Project Controls Expo – 16th Nov 2017
Emirates Stadium, London

Programmatic Controls,
an approach to
Fast Track Disaster Recovery

About the Speaker

Saurabh Bhandari

Technical Director, Project Controls & PMO

Mott MacDonald

- 16+ years of Construction and design
- Passionate about leveraging project controls for delivering success
- Author of MM Controls best practice – PACE
- Worked in UK, Australia, Middle East, SE Asia
- Experience: Heavy civils, SHE buildings, Transport projects, Master planning but essentially you will find me solving problems and sermonising

- **What else;**
- Avid reader of books on anything interesting but mostly management and economics
- Technology freak

The Topic

Storm Desmond - Cumbria Infrastructure Recovery Programme

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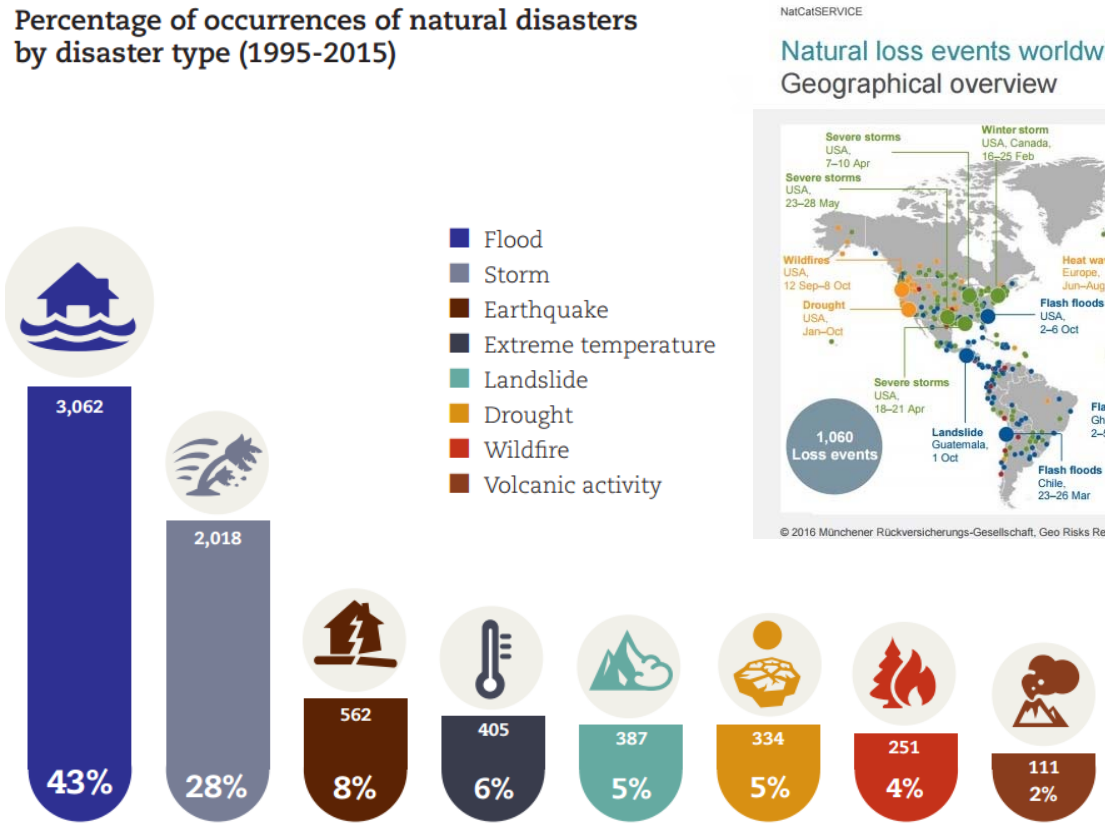
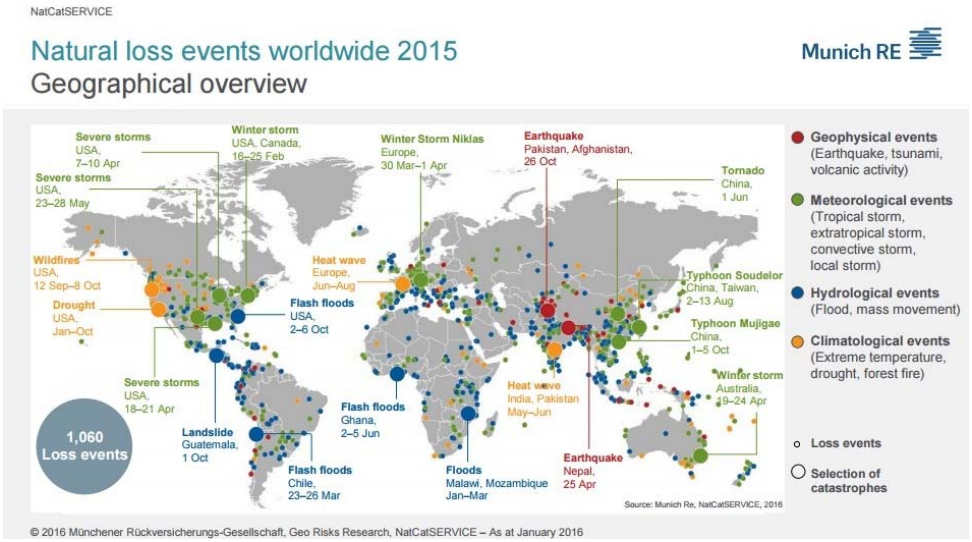
Agenda

- Relevance of post-disaster recovery and rebuild
- Cumbrian Context
- A differentiated Approach
  - Why
  - What does it mean
  - How
- Insights
  - The practical stuff
- Questions and Discussion

Relevance of Post-disaster rebuilds





Relevance of Post-disaster rebuilds

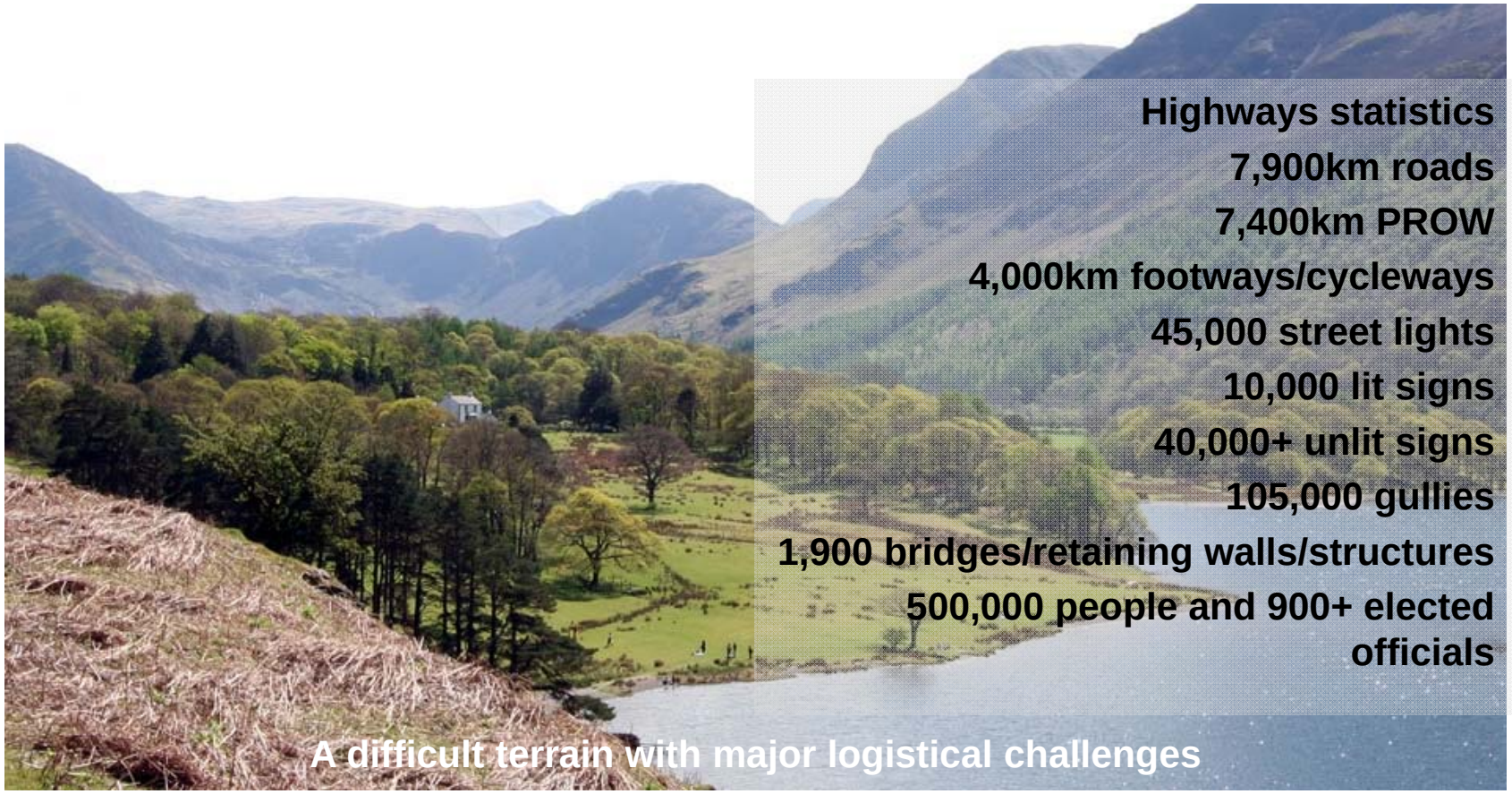
Disaster Event → Infrastructure Damage → Community Severance → Economic Impacts → Sociological impacts → Mega Crisis

Post – Disaster rebuild requires a forward thinking and urgent approach;

Action and not para(na)lysis

A disaster will become a Mega-crisis unless we stop the domino effect

Welcome to Cumbria



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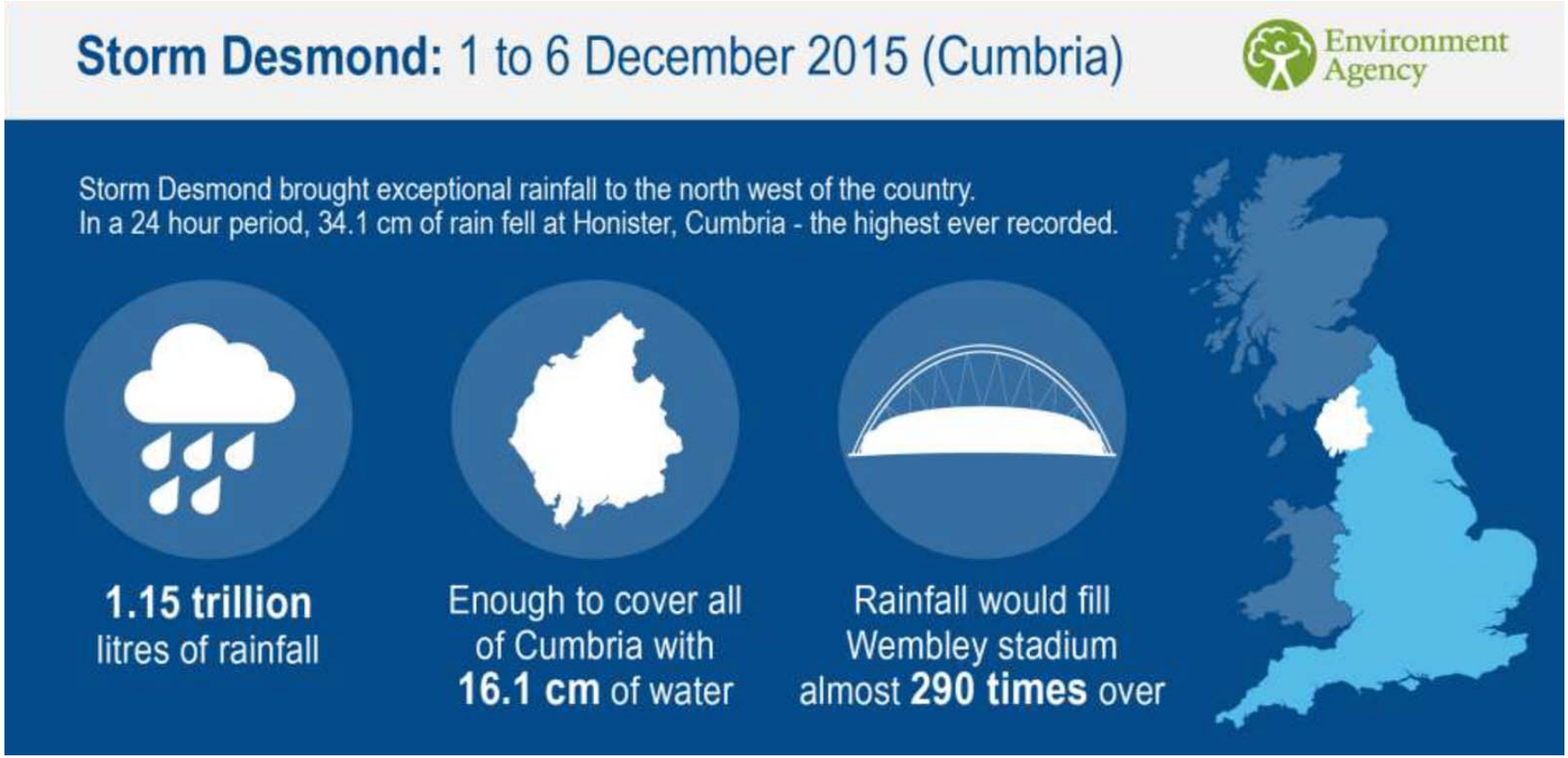
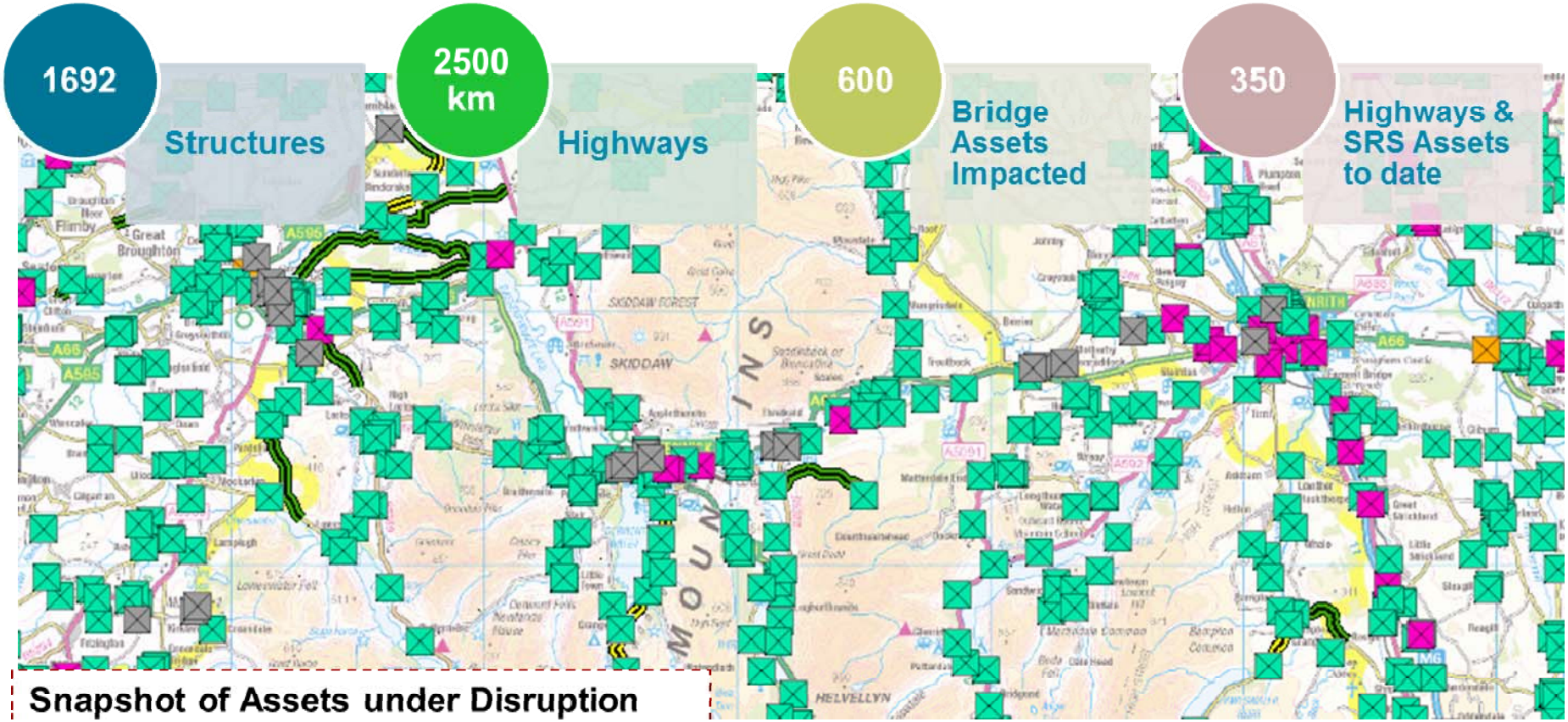
What Happened



The Impact

The Scale



The Mission - WHY ?

It wasn't just about re-building infrastructure

- Preventing crisis through proactively connecting all sections of the community through targeted implementation of resilient interventions
- Safeguarding the 'Fragile' - Tourism economy

1.Safety:	• Ensuring safety is not compromised in the recovery of assets and a safety culture is embedded in to the supply chain.
1.Efficiency	•delivering restoration of assets within the cost and time budget, through rigorous/ creative control
1.Value:	•implementing solutions which enhance the benefit to the community.
1.Local Economy:	• **support local economy** through **engaging local contractors** and using every opportunity to inject spending locally, and ensuring prioritisation of projects balance the needs of the community.
1.Legacy:	•**creating and developing local skills** for Cumbria in terms of human resource capacity and systems; within client and the wider supply chain.

The Stakeholders – Fairness & Scrutiny

Demands in a post disaster rebuild

Funders	Governance	Supply chain	Stakeholders	Community
• require effectiveness and efficiency	• affordable plan and democratic execution	• visibility to prepare for delivery	• participation to support delivery	• assurance and proactivity

These were a lot of things to balance; and maintain agility in delivery.
So: We used our 2 models of differentiated controls

Level of Control α (Complexity) – moderated by Risk appetite

Emergent Baseline – "A baseline which has broad buy in; with clear understanding of the uncertainties, emergent risks and cycle of refinement; through logical and transparent use of 'reference class' methodologies." - *Bhandari 2016*

A differentiated approach

(driving predictable delivery©)

We defined a Programmatic Controls approach that was agile, broad, and integrated. Using control methods as a lever to deliver 'effective' outcomes.
Baselines were used as guides to plan and not barriers to delivery.

Programme Controls

- Delivering **Effectively**
- **Blueprint Driven (plan)**
- **Leveraging Governance**
- Leading **Change**
- Emergent **Baselines**

vs.

Project Controls

- Delivering **Efficiently (TCQ)**
- **Schedule Driven**
- **Compliance**
- Managing **Change**
- Stable Baselines

Failure is not an option!

Managing – The Emergent Baseline

How did we do it?

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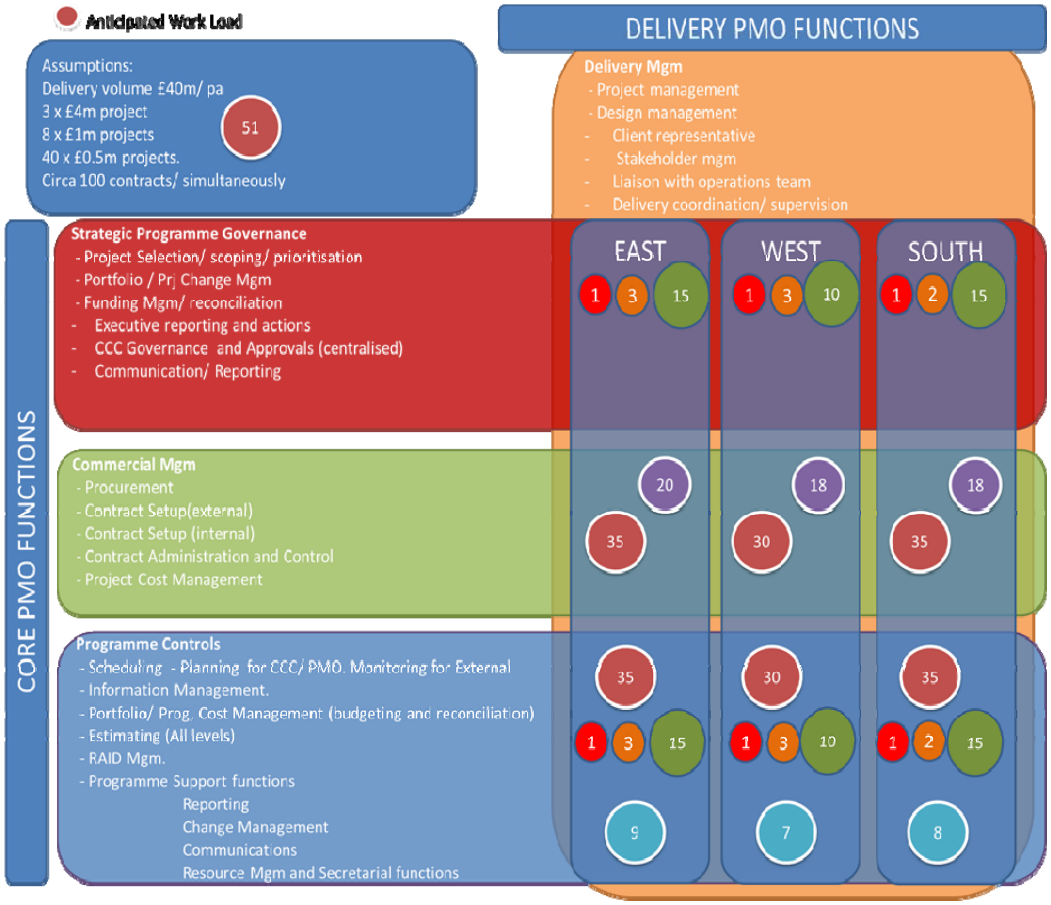
Creating Clarity and Control

an Integrated Works and Organisation Structure



Leveraging WBS/OBS for:

Creating clarity

Promoting Ownership

Resource planning and mobilization

Integrating delivery efforts

Resilient support

Flexibility but integration in detailed works

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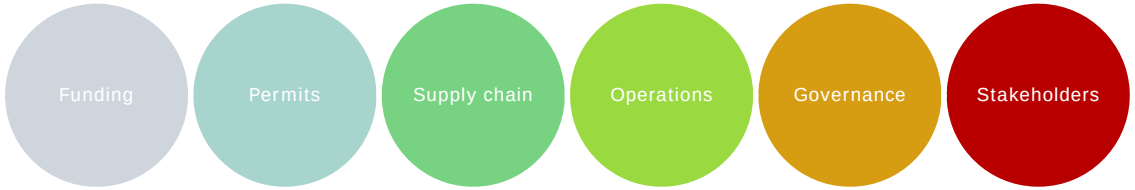
How did we organise - Delivery led OBS



Risk Sources

Align the team configuration to managing risks

Think in control accounts

We made the CAM most impacted; the owner for each of the risks; and worked through them in small Sprints

Planning the Rebuild – The Emergent Baseline

Brougham Old Bridge

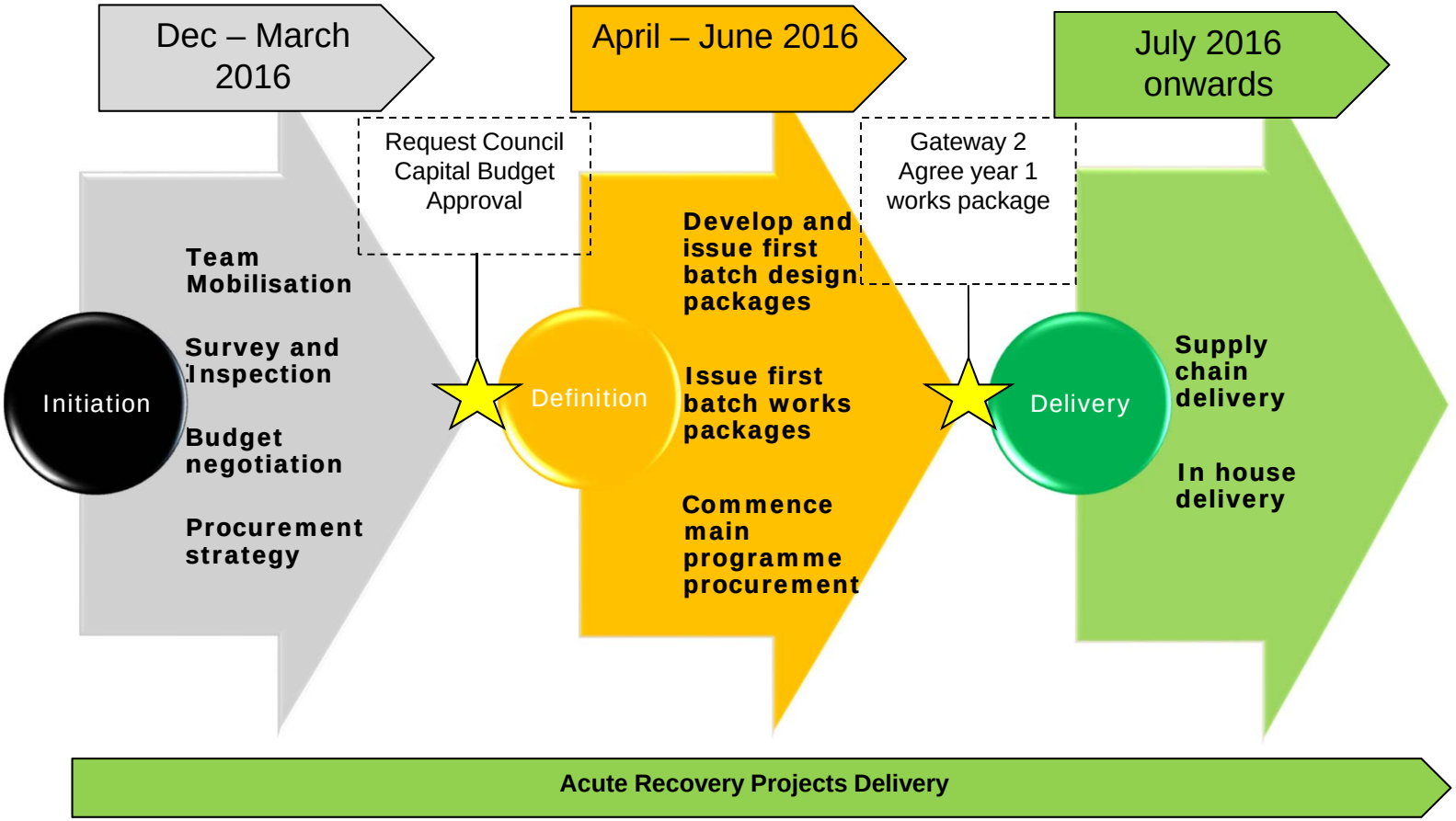
Building the Emergent Baseline

We were quite sure on why

BUT we had a small planning problem!!

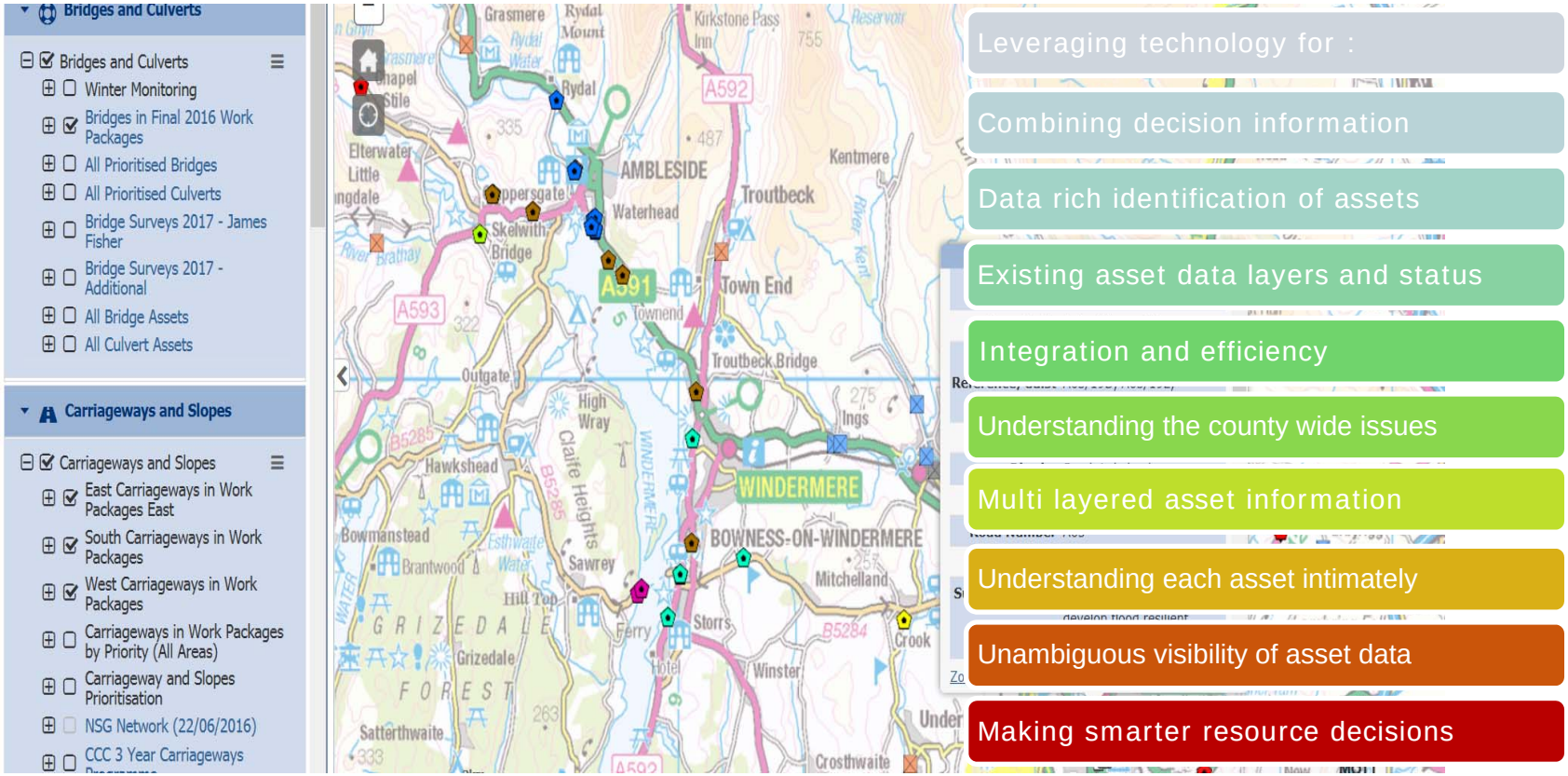
- Where do we start?
- What do we recover, repair, rebuild?
- Where is the asset? – it's below the waterline
- What's the sequence?
- Who's the Stakeholder?
- What's the budget? Will we get funding?
- What are the risks?
- What's the success criteria?
- Who will build?

The Timeline – aka Dilbert Plan



Traditional Planning - its too laborious!

(So we broke convention – GIS based data rich planning)



And then we scheduled the works

We went from 1690 assets to 40 work packages in 6 weeks

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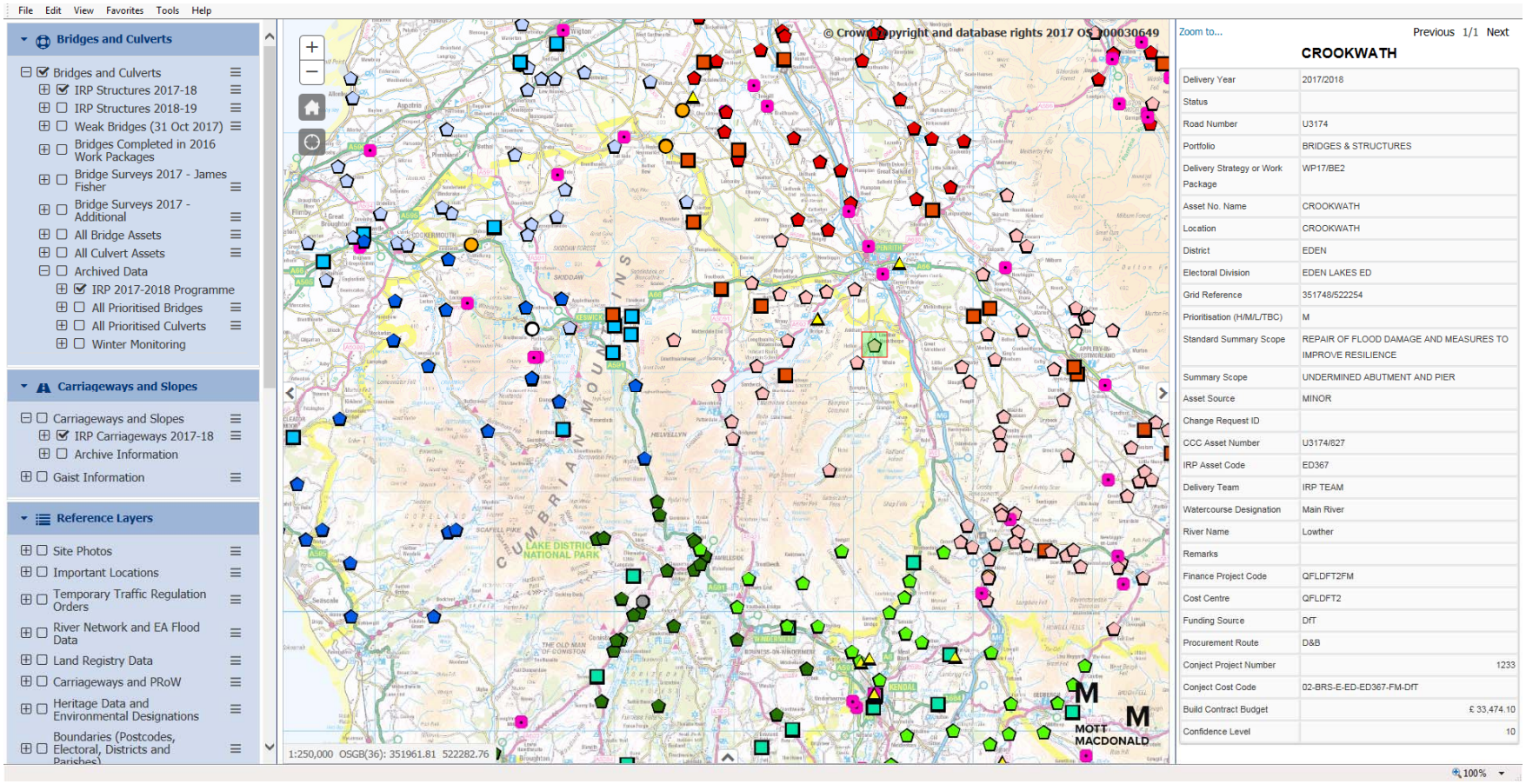
What does that mean?

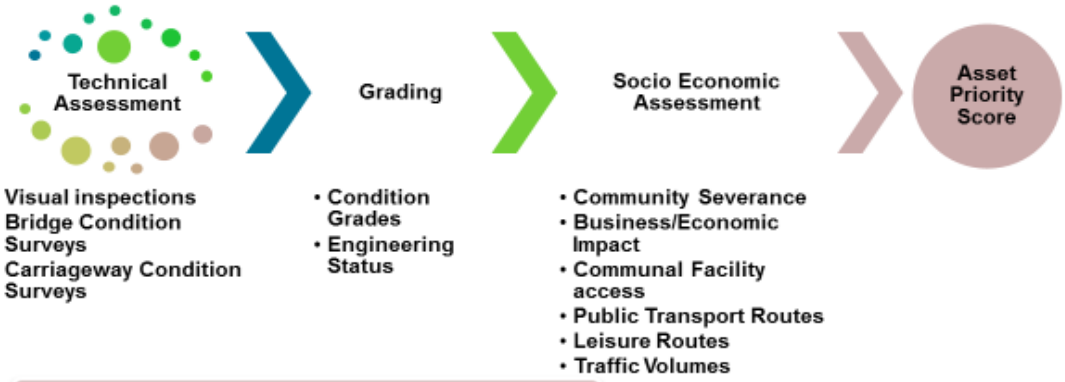
How do you plan in GIS

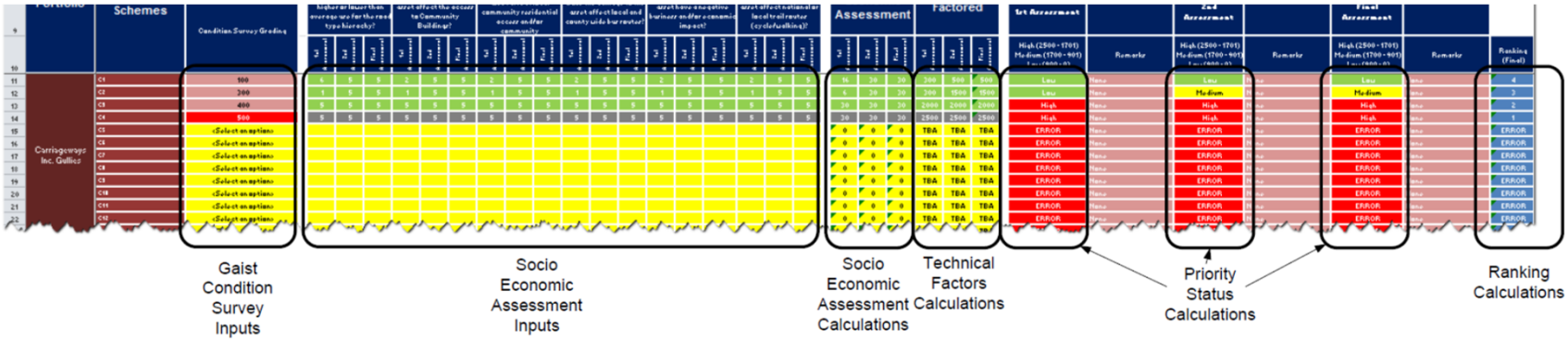


How do you create ‘fair’ Schedule ? –

(Hint: Democratically)

Sequencing the priority: Socio Economic scheduling





Post - disaster rebuilds are inherently sensitive; its about making the **important** stuff happen first;
in a logical, empathetic and democratic manner.

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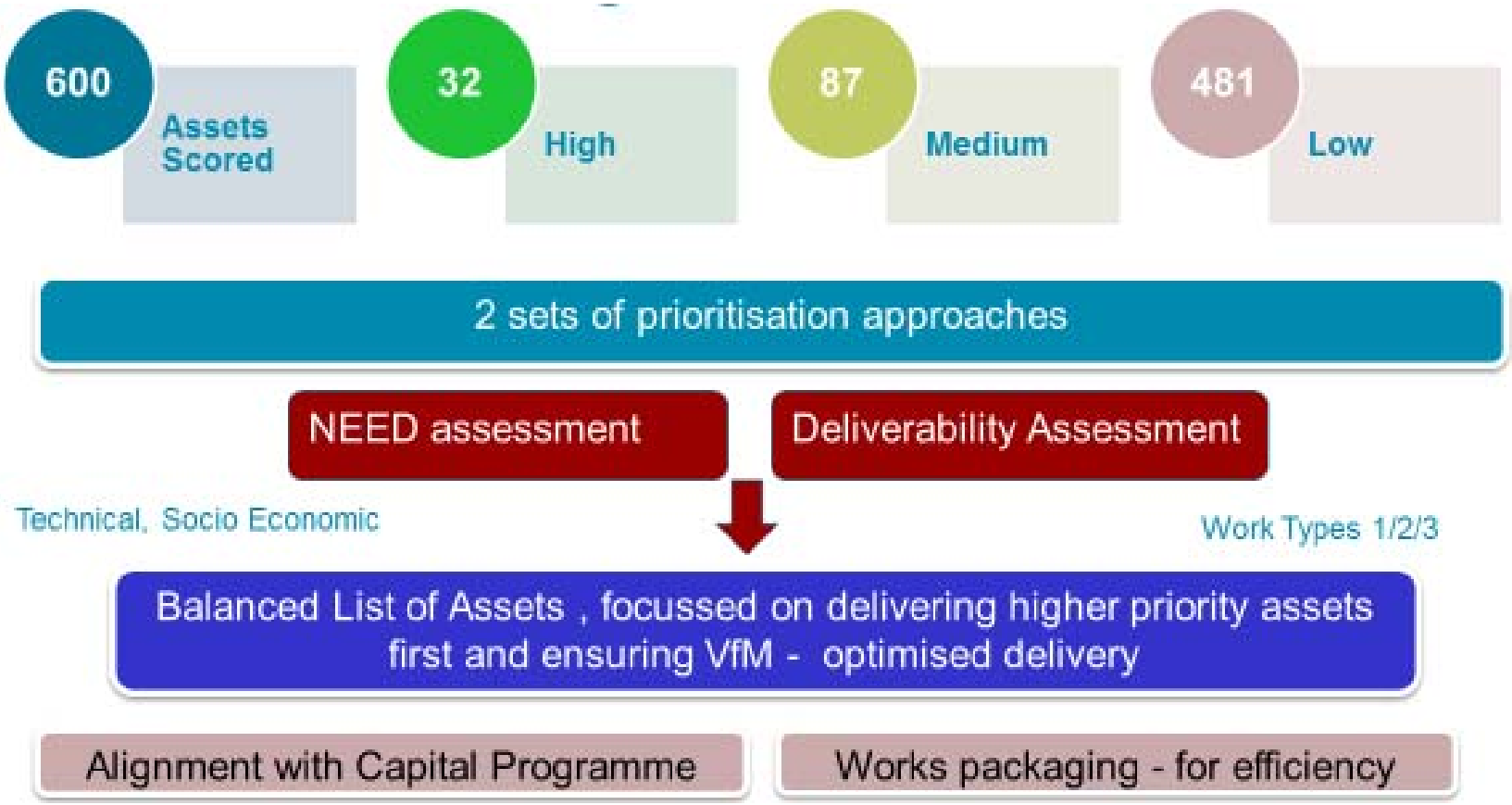
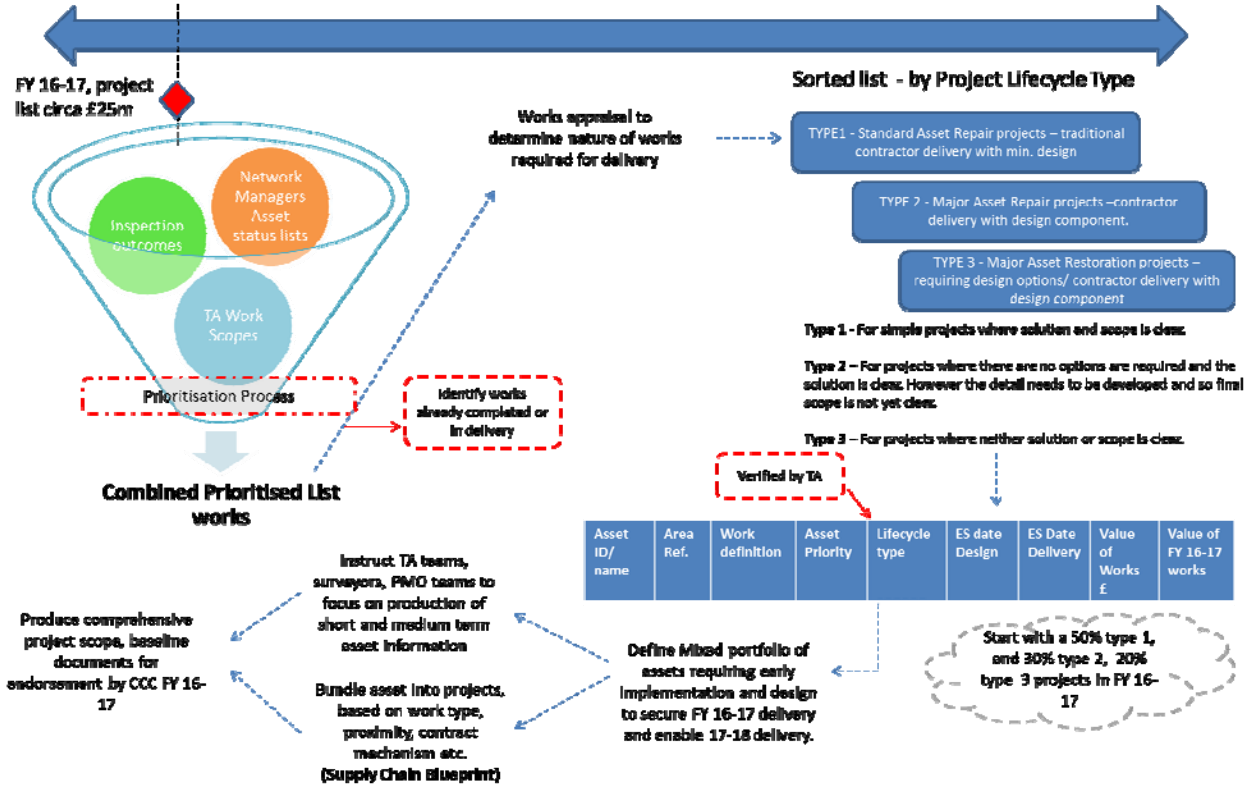
Works Planning and Prioritisation Process –

Dealing with Political and Delivery complexity



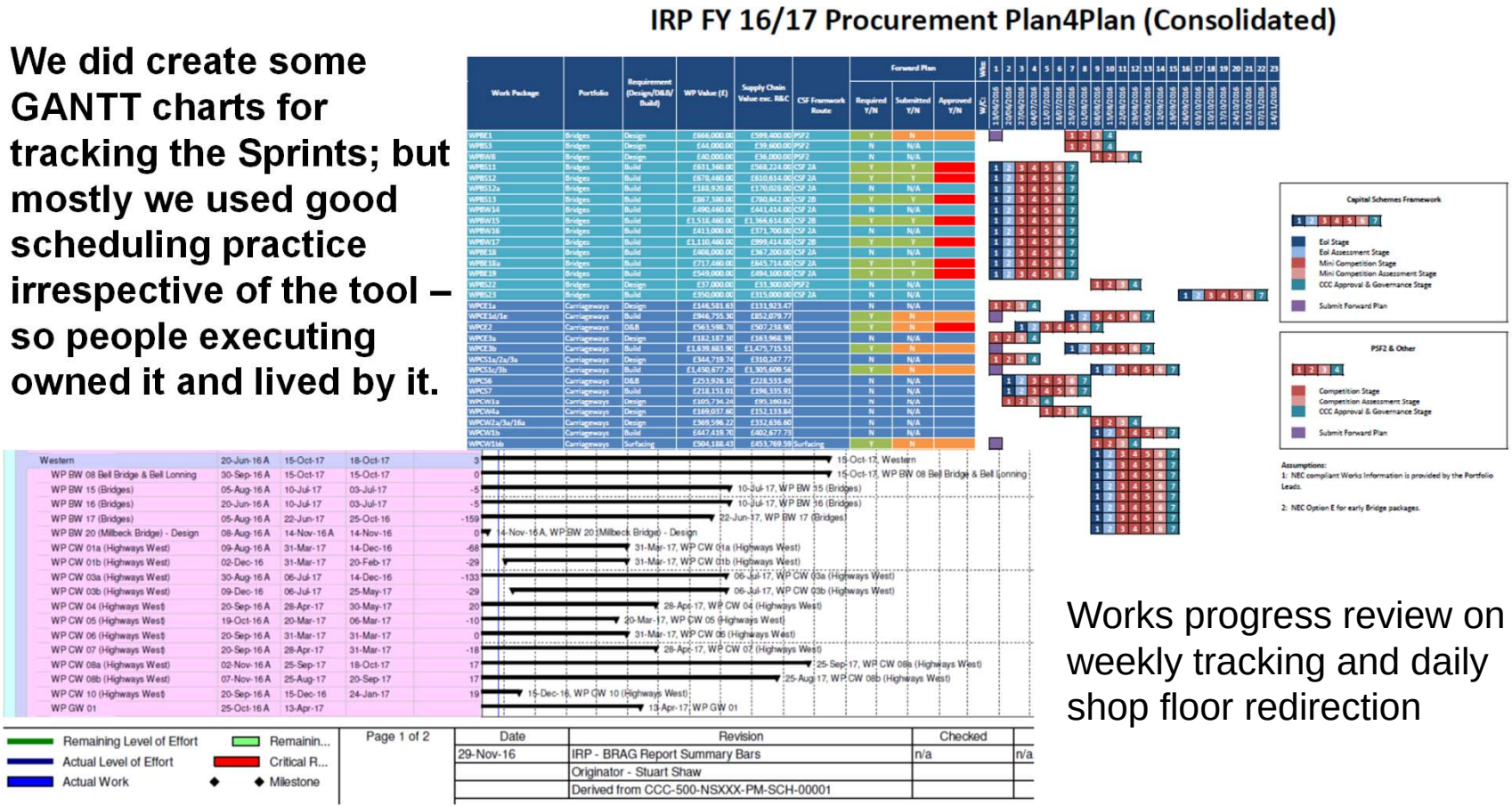
Communicate to be understood



We recognised early that our Do-ers were not comfortable with GANTT; but could follow a workflow - so we drew pictures

Works Scheduling – Short Horizon Plans

We did create some GANTT charts for tracking the Sprints; but mostly we used good scheduling practice irrespective of the tool – so people executing owned it and lived by it.



Works progress review on weekly tracking and daily shop floor redirection

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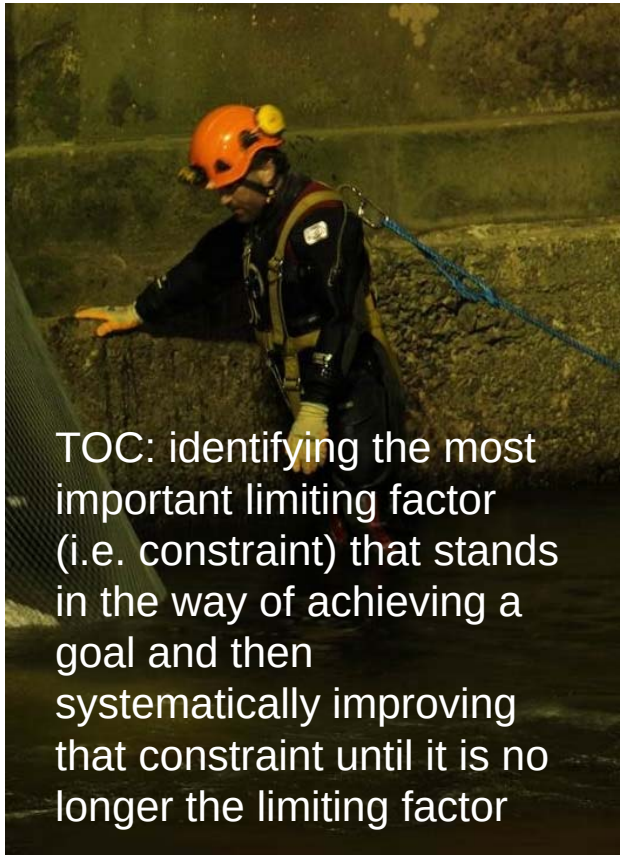
Managing Works Performance

Not creating a crisis

- The guiding light to works performance was
  - **'The Theory of Constraints'** - E.Goldratt
- **Keeping track of the leading indicators**
- **Monitoring**: we treated the first 6 months of the works as intense as a 'possession, shutdown..' – holding team members to account and supporting them to deliver to the critical path (emergent); on a daily basis



Costing the Rebuild – The Emergent Baseline

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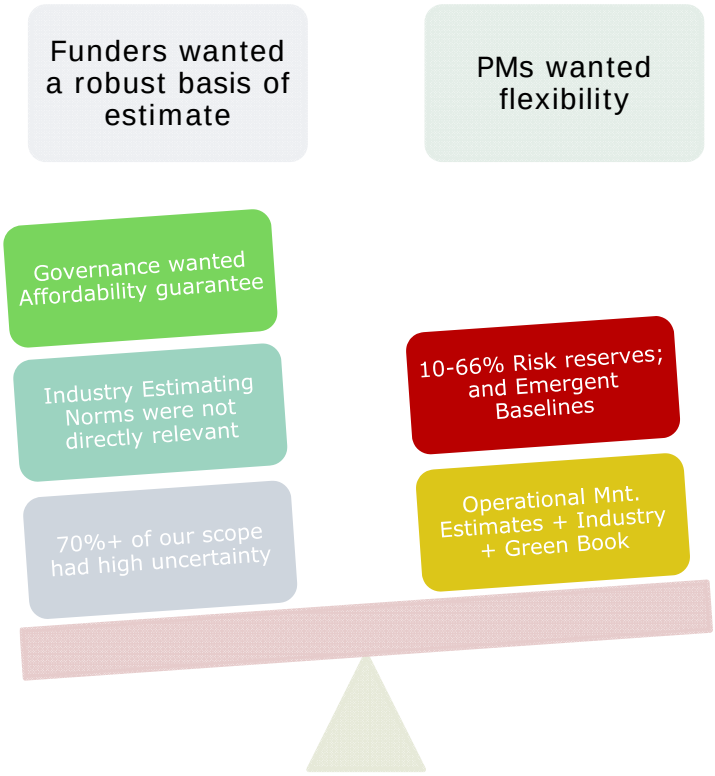
Funding

Challenges

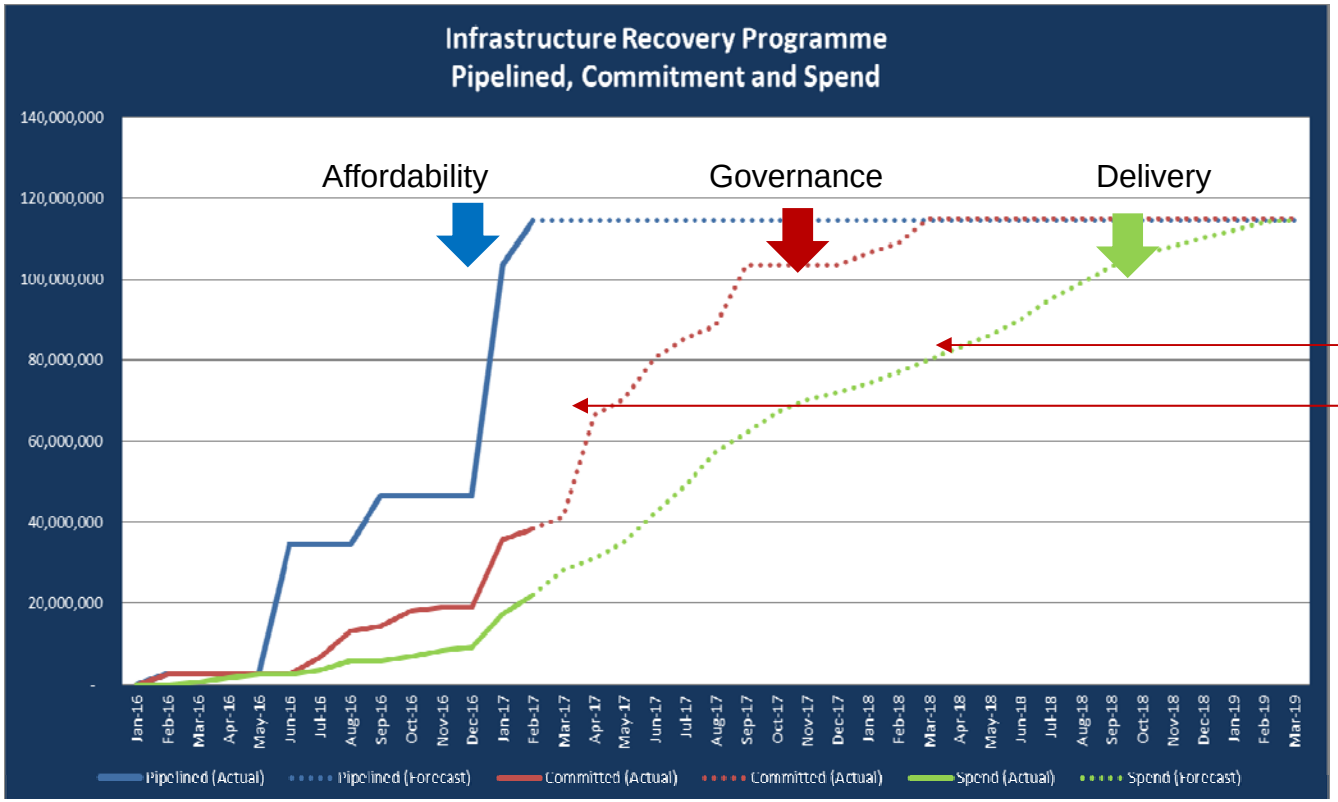
- Local Government financial governance
- Cost Accounting and Allocation
- Mega-Source Cost Monitoring
- Disconnected processes

Scenario



Creating Space to Deliver

Effectively and Efficiently



Converting a disaster recovery and rebuild effort in to a stable baseline.

to learn and plan better

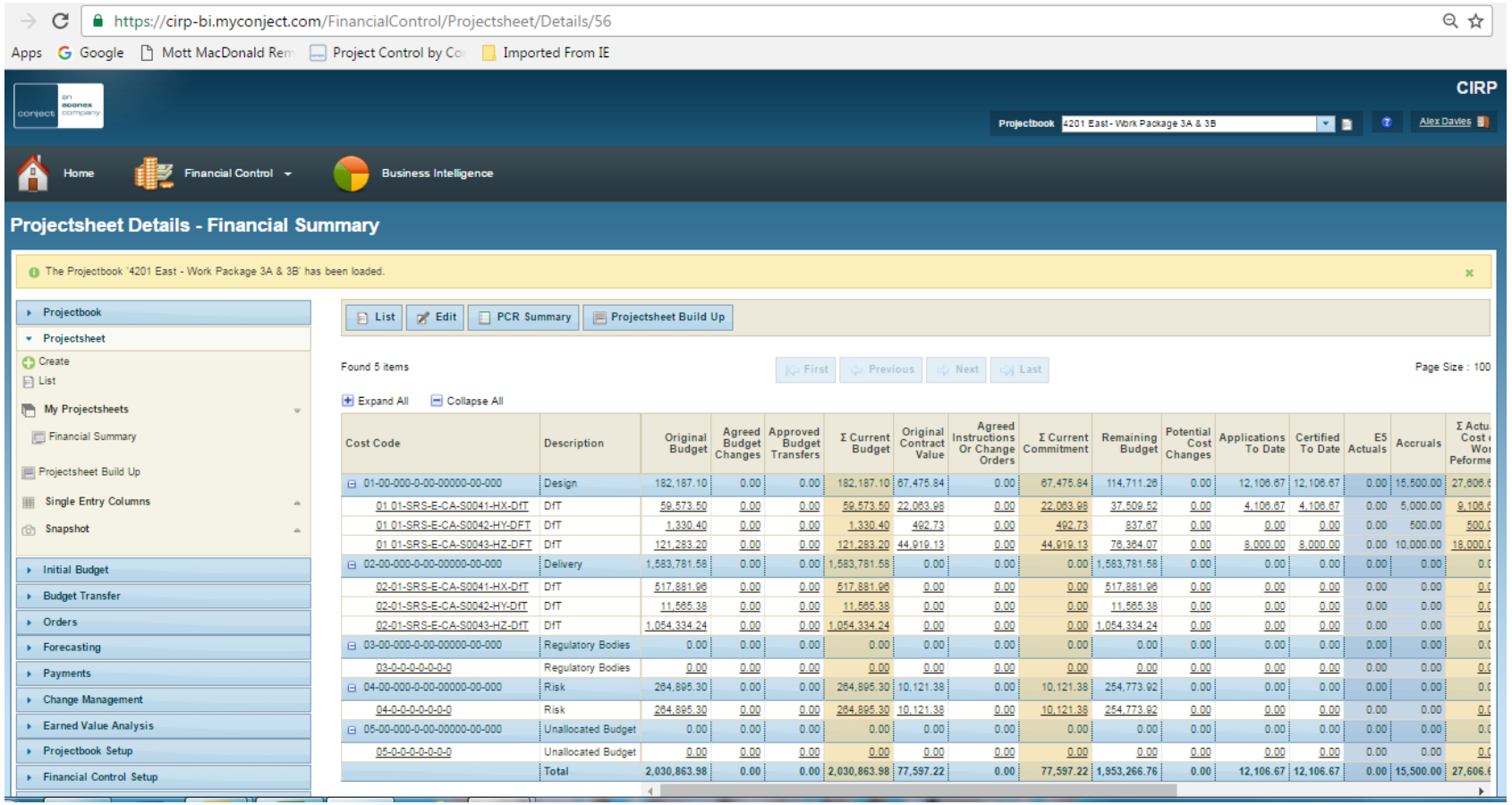
Creating Space to :

- Fail
- Change strategy
- Innovate
- Create legacy

Emergent Baseline - Summary

Managing the data effectively

Leveraging technology



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Cost Planning and Performance –

The practical stuff

Structure:	Dedicated Resourcing	Collaboration and Integration	Systems
Start with a mature **cost plan structure** – with monthly review cycles	**Coding** the Programme database to reflect the financial governance requirements	A 3 month window; while absorbing 3% of Budget as Sunk costs (we did not spend time cleaning up what was impossible to control - CBA) and creating a cost management culture	Scoping (engineers); Estimators ; Project Managers and Operations to form a consistent view of cost planning (LfE)	Spent the money to buy a system - Moved to a Cost Database and formal budget allocation and change management on projects by month 3. Trained supply chain

conject

What we did

Governance and Affordability | **Control and Development** | **Efficiency**

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Communicating Performance – The Emergent Baseline

Reporting - Communicating with Intent

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Community

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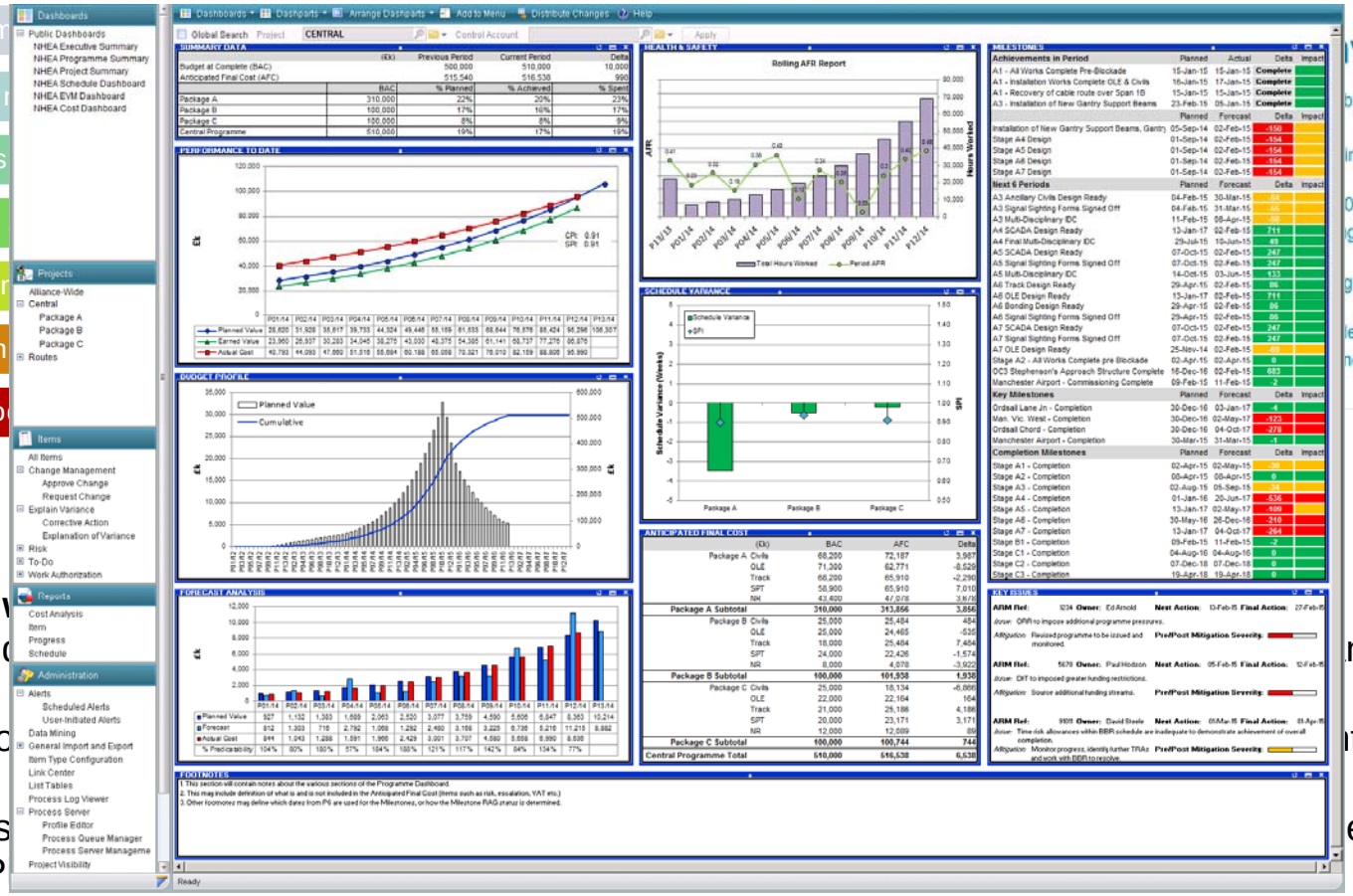
Building con

Sharing goo



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Creating Common working methods

Getting it right ‘first time’ - Guidance and Training

Project Manager’s Guidance Framework
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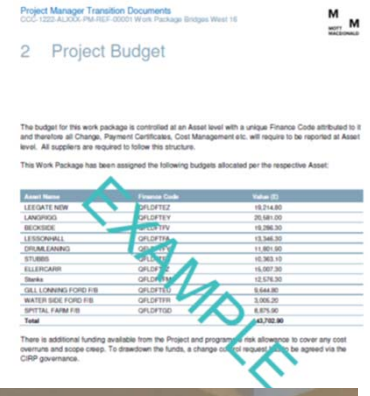
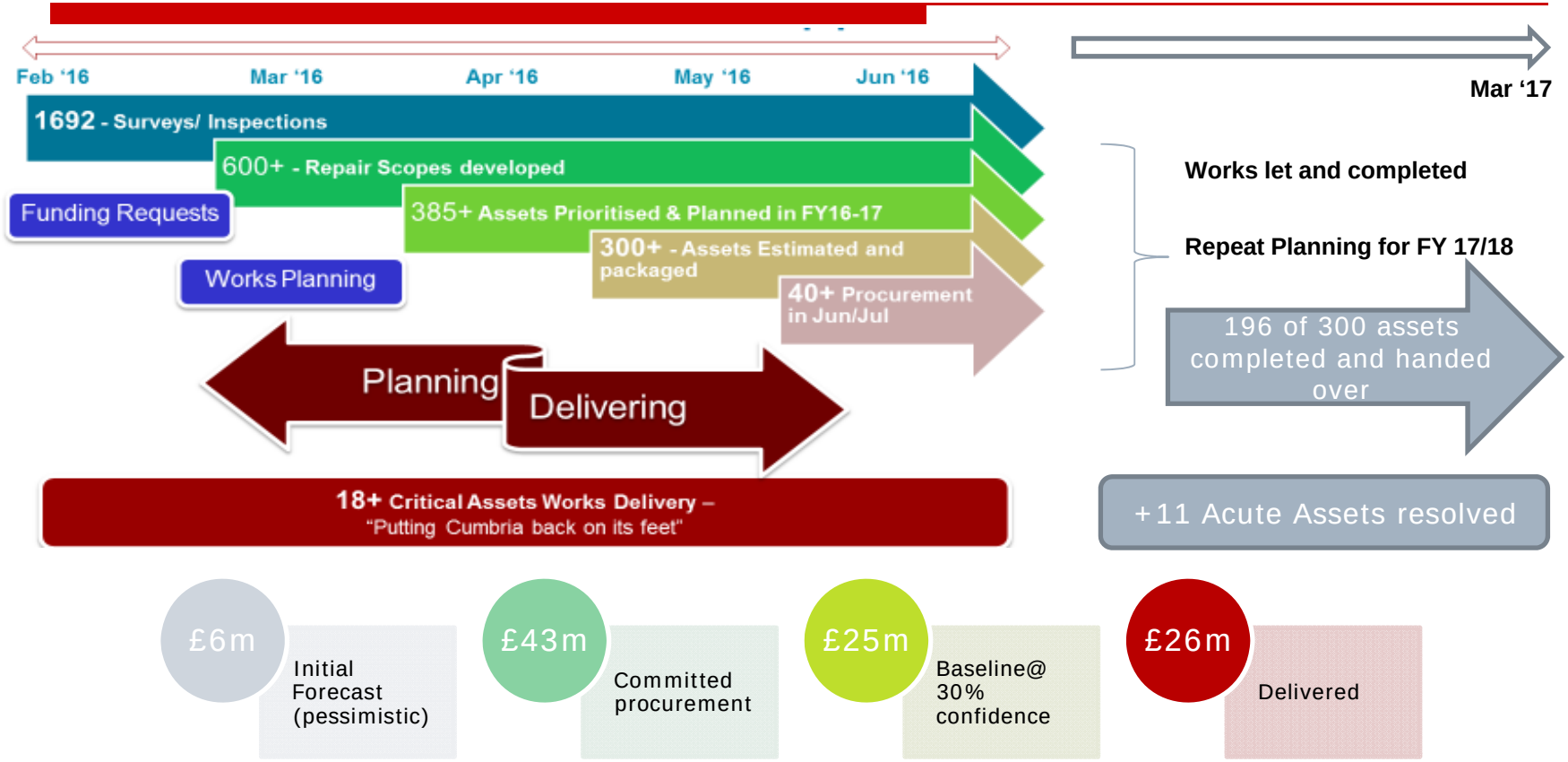


The Outcome

What did we achieve



FY17/18 – 18/19 will see further execution of £40m pa

The Take Away – Emergent Baseline

Controlling a post-disaster rebuild

Get comfortable with ambiguity and leverage it

Get the team structure, systems setup

Processes will evolve, so start with good practice

Build consensus on emergent baseline; and take shortcuts

Use Sprints to drive delivery; and technology for efficiency and effectiveness

Forward Focus on the rebuild rather than reactive accounting/ crisis management

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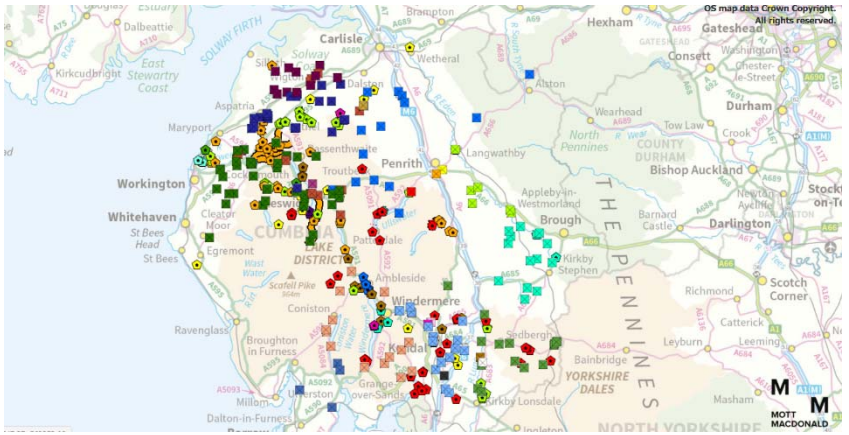
Questions?



Thank You

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