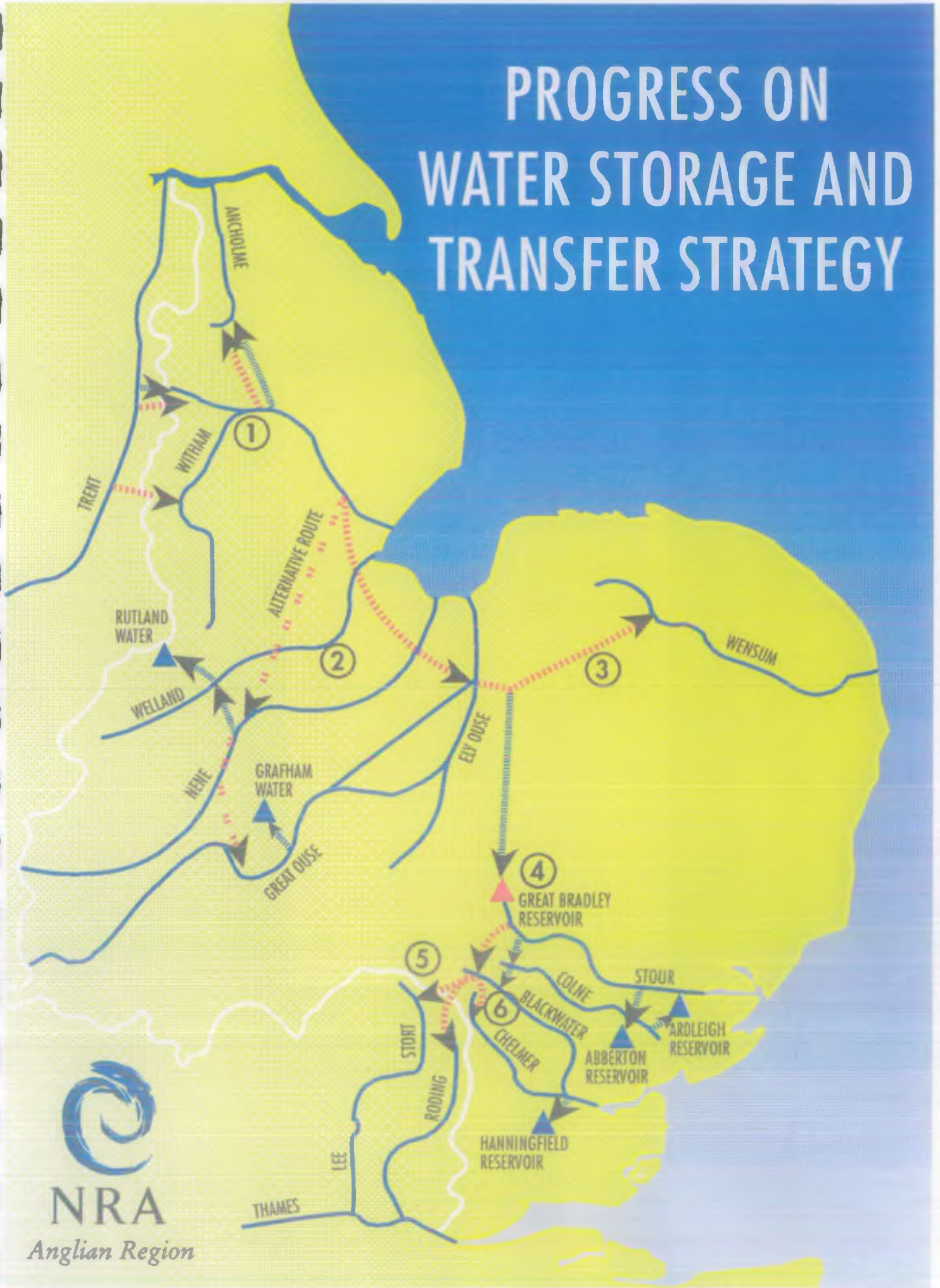


PROGRESS ON WATER STORAGE AND TRANSFER STRATEGY



NRA

Anglian Region

MEETING FUTURE WATER NEEDS - THE STRATEGY

Planning to meet the water needs of eastern England into the next century is already well under way. NRA's Anglian Region is working towards a Water Resources Strategy, to meet demands for water. Our aim is to secure the availability of water for augmentation and redistribution throughout the region whilst protecting the water environment. This will benefit all abstractors including agriculture, industry and public water companies.

The strategy includes:

- * demand management
- * further use of river water
- * further use of ground water
- * bulk raw water transfers
- * storage reservoirs

Public consultations on the strategy will take place in 1993.

OPTIONS AND STUDIES

There is no one solution and it is likely that a combination of options will be required. Whatever is finally decided,

- * drought years will still occur.
- * rivers and springs will still dry up in drought years.

Several studies have already commenced and this leaflet describes progress on one of these studies which includes:

- * the increased transfer of water from the River Trent into the eastern and southern parts of the Anglian region;
- * the building of a new reservoir at Great Bradley near Newmarket.

A full report on this study will be available in Autumn 92. If it is decided that water transfer and/or a reservoir are to form part of the strategy then before construction can commence detailed planning must be completed. Detailed planning includes:

- * further studies including public consultation and environmental assessments.
- * powers for construction, possibly involving a Public Inquiry.

ENVIRONMENT AGENCY



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- * decisions by the NRA and abstractors on financing the proposals and the impact on existing water supply networks.

In order to keep the implementation period to a minimum the NRA is already pursuing these issues and will continue to give them high priority.

BULK WATER TRANSFERS

Bulk raw water transfers already exist in the region (see map) and any new ones would be operated in the same way - by a combination of pipelines, tunnels or existing river, canal and drainage channels.

NRA is looking at five transfers involving Trent water:

1. Trent-Witham-Ancholme

This would increase the capacity of the existing scheme and enable water to be transferred from the lower Witham to other parts of the region. The existing scheme is licensed to abstract 180 thousand cubic metres a day. Two routes, together capable of transferring up to 600 tcmd from the Trent to the Witham are being studied:

- * by pipeline to the upper Witham near Newark;
- * from Torksey via the Fossey Canal.

The effects of such transfers are likely to include:

- * no serious problems for potable water supplies although fluctuating water quality parameters will need to be investigated.
- * the disturbance of fisheries by the intermittent transfer of large volumes of water, but environmentally sensitive channel improvements could provide opportunities to enhance the fisheries and ecological potential of both the Ancholme and the Witham.
- * the introduction of nutrient-rich Trent water into slow flowing channels which could lead to more algal growth. The issue of whether Trent water would have to be treated to remove phosphates before being put into the region's rivers will be reviewed.
- * the impact on the Trent of major abstractions at times of low flow could be significant because of the amount of water to be taken. There may be periods when the Trent flow is inadequate, which implies a need for storage of water to sustain supplies during such periods.

2. Witham to Denver

Five direct routes between the lower River Witham upstream of Boston and the Ely Ouse at Denver are being investigated together with branch routes to two existing reservoirs - Rutland Water in Leicestershire and Grafham Water in Cambridgeshire.

The most economic routes are considered to be :

- * Witham to the Twenty Foot River by pipeline, through the Middle Level drainage system with a tunnel from Nordelph to Denver;
- * Witham to, and along, the South Forty Foot Drain, and then by pipeline to Denver.

However both could prove less attractive than a direct pipeline from Witham to Denver because of issues connected with agricultural abstraction and the operational control of transfers through open channels.

Chloride levels in the lower Witham and South Forty Foot Drain should improve with current works at the sea sluices and with higher fresh water flows.

3. **Denver to River Wensum**

This scheme would transfer up to 100 tcmd by pipeline from the Cut Off Channel at Denver to the Wensum for public water supply abstraction upstream of Norwich.

A number of routes are being investigated :

- * from the Cut Off Channel to the Wendling Beck. The beck would need substantial improvement to handle the flow. This option would also have potential effects on adjacent Sites of Special Scientific Interest.
- * from the Cut Off Channel to the main Wensum channel at Swanton Morley but this would be more expensive.
- * a direct pipeline to Costessey water treatment works at Norwich. This would be even more expensive.

Environmental and water quality considerations include:

- * the impact of the quality of Trent supported water on the Wensum. Further study is needed .
- * the implications for fisheries and the overall ecological value of the Wensum. These could be significant and highly sensitive issues.

4. **Great Sampford to Rivers Roding and/or Stort**

This option would transfer up to 200 tcmd from the existing transfer discharge point at Great Sampford on the River Pant to the rivers Roding and/or Stort and could provide additional water for south Essex and east London.

Water quality and the biological implications for fisheries and the aquatic ecology are significant issues and the effects on existing public water supply and irrigation abstraction require further study.

5. Great Sampford to the River Chelmer

This option would transfer up to 200 tcmd into the Chelmer as an alternative to the existing river regulation discharge to the Pant and Blackwater.

Two routes are being investigated :

- * a direct pipeline from Great Sampford to the upper reaches of the Chelmer;
- * a downstream discharge at Great Dunmow routed along the Pant and then by cross country pipeline to the Chelmer.

Here again issues of water quality, the biological implications for fisheries and the aquatic ecology and the effects on existing public water supply and irrigation abstractions need further study.

A NEW RESERVOIR

If a major storage reservoir is required, this would involve building an earth embankment dam up to 30 metres high in the upper reaches of the River Stour at Great Bradley near Newmarket. A subsidiary embankment would be needed to protect Weston Green.

The main points to emerge from the interim study are :

- * the reservoir basin can be made sufficiently watertight by providing a clay blanket for the Kirtling Brook and the bottom of the Stour Valley to just upstream of Sipsey Bridge;
- * if the dam was designed with 'undrained' embankments the amount of material which would have to be brought to the site could be kept to a minimum.

- * taking the highest reservoir water level of those under consideration it is estimated that 54 properties could be affected including five which are listed buildings.
- * the environmental impact of the reservoir proposal would require detailed assessment and the production of an Environmental Statement. The area contains four Sites of Special Scientific Interest, ancient woodlands and a variety of possible archaeological sites.
- * the B1061 road would have to be diverted to maintain the existing network. Access for construction traffic would necessitate the upgrading of the C231 from Brinkley to the A45 and the building of a by-pass west of Brinkley village.
- * the Environmental Statement will contain a full assessment of the amenity, conservation and recreation potential of the proposal.

CONCLUSIONS

The study has identified:

- the environmental effects of water transfer schemes (eg. fisheries and water quality).
- the most likely economic routes.
- some of the impacts of reservoir construction.

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