

West Country Water Resources

**Emerging plan briefing
19 January 2022**

Agenda & Aims

Item No	Time	Item	
1	1000	Purpose of meeting & update on progress	PB
2	1005	National Framework/RAPID Update	KW & VK
3	1015	Outcomes & policy context	RS
4	1020	Future water needs	RS
5	1025	Environmental destination	LB
6	1035	Strategic themes, phasing and options	JJW
7	1045	Consultation process	PS
8	1050	Questions	All
9	1100	CLOSE	

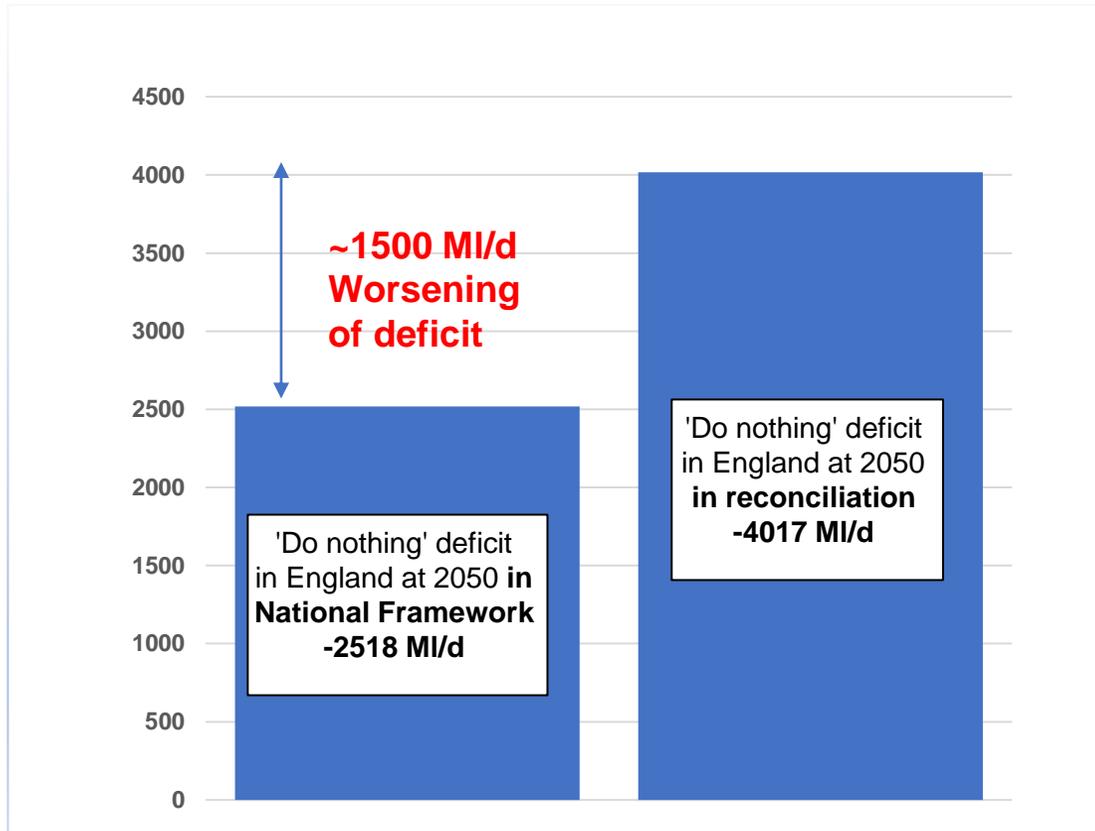
Aims of today:

To provide an update on progress of the regional plan, details on how you can feedback your views and what happens next.

Summary of work done to date

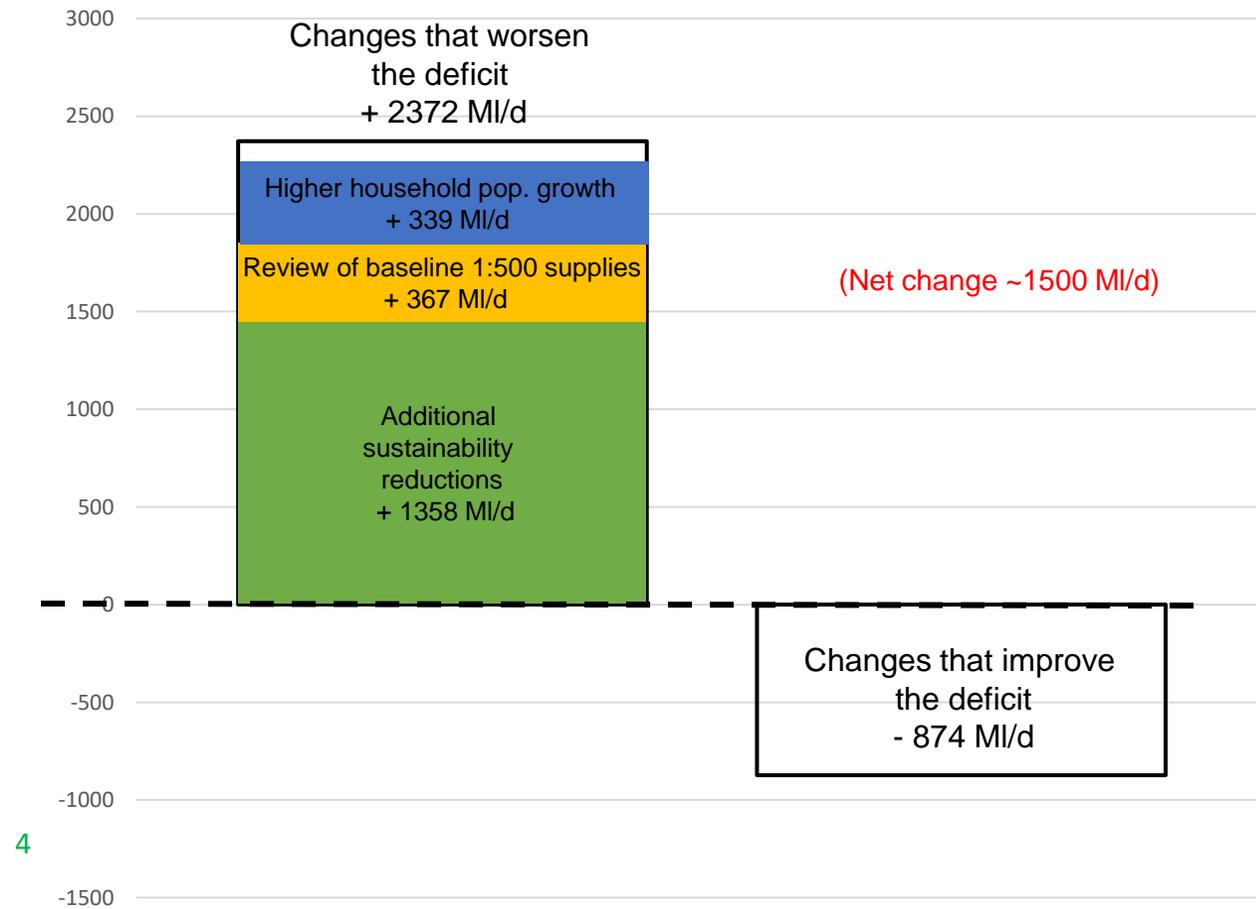
- Resource position statement (Mar 20, Mar 21, Aug 21)
- Method statements
- Engagement and further understanding of needs from Non-Public Water supply consumers
- Strategic Regional options investigations through gated process
- Environmental destination development
- Customer & Stakeholder Research
- 3rd party requests via Bid Assessment Framework
- Consultation - Emerging plan January 2022

How national public water supply demand estimates in England are changing since the national framework



The latest regional plan data shows a significantly more challenging 'do nothing' public water supply-demand balance than the equivalent data from the National Framework, published in March 2020. There is **~1500 MI/d** worsening of the national deficit.

The major contributors of this worsening deficit is due to:

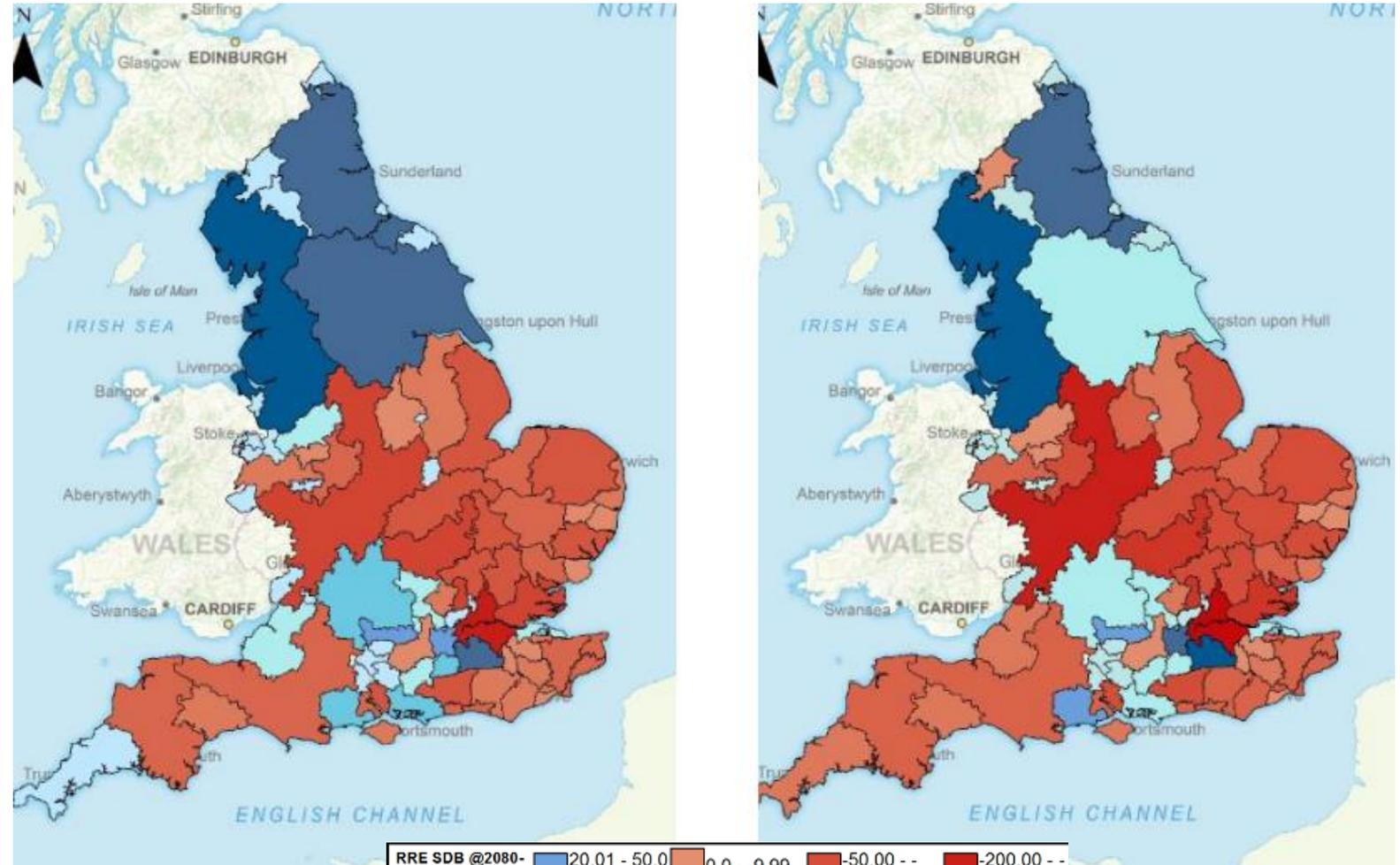


Public water supply-demand balance after demand reductions

2050

2080

- The water industry has committed to a 50% leakage reduction by 2050, and the national framework ambition for household consumption is 110 l/h/d per capita consumption by 2050 (current average is around 150 l/h/d)
- From a 'do nothing' position, in England these commitments equate to:
- **631 MI/d additional water savings from leakage**
- **1309 MI/d from PCC reduction**
- Even with achieving those ambitious leakage and consumption reductions, supply-side schemes will be needed to resolve these deficits



RRE SDB @2080-81 (MI/d)			
20.01 - 50.0	0.0 - -9.99	-50.00 - -99.99	-200.00 - -499.99
100.01 - 200.0	-10.01 - -19.99	-100.00 - -199.99	-500.00 - -1000.00
50.01 - 100.0	-20.00 - -49.99		
	10.01 - 20.0		
	0.01 - 10.0		

Introduction to RAPID

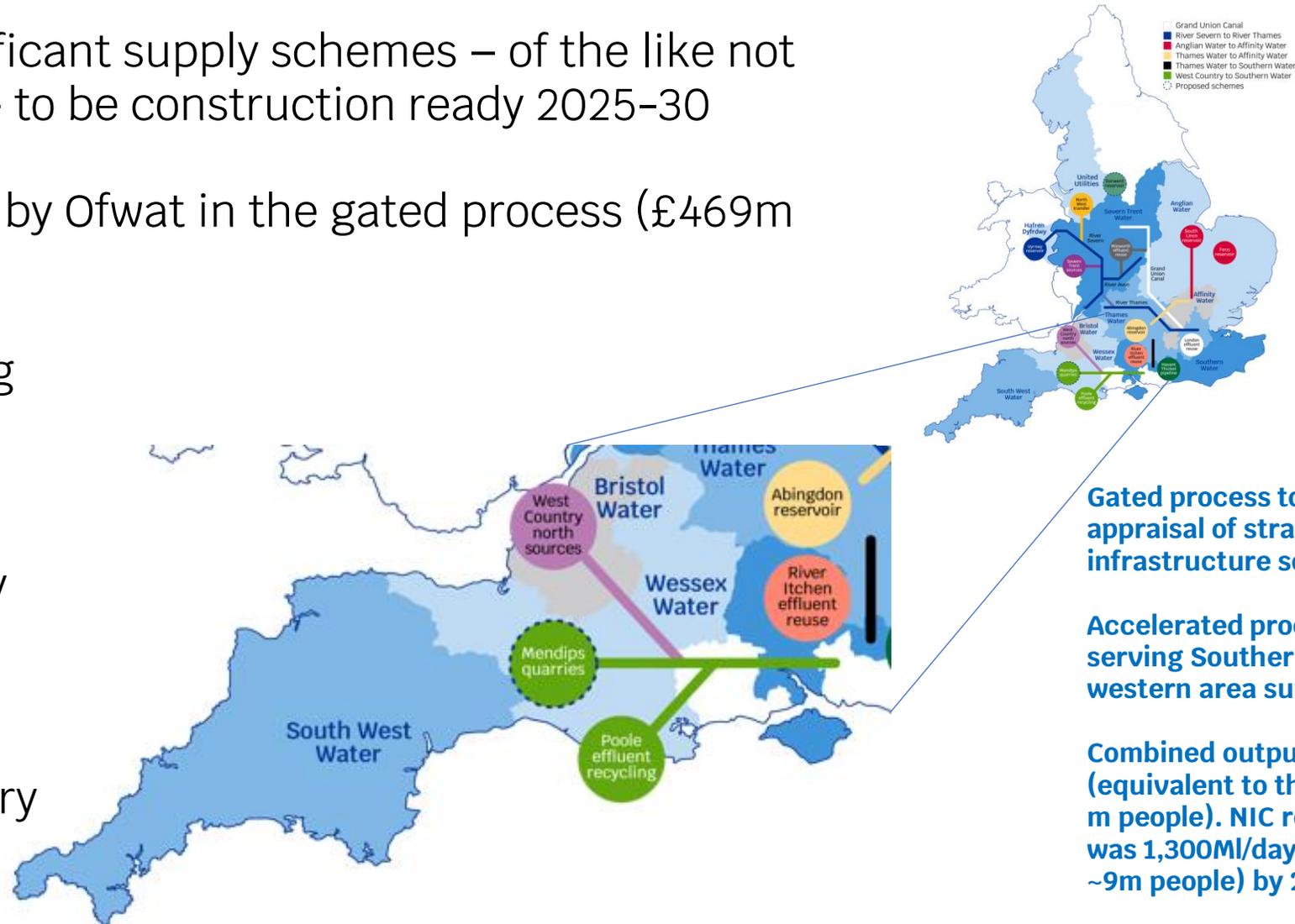
Facilitate nationally significant supply schemes – of the like not seen since privatisation – to be construction ready 2025–30

Support robust decisions by Ofwat in the gated process (£469m appraisal funding)

Support regional planning (in collaboration with sponsor regulators)

Improve interconnectivity and test for alternative options

Explore required regulatory and commercial enablers



Gated process to fund the appraisal of strategic infrastructure solutions

Accelerated process for solutions serving Southern Water's western area supply zone

Combined output of 1,500MI/day (equivalent to the needs of ~10.5 m people). NIC recommendation was 1,300MI/day (equivalent to ~9m people) by 2030s

Introduction to RAPID

Site visit to the
Mendips:

Regulators and
Industry building
relationships and
working collaboratively
on solutions



Outcomes & policy context

- Improve the Environment
- Ensure water supply resilience
- Deliver Societal benefit

Key:
 ● direct benefit
 ○ secondary benefit

Plan outcome	25-year Environment Plan							National Framework					
	Clean air	Clean and plentiful water	Thriving plants and wildlife	Reducing the risks of harm from environmental hazards	Using resources from nature more sustainably and efficiently	Mitigating and adapting to climate change	Enhancing biosecurity	Long term reductions in water use	Deliver greater environmental improvement	Increase Drought Resilience	Increase supplies	Moving water to where it is needed	Be adaptive to uncertainty
Improve the environment		○	●		●	○	●		●	○			○
Ensure water supply resilience		●		●		●				●	●	●	○
Deliver Societal benefit		●	○		●		○	○	●	●		○	●

Future Water Needs

- Factors affecting future needs
 - Leaving the environment in a better place than it is currently
 - Moving to 1 in 500 drought
 - Planning for all water users
 - Climate change
 - Population growth
 - Economic growth
 - Government policy
 - Societal benefits

- Potential scenarios

Future	Climate Change	Demand	Environmental Destination
Baseline	Central emissions	WRMP19 planned reductions only	WRMP19 planned reductions only
Policy Future	Central emissions	Deliver 110 PCC and 50% leakage	BAU
Higher Demand Future	Central emissions	Deliver 50% of policy targets	BAU
Bad Future	Higher emissions	Deliver 50% of policy targets	BAU
Stretching Future	Higher emissions	Deliver 50% of policy targets	Enhanced
Alternative Future	Central emissions	Deliver 110 PCC and 50% leakage	Enhanced

Future water needs by potential scenarios

Supply demand balance (MI/d)	Dry year annual average							Dry year critical period	
	Bristol Water	SWW Bournemouth	SWW Colliford	SWW Roadford	SWW Wimbleball	Wessex Water	Total	SWW Bournemouth	Wessex Water
Baseline	-17	41	-12	-16	-10	-14	-28	21	-31
Policy future	20	6	4	-26	-12	-34	-42	-25	-60
Higher demand future	1	-3	-6	-42	-18	-57	-125	-37	-78
Bad future	-8	-9	-14	-63	-23	-71	-186	-43	-92
Stretching future	-8	-9	-15	-135	-23	-87	-277	-43	-108
Alternative future	19	6	3	-98	-13	-50	-132	-25	-76

Environmental Destination

- Environment Agency National Framework modelling gave an indication of the **potential scale of additional environmental flow requirements in the 2050s**, both as a result of climate change and increased environmental protection (eg the Combined Standards Monitoring Guidance, sensitive Chalk Streams etc..)
 - Climate change data indicates significant reductions in flow, especially at low flow. Confirmed by recently released UKCP18 data (eflag)
- EA data analysed to understand what this could mean for water company abstractions. Potentially large reductions, further discussion on modelling refinement and conceptualisation between EA and water companies.

Environmental Destination – catchment pilots

- Climate change challenge questions about **catchment resilience**.
- **Five catchment pilots plans** selected by WCWR to **increase future water supply and low flow resilience in the West Country**
 - Tamar, East Devon, Stour, Poole Harbour Rivers, Rural Bristol Avon
 - **A lot of work ongoing, planned and envisaged to use catchment based solutions to solve water quality and flood risk problems**
 - Some measures (eg Upstream Thinking) could have some benefits for low flow resilience. **Better integration of water resources quantity questions into the catchment partnerships could help**
 - **Scale of the reduction challenge not going to be met by catchment measures, significant supply and demand side solutions needed to meet challenge of 2050s.**

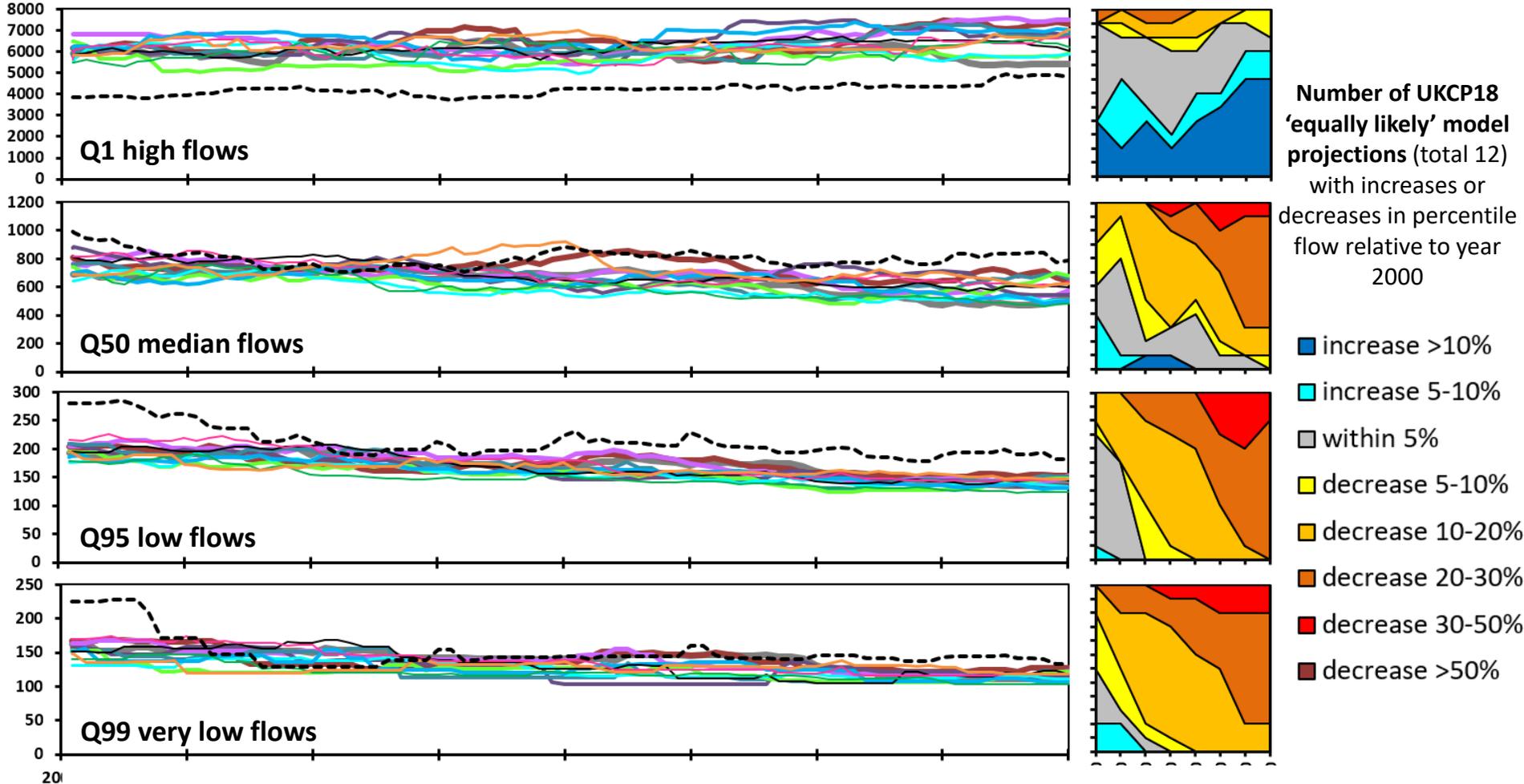
UKCP18 vs UKCP09 flow changes

Flow changes expected due to climate (Dorset Stour at Throop):

Projections from UKCP18 climate & PDM gauge-calibrated river flow models

UKCP18 eFlaG PDM gauge-calibrated model flow 18 yr rolling percentile projections, MI/d (c.f. UKCP09 afixK)

- RCM_01
- RCM_04
- RCM_05
- RCM_06
- RCM_07
- RCM_08
- RCM_09
- RCM_10
- RCM_11
- RCM_12
- RCM_13
- RCM_15
- UKCP09 afixK



Data source: natural flows from 12 equally likely UKCP18 regional climate models (with UKCP09 afixK natural projection for comparison):

Strategic themes & phasing

- Reduce the uncertainty associated with environmental needs and demand reduction
- Improve the use of existing water sources
- Ensure future strategic options can be implemented
- Improve understanding of non-public water supply needs and improve connectivity and storage to support them
- Phased approach
 - Short-term: Phase 1 “Low Regrets” (0 - 10 years)
 - Medium term: Phase 2 – Resilience phase (10 - 20 years)
 - Long term: Phase 3 – Final environment phase (beyond 20 years)

Demand management options

Consumption

- Not all within water company control. Therefore need for government intervention
- Environment bill - Water labelling, national demand target, building regulations
- Still need to include Non-household demand reductions within targets

Leakage

- Water company public interest commitment to further 50% reduction by 2050

- Demand forecasts assume consumption of 110 litres per person per day and 50% reduction in leakage
- Huge uncertainty in delivery of demand reduction initiatives



Supply side options

Favoured

Reservoirs / Storage

- New reservoirs
- Enhancements to existing reservoirs e.g. pumped storage
- Quarries



Effluent reuse

Abstraction from rivers

- High winter flows
- Where supported by augmentation from upstream



Unlikely to be feasible

Additional groundwater abstraction

Additional abstraction from sensitive rivers in dry periods

Other options

Desalination



WEST COUNTRY REGIONAL OPTIONS

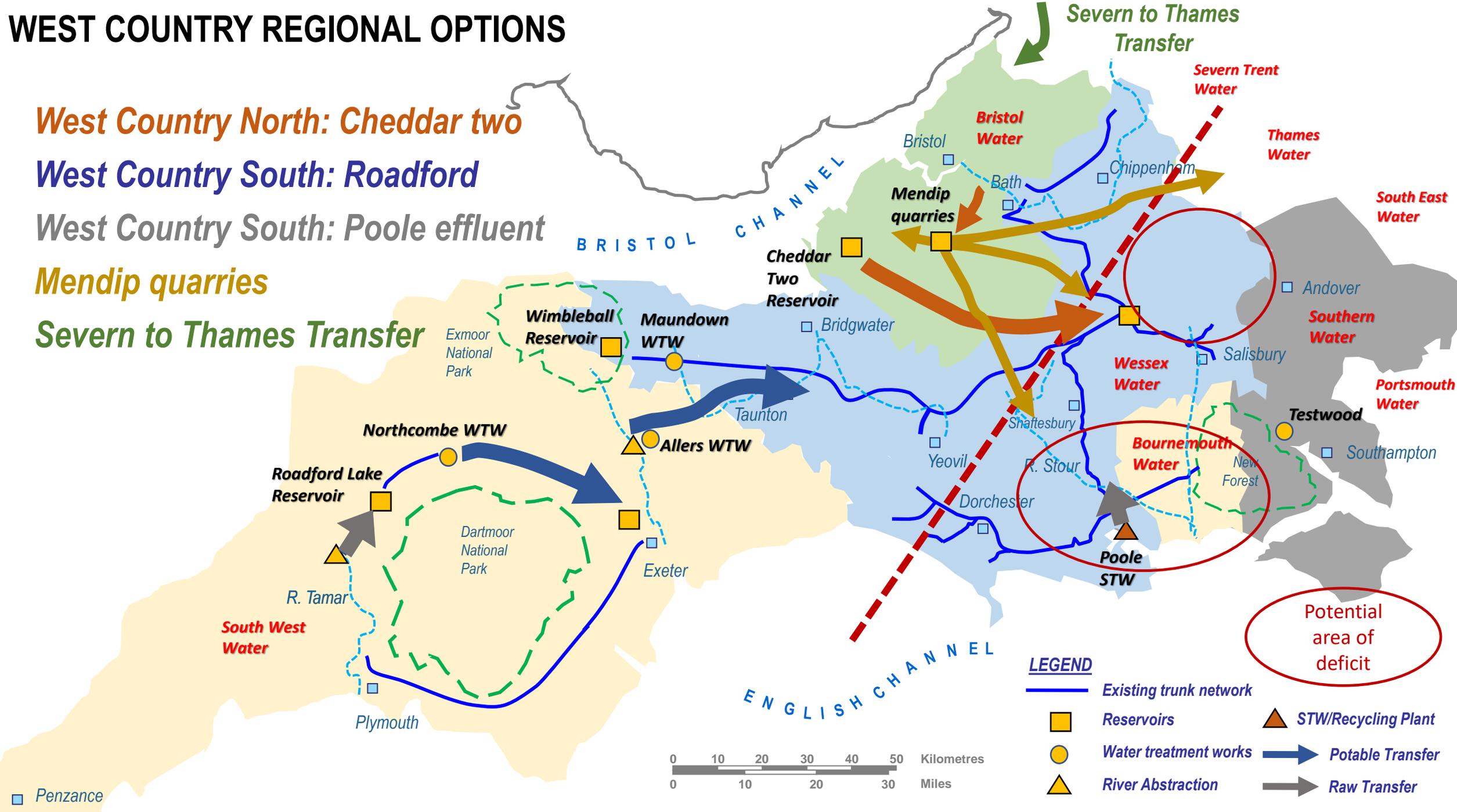
West Country North: Cheddar two

West Country South: Roadford

West Country South: Poole effluent

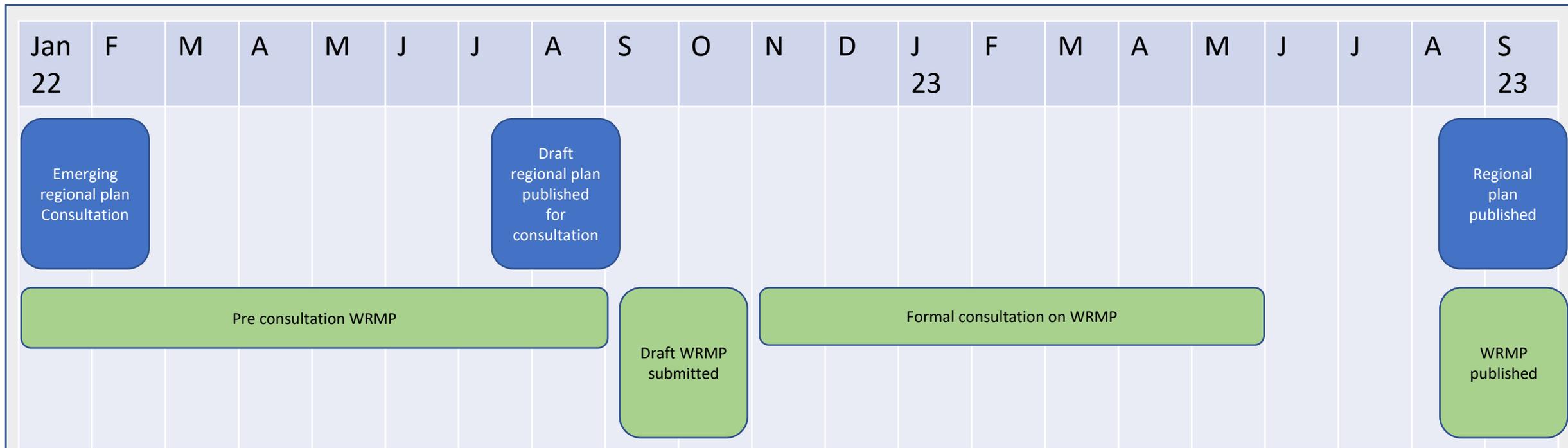
Mendip quarries

Severn to Thames Transfer



Consultation process & next steps

- Call to action – questionnaire or email (6 weeks)
- Particularly keen to get Non-PWS input
- Consultation responses will feed in to August submission & WRMP process



Questions?

- How would you like to be involved going forward? (Regional & WRMPs)
- Any other questions?