TREC's FME Journey

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Transport Rebuild East Coast

NZ TRANSPORT AGENCY WAKA KOTAHI | KiwiRail

Te Kāwanatanga o Aotearoa
New Zealand Government

Emma Winthrop - **Setting Up For Good**
TREC Team Lead, NZTA

Jason Ridley - **FME in Action**
TREC FME Lead, Aurecon

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Setting up for Good

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Natural Disaster : Recovery

- 2023 Cyclone Gabrielle
  - the deadliest cyclone to hit New Zealand since 1968, surpassing Cyclone Bola in 1988
  - affecting huge numbers of people, enormous areas

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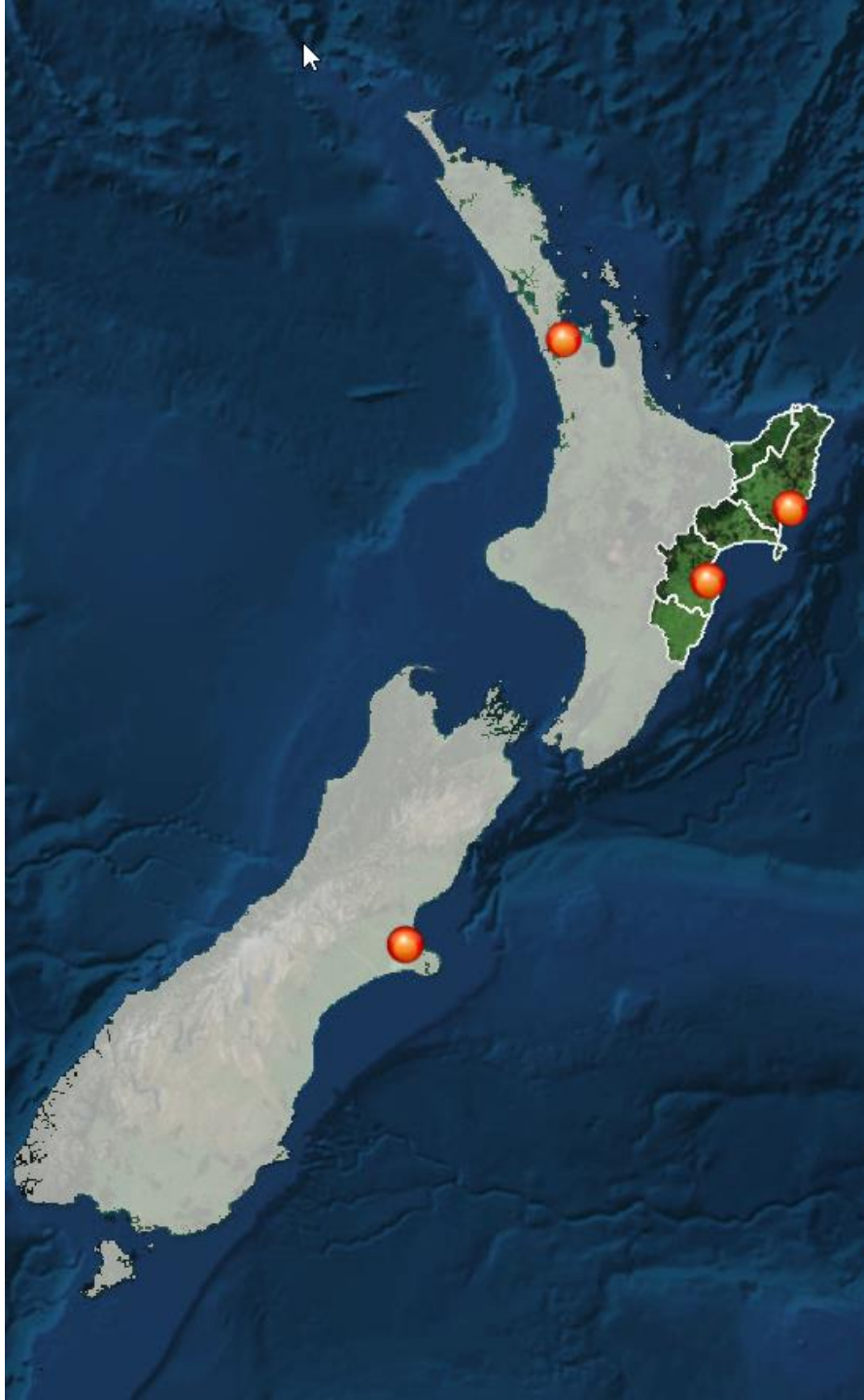
What's the difference?

- Funding model
  - Rebuild business cases
- Geographic spread
  - (Napier, Gisborne, Christchurch, Auckland)
- Client involvement
  - Geospatial enablement
- Puns:
  - SCIRT – hemline
  - NCTIR – the Hive
  - TREC…

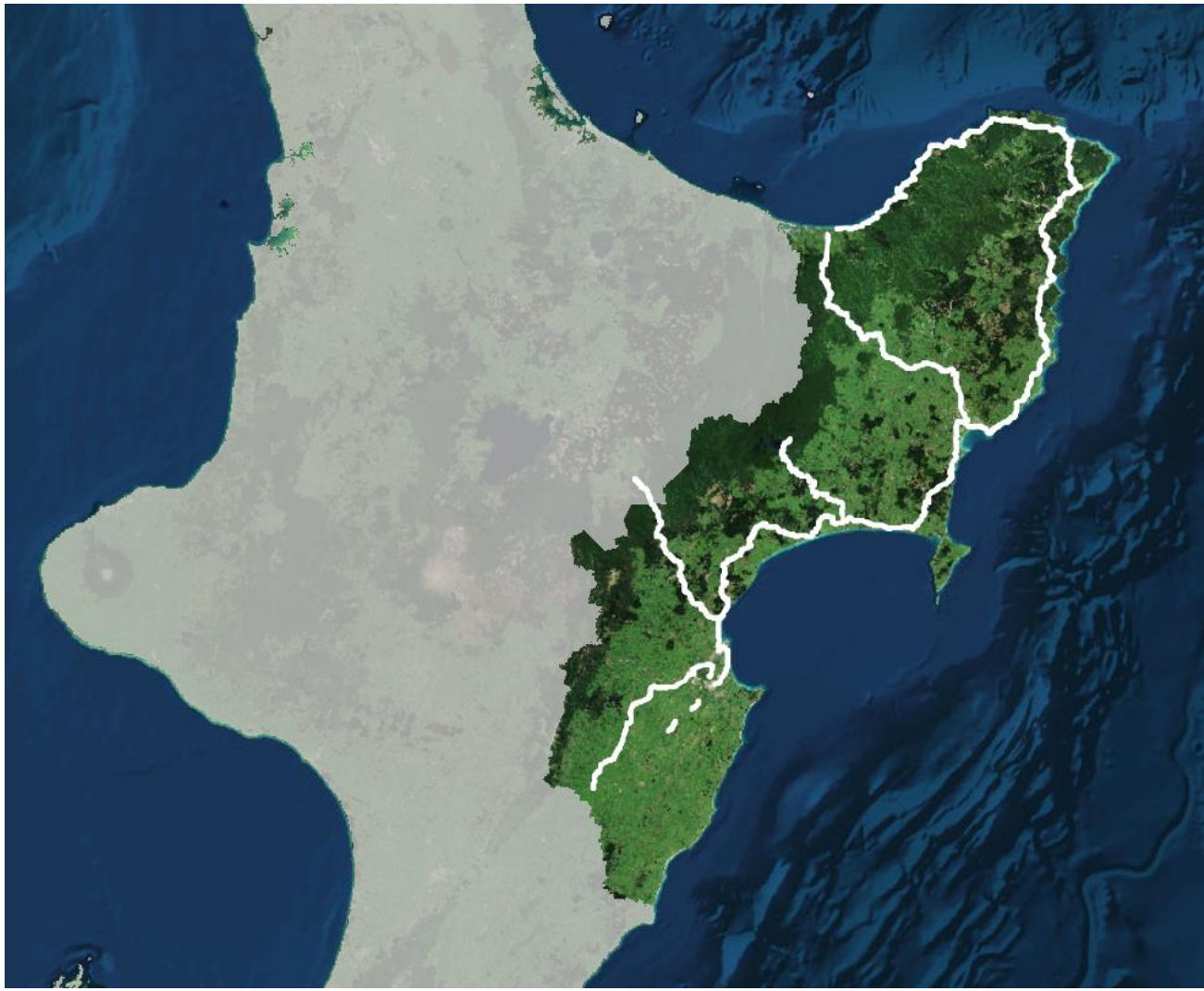
"It's life, Jim, but not as we know it, not as we know it, not as we know it"



Captain's Log

The TREC Programme of Works

- Alliance members are
  - Owner Participants:NZTA, KiwiRail,
  - Non-owner Participants: Downer, Fulton Hogan, and Higgins
  - Sub-alliance: Aurecon, WSP, Tonkin and Taylor
- Alongside local contractors and suppliers
- East Coast first approach



NZTA Digital Enablement Strategy

- Guidance for handing back project information
- Embedding AMDS into projects (Asset Management Data Standard)
- Extending NZTA geospatial capability to alliance partners
- System of Systems

TREC Universe

…in a nutshell

- Recovery (funded)
- Maintenance and Operations
  - NOCs brought in for lifetime of TREC
- Rebuild
  - Programme of Works plus Major Projects - Business Cases

TREC Universe

- Recovery
- Rebuild

Recovery work b numbers

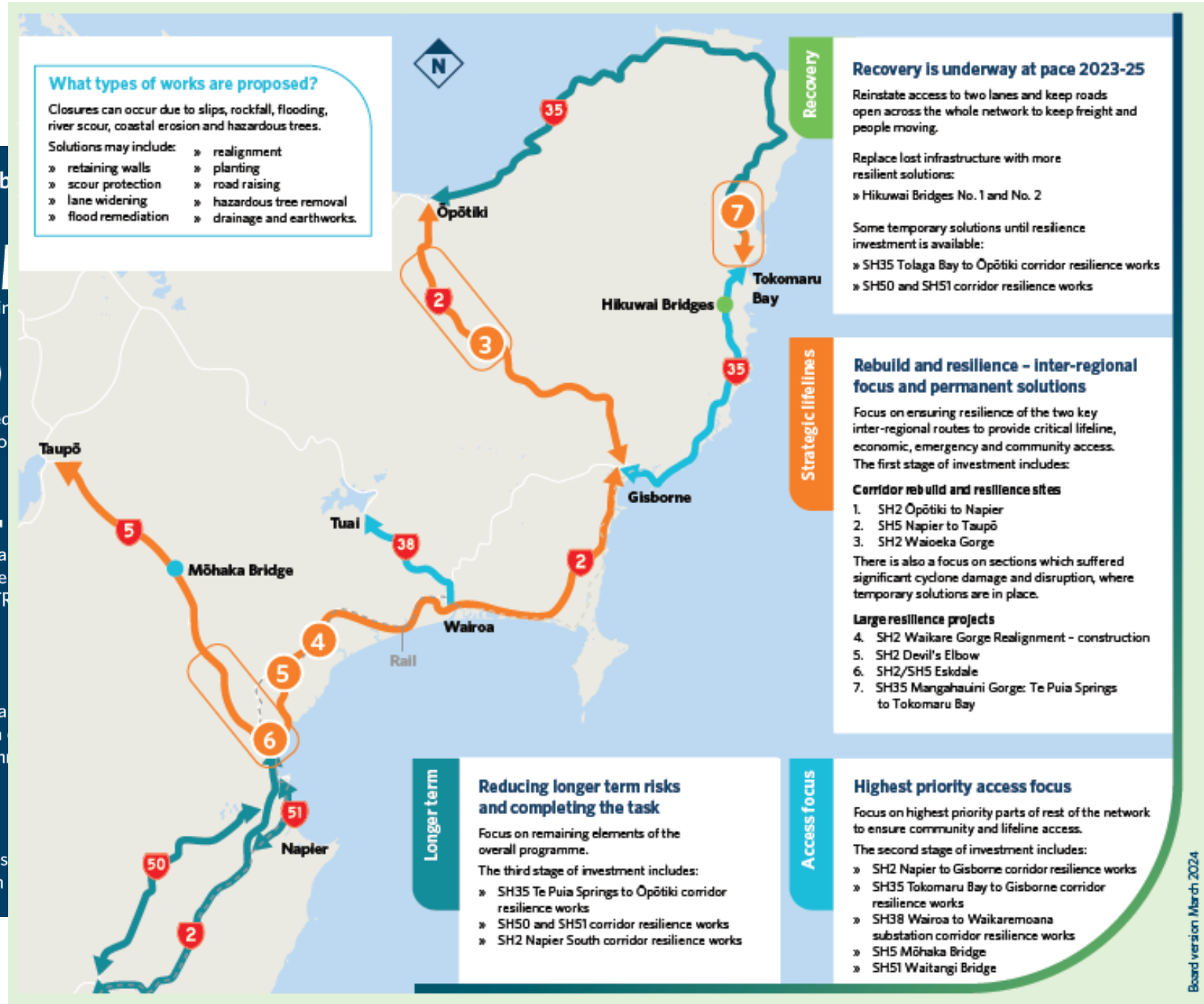
$384
recovery fundi

419
sites identifie for recovery wo

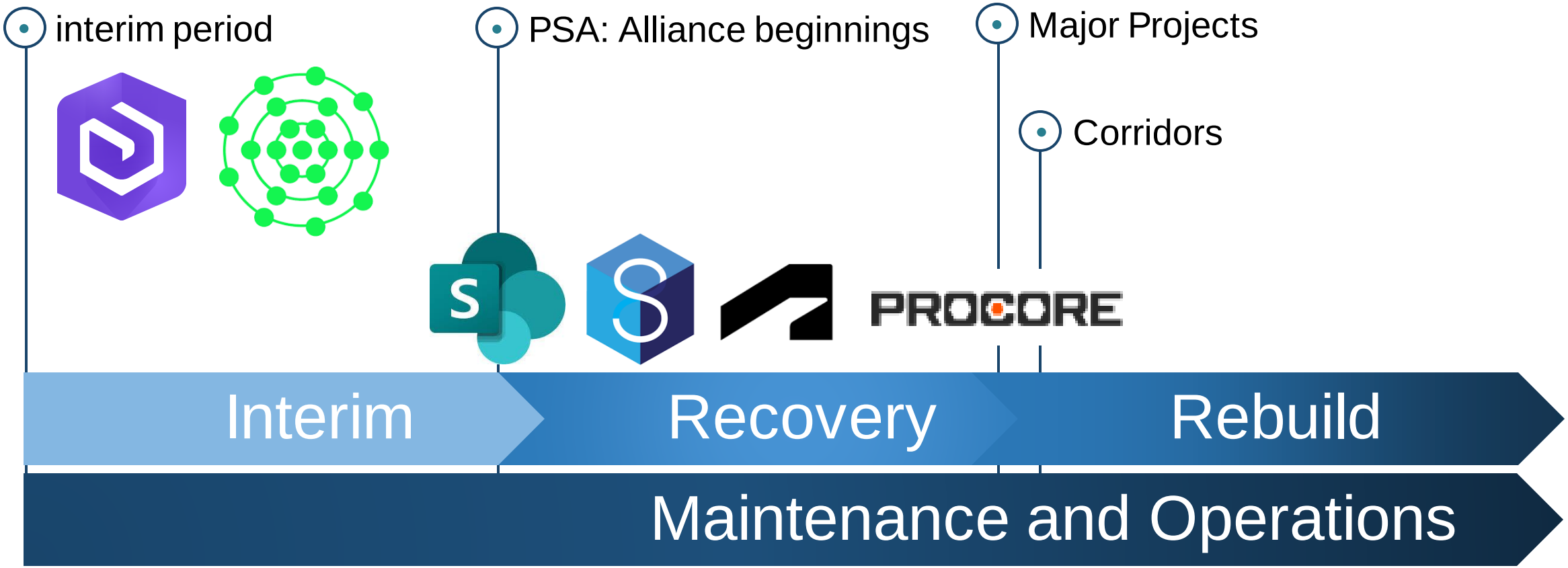
134
recovery sites a complete and be maintained by TR

58
recovery sites a in construction construction plan

131
recovery sites are in design

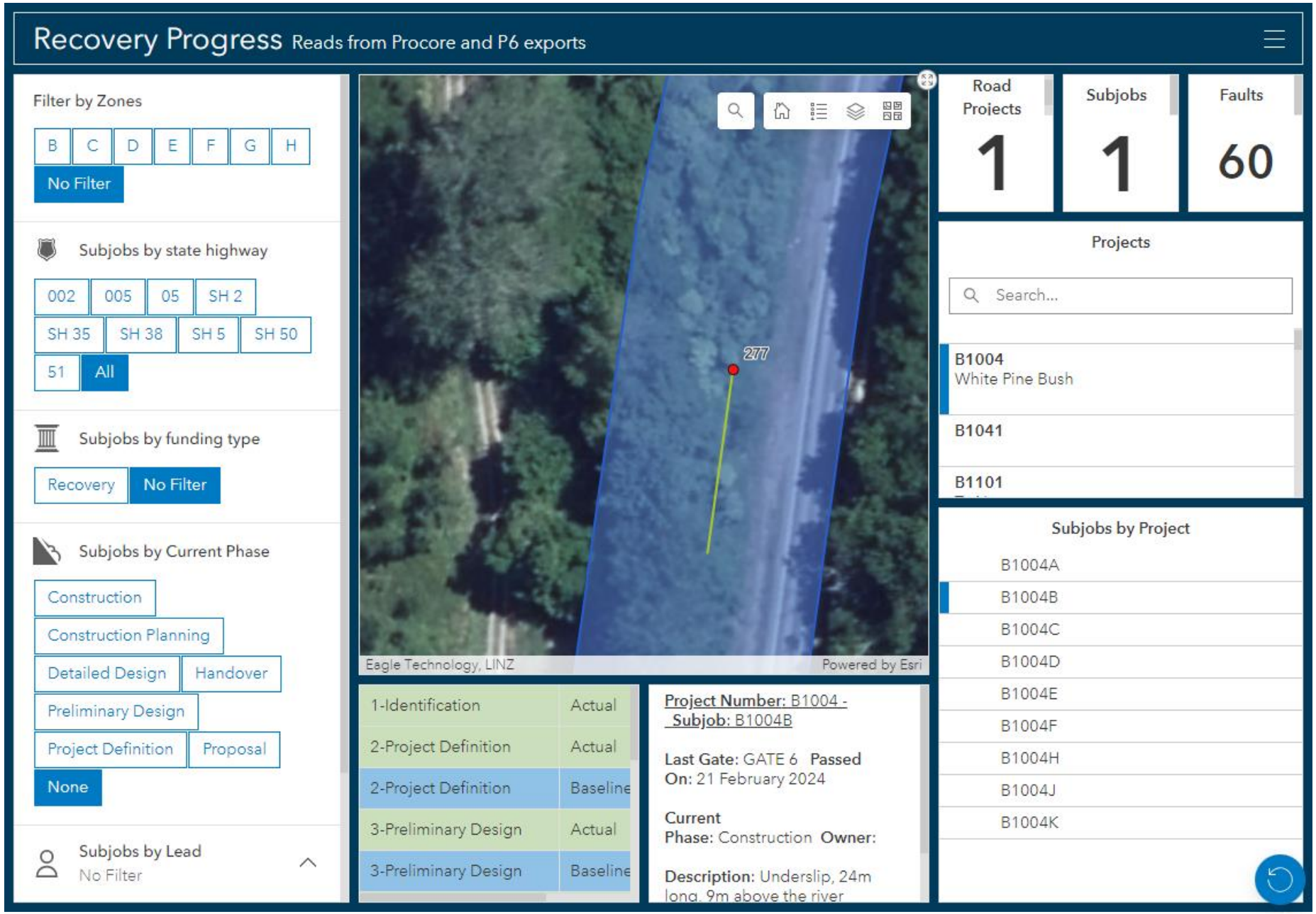


TREC Universe



Solutions

- Pou Arahi
- Geotech
- Property
- Maintenance & Operations
- Landscape and Urban Design
- Survey
- Progress



FME in Action

Project examples and Opportunities on TREC

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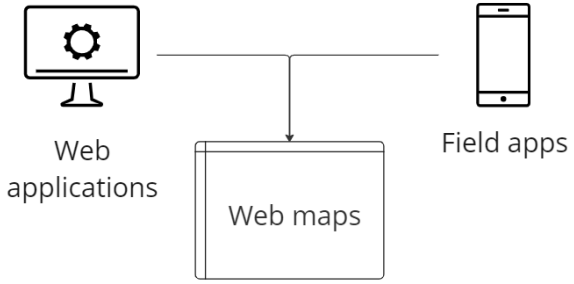
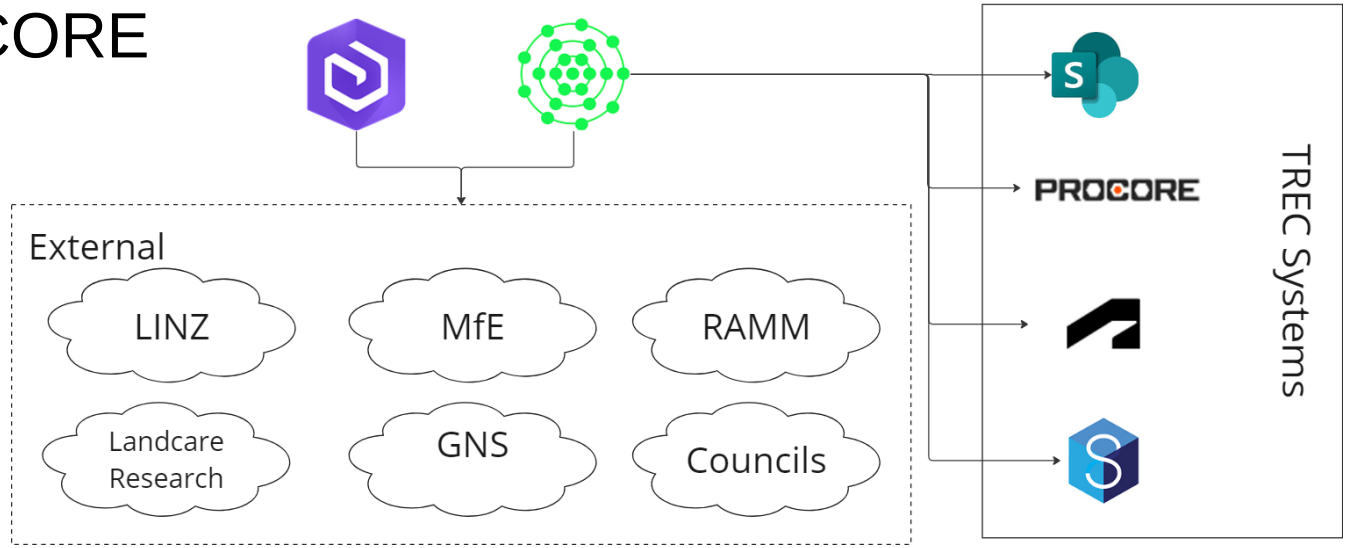
FME: Navigating TREC Software Universe

Multiple alliance authentication environments, adopted tech and standards

- BYOD
- CDEs: Sharepoint
- CDEs: 12d Synergy
- Documents and Workflow: PROCORE

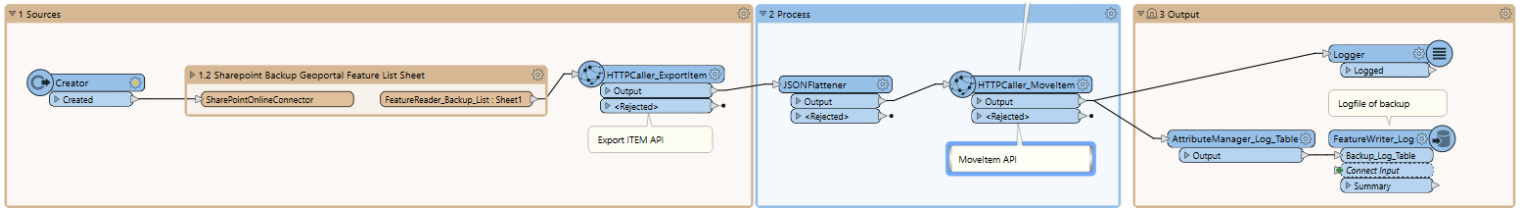




On the bridge: Operations

TREC Production workflows for key processes:
FORM and FLOW

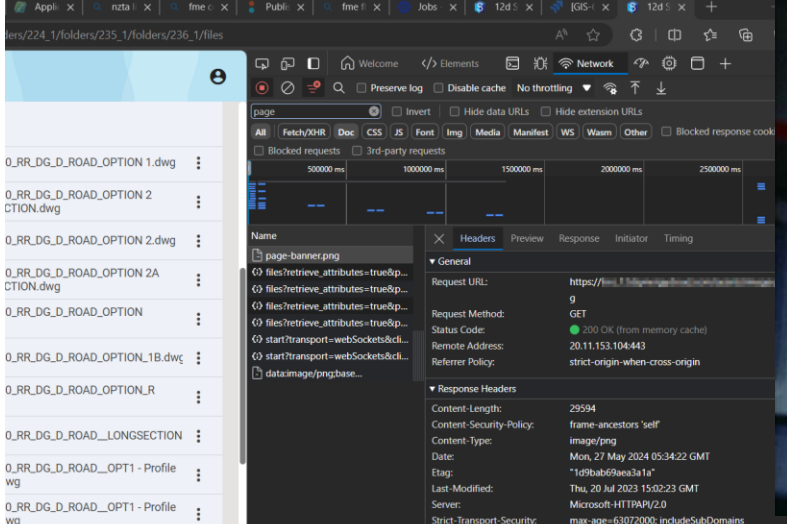
- LRP: Desktop processing combined with ArcGIS PRO map series
- Auto Feature Backups – ESRI REST service API calls to endpoints
- Daily RAMM snapshots
- FLOW Self serve – CAD from GIS content

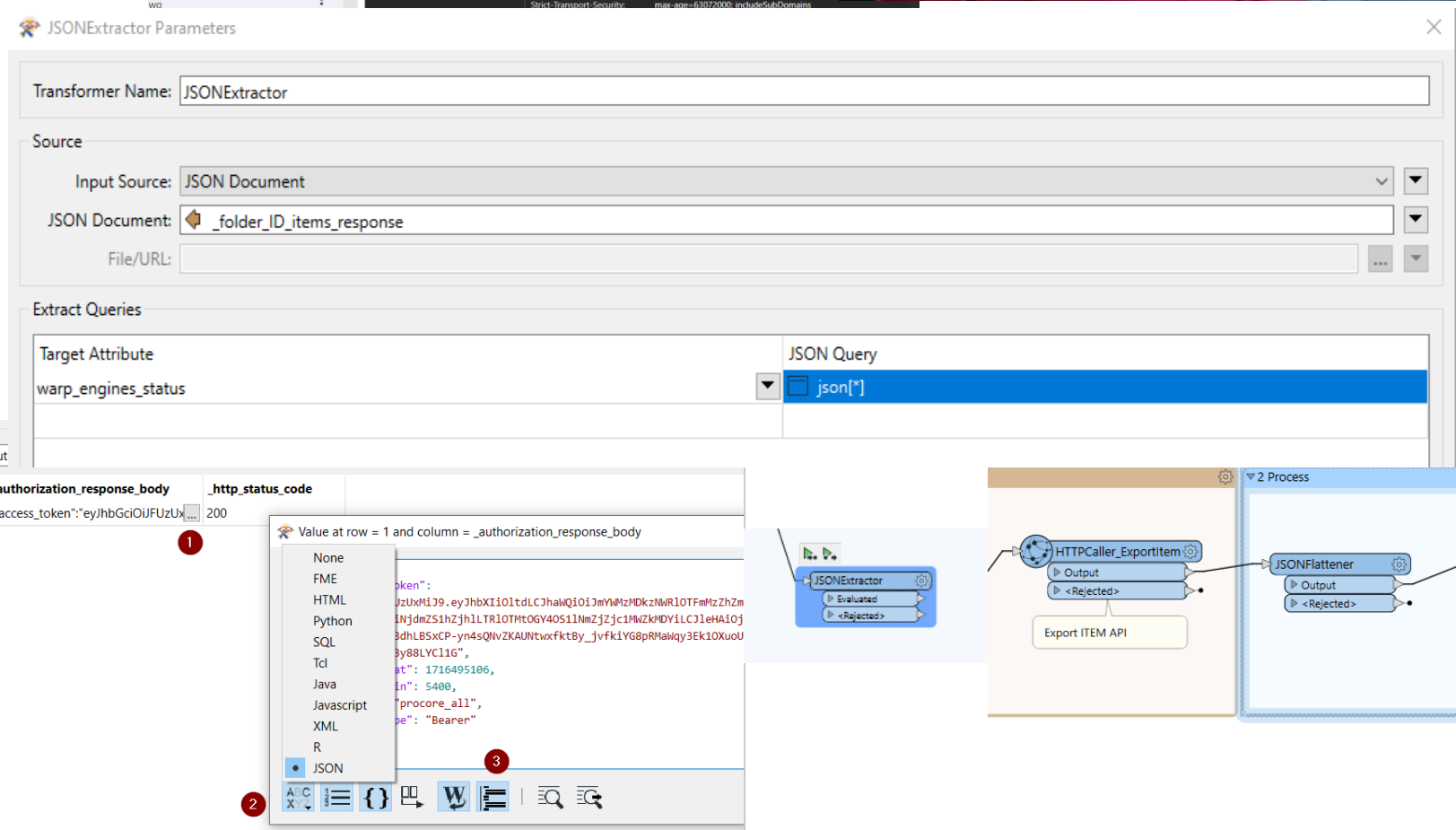


In the Engine Room

HttpCaller: “Universal” key to unlock cloud strategic and operational data sources

- Scotty of integrations: APIs – will engineer a warp factor connection no matter the odds
- TREC connects to Synergy, ESRI and others
- Nuts N Bolts: Exploring data structures and API responses in concert with JSON utilities and query language





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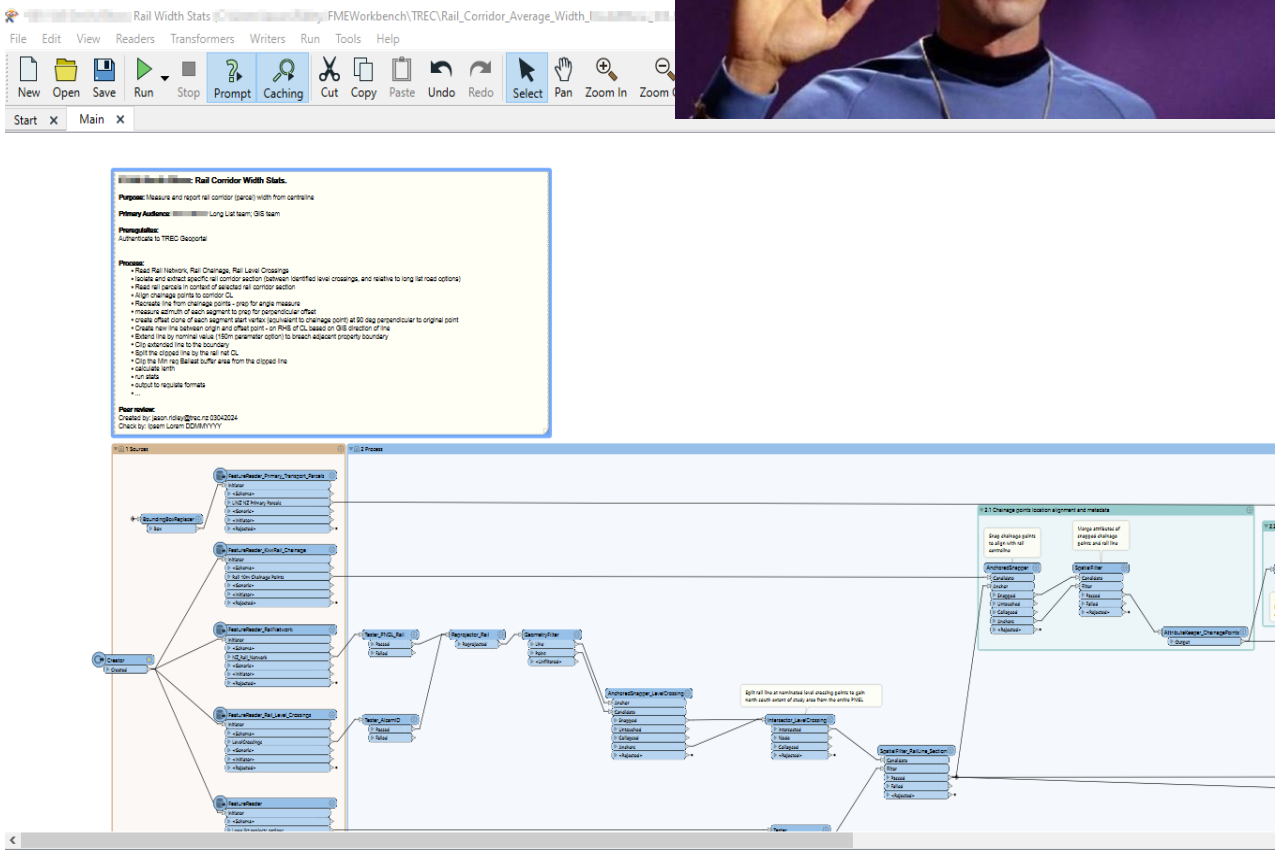
Enterprising Uses

Make it so: Day to day interventions, innovations translations and ad-hoc applications lead the way for further FME integrations – logically.

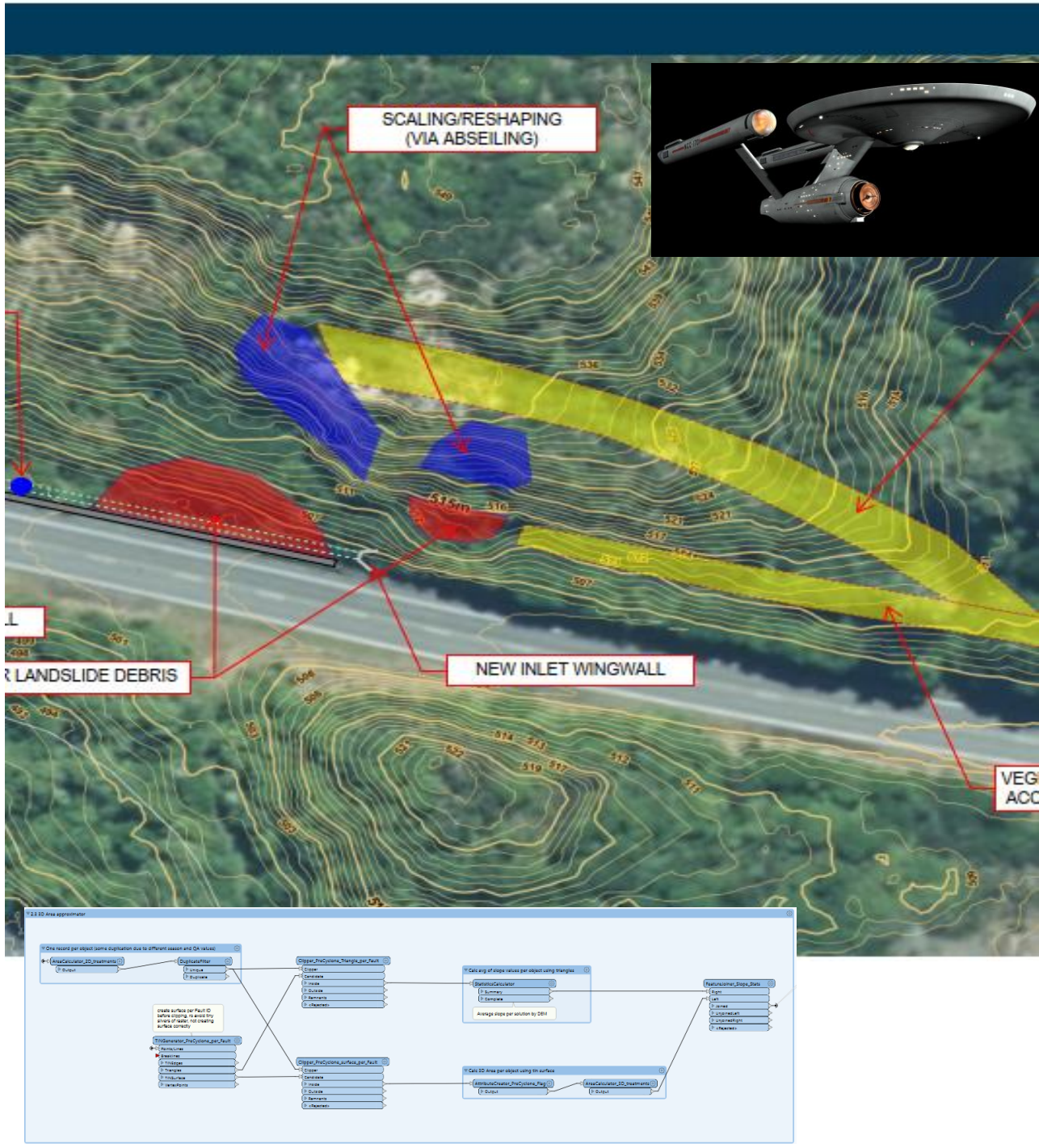
- Rail corridor max width assessment
- Webhooks with S123
- Bulk attachment downloads
- ETL – cleaning, exploding and transposing - no human intervention
- Efficiencies and accuracies of automations



Boldly going where …

TREC: Breaking the mold on traditional AEC workflows.

- Concept Design + QS integration
- Key Challenge: Business case inputs for SH2 & SH5 corridors including 123 Fault locations
- Concept designs with rich calculated attribution derived and merged from multiple data domains (~40 solution types) by FME to provide quantities output as XLSX for QS
- Uniform, automated, repeatable results - avoiding CutNPaste
- Recent experience of more “traditional” approach took ~25 people about 8 weeks of design time for 100 sites
- Integrated GIS/FME process used a design team of 6 FTEs to complete all the pricing of 123 sites in approx. 10 weeks (including 2 for the QS)
- Future options to automate QS calculations directly



Ongoing mission:

To seek out new applications, collaborations and integrations

- Real time TomTom API data for KPI metrics on road network
- Autodesk Construction Cloud
- Self Serve FLOW apps
- Design Integration – Synergy source
- AMDS model schema and data validation

FME by Safe Software

Connect

Transform

Automate

Questions?

Live long and prosper

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