
Lincolnshire Riparian Project

Risk Management Authority Study Results

Lincolnshire Riparian Working Group

Final Version

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Forward

The Lincolnshire Riparian Working Group would like to extend its sincere gratitude to all those that have participated within this important piece of work. Particular thanks are extended to the Flood Risk Team at Lincolnshire County Council, which provided a much-needed critical analysis of the questionnaires methodology and design.

The Lincolnshire Riparian Working Group consists of a range of organisations across Lincolnshire and includes:

- Anglian Water;
- East Lindsey District Council;
- Environment Agency;
- Lincolnshire County Council;
- Lincolnshire Rivers Trust;
- Lincolnshire Wildlife Trust;
- National Farmers Union;
- North Kesteven District Council
- Shire Group of Internal Drainage Boards;
- South Kesteven District Council;
- West Lindsey District Council;
- Water Management Consortium.

The group is striving to enhance the realisation of riparian responsibilities within Lincolnshire to minimise the risk of both current and future flooding, whilst also ensuring that the aesthetic, environmental and socio-economic benefits of well-maintained watercourses are realised. This study will provide a foundation from which further works can be developed.

Any questions or queries about the results of the study should be directed to the below email address:

FloodRisk@lincolnshire.gov.uk

Executive Summary

Lincolnshire County Council has commenced a project to explore how it can best work with its partners and with landowners to increase awareness of riparian assets and watercourses, promote understanding of landowners' responsibilities in respect of these assets and watercourses, and encourage a more coordinated approach to reducing the risk of flooding from riparian assets and watercourses.

To achieve this ambition the County Council has developed various work streams, with one such stream being the development of a comprehensive awareness raising campaign led by the Lincolnshire Riparian Working Group. To support the development of the awareness raising campaign a quasi-national Risk Management Authority (RMA) study was undertaken which sought to:

- Identify and appraise existing UK riparian content (e.g. leaflets, which explain to riparian landowners what their responsibilities are) and organisational approaches;
- Identify the barriers RMAs are facing in terms of encouraging riparian landowners to undertake their responsibilities;
- Identify the solutions developed by RMAs to overcome these barriers;
- Identify the topics covered by RMAs content;
- Identify the evaluation criteria and techniques utilised by RMAs.

This document seeks to summarise the results of the study. The key findings are as follows:

- One-hundred and fourteen pieces of organisational content was appraised via framework analysis.
 - A majority of the content was deemed to be average (50.88%), i.e. they demonstrated an equal amount of best and worst practice principles as identified by a prior review of both academic and practitioner literature.
 - On a more positive note, circa thirty percent (29.82%) of content was deemed to be above average, i.e. they demonstrated more best than worst practice principles.
- In addition to the content review, the approaches utilised by twenty-three organisations was appraised via framework analysis.
 - Seven organisations were given the rating of 'Not Applicable' as their approaches could not be analysed due to them answering 'No' to question 2 of the survey (Appendix A).

- A majority of approaches undertaken by RMAs was deemed to be below average (n = 11), i.e. they demonstrated more worst than best practice principles; however, care should be taken when utilising the results, as many questions within the surveys were unanswered thereby preventing complete analysis of an organisations approach (partially a result of questionnaire design).
- Six key themes were identified by coding and categorising of organisational content and questionnaire responses: Barriers to the Realisation of Riparian Responsibilities; Consequences of Riparian Actions; Evaluation Criteria; Guidance, Maintenance & Support; Solutions to Barriers; Watercourses, Structures & the Law.

It is recommended that

- The results of the study are shared with participating RMAs;
- Consideration be given to distributing the results more widely;
- The Lincolnshire Riparian Working Group consider utilising the results of the study to inform any proposed actions;
- Consideration be given to undertaking further studies to gain a more holistic understanding of the factors influencing the undertaking of riparian responsibilities.

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1.0 – Introduction

Throughout Lincolnshire, there are extensive amounts of watercourses and flood risk and water management assets. As well as public Risk Management Authorities (RMAs), numerous individual private landowners have responsibilities to maintain assets and watercourses, which are within or abut their property. Such private landowners are termed riparian landowners.

The understanding and undertaking or lack thereof of riparian responsibilities, although not sine qua non, plays a contributory factor in creating and augmenting an areas flood risk profile. Indeed, during the extended period of flooding incidents from June to November 2019 numerous properties, highways, public and private assets were inundated due to overcharged private riparian systems.

Consequently, Lincolnshire County Council commenced a project to explore how it can best work with its partners and with landowners to increase awareness of riparian assets and watercourses, promote understanding of landowners' responsibilities in respect of these assets and watercourses, and encourage a more coordinated approach to reducing the risk of flooding from riparian assets and watercourses.

To achieve this ambition the County Council has developed various work streams, with one such stream being the development of a comprehensive awareness raising campaign led by the Lincolnshire Riparian Working Group. To support the development of the awareness raising campaign a quasi-national RMA study was undertaken which sought to:

- Identify and appraise existing UK riparian content (e.g. leaflets, which explain to riparian landowners what their responsibilities are) and organisational approaches;
- Identify the barriers RMAs are facing in terms of encouraging riparian landowners to undertake their responsibilities;
- Identify the solutions developed by RMAs to overcome these barriers;
- Identify the topics covered by RMAs content;
- Identify the evaluation criteria and techniques utilised by RMAs.

This document seeks to summarise the findings of the study and is structured as follows:

- Section 2 highlights the study's methodology;
- Section 3 presents the results of the study;
- Section 4 concludes the document and proposes various recommendations.

2.0 – Methodology

Data were obtained via a review of published material and an email-based questionnaire.

2.1 – Published Material

Published material were identified (Figure 1) by interrogating the organisational websites of seventy-two different organisations, alongside various internet search engines utilising continually refined search terms to maximise search exhaustiveness. Further sources were identified via an email-based questionnaire. Search engines were interrogated until further searching was deemed unnecessary.

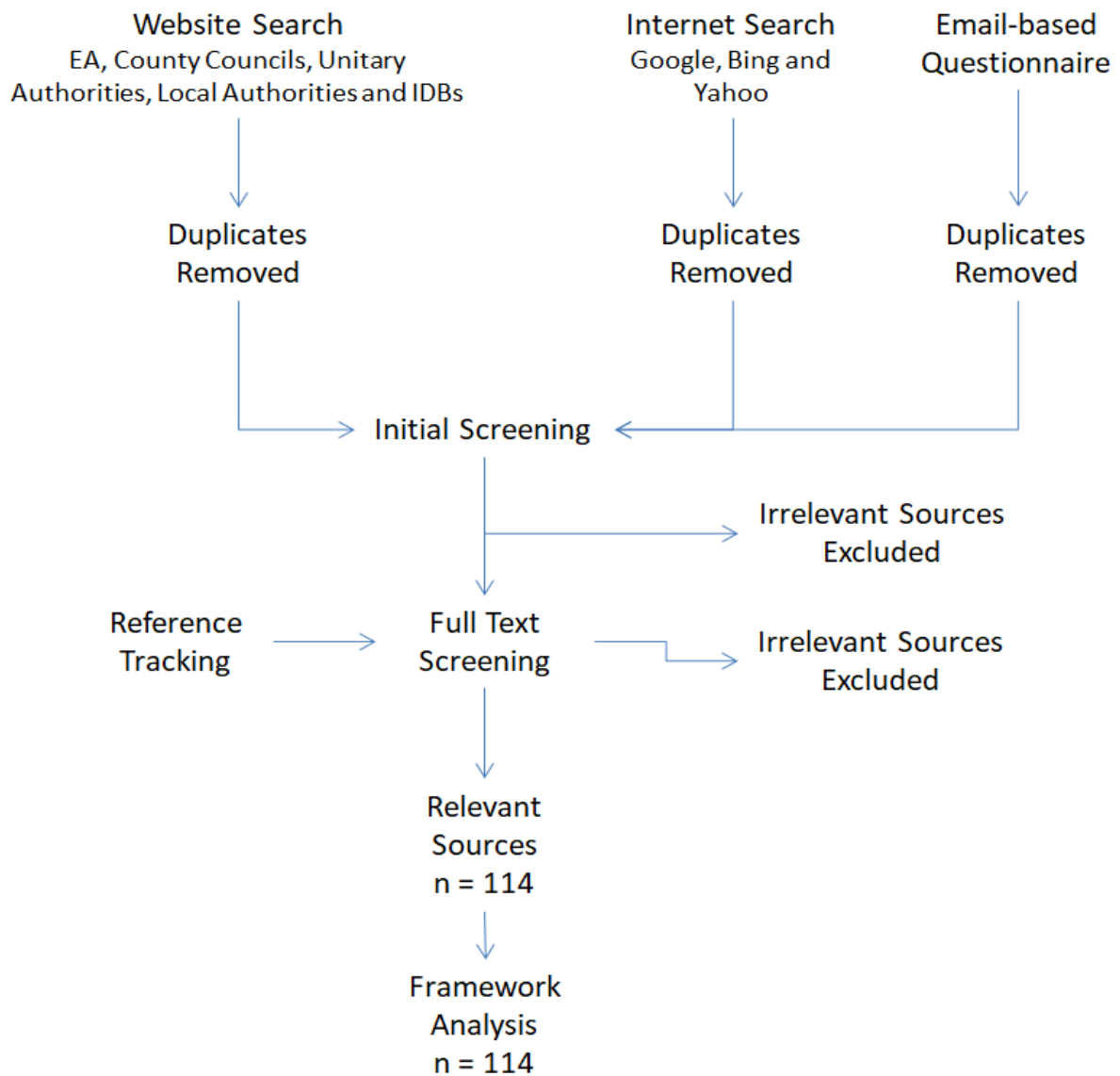


Figure 1 Published material data collection process

2.2 – Questionnaire Design

A mix of multiple-choice single answer and multi-line free text questions were developed to gain greater insight into the existing works undertaken by various RMAs. Email was employed to disseminate the questions due to its practicality, and financial benefits.

Question design followed various guidelines to minimise the likelihood of them being onerous to complete. The process used to design the questionnaire is shown in Figure 2.

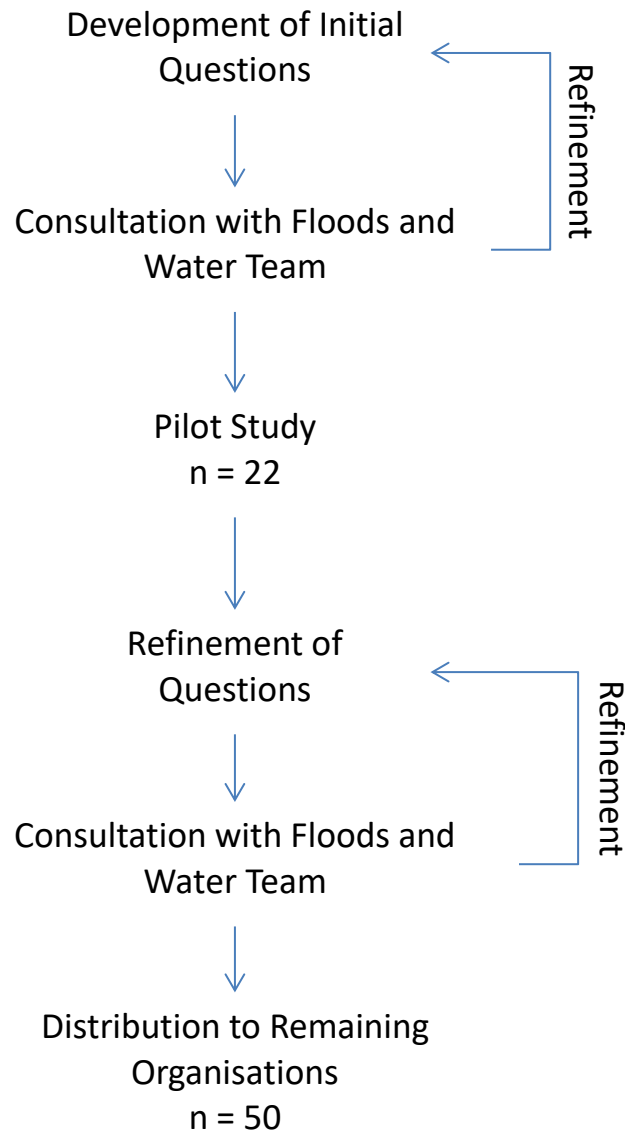


Figure 2 Question development process

The email-based questionnaire contained eighteen questions (Appendix A).

2.3 – Questionnaire Delivery

Questionnaire delivery was conducted in two stages. Initially a pilot study was sent to 22 of the identified organisations on the 14th July 2020. The purpose of the pilot survey was to identify and address flaws within the questionnaire. Deadline for participation was the 28th August 2020, with reminders sent on the 29th August 2020.

Following this the remaining organisations were pre-notified of the study by email (between the 29th September 2020 and 23rd October 2020), which outlined the researches aims, data security, usage and confidentiality measures and requested their participation. Pre-notification emails were resent on the 19th October 2020. Participation was measured by acknowledgement of the pre-notification email and agreement to participate within the study. Non-response was recorded if no acknowledgement and agreement was provided. The questionnaire was delivered on the 19th October 2020, only to organisations who provided consent and was open until 20th November 2020. Reminders were distributed on the 05th November 2020 and 16th November 2020.

2.4 – Data Analysis

Data were analysed using the following methods: framework analysis and coding and categorising.

Firstly, using a previously undertaken literature review as a guide, a framework analysis of published material and questionnaire responses was undertaken to identify examples of best practice. The evaluation criteria utilised in this analysis is depicted in Table 1 and 2.

Published material which solely demonstrated the principles of best practice were defined as examples of best practice. Material which demonstrated more principles of best practice than worst practice were defined as examples of above average practice. Material which demonstrated equal amounts of best and worst practice principles were defined as average examples. Below average examples were defined as those which demonstrated more worst practice than best practice principles, and finally, worst practice materials, were defined as those which solely demonstrated the principles of worst practice.

The above approach was also adopted for questionnaire responses.

Table 1 Evaluation criteria of the framework analysis (published material)

| Principle No. | Best Practice Principles | Worst Practice Principles |
|----------------------|--|--|
| 9 | Material used one standardised slogan, style and/or logo | Material did not use one standardised slogan, style and/or logo |
| 10 | Published material had regard to factors influencing behaviour change | Published material did not have regard to factors influencing behaviour change |
| 11 | Comprehensive coordinated interventions addressing individual, societal and environmental barriers to behaviour change | Intervention techniques addressed one barrier to behaviour change only |
| 12 | Messages defined actionable and achievable calls to action | No calls to action were given |
| 13 | Messages were accurate, concise and unambiguous | Messages were inaccurate, lengthy and ambiguous |
| 14 | Messages adopted positive rather than negative tones | Messages adopted negative rather than positive tones |
| 15 | Messages were consistent | Messages were inconsistent |
| 16 | Messages balanced simplicity and nuance | Messages did not balance simplicity and nuance |
| 17 | Messages sponsored dialogue | Messages did not sponsor dialogue |
| 18 | Messages were clearly structured | Messages were not clearly structured |
| 19 | Arguments were persuasive | Arguments were not persuasive |
| 21 | Interventions utilised visuals | Interventions did not utilise visuals |
| 22 | Intervention material was interesting | Intervention material was not interesting |

Table 2 Evaluation criteria of the framework analysis (questionnaire responses)

| Principle No. | Best Practice Principles | Worst Practice Principles |
|----------------------|--|--|
| 1 | The approach had a clear roadmap based on theory and good practice | The approach did not have a clear roadmap based on theory and good practice |
| 2 | The approach had clear aims and objectives | The approach did not have clear aims and objectives |
| 3 | Organisations understood the behaviours it wanted to change | Organisations did not understand the behaviours it wanted to change |
| 4 | Developed content was evaluated | Developed content was not evaluated |
| 5 | Material was designed to address the factors which influence the target audiences behaviour | Material was not designed to address the factors which influence the target audiences behaviour |
| 6 | Material was tailored to each target audience | Material was not tailored to each target audience |
| 7 | Target audience was involved in the design and dissemination of the behaviour change interventions | Target audience was not involved in the design and dissemination of the behaviour change interventions |
| 8 | Pilot studies were utilised | Pilot studies were not utilised |
| 20 | Messages were periodically reinforced | Messages were not periodically reinforced |
| 23 | Interventions were continually modified in response to evaluation feedback | Interventions were not modified in response to evaluation feedback |

Secondly coding and categorising was utilised as a means of developing a framework of understanding about experienced barriers, proposed solutions, evaluation criteria and techniques utilised and the content covered by the published material. Prior to analysis, data were reviewed several times to gain familiarity with the text.

Open line-by-line coding was then employed to identify relevant units, which were then condensed into codes. Codes were placed into a master codebook and tagged to ensure

links were maintained with the data of origin. Following initial coding, a cyclical process of categorising and conceptualising occurred whereby codes, categories and themes were developed, amalgamated and removed. This process continued until all codes had been satisfactorily analysed.

3.0 – Results

3.1 – Data

3.1.1 – Published Material

One-hundred and fourteen examples of existing UK riparian work were identified and analysed (Figure 1). The majority (70.18%) of examples were published by County Councils (Figure 3), with the most utilised technique being webpages (52.63%) (Figure 4). Twenty-seven of the reviewed organisations did not have any published material. Questioner responses identified twenty sources that the organisational and website analysis did not identify.

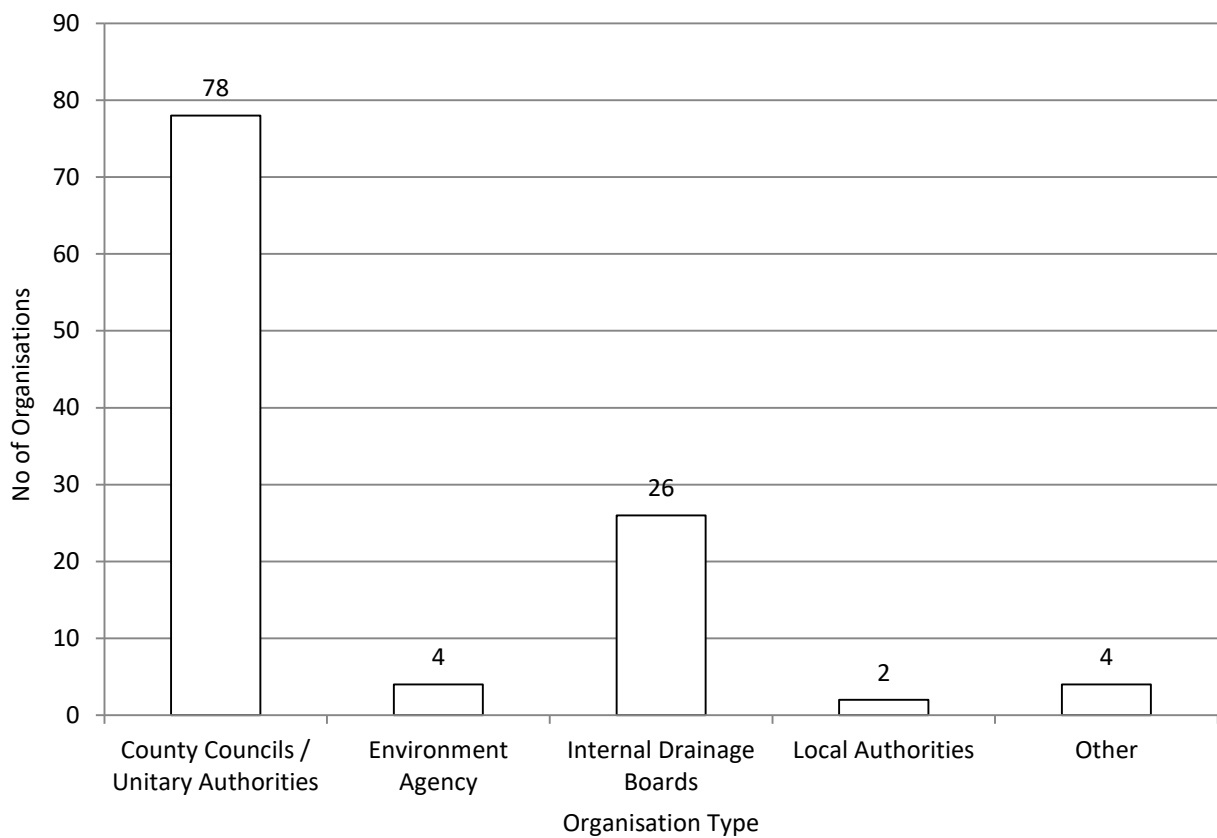


Figure 3 Breakdown of organisations which published material. The other category includes Government departments, joint initiatives and unions

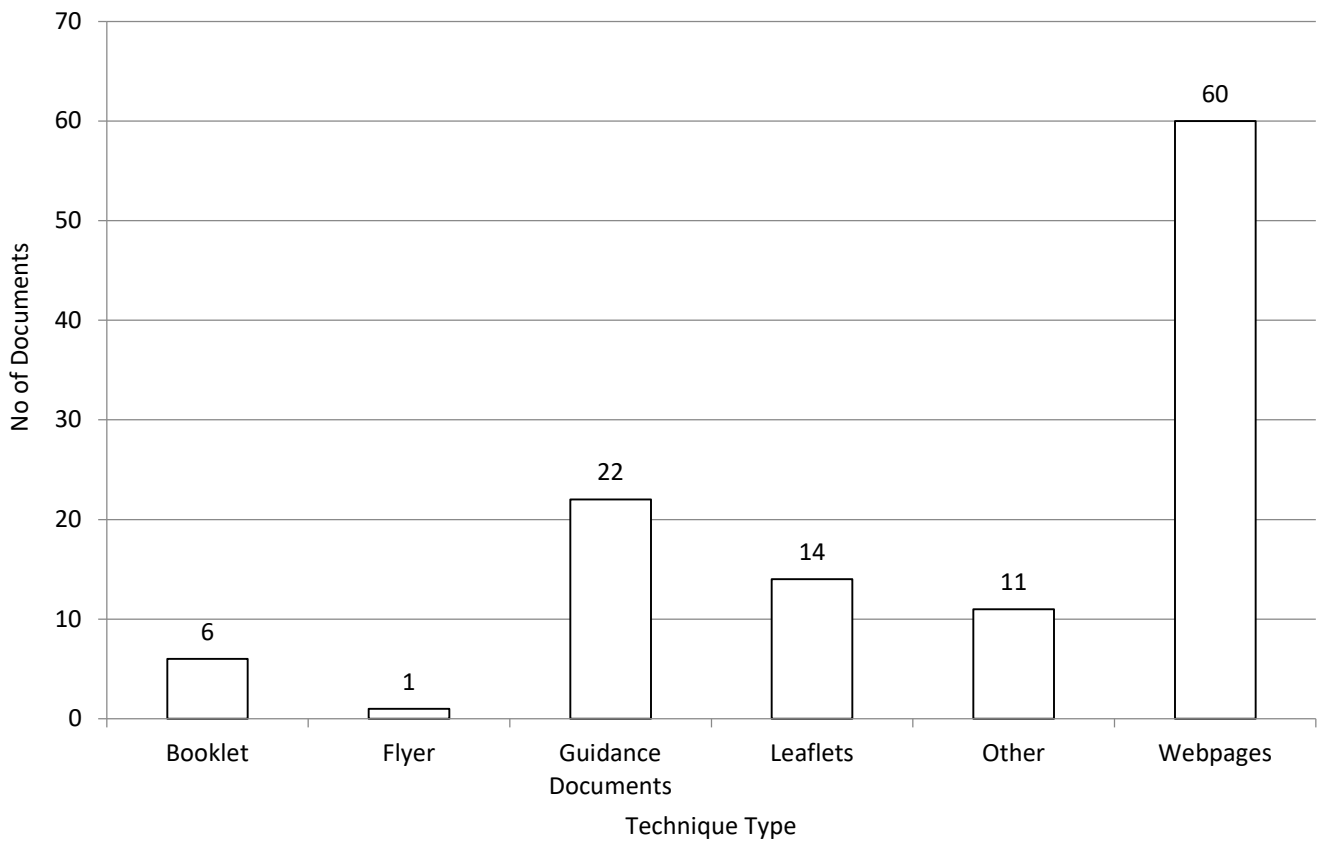


Figure 4 Breakdown of techniques utilised. The other category includes research documents, videos, and content which simply linked to other sources

3.1.2 – Email Questionnaire

In total, 72 organisations were sent participation requests. Eighteen of the twenty-two pilot study organisations agreed to participate within the study (81.00% response rate). A total of nine responses were received from the pilot study (50.00% response rate). For the main questionnaire twenty out of fifty responses were received (40.00% response rate), with nineteen providing consent to participate, and one declining participation. A total of fourteen completed surveys were received (73.68% response rate).

Responses were received from a range of organisations (Figure 5). The majority of responses were received from County Councils (60.87%), followed by IDBs (30.43%), and Local Authorities (8.70%).

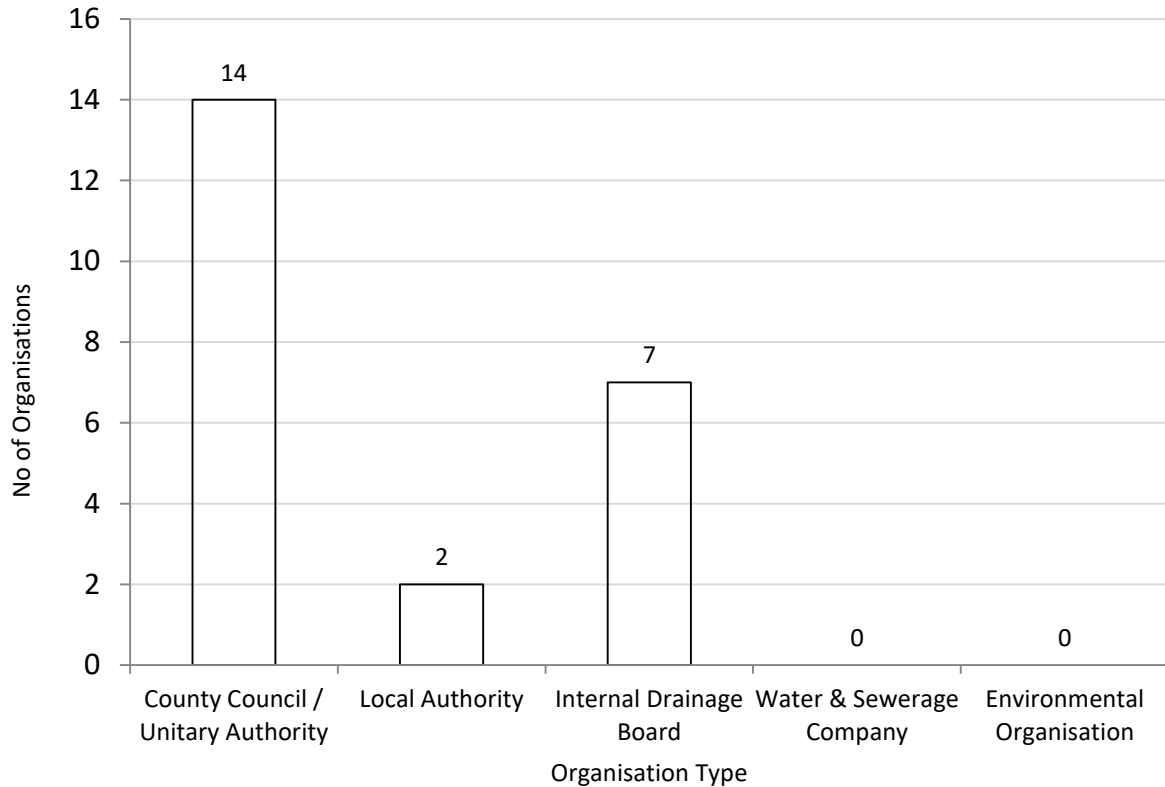


Figure 5 Breakdown of organisations that responded to the questionnaire

3.2 – Framework Analysis

3.2.1 – Published Material

The overall performance scores of each technique in relation to the aforementioned framework are depicted below in Table 3. Above average techniques accounted for 29.82% of all analysed content, with the greatest contributor being guidance documents (29.41%) followed closely by leaflets (23.53%) and webpages (23.53%). Average techniques accounted for 50.88% of all analysed content, with webpages having the greatest number of average examples (70.69%). Below average examples accounted for 15.79% of all analysed content. Much like the average examples webpages were the primary contributor (61.11%). Worst examples accounted for 3.51% and were a result of content simply providing links to other sources, for instance the Environment Agencies 'Living on the Edge' document. Finally, no examples of best practice were identified.

The performance of techniques in relation to each of the framework principles identified in Table 1 is explored below.

Table 3 Performance scores of identified techniques

| Technique | Best | Above Average | Average | Below Average | Worst |
|--------------------|------|---------------|---------|---------------|-------|
| Booklet | - | 4 | 1 | 1 | - |
| Flyer | - | 1 | - | - | - |
| Guidance documents | - | 10 | 12 | - | - |
| Leaflets | - | 8 | 2 | 4 | - |
| Other | - | 3 | 2 | 2 | 4 |
| Webpages | - | 8 | 41 | 11 | - |
| <i>Total</i> | 0 | 34 | 58 | 18 | 4 |

A majority of analysed content (n = 110) had consistent styles and logos, but no slogans (Principle 9). In contrast only four documents had consistent styles, logos and slogans. The slogan utilised by these four documents was "Ditch the Problem", which was deemed to be concise and engaging, arousing interest in the published material. Four documents were recorded as having no style due to them simply providing a link to other sources.

Six factors which influence behaviour on an individual level (Principle 10) were identified within the analysed content being: provision of knowledge (n = 99); highlighting costs of inaction (n = 48); salience (n = 41); highlighting of benefits (n = 32); efficacy promotion (n = 11) and altering of attitudes (n = 2). Four documents were deemed as not having any factors which influence behaviour due to them simply providing a link to other sources. No factors which influence societal or environmental barriers to behaviour were identified (Principle 11).

All but nineteen documents gave clear calls to action, using phrases such as "You must" and "It is essential that you" (Principle 12). Additionally many documents (n = 102) had accurate, concise and unambiguous messages (Principle 13), for instance:

"To maintain the banks and bed of the watercourse (including any trees and shrubs growing on the banks) and any flood defences that exists on it".

Furthermore, many of the analysed examples (n = 108) managed to effectively balance simplicity and nuance (Principle 16) explaining concepts such as riparian ownership with clarity and ease:

"If you own land that contains or is adjacent to a watercourse then you are a riparian land owner and have certain responsibilities".

The tone of messages was predominately neutral (n = 97), with negative (n = 6) and positive tones (n = 7) having near identical representation (Principle 14).

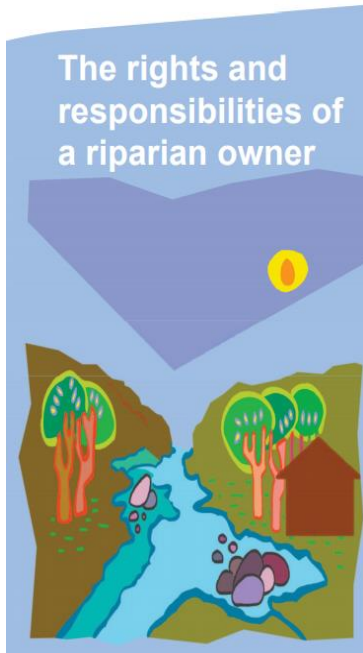
Overall consistency amongst content published by the same organisation was high (n = 87) (Principle 15). Twenty-three documents were not deemed as consistent as they covered topics not previously covered by the same organisation. Additionally most content was well structured (Principle 18), with two documents having slight structure issues (e.g. incorrectly placed diagrams, limited use of sub-headings).

None of the analysed content sponsored dialogue (Principle 17) in the sense of encouraging riparian landowners to engage with the content, for example, none requested residents to send pictures of their well-maintained watercourses. However, all content did provide contact details enabling riparian landowners to contact them, which could be seen as fostering dialogue, albeit limited. In a similar vein much of the analysed content (n = 73) did not attempt to persuade readers (Principle 19), with many explaining what the responsibilities of riparian landowners are without substantiating their benefits. Thirty-seven documents did attempt to somewhat persuade its readers by highlighting the costs and or benefits of (in)action, for instance:

"The failure to obtain consent prior to carrying out the works may be a criminal offence, which could result in a fine of up to £5,000, and a further fine of up to £40 for every day on which the contravention is continued after conviction".

However, it is uncertain as to how effective such limited persuasion would actually be.

A majority of content (n = 72) did not utilise visuals (Principle 21), however, thirty-eight pieces of content did. Visuals were utilised to either: enhance the overall look and appearance of the material, for instance eye catching front covers (Figure 6a) and interesting page design; or to explain the concept of riparian ownership (including responsibilities) (Figure 6b) and what structures require consent. The quality of utilised visuals differed from professionally designed computer images, real life photos to low quality diagrams.



(a)



(b)

Figure 6 (a) Eye catching front cover (b) A high quality figure depicting watercourse ownership and responsibilities

Finally, a majority of the documents (n = 105) were deemed to not likely be interesting (Principle 22). Resulting from the fact that numerous documents were simply text based (n = 68), or even if they contained diagrams or an eye catching cover page this benefit was lost due to the quantity of text within the material. Only five documents were deemed too be potentially interesting and were those which utilised eye catching cover pages, coupled with engaging figures and limited amounts of text.

Table 4 provides a summary of the above analysis.

Table 4 Published material compliance with best practice principles

| Principle | Best Practice Principle Achieved (No.) | | |
|-----------|--|-----|----|
| | Yes | No | NA |
| 9 | 110 | 0 | 4 |
| 10 | 110 | 0 | 4 |
| 11 | 0 | 110 | 4 |
| 12 | 95 | 15 | 4 |
| 13 | 102 | 8 | 4 |
| 14 | 7 | 103 | 4 |
| 15 | 87 | 0 | 27 |
| 16 | 108 | 2 | 4 |
| 17 | 0 | 110 | 4 |
| 18 | 108 | 2 | 4 |
| 19 | 37 | 73 | 4 |
| 21 | 38 | 72 | 4 |
| 22 | 5 | 105 | 4 |

3.2.2 – Questionnaire Responses

The overall rating of each organisations approach, in relation to the aforementioned framework, is depicted below in Table 5. Seven organisations were given the rating of 'Not Applicable' as their approaches could not be analysed due to them answering 'No' to question 2 of the survey. Care should be taken when utilising the results contained within Table 5, as many questions within the surveys were unanswered, thereby preventing complete analysis of an organisations approach (Table 6) (partially a result of questionnaire design).

The performance of organisational approaches in relation to each of the framework principles identified in Table 2 is explored below.

Table 5 Performance scores of organisational approaches

| Best | Above Average | Average | Below Average | Worst | Not Applicable |
|------|---------------|---------|---------------|-------|----------------|
| - | 2 | 3 | 11 | - | 7 |

Organisations reported that they utilised a range of techniques to explain and/or encourage riparian responsibilities. Techniques included: brochures; discussions with riparian landowners (for instance, during demonstrations; at awareness events or when dealing with complaints or enquiries); flyers; guidance documents; leaflets; letters; newsletters; presentations; questionnaires; videos and website content (for instance maintenance statements).

Of the organisations whose approach could be analysed, a majority (n = 13) stated that their work had clear aims and objectives (Principle 2). Aims ranged from establishing perceptions and misconceptions as to causes and responsibilities of riparian responsibilities, increasing awareness and/or uptake of riparian landowner responsibilities to becoming a "one stop shop for information – relevant to the local area". The same however, cannot be said for Principle 1 'the approach had a clear roadmap based on theory and good practice'. Only four organisations reported that their approach had a clear roadmap based on theory and good practice, with ten organisations stating that their approach had no roadmap and nine organisations providing no answer. The key stages within the roadmaps were as follows:

- "Review and understanding of legislation and case law combined with experience of historical cases";
- "Review of information publicly available";
- "Creating key documents for use in multimedia (website statements, presentations, event show banners e.t.c.)";
- "Discussion and clarification with owner occupiers with a view to encouraging those responsibilities to be better managed and to correct any false impression of responsibilities for watercourses".

Eight organisations stated that behaviour change was a key aspect of their work (Principle 3), which attempted to influence the behaviour of riparian landowners in terms of undertaking their responsibilities, and also the advice provided during planning applications. One organisation further noted that:

"Behavioural change was and remains the key challenge. Our experience from educating and raising awareness is that riparian responsibilities are unknown or ignored".

Other organisations noted that their work solely sort to raise awareness with one organisation hoping that this would result in behavioural change with further intervention.

Question 7, which sought to garner information to ascertain Principle 5 "Material was designed to address the factors which influence the target audiences behaviour", appears to have been misinterpreted by a majority of respondents. Nevertheless, three responses were received which explained that their implemented methods and/or techniques did have regard to factors influencing the target audiences behaviour. The sole factor that techniques sort to address was deficiencies within knowledge (n = 3).

"Information in the guide was designed to fill identified gaps in knowledge and counteract misunderstanding over responsibilities".

"Lack of knowledge awareness. Many are angry that property deeds and land searches did not inform them at the outset of purchasing a property".

In a similar manner question 8, which sought to provide information to ascertain Principle 6 "material was tailored to each target audience", appears to have misunderstood by several organisations, with one organisation stating that they did differentiate between target groups and one noting that their preference would be to differentiate if future work was undertaken:

"Only in so far as the type of advice was structured to the type of riparian landowner – agricultural, householder e.t.c."

"I don't know who was targeted, but if I was undertaking this work at present, I would want to differentiate, particularly between those who work the land for a living, and those who have this responsibility as part of their private dwelling".

On the other hand, two organisations stated that they did not differentiate between different types of riparian landowners as they had a specific target audience:

"The group target was those impacted by flooding be it internal, external or other".

"... Its more challenging for (urban) home owners – who need more guidance to enable works to be understood. This is the group we aim our guidance at".

With regards to involving the target audience within the design and dissemination of methods and/or techniques (Principle 7), four organisations noted that they involved the target audience, ten organisations did not, with nine organisations not providing an answer.

Pilot studies (principle 8), were only undertaken by one organisation. Thirteen organisations explained that they were not undertaken, with nine organisations not providing an answer. The reasons given for not undertaking pilot studies were resource constraints, time limitations and the works methodology:

"We did not treat the campaign as a pilot study. With it running over a number of years and with its potential impact on local flood risk reduction we could use this as examples of 'best practice'.

Organisations were also asked to highlight what their most effective communication channel(s) were. Sixteen organisations responded to this question providing a range of communication channels, including:

- Annual newsletters distributed simultaneously with rate demands;
- Email;
- Face to face;
- Leaflets;
- Letters;
- Meetings;
- Presentations;
- Questionnaires;
- Telephone; and
- Third parties (e.g. parish councils, local flood groups, residents e.t.c.).

Communication via third parties was a highly regarded channel in comparison to the other channels:

"We found one of the best forms of communication was via local peer pressure. Get one land owner doing the right thing and the message will soon spread".

"I would suggest using existing communication channels, maybe through parish councils or councillors".

One organisation expanded upon this question further noting that:

"I found setting out the clear legal links and responsibilities of riparian owner occupiers provided the necessary information to: encourage discussion, and/or reach acceptance".

It was also noted by an organisation that:

"Communication on a one to one basis, indeed establishing who were riparian owners was a mammoth and unachievable objective. Selective, i.e. targeted follow ups were made by telephone excepting where a written response to a relevant matter was achievable".

This factor must be regarded during the creation of any behaviour intervention technique to ensure that all proposed methods are practical.

Following on from this, question 12 sought to ascertain whether organisations periodically reinforced their messages (Principle 20). Seven organisations noted that they issued reminder messages, with the frequency and likelihood of sending reminder messages being subject to the situation at hand:

"[We distribute reminder messages] every year".

"Riparian drains are not our problem until a surface water / drainage issues arises. Because of this we only get involved with riparian drains when there is an existing problem that needs urgently resolving. Contact is then made, usually by letter to land/home owner initially, then by phone and site visit".

"We would only resend information where a problem arises and we feel we need to contact a land owner. We only have one officer covering land drainage for the whole county - there simply isn't the resource. In the autumn we would send out a message on social media aimed at land owners requesting that ditches are checked ready for the coming winter months but this is all".

Reminder messages were not distributed by eight organisations, with the sole reason being resource constraints.

Only four organisations undertook evaluation of their techniques (Principle 4). No justification was provided as to why evaluation was not undertaken. In a similar manner, only one organisation noted that they revised their techniques in response to evaluation (Principle 23). Nevertheless, a majority of organisations noted that the techniques they implemented appeared to be effective:

"[We have seen] an improvement in local ditch management and maintenance and therefore a reduction in the number of flooding incidents relating to watercourses".

"Purely anecdotal, but we also get calls into the office regarding watercourse maintenance issues which necessitate on site meetings. These appear to have reduced over time".

However, other organisations were uncertain as to the effectiveness of their techniques:

"Unsure. The annual reminder letters we rely on trusting the work, if needed, is completed. We don't have the capacity to follow up every reminder with a site visit. In some instances the landowner will phone or email to confirm".

"No evidence of this but would be good to have examples".

Such uncertainty is not unsurprising given the lack of evaluation that has currently been undertaken with regards to riparian landowner behaviour change interventions.

A summary of compliance with each best practice principle is depicted in table 6.

Table 6 Organisational approach compliance with best practice principles

| Principle | Best Practice Principle Achieved (No.) | | |
|-----------|--|----|----|
| | Yes | No | NA |
| 1 | 4 | 10 | 9 |
| 2 | 13 | 2 | 8 |
| 3 | 8 | 7 | 8 |
| 4 | 4 | 10 | 9 |
| 5 | 3 | 9 | 11 |
| 6 | 1 | 11 | 11 |
| 7 | 4 | 10 | 9 |
| 8 | 1 | 13 | 9 |
| 20 | 7 | 9 | 7 |
| 23 | 1 | 11 | 11 |

3.3 – Coding and Categorising

Six themes emerged from the analysis as depicted in figures 7 & 8. Detail of every code and category within each theme is provided within Appendix B. What follows is a brief description of each theme:

Barriers to the Realisation of Riparian Responsibilities – Refers to the various barriers, which inhibit the realisation of riparian responsibilities.

Consequences of Riparian Actions – Refers to the consequences, both positive and negative, of riparian landowners undertaking their responsibilities or lack thereof.

Evaluation Criteria – Refers to the criteria utilised by organisations to evaluate the effectiveness of implemented methods and/or techniques.

Guidance, Maintenance & Support – Refers to the guidance and supporting information that is available to assist riparian landowners in undertaking their responsibilities.

Solutions to Barriers – Refers to the various solutions, which could be utilised to reduce/remove barriers to the realisation of riparian responsibilities.

Watercourses, Structures & the Law – Refers to information that explains various concepts, including but not limited to: designated assets, flood defences and structures, undertaking works on or near watercourses and watercourse ownership.

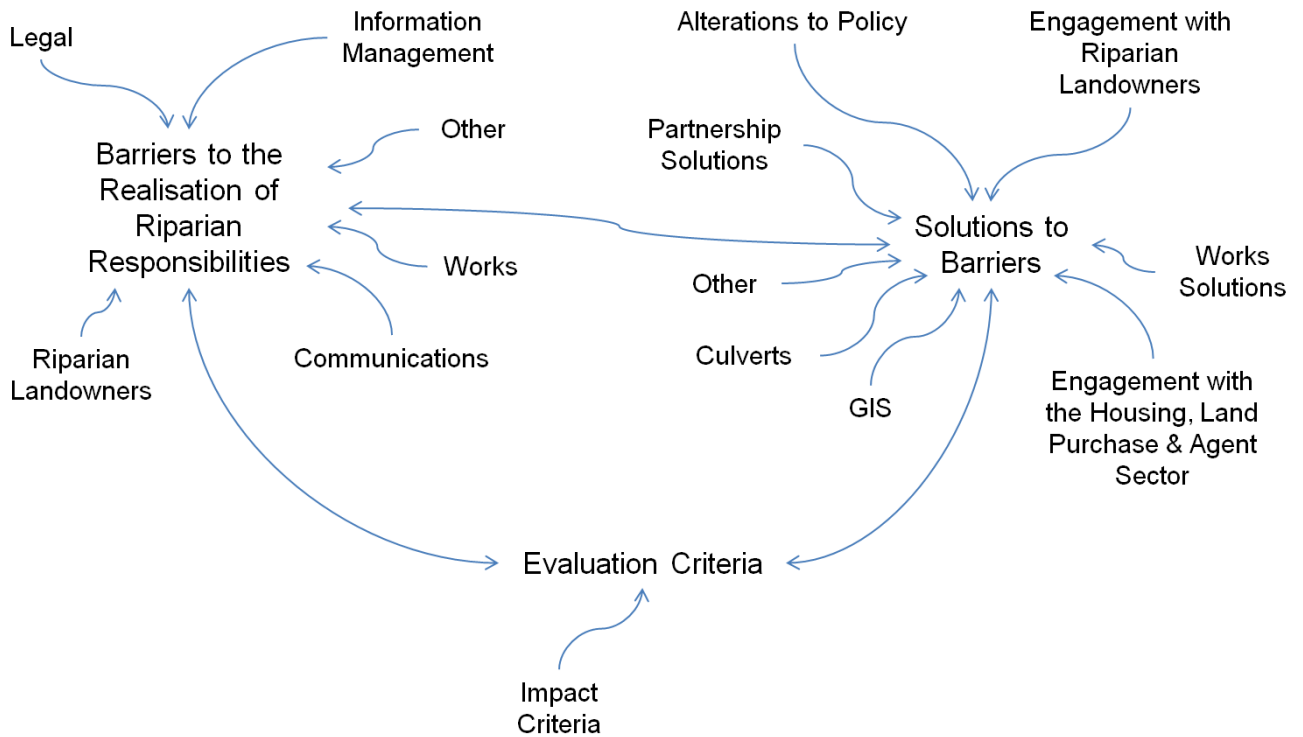


Figure 7 Summary one of the coding and categorising process

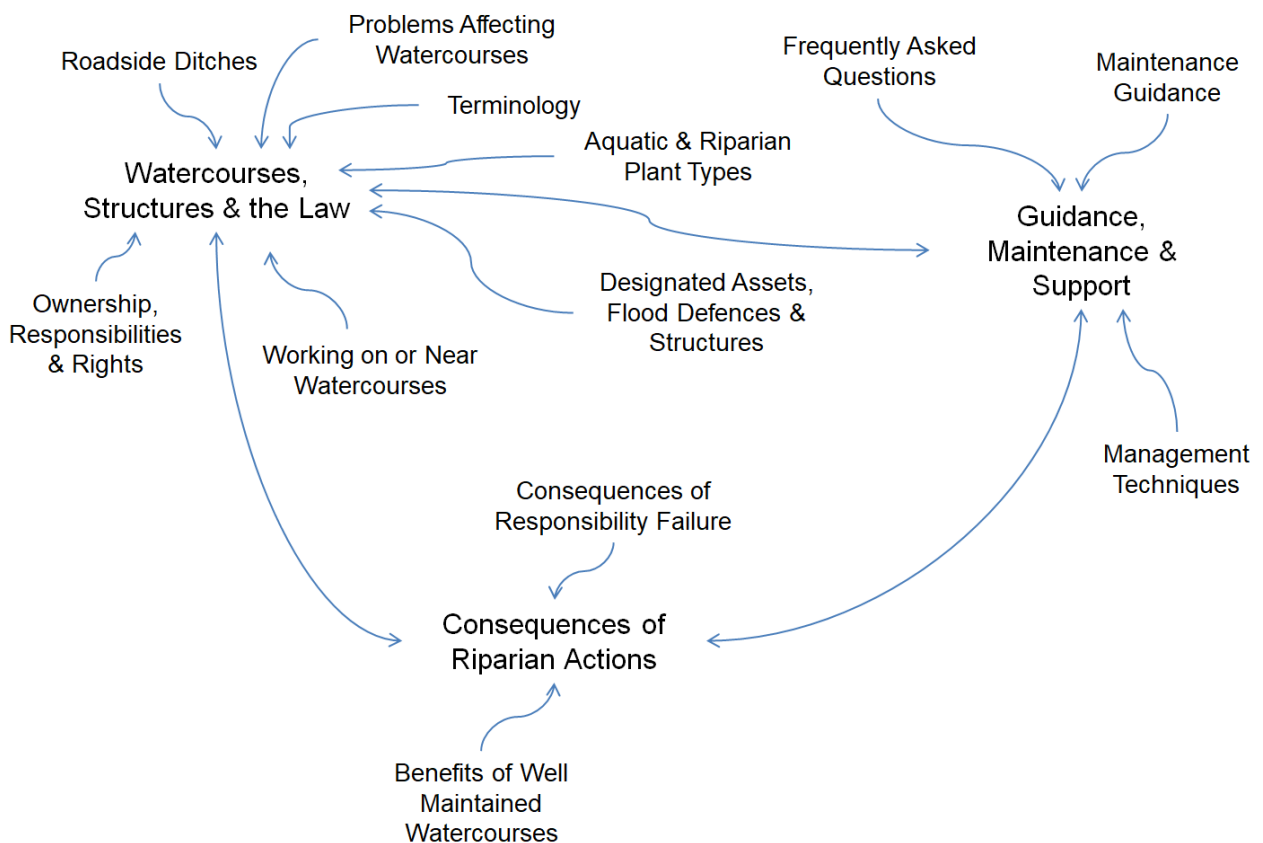


Figure 8 Summary two of the coding and categorising

4.0 – Conclusion

This document has summarised the results of a quasi-national RMA study. In summary, the key findings from study are as follows:

- One-hundred and fourteen pieces of organisational content was appraised via framework analysis.
 - A majority of the content was deemed to be average (50.88%), i.e. they demonstrated an equal amount of best and worst practice principles as identified by a prior review of both academic and practitioner literature.
 - On a more positive note, circa thirty percent (29.82%) of content was deemed to be above average, i.e. they demonstrated more best than worst practice principles.
- In addition to the content review, the approaches utilised by twenty-three organisations was appraised via framework analysis.
 - Seven organisations were given the rating of 'Not Applicable' as their approaches could not be analysed due to them answering 'No' to question 2 of the survey.
 - A majority of approaches undertaken by RMAs was deemed to be below average (n = 11), i.e. they demonstrated more worst than best practice principles; however, care should be taken when utilising the results contained within Table 5, as many questions within the surveys were unanswered thereby preventing complete analysis of an organisations approach (partially a result of questionnaire design).
- Coding and categorising of organisational content and questionnaire responses identified six key themes: Barriers to the Realisation of Riparian Responsibilities; Consequences of Riparian Actions; Evaluation Criteria; Guidance, Maintenance & Support; Solutions to Barriers; Watercourses, Structures & the Law.

4.1 – Recommendations

- The results of the study are shared with participating RMAs;
- Consideration be given to distributing the results more widely;
- The Lincolnshire Riparian Working Group consider utilising the results of the study to inform any proposed actions
- Consideration be given to undertaking further studies to gain a more holistic understanding of the factors influencing the undertaking of riparian responsibilities.

Appendices

Appendix A – List of Questions Asked

Question 1 – *What is your organisations unique identification number. Please type your identification number in the space provided.*

Question 2 – *Has your organisation undertaken any work (e.g. leaflets, posters e.t.c.) which explains to riparian landowners what their responsibilities are and/or encourages riparian landowners to exercise their responsibilities? Please highlight the most appropriate answer.*

Yes (go to question 3)

No (go to question 16)

Question 3 – *What methods or techniques (e.g. posters, social media campaigns, leaflets, incentives, education e.t.c.) did your organisation utilise? Please list the methods you utilised in the box below, providing explanation of the techniques where necessary, and if possible the web address(es) of these techniques.*

Question 4 – *Did your work have clear aims and objectives? Please highlight the most appropriate answer.*

Yes

No

If yes, please specify your aims and objectives. Please list your aims and objectives in the box below.

Question 5 – *Did your work have a clear roadmap based on theory and good practice (e.g. theory surrounding behaviour change, best practice principles of awareness raising campaigns)? Please highlight the most appropriate answer.*

Yes

No

If yes, what were the key stages within your roadmap. Please list and explain the key stages within your roadmap in the box below.

Question 6 – *Was behavioural change a key aspect of your approach (taking into account the above aims and objectives)? Please highlight the most appropriate answer.*

Yes

No

If yes, please specify the behaviour you were wishing to change. Please provide your answer in the box below.

If no, please explain why behavioural change was not a key aspect of your approach. Please provide your answer in the box below.

Question 7 – *Did your methods or techniques address the factors, which influenced the target audiences behaviour (e.g. lack of knowledge, lack of self-efficacy, social norms e.t.c.)? Please highlight the most appropriate answer.*

Yes

No

If yes, which factors did your methods or techniques address. Please specify and where necessary explain your answer in the box below.

Question 8 – *In your approach did you differentiate between types of riparian landowners or target specific groups? Please highlight the most appropriate answer.*

Yes

No

If yes, how did you differentiate between differing types of riparian landowners or groups? Please provide your answer in the box below.

Question 9 – *Did you engage with riparian landowners in the design and distribution of your methods and/or techniques? Please highlight the most appropriate answer.*

Yes

No

If yes, how did you engage with riparian landowners and what impacts did this engagement have? Please provide your answer in the box below.

Question 10 – *Did you utilise pilot studies to assess the effectiveness of your proposed methods and/or techniques? Please highlight the most appropriate answer.*

Yes

No

If yes, please explain why and how you utilised pilot studies to assess your proposed methods and/or techniques. Please provide your answer in the box below.

If no, were there any circumstances as to why a pilot study was not utilised. Please provide your answer in the box below.

Question 11 – *What were the most effective communication channels you found when communicating with riparian landowners? Please provide your answer in the box below.*

Question 12 – *Did you periodically reinforce your messages (e.g. reminder messages)? Please highlight the most appropriate answer.*

Yes

No

If yes, what methods/techniques did you use to reinforce your messages, how effective were they, and how often did you reinforce your messages. Please provide your answer in the box below.

If no, were there any reasons as to why messages were not reinforced. Please provide your answer in the box below.

Question 13 – *Did you evaluate the effectiveness of the methods or techniques you implemented? Please highlight the most appropriate answer.*

Yes

No

If yes, what evaluation criteria and techniques did you utilise (e.g. impact criteria (campaigns impact on skills, attitudes e.t.c.), accessibility criteria (e.g. ease of understanding e.t.c.), output criteria (e.g. number of leaflets distributed). Using the box below, please provide as much detail as to the evaluation criteria and techniques you utilised.

Question 14 – *Did your organisation revise the utilised methods or techniques in response to evaluation? Please highlight the most appropriate answer.*

Yes

No

Question 15 – *Were the methods or techniques you utilised effective, i.e. did they enable you to achieve your aims and objectives? Please highlight the most appropriate answer.*

Yes

No

If yes, please explain how the methods were effective and what outcomes did they achieve? Please provide your answer in the box below.

If no, why were the methods or techniques ineffective? Please provide your answer in the box below.

Question 16 – *In terms of encouraging riparian landowners to undertake their roles/responsibilities, what are the barriers that you are facing, including lost historical watercourses? Please provide as much detail as possible in the box below.*

Question 17 – *Given the above barriers what has/is your organisation proposing to do to overcome them (e.g. opening enforcement action)? Furthermore, (if applicable) have any of the measures implemented to overcome barriers been successful, if so please explain why? Please provide as much detail as possible in the box below.*

Question 18 – *Do you have any other comments that you would like to make? Please provide your answer in the box below.*

Appendix B – Coding & Categorising of Published Material & Questionnaire Responses

| Theme | Category | Code | Sub-code | Description | Unit Meaning Example(s) | |
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| Barriers to the Realisation of Riparian Responsibilities | Communications | Insufficient Consideration of how to Achieve Multiple Benefits | | Refers to how existing documentation does not consider, in a sufficient manner, how multiple benefits can be achieved from appropriate maintenance | "LLFA focus is to ensure landowners keep watercourses free from obstruction so that water can flow freely and which may not consider additional benefits which could be obtained" | |
| | | | | Refers to the issue of ineffective communication channels | "Lack of good lines of communication with Internal Drainage Boards" | |
| | | Limited Resources | | Refers to how resource limitations can prevent the fostering of communication and engagement strategies beyond the norm | "Resource is often a limiting factor, the desire may be there to produce something over and above the basic but the means to do it are lacking" | |
| | | Saliency | | Refers to the notion of issue saliency and how this can impact upon communication effectiveness | "Explaining why the need - okay when very wet, difficult when very dry" | |
| | | Mixed Messages | | Refers to how mixed messages, in particular slowing the flow messages vs riparian responsibility messages can conflict and result in confusion | "Confusion over benefits of slowing flow and maintaining a clear channel - why should one landowner be encouraged to place woody debris in a watercourse when another is penalised for the same thing" "Sometimes there are mixed messages being sent to landowners. In some instances, slowing the flow is encouraged for watercourses. Whereas, in some risk areas it is essential to carry out regular maintenance to ensure flow is passed through without being impeded" | |
| | Information Management | Failure to Produce Plans | | Refers to the issues resulting from a lack of planning | "Failure to produce plans when watercourses are piped in, to record this information and pass it on to new purchasers/owners" | |
| | | | Inadequate Records & Record Keeping | | Refers to how inadequate records can inhibit the undertaking of riparian responsibilities | "Older houses have no details of land drains etc. that have been culverted or diverted/are within their land - as this wasn't recorded by way of planning or consenting at the time. This makes it difficult for them to maintain until 'something goes wrong' - at which point is it fair to expect them to burden costs e.t.c" |
| | | | Limited Information Sharing | | Explains how the failure to share information can inhibit the undertaking of riparian responsibilities | "Failure to produce plans when watercourses are piped in, to record this information and pass it on to new purchasers/owners" |
| | | Legal | Deficiencies within Common Law Requirements | | Outlines how deficiencies within existing common law requirements can give rise to numerous issues | "Requirement under the legislation is defective: <ul style="list-style-type: none"> • It is requiring maintenance of flow. • This can be as little as ensuring the channel has a flow, and as narrow as any restrictive downstream culvert. There is no requirement for multiple owners to work collaboratively to achieve best possible outcome in terms of levels. • There is no requirement as to how managed they need to be especially if there is already restricted flow. • There is no requirement for them to maintain a specified profile, or significantly an all-important capacity for retention, during times of and to prevent flood" |
| | | | Deficiencies Within Legal Advice | | Highlights the deficiencies of legal advice with regards to riparian ownership, particularly during property purchasing | "People move into the district and buy a property with land having no idea that they have to pay a drainage rate and are taking on a liability if they have riparian responsibilities". This usually happens when the purchasers solicitor is not local" |
| | | Enforcement | Chance of Success | Refers to how the likely chance of success can | "Unless they have the support of robust evidence and liability, have a reasonable chance | |

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| | | influence enforcement considerations | of success, or are part of a bigger scheme they will not be allocated any resource or priority to be followed up" |
| | Difficulties in Utilising Case Law | Explains how case law provides an inconsistent context for pursuing enforcement | "Case law provides a difficult context for pursuing enforcement, due to the lack of consistency of this being successful/unsuccessful in various cases" |
| | Existing Workloads & Resource Requirements | Refers to how the high resource demands of enforcement activity and existing workloads influence the likelihood of enforcement action | "ADA make the point that enforcement, and particularly prosecutions, does consume costs and resources, and can take a long time, even when apparently straightforward" |
| | Incoherent Understanding of What Constitutes a Violation | Refers to how enforcement activities are hindered by an incoherent understanding of what constitutes a violation | "Land drainage responsibilities, and the nature of what constitutes a violation of these, are not coherently set out. Many enforcement cases are therefore dealt with using an ad hoc approach based on the circumstances in which these have occurred" |
| | Knowledge of the Issue | Explains how the knowledge of an issue or lack thereof can influence enforcement likelihood | "... always supposing they are known of and worthy of following up" |
| | Lack of an Ability to Enforce a Particular Maintenance Standard | Outlines the challenge that RMAs cannot enforce maintenance to a particular standard | "Despite this there is no responsibility for flood and coastal asset owners to maintain their defences to a particular standard or the ability for risk management authorities to enforce a level of maintenance" |
| | Lack of Appetite to Undertake Enforcement | Refers to the lack of appetite to undertake enforcement action | "Politically it wouldn't be deemed acceptable to knowingly allow flooding to occur just because it is technically the land owners responsibility, and practically, there isn't enough appetite in the legal team to pursue land drainage matters" |
| | Lack of Expertise to Pursue Enforcement | Refers to how the lack of expertise of legal teams can hinder the likelihood of pursuing enforcement | "As of yet, we are not aware of any unconsented culverts, but we'd anticipate that the legal team wouldn't be keen on assisting in matters with regards to enforcement, due to existing workloads and lack of experience in this field of work" |
| | Non-Statutory Duties | Outlines the issues of riparian responsibilities being non-statutory | "Riparian duties are non-Statutory and therefore difficult to enforce" |
| Other | Unclear Common Law Requirements | Refers to how the common law requirements of riparian landowners are unclear | "Legislation [is] unclear as to whether it is the landowners responsibility to remove the 'natural' build-up of silt and vegetation" |
| | Differing Beliefs | Refers to how differing beliefs can conflict with riparian landowner responsibilities | "There is also the barrier with other stakeholders. For example, ecologists would often prefer the watercourses to be left in a natural state" |
| | Highlighting of Land Drainage Consent | Refers to how Local Planning Authorities are not appearing to adequately highlight the need for Land Drainage Consents | "Local Planning Authorities do not appear to be robustly highlighting the need for land drainage consent as part of the planning process so many developers simply culvert or fill in ditches to meet their needs - usually financial" |
| | Historical Watercourses | Refers to the issues of historical watercourses including identification, ownership, original profile and rectification of issues | "Lost, historical watercourses - often very difficult - sometimes land may have changed hands several times. Were they filled as part of wider drainage scheme, e.g. new development e.t.c" "Changes over time including infilling of watercourses or development adjacent watercourse restricting access etc. are difficult to reverse" "Difficulty in establishing what were historical watercourses let alone their profile, reasons for and perceptions of consent. Most in villages were clearly in-filled as a |

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| | | | consequence of highways improvements, safety and/or consensus around untidiness and difficulty to manage" |
| Riparian Landowners | Beliefs & Pressure | Refers to how the beliefs of riparian landowners can influence their actions, and that riparian landowners may promulgate their beliefs onto others | "Other landowners historically believe dredging watercourses is essential work as a riparian owner. [We have] seen cases where they may put pressure on adjacent landowners to do the same. There has been evidence that this is often a detriment to ecology and flood risk, often hard to change their views" |
| | Confusion of Land Ownership | Explains that landowners are often confused with regards to land ownership | "Confusion of land ownership - do both parties have responsibility or just one side, issues around when land adjoins a Highway" |
| | Desire to Culvert | Refers to the desire of riparian landowners to culvert watercourses | "Desire to culvert sections. In the past we have objected to this, rejected consent and then the land owner has rebelled, completing culverting. This can cause problems when roots grow in pipes" |
| | Expectation Management | Outlines how the expectations of riparian landowners can cause issues | "Managing expectations- complaints regarding vegetation in dykes, etc expecting complete clearance" |
| | Lack of Awareness, Understanding & Clarity of Responsibilities | Refers to the lack of awareness, understanding and clarity of riparian roles and responsibilities | "Many do not understand the roles and responsibilities of those involved in land drainage management, including property owners. There are public misconceptions around who should respond to flooding often leading to them believing the Council is shirking its responsibility and no one is willing to take action" |
| | Limited Understanding of the Potential Impacts of Not Undertaking Work | Refers to the limited understanding of the implications of not undertaking riparian responsibilities | "Lack of understanding of potential impacts of not undertaking works" |
| | Limited Understanding of the Purpose & Importance of Drainage Assets | Refers to the limited understanding of the importance of drainage assets | "The benefit for residents and relationship to a watercourse "at the end of a garden" or "over the fence" or "a pipe running beneath the garden" needs a significant amount of work" |
| | Refusal To Accept Responsibility | Refers to the fact that riparian landowners sometimes refuse to accept responsibility | "Far too often people simply refuse to engage or accept that the problem is theirs even when advised to speak to a solicitor" |
| | | Refusal To Accept Responsibility for Roadside Ditches | "Landowners refuse to accept responsibility for roadside ditches that only serve to drain the highway" "Generally when they front onto the highway they assume that it must belong to the Council. There is usually a lack of willingness from the landowner to carry out any maintenance of the watercourse at all" |
| | Refusal to Engage & Comply | Refers to the notion that riparian landowners sometimes refuse to engage and comply with responsibilities | "General landowner belligerence/refusal to comply/engage - many landowners know local authorities often do not have the money, resources or appetite to enforce - so they give us the run around" |
| | Unwilling to Bear Costs | Refers to the notion that riparian landowners are sometimes unwilling to bear costs of work | "Landowners unwilling to bear the cost of remedial works" |
| | Unwilling to Undertake Works | Refers to the notion that riparian landowners are sometimes unwilling to undertake works | There is usually a lack of willingness from the landowner to carry out any maintenance of the watercourse at all" "Landowners unwilling or unable to undertake works on the highway that requires traffic management - i.e. roadside ditches" |
| Works | Accessibility | Refers to the issue of accessibility | "Access to watercourses is sometimes very difficult, land locked watercourses, or |

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| | | | | bordered on both sides by established vegetation" |
| | | Cost / Funding | Refers to the issue of cost and funding for undertaking works | "Where the issue is particularly severe, there is a significant cost to restoring the watercourse and cost becomes the issue" "Funding is not generally available or feasible for a riparian owner" |
| | | Establishing Correct Levels | Refers to the issue of establishing the correct bed level/invert level when undertaking works | "Establishing correct bed level/ invert level for culverts, e.t.c." |
| | | Lack of Expertise | Refers to the issue of lack of expertise amongst staff | "Lack of expertise in working on a watercourse, and the amount of knowledgeable contractors is limited" |
| | | Lack of Multi-Landowner Co-ordination & Co-operation | Refers to how the lack of co-ordination and co-operation amongst landowners can inhibit or increase the complexity of undertaking works | "Primarily where a watercourse has multiple landowners over a single problem stretch - one may be willing to maintain, but another may not, rendering a coordinated solution incredibly complex or completely unworkable" |
| | | Landowner Identification | Refers to the issue of landowner identification | "We are not currently undertaking land drainage work. However, when we did do work under the LDA, the greatest difficulties were: identifying owners of land..." |
| | | Standard of Maintenance | Lack of Clarity Regarding Standard of Maintenance | Refers to the lack of clarity on the standard of maintenance required |
| | | | Lack of Responsibility to Maintain Assets to a Particular Standard | "Lack of clarity on standard of maintenance required" "Despite this there is no responsibility for flood and coastal asset owners to maintain their defences to a particular standard" |
| Consequences of Riparian Actions | Benefits of Well Maintained Watercourses | Enhanced Environment | Outlines the benefits of watercourse maintenance in terms of environmental enhancement | "Well maintained watercourses can significantly benefit the local community by reducing flood risk and creating habitats for wildlife" |
| | | Economic & Physical Distress & Inconvenience | Outlines the benefits of watercourse maintenance in terms of reduced economic and physical distress and inconvenience | "The cost of maintaining a watercourse is minor compared to the costs that can arise from flood damage, not to mention the distress and inconvenience caused if your property is flooded" |
| | | Reduced Flooding | Outlines the benefits of watercourse maintenance in terms of reduced flood risk | "This [maintenance] will have the benefit of reducing the risk of flooding from the watercourse at times of wet weather, both for you and your neighbours" |
| | | Reduced Liability | Outlines the benefits of watercourse maintenance in terms of reduced landowner liability | "If a flood has occurred as a direct result of a landowner not carrying out their riparian responsibilities to properly maintain their watercourses, that landowner could be liable for compensating any damage that occurs" |
| | Consequences of Responsibility Failure | Drainage Problems | Outlines the drainage problems that can arise due to riparian landowners failing to undertake their responsibilities | "A drainage problem for the property owner and neighbouring land owners" |
| | | Enforcement Action & Fines | Refers to the enforcement action and fines that can be served on riparian landowners due to them failing to undertake their responsibilities | "The failure to obtain consent prior to carrying out the works may be a criminal offence, which could result in a fine of up to £5,000, and a further fine of up to £40 for every day on which the contravention is continued after conviction" |
| | | Flooding | Outlines the potential flooding issues that can | "Potential flooding of properties, the highway and surrounding land" |

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| | | | occur due to landowners failing to undertake their responsibilities | |
| Evaluation Criteria | Impact Criteria | Increased amount of landowners exercising their responsibilities | Refers to an increase in the number of riparian landowners exercising their responsibilities following the utilisation of various methods | "Owner occupiers undertaking small to medium maintenance / works themselves" |
| | | Reduced Issue Communication | Refers to a reduction in communications regarding riparian issues following the utilisation of various methods | "Purely anecdotal, but we also get calls into the office regarding watercourse maintenance issues which necessitate on site meetings. These appear to have reduced over time" |
| Guidance, Maintenance & Support | Frequently Asked Questions | Are County Councils Riparian Landowners | Answers the question 'are county council's riparian landowners'. | "The County Council do not own any watercourses except parts of those that flow through land owned by the County Council. The County Council are therefore the riparian landowner of that section of watercourse and have riparian responsibilities like any other riparian landowner" |
| | | As a riparian landowner am I obliged to undertake the maintenance that the RMA has previously carried out | Answers questions regarding the obligation of riparian landowners to undertake maintenance that RMAs previously undertook | "In general, as a riparian owner, you have no obligation* to continue maintenance and it could be continued to a greater or lesser extent than previously. However, you should ensure that you continue to meet your riparian responsibilities as outlined in chapters one and five" |
| | | How Can I Challenge the Decision to Withdraw | Answers the question of how riparian landowners can challenge the decision of an RMA to withdraw from maintenance | "In terms of main river maintenance, the Environment Agency's protocol outlines a procedure for challenging their decision to withdraw. If you are considering challenging the decision, or raising a complaint about the process, it is important that you adhere to the timeframes within any notice provided and familiarise yourself with the protocol" |
| | | How Do I find Out If I Am On A Main River | Answers questions regarding the identification of main rivers. | "The Environment Agency's interactive Flood Map for Planning can be used to determine whether you are on a main river or ordinary watercourse. You can locate a particular stretch of river by inserting a postcode or place name in the search box" |
| | | IDB Areas | Outlines where one can find out about the boundaries of IDBs | "To see if you live in an IDB area visit www.idbs.org.uk Information leaflets for IDB areas are also available from their web site" |
| | | Importance | Answers questions relating to the importance of ditches and riparian responsibilities | "Even if the ditch is often dry the responsibility of maintenance still applies. The ditch may form an important function in holding water in times of flood" "Watercourses are designed to drain surface water away, this helps prevent flooding that puts property, roads, land and infrastructure at risk. If the system of ditches and culverts are maintained to a good standard, any flooding is likely to only affect areas in the floodplain. Not all watercourses transport water, as some act as storage areas, but maintenance of these is important too, as they prevent water collecting elsewhere. The cost of maintaining a watercourse is minor compared to the costs that can arise from flood damage, not to mention the distress and inconvenience caused by property flooding" |
| | | Infilling Ditches | Provides answers in relation to questions such as can one simply infill ditches on their land | "No! These watercourses generally fulfil an important role in preventing local flooding. Plans for any works on ordinary watercourses, other than general cleaning and routine maintenance such as the removal of weeds or debris, must be approved by the District or Borough Council. Consent for the work must be secured before starting. This applies to any changes which might affect the flow or capacity and include installation of dams, weirs, mills, channel diversions and in particular, culverting or piping" |
| | | Land Ownership | Provides advice in relation to identifying land | "Land ownership is sometimes unknown, disputed or difficult to work out. Local |

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| | ownership | knowledge can be really useful in ascertaining riparian ownership and it may be necessary to obtain copies of title registers and title plans using the online Land Registry services" |
| Maintenance | Answers questions in relation to the level of maintenance needed on watercourses and how to maintain watercourses | "If you are unsure whether you are the riparian owner of the watercourse running through your land, check the title deeds of your property" "If you are unsure about the level of maintenance that you need to undertake please refer to 'Living on the edge' or contact the FRM team on the details at the end of this guidance" "We have produced a guide called "Good Practice for Watercourse Maintenance" which tells you in detail all you need to know" |
| My Responsibilities | Answers questions in relation to the responsibilities of riparian landowners | "The riparian responsibilities under law are: <ul style="list-style-type: none"> • To pass on water flow without obstruction, pollution or diversion that would affect the rights of others. • To maintain the banks and bed of the watercourse (including any trees and shrubs growing on the banks) and any flood defences that exist on it. • To maintain any approved structures on their stretch of the watercourse and keep them free of debris. These may include trash screens, culverts, weirs and mill gates. • Riparian Owners must not build new structures (for example a culvert, bridge or board walk) that encroach upon the watercourse, or alter the flow of water or prevent the free passage of fish without first obtaining permission from the Local Authority or Environment Agency" |
| My Rights | Answers questions in relation to the rights of riparian landowners | Yes! Riparian Owner rights are: <ul style="list-style-type: none"> • To receive a flow of water in its natural state, without undue interference in its quantity or quality. • To protect their property against flooding from the watercourse and to prevent erosion of the watercourse banks or any nearby structures. • A Riparian Owner usually has the right to fish in the watercourse, provided legal methods are used. • A Riparian Owner can abstract a maximum of 20 cubic metres of water per day for the domestic purposes of their own household or for agricultural use (excluding spray irrigation) without a license. Most other types of abstraction will require a license from the Environment Agency" |
| Neighbours Not fulfilling Duties | Refers to what riparian landowners can do when neighbours are not fulfilling their duties | "Give them this leaflet, if they require further information or you feel that your rights are being impinged contact the relevant regulating body for advice" |
| Tenant Riparian Responsibilities | Answers questions with regards to the riparian responsibilities of tenants | "Riparian responsibilities generally sit with owner of the land but you still will have a responsibility not to block the free flow of water. It is worth checking your tenancy agreement and talking to your landlord. Even so, you should be careful not to allow things like rubbish or grass cuttings to get into the watercourse as this may cause a blockage" |
| The River Asset has been left in poor condition, is the RMA obliged to improve its condition | Answers the question 'a river asset has been left in poor condition, is the RMA obliged to improve its condition' | "In most instances, the Risk Management Authority has no legal obligation to improve the condition of an asset before they cease maintenance. However the Risk Management Authority cannot leave the asset if it will increase flood risk" |

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| Watercourse Responsibility | Answers questions in relation to watercourse ownership, in regards to watercourses abutting land and those running through or underneath land, including roadside ditches | "If both banks of a watercourse runs through (or under) your land, you are fully responsible for its maintenance. If it runs adjacent to your land (even does not fall within your property boundary as set out by your Title Deeds e.g if it is the other side of a boundary fence) then you are likely to be responsible for the maintenance of the watercourse bank on your side, to halfway across the bottom of the watercourse. Using the example properties above, Owners G and B would each have responsibility for the maintenance of their side up to the middle of the watercourse. So unless the landowners' Title Deeds show otherwise, it is presumed that each party owns to the centre line of the watercourse. Depending upon the specific situation regarding land ownership, the responsibilities may vary and local advice should be sought if in doubt" |
| What Are Byelaws | Answers the question 'what are byelaws' | "A local authority or Internal Drainage Board may also decide to implement local drainage bylaws. If bylaws are implemented then consent is needed to undertake further activities. These bylaws cover a number of activities including, but not limited to: <ul style="list-style-type: none"> • Preventing the improper use of any watercourses, banks or works including preserving them from any damage or destruction. • Opening of sluices and flood gates. Preventing the obstruction of any watercourse" |
| What are the Consequences of not complying with byelaws | Explains the consequences of contravening byelaws | "By section 66(6) of the Land Drainage Act 1991 every person who acts in contravention of or fails to comply with any of the land drainage Byelaws is liable on summary conviction in respect of each offence" |
| What Consequences will I Face if I Fail to Undertake My Responsibilities | Answers questions such as, 'what are the consequences of me failing to undertake my responsibilities' | "If you do not carry out your responsibilities, you could face legal action and may be liable for any damage which occurs as a result of your failure to maintain the watercourse" |
| What Information Could I Request from the EA or Other RMAs if Proposed to Withdraw or Reduce the Frequency of Maintenance | Answers questions such as, what information could I request in relation to maintenance withdrawal or reduction | "The table below provides an overview of information it may be beneficial to obtain from the Risk Management Authority before and during maintenance withdrawal: <ul style="list-style-type: none"> • Is there any funding available from the RMA to 'invest to save'? Whereby the RMA agrees to improve the condition of assets before withdrawal; • What maintenance has previously been undertaken in the catchment, including type and frequency of work? This could include requests to the RMA to conduct demonstrations on how to operate the asset" |
| What is a Riparian Owner | Answers questions such as, 'what is a riparian landowner' | "A riparian owner is the person, or people, with watercourses on, next to or under their property. Riparian owners have the responsibility for maintenance of these watercourses. Riparian responsibilities usually lie with the person who owns the land or property but may be the tenant depending upon the agreement in place" |
| What is a Watercourse | Answers questions such as, 'what is a watercourse' | "Every river, stream, brook, ditch, drain, culvert, pipe and any other passage through which water may flow. A watercourse can be either natural or man-made. Watercourses drain the land, prevent flooding and assist in supporting flora and fauna. Historically, watercourses have taken water runoff from buildings and roads, as well as fields and parks. In the process of development many have been culverted (piped) or changed in other ways. In normal conditions a watercourse may be a dry channel in the ground; in heavy storm conditions it may become a raging torrent. Watercourses do not include public sewers but it could be in a pipe under the ground" |
| What Powers Does the Council Have | Answers questions such as, 'what powers does the Council have' | "The County Council has permissive powers under Section 25 of the Land Drainage Act to enter land to undertake emergency works to mitigate flooding/flood risk" |

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| Maintenance Guidance | Who owns the flood risk management asset on my land | Answers questions such as, 'who owns the flood risk management asset on my land' | "The question of ownership may depend on a number of factors, including the type of asset, who installed it, the extent to which it is fixed or removable and whether there is any legal documentation, (for example within property title documents or any other agreements with RMAs). It is recommended that you obtain legal advice if you require clarification on the legal ownership of any asset" |
| | Appropriate Waste Disposal | Refers to the need to dispose of all waste appropriately | "All non-organic waste should be completely removed off site and disposed of in an appropriate manner" |
| | Bank Cuts | Refers to alternating the cuts of banks and leaving some sections untouched to encourage biodiversity | "Plan your maintenance to ensure that stretches of habitat are left intact, for example by trimming alternate banks or lengths of the ditch each year. This ensures that there is always a healthily vegetated area where fauna disturbed by maintenance can migrate to without being forced to leave the ditches" |
| | Buffer Strips | Refers to the creation of buffer strips along watercourse banks to minimise sediment flows and encourage biodiversity | "Keep a vegetated berm on the banks of watercourses; this is important for biodiversity but also helps reduce the amount of sediment going in" |
| | Check for Protected Species/ Sites | Refers to the need to identify if protected species exist on a site and or if the land in question is in a protected area | "You can check if your site is on or near a protected site, such as a: Special Area of Conservation Special Protection Area Site of Special Scientific Interest" |
| | Check to see if Consent is Necessary | Refers to checking with relevant authorities to see if consent is required for the proposed works (e.g. discharge permits, wildlife licences, environmental impact assessments, public rights of way, archaeological sites, protected hedgerows e.t.c.) | "Please remember you may require consent to do this work" |
| | Develop a Maintenance Programme | Encouraging riparian owners to develop maintenance programme | "It is good practice to develop a programme that sets out how often and at what time of the year maintenance work is carried out" "It is good practice to develop a program that sets out how often you will carry out maintenance works" |
| | Drainage Companies | The provision of guidance with regards to the utilisation of drainage companies | "Many landowners appoint drainage companies to carry out maintenance. We recommend that landowners who choose to do this obtain a range of quotes in attempt to achieve best value" |
| | Habitat Improvement | Refers to seeking of opportunities for habitat improvement | "Opportunities for improving watercourse habitats should also be promoted" |
| | Identify Watercourse Type | Refers to identifying the type of watercourse prior to undertaking maintenance works | "Before carrying out any form of channel or bank management, it is vital to identify the watercourse type correctly. Damage to watercourse processes could occur if the watercourse type is incorrectly identified and an inappropriate management technique is subsequently used" |
| Invasive Alien Species | Refers to the need to seek guidance on how to control and dispose of invasive alien species | "The Environment Agency has published guidance on preventing the spread of harmful, invasive, and non-native plants" | |
| Links | The linking of readers to other documents | "Further information can be found in the 'Living on the Edge' booklet which was produced by the Environment Agency (EA)" | |

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| | Machinery Guidance | | Explains how machinery if utilised, should be utilised | "If machinery is proposed, the sensitivity of the watercourse must first be considered and maintenance should be planned to ensure stretches of habitat are left intact" |
| | Physical Safety | | The safety factors that must be considered when undertaking work in watercourse | "The dynamic nature of open and culverted watercourses means that landowners are required to assess the risk on a case-by-case basis. The appropriate clothing and protective wear should be worn by all involved in the maintenance" |
| | Placement of Vegetation, Debris and Silt on Banks | | Refers to the placement of removed vegetation, debris and silt on watercourse banks for a few days prior to disposal | Place it on the bank for a few days to allow organisms to migrate back, but don't place it there permanently as it can easily wash back in" |
| | Profile and Cross-section | | Refers to the need to maintain watercourse profile and cross-section | "Where possible, try to maintain the original profile and cross section of the ditch when de-silting. If the gradient is altered it can change the flow pattern and increase flood risk either upstream or downstream" |
| | Regular Checking | | Refers to the need to regularly check watercourses and any structures | "You should inspect your watercourse regularly to ensure no blockage has occurred" "Trash / debris / security screens should be regularly checked all year round but especially at times of anticipated high flow. Such debris should be removed as soon as it starts to build up" |
| | Right Tools for the Job | | Refers to the fact that the most appropriate tools for the job should be utilised in each instance | "This depends on the scale of your watercourse and the extent of works required" "The tools for the job depend on the size of your ditch and the amount of works required" |
| | Silt Removal | | Provides guidance relating to the removal of silt from watercourses | "The same depth of silt should be removed along the length of the ditch" |
| | Timing | | Refers to the timing of when works should be undertaken, and/or the need to identify appropriate times to undertake work | "You should always plan to do the work in late September/October when vegetation is already starting to die back" "Find out the best times to undertake maintenance activity: the Environment Agency should be able to advise in which seasons to take action" |
| | Use Hand Tools | | Highlights the importance of using hand tools over machinery | "Using hand tools, rather than heavy machinery to undertake any work affecting the channel or banks" "Regular maintenance using hand tools is a lot less damaging to the environment than infrequent maintenance using machinery" (Central Bedfordshire Council Method 2). |
| | Waste Disposal Advice | | Explains that landowners should seek guidance with regards to waste disposal | "Ditch spoil is categorised as 'Medium Level Hazardous Waste', so it is necessary to obtain advice on disposal from the Environment Agency" |
| Management Techniques | Biological Techniques | Cattle, Sheep & Horses | Allowing the grazing of cattle, sheep and horses to control problem species | "Control of aquatic and riparian vegetation, particularly on the banksides of watercourses by grazing cattle horses and sheep" |
| | | Invertebrates | Use of invertebrates to control aquatic plant species | "Release of weevil to control water fern" |
| | | Native Fish Species | Use of native fish species to control submerged aquatic plants | "Control of submerged aquatic plants due to turbidity caused by bottom-feeding native fish species" |
| | | Waterfowl | Use of waterfowl to control submerged aquatic plants | "Control of submerged aquatic plants by grazing ducks, geese and swans" |

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| | | Chemical Techniques | Barley Straw & Barley Straw Extract | Use of Barley Straw and Barley Straw Extract to control emergent and floating vegetation | "Only effective on emergent and floating vegetation includes glyphosate based herbicide, barley straw and barley straw extract" |
| | | | Glyphosate Based Herbicide | Use of Glyphosate based herbicide to control emergent and floating vegetation | "Only effective on emergent and floating vegetation includes glyphosate based herbicide, barley straw and barley straw extract" |
| | | Physical Techniques | Manual | Use of manual tools/techniques (e.g. hand pulling, ranking and cutting) to manage watercourses | "Includes a range of manual or mechanical activities: hand pulling, cutting and raking, mechanical harvesters, weed boats, de-weeding with a weed bucket, excavator and tractor mounted cutter, flail" |
| | | | Mechanical | Use of mechanical tools (e.g. excavator, weed boats, tractors) to manage watercourses | "Includes a range of manual or mechanical activities: hand pulling, cutting and raking, mechanical harvesters, weed boats, de-weeding with a weed bucket, excavator and tractor mounted cutter, flail" |
| | | Environmental Techniques | Dyes | Use of dyes to limit light penetration | "Preventing light penetration of the water column through the use of dyes in static waters to control the growth of some species" |
| | | | Manipulation of Flow Characteristics | The manipulation of flow characteristics to control problem species | "Plants have specific water flow requirements within which they grow. Increasing flow rates to faster than the problem plant species can tolerate can reduce their growth/eliminate them" |
| | | | Nutrient Management | The management of nutrient inputs to reduce the growth of problem species | "Management of nutrient inputs to watercourses, including the use of buffer strips, or nutrient-binding chemicals, may help to reduce problems in the long term" |
| | | | Shading with Materials | Utilising man-made materials to shade watercourses | "Shading using man-made materials, either suspended above, or submerged below the water surface" |
| | | | Shading with Vegetation | Utilising vegetation to shade watercourses | "Using tall vegetation to restrict light to the problem species so as to limit their growth" |
| | | | Water Level Manipulation | The manipulation of water levels to control problem species | "Plants have specific water level tolerance limits within which they grow. Altering water levels to be above or below these tolerance limits can help to reduce the growth of or eliminate problematic species" |
| Solutions To Barriers | Alterations to Policy | Legislative Change which Requires Designated Assets to be Maintained to a Particular Standard | | Refers to legislative changes that would impose a duty on owners of designated assets to maintain them to a particular standard. | "One approach would be for legislative change, for example to bring it about that designation of an asset or feature, under Schedule 1 of the 2010 Act, would place the owner under a duty to maintain the asset or feature to a particular standard. Intending purchasers would become aware of this responsibility, as designation is registerable as a local land charge and so would appear on their local search" |
| | | Making Riparian Responsibilities Statutory | | Refers to making riparian responsibilities a statutory requirement | "It would also help if riparian responsibilities were made Statutory" |
| | | Standard LLFA Drainage Policy & Enforcement Process | | Refers to how a standardised policy and enforcement process may increase the ease of undertaking enforcement | "A Standard LLFA Drainage Policy and Enforcement Process might help" |
| | Culverts | Conferring of Responsibilities for Culvert Maintenance to RMAs | | Refers to the conferring of responsibilities for culvert maintenance to RMAs to reduce issues of culvert maintenance | It has been suggested to me by one respondent that a duty, or possibly power, of inspection and maintenance of culverted watercourses might be conferred upon risk management authorities, such as the Environment Agency. If so, the question would arise as to whether a proportionate part of the cost should be recoverable from the riparian owner, or whether it should fall upon the public purse" |

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| | Identification of Culverts | Refers to the identification of culverts | "Culverted watercourses, running under multiple properties, are a particular issue. Firstly, it needs to be established where they are, and they should be recorded. The register of structures or features, to be maintained by the lead local flood authority under Section 21 of the 2010 Act, would seem to be the appropriate way to do this" |
| Engagement with the Housing, Land Purchase & Agent Sector | Alteration of Property Title Deeds | The alteration of title deeds to give greater legal account of riparian ownership responsibilities | "In parallel, property title deeds should take greater legal account of riparian ownership responsibilities" |
| | Alteration of the Way in Which Watercourses are Defined | The alteration of the way in which the Housing, Land Purchase and Agent Sector define watercourse | "Engagement is needed with Land Registry, Solicitors, Developers, LPAs in the Housing Sector as well as the Land Purchase / Land Agent Sector to alter the way in which watercourses are defined in legal documentation" |
| | Expansion of Property Conveyancing Requirements | The expansion of conveyancing requirements to enable the identification of existing and historic assets that may require maintenance | "The individual needs to be made aware upon purchasing land of a) existing/historic assets, b) the POTENTIAL for there to be assets that may require maintenance" |
| | Inclusion of LLFAs & IDBs within Solicitors Searches | The inclusion of LLFAs and IDBs within Solicitors Searches to increase the likelihood that riparian responsibilities are discussed during property purchasing | "We often get told that solicitor's searches didn't mention anything about this. Perhaps LLFAs and IDBs should be part of the standard search for solicitors" |
| Engagement with Riparian Landowners | Board Member Site Visits | The use of board member site visits to help riparian landowners appreciate the impact of their non-compliance | "We have the option to orchestrate and connect a difficult landowner with an existing Board Member who is also a farmer and this sometimes helps them to appreciate the impact of their non-compliance" |
| | Compromise | Compromising with landowners to reach an agreeable situation | "If they want to culvert hen in some cases meet halfway. Allow small sections to be culverted" |
| | Enforcement | The use of enforcement to resolve riparian issues | "Enforcement is always the last resort" |
| | Parish Council Involvement | The utilisation of the parish councils to raise awareness and exert pressure on riparian landowners | "Involve parish council who can exert pressure" |
| | Provision of Information to Landowners & Local Groups | The provision of information to riparian landowners and local groups to raise awareness of riparian responsibilities and best practice principles | "Sent information on riparian ownership, letter drop more riparian owners who may have not previously been aware of their responsibilities" |
| | Utilisation of Flood & Community Groups | The utilisation of local flood & community groups which can raise awareness and exert local peer pressure | "Lack of awareness of riparian roles and responsibilities is by far the biggest barrier. To overcome this you just have to keep on hitting the message home. As stated above working with the wider community brings 'peer pressure' into play which we found worked in a number of cases" |
| | Geographical Information Systems | Mapping & Naming of Community Watercourses | The mapping and naming of local ordinary watercourses (non identified) |

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| | Riparian Issues GIS Dataset | The development and maintenance of a collaborative GIS dataset to enable the spatial monitoring of riparian issues, and the targeting of awareness efforts | "To task responsibility to Riparian Owners and to priorities watercourse management, in my opinion has been and is one of data recording flooding incidents to GIS mapping, interpreting the hot spots and watercourses and prioritising targeting information, responsibility and enforcement as necessary at the respective owners" |
| Other | Encourage Riparian Landowners to Take an Interest in Flood Risk Issues | Refers to the need for RMAs to encourage riparian landowners to take a greater interest in flood risk issues | "That a greater onus should be placed on riparian owners to take an interest in flood risk issues on their land, the consequential impact on others, and know how to deal with them" |
| | Production of Countywide Guidance Documents | Refers to the production of countywide guidance documents which outline the rights and responsibilities of riparian landowners alongside how to undertake maintenance efficiently and effectively | "[Our] preferred method is for the wider public to be educated on riparian roles and responsibilities. If a county-wide document and/or brochure was produced similar to the one by Surrey County Council, people could be directed to this for guidance. It would make sense if the document was displayed on the LCC website as well as being forwarded for inclusion on the websites of district councils, parish councils, IDBs and other risk management authorities" |
| Partnership Solutions | Community of Good Practice | The development of a national community of good practice to promulgate best practice principles | "I would be grateful to see what comes from this research and to create a community of good practice, so that watercourses everywhere are better looked after" |
| | Dedicated Riparian Officer | The funding of a riparian officer who focuses solely on riparian landowner issues | "Funding Riparian Responsibilities Officer (hosted by LLFA) - early days and some challenges associated with establishing who does what already and intruding onto other authorities remit/'territory'. However benefits to be gained from cross party working" |
| | Grant Conditions | The attachment of conditions to grants to facilitate greater levels of awareness raising of riparian responsibilities | "Grant conditions have included the requirement for delivery partner to raise awareness of riparian responsibilities and ensure any works required to be done by landowner are undertaken" |
| | Increase Funding | Refers to increasing funding to enable the resolution of long-term problems | "[Increased funding] has allowed us to co-ordinate more with IDBs to pick up long-term problems and start to see resolution. It is difficult where this is maybe not our liability but gives us options where waiting to get through normal blockers puts members of the public at risk of further non-life threatening flooding in the meantime" |
| | Local Flood & Drainage Groups | The use of local flood & drainage groups to act as a conduit for communication and information sharing | "Local Flood Boards have been useful to improve communication" |
| | Partnership Schemes | The use of partnership schemes to overcome riparian responsibility issues | "And where there are multiple catchment beneficiaries work to promote an RMA lead scheme with various funding" |
| Works Solutions | Agreements for Maintenance to a Particular Standard | The use of agreements to ensure maintenance is undertaken to a particular standard | "Some respondents have suggested that the development of this scheme could provide a framework for achieving agreements in some circumstances with riparian and possibly other landowners to accommodate or maintain structures or features on their land, which make a contribution to surface water flood risk management. DEFRA officials have indicated to me, however, that they do not think that this would be a fruitful or practicable avenue to explore" |
| | Financial Incentives | The provision of financial incentives to encourage maintenance | "Consideration of financial incentives to landowners to undertake routine maintenance but concerns over setting future precedent so no certainty that this will proceed" |
| | Inspections | The use of inspections to ensure works are undertaken | "Monthly inspections at "hot spots" i.e. locations where a blockage may increase flood risk to adjacent property or highway" |

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| | Provision of a Maintenance Service | The establishment of a maintenance service which riparian landowners can subscribe to | "The council should be able to offer a service to undertake maintenance and recharge the applicant without it going through enforcement - i.e. a paid for service" |
| | Undertaking Works by Default | The undertaking of works by default to avoid any of the above barriers | "Of the 80 authorities who answered this question, 64 or 80% had issued an initial prompt letter, 63 or 66% had issued a formal letter before action, 31 or 39% had issued a formal notice, 19 or 24% had directly carried out works, and six or 8% had recovered costs" |
| | Undertaking Works on a Without Prejudice Basis | The undertaking of works on a without prejudice basis to avoid any of the above barriers | "We tend to take the pragmatic approach of managing flood risk rather than relying on the landowners. A couple hours of labour is more cost effective than an unknown amount of hours fighting a legal battle with the landowner, especially if flooding would occur in the meantime" |

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| Watercourses, Structures & the Law | Aquatic & Riparian Plant Types | Algae | Outlines the types of algae found in watercourses | "Algae are classified according to colour. Filamentous types mat together in large entangled masses often known as blanketweed or cott, whereas microscopic, unicellular forms can float in the water and give rise to blooms" |
| | | Emergent Plants | Outlines the types of emergent plants found in watercourses | "Plants whose stems and leaves are exposed above the normal water level. They have erect, aerial leaves and can grow both in water and temporarily damp conditions. This category can be sub-divided into: tall emergent species with long, narrow leaves; generally smaller, broad-leaved emergent species" |
| | | Floating-leaved Plants | Outlines the types of floating-leaved plants found in watercourses | "Plants with some or all of the leaves floating on the water surface. This group can be sub-divided into: rooted floating leaved plants, free-floating species" |
| | | Non-native Invasive Bank Species | Outlines the types of non-native invasive bank species found near watercourses | "Three non-native invasive bank species associated with watercourses also require particular attention. These are: Japanese Knotweed, Giant hogweed, and Himalayan balsam" |
| | | Submerged Plants | Outlines the types of submerged plants found in watercourses | "Species with stems and leaves that grow beneath the surface of the water, although flowers may project above the surface. They are usually found in deeper water and rooted on the bottom" |
| | Designated Assets, Flood Defences & Structures | Altering, Removing or Replacing Designated Assets | Explains that consent may be needed prior to altering, removing or replacing a designated asset | "You may need consent from the responsible authority if you want to alter, remove, or replace a designated asset" |
| | | Appeal Process | Explains the appeal process with regards to asset designation / designated assets | "You may be able to appeal to the General Regulatory Chamber of the First-tier Tribunal (Environment) against a decision made by a designating authority. If you're the owner of a designated structure or feature you can appeal if you: disagree with a decision to designate your structure or feature; are refused consent; don't agree with a decision in connection with a consent application; don't agree with an enforcement notice; have applied to have the designation cancelled and been refused" |
| | | Culverts | Outlines the authorities position regarding culverting | "Our policy has been adopted to prevent the unnecessary culverting of Buckinghamshire's ordinary watercourses due to the adverse effect on the environment. This includes: <ul style="list-style-type: none"> • exacerbated risk of flooding • increased maintenance requirements • difficulty detecting pollution • destruction of wildlife habitats • damage to natural amenity" |

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| Ownership, Responsibilities & Rights | Designation of a Flood Risk Asset | | Explains that certain structures or features may be designated as a flood risk asset by RMAs | "Your structure can be designated by the risk management authorities: EA, NRW, LLFA, DC, IDBs" |
| | Designation Process | | Explains the process of designation | "You'll be sent a provisional designation notice by the authority that wants to designate the potential asset. The notice will: identify the structure or feature to be designated; ask you to confirm you're the owner or that you maintain it; tell you which authority intends to designate it; explain the reasons for the designation including why the potential asset affects flood or coastal erosion risk; explain the legal process and implications; tell you how to raise any queries or concerns you may have" |
| | When an Authority Stops Maintaining a Flood Defence | | Explains what one should do if this occurs | "On a main river, you can find out what to do if the Environment Agency stops maintaining a flood defence on their website. On any other watercourse, contact Suffolk County Council – Flood & Water Management Team or the IDB if you are in an IDB area" |
| | Environment Agency (EA) Responsibilities | | Explains the responsibilities of the EA in relation to riparian landowners | "Responsible for consenting and associated enforcement on Main Rivers" |
| | | EA Enforcement Process | Explains the enforcement process of the EA | "You must follow the environmental permitting rules if you want to do work... You may need to apply for permission to do any of the following regulated flood risk activities" |
| | Internal Drainage Board (IDB) Responsibilities | | Explains the responsibilities of IDBs in relation to riparian landowners | "The IDB also have a general supervisory duty over all drainage matters within their districts and have consenting and enforcing powers for work carried out" |
| | | IDB Enforcement Process | Explains the enforcement process of IDBs | "Before submitting an application you can contact us for pre-application advice on your proposal. These guidance notes give you information to help you fill in your application for flood defence consent for works in a Drainage District. If you fill in your application form correctly first time, we can process it quicker. Please follow this guidance to help avoid delays in your application. Each element of the proposed works that requires land drainage consent will need a separate application". |
| | Lead Local Flood Authority (LLFA) Responsibilities | | Explains the responsibilities of the LLFA in relation to riparian landowners | "We have permissive powers under Section 25 of the act to ensure that appropriate maintenance is carried out by riparian landowners on ordinary watercourses. These powers can be exercised if it is deemed that a lack of maintenance or an alteration to a watercourse pose a flood risk" |
| | | LLFA Enforcement Process | Explains the enforcement process of LLFAs | "In the first instance after being informed of a possible infringement by a landowner, we will seek to gain that landowner's cooperation in ensuring appropriate maintenance takes place. We will carry out site investigations, advise all parties on their duties under the Land Drainage Act and co-ordinate discussion and communication between relevant parties. Exercising of permissive enforcement powers will only take place when necessary and as a last resort when all other opportunities to resolve the issue have been explored" |
| | Riparian Landowner Responsibilities | | Explains the responsibilities of riparian landowners | "Accept flood flows through their land, even if these are caused by inadequate capacity downstream" |
| Riparian Landowner Rights | | Explains the rights of riparian landowners | "[Right to] protect your property against flooding from the watercourse and to prevent erosion of the watercourse banks or any structures" | |
| Watercourse Ownership | | Explains the concept of watercourse ownership | "You normally own a stretch of watercourse: that runs on or under your land; on the boundary of your land, up to its centre" | |

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| Problems Affecting Watercourses | Disposal of Garden or Domestic Waste | Refers to the problems associated with the disposal of garden or domestic waste into watercourses | "Could cause pollution on the banks or in the water" |
| | Failure to Clear Entrances to Piped Watercourses | Refers to the problems associated with the failure to clean entrances to piped watercourses | "Failing to clear the entrances to piped watercourses" |
| | Failure to Obtain consent | Refers to the problems associated with the failure to obtain consent for works on watercourses | "Failing to obtain consent for any building or alterations within eight meters of the bank" |
| | Silt Build-Up | Refers to the problems associated with the build-up of silt in watercourses | "Allowing silt to build up which can reduce the capacity of or block watercourses" |
| | Uncontrolled Vegetation Growth | Refers to the problems associated with the uncontrolled growth of vegetation in watercourses | "Failing to keep vegetation growth under control" |
| Roadside Ditches | Ditch Created by Highway Authority | Outlines who is responsible for ditch maintenance in this circumstance | "If the Highway Authority has created or piped the ditch specifically under their highway powers, they became responsible for its maintenance" |
| | Ditch on Field Side of Fence or Hedge | Outlines who is responsible for ditch maintenance in this circumstance | " A ditch on the field side of the fence or hedge taking land drainage as well as highway drainage which is a responsibility of the riparian owner" |
| | Ditch on Road Side of Fence or Hedge | Outlines who is responsible for ditch maintenance in this circumstance | "A ditch on the road side of fences and hedges taking land drainage as well as highway drainage which is the responsibility of the Riparian owner" |
| Terminology | Flood Risk Asset Definition | Defines the term flood risk asset | "Flood risk assets are structures which are used to manage flood risk such as walls and embankments, pumping stations, culverts, trash screens, flood gates, and channels, some of which may be on your land" |
| | Land Drainage Authority Definition | Defines the term land drainage authority | "Kent County Council and internal drainage boards are local land drainage authorities in Kent for ordinary watercourses and have powers under the Land Drainage Act 1991" |
| | Land Drainage Definition | Defines the term land drainage | "Land drainage is the disposal of rainwater, achieved by a network of various types of watercourse" |
| | Main River Definition | Defines the term main river | "Main Rivers are usually larger rivers which have been designated by DEFRA" |
| | Ordinary Watercourse Definition | Defines the term ordinary watercourse | "An ordinary watercourse is every river, stream, ditch, drain, sluice, sewer (other than a public sewer) and passage through which water flows and which does not form part of a main river" |
| | Riparian Landowner Definition | Defines the term and explains the concept of riparian ownership | "A 'Riparian Owner' is someone who has a watercourse within or adjacent to any boundary of their land". This concept applies to both main rivers and ordinary watercourses (even those maintained by IDBs or Local Authorities) as demonstrated below: <ul style="list-style-type: none"> "Main rivers – These are the responsibility of the riparian owner(s) for their maintenance and repair" "Ordinary watercourses – These include any rivers, streams, ditches, drains or channels which do not form part of a main river as designated by the Environment Agency. The responsibility for their maintenance and repair also lies with the riparian owner(s)" "The above information also applies to IDB watercourses along with our |

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| | | | byelaws... So, if you have a hedge, wall, fence or structure backing onto an IDB watercourse, it is your responsibility to ensure any rubbish, vegetation is kept clear from around these" |
| Working on or Near Watercourses | Watercourse Definition | Defines the term watercourse | "A watercourse is any natural or artificial channel above or below ground through which water flows" |
| | Application Cost | Outlines the costs of applying for land drainage consent | "£50 per structure" |
| | Application Guidance | Provides guidance on how to complete a land drainage consent application form | "When making an application it is essential to fill in the application form fully and accurately, and for any accompanying information, including drawings, maps, assessments and calculations submitted to be clear" "Before submitting an application you may find it useful to familiarise yourself with our consenting policy, which outlines the features we would expect to see in an application and why" |
| | Byelaws | Outlines the byelaws of relevant authorities that influence works on or close to watercourses | "The byelaws include a number of restrictions" |
| | Consent Appeal Process | Outlines the appeal process for consent refusal | "If you believe a consent (under Section 23) has been unreasonably withheld then you have the right to appeal. Under Section 23 (5) if agreement cannot be reached between us an arbitrator will be appointed to settle the matter" |
| | Consent Application Process | Outlines the process for consent application | "In order for consent to be granted, you must submit your application for consent in writing to Cornwall Council at least two months before you intend to carry out any proposed works, allowing us to fully consider your application" |
| | Consent Granted | Refers to what happens after consent is granted (e.g. may be subject to additional conditions for instance timing, or other permits) | "If we approve your application for ordinary watercourse consent, you may start your work. In some cases, we may apply additional conditions. These can be certain timescales or gaining additional permits or permission from other bodies. If there are conditions, we will notify you at the time the consent is issued" |
| | Consent Purpose | Justifies the purpose of issuing consents | "The reason for the consenting process is to ensure that any proposed works do not endanger life or property by increasing the risk of flooding nor cause harm to the water environment and nature conservation" |
| | Consent Refusal | Explains that consents may be refused | "Yes, if: It is deemed that the structure being applied for is not necessary; a watercourse's flow will be obstructed; there is insufficient information contained within the application" |
| | Consent Time Limit | Explains that time limits may apply to granted consents (details of which are often provided in the consent notice) | "Your consent will also only be valid for a period of three years. This is because the resultant effects of the scheme may change due to other factors that have developed since the application was first made" |
| Guidance on What Works Need Consent | Outlines what types of work will and may not require consent from the relevant authority | "As a guide for applicants, we have created a simple diagram with some common examples which aims to make clear which kinds of work do or don't need consent" | |
| Need for Consents | Explains when consents are needed | "If you are planning to undertake works within a watercourse within the UK, you need permission to do so by law. It is essential that anyone who intends to carry out works in, | |

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| | | | | over, under or near a watercourse, contacts the relevant flood risk management authority to obtain the necessary consent before starting the work" |
| | Other Potential Consents | | Refers to other consents that may be needed/ must be abided to including: protected hedgerows; works to highways; tree preservation orders; settlement conservation areas; archaeology; planning permission; conservation permission; countryside stewardship; environmental permit for waste removal; discharge activity permit | "If you're going to treat or dispose of waste from your works, find out if you need to: get an environmental permit from the Environment Agency; register a waste exemption with the Environment Agency; Registering an exemption means you don't need an environmental permit for your activities with waste" "You may also require planning permission if you propose to go beyond the curtilage of your boundary" "If the work affects sites of known conservation or archaeological value, you may need further permissions from the relevant Authorities" |
| | Pre-Application Service Works | Process | Outlines the process of the pre-application service | "Once you have filled out the online form, one of our engineers will review your application within 28 days" "If you have requested a site visit, you will have a face-to-face consultation with an engineer at your site. The engineer will help make sure your application is accurate and complete. They will also provide written advice for you to refer to" |
| | | Benefits | Outlines the benefits of the pre-application service | "Improve the likelihood of having your watercourse consent approved first time; Save time and money by receiving expert advice on your application.; A site visit ensures your application is accurate to the works you are carrying out" |
| | | Cost | Outlines the costs of the pre-application service | "Written advice: £165; Site visit and written advice: £325" |
| | Who to Apply to | | Outlines which RMAs should be contacted to obtain consent | "Cumbria County Council is now the flood defence consenting authority for works on Ordinary watercourses ... The EA retains responsibility for consents relating to main rivers" |