NRA

THE INTRODUCTION OF AN EFFECTIVE MARKET TESTING PROGRAMME FOR THE FLOOD DEFENCE FUNCTION OF THE NATIONAL RIVERS AUTHORITY IN THE NORTH WEST REGION

CERTIFICATE IN MANAGEMENT
GROUP 5
GLYN VAUGHAN
SEPTEMBER 1994

CERTIFICATE IN MANAGEMENT

GLYN VAUGHAN - GROUP 5

Project Title :

The Introduction of an Effective Market Testing Programme For the Flood Defence Function of the National Rivers Authority in the North West Region

Executive Summary

The project explains the events leading up to the introduction of market testing. The pressures for change are examined and analysed.

The project goes on to examine closely the operational elements of the introduction of market testing and the problems encountered during and after the client/contractor are:

- The Lack of Financial Systems
- The Lack of Monitoring Systems
- The Lack of Resources.

It is hoped that the latter problem is solved to a certain extent by the analysis and recommendations within the report. However, the lack of financial and monitoring systems is a continuing problem and pressure exerted by Senior Management to ensure the speedy introduction of National Initiatives would most certainly be beneficial.

The report also highlights the need for Senior Management within other regions, who are still to be subjected to market testing, to ensure that the relevant systems are in place before any split to client/contractor. This would certainly remove one of the greatest barriers to a smooth transition, and help ensure that the morale of staff is not affected more than it need be.

CERTIFICATE IN MANAGEMENT

THE INTRODUCTION OF AN EFFECTIVE MARKET TESTING PROGRAMME FOR THE FLOOD DEFENCE FUNCTION OF THE NATIONAL RIVERS AUTHORITY IN THE NORTH WEST REGION

G VAUGHAN
Group 5
Sept 1994

CONTENTS

1. TERMS OF REFERENCE

- To make recommendations in order to advance the market testing strategy.
- To give a background to the NRA in a market testing context.
- To examine the methods used for Market Testing Flood Defence in the North West Region.
- To highlight the problem areas and suggest recommendations.

2. SUMMARY

2.1 The project sets out to look at the events leading up to Market Testing. The pressures for change are examined, with emphasis on political and economic forces.

2.2 Background information is briefly given in order for non National Rivers Authority readers to understand the issues raised.

2.3 The project then goes on to examine its introduction and how it was implemented. Problems are examined and critically analysed.

2.4 The report shows that Market Testing was not introduced in the most efficient way, and was only made to work through the efforts and loyalty of N.R.A. employees, both Contractor and Client.

2.5 The main reasons for the inefficient introduction of Market Testing were the tight timescales, the lack of financial and monitoring systems, and the lack of resources in management, supervision and labour.

2.6 The report recommends various ways to ensure that the Market Testing of Flood Defence develops into an efficient and effective system of working, giving real value for money.

2.7 The recommendations should be useful to other functions or regions who have yet to go through this process. Hopefully it will ensure that they do not make the same mistakes.

3. CONCLUSIONS

3.1 The political pressure to introduce market testing was the overwhelming force, with a myriad of real problems being swept aside. These problems have had to be solved or worked around to make market testing possible. In reality, only the dedication and loyalty of all those concerned in the NRA made it possible.

3.2 The market testing of flood defence was introduced on an unrealistic timetable. Systems required to ensure the efficient management of the new structure were not in place at the time of the client/contractor split.

3.3 Nine months after the split took place, the most important systems, namely the financial systems were still not available.

3.4 The introduction of market testing has not led to true value for money. Without the financial systems mentioned above it is not possible to calculate the cost of each element of work accurately. Eventually, of course, this will be possible, however, the cost of each element of work was never known prior to the client/contractor split. A direct comparison is not, therefore, possible.

3.5 Market testing has forced the flood defence function to examine closely what it actually does, and to justify its work. This has definitely led to a more efficient way of working and, therefore, indirectly is providing value for money.

3.6 The management of resources is of vital importance. The client/contractor split inevitably reduces the availability of supervisory and inspection staff. An analysis of the most effective method of deploying these staff is essential.

4. RECOMMENDATIONS

4.1 Recommendations are given at the end of each chapter where appropriate. The following paragraphs are a summary of the main recommendations.

4.2 It is clear in the project that there is a desperate lack of any formal systems to monitor finance and operational tasks.

4.3 It is recommended that pressure is exerted by Flood Defence Managers, and Senior Managers to speed up the introduction of national systems such as the Flood Defence Management System. In the meantime, area databases and monitoring systems, however crude, should be improved and maintained. This is essential in order to gather historical data for use in future planning and budgeting.

4.4 Our customers must be informed of the changes before they are affected. Riparian owners whose level of service from the NRA may be reduced, must have the situation explained to them.

4.5 This could be done by either individual contact or by using a full marketing strategy. This is outside the scope of this project. However, a report prepared by the author on suggested ways to carry out this marketing is available.

4.6 The project analyses in detail the use of resources for inspection of work and recommends, for the North Area, the re-allocation of inspection areas together with the introduction of a service level agreement with fisheries bailiffs.

4.7 It is recommended that other functions or regions who are still to undergo market testing ensure that all systems and staff structures are in place at least 12 months before market testing is introduced.

4.8 The Bill of Quantities and Schedule of Rates documents are accepted as being the correct choice for their respective contracts. It is recommended, however, that any repetitive documents, such as the Bills of Quantities are entered onto a computerised system. The initial efforts will be rewarded when the time comes to amend or re-issue them.

4.9 More use should be made of consultants when carrying out tender assessment. Firstly, it will release the already stretched resources available within the NRA and secondly, it will show complete fairness when the IBU is competing against outside competition.

5. INTRODUCTION

5.1 Background Information

5.1.1 The Water Act of 1989 established the National Rivers Authority as "Guardians of the Water Environment", with a wide range of statutory duties and powers. It was formed by combining the relevant resources of 10 Water Authorities. This effectively meant 10 N.R.A. Regions with 10 completely different structures. An important aim of the N.R.A. was to integrate these 10 regions (now reduced to 8 through amalgamation) into a real National Rivers Authority. This process is a continuing one made very difficult by each region wanting to cling onto its own identity.

5.1.2 The title of the project purposely only refers to the North West Region. The reason for this is that due to the diversity in the regional structures, it would be impossible to introduce a common Market Testing policy. Indeed, it will be difficult enough to introduce a policy that will be common over the areas within a region. As Flood Defence Manager for the North Area of the North West Region, many of the topics within the project will be based on my own experiences within my Area. However, in most cases, the arguments can be applied directly or adapted to cover the whole Region.

5.1.3 The White Paper, "The Citizens' Charter, First Report 1992" set out to promote fair and open competition so that departments and agencies could achieve the best value for money for the customer and for the taxpayer.

5.1.4 What is Market Testing?

It is where an activity currently performed in-house is subjected to competition, in order to give the best value for money. Market Testing compares with 'make or buy' decisions in the private sector, and exists to ensure the efficient provision of services to the public.

5.1.5 The mission statement of the N.R.A. includes the following:

> ".....we will aim to provide effective defence for people and property against flooding from rivers and sea....."

This commitment which involves the maintenance of watercourse, structures and embankments for flood defence purposes plus the maintenance of watercourses and associated structures for land drainage purposes comprises the operational function of the Flood Defence department and is the subject of the Market Testing Policy.

5.2 The Need for Change

5.2.1 The present economic and political climate are the main driving forces behind the move towards Market Testing as a way to show value for money. These external pressures can be best examined using a P.E.S.T.L.E. analysis:

- Political — Political dogma is driving the market Testing philosophy as a way to show value for money.
- Economical — The reason for showing value for money is to reduce costs as a way of giving savings to the taxpayer and reducing public spending.
- Sociological — People are now far more aware of Authorities such as the N.R.A., and demand to know where their money is going. Market Testing is a way of showing the public that a real effort is being made to justify how their money is being spent.
- Technological — Advancement in machinery means that work on river maintenance can be carried out far more efficiently and that means that fewer people are required.
- Legal — In April 1996, the new environmental agency will be established, combining the resources of the N.R.A., H.M.I.P. and the Waste Regulators. The N.R.A. is being pushed towards more efficient working before this change takes place.

  European laws to curb pollution and the willingness of the public to 'take on' large Authorities in the courts required the N.R.A. to be more accountable for its actions.
- Environmental — As "Guardians of the Water Environment", the N.R.A., and particularly flood defence, must plan their work better, so as to have the least effect on the environment.

  The general public have a great awareness of environmental issues and the N.R.A must act in a professional and caring way.

5.2.2 There are also internal pressures, most of which are driven by the external pressures highlighted in the P.E.S.T.L.E. analysis.

5.2.3 For instance, senior management have been set objectives, some of which have been designed to ensure the introduction of Market Testing.

5.2.4 The main barrier to this change is custom and practice. In the past, there have been many changes to the structure of staff, but never as fundamental as that created by a Market Testing Strategy. Many people have found the change very difficult to come to terms with and many people still do not understand the Market Testing Philosophy (or are unwilling to).

5.2.5 Using Lewins forcefield analysis below seeks to demonstrate the various resistances to change, and highlights the enormous problems in introducing such a radical change.

DRIVING FORCES	CHANGE	RESTRAINING FORCES
P.E.S.T.L.E. pressures		Custom & Practice
→	THE INTRODUCTION	←
Improved Planning	OF A	Mental Attitudes
→	MARKET TESTING STRATEGY	←
Improved Accountability		Increased Paperwork
→		←
Improved Justification		Lack of Resources
		←
		Increased Workload

All the restraining forces must be overcome to have a successful change, but in reality, the political pressure is so overwhelming, the restraining forces are overcome, but still remain as problems.

5.3 A Method For Determining How Much Work Should Be Exposed To External Competition

5.3.1 In 1992, a consultant, David Noble, was employed by the N.R.A. to determine how many of the total in-house workforce would be required to maintain an emergency response to flooding events. This number is known as the 'Noble Number' and is defined for each area.

5.3.2 Enough work must be guaranteed to employ the Noble Number all year round, with the remainder of the work made available for outside competition.

5.3.3 The regional figures gave a total in-house workforce of 260 and a Noble Number of 174. However, due to the highly rural and unpopulated nature of the North Area, the Noble Number was only 32 as against an initial work force of 75, which has now reduced to 53 through voluntary severance, retirement and sickness.

5.3.4 It was initially agreed to tender one third of all the work regionally within the first year. However, due to the changing relationship between the Noble Number and the number of Manuals within the current I.B.U. (Internal Business Unit), as the N.R.A. Contractor is called, this figure is continually being reviewed.

5.3.5 The contracter is defined as the provider of the work, whilst the client is defined as the specifier of the work.

5.3.6 In the North Area, an initial contract of approximately £1.7 million over three years has been tendered and won by the I.B.U. (See Chapter 7)

5.3.7 The guaranteed work is awarded to the I.B.U. using the ICE 6th Edition contract. This involves specifying the work using Bills of Quantity (Appendix 1).

5.3.8 Only three out of the eight regions had a Noble number less than their existing in-house work force, namely North West, Thames and Anglian. Therefore, only those three regions must put work out to external tender, although the remaining regions must have a client/contractor split and organise their work in a way which demonstrates value for money.

5.4 Scope of this Project

5.4.1 The project will aim to look at the problems in introducing the Market Testing Strategy, the positive points that have arisen and how the negative points may be overcome.

5.4.2 It is hoped that some of the lessons learnt during the sometimes painful process may help others in smoothing the way to a successful conclusion.

6. THE INTRODUCTION OF MARKET TESTING

6.1 The Timetable

6.1.1 The N.R.A. first started looking seriously at Market Testing in late 1991 and operations staff in the North West Region were involved in this process. In the Spring and Summer of 1992 two groups were formed, one to look at what was required on the Contractor's side to be successful and one on the Client side to look at the systems that would be required to be successful. This exercise proved very fruitful, although many of the recommendations, notably the introduction of a good financial monitoring and costing system, were ignored.

6.1.2 The N.R.A. timetable was very much controlled by the Government who changed their timetable many times during this difficult period. This involved many aspects of Market Testing, such as staff structures, being revisited. This obviously was not good for morale and certainly did not boost the confidence of the staff and workforce.

6.1.3 The eventual outcome was that the North Area would be the first to offer work to competition. The first contract would have to be ready to start in the Spring of 1994.

6.2 The Position Prior to Market Testing

6.2.1 To describe accurately the introduction of Market Testing, we must go back in time to the period immediately before January 1994.

6.2.2 At this time, there was no Client/Contractor split as there is today. The Flood Defence operations function was both Client and Contractor with the District Managers and their staff specifying the work and the in-house workforce carrying out the work. Also at this time, the area boundaries were in the process of being altered, including the merging of North Cumbria and South Cumbria districts to form the North Area (Appendix 2).

6.2.3 The staff structure at this time included a District Manager, technical staff and supervisory staff (Appendix 3). This team produced a programme of heavy maintenance work which included the resectioning of watercourses, repairs to embankments and the construction of access bridges. A programme of routine maintenance work such as grass and aquatic weed cutting was also produced, which made up the bulk of expenditure. Another important element of work was reactive work. This could involve the removal of trees or other blockages from structures for instance, and generally was work which could not be planned in advance. This, of course, is still the case.

6.2.4 All the work described above was issued to the in-house workforce by the Flood Defence staff. In general, the routine maintenance was administered by the supervisory staff, and the heavy maintenance by the technical staff. Reactive work was issued by either, depending on the type of work.

6.2.5 Apart from some reactive work and emergency work, all the remainder was pre-measured and issued to the workforce using job notes. This document gave a description of the work, a target time, and a means to log all hours worked against that job (Appendix 4). This system was known as the Water Industry Productivity Payment Scheme (W.I.P.P.S). The computer could spool off the job notes for routine maintenance in a planned order to complete the annual programme. In reality, this was not the case due to weather, or operational problems, and more often than not, the supervisor would order off the job notes in a different sequence.

6.2.6 Depending on the hours booked against each job and the hours allocated to that job, a bonus was payable to the workforce which varied from 0% to 31.25%.

6.2.7 This project does not aim to explore this system, but suffice to say, the WIPPS could be, and was, abused. The scheme was also used for too long, not being phased out until 1994. This obviously resulted in a very inefficient way of working.

6.2.8 At this time, when an emergency arose, such as flooding of a river, a member of staff would be sent to the scene by an Area Duty Officer to liaise the event. Usually, the flooded area was a known site, and the staff would know roughly what resources were required before they arrived on the scene.

6.2.9 Any resources, such as labour and plant would be organised between the staff on site and the Area Duty Officer. There was no fixed limit for any resources.

6.2.10 The budgets will be discussed in more detail at a later stage in this project. However, it would be useful to give a brief description of the position prior to January 1994.

6.2.11 The budget was obviously resource based and basically calculated by costing out all the staff, labour and plant, making an estimate for materials and adding overheads. Apart from the materials, there was no reference to the work actually being carried out!

6.3 The Change in Staff Structure

6.3.1 In January 1994, the staff structure was changed in order to produce a Client/Contractor split. The new structure now has area based Client staff with a regional contractor structure and a regional workforce. (Appendix 5)

6.3.2 The new structure has meant a reduction in supervisory and technical staff for both the Client and Contractor. As will be seen later, this has caused major problems.

6.3.3 A much greater emphasis has been placed on teamwork in order to achieve the purpose of Market Testing. Obviously, it is not possible to discuss the teambuilding on the contractor's side, but it is felt by senior managers that the clients' teambuilding efforts have been very successful.

6.3.4 The purpose of the Client team is to organise and carry out the effective and efficient provision of a Flood Defence service within the North Area, protecting people, property and land from flooding and maintaining watercourses to enable land to be drained efficiently where justified.

6.3.5 Team building has played a very important role in the development of the Client function and has been particularly successful considering the preparation of tender documents to a very tight timescale.

6.3.6 At the time of the split, the strengths and weaknesses of the Flood Defence Client Team were determined by the Flood Defence Manager and a decision made on the immediate, the medium term, and the long term development priorities.

6.3.7 A report by the author, on teambuilding within the client function produced a chart of the success criteria for the Flood Defence Client team. This was done in January 1994, and the first task is now complete. It is interesting to note the outcome below which clearly demonstrates the success of the team.

TASK	SUCCESS CRITERIA	RESULT
TO PRODUCE THE NORTH AREA REVENUE PROGRAMME IN I.C.E. 6TH EDITION FORMAT TO BE READY FOR MID MARCH 1994	• The programme is accurate	Yes
	• The programme is achievable	Yes
	• Related documents are easily understood and unambiguous	Yes
	• The budget is realistic	Yes
	• The proposed work is cost beneficial and justified	Yes
	• The programme is produced to the deadline (or before)	Yes
	• The programme is capable of being monitored and costed	Yes (Within Limits)
	• The programme can readily be audited	Yes

6.4 The Lead Up to Contract Award

6.4.1 Between January and April 1994, there was intense activity by the Client and the Contractor. The I.B.U. and their management had to reorganise their depots, transport and working methods to be able to cope with the change. At the same time, they had to introduce systems to monitor their work and cost it.

6.4.2 The Client also had an extremely busy time. In these few months, the Flood Defence Manager and his team had to produce the relevant documents (discussed in Chapter 7) and arrange, together with Head Office staff, for suitable contractors to be selected to compete for the work.

6.4.3 Systems were frantically being set up with the result that they were never going to be successful. All this in spite of warnings two years previously by ourselves to senior management that if financial systems and monitoring systems were not in place before the introduction of Market Testing, it would never be a success.

7. JUSTIFICATION AND PRIORITISATION OF WORK

7.1 Although the justification of work is not an inherent part of Market Testing, it is non the less a very important way of getting value for money and has been incorporated into the process.

7.2 In the past, very little justification of work took place. Routine maintenance tended to be on a custom and practice basis and heavy maintenance tended to be carried out because, in the eyes of the supervisor or other member of staff, it should be done, or perhaps because of pressure from a member of public. For whatever reason, there was no effort made to carry out any justification. As mentioned in Paragraph 5.2.11, this work became part of the programme and was carried out using resources accounted for in the budget.

7.3 The system adopted to justify and prioritise the work in this year's programme, including the work subjected to outside competition, was based on calculating cost benefits to justify the work, and a scoring system to prioritise it.

7.4 The method was crude but effective in focusing the mind on what we actually do. An example in Appendix 6 shows the final result, but does no include the calculations for the cost/benefit.

7.5 The system has now been improved drastically following a Consultant's report on the Standards of Service on each watercourse. The work in next year's programme will be far better justified and a regional prioritisation will be applied.

7.6 The process will continue to be refined as more accurate information is made available to us.

7.7 There is no doubt that the justification of our work was long overdue and this has most definitely been a positive move in showing value for money.

7.8 ***Recommendations***

- *The continued improvement in the justification and prioritisation of work is essential to ensure that money is spent only where it is required.*
- *Landowners and other Riparian owners who have long enjoyed a level of service on their watercourses will need consulting if any reduction or ceasing of our services will affect them. (Report available from author).*

8. THE TENDERING PROCEDURE, TYPES OF CONTRACT AND AWARD OF WORK

8.1 The Selection of Suitable Contractors for Externally Contracted Work

8.1.1 A very important aspect of the Market Testing procedure is the selection of suitable contractors. Contractors must be experienced, financially viable and have a good reputation.

8.1.2 The selection of suitable contractors involved gathering large amounts of information, analysing it and then taking decisions.

8.1.3 Because the cost of the proposed work was greater than £144,000, then, following Government rules, the notice asking for requests to be placed on the list, had to be advertised in the European contract journals and all local papers covering the area of the Contract (see Appendix 7). This was duly done, and an initial list of 85 contractors drawn up, all of which were British.

8.1.4 The initial stage of selection involved all 85 contractors being sent a questionnaire to complete. (Appendix 8). A final date for submission was given, and when that date had passed, all the questionnaires were logged and then subjected to selection criteria (Appendix 9).

8.1.5 The various aspects of the questionnaire were sent to the 'experts' to look at. For instance, all the financial information was sent to the Exchequer Manager at Regional Head Office to examine. Each of these experts was asked to give marks on a weighted scale depending on whether they thought that the contractor was good, intermediate, poor or totally unsuitable. Obviously, the quality of the information submitted by the contractors was very important.

8.1.6 In some instances, extra information was asked for to clarify certain points.

8.1.7 A mass of information was gathered in order to carry out this exercise, and many people were involved in the process.

8.1.8 A maximum score of 53 was possible.

8.1.9 All contractors with more than 20 points would be placed on the provisional Select Tenders list. The threshold of 20 points was arrived at by asking each expert to give the ideal score for a contractor. The threshold was not fixed and could be altered if necessary. Certain elements, such as finance, were compulsory ie. pass or fail.

8.1.10 The number of contractors scoring 20 points of more was 18, which was acceptable.

8.1.11 Each of these contractors was then contacted and given exact details of the type of work they would be tendering for. This is necessary because many contractors in these days of continuing recession in the construction industry, will apply for any Select Tender list in the hope of getting on some of them. Quite often, they will apply even if the field of work required is not exactly the same as theirs. By sending them exact details, and asking them to state how they would carry out that work, i.e. a method statement, only those who have a real desire to continue will proceed.

8.1.12 Unfortunately, only five contractors wanted to proceed and be added to the Select Tender List!

8.1.13 All five of the remaining contractors were visited by a Flood Defence Manager, together with the Regional Safety Advisor, to assess at first hand, their suitability.

8.1.14 All five contractors were deemed to be suitable, and placed on the Select Tender List. The I.B.U. was also placed on the list automatically giving a total of six contractors.

8.1.15 This process was a reasonably straightforward one, but ended up as a nightmare because of the lack of contractors willing to go 'all the way' at the end of the process.

8.1.16 The main problem was that so many contractors did not really understand what the contract was about, and when they eventually did, they withdrew at the final stage.

8.1.17 The reason was that many contractors did not have enough information initially to make a reasonable decision on whether to apply or not. The difficulty here is giving the information in such a way that they will look at it and make a reasonable decision quickly.

8.1.18 The questionnaire information is necessary to make an initial 'trawl', but if we ask for method statements etc. at this point, we have too much information all at once. In effect, we need to produce a 'hurdle' system, where the questionnaire is the first hurdle, and the method statement is the second.

8.1.19 Recommendations

- *In future, it would be recommended that the advert is left as it was, but when the questionnaire is sent, a brochure outlining the type of work expected, is sent with it, and the contractors are asked to read this before deciding on whether to continue. At this stage, a method statement, should not be asked for, the brochure being for information only.*

- *The brochure should state that at a later stage, all contractors who have progressed along the route to the Select Tender List will be required to show that they are capable of carrying out the work requested.*

- *This will ensure that these contractors who automatically attempt to get onto all select tender lists are aware at the outset that they will be expected to undergo a rigorous selection procedure. Hopefully, any 'not sures' will go no further.*

8.2 Type of Contract for the Externally Contracted Work

8.2.1 There are many different types of contract, such as Bills of Quantity and Schedule of Rates. Each type has its own merits and to a large degree are dependant on the type of work.

8.2.2 The Bill of Quantity type contract was decided to be the best suited to the flood defence maintenance work for a number of good reasons.

- Easy to administer
- Usually cheaper price because of generally known quantities.
- Flexible to change with variation orders and site instructions.

8.2.3 There are many different types of Bill of Quantity contracts such as ICE 6th and ICE minor works. The most suitable was the ICE (Institute of Civil Engineers) 6th edition. This was the type of contract agreed, mainly because it is a very well known type of contract, well respected amongst all reputable contractors and NRA staff. This would ensure that the NRA would get the best value for money from the contractors and would also easily administer it.

8.2.4 Much of the standard paperwork required to use this contract is readily available in the NRA already, ensuring a fast transition to the contract.

8.2.5 The main problem with the Bill of Quantity type of contract was the volume of data required. The North Area contract consisted of 800 pages, most of which was the actual Bills of Quantities. However, it has now been recognised that once the initial 'donkey work' has been done, it is relatively easy to up-date.

8.2.6 Recommendations

- *All Bills of Quantities are prepared well in advance of preparing the remainder of the tender document. Because of the repetitive nature of routine maintenance work, this is relatively easy.*

- *Build up all Bill of Quantity sheets on a suitable spreadsheet. This produces a professional finish, is easily up-dated, and can be used to calculate costs.*

- *Introduce suitable systems at an early stage and keep track of all the Bills of Quantities, Variation Orders and Site Instructions.*

8.3 Tender Assessment

8.3.1 When all the completed tenders had been received from the six contractors, the process of tender assessment then had to take place.

8.3.2 This process was a very tedious and complicated one, and it is only intended to give an overview here to highlight problems and make recommendations.

8.3.3 The initial stage was to have each priced document checked for completeness and mathematical errors. This was a very tedious and time consuming task.

8.3.4 The next stage was to examine each element of work to ensure that the rates were reasonable and achievable.

8.3.5 Once again, other functions including Health and Safety and finance, were asked to comment on various aspects of the contract, to ensure the suitability of the contractors.

8.3.6 A matrix was then used with a weighting scale to assess each contractor (Appendix 10). This would allow for contractors who were strong in their environmental, or Health and Safety commitments for instance, to be given uplift.

8.3.7 The final 'adjusted' costs were the costs used for prioritising the contractors.

8.3.8 It should be noted that one contractor withdrew their bid.

8.3.9 The final result was a list of contractors in order of economic viability, with the work most economically viable at the top (not necessarily the cheapest).

8.3.10 The Internal Business Unit returned the most economically viable contract and were, therefore, awarded the contract.

8.4 Type of Contract for the Guaranteed Work

8.4.1 A Schedule of Rates type contract was considered to be best for the guaranteed work.

8.4.2 In this type of contract, the Client provides a list of standard tasks, to which the IBU places a unit cost.

8.4.3 The work is then issued using works orders, which are simply documents giving an instruction to carry out an element of work. (Appendix 11). A schedule of the work is attached, identical to a Bill of Quantities, to which the schedule of rates can be applied. (Appendix 12)

8.4.4 This type of contract has several advantages over a Bill of Quantities contract.

- It is much easier to set up. With the very tight timescale, this was an essential feature.
- Gives much greater flexibility for reactive and emergency work.
- Very easy to operate and up-date/expand.

8.4.5 The system, in practice, has proved very efficient from an operational point of view, and is 'settling down' very well.

8.4.6 Recommendations

- *The two types of contract work very well and have been favourably received by the client and contractor. The two contracts should now be refined by the better use of internal systems as mentioned in paragraph 9.3.*
- *An external consultant is used to check the mathematics, completeness and sensitivity of contracts in the future. The two main reasons are firstly, to save valuable time, and secondly, to show impartiality when the IBU is one of the contractors.*

9. FINANCIAL SYSTEMS

9.1 Financial Information

9.1.1 The 1994/95 budget, was set and agreed, at a time when the Client/Contractor split had not occurred, and it was unclear how it would evolve. The only way in which the budget could be set was by basing it on the work carried out by the resources available at that time.

9.1.2 This was an extremely unsatisfactory way of setting a budget that was to cover work required by the Client, rather than work guaranteed to cover the available resources. It was also very unclear, and still is unclear, what the work was actually going to cost. It was therefore impossible to set an accurate budget.

9.1.3 The budget agreed for the North Area for 1994/95 was £2.1 million, not including the I.B.U. overheads, which have since added a further £200K making a total budget of £2.3 million.

9.1.4 The monitoring of the budget in previous years could be a project on its own, but suffice to say, it was a non committed accounting system, mainframe based, and very inaccurate - a manager's nightmare!

9.1.5 The 1995/96 budget is to be set by October 1994, and it had been hoped that a much better system of monitoring costs would have enabled the Flood Defence Managers to set a far more accurate budget. As will be seen in the following sections, this was not to be the case.

9.2 Financial Monitoring

9.2.1 Out of all the discussions, arguments and debates over 2-3 years on introducing value for money measures, and Market Testing, the one subject that continually raised its head was "how were we to monitor costs".

9.2.2 In January 1992, the Operations Managers were so concerned that a financial monitoring system should be in place at least 12 months before splitting into Client and Contractor, it was agreed that they give a formal presentation to the Regional Management Team (RMT).

9.2.3 In this presentation several issues were raised, but the main one was that unless a workable, committed and successful financial monitoring system was introduced, there would be no point in going any further.

9.2.4 The presentation was received by the RMT with mixed feelings, but the feedback to the Operations Manager was that they were trying to push things along too quickly.

9.2.5 The Operations Managers felt that unless they knew exactly how the money was being spent before the split how could they possibly compare anything after the split to show value for money.

9.2.6 Again, financial monitoring is a subject in itself but it is so important for other regions not to make the same mistake, it is intended to briefly describe the present position.

9.2.7 The financial monitoring of the external contract is relatively straightforward. As discussed in Chapter 7, the work is issued on Bills of Quantities. Each month, the I.B.U. sends a valuation of the work carried out to that date, including variation orders and site instructions to the Flood Defence Manager. The values can then be checked against the contract documents to ensure that they are correct. The correct expenditure code can then be placed against each piece of work to ensure that money is placed against the relevant code in the budget. Once that has been done, a certificate for payment is sent to Head Office who then transfer the relevant monies from the Flood Defence Client budget account to the I.B.U.

9.2.8 The main problem with the system at the present moment from the Clients point of view is that only completed work is accounted for in the valuation. It is therefore not an accurate indication as many watercourses may be substantially complete but not accounted for in the valuation.

9.2.9 This is not a problem from the purely financial point of view, as the longer the money stays in the Client's account, the better. However, it gives the impression that an underspend is occurring and it becomes difficult, if not impossible, to monitor the budget, and predict financial forecasts..

9.2.10 The main reason that the I.B.U. are unable to give a much more accurate valuation is because they are having to do everything by hand. They do not have a financial system in place to automatically calculate the work done at any particular time.

9.2.11 The I.BU. have purchased a software package to help them to manage their work and costs. Major problems have arisen in attempting to 'marry up' this software to the N.R.A. mainframe which holds all the timesheet details. This is essential as this gives the labour element of the valuation.

9.2.12 The problems highlighted on the tendered work are mainly internal to the I.B.U., necessitating a lot of time being spent on producing a reasonable valuation.

9.2.13 For the guaranteed work, which is the bulk of the work, the situation is totally different, although for similar reasons.

9.2.14 As discussed in Chapter 7, the guaranteed work is again issued on Bills of Quantities which are costed using a Schedule of Rates.

9.2.15 The Schedule of Rates is only valid from the 1st September 1994, and prior to that, all work was done 'at cost' by the I.B.U.

9.2.16 Because of the failure of their monitoring and costing system, they have never been in a position to give an accurate estimate of work carried out. At the time of writing this (mid August 1994), not one valuation has been received.

9.2.17 The I.B.U. know approximately what their total expenditure is by taking all their labour, plant and materials costs from the Management Accounting System on the mainframe. They do not, however, know exactly how that money is split up, or where the very complicated overheads should be charged. this figure is not what will eventually get charged, as the I.B.U. have to make an operating profit.

9.2.18 The I.B.U. accountant has to make an estimate and this figure is the only one the Client is able to obtain.

9.2.19 This is an impossible situation. Market Testing is supposed to show value for money. To do this, a basic tool is accurate financial information for both the I.B.U. and the Client. Without it, it is impossible to plan and monitor the budget, or programme accurately.

9.2.20 The problem should never have occurred, a system should have been in place before the split to Contractor and Client.

9.2.21 Whilst ironing out all these bugs, the N.R.A. could have accurately established the basic costs of each individual task and had a figure to compare with the post-split era. This would have demonstrated true value for money.

9.2.22 The position now is that even when the system is operating correctly, with accurate figures available, at best, only comparisons between this year's work and future work will be possible.

9.2.23 To compound the problem of financial monitoring, the I.B.U. are not allowed to make a 'loss' or a 'profit'. Therefore, at the end of the financial year, any 'loss' or 'profit' will be adjusted using the Client's budget. This of course means that the Client will not know the final position on its budget until all the costs have gone through this system, probably by May 1995.

9.3 *Recommendations*

9.3.1 Recommendations for those Functions/Regions not yet at the full Client/Contractor Stage

- *A financial system must be in place at least 12 months before Market Testing in order to ensure its validity.*

- *Staff must be trained to use it properly and recognise it weaknesses so that they may be corrected before the introduction of Market Testing.*

- *The system must be capable of giving the unit costs of each element of work before Market Testing to enable a comparison to be made with costs after the introduction of Market Testing.*

9.3.2 Recommendations for the North West Region Flood Defence Function.

- *A financial monitoring and costing system to be introduced and working by April 1995 at the latest.*

- *Training to take place in order for any corrections to be made*

10. IMPLEMENTATION

10.1 Introduction

10.1.1 The implementation of market testing has been possible due to the loyalty and hard work of all those concerned, rather than the introduction of workable, accurate and suitable systems. In short, it's been made to work as far as is possible.

10.1.2 Obviously, there have been many individual tasks and operations that have had to take place to make it possible. These include:

- Re-structuring of staff.
- Re-structuring of accommodation.
- Training for client and contractor.
- Training of in-house work force to explain market forces.
- Production of a workable programme.
- Introduction of monitoring systems.
- Introduction of financial systems.
- Introduction of effective inspections

....and so the list goes on.

All these processes are part of the management of change and require careful planning within a sensible timescale. As already discussed the timescale was totally unsuitable and caused severe problems.

10.1.3 It would not be possible to discuss all the processes above in detail, as each one could be a subject on their own ! It is, therefore, intended to highlight the four operational processes, discussing the first three in brief detail, then taking an analytical approach to the fourth process; namely inspections.

The four processes are:

- The introduction of financial systems.
- The introduction of monitoring systems.
- The production of a workable programme.
- The introduction of effective inspections.

10.2 The Introduction of Financial Systems

10.2.1 These have already been covered in the last chapter, but the lack of any workable financial systems needs to be stated again.

10.2.2 It has always been said by operations staff that the success or failure of market testing would fall on the back of sound financial systems for costing, estimating and monitoring. This is most certainly true, and the most serious problems encountered have all been financial.

10.2.3 It is not intended to re-state the facts here, except to say that unless there is a vast improvement in the service within the near future and certainly before December 1994, then even more severe problems will be encountered in the next financial year.

10.3 The Introduction of Monitoring Systems

10.3.1 Several types of monitoring systems are required to operate the client/contractor split efficiently and to show real value for money. They are financial monitoring and operational monitoring. Financial monitoring is covered elsewhere in this project, and therefore, will not be covered in this section.

10.3.2 Operational Monitoring. This is necessary to ensure that the works programme is being progressed in accordance with the given timetable and specifications for many reasons including:

- To ensure that the programme of work will be completed.
- To ensure that seasonal work is carried out at the correct time.
- To ensure that work with special conditions attached, such as conservation, is completed at the appropriate time.
- To ensure that reactive work is completed satisfactorily.
- To monitor emergency work.
- To monitor the work for future savings.
- To monitor the work in order to make programme changes.
- To ensure the efficiency of the client and contractor supervision and inspection.
- To line up physical monitoring with budgeting monitoring.

10.3.3 The above list is not exhaustive, and covers only the main areas. The fact is, at the moment, there are no official monitoring systems available !

10.3.4 Each area has its own 'home grown' systems which have evolved generally from the pre-split era.

In the North Area, databases have been set up on DataEase software, to monitor inspection details, works order number details, cost centres, and historical data. Much of the information, though, is still handled manually because there are not the resources available to maintain large databases.

10.3.5 A National Initiative is, at present, being developed, call the Flood Defence Management System (FDMS). It is hoped that when this system is eventually introduced, it will make all the local systems redundant. A paper is available explaining the workings of the FDMS, but it is not envisaged that it will be available for several years.

10.4 The production of a Workable Programme

10.4.1 This is extremely important, and is the basis of all the maintenance work carried out on both the guaranteed work and the external contracts.

10.4.2 It is important because each element of work must be known, including what is to be done and when. In the past, the work was based on providing a twelve month spread of work for the in-house workforce, to keep them employed throughout the year. This, of course, is not now the case. The client need only keep the 'Noble number' of workforce employed throughout the year. However, in practice, the programme has been developed over many years, and provides a reasonable spread of work over the 12 month period.

10.4.3 The programme should be relatively easy to produce, based on historical data.

10.4.4 In the North Area, the complete programme of work for two catchments was included in the external tender. Each watercourse on the Bill of Quantities was given a range of months, or exact dates if required for exceptional circumstances, in which it should be maintained. A full year's work was given, with a group of watercourses left without a date, in order to give flexibility in times of wet weather etc.

10.4.5 The programme must be reasonably flexible, especially considering the geographical and climatic restrictions in the North Area.

10.4.6 The programme of work for the guaranteed work is issued in three month schedules, given to the IBU at least one month before the three month period starts. This is in order to give a more accurate programme than a 12 month schedule.

10.4.7 Again, each watercourse on the Bill of Quantity is given a date with some being left as high-water work.

10.4.8 Generally speaking, there are very few problems in producing a programme of work. The main problem is being flexible enough to change the programme, often at short notice.

10.5 Inspections

10.5.1 As explained in paragraph 9.1.3 it is intended to take an analytical approach to the problems concerned with inspections. At the present time, in the North Area, and in the North West Region generally, this is a real problem which requires a solution.

10.5.2 An extremely important element of market testing is ensuring the work carried out is being done to the correct quality and quantity laid out by the client, and that it is complete. There are several reasons for this.

10.5.3 **Financial**. This is the most important reason. When a section of work is completed, it is necessary for a client inspector (see Appendix 5 - Structure) to have a look at the work to ensure that it is to the correct specifications, and that it has been completed. A formal system is then required to log the inspection.

10.5.4 When the invoice or valuation is received by the client, he must have a check to ensure that the work being invoiced is what was indeed carried out.

10.5.5 If, for instance, a section of watercourse of length 3000m was programmed to be maintained, there are many ways in which a contractor could make a false claim for payment:

(a) Maintain only, say, 1000m, most of which would be visible from a bridge, or other vantage point so that if only briefly inspected, it would appear complete.

(b) Maintain the full length but to a lower specification than that specified.

(c) A combination of the above.

(d) Not maintain any of the length, if there was any suspicion that it would not be inspected.

10.5.6 If an invoice, or valuation, is passed for payment having been signed as completed when, in fact, it is not, this could be construed as fraud. Another view is that, so long as every effort has been made to check the work, using all the available resources, then trust is sufficient.

10.5.7 Obviously, for some individual sections of work, it must not be cost beneficial to send and inspector to check that the work has been completed. Again, the pressure to inspect the work comes down to the question of fraud, if the contractor is not truthful or accurate with the invoice/valuation.

10.5.8 It should be noted that in the opinion of all those concerned, it is not considered that the IBU, as contractors, will be fraudulent in any way. However, if an external contractor had been awarded a contract, then this situation could be very different. Many contractors in these days of recession in the construction industry, cost a job extremely keenly, then depend on claims against the client for a profit. It is very common for unscrupulous contractors to look for ways of obtaining payments from a client without actually doing anything for it !

10.5.9 In order for the maintenance work to be auditable, the client must assume that the IBU is the same as any other contractor and, therefore, the same rules must apply. For this reason, any ruling on how to solve the inspection problem must apply to all parties.

10.5.10 The Flood Defence Client Section in the North Area has four inspectors at its disposal. Quite simply, this is not enough to be able to inspect 100% of all work. The problem of only inspecting some of the programmed work is, therefore, a very real one.

10.5.11 It has been accepted that at the present time, it is impossible to inspect all the work, and, therefore, invoices and inspections can be signed and passed for payment if the inspections and flood defence manager (or the originator of the work) are satisfied as far as possible, that the work has been carried out. This strategy is mirrored in the performance measures reported back to Head Office, where inspections are divided into three categories: Full, Partial, and None.

10.5.12 **Operational** Inspections show up incorrect quantities to the client which can be rectified using variation orders or site instructions. This is especially important in the first year where it is accepted that there will be errors with the data, and the base data can be altered to ensure that next year, it will be correct.

10.5.13 Inspectors have a golden opportunity whilst inspecting the watercourses to assess the condition of the asset and decide whether routine maintenance is sufficient or whether a heavy maintenance scheme may be required. Walking the job also enables the inspectors to get 'a feel' for any changes in landuse, or farming regimes which may affect the future cost/benefit of a particular watercourse.

10.5.14 Inspections are visual, and a full inspection would involve walking the length of watercourse, embankment or other structure to ensure that the work carried out is exactly that specified. Obviously, the timing is important, as it would not be reasonable to inspect a grass cutting job say four weeks after the job was carried out. A reporting system is, therefore, very important so that the client knows which watercourses are complete.

10.5.15 As Flood Defence Manager in the North Area, I believe that the client section should be inspecting at least 80% of all the allocated work and looking to 100%. At present this figure is nearer 50%.

10.5.16 The following is a problem solving exercise to investigate the various options for solving the problem.

10.5.17 Recognising the Problem

10.5.17.1 The present resources dictate that not enough inspection is being carried out on watercourses. The inspections are required to ensure that work carried out is complete and to the specified standard, as described above.

10.5.18 Analysing the Problem

10.5.18.1 There are several key personnel included in the problem, namely the area Flood Defence Manager, the Flood Defence Operations Officer, and four Inspectors. All were agreed that for both financial and operational reasons, inspections should be carried out on at least 80% of watercourses in the 1995/96 financial year, rising to 90%-95% in the 1996/97 financial year.

10.5.18.2 The North Area is an extremely diverse area with the mountainous Lake District in the centre, surrounded by areas of coastal and low lying land. The north of the area is covered by two Inspectors home based at Keswick, whilst the south of the area is covered by two Inspectors home based around Kendal.

10.5.18.3 By examining the map in Appendix 2, it can be seen that the spread of work involves the two north Inspectors in high mileages and lost time covering the area whilst the work in the south is in several concentrated areas. There is no physical boundary only the natural geographical boundary between north and south. The north Inspectors, therefore, struggle to cover the inspections of watercourses and in some months only manage to inspect 35% of completed watercourses. Conversely, the inspectors in the south of the area can inspect 80% of completed work. This position will worsen in the autumn and winter months when embankments covering 102 Km in the south of the area will require regular inspection.

10.5.18.4 A method of increasing the amount of inspections will have to be found without increasing the present resources.

10.5.19 Setting a Goal and Establishing the Criteria for Success

10.5.19.1 When the solution is implemented, then the short term goal is to increase inspections of watercourses, embankments and structures from 50% at present to 65% at the end of the 1994/95 financial year, in the medium term to 80% in the 1995/96 financial year and in the long term to 95% in the 1996/97 financial year.

10.5.19.2 The criteria for success are:

1. To inspect completed work, embankments and structures to the percentages highlighted in the goals above.

2. To carry this out with no increase in resources.

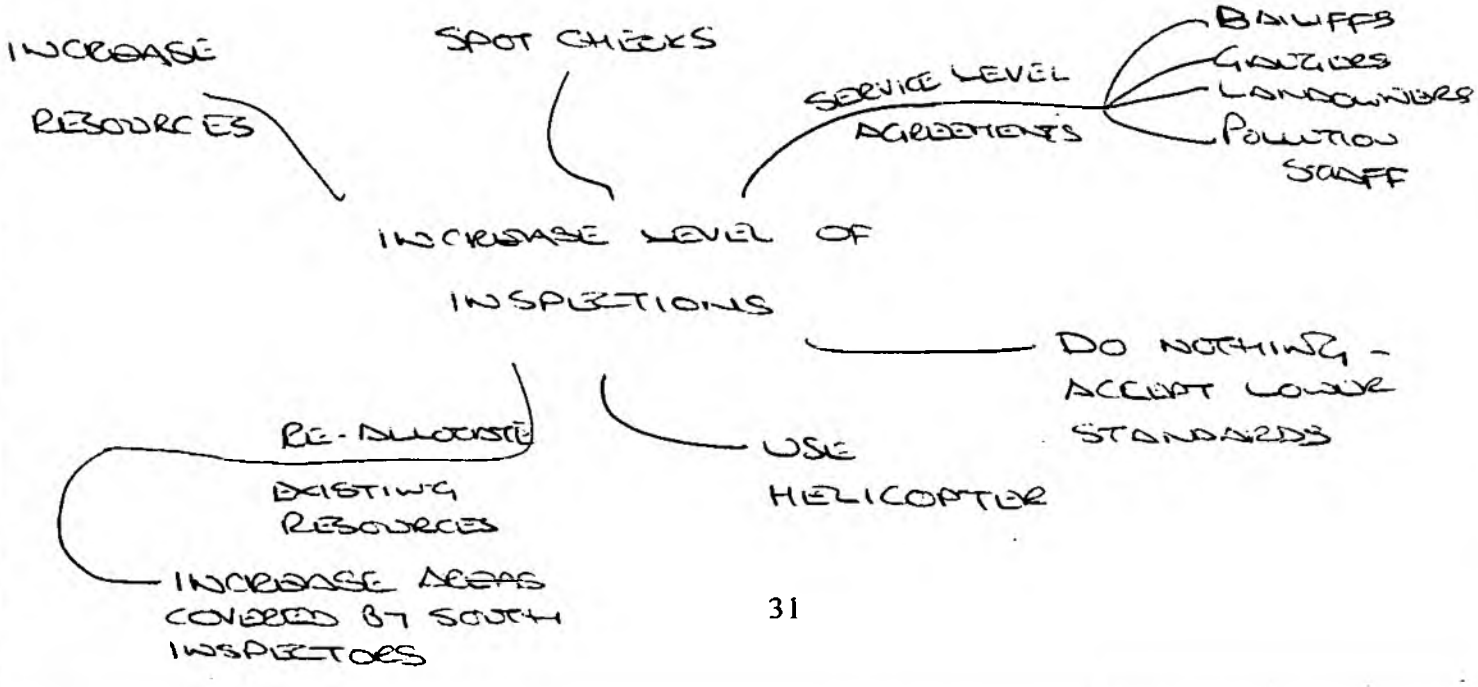
3. To ensure that Inspectors are not involved in an unrealistic demand on time and effort.

4. To ensure that any changes in work practices are negotiated with staff before implementation.

10.5.20 Generating and Identifying Options

10.5.20.1 There are many ways of generating options, from brainstorming to lateral thinking. One of the most useful and productive methods is to use Buzan Diagrams. In this option, the issue is placed in the centre of the work area and then thoughts are generated and written down around the issue.

10.5.20.2 The Buzan Diagram below also had an element of brainstorming, as the thoughts of the key personnel were obtained and incorporated.



10.5.21 Evaluating and Choosing an Option from the Buzan Diagram

10.5.21.1 Option 1

Spot checks - these are a useful way of ensuring that work is carried out whilst resources are restricted, however, they do not fulfil criteria No.1, which is the most important one. This option is certainly relevant at present and is being actively practised.

10.5.21.2 Option 2

Do nothing - this option is not acceptable as lower standards are simply not acceptable.

10.5.21.3 Option 3

Increase resources - This option does not satisfy criteria No.2, which is an essential part of NRA life at the moment. Staff structures are being examined closely for cuts without any possibility of an increase.

10.5.21.4 Option 4

Use helicopter - as ridiculous as this option may sound, it is a possibility. It meets three of the four criteria for success. Its main downfall being that it would only really be a spot check. The cost of hiring a helicopter is approximately £150 per hour. Realistically a half day hire four times a year would be all that could be justified. The nature of bank and bed growth in the summer months would mean that unless an inspection was carried out fortnightly on completed watercourses, it would be very difficult to tell if this work had been carried out at all.

A possibility would be to share the cost of a helicopter. The Gas and Electricity Companies have been contacted but are unwilling to allow their helicopters to deviate from a given route and would not, therefore, be of any use.

10.5.21.5 Option 5

Re-allocate present resources - The present locations of Inspectors is not ideal, because of the geographical locations of the work.

By allocating one of the two South Inspectors to inspect the area hatched in red on the map in Appendix 2, and the other South Inspector to move partially into the area inspected by one of the North Inspectors, hatched in blue, more time would be released for the North Inspectors to increase their output of Inspections. All four criteria would be met.

In order for all Inspectors to increase their knowledge of the whole of the north area, a need to be more aware of the North Area has been incorporated in their objectives for Performance Related Pay purposes.

10.5.21.6 Option 6

Service level agreements - there are a number of NRA functions who have staff visiting rivers for various reasons. It is a possibility that these staff could be used to inspect watercourses at the same time. A service level agreement could be set up in order for payment to be agreed.

Another area of interest would be to use the riparian owners to inspect the watercourses, embankments and structures. The basic advantages and disadvantages of each source is outlined below:

	Advantages	Disadvantages
Bailiffs (NRA)	Cover much of the main river. Local knowledge.	Already heavily committed to fisheries.
Gaugers (NRA)	Many sites are at strategic points.	Visit only single sites, not river systems.
Pollution Staff	Many sights at strategic points	Visit only single sites, not river systems.
Riparian Owners	Low cost as high standard of service is in their interest.	Dependency on 3rd party. Difficult to justify.

From the above, it is obvious that the best likely source for a service level agreement is the Bailiffs. A SWOT analysis of the Bailiffs with regard to carrying out inspections for flood defence purposes should put the option into better perspective.

STRENGTHS

- Good Local Knowledge
- Good Communications.
- Aware of flood defence working methods.
- Know many riparian owners.
- Good contacts with NRA and non NRA personnel.

WEAKNESSES

- Do not cover much of the main river system, only where there are fisheries interests.
- Already heavily committed.
- Some river visits are seasonal.
- Reactive fisheries work takes precedence.

OPPORTUNITIES

- Opportunity to provide fisheries and flood defence service simultaneously.
- Opportunity for Bailiffs to learn more about flood defence and, therefore, increased level of interest.

THREATS

- Restructuring of Bailiffs will make less time available.
- Introduction of Envage may change focus of resources.
- Market costing.

This option would meet all four criteria for success although the cost would have to be negotiated. It might be possible to have a reciprocal arrangement with fisheries whereby Inspectors could report on fisheries information, with the net result of no transfer of costs.

10.5.22 Using a weighting table, the options can be evaluated to determine the best choice.

CRITERIA Score out of 10 depending on importance multiplier		**OPTIONS** Likelihood of each meeting given criteria : 0 - No 10 - Yes					
		1 Spot Checks	2 Do Nothing	3 Increase Resources	4 Helicopter	5 Re-Allocate Resources	6 Service Level Agree-ments
To inspect completed work, embankments and structures to the percentages highlighted in the goals.	10	5 50	0 0	7 70	6 60	9 90	8 80
To carry out the above with no increase in resources.	7	10 70	10 70	0 0	9 63	10 70	10 70
To ensure that Inspectors are not involved in an unrealistic demand on time and effort.	6	8 48	10 60	7 42	7 42	9 54	9 54
To ensure that any changes in work practices are negotiated with staff before implement-ation	6	10 60	10 60	10 60	10 60	10 60	10 60
Total Score		**228**	**190**	**132**	**225**	**274**	**264**

10.5.23 On the above scores, the best option would be to re-allocate the present resources with service level agreements a close second.

10.5.24 Implementing the Solution

10.5.24.1 The solution to the problem is a combination of the two options with the highest scores. A service level agreement with fisheries could cover an estimated 40% of the shortfall in inspections whilst the remainder could be carried out using the re-allocation option.

10.5.21.2 It is important to plan the introduction carefully and, therefore, a staged introduction is proposed as below:

TASK	TARGET DATE	PERSON(S) RESPONSIBLE	RESOURCES REQUIRED
Start serious discussions with fisheries staff.	November 1994	G Vaughan S Douglas	Time
Agree on method and costs (if any)	December 1994	G Vaughan G Noonan S Douglas C Durie	Time
Sign S.L.A.	December 1994	G Vaughan G Noonan S Douglas C Durie	Time
Bailiff Training	January 1995	G Vaughan S Douglas Inspectors Bailiffs	Time Suitable Sites
Trial	January 1995	G Vaughan S Douglas Inspectors Bailiffs	Time Suitable Sites
Implement	February 1995	G Vaughan S Douglas Inspectors Bailiffs	Time Programme
Plan and Agree new areas for Inspections	November 1994	G Vaughan M Wheatley Inspectors	Time Maps Location of Work
Allow re-allocated Inspector to gain brief knowledge of area	December 1994	G Vaughan Inspectors	Time Maps
Implement	January 1995	Inspectors	Time
Review	April 1995	Bailiffs Inspectors G Vaughan S Douglas	Time

10.5.24.3 The success of the introduction of the above will require continual assessment, but it is certain to increase the effectiveness of the inspection process significantly.

10.6 *Recommendations*

10.6.1 *Recommendations for those Functions/Regions not yet at the full Client/Contractor Stage*

- Introduce a financial monitoring and costing system at least 12 months before the client/contractor split.
- Introduce regional PC based monitoring systems for operational purposes at least 12 months before the client/contractor split.
- Apply pressure to ensure that the F.D.M.S. is introduced as soon as is possible.
- Ensure that the programme of work is flexible enough for change.
- Ensure that all systems are in place before the client/contractor split.
- Ensure adequate resources are available

10.6.2 *Recommendations for the North West Region Flood Defence Function.*

- Sustain pressure to introduce a workable financial monitoring and costing system.
- Maintain area based monitoring databases, using extra resources if necessary.
- Monitor and evaluate the suggested solution to the inspector resource problem.
- Exert pressure for an early introduction of the F.D.M.S.

11. THE SUCCESS OF MARKET TESTING TO DATE

11.1 At the time of writing this chapter (September 1994) it is still very early in the market testing era to comment on any real detail regarding its success, or otherwise.

11.2 Many problems have been described throughout the project with many more not even mentioned. The introduction of market testing to flood defence has obviously not been an easy one and there are still many hurdles yet to cross.

11.3 What it has done is forced the flood defence revenue section to look very closely at what it does and for the first time, justify and prioritise accurately what it does. This, in turn has lead to improved planning and will, eventually, lead to better budgetary control.

11.5 Meaningful objectives and operational performance measures will enable the progress to be monitored as it develops.

11.6 The flood defence function must now be allowed to stand back, build on what it has learnt, learn from what went wrong and Get It Right.

11.7 This is very important as so many different processes have taken place during the last 12 months, such as the logical process, performance related pay and market testing, that a short period of stability, difficult to achieve these days, is desperately required.

11.8 In April 1996, the new Environmental Agency will be upon us, and once again we are into the management of change. Who knows what will happen then ?

11.9 A S.W.O.T. analysis is an ideal way of showing how we stand today in relation to market testing in the flood defence function.

STRENGTHS

- Prioritisation and justification of work.
- Forces us to focus on what we do.
- Allows staff to have more of an input to and control over the work.

WEAKNESSES

- Poor financial control.
- Poor monitoring, both financial and operational.
- Systems have not had a chance to be tried before the split.
- Does not show true value for money.

OPPORTUNITIES

- Better financial and operational monitoring systems will greatly improve budgetary control.
- Improved systems will allow more accurate planning.

THREATS

- The introduction of the Environmental Agency is an unknown situation.
- The threat of further reductions in resources.

12. PROJECT RESEARCH DESIGN

12.1 This particular project was relatively easy to research. Many of the facts were evident to the author because of his involvement in market testing from its introduction.

12.2 The majority of the remaining information was gained using unstructured interviews and the use of reports and minutes of past meetings.

12.3 The unstructured interview took the form of informal talks, having first explained to the person concerned why the information was needed and how it would be used. This is important so that the person concerned knows exactly in what context their comments will be noted.

12.4 Once a person had been briefed and the unstructured interview had taken place, face to face, subsequent extra information could be obtained by either post, electronic mail, or telephone.

12.5 Several reports were used to gather information. One of the reports was an external H.M.S.O. document with the remainder being NRA internal reports.

13. ACKNOWLEDGEMENTS AND BIBLIOGRAPHY

13.1 Acknowledgements

The author wishes to thank the following people for their help in completing this project and for their support and guidance over the duration of the Certificate in Management Course.

G A Noonan
D Reid
A Gething
S Douglas
Group 5
D Ferguson
A Crampsie
S Allen

13.2 Bibliography

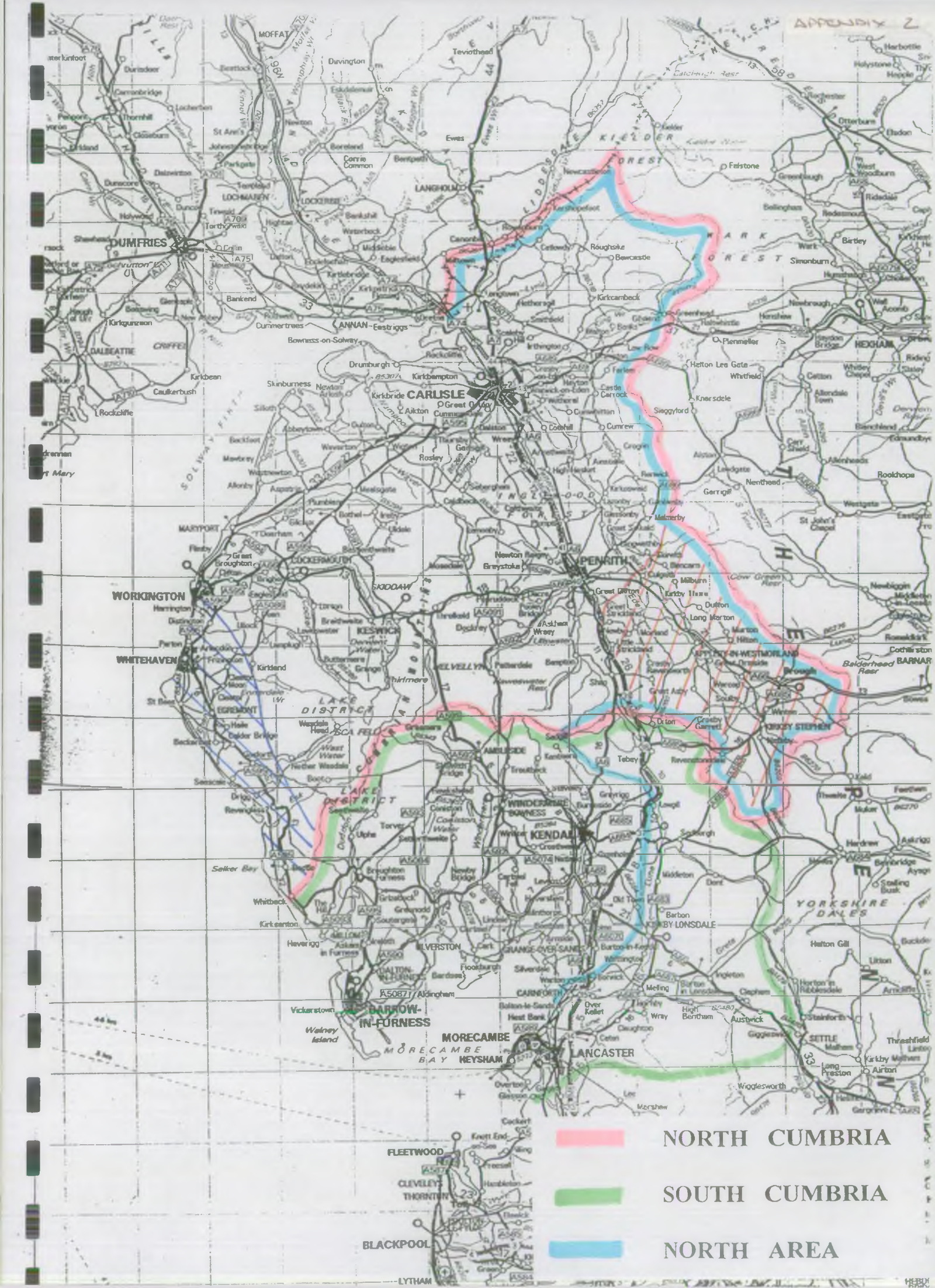
- The Governments Guide to Market Testing - H.M.S.O.
- Guide to the Flood Defence Management System - N.R.A.

14. APPENDICES

1. Bill of Quantity Sample
2. North Area Boundaries
3. Staff Structure prior to January 1994
4. W.I.P.P.S. Job Note Sample
5. Staff Structure - Client/Contractor
6. Justification and Prioritisation Form
7. Advert for Select Tender List
8. Select Tender Questionnaire
9. Selection Matrix
10. Scoring Matrix for Final Selection
11. Works Order
12. Schedule of Rates.

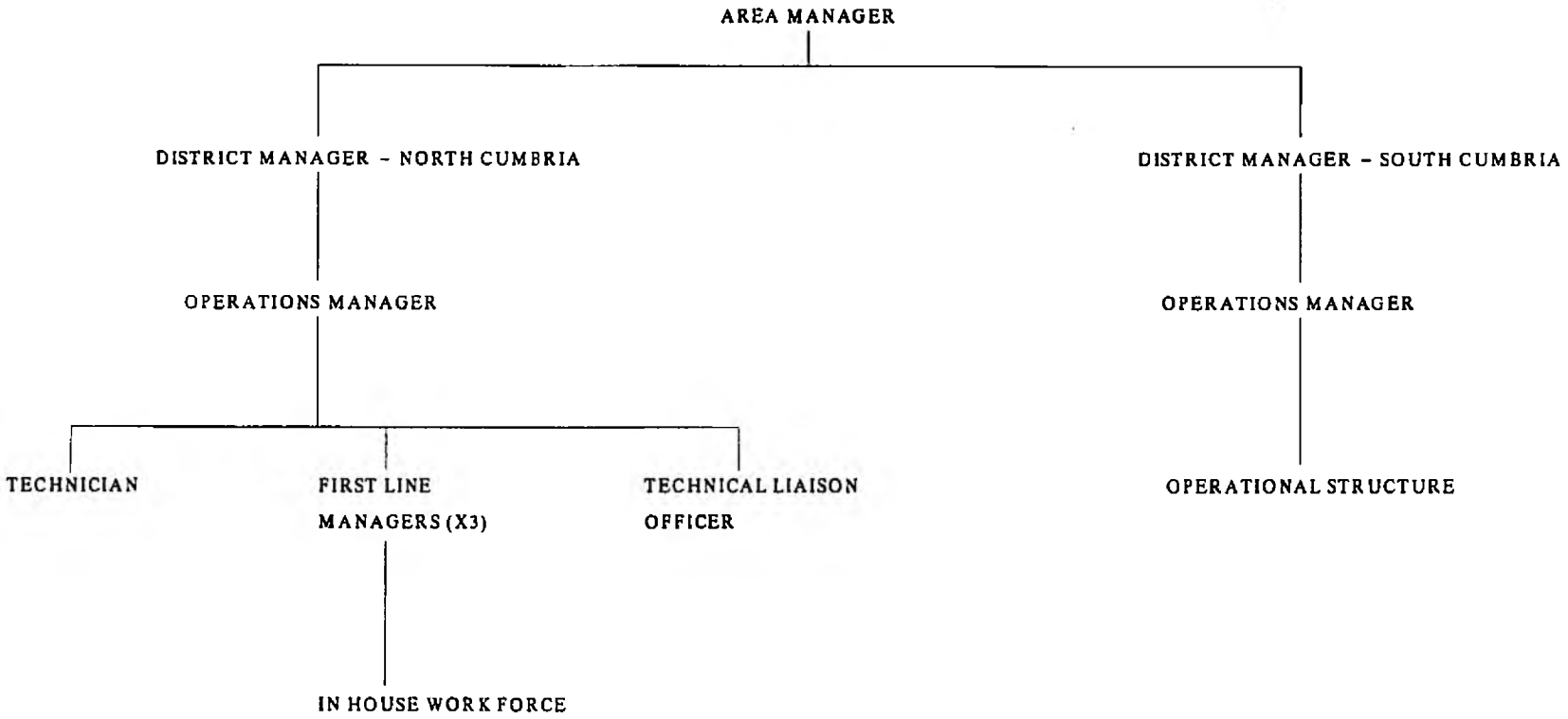
No.	Item Description	Unit	Quant	Rate	Amount
	GRASS CUTTING TYPE - 1				
	ABHO 01				
A	Band width 4 m max slope - 90 Left bank cut - OCT - DEC	m	357		
B	Band width 4 m max slope - 90 Right bank cut - OCT - DEC	m	357		
	ABHO 02				
C	Band width 2 m max slope - 90 Left bank cut - OCT - DEC	m	908		
D	Band width 2 m max slope - 90 Right bank cut - OCT - DEC	m	908		
	ABHO 03				
E	Band width 3 m max slope - 90 Left bank cut - OCT - DEC	m	1167		
F	Band width 3 m max slope - 90 Right bank cut - OCT - DEC	m	1167		
	ABHO 04				
G	Band width 3 m max slope - 90 Left bank cut - OCT - DEC	m	746		
H	Band width 2 m max slope - 90 Right bank cut - OCT - DEC	m	746		
	AQUATIC WEED CUTTING				
I	ABHO 01 Band width 1 m cut- OCT - DEC	m	357		
J	ABHO 02 Band width 2 m cut- OCT - DEC	m	908		
K	ABHO 03 Band width 2 m cut- OCT - DEC	m	1167		
L	ABHO 03 Band width 2 m cut- OCT - DEC	m	746		
	DE SILT				
M	ABHO 01 Band width 1 m OCT - DEC Depth band 0-250mm	m	357		
				Page total carried forward	

APPENDIX 2


NORTH CUMBRIA
SOUTH CUMBRIA
NORTH AREA
DUMFRIES
CARLISLE
PENRITH
WORKINGTON
WHITEHAVEN
BARROW-IN-FURNESS
MORECAMBE
LANCASTER
KENDAL
KESWICK
AMBLESIDE
WINDERMERE
LAKE DISTRICT
YORKSHIRE DALES
NORTH YORK MOORS
KIELDER FOREST
HEXHAM
ANNAN
LANGHOLM
MOFFAT
FLEETWOOD
BLACKPOOL
LYTHAM

APPENDIX 3

FLOOD DEFENCE OPERATIONAL STRUCTURE – NORTH AREA



NORTH WEST WATER AUTHORITY - WIPPS SYSTEM

18/11/92
DISTRICT
PROGRAMME WEEK 3

JOB NOTE FOR HAND MAINTENANCE HM

RIVER : EAST COTE SOUGH
LOCATION : CF SNECKYEAT BECK - D/S FACE CULVERT

SECTION 01

NGR : 127 550 TO 124 547

RECORD KEY : EACO01HM00

JOB DETAILS
****

DATE OF LAST INSPECTION : 03/11/92

SECTION LENGTH = 444 M

LENGTHS NOT MAINTAINED :
LEFT BANK 0 M
RIGHT BANK 0 M
BED 0 M

LOC	LENGTH	TASK DESCRIPTION	CODE
L	444	STANDING IN-PERSIDE CUT GROWTH	111101
R	444	STANDING IN-PERSIDE CUT GROWTH	111101
B	240	SPADE DEPOSITS,REFUSE&WEED UP TO 1.2M	211101
B	204	CUT&DIG WEED,DEPOSITS,REFUSE UP TO 1.2M	211201
R	444	STANDING OUT-CUT GROWTH UP TO 1.5M WIDE	111201

LOCATION CODES: L= LEFT BANK S= BOTH BANKS AND BED F= LEFT BANK AND BED
R= RIGHT BANK E= BOTH BANKS G= RIGHT BANK AND BED
B= BED A= ANCILLARY X= BANKSMAN

UNINTERRUPTED SECTIONS ALLOWED ( )

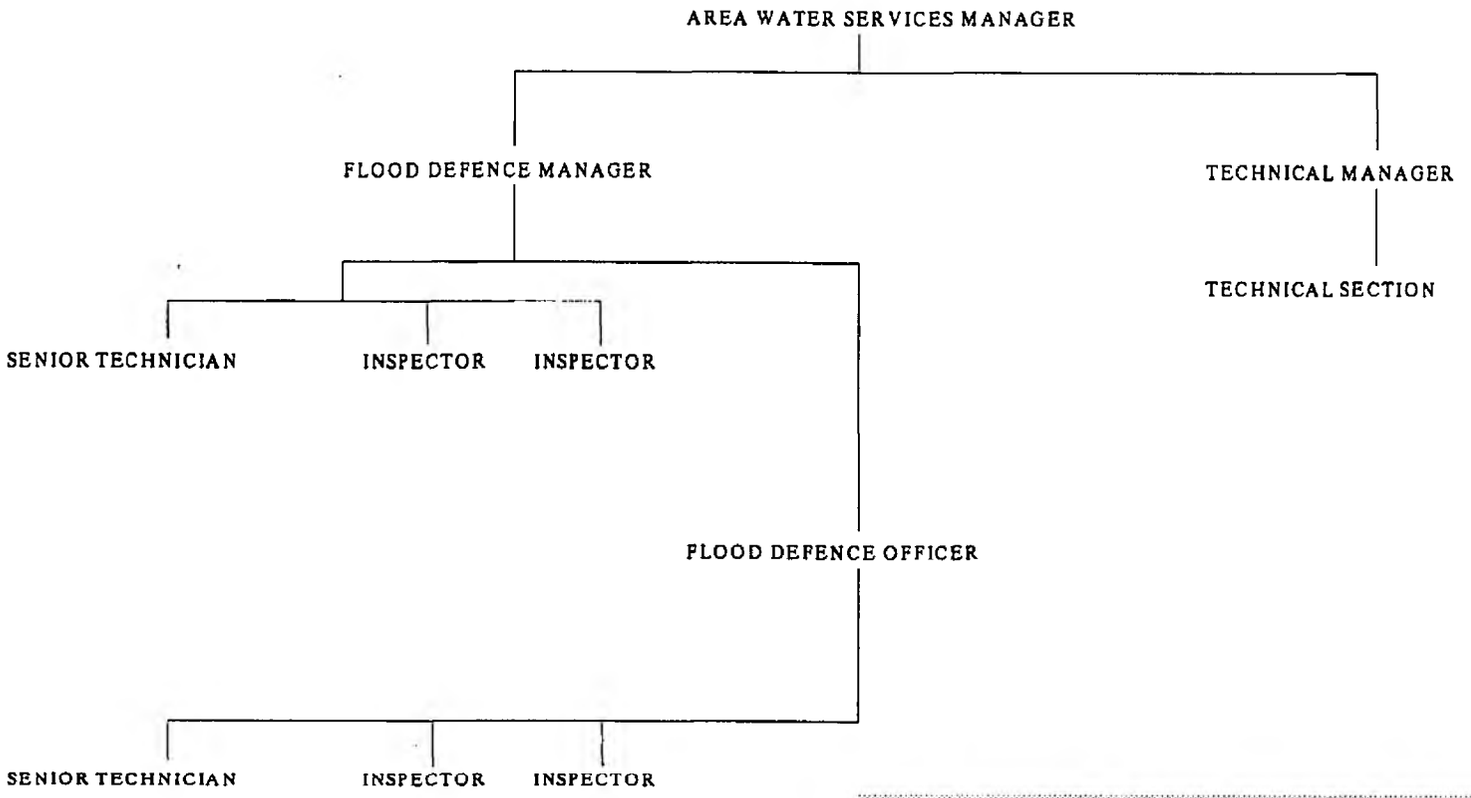
****
TOTAL TIME ALLOWED FOR THIS JOB IS * 37.9 * MAN HOURS INCLUDING ALLOWANCES
****

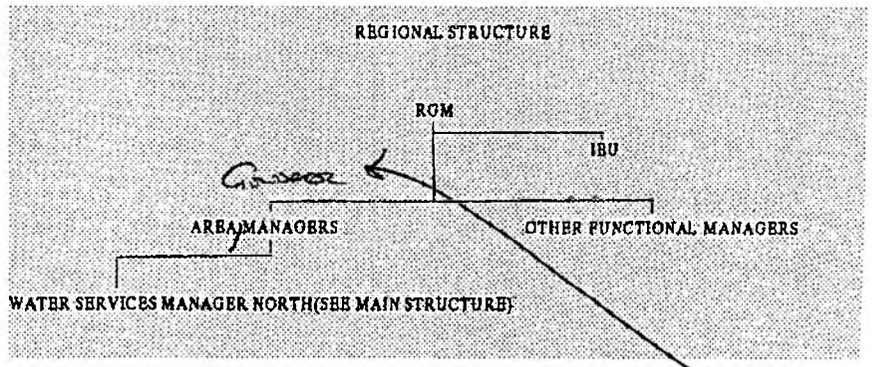
OPERATING CONDITIONS :

NOTES :

PERFORMANCE FILE JOB REFERENCE : EACO01HM001 592

NORTH AREA FLOOD DEFENCE STRUCTURE





APPENDIX 5

FLOOD DEFENCE MAINTENANCE PROGRAMME 1994/95

APPRAISAL + PRIORITISATION

PROJECT:	AREA:
Black Dub	North
	ESTIMATE: 26K
PRIORITY: CATEGORY: 3	RATING: 3

PROJECT DESCRIPTION — Benefit Cost Ratio: 1.5 : 1

Heavy maintenance work to the river channel affecting land mostly in Land Use Band E. Work will consist of:

De-silt	650m
Re-section banks	200m
Timber Revetment	200m

REASON: Flooding [ ] Drainage [✓] Combination [ ]

Alternatives Considered:	Benefit/cost
Do nothing.	
De-silt only.	0.3:1
Re-section banks only.	0.7:1

Problem Description:

This watercourse has deteriorated over the past few years, resulting in many slips, expecially on the meanders. This has resulted in a reduction in hydraulic capacity during times of high waters, which in turn, has resulted in a reduction in drainage standards. A good level of drainage is essential to sustain the current agricultural output.

Consequences of Do Nothing Option:

Banks will collapse, reducing the cross-sectional area of the watercourse. This would result in a deterioration in the drainage standards and the land would revert from current good standards to a poor standard within three years.

Benefits for Preferred Option: | £000'S

Re-establish drainage capacity to approximately 140 hectares of low lying land.

Conservation + Environmental Considerations:

This is of limited conservation interest, but an agreed approach has been formulated. All interested parties have been consulted.

Change to Defence Standard			Maintenance Requirements		
Improve	✓		Annual		
Sustain			Regular 2–5yrs		
Reduce			Long Term 10yrs +	✓	

Consulted with: (FCRN) WR EQ Other

Applicant: Title Asst. Dist. Manager Signature

Approved: Date:

Area WS Manager _____

Project Status:

Included in 94/95 Programme:		Budget:	
Reserve Project:		Referred:	

PRINCIPAL FLOOD DEFENCE _____ Date

NATIONAL RIVERS AUTHORITY
NORTH WEST REGION

CONTRACTORS FOR FLOOD DEFENCE MAINTENANCE WORKS

Applications are invited from suitably experienced Companies who wish to be considered for routine maintenance and small Civil Engineering works on watercourses and coastal defences throughout the Region, from 1st April 1994 for contract values between £200,000 — £500,000. The total annual Regional budget to be let is approximately £1.9M. Approximately 5 No. contracts will be let for particular areas within the Region. The work will be tendered for by the in-house work force.

The North West Region covers the Counties of Cumbria, Lancashire, Greater Manchester, Merseyside and Cheshire.

Interested applicants should apply to the Purchasing Officer at the address below, all applicants will be forwarded a questionnaire.

Applications should be received no later than Monday, 8th November 1993, addressed to:-

Purchasing Officer, NRA North West Region,
P.O. Box 12, Richard Fairclough House,
Knutsford Road, Warrington, WA4 1HG

Tel: 0925 53999 Fax: 0925 415961

2.0 QUESTIONNAIRE.

All contractors who reply to be sent out the following questionnaire. To be organised by the Purchasing Officer.

NATIONAL RIVERS AUTHORITY (NORTH WEST REGION)

CONTRACTS FOR FLOOD DEFENCE MAINTENANCE WORKS

INFORMATION TO BE SUPPLIED BY TENDERERS

INTRODUCTION
Successful Contractors will be involved in working on routine maintenance and small Civil Engineering works on watercourses throughout the Region, from 1 April 1994 for contract values between £200,000 - £500,000. The work will be tendered for by the in house work force.

The conditions of contract will be ICE 6th and Method of Measurement CESMM 3, with appropriate amendments. Draft copies of standard specification, method of measure and prelims are available for inspection at the above office (during normal working hours). Copies will be forwarded on receipt of £30.00 payable to the NRA

The Authority do not bind themselves to include all or any of the Contractors submitting their names for inclusion, compilations of the restricted list is at the sole discretion of the Authority.

Tenderers who wish to be invited to tender should provide the following information. Failure to comply may result in disqualification. All information received will be treated in strictest confidence.

1.0 ECONOMIC AND FINANCIAL STANDING
Applicants should include:
1.1 Copies of last two years published accounts (Parents and subsidiary, if applicable)
1.2 Statement from, and the name and address of their bankers.
1.3 Statement of overall turnover and turnover in relevant areas of work.

2.0 TECHNICAL CAPACITY
2.1 Details of similar work (working on watercourses, and Maintenance type contracts, undertaken within the last three year (stating: dates, value, clients)
2.2 Applicants may include further information and experience, but are requested to keep this relative and to a minimum.

3.0 REFEREES
The names and addresses of three technical referees, whom references may be sought regarding the company's experience and ability to undertake such works.

4.0 HEALTH AND SAFETY
Applicants should include a copy of their company safety policy as required under Section 2(3) of the Health and Safety at Work Act 1974.

5.0 INSURANCE
Public liability insurance normally carried.

6.0 MANPOWER

Applicants should state the annual average manpower, both directly employed and subcontracted totals for the last 3 years.

7.0 QUALITY ASSURANCE
Applicants should state any quality assurance procedures in place, and accreditation received.

8.0 ENVIRONMENTAL
Applicants should state if they have been prosecuted by the NRA, and if so the circumstance of the prosecution.
Applicants should enclose:
a) A copy of their environmental policy
b) Procedures for complying with statutory obligations
c) Name of most Senior person in charge of environmental policy and performance
d) Evidence of practical application of the policy, relevant to these contracts.
e) Staff experience, training and qualifications.
f) Any environmental quality procedures in place and accreditation received (BS 7750)

9.0 TRADE MEMBERSHIP
Details of membership of any relevant professional trade association.

10.0 SUBCONTRACTS
Applicants should indicate trades and services they would expect to subcontract.

Applicants may state their preference for working in the following areas.
Cumbria, Lancashire, Greater Manchester, Merseyside, Cheshire. This will not form part of the selection criteria, but will be used to target contractors to particular contracts within the North West Region.

3.0 SELECTION CRITERIA

A clear and preferably objective procedure is required to actively select from the returned questionnaire, preferably by a predetermined weighted matrix, which can be published pretender.

A selection panel is proposed comprising of:
Area Flood Defence Manager
Representative from Purchasing
Revenue Planning Engineer

The questionnaire should be checked by:
Finance
Water quality
Safety
Conservation
To check compliance with their respective criteria.

Finance to check financial standing, conclusion to be either Yes or no, and insurance cover yes or no.

Water Quality to recommend refusal of those contractors and or subcontractors who have a poor pollution record, have been prosecuted for pollution offences. Frequency and severity to be considered.

Safety to check compliance with safety criteria and recommend Yes or No.

Conservation to score matrix based on environmental record, environmental policy and proposals including refusal.

For the 5 No. contracts in the Region, contractors should be selected relative to each Area and with the following guidlines.

a) No contractor to be selected for the lists for adjoining contracts.

b) No contractor to be on more than 3 lists.

c) Highest scores from selection matrix to be chosen.

4.0 CONTRACT SPECIFIC SELECTION CRITERIA

To be included within the Request for tender, for each contract.

1.0 Request for technical and educational qualifications of managerial staff.

2.0 HEALTH AND SAFETY
The Tenderer must supply:
a) The contractors Statement of Policy, Organisation and Arrangements.
b) Statutory risk assessments relevant to the work to be undertaken made under:
    1) The management of Health and Safety at Work Regulations.
    2) The Manual Handling Operations Regulations.
    3) The Personal Protective Equipment at work Regulations.
    4) The Control of Substances Hazardous to Health Regulations.
    5) The Noise at Work Regulations.
c) Details of the measures taken to provide employees with relevant information on the risks, and the preventative and protective measures necessary to ensure their health and safety.

d) Details of persons appointed as competent to assist the Contractor in undertaking the measures he needs to take to comply with the requirements and prohibitions imposed upon him by or hinder the relevant statutory provisions. This shall include details of the trainings, experience, knowledge and other qualities of those persons appointed which enable them to properly assist the Contractor in undertaking the above measures.

3.0 SUB CONTRACTORS

Applicants should state their capability to undertake works with their own labour, and state likely works they would subcontract, and likely sub contractors.

5.0 EC PROCUREMENT REQUIREMENTS

The selection criteria should be stated within the Tender documents.

The following tender selection criteria was advertised to the tenderers, prior to the submission of tenders.

1 Price

2 Contract Management/supervision, organisation and communication (on and off site).

3 Workforce skills (including subcontractors)

4 Working method:
a) Health and safety (including (for example): overhead & underground services, river crossings, machinery, health and welfare provisions, personal protective clothing,) (standard H & S material previously supplied need not be included)
b) Method of work, including access to works, machinery proposed.
c) Environmental concerns.

The following categorise were used to assess the above in detail for the respective percentages as agreed prior to the submission of tenders. Previous information provided for selection onto the Tender list was used, if required.

PRICE	80%
MANAGEMENT	5%
Communication	
Management structure	
Accomadation/depots, problem of divers area.	
Programme	
Management supervision	
Use of Sub Contractors	
Previous contract experience.	
WORKFORCE	5%
Supervision on site	
Skill mix	
Training, qualifications, licensed.	
HEALTH AND SAFETY	4%
Deep or fast flowing water	
Overhead and underground services	
Manual handling	
Personnel protective equipment	
WORKING METHODS	3%
Access	
Plant	
Proportion by hand	
ENVIRONMENTAL	3%
Have a policy	
Pollution	
Protection/minimum disruption	

NRA
National Rivers Authority
North West Region

WORKS ORDER

No. 00250

COST CODE (NRA) .....
COST CODE (CON) .....

FLUVIAL .....
TIDAL .....
SEA .....

MAINTENANCE .....
EMERGENCY .....
PS & STRUTS. .....

RAISED BY ..... DATE .....
APPROVED BY ..... DATE .....

CONTRACTOR .....

LOCATION
(Catchment, Reach ref. Maint reach no.)

.....
.....

DESCRIPTION

.....
.....
.....
.....
.....
.....
.....
.....
.....

COMPLETION / DATES

.....
.....
.....
.....

METHOD OF PAYMENT
SCHEDULE .....
BILL OF Q. .....
DAYWORKS .....

COMPLETION CERTIFICATE

COMPLETED (CON) SIGNED
COMPLETED (NRA) SIGNED
COMMENTS

INTERIM / FULL
DATE .....
DATE .....

.....
.....
.....
.....

PAYMENT

APPROVAL FOR PAYMENT SIGNED ..... DATE .....
DAYWORK SHEET NO.S .....
VARIATION ORDER NO.S .....
TOTAL (Ex. VAT) £.....

.....
.....
.....
.....

Original/white - originator, yellow - NRA file
blue - contractor site, orange - contractor office

AD 127LK

SCHEDULE OF RATES

CODE	DESCRIPTION	UNITS	RATES A	X	B	C
	General clearance :– BUSH & TREE					
BT						
BT1	Type I Per Bank	m				
BT2	Types II & III 1 mtr Band width	m2				
D	Excavating ancillaries : DESILTING					
D1a	1 m band width depth not exceeding 250 mm	m				
D1b	1 m band width depth 250 mm – 500 mm	m				
D2a	2 m band width depth not exceeding 250 mm	m				
D2b	2 m band width depth 250 mm – 500 mm	m				
D3a	3 m band width depth not exceeding 250 mm	m				
D3b	3 m band width depth 250 mm – 500 mm	m				
D3c	3 m band width depth 500 mm – 1.0 m	m				
D4a	4 m band width depth not exceeding 250 mm	m				
D4b	4 m band width depth 250 mm – 500 mm	m				
D4c	4 m band width depth 500 mm – 1.0 m	m				
D5a	5 m band width depth not exceeding 250 mm	m				
D5b	5 m band width depth 250 mm – 500 mm	m				
D5c	5 m band width depth 500 mm – 1.0 m	m				
D6a	6 m band width depth not exceeding 250 mm	m				
D6b	6 m band width depth 250 mm – 500 mm	m				
D6c	6 m band width depth 500 mm – 1.0 m	m				
D7a	7 m band width depth not exceeding 250 mm	m				
D7b	7 m band width depth 250 mm – 500 mm	m				
D7c	7 m band width depth 500 mm – 1.0 m	m				
DM	Excavating ancillaries : DISPOSAL of MATERIAL Material produced by Maintenance " off site"					
DM1	Less than 10 t	t				
DM2	Between 10 t –– 20 t	t				
DM3	Greater than 20 t	t				
DD	Excavating ancillaries : DISPOSAL of DEBRIS Material produced by Debris clearance					
DD1	Less than 10 t	t				
DD2	Between 10 t –– 20 t	t				
DD3	Greater than 20 t	t				

NOTE:– 1) " X " Rate, denotes Banksman required to be in attendance.
2) SELECT CODE FOR DESIRED ACTIVITY, FOLLOWED BY THE RATE LETTER. eg :– D1aA