MILTON KEYNES:

MAKING A GREAT CITY GREATER

Commission Working Paper 18

Water Sustainability Report

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Milton Keynes Futures 2050 Commission

MILTON KEYNES FUTURES: 2050

MK Futures 2050 – Water Sustainability Report

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Abstract

This short report provides recommendations to the Milton Keynes Futures 2050 Commission regarding water systems. Water systems are a key component of the city's infrastructure providing critical services by resourcing, supplying and removing water for residents, businesses and other stakeholders. The outlook for Milton Keynes is increasing uncertainty about both water stress, already evident in the catchment, and the ability of water drainage and conservation systems (with some Sustainable Drainage Systems- SuDS[1]) to cope with more severe flooding. So in the context of population growth, beyond that already planned to 2026, as well as potential impacts from climate change and water regulation for improved quality, water services are likely to become a priority as concerns over security of supply and damage to people and property escalate. These challenges recognized by water utility provider Anglian Water's latest management plans.

These recommendations should be considered now and planned for implementation from 2020. It is recognized that the recommendations are broader than the responsibilities of MK Council which are limited to activities such as building control, land use planning, permitting, and citizen engagement. For the recommendations to be effectively implemented requires MK Council to support and work with Anglian Water and the Environment Agency who both have largely commensurate ambitions in this area.

1. **Reduce water demand** through support for sustainable behaviour and where possible retrofit of efficient devices in the home and workplace, through early leak detection and repair using water systems telemetry, and through innovative charging models and behaviour change campaigns.
2. Plan for **minimized water demand and maximised water conservation** in new planning applications and building works.
3. **Protect people and properties from flood risk** by extending and revising the boundaries of flood plains. Prevent the use of this land for living or working places or create barriers in existing places at risk from flood. Work with farmers and land owners to minimise water run-off.
4. **Plan for new water resources to maintain the balance between supply and demand.** This may include extending reservoirs at Grafham and/or Wing and/or new reservoirs to meet the needs of a growing population, or increased winter storage and transfers from areas of surplus.
5. Keep water prices low for essential services by **avoiding high costs of water treatment** by avoiding pollutants, nitrates, etc. entering potable water systems by working with land owners, farmers, and other industries.
6. **Design new flood management systems** and SuDS to cope with more people in urban homes and densification for new build areas.
7. **Recognize the dependence upon energy systems** for water treatment and distribution, and invest in renewable technologies for energy use, generation and storage.

[1] The SuDS Manual, 2015, published by CIRIA,
http://www.ciria.org/Memberships/The_SuDs_Manual_C753_Chapters.aspx
see also http://www.hrwallingford.com/projects/the-suds-manual

Introduction

Milton Keynes Council is taking positive action to evaluate the potential of city growth on water systems which provide water and remove unwanted used water. Both technological and behavioural changes, such as efficient toilets and use of water butts for watering gardens respectively, are observed already in the city and this is helping to reduce demand. But the future to 2050 is very uncertain. Milton Keynes is a desirable location to live and work and continues to grow already being the city with the greatest growth between 1981 and 2011 almost doubling in size[2]. Contemporary issues raise concerns about water security and include: climate change and the need for adaptation to extreme weather; increasing demand for food and consequent mechanisms for high yield produce which are polluting ground water; challenging local and global macro-economic conditions creating pressure to reduce utility costs.

This Water Sustainability Report forms part of an evidence base for the MK Futures 2050 Commission. It attempts to condense significant knowledge from published materials and through interviews with MK Council, MK Smart project, Anglian Water and HR Wallingford. It reviews national and local water system challenges and draws conclusions from these to make recommendations for the MK Futures 2050 Commission.

National and international water system challenges

Akin to the energy trilemma, the water trilemma[3]concerns the issue of distributing scarce resources of water among citizens, the economy and the environment. Globally, water use is growing at twice the pace of the population and in less than 10 years, two thirds of the world will live in areas of water stress if current water management practices continue. **Water crises**, that is, "*a significant decline in the available quality and quantity of fresh water resulting in harmful effects on human health and/or economic activity"* is rated **the highest impact risk globally**[4] .

The UK government defines water as a critical service[5] requiring a sector resilience plan led by the Department for the Environment, Food, and Rural Affairs (DEFRA). Water systems are dependent upon: electricity, which if disrupted could result in the loss of mains water and affect the movement and treatment of sewerage; and telecommunications, which if lost would impact remote flow management and monitoring systems. Irrespective of risks, water utilities are required by law to provide water by alternative means in the event of a failure of the mains supply. The resilience of the water industry to major risks is addressed by all risks regulatory framework, mutual aid agreements and high levels of investment continue to strengthen the resilience of the water industry to major risks.

The UK food sector recognises its critical dependence on water (as well as other services, such as energy, transport and communications) but owing to the geographic spread, number of firms, and competitiveness of the industry, and high substitutability of foods it has high resilience. The food sector's resilience was demonstrated by its ability to withstand disruptive challenges, such as 2007 floods and severe winter weather and flooding since 2010.

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[2] Tony Champion, People in cities: the numbers. Future of cities: working paper Foresight, Government Office for Science https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/321814/14-802-people-in-cities-numbers.pdf

[3] http://thoughts.arup.com/post/details/473/how-to-solve-the-water-scarcity-trilemma

[4] World Economic Forum, Global Risks and Trends 2015 at http://reports.weforum.org/global-risks-2015/executive-summary/

[5] Cabinet Office, A Summary of the 2014 Sector Resilience Plans https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/370156/20141103_Summary_sector_resilience_plan_2014.pdf

Agriculture and land-use management in the UK has changed immensely since the end of the Second World War, and modern agricultural practices have led to changes such as increased field size, the use of large farm equipment, and elimination of buffer zones (areas of land, lying next to a waterway, kept in permanent vegetation) and hedgerows[6]. Those changes in farming methods have resulted in more deeply compacted soils, unchecked runoff, lines left from ploughing, and cracks in the soil speeding up the flow of water on the soil's surface. This in turn increases the volume and speed of water flowing into waterways and heightens the risk of flooding. There is now significant evidence that interventions are possible to reduce water flow[7].

Climate Change Risk Assessment (CCRA)

Evidence for the 2012 CCRA[8] (see section 7.6 on water) highlights the future pressures on water availability and the consequences for water users and the natural environment. The deployable output of water in the UK could decrease by as little as 1.5% to as much as 33%, by 2050 (see Figure 1).

Deployable output for the UK is projected to decrease from present day output of 19,500 Ml/day by around 750 Ml/day by the 2020s for the Medium emissions scenario, central estimate (ranging from an increase of 1,200 Ml/day to a decrease of 2,900 Ml/day) and decrease by 3,600 Ml/day by the 2050s (ranging from a decrease of 280 to 6,600 Ml/day).	Medium confidence

Fig 1. CCRA (2012) HR Wallingford[8, section 7.6]

Land use change, population needs, and other social and economic drivers affect water availability and quality. But population growth represents one of the biggest pressures due to increased demand and increased pollution, including that from urbanized environments.

The updated projections for UK water availability[9] assess future vulnerability, sensitivity and risk for the public water supply, suggesting that 27 water resources zones have a supply-demand deficit greater than 5 Million litres per day (Ml/d) by the 2030s. These deficits are projected to be widespread by the 2050s in high population growth and high climate change scenarios, and the south-east is particularly susceptible.

The Environment Agency's 2050s water scenarios project[10] identified four possible futures of water for the 2050s: Sustainable Behaviour, Innovation, Local Resilience and Uncontrolled Demand (see Figure 2).

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[6] O'Connell, P. E., Ewen, J., O'Donnell, G., & Quinn, P. (2007). Is there a link between agricultural land-use management and flooding? Hydrology and Earth System Sciences 11(1): 96-107. DOI: 10.5194/hess-11-96-2007.

[7] Science for Environment Policy, Environment Soil and Water: a larger-scale perspective, November 2015 http://ec.europa.eu/environment/integration/research/newsalert/pdf/soil_and_water_larger_scale_perspective_52si_en.pdf

[8] HR Wallingford, Climate Change Risk Assessment 2012 http://ccra.hrwallingford.com/CCRAReports/reportviewer.html?sector=evidence&link=LinkTarget_2493

[9] CCRA2: Updated projections for water availability for the UK: Final Report, Aug 2015, MAR5343-RT002-R05-00 https://www.theccc.org.uk/wp-content/uploads/2015/09/CCRA-2-Updated-projections-of-water-availability-for-the-UK.pdf

[10] Environment Agency: Water: Planning ahead for an uncertain future: Water in the 2050s http://webarchive.nationalarchives.gov.uk/20140328084622/http://cdn.environment-agency.gov.uk/geho0811bsml-e-e.pdf

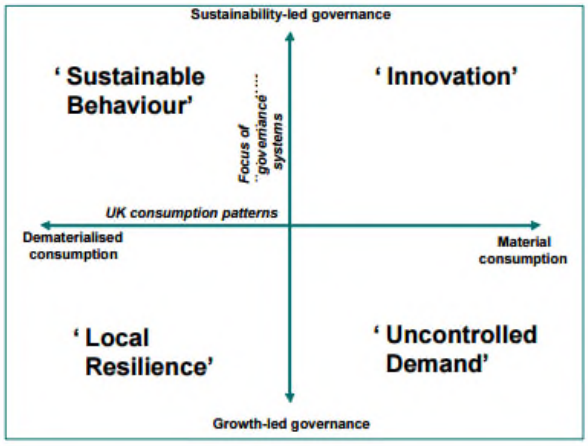

Fig 2. Four scenarios, Environment Agency, Water Futures[10]

Of these, only the Sustainable Behaviour and Innovation scenarios predict a reduction in water demand (see Figure 3) enabled by a focus on governance systems. It suggests that water demand must be controlled and that local resilience will not abate demand and its impact on water quality.

Scenario	Total demand	Overall water quality
Innovation	- 4 per cent	↑ ↑
Uncontrolled Demand	+ 35 per cent	↓ ↓ ↓
Local Resilience	+ 8 per cent	↓ ↓ ↓
Sustainable Behaviour	- 15 per cent	↑

Fig 3. Demand reduction in four scenarios, Environment Agency, Water Futures[10]

Water quality

Anthropogenic impacts on water quality affect the environment and increase the costs of water treatment.

There are various chemicals and pathogens that have negative impacts on water quality and the viability of water bodies. Nitrates are a common form of water pollution. Water pollution occurs when there is a concentration of more than 50 milligrams per litre (mg/l) of nitrates. The Nitrates Directive (1991)[11] aims to protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices. The Nitrates Directive forms an integral part of the Water Framework Directive and is one of the key instruments in the protection of waters against agricultural pressures. Methane contamination of drinking water may arise due to hydraulic fracturing[12] with implications for water quality and cost of treatment although this is not currently an issue in the Great Ouse Catchment.

[11] European Commission, Nitrates Directive http://ec.europa.eu/environment/water/water-nitrates/index_en.html

[12] Osborn, S. G., Vengosh, A., Warner, N. R., & Jackson, R. B. (2011). Methane contamination of drinking water accompanying gas-well drilling and hydraulic fracturing. *Proceedings of the National Academy of Sciences of the United States of America*, *108*(20), 8172–8176. http://doi.org/10.1073/pnas.1109270108

The CCRA Water Sector Summary[13] highlights the priorities for the UK water sector as a whole (see Figure 4), raising the issues of water quality and importantly recognizing that decisions on water should look beyond 2025.

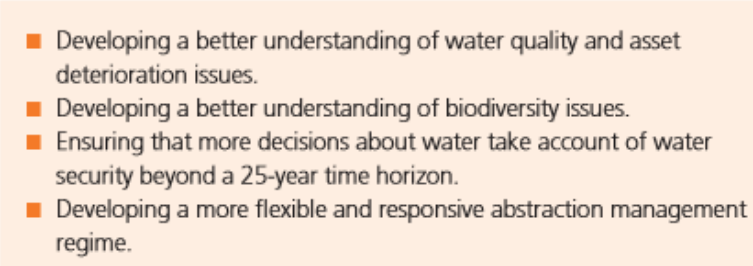

Fig 4: UK Water Sector Summary[13, box 1.1]

Great Ouse Catchment

Flood management aims to minimize flood damage to people and property, to control development and protect cultural heritage and the natural environment, and where possible to improve water quality. The Great Ouse Catchment Management Plan[14] is largely rural, about 8,596km^2, and has a population of around 1.7 million people, including large centres of population such as Milton Keynes, Cambridge and Bedford and smaller market towns such as St Neots, St Ives and Ely. The towns are situated on natural flood plain. Properties with 1% annual probability of surface water flooding and of river flooding include historic towns Newport Pagnell, Old Stratford and Stony Stratford now within the unitary borough of Milton Keynes. These towns do not benefit from The Milton Keynes Balancing Lakes, a storm-water balancing lake system along the River Ouzel, designed to mitigate the effects of the Milton Keynes development, by managing surface water runoff.

The Great Ouse Catchment Management Plan states that **existing flood risk is too high**. Urban development should not increase flood risk, and policies should be put in place to create green corridors and to incorporate flood resilience measures into the location, lay-out and design of development.

Water supply and waste water treatment

Anglian Water currently manages a total of some 37,000 kilometres (km) of water mains, distributing water from 139 water treatment works located throughout the region. In addition to this the company operates 1,083 wastewater treatment works (WWTWs), the highest concentration of WWTWs per head of population in the country. The Environment Agency identified the Anglian Water region as an area of moderate water stress in its 2007 consultation on water stressed areas. This was revised to one of **serious water stress** (in which >20% of the water company population is served by resource zones that are classed as under serious stress) in the final designation[15].

[13] UK CCRA Water Sector Summary, 2012
http://ccra.hrwallingford.com/CCRAReports/downloads/CCRASummaryWater.pdf, see also
http://ccra.hrwallingford.com/CCRAReports/reportviewer.html?sector=water&link=LinkTarget_1
[14] Great Ouse Catchment Flood Management Plan, 2011
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/288877/Great_Ouse_Catchment_Flood_Management_Plan.pdf
[15] Environment Agency, Areas of water stress: final classification, 2007
https://www.iwight.com/azservices/documents/2782-FE1-Areas-of-Water-Stress.pdf see also for definitions:
Environment Agency and Natural Resources Wales, Water stressed areas – final classification, 2013
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/244333/water-stressed-classification-2013.pdf

Anglian Water's Strategic Environmental Assessment[16] considers the additional infrastructure which might be added to the Anglian Water assets through the identification of new resource development options. The Anglian Water region's water resources are highly utilised. The predictions for growth in the region means water resources are going to need to be carefully managed to provide additional water supplies and manage customer demand to ensure a secure supply of water without damaging the natural environment. In its Strategic Direction Statement 2010-2035[17], Anglian Water state they will have to develop new supplies of up to 200 Million litres per day (Ml/d) by 2025 and 300 Ml/d by 2035 on top of the current maximum resources available of 1,800 Ml/d.

Anglian Water's recently published Water Resources Management Plan[18] recognizes pressures relating to population growth, environmental pressures and climate change will result in an imbalance between water supply and water demand. The 25 year plan details where and when additional resources will be required for all supply areas, including the Ruthamford South Resources Zone within which Milton Keynes is located. The key supply side option to support the Milton Keynes area is a transfer from an adjacent Resource Zone. In the longer term, more demand management measures will be introduced, such as higher leakage reduction targets, as well as new water resource schemes. Water resource options currently under consideration may extend to increased winter storage and transfers from areas of surplus. Longer term plans will be refreshed in 2020 to account for latest growth trends and climate change guidance.

Anglian Water states that a combination of growth, licences changes under environmental regulations and the mean impact of climate change are projected to result in deficits in resource zones in the south and east of the company's supply system. In the worst case planning scenarios, Anglian Water states that the supply demand risk is approximately 570 Ml/d over the period to 2039/2040.

Milton Keynes – the local status

Milton Keynes is one of the driest regions in the UK getting on average 600mm of rain a year, a third less than the rest of the England[19]. The Environment Agency classifies it as 'water stressed'. Anglian Water provides water supplies to Milton Keynes (MK). MK is grouped with Newport Pagnell and Woburn into the Ruthamford South water resource zone which is one of the zones in the Anglian region likely to become most water stressed as a result of housing growth and climate change. By 2030, less water will be available and demand will have risen leading to a ***projected deficit*** of 12 Ml/d, which is approximately 10% of total consumption in 2015 (see Figure 5). This is without implementing any adaptation options.

[16] Anglian Water Services Limited Water Resources Management Plan: Strategic Environmental Assessment Environmental Report: Non-Technical Summary April 2008 https://www.anglianwater.co.uk/_assets/media/wrmp-sea-non-technical-summary.pdf

[17] Strategic Direction Statement 2010-2035, https://www.anglianwater.co.uk/_assets/media/strategic-direction-statement.pdf

[18] Anglian Water, Water Resources Management Plan, 2015, http://www.anglianwater.co.uk/environment/our-commitment/our-plans/water-resource-management.aspx

[19] HR Wallingford (A J Brown, H Udale-Clarke), MK Smart: A Water strategy for Milton Keynes, Jan 2016, MAS1216-RT002-R02-00,

The most recent climate change impact analysis for the UK Water Sector presented results for the UK at a water resource zone scale using the UKCP09 probabilistic climate projections[1]. The analysis shows that for 2012, the baseline year, the Ruthamford South water resource zone had:

- A population of 778,000;
- A total household consumption of 110 Ml/d and a total non-household consumption of 36 Ml/d;
- A supply-demand balance[2] surplus of 16 Ml/d.

It is projected, with a medium level of confidence, that by the 2030s:[3]:

- The population in the zone will have increased by 24%;
- Deployable Output[4] will decrease by 2%, or 6 Ml/d, under the medium emissions scenario;
- There will be a supply-demand deficit of 12 Ml/d under the medium emissions scenario.

Fig 5: Ruthamford South water resource zone[16, box 1.1]

The MK:Smart project assumption is that a 20% reduction in water consumption per capita is needed to ensure sustainability with respect to planned population growth by 2026.

The Council's Supplementary Planning Document[20] has the objective for new developments to "*to maximise the use of water efficiency techniques as well as sustainable urban drainage system*" in order to achieve the sustainability objective "*to maintain and improve the borough's water quality and reduce the risk of flooding".* The Supplementary Planning Document refers to The Environment Agency's 2001 report[21] which concluded that water supply should be enhanced by, a modest, 5% over the next 25 years, during which period household metering should become widespread, water efficiency should be promoted and that progress is needed on leakage control. The MK Local Plan[22] aims to reduce water pollution and conserve water supplies and natural water levels. More recently, the MK Core Strategy Sustainability Appraisal Addendum (2)[23] includes objectives "*to protect local water resources and improve the quality of surface and groundwater*" and "*to reduce the risk of flooding*".

Performance standards are set out in Milton Keynes Sustainable Construction Guide[24] and provide planners and developers with minimum, good and excellent targets for proposed household and non-household plans. 105 litres per person per day household drinkable (potable) water is the minimum, and plans rated at 80 litres per person per day are rated excellent[4] (page 4). For water conservation, a water butt is a minimum standard, and grey water recycling and rain water harvesting is excellent. For drainage, the minimum standard is for 50% of hard surfaces and conveyance systems to be permeable, and 100% is excellent. Non-household plans use a different metric for potable water and require a 25% reduction in water use as a minimum and 75% would be excellent. These targets indicate currently understood thresholds for reducing water consumption.

The MK core strategy[25] highlights the importance of green infrastructure and open space, especially the linear parks which are a unique asset of the city. They act as a strategic flood management

[20] MKC Sustainability Appraisal: Sustainable Construction Guide: Supplementary Planning Document Dec 2006 http://www.milton-keynes.gov.uk/assets/attach/5083/Sustainable_Construction_SPD_SA.pdf

[21] Environment Agency, 2001, Water Resources for the Future: a Water Resources Strategy for England and Wales

[22] Milton Keynes Local Plan 2001-2011, adopted Dec 2005, http://www.milton-keynes.gov.uk/planning-and-building/planning-policy/adopted-local-plan-pdf

[23] MKC Core Strategy Sustainability Appraisal Addendum (2), Sep 2011 file:///C:/Users/mn2635/Downloads/Core_Strategy_Sustainability_Appraisal_addendum_-_Reasonable_Alternative_Sites_Sept_2011%20(1).pdf

[24] MKC Supplementary Planning Document, Sustainable Construction Guide, adopted April 2007, http://www.milton-keynes.gov.uk/assets/attach/5084/Sustainable_Construction_SPD.pdf

[25] Milton Keynes Council Core Strategy, adopted July 2013

system, whilst also providing high quality, continuous open space, accessible to all residents. Policy CS19 aims to protect and enhance green infrastructure, particularly along the Ouse and Ouzel Valleys. The strategy sets out indicators to have no new residential development in areas prone to flooding, and to adopt the Residential Design Guide SPD by 2012. The MK Green Infrastructure Plan[26] helps to identify green buffers and areas of opportunities which are taken into account in development frameworks for strategic land allocation.

The MK Local Flood Risk Management Strategy (LFRMS)[27] sets out local objectives which have been developed in line with national objectives and guiding principles of the National Strategy. The local objectives considered the Water Cycle Study[28] which assessed the impact of proposed growth targets for Milton Keynes on the water cycle infrastructure and water environment of the area. Local objective 7 aims to "*Ensure future development does not have a negative impact on flood risk and lowers the risk where possible*".

Summary and recommendations

Water systems are a key component of the city's infrastructure providing critical services by resourcing, supplying and removing water for residents, businesses and other stakeholders as well as using water as an amenity and biodiversity resource. The outlook for Milton Keynes is increasing uncertainty about both water stress, already evident in the catchment, and the capability of water drainage and conservation systems (with some Sustainable Drainage Systems- SuDS[1]) to cope with higher intensity flooding. So in the context of population growth, beyond that already planned to 2026, as well as potential impacts from climate change and water regulation for improved quality, water services are likely to become a priority as concerns over security of supply and damage to people and property escalate. Anglian Water's long term water resources and water recycling plans and related investment programmes are accounting for growth and climate change risks.

Conclusion	Recommendation
Demand is increasing but there is little focus on existing homes and workplaces to promote sustainable behaviour and innovation, key to reducing demand. Plans for increased water provision could be slowed down through the use of information about use, growth and water losses, which can target water demand reduction, maintenance and preventative work. Innovative incentives to reduce water demand could include tiered pricing[29].	1. **Reduce water demand** through support for sustainable behaviour and where possible retrofit of efficient devices in the home and workplace, through early leak detection and repair using water systems telemetry, and through innovative charging models and behaviour change campaigns.
Water demand in new dwellings is not overly ambitious. Innovations, such as rainwater harvesting, water-less toilets, grey water recycling and local water conservation could have major impacts on the sustainability of water systems by avoiding water demand.	2. Plan for **minimized water demand and maximised water conservation** in new planning applications and building works.

file:///C:/Users/mn2635/Downloads/FINAL_Core_Strategy_Adopted_July_2013_low_res.pdf

[26] MK Green Infrastructure Plan, Feb 2008 https://www.milton-keynes.gov.uk/.../Final_Report-11%5E4%5E08.doc

[27] Milton Keynes Council Local Flood Risk Management Strategy (LFRMS) Strategic Environmental Assessment Environmental Report, Apr 2015, draft file:///C:/Users/mn2635/Downloads/Annex%20B%20Environmental%20Report.pdf

[28] Milton Keynes Outline Water Cycle Study (2008) http://www.milton-keynes.gov.uk/planning-policy/documents/Milton_Keynes_Outline_WCS_Final_Report.pdf

[29] Stanford Report, May 19, 2015, Stanford professor developing water usage model that could help California meet conservation goals, http://news.stanford.edu/news/2015/may/tiered-water-rates-051915.html

Agricultural practices which promote yield efficiency through the use of chemicals and large scale agricultural machinery are not capturing water effectively, leading to faster and greater flood impacts along water courses. Mechanisms are needed to slow down the flow of water to urban areas, and at the same time, recognize the greater risk to urban areas when flood plains have been built upon and become ineffective at managing flood water. Mechanisms could include improving barriers or limiting new buildings in these areas.	3. **Protect people and properties from flood risk** by extending and revising the boundaries of flood plains. Prevent the use of this land for living or working places or create barriers in existing places at risk from flood. Work with farmers and land owners to minimise water run-off.
Strategies to reduce water demand may not be sufficient to meet planned growth. Planning for net increased capacity needs will be essential. These plans need to be informed by evidence of population growth, and per capita demand.	4. **Plan for new water resources to maintain the balance between supply and demand.** This may include extending reservoirs at Grafham and/or Wing and/or building new reservoirs to meet the needs of a growing population, or increased winter storage and transfers from areas of surplus.
The cost of water provision will rise as water treatment costs rise. The costs of water treatment can be reduced significantly if the polluters of land systems can change their behaviours to reduce impact on treatment needs.	5. Keep water prices low for essential services by **avoiding high costs of water treatment** by avoiding pollutants, nitrates, etc. entering potable water systems by working with land owners, farmers, and other industries.
The design of new developments should adopt existing methods using green infrastructure such as the linear parks in MK, as well as SuDS which are not alternatives. However existing methods will need to be enhanced to recognize the denser population and increased concrete/tarmac, as well as climatic changes, both leading to increased flood risk.	6. **Design new flood management systems** and SuDS to cope with more people in urban homes and densification for new build areas.
Energy reliance reduces water security and energy costs are expected to rise, so there is a need to move toward energy self-sufficiency in water systems, or at least toward longer-term back-up solutions in the event of energy outages.	7. **Recognize the dependence upon energy systems** for water treatment and distribution, and invest in renewable technologies for energy use, generation and storage.

The water strategy for England[30] sets out the Government's plans for water in the future. Looking forward to 2030, it identifies practical steps including: improving the supply of water; agreeing on important new infrastructure such as reservoirs; reducing leakage; tackling direct pollution to rivers; reducing demand, through better building design, more efficient appliances and improving industrial processes; and managing surface water made worse by the increasing amounts of concrete and paving in our towns and cities. The recommendations above are aligned with this strategy.

[30] DEFRA, Future Water: The Government's water strategy for England, 2008 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69346/pb13562-future-water-080204.pdf

It is recognized that the conclusions and recommendations presented above are broader than the responsibilities of MK Council which are limited to activities such as building control, land use planning, permitting, and citizen engagement. For the recommendations to be effectively implemented requires MK Council to support and work with Anglian Water and the Environment Agency who both have largely commensurate ambitions in this area.

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End of report