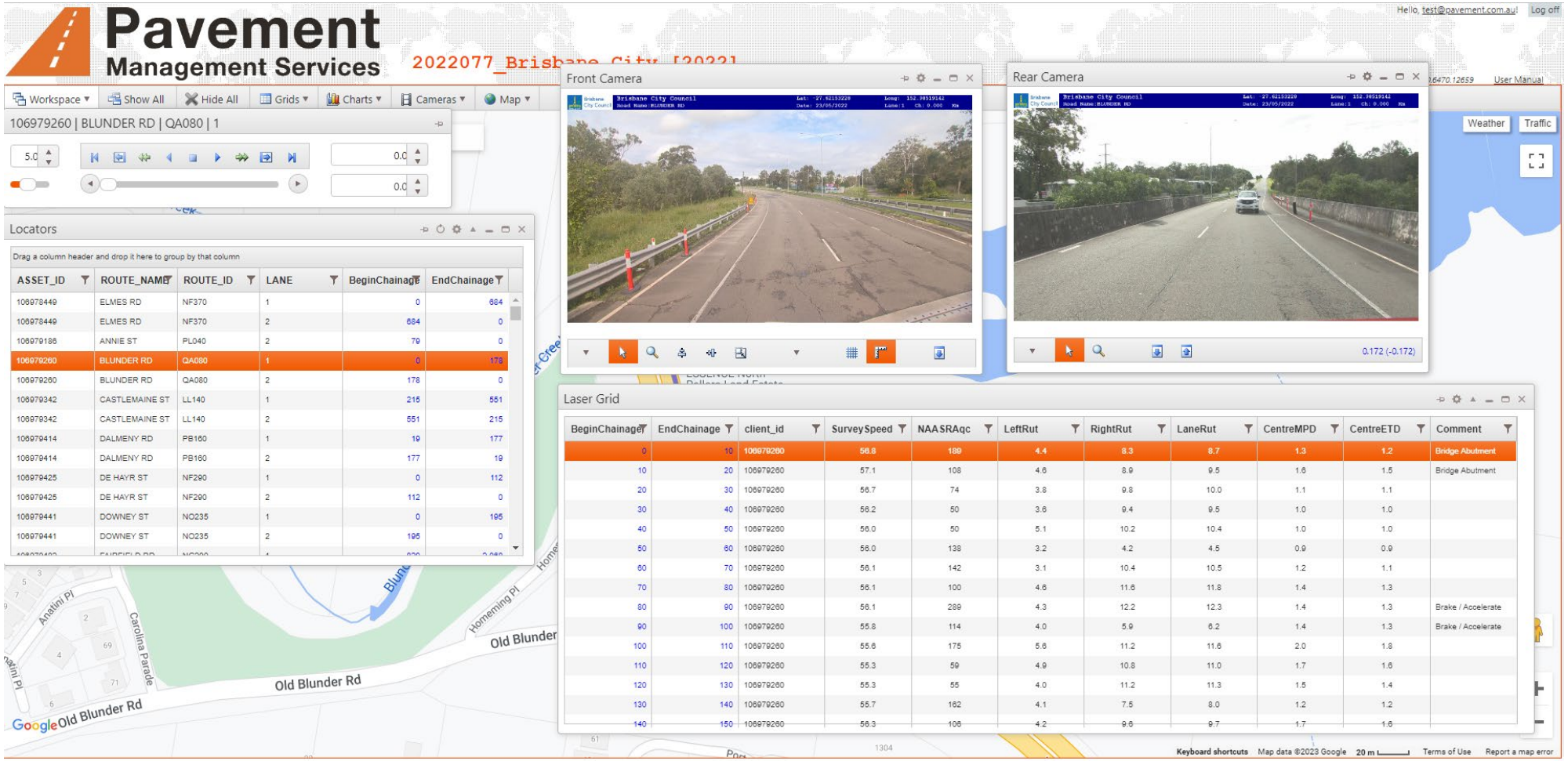
Output

Camera and Laser Data Grid



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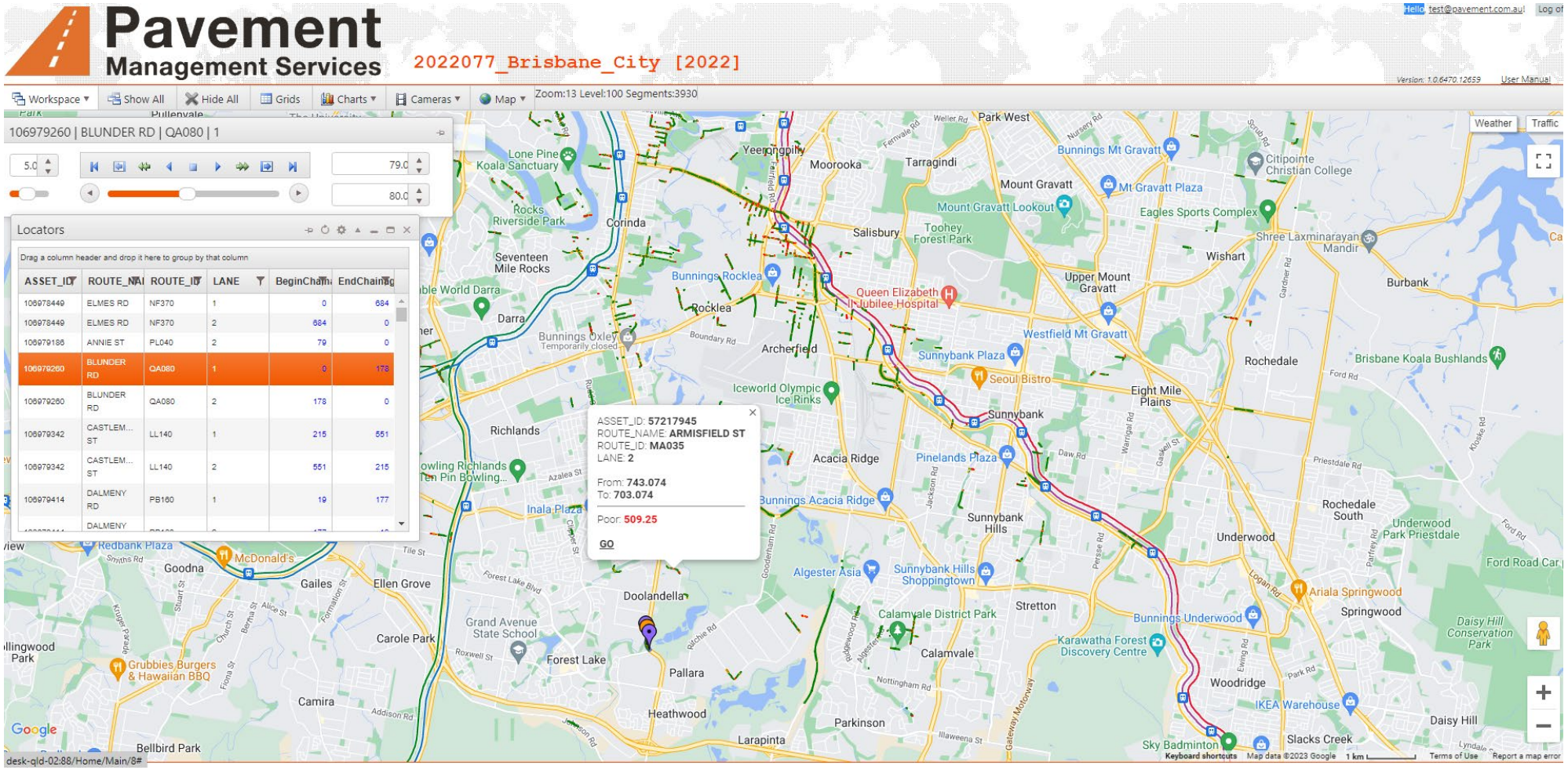
Output

Thematic Map with Hover



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Outcomes: Preliminary

- Opening roads quickly after inundation did accelerate decline
- Repeated inundation marked impact on resilience
- Data enabled the council to make the necessary steps to start restoring.
- Data to seek emergency funding.
- Set priority against existing funding
- Study still in progress – modelling future

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Conclusion

- LCMS technology proved a vital tool for rapid assessment
- Whilst the focus was initially quite tight (cracking) the other sensor and imagery proved vital for immediate response.
- Provided good visual ‘story’
- Provides an important study baseline for future analysis

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THANK YOU

John Yeaman

jwyeaman@pavement.com.au

Ph: (02) 9674 9488