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Ynysybwl Clydach Terrace FRM Capital Scheme

Public Informative Session 30th November 2023

Agenda

- **Introductions (2 mins)**
- **Project Lifecycle (5 mins)**
 - Strategic Outline Case**
 - Outline Business Case**
 - Full Business Case**
 - Delivery**
 - Closure**
- **Progress so far (5 mins)**
 - Initial Assessment / Modelling**
- **Longlist Options (5 mins)**
- **Next Steps and Timeline (3 mins)**
- **Q&A Session (40 mins)**



Agenda

- **Introductions**

NRW

- **David Letellier (Chair & Lead)**
- **Mark Groves (Project Executive)**
- **Alexia Dimitriou (Project Manager)**
- **Chris Powell (Senior User - FRM)**

Arup

- **Alex Lloyd (Consultant PM)**
- **Jo Nelson (Assistant PM)**

RCT

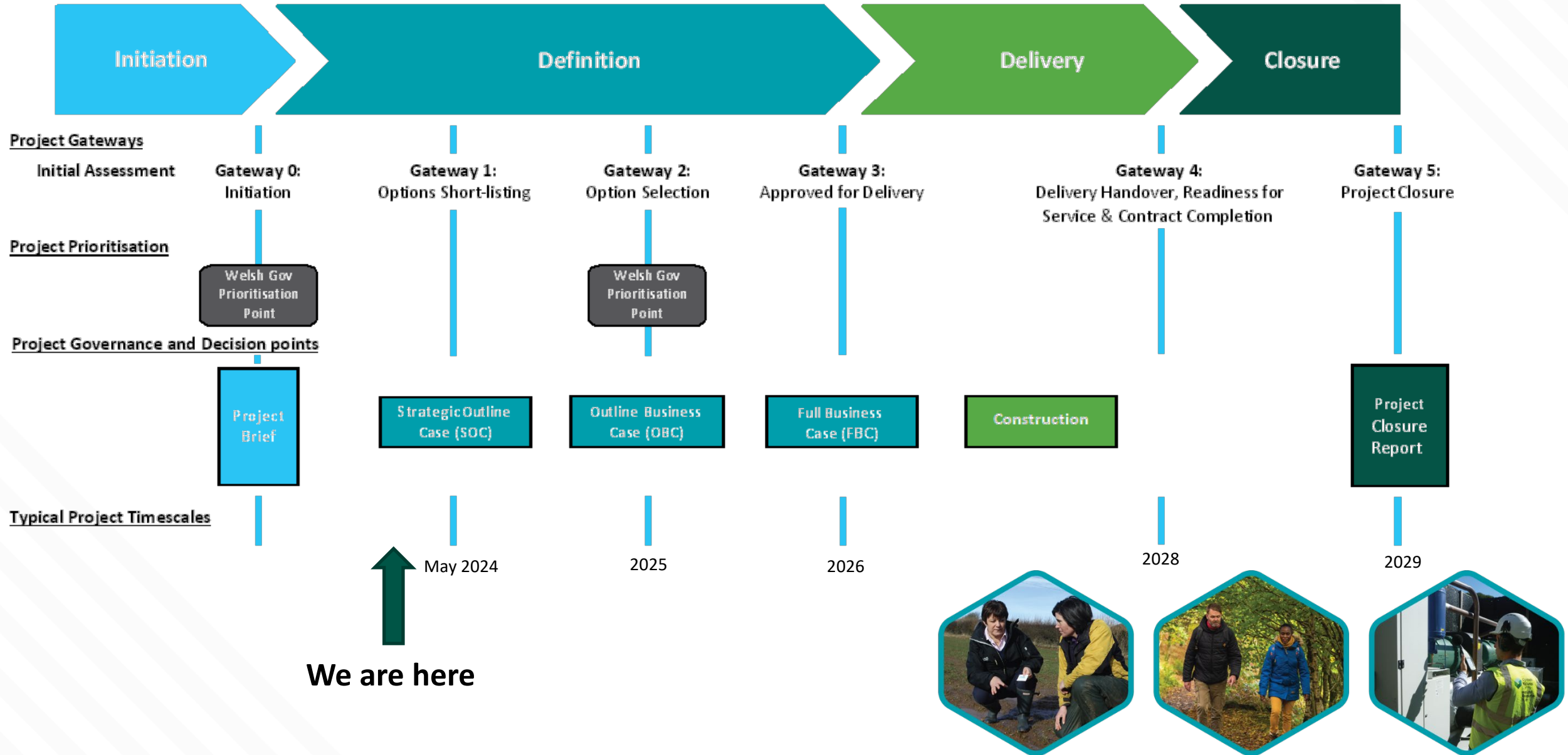
- **Owen Griffiths (Flood and Water Risk Manager)**
- **Ian Woodland (Emergency Planning Manager)**

NFF

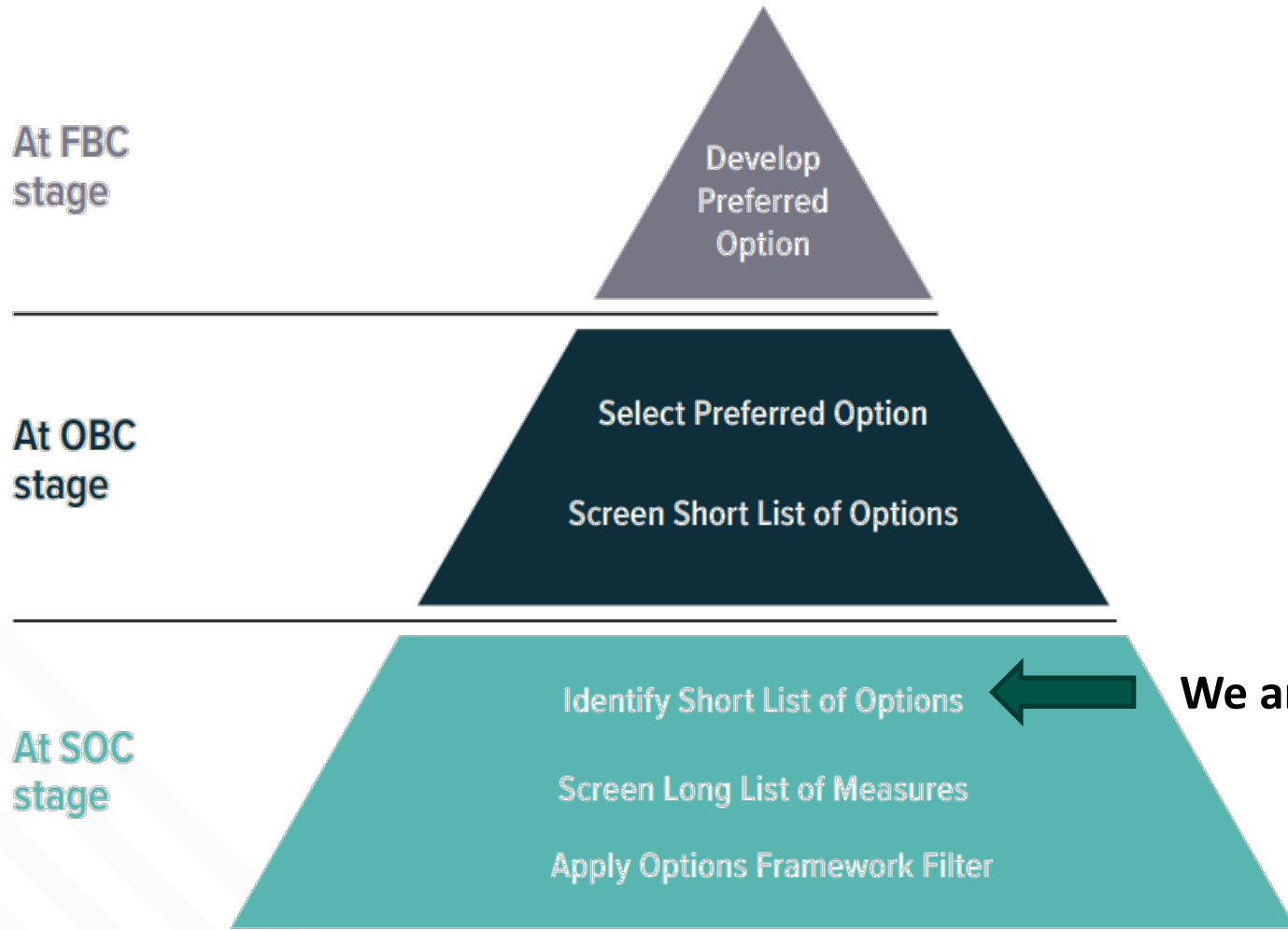
- **Sarah Bennett (Flood Engagement Officer)**



Flood Risk Management Project Life Cycle



Flood Risk Management Project Life Cycle



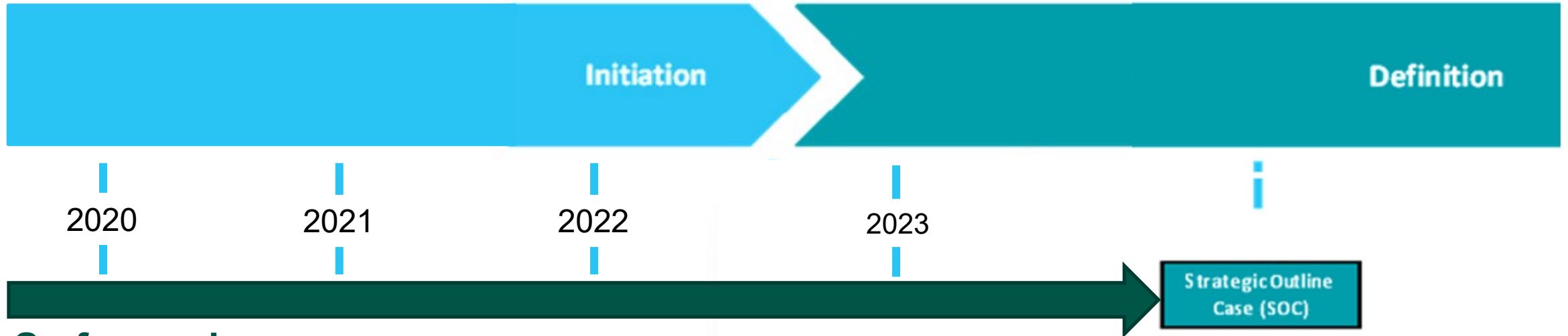
Llywodraeth Cymru
Welsh Government

Flood and Coastal Erosion Risk Management

Business Case Guidance



Progress – What has been done



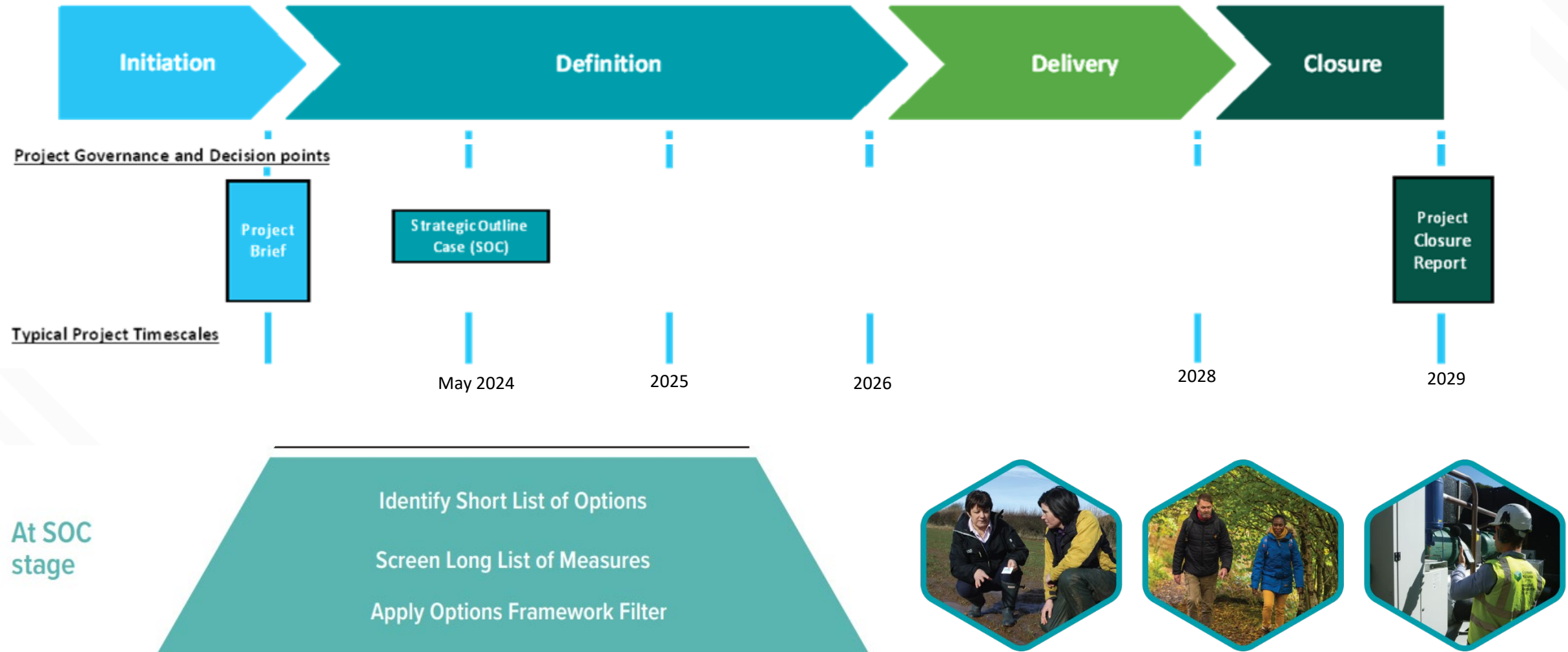
So far, we have:

- Completed the Initial Assessment
- Surveys and Modelling
- Built the Project Team
- Developed Project Programme, and tools
- Screened the project for environmental, heritage, landscape, cultural and archaeological baselines
- Procured Consultants (Arup)
- Stakeholder Engagement (RCT, DCWW, WG)
- Produced Longlist Options
- Developed project specific Financial Trackers and Risk Register/log
- Confirm the legislative framework and potential statutory permits, consents and licences required to develop (survey, inspect, GI) and potentially build an FRM asset
- Introduced National Flood Forum

We are here



Flood Risk Management Project Life Cycle



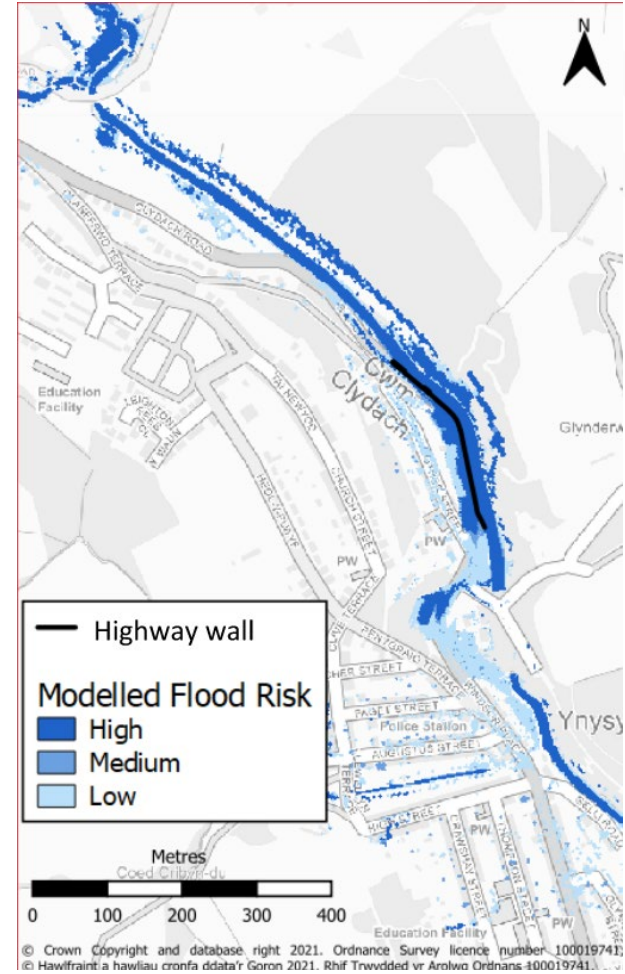
Longlisting

So Far

- Identify and assess the feasibility of options
- Integrate comments from community to decision making
- Test options by modelling

Next Steps

- Economic appraisal of options
- Completion of business case for submission for Gateway 1



Longlisting

Options

Options workshop 19th October 2023

Option Number	Title of option		Option Number	Title of option
1	Walk Away	→	0	Walk Away
2	Business as usual (BAU)	→	0	Business as usual (BAU)
3	Do Something 1 Channel Maintenance, Raise Existing Wall (2% AEP)	→	1	Do Something 1 Raise Existing Wall
4	Do Something 2 Channel Maintenance, Raise Existing Wall (1% AEP)	→	1	Do Something 1 Raise Existing Wall (alternative return period)
5	Do Something 3 BAU, Updgrade existing wall & Natural Flood Management (NFM)	→	-	Natural Flood Management (NFM)
6	Do Something 4 - Remove People & Property at High Risk of Flooding from Risk Area	→	2	Do Something 2 - Remove People & Property at High Risk of Flooding from Risk Area
7	Do Something 5 – Introduce Flood Warning System	→	-	Introduce Flood Warning System
8	Do Something 6 - Remove Downstream Culvert	→	3	Do Something 3 - Remove Downstream Culvert
9	Do Something 7 – Offline Flood Storage/Reconnecting the Flood Plain	→	4	Do Something 4 – Offline Flood Storage/Reconnecting the Flood Plain
10	Do Something 8 – Property Flood Resilience (PFR) & Wall Improvement	→	-	Property Flood Resilience (PFR)
11	Debris Management	→	-	Debris Management
			5	Do Something 5- Reduce bed level of watercourse and culvert section

Longlisting

Options

Option Number	Title of option
0	Walk Away
0	Business as usual (BAU)
1	Do Something 1 Raise Existing Wall
2	Do Something 2 - Remove People & Property at High Risk of Flooding from Risk Area
3	Do Something 3 - Remove Downstream Culvert
4	Do Something 4 – Offline Flood Storage/Reconnecting the Flood Plain
5	Do Something 5- Reduce bed level of watercourse and culvert section

Additional Options to be considered alongside core options

-	Natural Flood Management (NFM)
-	Introduce Flood Warning System
-	Property Flood Resilience (PFR)
-	Debris Management



Strategic Outline Case (SOC)



Next Steps – Timeline

Now – May 2024 → Deliver SOC → Start OBC

- Creation of Flood Action Group (NFF and CT residents)
- Conduct necessary surveys and desk studies
- Environmental Assessment
- Update the Economic Appraisal
- Derive the Shortlist of Options
- Deliver the SOC to Welsh Government



Questions & Answers Session



Project Objectives

- 1 Reduce the risk of flooding to the 17 properties at Clydach Terrace, initially through optioneering and appraisal, by using a direct rainfall model to assess current level of flood risk and appraise options to increase Standard of Protection (SoP) by 2029.
- 2 Avoid service failure and long term OPEX maintenance costs, by using data from the operations team to measure long term maintenance costs associated with de-shoaling and INNS management.
- 2 Contribute to Sustainable Management of Natural Resources by maintaining and enhancing biodiversity and identifying wider opportunities for ecosystem resilience such as Natural Flood Management (NFM) through project delivery, by April 2029.
- 3 Contribute to NRW's Well-being objectives and consider the needs and views of the local community and stakeholders through effective engagement during the project lifecycle, by April 2029. (Noted that NRW are currently developing a new Corporate Plan and this will be reviewed and incorporated at the next Gateway).



Project Scope

To develop the SOC and identify if there are viable options, meeting the project Objectives, to progress to OBC:

- Further develop the long list of options identified at Initial Assessment, to include NFM, PFR and upstream storage. Consider combining options where beneficial e.g. wall and NFM.
- Undertake additional hydraulic modelling of any further long list options.
- Engage with key stakeholders to investigate viability of options identified in the long list.
- Assess the viability of options identified in the long list.
- Develop a short list of viable options to take forward to OBC.
- Deliver a SOC considering business justification and recommending a preferred way forward.



Project Risks

No	Key Risk	Mitigation Plans
1	Landowners don't support the short listed options and agreements can't be reached to take them forward.	NRW do not own any land at this location. Short listing of options will require further consultation to ensure that options are acceptable to affected parties and relevant stakeholders. Compensation estimates will be included in option costs.
2	Stakeholders don't support the short listed options and agreements can't be reached to take them forward.	Early consultation with key stakeholders during short listing to ensure options are viable.
3	Detriment for which there is no mitigation is not acceptable to property owners, leading to objections to planning application.	Early consultation with property owners affected to assess likelihood of reaching agreement. Or propose mitigation for detriment caused. Early consultation with NRW FRA team. The Flood Consequence Assessment (FCA) for the scheme will be developed and submitted early in the detailed design phase of works.
4	Reputation damage if a scheme is not economically viable - Project has become high profile locally due to involvement of MP and there is a keen interest from the community.	<p>A communication strategy will be developed by the project team and the community and key stakeholders will be kept updated with project progress.</p> <p>Project economics have been assessed in the Initial Assessment and will be reviewed in the SOC to ensure that the scheme is only progressed further if it is economically viable.</p>



Option 1- Replacing and raising the existing highway wall

Sub options will include consideration of differing heights of the wall.

Height shown in image is for 0.1% Chance in any 1 year without climate change (100 year return period)

NFM and debris management options to be considered to try and reduce wall height

Option to be Shortlisted



Appraisal Criteria

Appraisal Criteria										Total Score (out of 25)
Cost	Score	Benefit	Score	Buildability	Score	Potential to meet CSF's	Score	Potential to meet Objectives	Score	
High cost	2	Flood risk benefit but few wider benefits	4	Moderate complexity	4	Good potential to meet CSFs	5	Objective 2 may not be met as maintenance requirements will be similar to existing	4	19

Option 2- Remove People & Property at High Risk of Flooding from Risk Area

Option is legally complex. Mechanisms require further investigation.

Demolition and making safe of existing structures as would likely be required.

Option to be Shortlisted

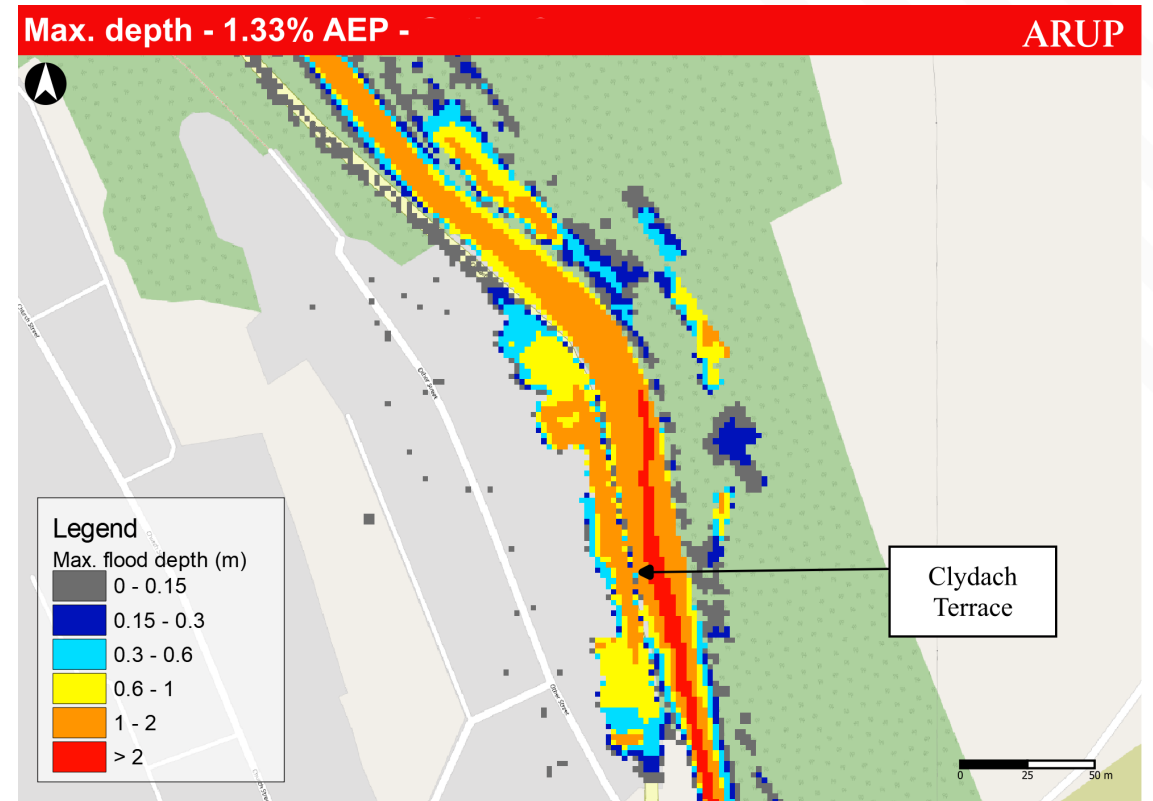
Appraisal Criteria										Total Score (out of 25)
Cost	Score	Benefit	Score	Buildability	Score	Potential to meet CSF's	Score	Potential to meet Objectives	Score	
High cost	2	Flood risk not resolved and does not provide wider benefit	4	Demolition of properties in a constrained area - relatively complex.	3	Has potential to meet CSFs. Merits further investigation	5	Has potential to meet some objectives	2	16

Option 3- removal of downstream culvert

Option doesn't reduce flood risk significantly but has significant cost and environmental implications

The option reduces flood depths and extents on Clydach Terrace, however the scale of the reduction is not large enough to remove the risk of internal property flooding and therefore the Option does not provide sufficient benefit in terms of protecting these properties.

Option not recommended for Shortlisting



Appraisal Criteria										Total Score (out of 25)
Cost	Score	Benefit	Score	Buildability	Score	Potential to meet CSF's	Score	Potential to meet Objectives	Score	
Very High cost	1	Minor flood risk benefit, moderate wider benefit including increased watercourse connectivity	3	Moderate complexity	1	Moderate potential to meet some of the CSFs, however flood risk reduction is limited	2	Potential to meet some objectives, however flood risk benefit is limited	4	11

Option 4- Offline Flood Storage/Reconnecting the Flood Plain

Significant volumes required to reduce flood risk.

The amount of storage required to reduce a 3.33% AEP to a 5% AEP would be approximately 10,000m³.

For a 1.33% chance event this goes up to 56,200m³

Option not recommended for Shortlisting

Appraisal Criteria										Total Score (out of 25)
Cost	Score	Benefit	Score	Buildability	Score	Potential to meet CSF's	Score	Potential to meet Objectives	Score	
High cost	1	No flood risk benefit, potential wider benefits in terms of ecology and habitat creation	2	Moderate complexity	1	Low potential to meet CSFs due to lack of flood risk benefit	1	Potential to meet some objectives, however there is no flood risk benefit and therefore other objectives are secondary	1	6

Option 5- Reduce bed level of watercourse and culvert section

Reducing levels impacts on structure and bank stability as well as impacting on ecology.

Impacts on flood levels are likely to be negligible relative to the impacts.

Option not recommended for Shortlisting

Appraisal Criteria										Total Score (out of 25)
Cost	Score	Benefit	Score	Buildability	Score	Potential to meet CSF's	Score	Potential to meet Objectives	Score	
Medium cost	3	Low flood risk benefit but high environmental damages	2	Complex construction	2	Low potential to meet CSFs due to lack of flood risk benefit	1	Potential to meet some objectives, however high dis-benefits to environment.	1	9

Option 5- Reduce bed level of watercourse and culvert section

