



Optimising Programme Success through technical and behavioural innovation

Cumbria County Council

Dan Phillips – Global Practice Leader



Agenda

Introduction to our 'i'nnovation

How Storm Desmond affected Cumbria

The Infrastructure Recovery Programme, example projects and impact on our communities

Our 'i'nnovation themes – challenges, risks, benefits

Questions and answers

Introduction

Off the back of a significant weather event (Storm Desmond) in 2015 we believe we have chartered new territory in our approach to Programme Management.

Whilst our story includes innovative technological advancements, it is largely around individual evolutionary 'small step' behavioural changes that when combined have been far greater and affective than the sum of their parts.

Our approach to what followed Storm Desmond has been anchored around three pillars which have been a 'golden thread' in everything we do.



**This is the story of our
Infrastructure Recovery
Programme (IRP) and how we
have optimised success through
behavioural alignment.**

Welcome to Cumbria!



**1.15
trillion**

Litres of rainfall

Water

Enough to cover all
of Cumbria with
16.1cm of water

Rainfall

Rainfall would fill
Wembley stadium
almost **290 times**
over



County wide impacts

Key facts

1

7,000 properties flooded

2

18,000 properties without power

3

One fatallality in Kendal

4

One care home flooded and evacuated

5

60 schools affected – Four closed long term

6

Environmental contamination issues at two locations

7

Circa 630 farms affected and loss of over 1,000 livestock

8

Up to 2,000 parcels of land flooded

County wide impacts

Key facts

9

40 farms with over 50% of fields flooded

10

1,000 properties lost water supply

11

Over 60 waste water treatment works damaged or impacted

12

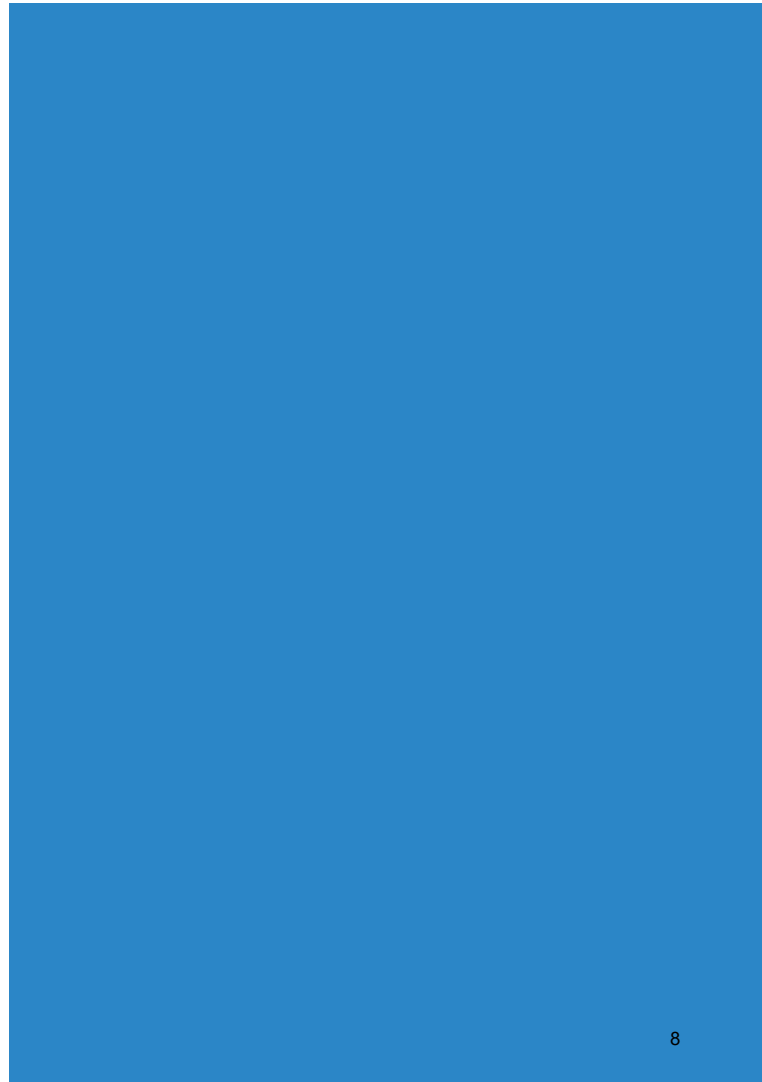
Over 2,000 businesses impacted affecting over 22,000 employees

13

West Coast Main Line and Carlisle – Newcastle was closed until end Jan 2016 (1 month)

14

51 Cumbria County Council buildings affected by flood water



13/10/2018

Why the IRP is here

<https://www.bing.com/videos/search?q=bbc+storm+desmond&&view=detail&mid=1705D897439F2CD892971705D897439F2CD89297&&FORM=VRDGAR>



Carlisle



Cockermouth



Keswick



A592



Pooley Bridge



A591



Kendal



Appleby

What is the IRP?

Key facts

1

174

Highways
surfacing

2

745

Bridge assets
impacted

3

306

Major civils and
other

4

£123.6m

Funding envelope

5

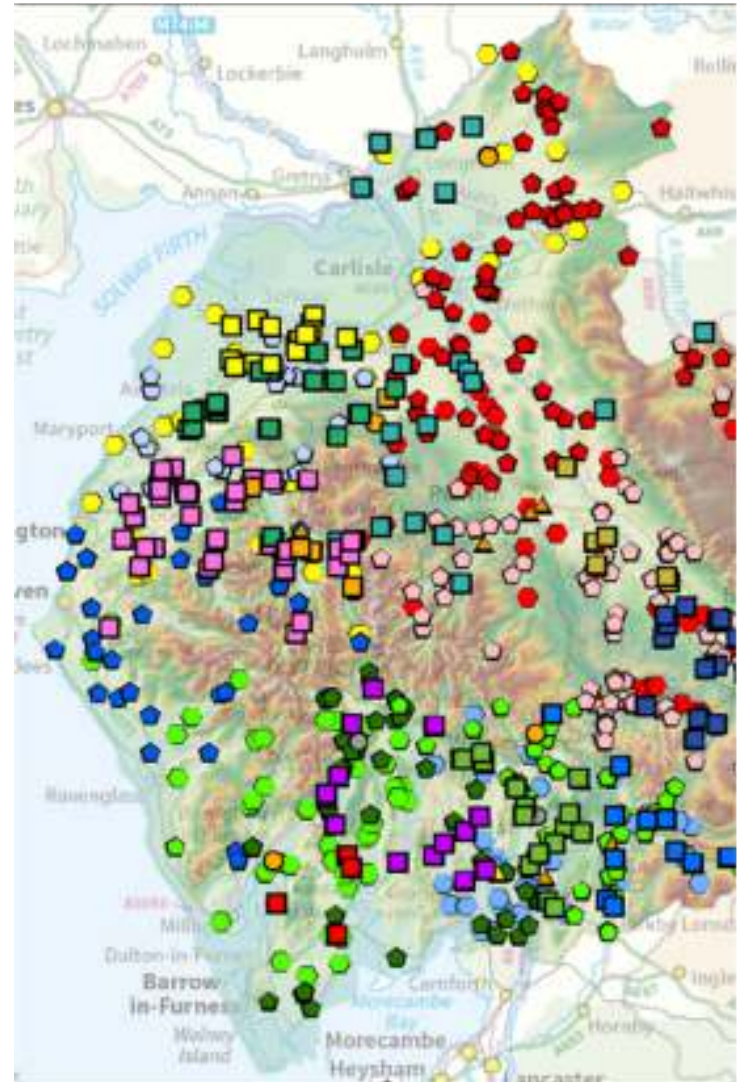
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Individual schemes

6

Jan 16 –Dec 19

Duration



Our projects

Before



During



After

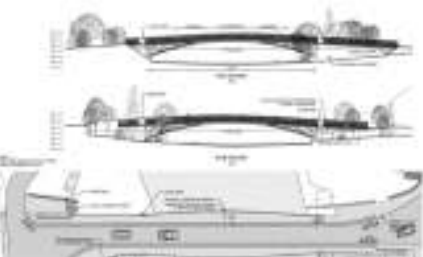


Our projects

Before



During



After

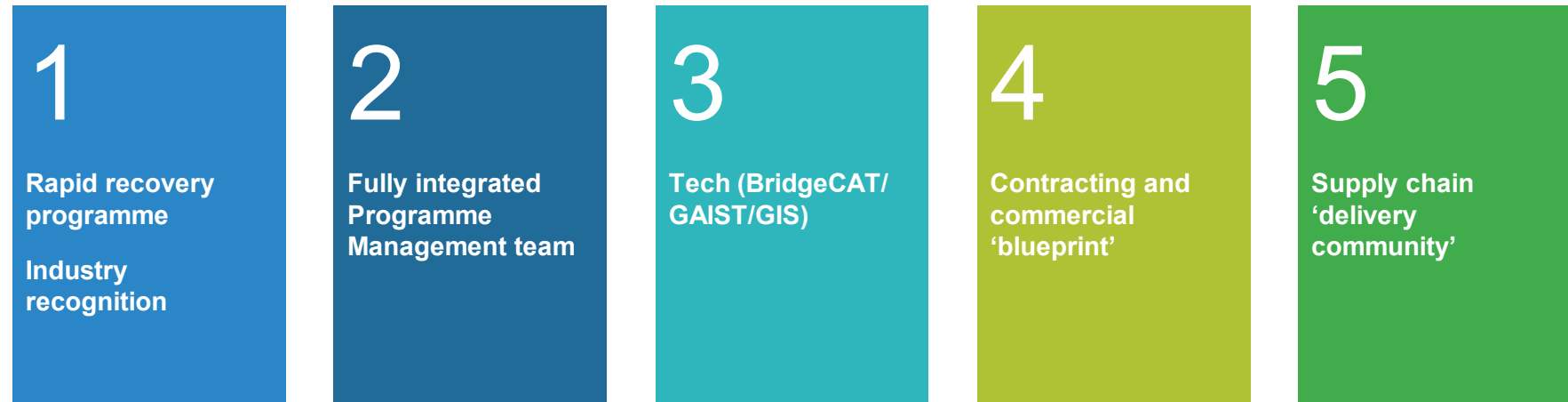


Our communities

<https://www.bing.com/videos/search?q=gowan+bridge+staveley+opening&&view=detail&mid=1FE9EE DB7E82285445491FE9EEDB7E8228544549&&FORM=VRDGAR>

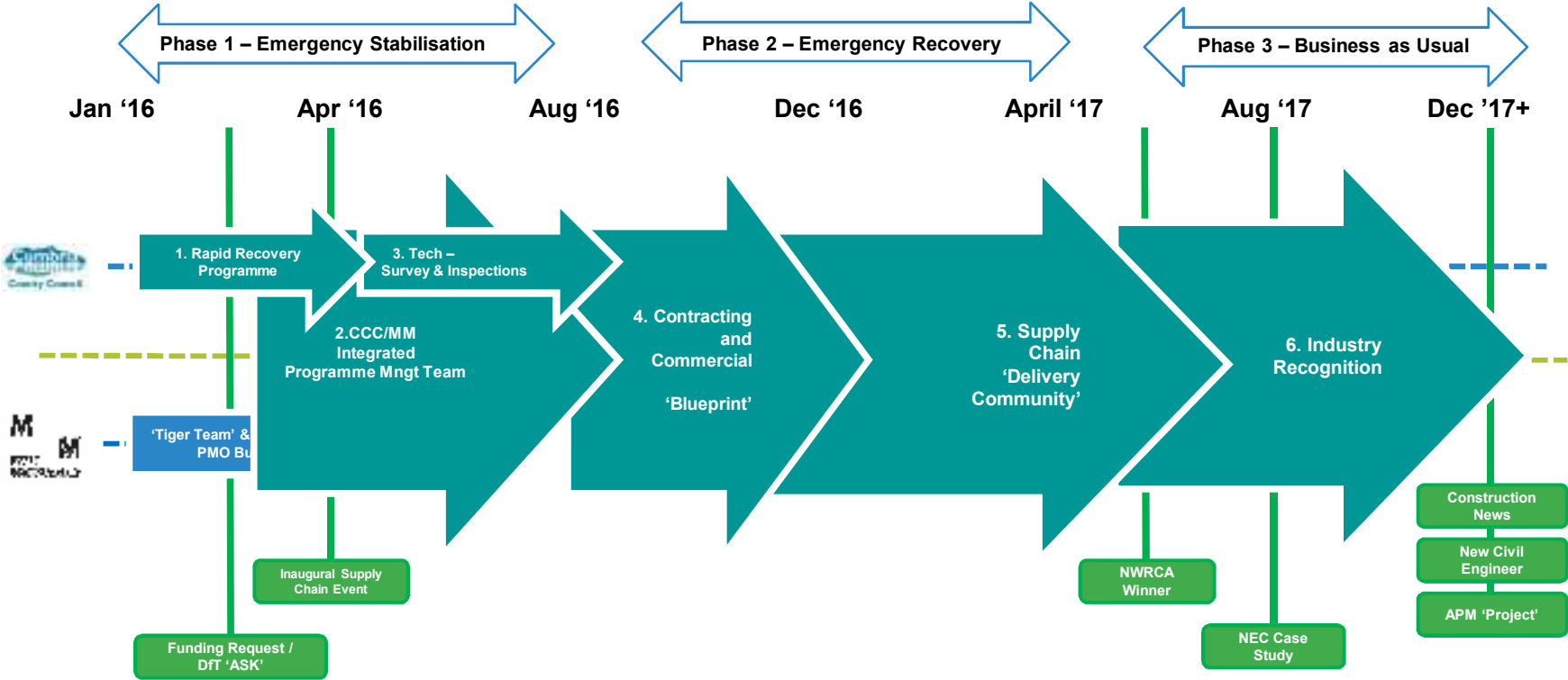


Key innovation themes



Proportionate / Behaviours / Simple

Key innovation milestones



Fully integrated programme management team

Key features

- Corporate origins unrecognisable on the 'shop floor'
- Learning, Development, Progression, Inclusion & Betterment – Shared by All

Key challenges

- Behavioural alignment
- A new 'pace'
- Day-2-Day Management

Key opportunities

- Upskilling Legacy
- Industry Process, Tools & Systems

Key risks

- Behavioural & Corporate Incompatibility

Benefit Realisation:

The IRP Programme has established its own unique identity both within the Council and with the wider supply chain, and is now recognised for its behavioural based and collaborative approach to delivering successful outcomes. Our team now have a significantly increased breadth of skills and knowledge that they can embed in the wider County Council organisation.

Rapid recovery programme

Key features

- Governance: Strategic Recovery Co-ordination Group,
- Government Oversight: Ministerial Recovery Group.

Key challenges

- Situational Awareness.
- Rapid Mobilisation.
- Projecting Confidence: communities, government, councillors, media.
- Balancing risk with opportunity.

Key opportunities

- Governance: Strategic Recovery Co-ordination Group,
- Government Oversight: Ministerial Recovery Group.

Key risks

- Governance: Strategic Recovery Co-ordination Group,
- Government Oversight: Ministerial Recovery Group.

Benefit Realisation:

- Large volumes of infrastructure re-constructed quickly.
- Stakeholder confidence built.
- Decision making processes re-engineered.
- Improved communications strategies.
- Strengthened relationships with government – Funding!
- New strategies for risk management.

Tech (BridgeCAT/GAIST/GIS)

Question

How do you understand the extent of damage to your asset base in a safe and expedient manner without diverting a large proportion of your operational resources away from the day job?

Solution

Use technology that significantly improves the human safety factor, whilst has the capability to cover large geographic areas in a short space of time, and records the information on a Geographic Information System (GIS) Common Data Environment mapping tool for multi user access.



Key features:

- **BridgeCAT:** 'Go-Anywhere' vehicle based Sonar & CCTV unit to inspect bridge structures.
- **GAIST:** Vehicle based carriageway condition surveying based on high resolution cameras.

Tech (BridgeCAT/GAIST/GIS)

GiGi

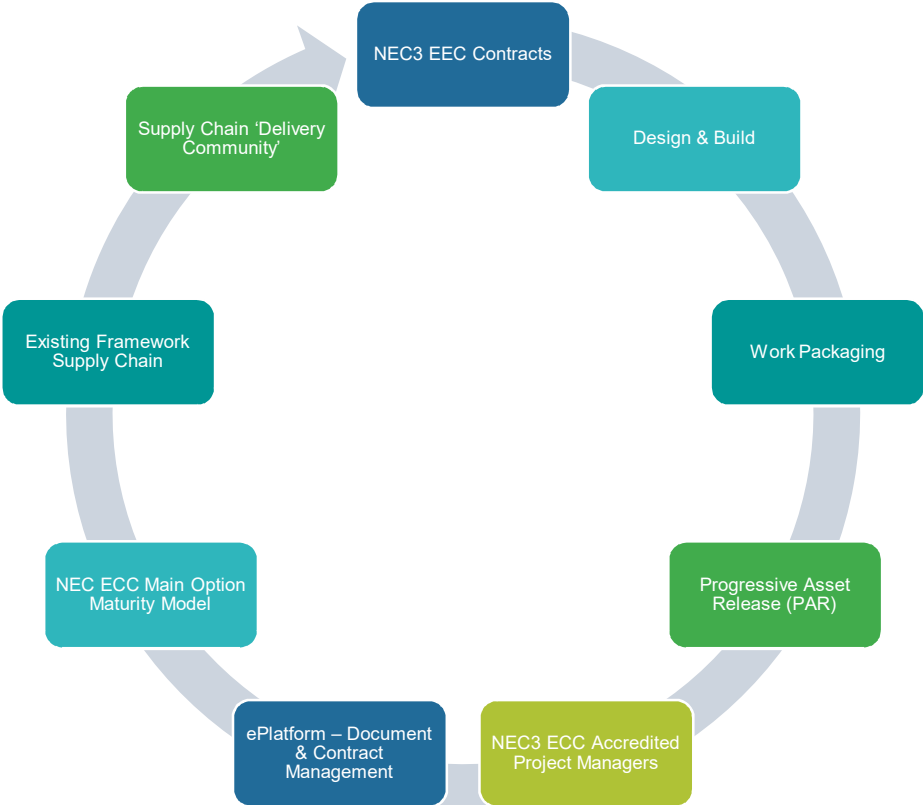
A cloud based GIS Common Data Environment (CDE) tool providing multi-layer interactive mapping services to support asset management and public 'self-service' functionality to create a single 'real time' version of the truth.



Mott MacDonald | Presentation



Contracting and commercial 'blueprint'



Contracting and commercial 'blueprint'

NEC EEC Contracts

- Openness, honesty & transparency – 'we talked the talk & walked the walk'.
- A single language – consistent application.
- Flexibility to match contracting approach with scope maturity.
- A foundation for behavioural alignment with the supply chain – 'we went as close as we could to the contractual boundary'.



NEC3 ECC Accredited Project Managers

- Highly capable project & contract management team - Confidence to fully exercise NEC.
- Only 90 accredited NEC3 ECC PM Highways & Infrastructure – 8 within CCC.
- Supported and upskilled the supply chain – we shared our knowledge, 'held hands'.



Contracting and commercial 'blueprint'

NEC EEC Main Option Maturity Model

- Added rigour to the selection of appropriate Main Contract Option i.e. Lump Sum (A), Target Cost (C) etc..
- Appropriate apportionment of risk and reward – VfM, we weren't paying for unnecessary risk provisions.
- Optimised a successful contractual relationship between the parties.

NEC3 - Contract Maturity Self-Assessment Tool

R1 Risk - How well defined and likely to change is the Works Information and Site Information?

1 2 3 4 5 6 7 8 9 10

Maturity Position: 8

R2 Procurement - What level of capability and capacity does the supply chain have to fulfil and only manage the contract?

10 9 8 7 6 5 4 3 2 1

Maturity Position: 3

NEC3 Main Options Maturity Position Matrix

| R1 | E | L | P | CC | CC | CC | CC | CC | CC | CC | CC | CC | CC | CC | Option |
|----|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----------|
| 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 2 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 3 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 4 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 5 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 6 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 8 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 10 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 11 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 13 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |
| 14 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Lump Sum |

Is the appropriate performance reporting?

1 2 3 4

Maturity Position: 3

Cost & budget drivers & considerations for

1 2 3 4

Maturity Position: 3

Culture and behaviour of the Client?

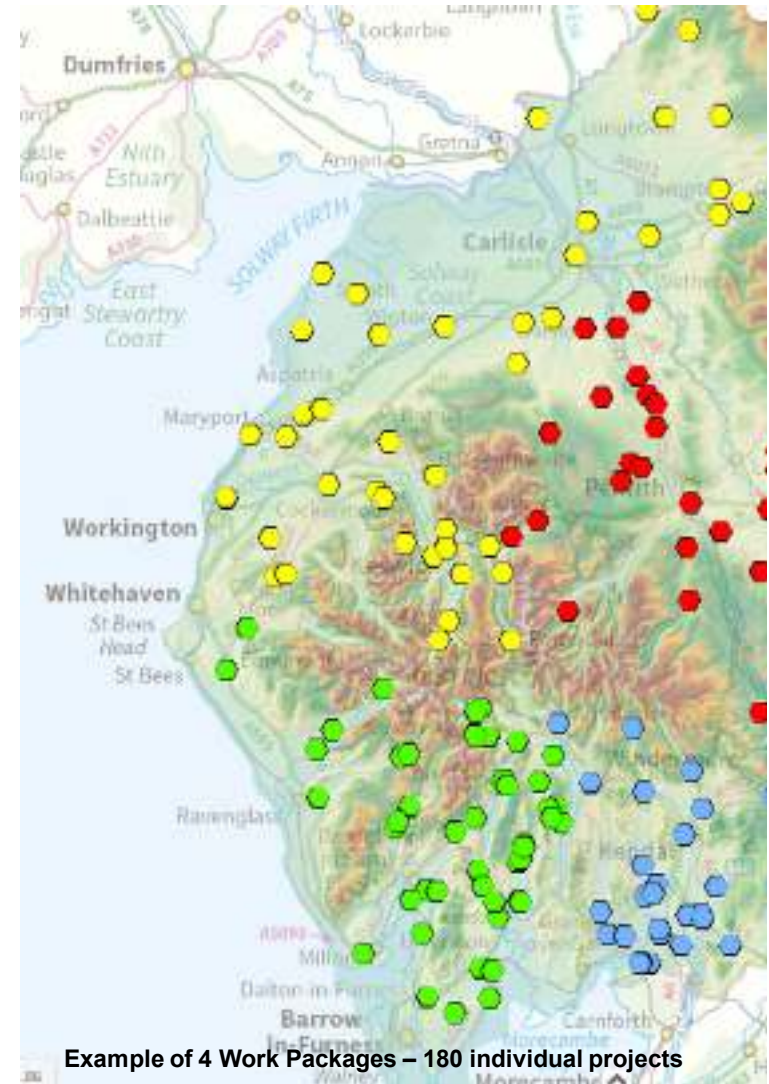
1 2 3 4

Maturity Position: 2

Contracting and commercial 'blueprint'

Work packaging

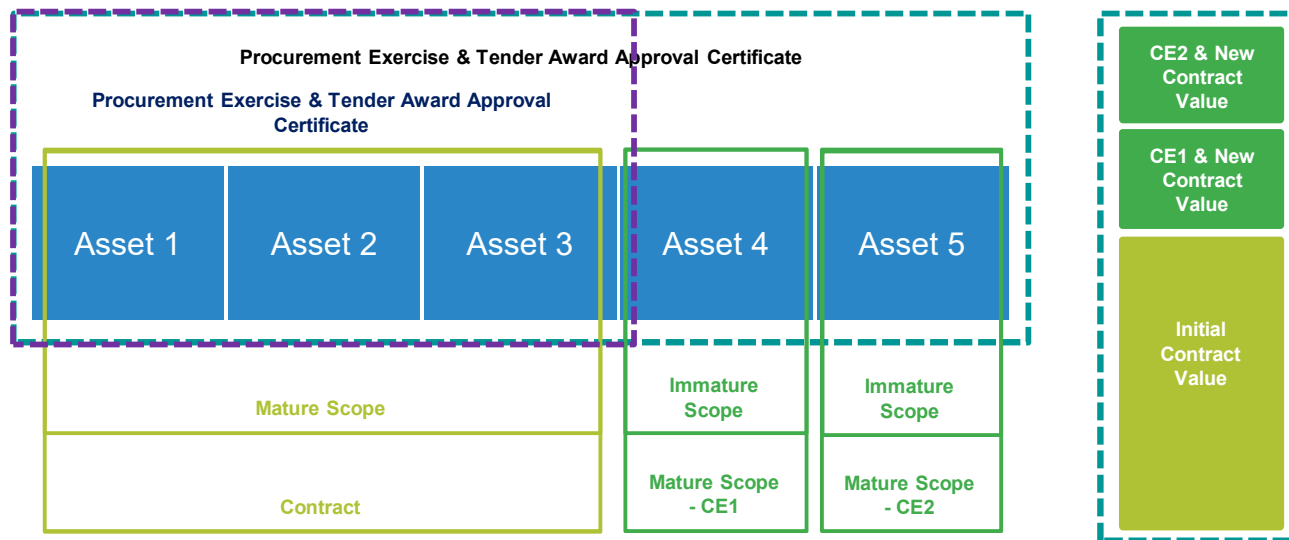
- 1200 individual schemes/projects – No place for a traditional 1:1 Project:Contract relationship.
- Aggregation of schemes based on geography, complexity and similarity – GIS was fundamental.
- Larger more meaningful packages of work for the supply chain.
- Organic growth opportunities for the supply chain – greater surety.
- Economies of scale from the supply chain – VfM betterment.
- Ability to communicate to the supply chain – improved preparation & readiness.



Contracting and commercial 'blueprint'

Progressive Asset Release (PAR)

Ability to significantly reduce the volume of procurement activity for a number of schemes within a Work Package that are not all at the same level of design/engineering and/or commercial maturity.



Contracting and commercial 'blueprint'

Progressive Asset Release (PAR)

- 30% efficiency for pre-contract process.
- Seamless release and timing of other schemes/projects – minimising pre-contract delays and optimising on-site delivery.
- Immature scope benefitted from Early Contractor Involvement – Increased buildability and fitness for purpose design.
- No heavy legal redrafting of contracts T&C's – NEC made it easy via Compensation Event process.
- No contractual commitment to the other immature scope schemes/projects – we retained the right to retender creating the appropriate level of commercial tension.

Design & Build

- IRP pace – Traditional approach too timely.
- Early Contractor Involvement – Benefits were invaluable.
- Historic assets/structures – Cumbrian heritage supply chain skillset.
- Improved buildability and engineering outcome V's traditional desk top design.

Contracting and commercial 'blueprint'

ePlatform – Document & Contract Management

- Single version of the truth – internally & externally.
- Collaboration promoted between the parties.
- Appropriate management and discharge of our contractual obligations – contract compliance.
- Common data environment - Improved efficiency.
- Audit ready.

Existing Framework Supply Chain

- Primarily Cumbrian based – 'Hearts & Minds'.
- Social economic benefit – 'Cumbrian Pound', Cumbria PLC, Gross Value Add.
- Heritage skills combined with modern engineering techniques – increasing rare skillset.
- We've supported and helped their development, we didn't leave them to fail – Win:Win, Lose:Lose

Supply chain – ‘delivery community’

- Established supply chain engagement events – Regular ‘2way’ conversations.
- Promoted sharing and best practice – learning together amongst peers.
- Alignment of objectives and outcomes – ‘Delivery Community’
- Counsel and guidance from the supply chain – Market acceptance leading to stronger buy-in and commitment.
- Majored on the behavioural environment created at Programme Level – Cascade & lead by example.
- Upskilling through focused engagement – NEC ‘Bitesize’.
- Clear & transparent dialogue, moral leap of faith – Informed, honest, decisions.



Industry recognition

- EWork hard at communicating success with our communities – ‘Pat on the Back’ from the industry has provided a platform for team development, pride and moral.
- Attracting new recruits to the Council – Our future, today.
- Industrial tourism – Other Councils and organisations want to learn and benefit from our journey.
- Trade press – Construction News, New Civil Engineer, APM ‘Project’ - Unique projects, technically challenging, rare in UK
- NEC – Case study.
- Awards:
 - NWRCA 2017 – Winner, NWRCA 2018 – Shortlisted in 4 categories
 - BCIA 2017 – Finalist
 - APM Project Management Awards 2018 – Entry submitted
- Desire to show-off what Cumbria is truly capable of achieving.



Summary

Simplicity

- Formation of Programme Team & Supply Chain – No huge legal agreements/amends, ‘vanilla contracts’.
- BridgeCAT/GAIST/GiGi – Off the shelf tech – applied to suit environment and situation.
- Commercial Blueprint, all small but simple improvements – combined had a high impact.
- Delivery Community – Be open, honest and transparent. Keep the conversation going.

Behaviours

- Lead by example – Set the tone.
- Align Top-Bottom & Left-Right.
- Make it real – Make it part of the solution.
- Risk appetite.
- Local knowledge – Understand the need, deliver quick fixes whilst planning for the longer term.

Proportionate

- Balanced approach.
- Optimise what you’ve already got.
- Supply chain – Big isn’t always better.
- Optimal design & engineering – not a ‘pan-platinum’ approach.
- Demonstrate ‘GRIP’

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MACDONALD

Thank you

