

Delivering Water Framework Directive-compliant **projects**

Slovenian Training strategy for SEA and EIA as ex-ante conditionality
Assessing Project Compliance with the EU Water Framework Directive

Jan Brooke, JASPERS Consultant

Ljubljana, 30 November 2017

Workshop Programme

Session 1

- **An introduction to the EU Water Framework Directive**
- Q&A

Session 2

- **WFD and project compliance**
- Q&A

Session 3

- **Screening, scoping and data collection**
- Q&A

Session 4

- **Applying the Article 4(7) tests**
- Q&A

Delivering Water Framework Directive-compliant projects

Session 1

An introduction to the EU Water Framework Directive

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“Water is not a commercial product like any other but rather, a heritage which must be protected, defended and treated as such”

Directive 2000/60/EC establishing
a framework for Community action
in the field of water policy: the
Water Framework Directive.
Preamble (1)

An Introduction to the WFD

- Overarching WFD objectives
- Ecological and chemical status
- WFD elements
- Status classes; one-out-all-out principle
- Groundwater objectives
- Protected areas in WFD
- Exemptions

Overarching WFD Objectives

- Prevent further deterioration
- Promote sustainable use
- Aim at enhanced protection and improvement of the aquatic environment
- Reduce and phase out, discharges, emissions and losses of priority substances and priority hazardous substances respectively
- Reduce groundwater pollution
- Measures to achieve WFD objectives to be set out in the River Basin Management Plan

Surface Water Ecological and Chemical Status Objectives

- WFD 'default' objectives: good ecological status (GES) and good chemical status
- Good chemical status (GCS) for priority and priority hazardous substances
- GES for biological quality elements and various supporting elements
- Good ecological potential (GEP) is ecological objective for heavily modified and artificial water bodies
- Must meet relevant protected area objectives

Heavily Modified and Artificial Water Bodies

- WFD recognises that certain human uses mean the default ecological objectives cannot be met, so ...
- Allows designation of HMWBs and AWBs where the achievement of good ecological status would adversely affect use or wider environment
- 'Uses' include navigation; water storage; flood protection; other sustainable development activities
- Ecological objective is GEP
- GEP can be defined scientifically and/or referring to presence or absence of mitigation measures (the Prague approach)

Ecological Status

Comprised of

- Biological quality elements
- Hydro-morphological supporting elements
- Physico-chemical supporting elements
- Specific pollutants

Biological Quality Elements

- Rivers: aquatic flora; benthic invertebrate fauna; fish
- Lakes: phytoplankton; other aquatic flora; benthic invertebrates; fish
- Transitional waters: phytoplankton; other aquatic flora; benthic invertebrates; fish
- Coastal waters: phytoplankton; other aquatic flora; benthic invertebrates

Full list: Water Framework Directive Annex V

Hydro-morphological Elements

- Rivers: hydrological regime (flow; connections to groundwater); river continuity; morphological conditions (depth variation, width, bed structure and substrate, riparian zone)
- Lakes: hydrology (flow; residence time; connections to groundwater); morphology (depth, bed, shore)
- Transitional waters: morphology (depth, bed, intertidal zone); tidal regime (freshwater flow; wave exposure)
- Coastal waters: morphology (depth, bed, intertidal zone); tidal regime (dominant currents; wave exposure)

Full list: Water Framework Directive Annex V

Physico-chemical Elements

- All water bodies: thermal conditions; oxygenation conditions; salinity; nutrients

Also

- Rivers: acidity
- Lakes: transparency; acidity
- Transitional waters: transparency
- Coastal waters: transparency

Full list: Water Framework Directive Annex V

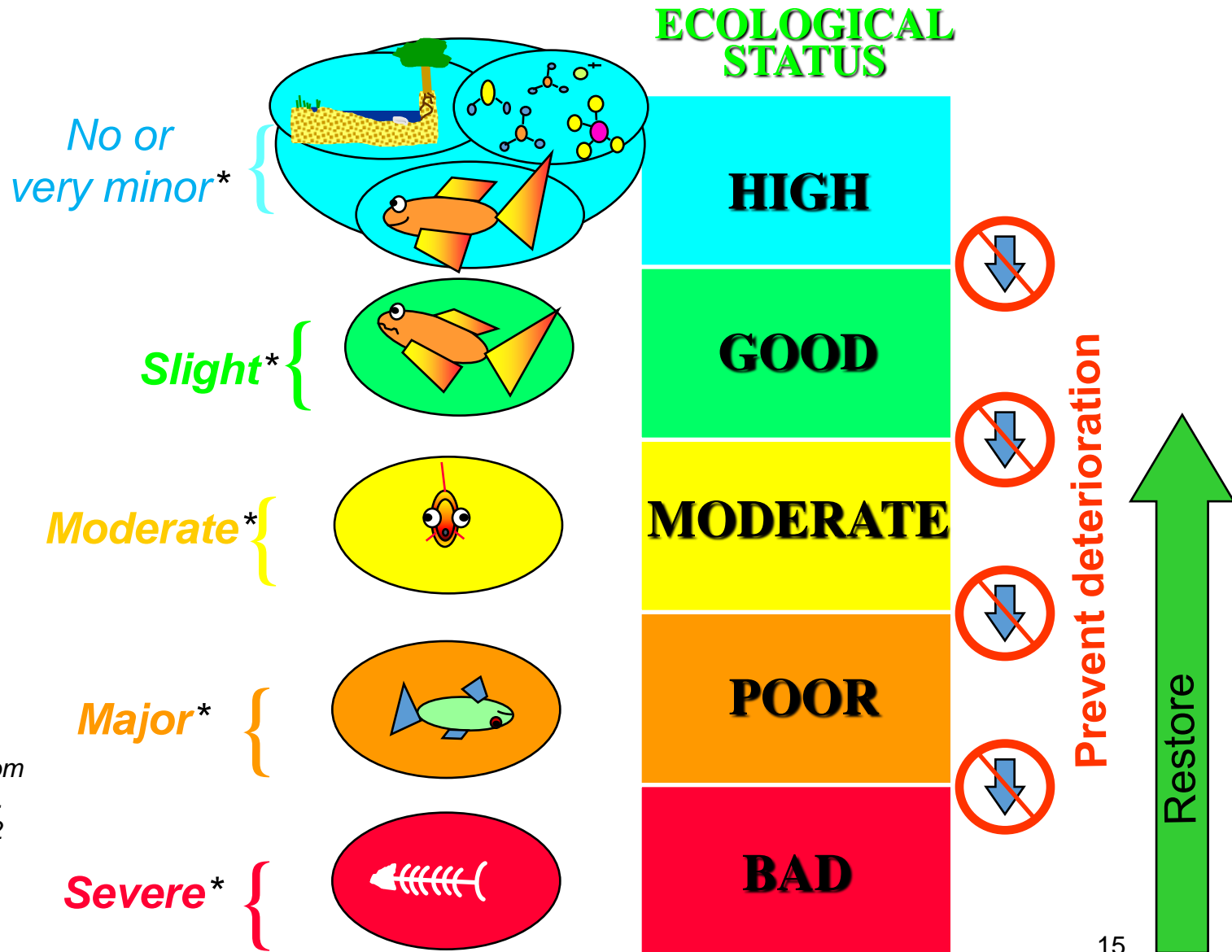
Specific Pollutants

- Under ecological status heading
- 'Pollution by' priority substances being discharged
- 'Pollution by' other substances discharged in significant quantities into water body
- Specific synthetic and specific non-synthetic pollutants
- No EU-wide list; rather substances are identified by Member States

Ecological Status Classes

- Classified according to status:
 - high (or maximum for GEP)
 - good (the default target)
 - moderate
 - poor
 - bad
- Overall water body status is derived using the one-out-all-out principle
- Supporting elements may be 'good' or 'moderate' where 'moderate' infers below good

Ecological Status Explained



* extent of deviation from undisturbed conditions.
 See WFD Annex V: 1.2

Environmental Quality Standards Directive

- Directive 2008/105/EC on environmental quality standards (EQS) in the field of water policy
- So-called 'priority substances daughter Directive'
- Replaces Dangerous Substances Directive
- Requires application of European EQS for identified priority substances and priority hazardous substances; also certain substances from Directives 86/280/EEC & 76/464/EEC
- Amended by Directive 2013/39/EU
- EQS applied primarily to water but biota and sediment EQS also possible
- List of substances under regular review and addition

Chemical Status

- Member States are required to take measures to:
 - Phase out discharges, emissions and losses of priority hazardous substances
 - Progressively reduce discharges, emissions and losses of priority substances
- Water bodies 'pass' (at good status) or 'fail' (not at good status)
- WFD very strict on chemical status objectives
- Inventories prepared by Member States
- Some recognised outstanding issues with 'legacy' substances including uPBTs (ubiquitous, 'persistent, bio-accumulative toxic' substances)

- WFD includes quantity and quality objectives:
 - prevent or limit the input of pollutants into groundwater
 - prevent deterioration of status
 - protect, enhance and restore
 - balance abstraction and recharge
- Also links to dependent surface waters and groundwater dependent terrestrial ecosystems
- Groundwater also covered by exemptions

Protected Areas

- WFD aims to achieve [relevant] protected area objectives i.e. where a site or feature is 'water-dependent'
- Bathing Waters Directive; Urban Waste Water Treatment Directive; Nitrates Directive; Birds and Habitats Directives
- Freshwater Fish Directive and Shellfish Waters Directive were integrated into WFD from 2013
- Where there is more than one objective, the 'most stringent' applies
- *For example, the Habitats Directive objective for a feature might be more ambitious than the WFD 'good' status threshold*
- Cannot use WFD to derogate from objectives of other protected area Directives

WFD and Nature Directives

FAQ paper

- Both WFD and Birds/Habitats Directive objectives apply to water-dependent Natura 2000 sites (i.e. sites where maintaining or improving water status is essential for habitat or species protection)
- Confirms that, if objectives differ, the most stringent applies
- Protection of a habitat/species which is uncharacteristic of the water body should not prevail over water body restoration unless such protection is important to the conservation status of the protected area
- Confirms that WFD cannot be used to justify a significant effect on conservation status

River Basin Management Plans

- Statutory plans
- Describe characteristics of River Basin and water bodies (the two WFD reporting units)
- Confirm current and expected future water body status (objectives)
- Explain whether designations (e.g. HMWB) and derogations (exemptions) have been applied
- Describe measures to achieve WFD objectives: programmes of measures; also mitigation measures to achieve GEP in HMWBs and AWBs

Questions ?

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Session 2

WFD and project compliance

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WFD and Projects

- Relevance of WFD exemptions to projects
- A word about 'maintenance' activities
- CIS Guidance Document 35
- JASPERS draft checklist tool

Overview of WFD Exemptions

- Article 4(3) = designations
- Articles 4(4) and 4(5) = extended deadlines and less stringent objectives
- Article 4(6) = retrospective exemption
- Article 4(7) = allows physical modifications, alterations to level of groundwater bodies, new sustainable development affecting high status water bodies
- Article 4(8) = other water bodies
- Article 4(9) = other EU Directives

Article 4(3)

- WFD recognises that certain human uses depend on the physical modification of water bodies
- Heavily modified water bodies (HMWB) and artificial water bodies (AWB) are a designation rather than an exemption
- Other exemptions may then apply, including Article 4(7)
- Cannot designate HMWB in response to a threat; only after the modification has taken place

Articles 4(4) and 4(5)

- If certain criteria are met and providing that no further deterioration occurs.....
- 4(4) allows Member States to extend deadlines for meeting WFD objectives
- 4(5) allows setting of less stringent targets
- Disproportionate cost, technical feasibility are amongst the determining criteria
- Need to demonstrate 'no environmentally better option' for 4(5)
- Article 4(4) widely used in RBMPs; 4(5) less so
- Article 4(4) may apply in some situations where a project leads to a temporary effect on status

Article 4(6)

- Temporary, retrospective exemption
- Applies to natural events or *force majeure*
- Must be exceptional or 'could not reasonably have been foreseen'
- Particularly prolonged droughts or extreme floods
- Also accidents which 'could not reasonably have been foreseen'
- Certain criteria must be met
- Not an alternative to 4(7)

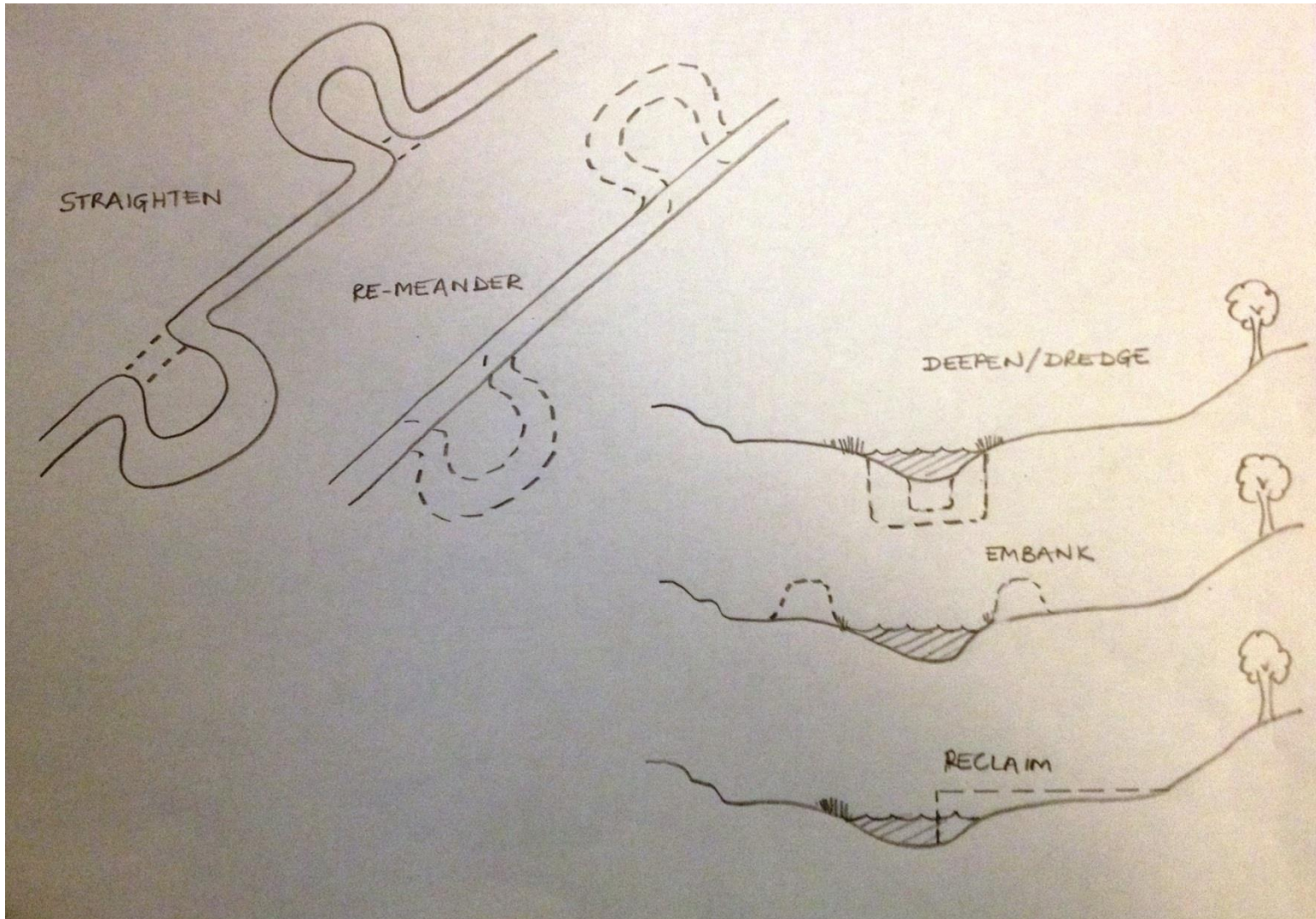
Article 4(7)

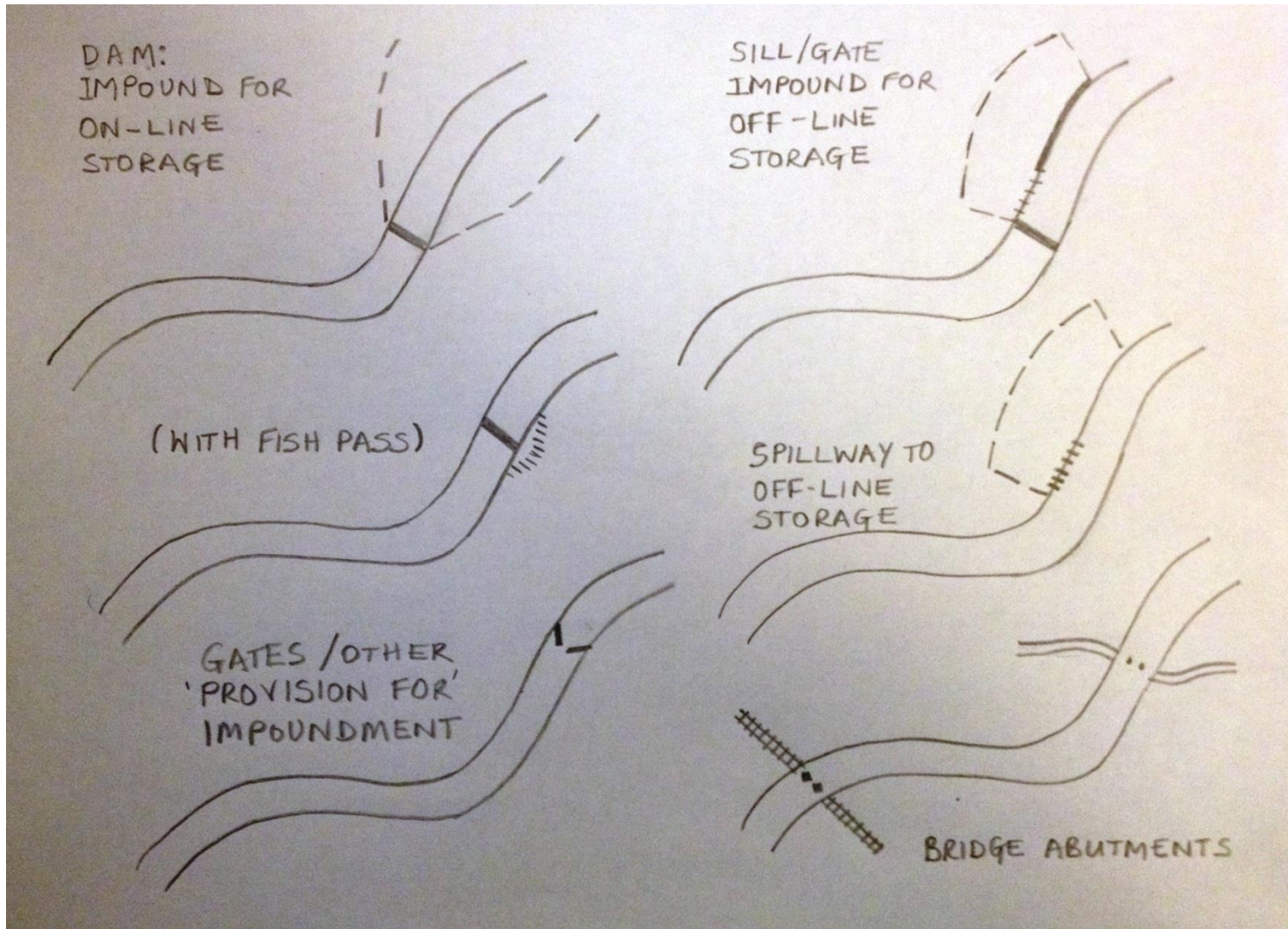
- Exemption is potentially applicable if a deterioration in ecological status or a failure to achieve the WFD ecological objectives is a direct or indirect consequence of:
 - a new modification to the physical characteristics of a surface water body or
 - an alteration to the level of a groundwater body
 - or if chemical status will be indirectly affected by such changes* or if
 - new sustainable human development activities cause deterioration from high to good status

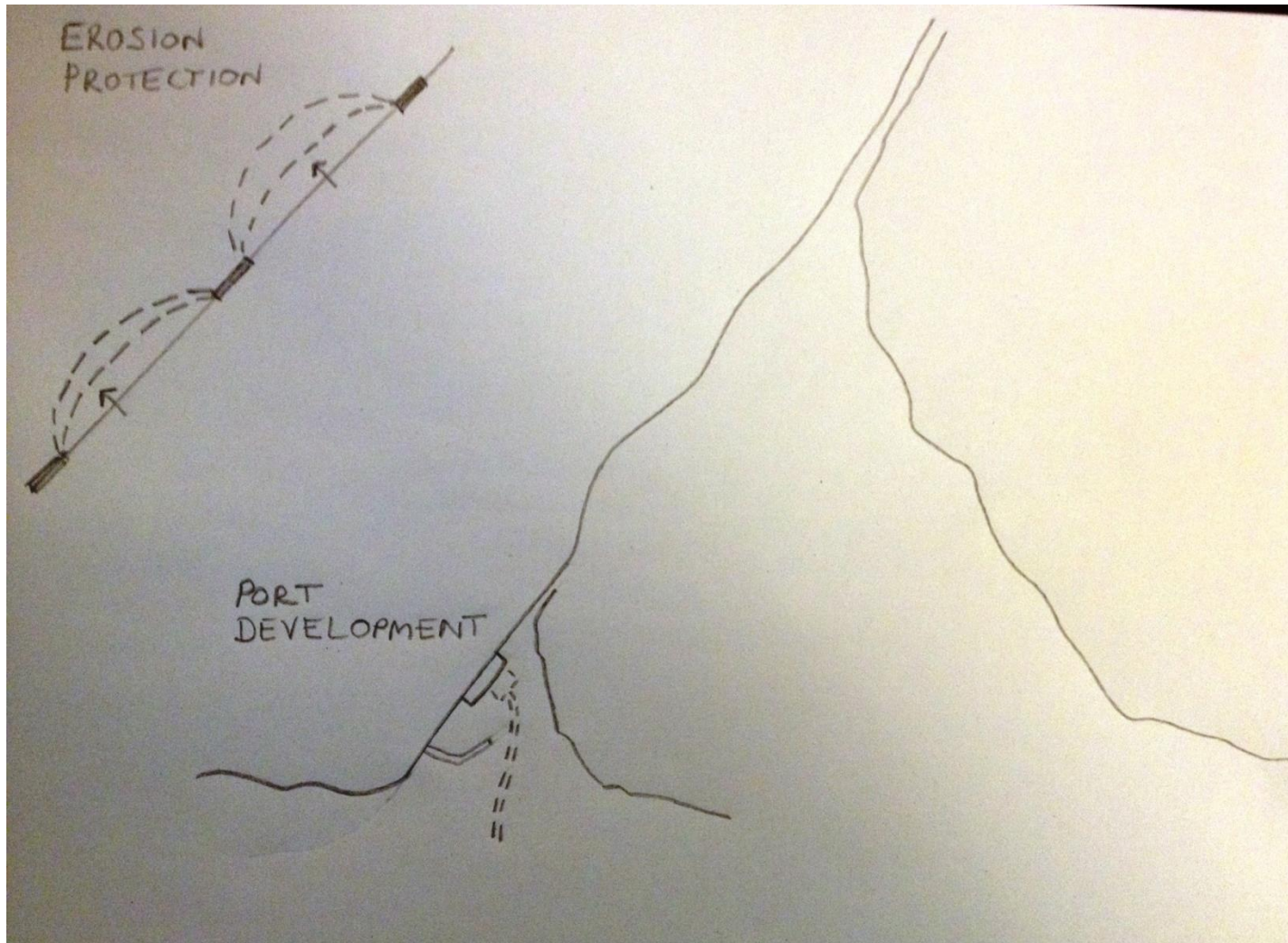
* *For example, if contaminated sediments are re-suspended by construction works for a physical modification or if pollutant concentrations are increased because of groundwater drawdown*

- Article 4(7) does not provide an exemption where new direct, point or diffuse source inputs of pollutants cause deterioration, other than in high status water bodies as long as status does not drop below good

Physical Modifications: Examples







Maintenance

- Regular ongoing maintenance activities can affect the achievement of WFD objectives
- The need for maintenance to support a use may have been considered in a HMWB designation; the GEP objective should take account of the maintenance upon which water body use depends

However

- If modification is proposed so as to reinstate conditions that existed many years ago, this may be considered 'maintenance' from an engineering point of view, but the ecological and chemical status of the water body may have recovered or stabilised in the meantime
- The current status of the water body is what is important
- *If the current status could be detrimentally affected, the proposed works should be assessed as a 'new' project irrespective of the engineering intention*
- The Article 4(7) tests may need to be applied
- Case-specific consideration is therefore important

Article 4(7) Criteria

Exemption can be granted if:

- All practicable steps are taken to mitigate possible effects on status
- Reasons for the physical modification, alteration to the level of groundwater or justification for the new sustainable development are set out in the RBMP
- There are reasons of overriding public interest or the project benefits outweigh the WFD benefits foregone (the balancing test)
- No technically feasible, not disproportionately costly and significantly environmentally better alternative exists
- *All criteria must be met*

Articles 4(8) and 4(9)

- WFD makes clear that exemptions, including Article 4(7), can only be used if provisions of Articles 4(8) and 4(9) are also met
- 4(8) requires that use of exemption 'does not permanently exclude or compromise' achievement of WFD objectives in other water bodies and is consistent with other EU Directives
- 4(9) requires that use of exemption 'guarantees at least same level of protection' as existing EC legislation

Questions ?

CIS Guidance Document 35

CIS Guidance Document 35

- Updates CIS Guidance Document 20 on environmental objectives, specifically dealing with Article 4(7)
- Submitted for Water Directors' endorsement in December 2018

Guidance (draft v5 Track Changes 15th November 2017) comprises:

- Introduction
- Integration of sector policies / policy coherence
- General considerations and scope of Article 4(7)
- Article 4(7) applicability assessment and streamlining with other Directives
- Article 4(7) tests and relationship to RBMPs
- Outlook and follow up

CIS 35 Scope of Article 4(7)

Table 2: Modifications according to Article 4(7), quality elements and possible effects

Modification / alteration / sustainable human development activity according to Article 4(7)	Surface water bodies			Groundwater bodies		
	Ecological status / potential			Chemical status	Quantitative status	Chemical status
	Biological quality elements	Supporting elements				
		Hydro-morphological quality elements	Chemical and physico-chemical quality elements			
1) Modification to the physical characteristics of a body of surface water	Possible direct and/or indirect effects	Possible direct and/or indirect effects	Possible direct and/or indirect effects	Possible indirect effects	Possible indirect effects	Possible indirect effects
2) Alterations to the level of bodies of groundwater	Possible indirect effects	Possible indirect effects	Possible indirect effects	Possible indirect effects	Possible direct effects	Possible indirect effects
3) New sustainable human development activities*	Possible direct and/or indirect effects	Possible direct and/or indirect effects	Possible direct and/or indirect effects	Not applicable (because no definition of high status)	Not applicable (because not addressed in this specific context)	

* Not further defined, potential effects could therefore be direct or indirect. Groundwater not addressed, only deterioration of surface waters from high to good, therefore not relevant for surface water chemical status since no definition for high chemical status for surface waters. Also not relevant for artificial or heavily modified water bodies and therefore the ecological potential since "new sustainable human development activities" only address deterioration of surface water bodies from high to good.

CIS 35 Examples of Effects on Status

- Example 1: deterioration of overall status (see next slide). Guidance also contains ...
- Example 2: deterioration at element level in a surface water body (even though the overall status of the water body does not change)
- Example 3: deterioration from high to good status in a surface water body
- Example 4: deterioration, in a surface water body, of a quality element already in the lowest status class
- Example 5: deterioration in overall status of a groundwater body
- Example 6: deterioration at element (or criterion) level in a groundwater body
- Example 7: further deterioration, in a groundwater body, of an element (criterion) already in the lowest status class

CIS 35 Example 1 Overall Status

Table 3: Example 1 - Deterioration of overall status

Example 1									
Starting point: Overall ecological status determined by quality element in worst condition (in this case moderate).									
Effect due to modification: Overall status may deteriorate due to deterioration of individual quality elements (in this example benthic invertebrate and fish fauna), therefore triggering an Article 4(7) Test. The example includes in this case a change in overall status of the water body from moderate to poor.									
Quality elements	Biological quality elements			Hydromorphological quality elements supporting the biological elements			Chem. and phys. chem. quality elements supporting the biological elements		Overall ecological status
	Aquatic flora	Benthic invertebrate fauna	Fish fauna	Hydrology	Morphology	Continuity	General conditions	River basin specific pollutants	
Starting point	2	2	3	worse than 2**	2*	worse than 2**	2*	2	3
Effect due to modification	2	3	4	worse than 2**	worse than 2**	worse than 2**	2*	2	4

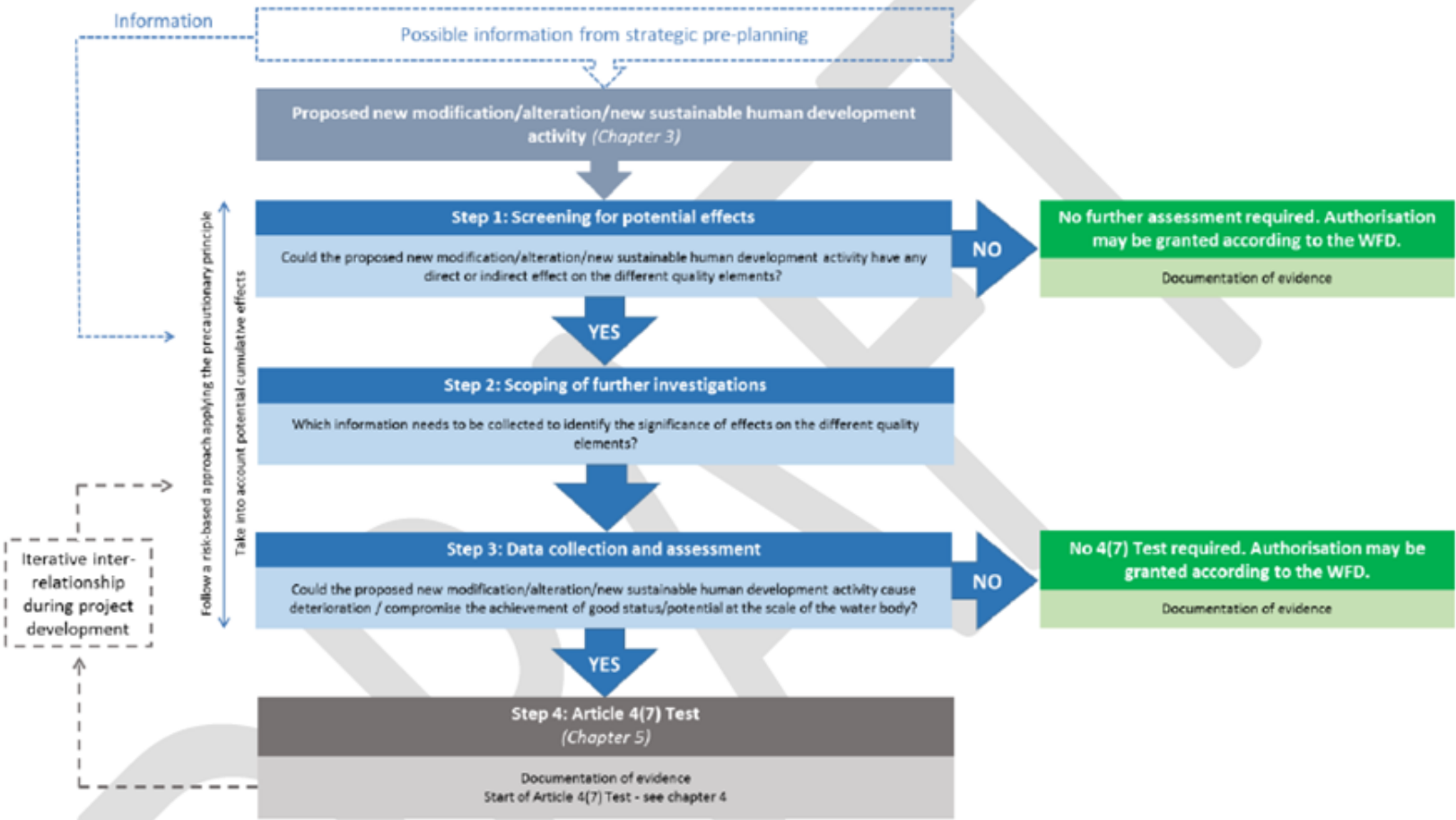
1: High; 2: Good; 3: Moderate; 4: Poor; 5: Bad

* Conditions consistent with the achievement of the values specified for good status

** Conditions not consistent with the achievement of the values specified for good status

CIS 35 Article 4(7) Applicability Assessment

Figure 4: Outline for a step-wise approach for an Article 4(7) Applicability Assessment



Note that for groundwater different criteria are applied to determine the status of the groundwater body (see chapter 3.4.2)

JASPERS Checklist Tool

JASPERS Draft Checklist Tool

Four main steps:

1. Context and screening: is there a causal mechanism for a direct or indirect effect on status at element level?
 2. Scoping: consider non-temporary effects, significance at water body level, alone or in-combination effects
 3. Data collection and investigations
 4. Application of Article 4(7) tests: mitigation measures, alternatives, overriding public interest, inclusion in RBMP; also Articles 4(8) and 4(9)
- Checklist tool being developed in parallel with CIS Guidance 35
 - Steps 1-3 equivalent to the 'Article 4(7) Applicability Assessment'
 - Final version of checklist will be consistent with published version of CIS Guidance 35

Draft Checklist Tool Contents

- Preamble: general principles
- Step one: context and screening
- Step two: scope
- Step three: data collection or investigations
- Step four: the Article 4(7) tests
- Tables 1a to 1e: cause-and-effect mechanisms (one each for rivers, lakes, coastal, transitional, groundwater)
- Tables 2a to 2e: scoping tables (as above)

Can be applied to any project i.e. any type of development, activity, infrastructure works or components of works' programme with the potential to affect status

Overarching Considerations

- Think about data needs early. Use existing data, including from: RBMP classification; WFD monitoring outcomes; protected area registers; other data sources
- Explore alternatives
- Level of detail of investigations to be proportionate to risk
- Deal with uncertainty (if uncertain effect on status at water body level, could effect be mitigated?)
- Seek 'proven and effective' mitigation measures (or use adaptive management solutions)
- Assess implications for protected areas
- Consider transboundary implications and collaborate if needed

Relationship between WFD, EIA and Habitats Directive Assessments

- In addition to demonstrating WFD-compliance, a project may also require assessment under the EIA Directive and/or the Habitats Directive
- A project may already have been included in a Strategic Environmental Assessment. SEA can provide useful context for a WFD assessment, especially on alternatives and in-combination effects
- At project-level, streamlining of EIA, Habitats Directive and WFD assessments is possible: it is vital to be aware that there are both
 - Efficiencies, synergies; streamlining opportunities, and
 - Subtle but important differences

EIA-WFD Efficiencies and Synergies

- Screening and scoping for the different assessments can be carried out in parallel
- Potential for economies of scale can be achieved especially with data collection e.g. common mobilisation costs [but see next slide]
- Public participation and consultation can be coordinated; this is especially important if the assessment is taking place within a WFD planning cycle
- Identifying mitigation measures
- Consideration of alternatives [but see next slide]

WFD and EIA Directives: Differences

- May be different parameters needed, or different levels of detail may be required during data collection if there are different 'thresholds' for significance
- EIA: significant impacts can be local or temporary
- WFD significance test: 'non-temporary' effect on status of one or more elements at the scale of the water body
- So, the same impact can be 'significant' under one Directive but not the other
- Other differences between EIA and WFD 4(7) tests include:
 - 'Compensation' concept in EIA, not as such in WFD
 - WFD 'alternatives' expected to be *significantly* environmentally better

WFD and Habitats Directives: Differences

- Also different parameters, or different levels of detail required during data collection if different 'significance' thresholds'
- Habitats Directive significance test: adverse effect on the integrity of the site concerned
- Again, the same impact can be 'significant' under one Directive but not the other
- Other differences between WFD 4(7) and Habitats Directive 6(4) include:
 - Habitats Directive = *Imperative* Reasons of Overriding Public Interest; WFD = Reasons of Overriding Public Interest
 - A clear requirement for compensatory measures in the Habitats Directive; but not in the WFD

Questions ?

Delivering Water Framework Directive-compliant projects

Session 3

Screening, scoping and data collection (Applicability Assessment)

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Ljubljana, 30 November 2017

Step One

Step One: Context and Screening (1)

1.1 Collate information on project including location, characteristics

- *Compliance with the WFD should be demonstrated for all projects that have the potential to affect water body status, irrespective of whether the Article 4(7) tests need to be applied*
- *An effect on status can be caused either when a modification, alteration or development results in element-level deterioration across a status class boundary at the scale of the water body, **or** when a modification or alteration compromises an improvement in status that is otherwise anticipated*
- *Transport, energy, or other types of project that could affect status should be assessed. WFD compliance is not only for projects involving a water management activity*

Step One: Context and Screening (2)

1.2 – 1.4 Identify potentially affected water bodies; record their size/scale; include any water-dependent EU protected areas

- *Information for 1.2 to 1.7 to be obtained from the River Basin Management Plan or the WFD competent authority*
- *All potentially affected water bodies should be included in the assessment to avoid issues with Article 4(8)*

1.5 For each water body, note its type and the main features. Identify any designations under WFD Article 4(3) i.e. heavily modified or artificial water bodies. Provide equivalent information for potentially affected protected areas

Step One: Context and Screening (3)

1.6 Record the current ecological and chemical status of each water body and each protected area

- *Pay particular attention to elements that are close to the status class boundary or are in the lowest status class*
- *Further measurable deterioration in an element that is already in the lowest status class can automatically trigger the application of the Article 4(7) tests*

1.7 For each water body, record future WFD status objectives and any derogations already applied (e.g. under Article 4(4) or 4(5)). Include similar information for relevant EU protected areas

Step Two: Scope the Assessment (2)

1.8 For each water body, list the measures already identified in the RBMP that will deliver improvements in ecological or chemical status

- *Refer to the RBMP programme of measures. Include any mitigation measures intended to achieve GEP in HMWBs or AWBs. Obtain equivalent information about protected areas from the relevant agency. This information is needed to inform decisions in Step Two*

1.9 For each water body, identify any other planned, proposed, or already under-construction projects, activities, etc. that could affect water body status

- *Projects can affect the WFD status of water bodies alone or in combination with other projects, activities or works. This information is needed to inform decisions in Step Two*

Step One: Context and Screening (4)

1.10 For each water body, identify possible mechanisms for a direct and indirect effect on status at element level

- *Taking into account the information collated, consider possible effects on the ecological or chemical status of each surface water body, or on the chemical or quantitative status of a groundwater body, or adverse impacts on a water-dependent EU protected area*
- *Direct vs. indirect effects: by way of an example, if a new dredge is proposed in a transitional water body, there is a mechanism for direct effects on depth and on the benthic invertebrates that are physically removed from the affected area. In addition, however, the deepening could indirectly affect flow characteristics, salinity and intertidal zone structure amongst other elements*
- *Step One is a broad filter, designed only to screen out projects where there is no mechanism for an effect on status, or to identify the WFD elements where a cause-and-effect mechanism exists*

Table 1a WFD compliance assessment cause-and-effect mechanisms (Rivers)

WFD elements	Is there a possible causal mechanism for a direct effect on...? Notes (a)(c)(d)(f) ⁶	Is there a possible causal mechanism for an indirect effect on...? Notes (a)-(f) ⁷
Hydromorphological supporting elements		
Hydrology: quantity and dynamics of flow		
Hydrology: connection to <u>groundwaters</u>		
River continuity		

Table 2b WFD compliance assessment scoping table (Lakes)

Under each heading, identify the element(s) that could potentially be affected by the project (from Table 1b)	✓ Will the effect be temporary ? <i>Yes / No / Uncertain</i> Note (i)	Is the effect on the element insignificant in the context of the <u>water body</u> ? <i>Yes / No / Uncertain</i> Notes (j) and (k)	Can it be concluded that there are no potential in-combination effects ? <i>Yes / No / Uncertain</i> Note (l)
Hydromorphological supporting elements			
Hydrology: quantity and dynamics of flow			
Hydrological regime: residence time			
Hydrology: connection to <u>groundwaters</u>			
Morphology: depth			
Morphology: quantity, structure, substrate of bed			
Morphology: structure of shore			

Step One: Example Outcomes

- It is clear that a new tidal barrage will cause direct and indirect deterioration in the status of several BQEs and hydromorphological supporting elements. *Project continues to Step Two*
- There is a lack of data and much uncertainty about the possible effects of a proposed new hydropower project. *Project continues to Step Two*
- The pillars for a new bridge will be constructed in the flood plain immediately to landward of the existing flood embankment. No mechanism for a direct or indirect effect on the ecological or chemical status of the water body is identified. The evidence to support this conclusion is recorded and the *project does NOT need to continue to Step Two*

Step Two

Step Two: Scope the Assessment (3)

2.1 Confirm which WFD elements require further consideration in each water body or protected area (i.e. elements where a potential cause-and-effect relationship has been identified)

2.2 Taking into account the information collated in 1.2 to 1.8, address the following questions:

- Will the effect be temporary?
- *The application of the Article 4(7) tests will not be needed if the status of an element will be affected only temporarily and will recover in a short period of time. The Article 4(7) tests will need to be applied if the effects will be permanent or persist over a long period*
- *Consider the relevance of monitoring frequencies*
- *Construction effects where recovery is expected either naturally or as a result of mitigation measures, with no long term consequence, should not trigger the Article 4(7) tests*

Step Two: Temporary Effect Examples

- Increased levels of suspended sediment concentrations generated during a week long dredging campaign will quickly revert to background concentrations when dredging is finished. *Conclusion: the effect on the transparency supporting element is temporary*
- A river is to be dredged and straightened to improve flood conveyance. *Conclusion: the effect on several BQEs and hydromorphological supporting elements is NOT temporary*
- Whilst the demolition of a breakwater will take only a few days, the release of sediment trapped in the lee of the structure could lead to the smothering of seagrass beds in the vicinity, with potential long term consequences. *Conclusion: the potential effect on the angiosperms BQE may NOT be temporary*
- Construction of a major road tunnel will involve the extensive drawdown of groundwater over a period of years. There is uncertainty over how long water level recovery will take. *It cannot be concluded that the effect on the level of the groundwater body is temporary. Further investigation is needed*

Step Two: Scope the Assessment (4)

- Will the effect be insignificant in the context of the water body?
- *The spatial characteristics of the water body and the distribution of elements within it are relevant to this question*
- *Just because an impact is 'significant' in EIA terms does not necessarily make it significant in WFD terms (and vice versa)*
- Can it be concluded that there will be no potential in-combination effects on status?
- *A modification or alteration - on its own - might not affect water body status. However two or more project components, or two different projects, might cause deterioration or compromise an expected improvement in status*
- *For projects in their scope, SEA or EIA outputs can inform decisions on in-combination effects*

Step Two: Examples of Insignificant or In-Combination Effects (1)

- A new flood embankment will lead to the direct loss of 0.8 ha of the 350 ha of saltmarsh in a 30 km² coastal water body. *Conclusion: the effect on the angiosperms BQE is insignificant at the scale of the water body (*but note this same loss is not necessarily also insignificant in Habitats Directive terms)*
- A new flood embankment will lead to the direct loss of 0.8 ha of the 1.5 ha saltmarsh in a 30 km² coastal water body. *Conclusion: the effect on the angiosperms BQE (deterioration) is NOT insignificant at the scale of the water body*
- The construction and dredging of 2km of new quay walls in a small transitional water body, will result in the loss of 30% of the remaining mudflat. *Conclusion: the potential deterioration of the benthic invertebrates BQE is NOT insignificant at the scale of the water body*

Step Two: Examples of Insignificant or In-Combination Effects (2)

- A new impounding structure is proposed on a river with an existing but redundant sluice. The RBMP contains a measure to remove this existing sluice, enabling the water body to reach good status. The new structure therefore has the potential to compromise this intended improvement. *In addition to possible deterioration, the new physical modification will affect status by compromising a planned improvement. This needs to be considered in Step Three*
- The construction of an off-line water storage area is unlikely, alone, to affect the status of aquatic flora at the scale of the water body. However, a new bridge is being constructed less than 2km upstream. *It cannot be concluded that there are no in-combination effects so further data collection is needed*

Table 1a WFD compliance assessment cause-and-effect mechanisms (Rivers)

WFD elements	Is there a possible causal mechanism for a direct effect on...? Notes (a)(c)(d)(f) ⁶	Is there a possible causal mechanism for an indirect effect on...? Notes (a)-(f) ⁷
Hydromorphological supporting elements		
Hydrology: quantity and dynamics of flow		
Hydrology: connection to <u>groundwaters</u>		
River continuity		

Table 2b WFD compliance assessment scoping table (Lakes)

Under each heading, identify the element(s) that could potentially be affected by the project (from Table 1b)	✓ Will the effect be temporary ? <i>Yes / No / Uncertain</i> Note (i)	Is the effect on the element insignificant in the context of the <u>water body</u> ? <i>Yes / No / Uncertain</i> Notes (j) and (k)	Can it be concluded that there are no potential in-combination effects ? <i>Yes / No / Uncertain</i> Note (l)
Hydromorphological supporting elements			
Hydrology: quantity and dynamics of flow			
Hydrological regime: residence time			
Hydrology: connection to <u>groundwaters</u>			
Morphology: depth			
Morphology: quantity, structure, substrate of bed			
Morphology: structure of shore			

Step Two: Outcomes (1)

Where an effect is temporary and/or insignificant in the context of the water body and there are no potential in-combination effects on status, no further assessment is needed for that element.

- *The evidence used to support this conclusion should be documented*

OR ...

Step Two: Outcomes (2)

2.3 Where an effect on an element is not temporary and/or it is significant in the context of the water body and/or there are potential in-combination effects, or where there is uncertainty, the scope of further work on each element should be determined

- *The level of detail of data collection or investigation should be proportionate to the risk*

2.4 Agree the overall scope of further work with the WFD competent authority. *Project continues to Step Three*

- *In some cases a WFD assessment may be required even though the project is below the threshold triggering an EIA*
- *Other ongoing assessments (e.g. for EIA, Habitats Directive) can help inform WFD decisions on protected area implications*

Step Three

Step Three: Data Collection (1)

3.1 Undertake data collection/investigations and review outcomes:

- Could the project have a non-temporary effect on the status of one or more of the WFD elements at the scale of the water body?
- Is the project expected to have an adverse effect on the water-dependent features of relevant EU protected area objectives?
- Are significant in-combination effects on status possible?

If the answer to all of these questions is 'no' record the supporting evidence. No further WFD assessment of the project is needed and the Article 4(7) tests do not need to be applied

- *The WFD 'significance tests' are different from those for EIA or Habitats Directive assessments. Local or temporary effects may be significant in EIA but not in WFD; an effect on WFD status is often not the same as Habitats Directive adverse effect on integrity*
- *Data collected as part of another assessment must be 'fit-for-purpose' in WFD terms*

Step Three: Data Collection (2)

3.2 Where effects on status are expected, including in-combination effects, consider whether mitigation measures are available. Provide evidence to show how these measures will be integrated into project

- *The WFD does not differentiate between mitigation and compensation: offsetting measures in another water body could be used, as long as the outcome is to mitigate the effect in the water body to which the Article 4(7) tests might be applied*
- *Not all mitigation measures will be hydromorphological in nature. Management or operational procedures might avoid deterioration*
- *Applying the mitigation hierarchy is recommended: i.e. preferable to avoid / minimise effect on site than offset / compensate off-site*
- *Adaptive management concept (implementing mitigation measures in response to monitoring outcomes) can help deal with uncertainty*

Step Three: Mitigation Examples

- Adaptive management example (1): a newly developed seed product is to be trialled. The establishment of vegetation will be monitored. *If the new method is not performing satisfactorily, proven seedling planting techniques will be used to ensure deterioration is avoided*
- Adaptive management example (2): ecologically sensitive resources exist within 2 km of a capital dredging project. Modelling investigations indicate it is unlikely these will be affected by the plume, but real time techniques will be used to monitor suspended sediment levels. *If an agreed threshold is exceeded, dredging will temporarily be stopped. If the threshold is exceeded too frequently, a change to a less productive dredging method that generates less suspended sediment will be required*
- Offsetting example: even with screening in place, a new intake will have a small residual adverse effect on fish mortality. An opportunity exists to enhance nursery habitat for this species in an upstream water body. *The offsetting mitigation measure will deliver an overall increase in fish populations in the affected water body even though some individuals may still be entrained*

Step Three: Outcomes (1)

3.3 With mitigation measures in place can it be concluded with sufficient certainty that the project will not cause deterioration or compromise the achievement of good status? Document the evidence used to support this decision

- *The WFD competent authority should be involved in this decision*

Step Three: Outcomes (2)

3.4 Is the project eligible for an exemption under Article 4(7)?

If the Article 4(7) tests need to be applied, *project continues to Step Four*

- *Article 4(7) can only be used if the effect on status is the result of a new physical modification or a new alteration to the level of the groundwater body, or if a new sustainable human development activity will result in deterioration from high to good status*
- *Article 4(7) cannot be used to exempt deterioration due to a new (direct) point source or diffuse input that drives the water body to a status below good*

Questions ?

Delivering Water Framework Directive-compliant projects

Session 4

Applying the Article 4(7) tests

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Ljubljana, 30 November 2017

Step Four

Step Four: Article 4(7) Tests

1. All practicable steps are taken to mitigate possible effects on status
2. Reasons for the physical modification are set out in the RBMP
3. There are reasons of overriding public interest or the project benefits outweigh the WFD benefits foregone (the balancing test)
4. No technically feasible, not disproportionately costly, significantly environmentally better alternative exists
 - All criteria must be met
 - Projects not meeting these criteria may not be authorised

4.1 Is it necessary and/or relevant to apply the Article 4(7) tests?

- *If there is uncertainty about the significance of an effect, the Article 4(7) tests should be applied*

Step Four: Mitigation

4.2 Identify any additional practicable steps to mitigate expected effects on status

- *Practicable suggests technically feasible, not disproportionately costly and compatible with the modification, alteration or use*

Return to 3.2 or *continue to 4.3*

Step Four: Alternatives

4.3 Could the objectives be achieved by a technically viable and not disproportionately costly alternative means, representing a significantly better environmental option?

- *Consider strategic as well as project or project component level alternatives; alternative locations, designs, methodologies, processes ...*
- *Reference can be made to SEA or the outcomes of an ongoing EIA, but remember the WFD requires identification of a significantly better environmental option*
- *Disproportionality is a judgement informed by economic information but with political, technical and social dimensions*

Return to 1.6 or *continue to 4.4*

Step Four: Public Interest or Weighing of Benefits (the Balancing Test)

4.4 Are there reasons of overriding public interest why the modification, alteration or use should go ahead, or do the benefits of the project (to human health, safety or sustainable development) outweigh the benefits of achieving the WFD objectives?

- *Evidence needs to be presented; this is not just a statement*
- *Assessment to be as simple as possible but as detailed and comprehensive as necessary*
- *Qualitative, quantitative and monetised information can all be used*
- *Need for clarity on the residual effects on WFD status triggering the Article 4(7) tests*
- *Balancing test is especially useful where most effects are mitigated but a relatively minor residual effect is a potential showstopper*

Step Four: Project in RBMP

4.5 Are the reasons for the modification, alteration or development explained in the RBMP?

- *If the project is proposed within a WFD planning cycle (i.e. is not included in the RBMP) the public must be given an opportunity to comment at least equivalent to that provided for comments on the RBMP*
- *Public consultation on SEA or EIA might be relevant*

Step Four: Article 4(7) Examples (1)

- A new flood defence scheme will affect morphology (the depth and substrate supporting elements) and hydrology (the flow supporting element) over 10 km in a 30 km river water body, with permanent consequences for aquatic flora and fauna. The Article 4(7) tests therefore need to be applied. It is confirmed there are no additional mitigation measures, and no significantly environmentally better alternative exists. An extended cost benefit analysis supports the argument that improved flood protection to the safety of a city of 45,000 people represents an overriding public interest. *Conclusion: the Article 4(7) tests are applied and are met*

Step Four: Article 4(7) Examples (2)

- A port fairway is to be deepened from 11.0m to 12.5m over 6 km in a 70 km² coastal water body. Effects on the transparency supporting element are shown to be temporary; the effects on hydrology and morphology are insignificant in the context of the water body. In Step Three, data collection on sediment quality and a study of the possible implications for a European protected area both confirm no effect on status. All the identified effects are thus local or temporary. *Conclusion: the project can be authorised; the Article 4(7) tests do not need to be applied*

Step Four: Article 4(7) Examples (3)

- An extensive programme of measures including ecological enhancement works will mitigate the effects on WFD status of a major coastal erosion control project. However, the implementation of the full programme of works will take several years and there is uncertainty about ecological recovery timescales. This uncertainty triggers application of the Article 4(7) tests. No additional mitigation measures or significantly environmentally better alternatives are identified, and the balancing test demonstrates that the benefits of the coast protection clearly outweigh the possible delay in the return to WFD good ecological status. *Conclusion: the Article 4(7) tests are applied and are met*

Step Four: Article 4(7) Examples (4)

- Steps One to Three confirm that construction of a road tunnel will both affect the level of the groundwater body (through drawdown) and impact on a groundwater-dependent terrestrial ecosystem (via changes in mineral content due to flow / changes in residency times). In addition, some realignment of a river water body is required at the tunnel entrance, with residual effects on hydrology, morphology and several BQEs. *Conclusion: even though this is not a 'water' project, the Article 4(7) tests need to be applied*

Step Four: Article 4(7) Examples (5)

- A new waste water treatment works (WWTW) involves a direct, point source discharge into a high status surface water body. The Step Three data collection shows that, with an appropriate level of treatment, the water body will deteriorate to good status but not below. Article 4(7) can be used. All practicable mitigation measures are in place, there is no significantly environmentally better option, and the benefits to human health outweigh the deterioration to good status. *Conclusion: the Article 4(7) tests are applied and are met*
- A new WWTW involving a direct, point source discharge into a moderate status surface water body will cause a deterioration to poor status. *Conclusion: the deterioration in status is not the result of a new physical modification or an alteration to the level of groundwater, and the water body will deteriorate to below good status. The Article 4(7) exemption cannot therefore be used*

Step Four: Article 4(7) Examples (6)

- A new WWTW will involve a direct, point source discharge into a large coastal water body currently at good status. The Step Three data collection shows that the proposed level of treatment and the scale of the water body combine to mean no change in WFD status is expected in the water body. *Conclusion: the project can be authorised; Article 4(7) is not relevant*
- A new WWTW is proposed in a water body that is currently at poor status because of the discharge from an existing WWTW nearby. Once the new WWTW is constructed, this old works will be decommissioned. Notwithstanding that the new facility will treat effluent from a larger number of households, the intended level of treatment is such that there will be an overall improvement in status. The physical modification required for the new outfall structure is insignificant in the context of the 12km long water body and the new works will not affect the status of the water body in any other way. *Conclusion: the project can be authorised; Article 4(7) is not relevant*

Step Four: Article 4(7) Examples (7)

- A new WWTW will involve a direct, point source discharge into a watercourse that is typically dry during the summer months. The assessment identifies several potential effects on status, related to hydrology (introduction of year-round flow); ecology (species that are adapted to or depend on a dry environment for part of the year); and the introduction of contaminants affecting the WFD physico-chemical supporting element and possibly also chemical status. *Conclusion: it is unlikely that the Article 4(7) exemption can be used. Advice should be sought from the WFD competent authority*

Step Four: Articles 4(8) and 4(9)

Even if the Article 4(7) tests are met, Articles 4(8) and 4(9) of the WFD indicate that the Article 4(7) exemption can only be used if its application:

- does not permanently exclude or compromise the achievement of WFD objectives in other water bodies in the same river basin district, and
- is consistent with the implementation of other European Community legislation, and
- guarantees at least the same level of protection as other existing European Community legislation

4.6. Confirm that this is the case (and provide supporting evidence) and/or describe any issues raised by this requirement

Questions ?