

**WELLAND
AND
NENE
RIVER
AUTHORITY**

**FIRST
ANNUAL
REPORT
1964-1966**



WELLAND AND NENE RIVER AUTHORITY

FIRST
ANNUAL REPORT
1964-1966

Chairman
ALDERMAN SYDNEY STRICKLAND

Vice Chairman
T. R. PICK, Esq., O.B.E.

OUNDLE
Peterborough

D. S. AKROYD
Clerk of the Authority

WELLAND & NENE RIVER AUTHORITY

*With the Compliments of
the Clerk of the Authority*

OUNDLE
Peterborough

Telephone :
3366

CONTENTS

<i>Part</i>		<i>Page</i>
	PREFACE	4
I	MEMBERSHIP	
	Membership of the Authority	5
	Membership of Committees	7
II	STAFF	
	Principal Officers	8
	Other Officers	8
	Water Bailiffs	9
	Labour Force	9
III	WATER RESOURCES	
	General Review	10
	Periodical Surveys	10
	Hydrometric Scheme	11
	Underground Strata	12
	Minimum Acceptable Flow	13
	Research and Experimental Work	13
	Licences	13
	Conservation Works	16
	Agreements under sections 81 and 82	17
	Charges	17
	Rainfall and River Gauging Tables	17
IV	LAND DRAINAGE	
	Capital Works	27
	Maintenance	31
	Work in Internal Drainage Districts	32
	Floods	33
	Drainage Charges	34
	Statutory Schemes for Internal Drainage Boards	34
	Other Matters	34
V	FISHERIES	
	General Report	36
	Salmon and Migratory Trout	39
	Licences issued	39
	Commercial Salmon and Trout Fisheries	40
	Prosecutions	40
	Assessed Fisheries	41
	Research	41

<i>Part</i>		<i>Page</i>
VI	PREVENTION OF POLLUTION	
	Quality of Water	42
	Standards applied to Effluents	45
	Samples and Analyses of Effluents	45
	Sewage and Trade Effluents	45
	Remedial Action	52
	Statistics relating to Pollution Control	53
	Research	54
	Analytical Results	55
VII	GENERAL INFORMATION	
	Establishment of the Authority	61
	Recreational Facilities	62
	Commercial Navigation	63
VIII	ACCOUNTS	64

PREFACE

This Report is published as required by section 110 of the Water Resources Act 1963, and is in the form and contains particulars as directed by the Minister of Agriculture, Fisheries and Food and the Minister of Housing and Local Government.

The Welland and Nene River Authority were constituted by the Welland and Nene River Authority Constitution Order 1964 (S.I. No. 1030) made by the Minister of Housing and Local Government and the Minister of Agriculture, Fisheries and Food in exercise of the powers conferred on them by sections 3, 7, and 134 of the Water Resources Act 1963.

That Order provided that the number of local authority members should be as follows:

<i>County</i>	<i>No. of Members</i>
Bedford	None
Buckingham	None
Cambridgeshire and Isle of Ely	One
Huntingdon and Peterborough	Two
Leicester; Rutland	One jointly
Lincoln, Parts of Holland	One
Lincoln, Parts of Kesteven	One
Norfolk	None
Northampton	Six
<i>County Borough</i>	
Northampton	Two

One of the two members appointed by Huntingdon and Peterborough County Council shall be from among persons nominated by Peterborough Municipal Borough Council.

One of the six members appointed by Northampton County Council shall be from among persons nominated by Corby Urban District Council.

The Minister of Agriculture, Fisheries and Food in accordance with the provision of section 6 (3) of the Water Resources Act, 1963 made five appointments of persons qualified in respect of land drainage, two appointments of persons qualified in respect of fisheries, and two appointments of persons qualified in respect of agriculture.

The Minister of Housing and Local Government in accordance with the provision of that section made two appointments of persons qualified in respect of public water supply and two appointments of persons qualified in respect of industry other than agriculture.

The Members first appointed hold office until the 31st October 1967, and thereafter Members will be appointed for successive periods of three years.

The River Authority came into existence on the 15th October, 1964 (S.I. No. 1267) and took over the functions assigned to them on the 1st April, 1965. The first meeting was held at Peterborough on the 17th November, 1964.

The Area comprises 1,547 square miles, of which 934 square miles are in the Nene Hydro-metric area and 613 square miles are in the Welland Hydrometric area. The total length of main river on the 1st April 1965 was 464 miles, the length of the River Nene and tributaries being 244 miles and the length of the River Welland and tributaries being 220 miles. The estimated penny rate product for 1964-65 was £114,183. The precept of the County and County Borough Councils for the year ended 31st March 1966 was 1.77052 pence, and produced £202,163. The contribution required of internal drainage boards amounted to £51,752. Annual loan charges amounted to £183,785.

MEMBERSHIP

1. MEMBERSHIP OF THE AUTHORITY

CHAIRMAN OF THE AUTHORITY

Alderman Sydney Strickland

VICE CHAIRMAN OF THE AUTHORITY

T. R. Pick, Esq., O.B.E.

MEMBERS AND APPOINTING AUTHORITIES

Appointed by Cambridgeshire and Isle of Ely County Council

County Alderman M. Payne

Appointed by Huntingdon and Peterborough County Council

County Alderman Lt. Col. the Hon. P. E. Brassey, J.P., D.L.

Councillor C. W. Swift (*appointed on the nomination of Peterborough Municipal Borough Council*)

Appointed by Leicester and Rutland County Councils jointly

County Councillor G. S. Finch, J.P.

Appointed by Lincoln (Parts of Holland) County Council

County Alderman H. Waltham

Appointed by Lincoln (Parts of Kesteven) County Council

County Councillor G. A. Griffin

Appointed by Northampton County Council

County Councillor G. D. Berry, M.B.E. (*resigned 12th January 1966*)

County Alderman P. Champion, M.B.E. (*appointed 18th November 1965*)

County Councillor W. A. George

Alderman C. E. Goode (*appointed 24th February 1966*)

County Alderman E. Marlow, M.C., C.B.E., J.P. (*died 4th July 1965*)

County Alderman Mrs. D. P. Oxenham, J.P.

County Alderman H. C. L. Warwick

County Alderman E. E. Wright (*appointed on the nomination of Corby Urban District Council*)

Appointed by Northampton County Borough Council

Councillor R. P. Dilleigh

Alderman S. Strickland

Appointed by the Minister of Agriculture, Fisheries and Food as being qualified in respect of Land Drainage

R. J. Berry, Esq.
G. H. Hoyles, Esq.
T. R. Pick, Esq., O.B.E.
A. C. Pyrah, Esq., J.P.
H. Cole Tinsley, Esq., M.B.E.

Appointed by the Minister of Agriculture, Fisheries and Food as being qualified in respect of Fishery Interests

P. H. Tombleson, Esq.
L. G. Turnill, Esq.

Appointed by the Minister of Agriculture, Fisheries and Food as being qualified in respect of Agriculture

H. J. T. Carter, Esq.
S. T. Ward, Esq., C.B.E.

Appointed by the Minister of Housing and Local Government as being qualified in respect of Public Water Supply

L. H. Brown, Esq., B.Sc., M.I.C.E., M.I.W.E.
Alderman A. S. Ireson, F.R.S.A.

Appointed by the Minister of Housing and Local Government as being qualified in respect of Industry other than Agriculture

G. C. S. Oliver, Esq., B.A.
N. A. Pearce, Esq., B.E.M.

COUNTY ALDERMAN EWART MARLOW, M.C., C.B.E., J.P.

The death of County Alderman Ewart Marlow on the 4th July 1965 deprived the Authority of a member who had rendered valuable guidance and leadership at the early meetings, and whose ability and impartiality had quickly inspired the respect of all.

As Chairman of Northamptonshire County Council and as a member of numerous other bodies he had wide experience of local government and public administration. As Chairman of the Mid-Northamptonshire Water Board, Chairman of the Great Ouse Water Authority, a member of the British Waterworks Association and a member of the Central Water Advisory Committee he had an outstanding knowledge of public water supply, and problems relating to Water Conservation. He was keenly interested in the work of the Authority, and he would undoubtedly have made a major contribution to the solution of the many new problems arising on the "new functions".

His kindly and considerate manner endeared him to many.

**2. MEMBERSHIP OF
STATUTORY AND STANDING COMMITTEES**

Finance and General Purposes Committee

T. R. Pick, Esq., Chairman

R. P. Dilleigh, Esq., Vice-Chairman

R. J. Berry, Esq.,	Alderman Mrs. D. P. Oxenham
Lt. Col. the Hon. P. E. Brassey	(from 10th February 1966)
H. J. T. Carter, Esq.	H. Cole Tinsley, Esq.
Alderman E. Marlow	L. G. Turnill, Esq.
(to 4th July 1965)	Alderman H. Waltham
N. A. Pearce, Esq.	Alderman H. C. L. Warwick
Alderman S. Strickland	Alderman E. E. Wright

Land Drainage Committee

R. J. Berry, Esq., Chairman

H. Cole Tinsley, Esq., Vice-Chairman

H. J. T. Carter, Esq.	T. R. Pick, Esq.
Councillor G. S. Finch	A. C. Pyrah, Esq.
County Councillor W. A. George	Alderman S. Strickland
Councillor G. A. Griffin	Alderman H. Waltham
G. H. Hoyles, Esq.	S. T. Ward, Esq.
Alderman M. Payne	

Fisheries and Pollution Prevention Committee

L. G. Turnill, Esq., Chairman

Alderman A. S. Ireson, Vice-Chairman

Lt. Col. the Hon. P. E. Brassey	N. A. Pearce, Esq.
L. H. Brown, Esq.	T. R. Pick, Esq.
Alderman P. Champion	A. C. Pyrah, Esq.
(from 10th February 1966)	Alderman S. Strickland
County Councillor G. S. Finch	Councillor C. W. Swift
G. C. S. Oliver, Esq.	P. H. Tombleson, Esq.
Alderman Mrs. D. P. Oxenham	
(to 10th February 1966)	

Water Conservation Committee

Lt. Col. the Hon. P. E. Brassey, Chairman

Alderman E. E. Wright, Vice-Chairman

County Councillor G. D. Berry	Alderman E. Marlow
(to 12th January 1966)	(to 4th July 1965)
L. H. Brown, Esq.	G. C. S. Oliver, Esq.
Alderman P. Champion	Alderman Mrs. D. P. Oxenham
(from 10th February 1966)	T. R. Pick, Esq.
Councillor R. P. Dilleigh	Alderman S. Strickland
Alderman C. E. Goode	Councillor C. W. Swift
(from 24th February 1966)	Alderman H. C. L. Warwick
Alderman A. S. Ireson	

STAFF

1. PRINCIPAL OFFICERS

Office	Name
Clerk of the Authority ..	D. S. Akroyd, LL.B., Solicitor.
Associate Clerk of the Authority ..	R. W. Hastings, M.B.E., Solicitor.
Chief Engineer ..	H. W. Clark, A.M.I.Struct.E., M.I.W.E.
Associate Chief Engineer ..	R. L. G. Baxter, B.Sc., A.C.G.I., M.I.C.E., M.I.W.E.
Treasurer ..	A. E. Lane.
Chief Fisheries and Pollution Prevention Officer ..	R. E. Field, A.M.Inst.S.P.

2. OTHER OFFICERS

(as at 31st March, 1966)

Clerk's Department and General Administration

Chief Assistant ..	Grade C
Secretary ..	Clerical I
Typists (7) ..	Scale as appropriate
Telephonist ..	Scale as appropriate

(3 part time and temporary typist/clerks not established)

Chief Engineer's Department

Senior Engineer ..	Grade E
Senior Engineer ..	Grade D
Divisional Engineers (5) ..	Grade C
Hydrologist ..	Grade C
Assistant Engineers (3—1 vacant) ..	APT IV/Grade A/B/C
Assistant Engineers (2) ..	APT III
Assistant Hydrologist (vacant) ..	APT III/IV
Draughtsman ..	APT III
Junior Draughtsman and Engineering Assistants (12) (2 Vacant) ..	{ APT I/II Misc. Div.; Gen. Div. as appropriate
Pupil Engineers ..	General Division
Clerks and Machine Operators (2) ..	General Division
Typists/General Clerk (2) ..	Scales as appropriate

Treasurer's Department

Senior Assistants (2) ..	APT III
Clerical Assistants (2) ..	Clerical II/III
General Clerk/Machine Operator (1) ..	Clerical I
Junior Assistants (3) ..	General Division

Fisheries and Pollution Prevention Department

Chemist ..	Grade A
Senior Assistant Inspector ..	Grade A
Assistant Inspector (1) ..	APT III/IV
Junior Assistant Inspector (1) ..	APT II
Trainee Inspector ..	APT I/II
Laboratory Assistants (2) ..	General Division
Shorthand typist ..	Scale as appropriate

3. WATER BAILIFFS

Water Bailiffs (2) ..	Misc. IV.
Honorary Water Bailiffs (62) ..	

4. LABOUR FORCE

(as at 31.3.66)

Tradesmen ..	13
Foremen and Under Foremen ..	23
Plant Drivers ..	32
Storekeepers, Sluicekeepers, Toll-keepers, etc. ..	7
Labourers ..	74
	<hr/>
	149

WATER RESOURCES

1. GENERAL REVIEW

The primary activity in the first twelve months has been to lay sound foundations, and to accumulate information required before an adequate appreciation can be made of the tasks to be carried out under Part III of the Act. Decisions can then be taken on policy. The rainfall and river flow records compiled by the River Nene Catchment Board and by the Nene River Board over the past 28 years, although initially for land drainage purposes, have proved a very sound foundation on which to build the further records now required. Preparations have been made to obtain information as to the Welland Hydrometric area, but records have yet to be accumulated. Further information is essential about the ground water resources in South Lincolnshire and in the river valleys.

An Hydrologist had been appointed by the Nene River Board. The Chief Officers advised that no increase should be made in the establishments taken over from the two River Boards until there had been an opportunity to assess the tasks, and it was known whether the amalgamation of the Areas would result in any economies. Although that advice appeared prudent at the time, it has meant that in the past year the number of staff has not been entirely adequate, and it has been unsatisfactory that the Senior Engineers have not had a clear division of responsibility as between Water Conservation and Land Drainage. It has now been decided to appoint further staff to undertake Water Conservation duties.

The principal and immediate problems arise from the proposals to double the size of Northampton and Peterborough, as recommended in the South East Study published by the Ministry of Housing and Local Government in 1964. Water supply must be assured before any part of the South East expansion can be put in hand, and the Water Resources Board set up a Technical Committee consisting of the Engineers of River Authorities and of the Water Undertakings in the South East to make an immediate overall assessment of the present and potential resources, and of the existing and future demand. The Chief Engineer served on the North Thames Sub-Committee. At the end of the year the publication of the Technical Committee's Report, and of the Water Resources Board's recommendation thereon, was awaited. As a solution of the problems in this Area is obviously dependent on the solution of the problems for the South East as a whole it was premature to formulate any proposals.

The initial task was to examine and issue Licences of Right, and it was with some satisfaction that the work was almost entirely completed by the due date.

Liaison was established with the Statutory Water Undertakings, and some basic information on demands and on resources has been assembled.

2. PERIODICAL SURVEYS

Information derived from the Licences of Right and predictions made by the water undertakings are being collated to prepare an initial Water Balance Sheet. It is premature to formulate any conclusions or to decide on policy. Liaison has been established with the Technical Officers of the Water Undertakings and with the major industrial abstractors.

The Hydrological Survey for the Welland and Nene Rivers published by the Ministry of Housing and Local Government in November 1964 (and the last in the series) was most opportune, and contained a lot of valuable data basic to the new functions.

A general appraisal of demands and water resources was made by the Technical Committee for the purpose of the Report on Water Supplies for South East England initiated by the Water Resources Board from information supplied by the Authority, the Water Undertakings and other major abstractors. At the end of the year the publication of the Report and the Water Resources Board's recommendations thereon was anticipated with great interest. Decisions as to policy must obviously await the discussion of the Report, which it is expected will be held under the aegis of the Water Resources Board.

Information prepared for the Report shows that the effective overall deficiencies in the Welland and Nene are as set out in the following table, but it must be emphasized that the overall deficiencies conceal the local deficiencies which will have to be met before 1971, particularly in respect of public water supply.

<i>Year</i>	<i>Public Water Supply</i>	<i>Industry</i>	<i>Irrigation</i>	<i>Total</i>
1971	—	3	2	5
1981	30	7	3	40
2001	75	21	4	100

Effective deficiency in million gallons/day

As mentioned above, in this Area the first major problem is to decide how to meet the substantial increase in the demand for water which will result from the proposal contained in the South East Study to double the population of Northampton and Peterborough. Any policy for this Area must depend on the solution to that problem. Fortunately the Mid-Northamptonshire Water Board have already given considerable thought to the requirements of Northampton, and their investigations lead them to the conclusion (which, although confidential at the end of the year, has since been revealed in the South East Report) that the answer is to build a new pumped storage reservoir in Rutland with a yield of 50 million gallons per day to be fed by an abstraction from the river Nene up-stream of Peterborough. Those responsible for exploring the planning problems which will arise on the Peterborough expansion have appointed Consultants to advise them on Engineering matters, including water supply.

Some water is transferred to the Lincolnshire Area through intakes from the river Glen to feed the Black Sluice drainage system and then used for agricultural spray irrigation. Water is also transferred to the Great Ouse Area through the Middle Level sluice at Stanground. There is a statutory obligation to provide water for Navigation, but since the River Nene Catchment Board constructed the Dog-in-a-Doublet Sluice, additional water has been fed into the Middle Level system for irrigation. Applications for licences of right were received in respect of both these abstractions, and in the latter case the purpose was defined as "for the dilution of sewage effluent"! The implications of that are yet to be considered.

3. HYDROMETRIC SCHEME

Part I of the Hydrometric Scheme (Rainfall and Inland water) was submitted to the Water Resources Board in March.

Following consultation with the Meteorological Office as to rainfall gauging, the Scheme

provides for a network of 98 rain gauges, of which 50 are in the Welland Hydrometric area of 613 square miles and 48 are in the Nene Hydrometric area of 934 square miles. The difference in density is due to larger and less numerous sub-catchments in the River Nene basin.

With the approval of those operating them, it is hoped to include 5 existing recording rain gauges in the network, and it will be necessary to establish 29 new stations. It is proposed to complete Part I of the scheme in two years, but the sequence in which the stations are established will depend on the location of suitable sites and the recruitment of reliable observers.

For measuring inland water the Scheme provides for the continuation of 8 existing stations, for the improvement of 6 other gauging stations in the Nene Hydrometric area, and for the construction of 39 additional gauging stations, to make a total of 53. The majority of the new gauging sites are to provide accurate measurement of low flows on the smaller, but nevertheless important, tributary streams.

Provision has been made for continuous measurements of reservoir levels, of river levels at points where such data is important, and of the flows from selected springs.

The estimated cost for Part I of the Hydrometric Scheme is £78,500, which is believed to be very small compared with the cost of the Schemes submitted by some other Authorities. This is in part due to the fact that the River Nene Catchment Board first established river gauging stations in 1938, and (although improvements need to be made and the original equipment replaced) the basic work done by the foresight of the Catchment Board has proved greatly advantageous. As was stated by the Ministry of Housing and Local Government in the Hydrological Survey:

“The River Nene Catchment Board with commendable foresight initiated a comprehensive river gauging scheme on the main river and its principal tributaries in 1936. Between 1938 and 1945 ten permanent stations were established, and this was one of the first two systematic flow measurement schemes in this country.

The time has now come when a number of replacements and improvements to the original stations are necessary to bring them up to date with modern practice. With this objective in view the Nene River Board submitted an outline scheme of improvements estimated at £21,870, and this scheme has recently been approved in principle by the Ministry under the River Boards Act, 1948. The work will include the replacement of badly worn automatic recorders and unserviceable timber recorder huts, the provision of new cable ways, and improvements to structures where such are desirable to increase accuracy of flow measurements.”

Limited and disappointing progress was made on the construction of new sites, and on the modernisation of existing stations. Work commenced on the river Welland's main station at Tallington, where weirs are to be constructed on two mill streams, and a weir at the junction of the River Welland—Maxey Relief Channel is to be adapted for measurement. The new weir on Harper's Brook was completed at a cost of £5,000, and Punch tape and visual recorders installed. This replaces an installation completed in 1938 at the cost of £55 which has provided a continuous record since that date, although the accuracy is not of the standard now required.

4. INVESTIGATION OF WATER IN UNDERGROUND STRATA

No Scheme was submitted to the Water Resources Board under section 18. The staff are making a study of ground water levels in gravel strata in the vicinity of Maxey Relief Channel near West Deeping. One of the objects is to determine whether the new Relief Channel has lowered ground water levels to the detriment of agricultural land.

Preliminary discussions have taken place with the South Lincolnshire Water Board as to

co-operating with them in the continuation of their work in observing water rest levels in the Lincolnshire limestone.

5. MINIMUM ACCEPTABLE FLOW

Preliminary consideration has been given to the factors to be taken into account in determining Minimum Acceptable Flow. Basic data has been assembled in respect of the Nene basin, and some data is accumulating in respect of the Welland basin. No conclusion can be reached until the commitments under the Licences of Right have been fully assessed.

6. RESEARCH AND EXPERIMENTAL WORK

Arrangements were completed with the Road Research Laboratory under which the Authority will undertake routine weekly observations and inspections of the instruments at the Flore Experimental Catchment which is situated in proximity to the M1 Motorway and the Bugbrooke Climatological Station, where daily observations are made by A. R. Heygate & Sons Ltd. The Authority have full use of the Flore Station, and it is hoped to develop it in accordance with future needs. Analysed data on rainfall and run-off are received but there has not been an opportunity of doing any research or experimental work.

7. LICENCES

(a) Abstraction Licences

The applications for Licences of Right numbered 1,123, of which 56 were found to be duplicated or to relate to neighbouring Areas. One hundred and eighty applicants were invited to withdraw, and 48 applications were rejected on the grounds that there was no entitlement. Only a very small number of applications were rejected as totally insufficient. Eight applications were indefinitely deferred pending clarification of certain difficulties. Some applications resulted in the issue of 2, 3 or more licences, and the total number of licences issued was 973.

It was with some satisfaction that it was possible to inform the Water Resources Board within 15 days of the due date that all applications for Licences of Right had been disposed of.

The applications received, having regard to the complexity of the prescribed forms, were generally well prepared, and many farmers and small industrialists are to be commended on the care and attention which they gave to the completion of the forms. Some of the applications prepared by professional advisers were not so satisfactory.

Subject to Statutory requirements, the greatest possible consideration and sympathy were shown in dealing with applicants and in examining applications, and it is believed that much good-will was created in carrying out a task which might well have led to irritation and misunderstanding. Only a very small number of the “irate farmers” referred to in Mr. Montague Keen's article in the *British Farmer* of the 26th March have been encountered in this Area. This good-will is being further developed in discussions and liaison with the County Committees of the National Farmers' Union and with the local Committee of the Confederation of British Industries. It is most necessary that mutual understanding should exist with all organisations concerned in the administration of these complex new functions. Organisations representing applicants for Licences must be assured that the Authority are acting reasonably, and that each case is considered on its merits and that the requirements and conditions are appropriate to the