Cambridgeshire Water

U3AC and Cambridge Conservation Forum Seminar

15th November 2024

Finance and Nature

- Banker; Trustee and Treasurer of Fenland Soil and of Natural Cambridgeshire; founder of Cambridge Phenomenon and later Cambridge Ahead; Emeritus-Master of St Edmund's College
- Bees and birds don't have bank accounts, so finance has to be expressed by humans and man-made institutions
- Appreciation of aesthetics – public's donations and ticketing
- System thinking and mitigations – ongoing revenues and capital grants
  - Biodiversity credits
  - Carbon credits, especially for peat
  - Water

Summary

- Known for low rainfall, but Cambridgeshire does not have a shortage of water passing through its 3 major river each year
- Long term concerns about climate change – droughts and deluges
- There is a shortfall now in water availability due to lack of storage
- With more volatile rainfall patterns, farmers are building more storage in farm reservoirs to insure crops for drought and downpours
- More water in the landscape will help deal with CO2 emissions from peat and support biodiversity
- Hope planners will be supportive
- Investigating whether more local storage can help Public Water Supply (PWS)

Cambridgeshire Issues

- Availability of Public Water due to high economic growth in Greater Cambridge (PWS 85% of water use; agriculture 10%)
- Excess abstraction of ground water drawn from aquifers drawn in south section of chalk hills around Cambridge
- South Cambs chalk streams drying up due to abstraction
- Sewage outfalls and nutrient absorption reducing water quality
- Longer term sea level flooding and urban run off flooding from downpours are concerns; riverine flooding not a significant issue
- Who owns water? All water uses are controlled by Env Agency licences, so no proper value mechanism or market

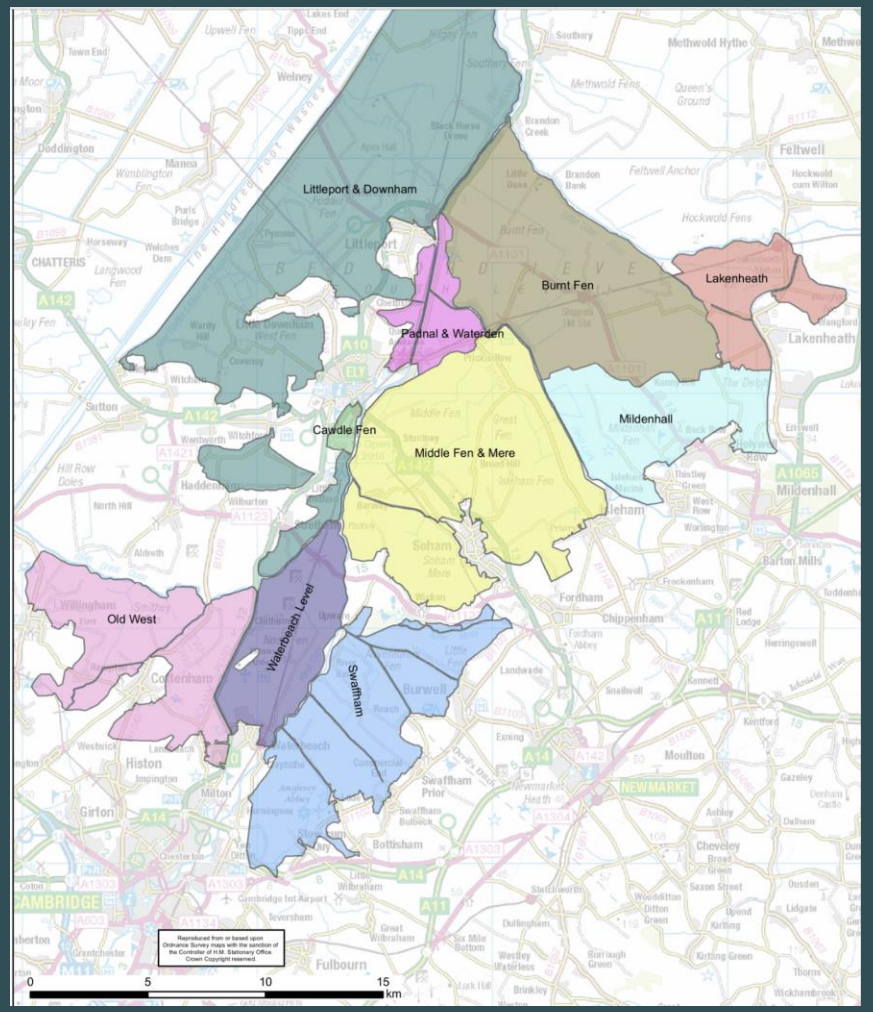
Public water system in Cambridgeshire

- 3 large water catchments - Nene and Great Ouse from Cotswolds Northants, Beds and Camb, Cam from Essex, Cambs and Norfolk chalk hills
- P'boro provides 25% of Cambs economy, Huntingdon 15% Greater Cambridge 50% and Fens 10%
- PWS provided by Anglian and Cambridge Water; both fully vertically systems/19th century municipal models with sourcing water, treating and distributing within regional monopolies,
- Regulated by OFWAT for price and ROI, EA for sourcing and Drinking Water Inspectorate for water quality

Public water system in Cambridgeshire

- Greatest pressure on PWS in Greater Cambridge
- Cambridge Water depends on ground water boreholes; smaller operating storage at Lime Kiln Rd and Madingley Rise, but no back up storage
- Statutory back up reservoirs Graffham (58m cm3) and Rutland (124m cm3) owned by Anglian for East Midlands needs
- Additional Chatteris back up reservoir (55m cm3) for Cambs and Norfolk; to be owned by Camb Water and Anglian, available ?2036/£1.2bn+; build cost £40 p cm3; longer term need for desalination?
- Short term extra link from Graffham in 2032?, but demand control measures to be enforced
- Hard limits on future housing and hospital developments until then

Ouse and Cam catchments and South Level



Cambs agricultural water system

- South aquifer abstraction being constrained: Cam upstream farm clusters with independent reservoirs and pipelines
- Fens organized in 3 Levels by Internal Drainage Boards (IDBs)– North for Nene, Middle for Ouse/100 Foot Drain, and South for Lower Cam and Ouse
- IDBs statutory bodies to drain fens, but not permitted to manage water system and have to carry costs of pushing surplus water out to sea, paid by farmers and fenland rates

Cambs agricultural water systems

- South Level farmers have built 5m cm3 in mid-sized reservoirs for cropping insurance; built in 2-3 years, build cost £4.00 p cm3
- Growing need of water in landscape for partial re-wetting of peat and reduce CO2 emissions
- Using surplus winter river abstraction; no shortage of river or aquifer/ground water in South Level
- Defra support for mid-sized reservoirs; designs incorporate biodiversity features
- IDB drains and ditches are already a green infrastructure and highly biodiverse

Crossover thinking

- Can the agricultural water systems supplement PWS – shorter term and long term?
- South Level IDBs to transmit water upstream through its grid/network to Waterbeach, plus upstream flows, for treatment and connection to Cambs Water network
- Available faster and lower cost extensive network of mid-sized storage throughout Cam catchment - parallel to electricity market
- Biodiversity credits and income stream for farmers to support long term water investments for climate change/re-wetting
- Defra/EA/DCL sponsored project to explore this

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