

7. Development Strategy

The Outline Water Cycle Study has assessed the potential impacts of four growth scenarios on the water environment. It should be remembered that the housing numbers and capacities for the strategic sites that have been assessed are indicative only, and the capacity assessments for water resources and wastewater treatment are undertaken at a high level. Information for the assessments is provided by third parties and Entec cannot be responsible for the validity or accuracy of third party data. The results therefore provide a strategic overview of issues in the Gatwick Sub-Region and do not constitute detailed assessments.

This section discusses the growth scenarios with regard to the water cycle, and presents a high level assessment of constraints for each strategic site to help inform the development of the sub-regional authorities preferred options. Section 7.2 presents a discussion over the impact of a new market town on the water cycle elements post 2026. An indicative “Development Strategy” is presented in Figure 7.1 to 7.4 for each scenario.

7.1 Identified Growth Scenarios

The four growth scenarios assessed all assume for existing Core Strategy allocations and the development of a 2,500 dwelling neighbourhood West of Bewbush, and are based on the following assumptions:

- **Scenario 1:** Strategic Development at Crawley’s North East Sector (2500 homes at NE Sector, no development at Crabbet Park or West of Ifield). 1725 homes each at North Horsham and Southwater;
- **Scenario 2:** Strategic Development adjoining Crawley at Crabbet Park in Mid Sussex (2500 homes at Crabbet Park, no development at NE Sector or West of Ifield). 1725 homes each at North Horsham and Southwater;
- **Scenario 3a:** Strategic Development adjoining Crawley at West of Ifield in Horsham (no development at NE Sector or Crabbet Park, 2500 at West of Ifield, 2300 homes at North Horsham);
- **Scenario 3b:** Strategic Development adjoining Crawley at West of Ifield in Horsham (no development at NE Sector or Crabbet Park, 2500 at West of Ifield, 2300 homes at Southwater).

Further information and breakdown of the four scenarios is provided in Section 2.2.3.

Scenario 1 assumes strategic neighbourhood development at the North East Sector site in Crawley. Based on the distribution of homes between the three companies’ water resource zones and the differing water companies’ planned occupancy rates and per capita consumption, this option would result in the largest increase in demand of the four options (refer to Figure 5.1). Water efficiency measures however could reduce the increase in demand by approximately 4 MI/d. Scenarios 3a and 3b have the same impact on water demand and overall result in approximately 1 MI/d less demand compared to Scenario 1. Based on this narrow difference in impact between



scenarios and the previous conclusions that water resourcing does not pose a constraint to development, any of the four scenarios could be accommodated based on water supply issues.

The assessments of the scenarios are based on only one strategic neighbourhood development coming forward in addition to West of Bewbush, prior to 2021. With regard to wastewater treatment, all potential scenarios would exceed the capacity of the Crawley works based on the indicative housing scenarios modelled in this report. Thames Water has advised that growth upgrades will be undertaken, allowing the works to accommodate a total of approximately 167,000 population equivalent (PE) by 2021. Based on current PE of 148,600 and an occupancy rate of 2.4 this is approximately equal to an increase of 7,666 new homes. Additional assessment is required to model the impact of the potential growth on DWF and determine if changes in occupancy rates or household demand would enable higher growth levels to be accommodated within the existing planned upgrade at Crawley WwTW. For example, if the average occupancy rate of 2.1 is applied to the planned upgrade, then 8,761 homes could be accommodated at the works. It is advised that the sub-regional authorities continue to liaise with Thames Water, to review the proposed growth levels and the capacity at the works as growth progresses. Capacity at the works could be constrained further if potential growth levels were to increase above that assumed in this study, for example from windfall development or from the expansion of Gatwick airport, if the airport was to permit increased passenger numbers beyond 40 million passengers per annum.

The phasing under each scenario varies. Scenario 1 would see the maximum capacity almost reached at Crawley WwTW by approximately 2021, which is earlier than the other scenarios. This is a result of the proposed phasing of development. Under scenario 2, phasing of development takes place over a longer period of time, with the strategic neighbourhood at Crabbet Park not starting until 2021. Therefore maximum flow to the works is reached later in the planning period. However, there is a risk that the Crabbet Park site, if developed, might be developed sooner than modelled in this report which would mean that capacity of the treatment works would be reached sooner.

Scenarios 1 and 2 would result in increased flow volume to Horsham WwTW compared to Scenarios 3a and 3b, however all scenarios would be accommodated by the current headroom available.

Under all scenarios the North and North West of Burgess Hill development increases pressure on the Goddards Green works. An increase in flow consent will be required by approximately 2015 / 2016 to accommodate the planned growth. Environmental constraints and finite wastewater treatment technology may prevent this and require additional flows to be diverted to an alternative discharge point, which cannot be implemented by 2016.

This study has considered the potential impact of planned employment growth on the water cycle where appropriate. In comparison to the planned housing growth, increased demand from employment does not have a significant impact on the water cycle elements. Nevertheless, water efficiency will help to reduce pressure on both water resources, and to some degree in conjunction with SuDS, reduce impacts on wastewater flows. Chapter 8 presents recommendations for policies in the sub-regional authorities' Core Strategies and Development Plan Documents that would require water efficiency measures in all new homes.



It is acknowledged that other constraints outside the water cycle may dominate the sub-regional authorities' decisions on growth locations and phasing. From the high level assessments in this study, there are no current constraints to development, however a number of future major constraints have been identified surrounding wastewater treatment for potential growth in Crawley WwTW (above the 167,000 population equivalent), at Goddards Green WwTW (if/when growth in the catchment exceeds 2,600) and at Eden Vale, Horsted Keynes and Handcross WwTW catchments. In order to progress the final preferred development options, it is advised that a Detailed WCS is prepared and continued discussions with the sewerage and water providers and regulators take place to monitor growth rates and the water environment capacity.

Tables 7.1 to 7.4 present an assessment of the various water cycle elements for each of the strategic sites in the four Councils' administrative areas, to further assist the authorities in identifying preferred options for development.



Table 7.1 Crawley Borough Council Strategic Sites Constraints Matrix

Strategic Site (potential housing capacity)	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
North East Sector (2500)	Stream at outlet is currently moderate status under WFD; downstream is currently poor status, predicted to remain poor by 2015. Capacity of watercourse for additional flows is potentially limited due to high P levels. However, no constraint at treatment works with regard to process and effluent quality	No constraints identified, based on implementing WRMP measures for metering and reduced household usage	Parts of River Mole and Flood Zone 2 and 3 run through site. Site specific FRA required	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed trajectory Scenario 1 in this study, total houses will exceed this level post 2021.	No constraint identified. Assessment required for new infrastructure. Dedicated strategic network upgrades for the NE Sector are likely to be required.	Growth upgrade planned at Crawley Works during AMP5 to accommodate approx 7,600 more homes	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required
Leisure Centre Site, Haslett Avenue (784)	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required



Table 7.1 (continued) Crawley Borough Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
Lucerne Drive (107)	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required
Ifield Community College (170)	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required



Table 7.1 (continued) Crawley Borough Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
Thomas Bennett School (200)	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required
Dorsten Square, Bewbush (143)	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required



Table 7.1 (continued) Crawley Borough Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
Haslett Avenue/Telford Place (100)	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required
West of Pegler Way (Southern Counties Site) (218)	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required



Table 7.1 (continued) Crawley Borough Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
Station Way (Crawley Station) (100)	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required
Land East of Tinsley Lane (150)	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required



Table 7.1 (continued) Crawley Borough Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
Three Bridges Station (100)	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required
Town Centre North (400)	As above	As above	Very low fluvial flood zones identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required



Table 7.1 (continued) Crawley Borough Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
Land East of Brighton Road*	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above Additional upgrade unlikely to come forward in consecutive planning period (AMP6)	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required
Russell Way, ** Three Bridges	As above	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 based on an occupancy rate of 2.4. Based on assumed scenarios in this study, total houses will exceed this level post 2021.	No constraint identified. Local infrastructure upgrades likely to be required.	As above Additional upgrade unlikely to come forward in consecutive planning period (AMP6)	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required

* The site has been identified in the emerging SHLAA as having potential for the development of up to 600 dwellings, though does not form part of the Crawley Borough Council housing trajectory at the time of writing.

** Planning permission for 237 homes at Russell Way has expired. At the time of writing the site is not therefore included on Crawley's housing trajectory.



Table 7.2 Horsham District Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
West of Ifield (1150 / 1917)	As above	No constraints identified, based on implementing WRMP measures for metering and reduced household usage	Parts of River Mole and Flood Zone 2 and 3 run through site. Site specific FRA required	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021 assuming an occupancy rate of 2.4. Based on assumed Scenario 3a and 3b in this study, potential growth numbers will exceed the works capacity by the end of the planning period.	No constraint identified. Assessment required for new infrastructure	Growth upgrade planned at Crawley Works during AMP5 to accommodate approx 7,000 more homes	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required
North Horsham (1150 / 1917)	Upstream of the WwTW outlet is currently moderate ecological status; downstream is currently moderate status, predicted to remain by 2015. Capacity of watercourse for additional flows is limited due to high P levels.	As above	Parts of River Arun run through site. Site specific FRA may be required	Horsham New WwTW Capacity within current flow consent to accommodate growth within planned trajectory for all scenarios. Any increase in growth would potentially erode headroom at works.	No constraint identified.	Abstraction within tidal River Arun	Main limiting factor is the River Arun water quality. EA advised growth ok up to WwTW flow consent. Development ok within planned housing density. Any increase would be constrained by works flow consent and quality consent.



Table 7.2 (continued) Horsham District Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
Southwater (1150 / 1917)	As above	As above	Very low fluvial flood risks present. Site in Flood Zone 1	Horsham New WwTW Capacity within current flow consent to accommodate growth within planned trajectory for all scenarios. Any increase in growth would potentially erode headroom at works. WTW is at BAT for P removal	No sewer network in place and investment is required to connect the site to Horsham Wastewater Treatment works	Abstraction within tidal River Arun	Main limiting factor is the River Arun water quality. EA advised growth ok up to WwTW flow consent. Development ok within planned housing density. Any increase would be constrained by works being at BAT and unable to meet higher quality consent set by EA.
West of Bewbush	Stream at outlet is currently moderate status; downstream is currently poor status, predicted to remain poor by 2015. Capacity of watercourse for additional flows is potentially limited due to high P levels.	As above	Minor area of flood zone 2 and 3 present Site specific FRA required due to size of development	Crawley WwTW Planned upgrade will alleviate pressure on growth plans for all assumed scenarios but additional growth beyond assumed trajectories likely to exceed the capacity of the works. This site is included in all scenarios and therefore considered within capacity of planned upgrade.	Ongoing assessment over required infrastructure. Investment needed to connect to Crawley works. Dedicated strategic network upgrades likely to be required.	Sewerage infrastructure required	Development ok within current planned housing density.



Table 7.3 Mid Sussex District Borough Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
Crabbet Park (2500)	Stream at outlet is currently moderate status; downstream is currently poor status, predicted to remain poor by 2015. Capacity of watercourse for additional flows is limited due to high P levels.	No constraints identified, based on implementing WRMP measures for metering and reduced household usage	Minor area of flood zone 2 and 3 present	Crawley WwTW Planned upgrade during AMP5 (2010-2015) at works to accommodate approx 7,600 more homes up to 2021. Based on assumed Scenario 2 in this study, growth levels by the end of the planning period will exceed the works capacity.	No detailed assessment of infrastructure requirement. Investment in dedicated strategic network upgrade likely to be required.	Growth upgrade planned at Crawley Works during AMP5 to accommodate approx 7,000 more homes	Main limiting factor is capacity of Crawley WwTW flow consent. Capacity exists at the works for approximately 7,666 homes (assuming an occupancy rate of 2.4). If capacity at works is eroded before this site is developed, additional upgrades will be required
Land East of Burgess Hill (700)	Upstream and downstream of the outlet are currently poor status, predicted to remain poor by 2015. Capacity of watercourse for additional flows is limited due to high P levels.	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Goddards Green WwTW Capacity of inlet works, secondary Treatment etc would need to be upgraded to meet planned growth at this and other planned sites. WwTW is at BAT for BOD removal.	No constraint identified.	None planned	Main limiting factor is flow capacity at Goddards Green. Increase in DWF consent required to meet growth. Tightening of quality consent likely to occur also which be beyond BAT. Southern Water may be required to discharge additional flows to an alternative location. Feasibility studies would be undertaken in AMP6.



Table 7.3 (continued) Mid Sussex District Borough Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
Land West of East Grinstead (570)	Receiving watercourse for the outlet is currently moderate status, predicted to remain moderate by 2015. Capacity of watercourse for additional flows is limited due to high P levels.	As above	Minor area of flood zone 2 and 3 present. Masterplan could avoid flood zones.	Felbridge WwTW Capacity of inlet works, secondary Treatment etc would need to be upgraded to meet planned growth at this WwTW beyond 2016. Luxford Lane WwTW could accommodate growth	No constraint identified. New infrastructure required, with potential to connect direct to works	None planned	Main limiting factor is wastewater treatment works. Site could drain to Luxfords Lane WwTW if developer requisitions new sewer. Flow consent would be breached at Felbridge WwTW without further investment/upgrades
Land North and Northwest of Burgess Hill (3800)	Upstream and downstream of the outlet are currently poor status, predicted to remain poor by 2015. Capacity of watercourse for additional flows is limited due to high P levels.	As above	Parts of River Adur and Flood Zone 2 and 3 run through site. Site specific FRA may be required	Goddards Green WwTW Capacity of inlet works, secondary Treatment etc would need to be upgraded to meet planned growth at this and other planned sites. WwTW is at BAT for BOD removal.	No constraint identified. New infrastructure required, with potential to connect direct to works	None planned	Main limiting factor is flow capacity at Goddards Green. Increase in DWF consent required to meet growth. Tightening of quality consent likely to occur also which be beyond BAT. Southern Water may be required to discharge additional flows to an alternative location. Feasibility studies would be undertaken in AMP6.



Table 7.3 (continued) Mid Sussex District Borough Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
Land East of Gravelye Lane (528)	Upstream and downstream of the outlet are currently poor status, predicted to remain poor by 2015. Capacity of watercourse for additional flows is limited due to high P levels.	As above	Very low fluvial flood risks identified. Site in Flood Zone 1.	Scaynes Hill WwTW Inlet has capacity to accommodate growth.	No constraint identified.	None planned	No limiting factor to growth



Table 7.4 Reigate and Banstead Borough Council Strategic Sites Constraints Matrix

Strategic Site	Receiving Water Capacity	Water Resources	Flood Risk	Waste Water Treatment Capacity	Sewerage Infrastructure	Planned Investment	Overall score post investment and main limiting factor
Horley Northeast (710)	Upstream of the outlet is currently moderate status; downstream is currently poor status, predicted to remain poor by 2015. Capacity of watercourse for additional flows is limited due to high P levels.	No constraints identified, based on implementing WRMP measures for metering and reduced household usage	Parts of River Mole Flood Zones 2 and 3 border site. Site Specific FRA required due to size of development	Horley WwTW DWF consent has capacity to accommodate significant growth. Minor upgrades may be required at works.	No constraint identified.	None planned	No limiting factor to growth. FRAs required. The future protection of the floodplain areas is imperative to retain essential flood storage away from the built-up areas of the Borough, and the Council's Riverside Green Chain policy is an important contributor to this goal.
Horley Northwest (1570)	As above	As above	Parts of Burstow Stream (River Mole tributary) Flood Zones 2 and 3 on site. Site Specific FRA required	Horley WwTW DWF consent has capacity to accommodate significant growth. Minor upgrades may be required at works.	No constraint identified.	None planned	No limiting factor to growth. FRAs required. As above regarding protection of the flood zone areas.
Horley Town Centre (371)	As above	As above		Horley WwTW DWF consent has capacity to accommodate significant growth. Minor upgrades may be required at works.	No constraint identified.	None planned	No limiting factor to growth. FRAs required. As above regarding protection of the flood zone areas.



7.2 New Market Town Development

The possibility of a new market town is being considered by Crawley Borough Council, Horsham District Council and Mid Sussex District Council to help meet the longer-term need for housing and employment. The potential location for the new settlement would be within the A23 corridor area. It has been indicated that a town of 10,000 + homes would be needed in order to make a possible new market town genuinely sustainable.

The increase in new homes would affect water resources demands and wastewater treatment requirements. Additional modelling of the impact of this settlement would be needed, to determine what infrastructure would be required. An increase in population will in turn increase pressure on water resources further. Consideration should be given to develop the town as an eco-town. Currently proposed eco-towns are investigating the potential to be “water neutral”, where the net demand for water in an area of significant development is the same after development is completed as it was before the increase in new homes. Implementation of meters in all new households and homes constructed with water efficient appliances would reduce pressure on water resources to some degree. Water neutral developments would require additional strategic investment including rainwater harvesting and/or greywater recycling for example.

Wastewater treatment could be a major constraint and the Environment Agency should advise where a new effluent discharge can be made to serve this proposed development. A new wastewater treatment works will be required to accommodate the new town as the closest works to the search area for the new town is at Cowfold, which currently serves only 500 properties. In planning for a new settlement, early consideration must be given to environmental constraints and the most appropriate solution for wastewater treatment and surface water drainage. These should contribute also to provision of green infrastructure amongst the urban setting, to increase the amenity value whilst contributing to flood risk management, water quality improvements and provision of biodiversity habitats. The floodplain of the River Adur will also require protection from the new town.

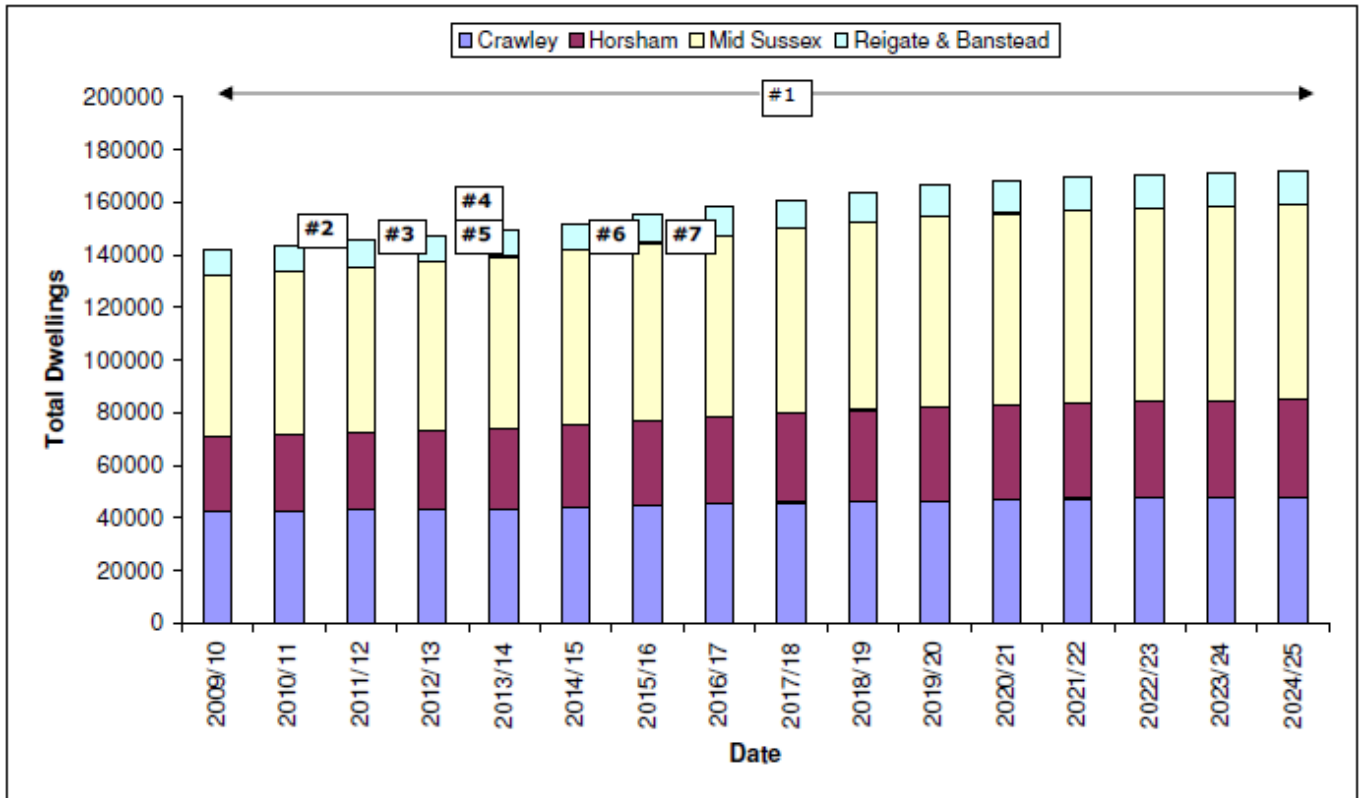
The sub-regional authorities should consult the Environment Agency, water company and sewerage providers on their proposed strategy for a new town so that sufficient planning and advice can be given on the most sustainable option to deliver water and sewerage infrastructure for 10,000+ homes. Adopted development plans that have been tested via public examination will provide evidence for the water industry investment planning process from 2015 onwards.

7.3 Indicative Development Strategy

Figures 7.1 to 7.4 present indicative Development Strategy for all four scenarios using the assumed housing trajectories for this assessment. In each scenario the strategic development around Crawley would contribute to the Crawley WwTW. The Horsham WwTW would receive slightly less development under Scenarios 3a and 3b. All other works have been assumed to be subject to the same levels of growth, hence each strategy includes the same recommendations at the same time periods.



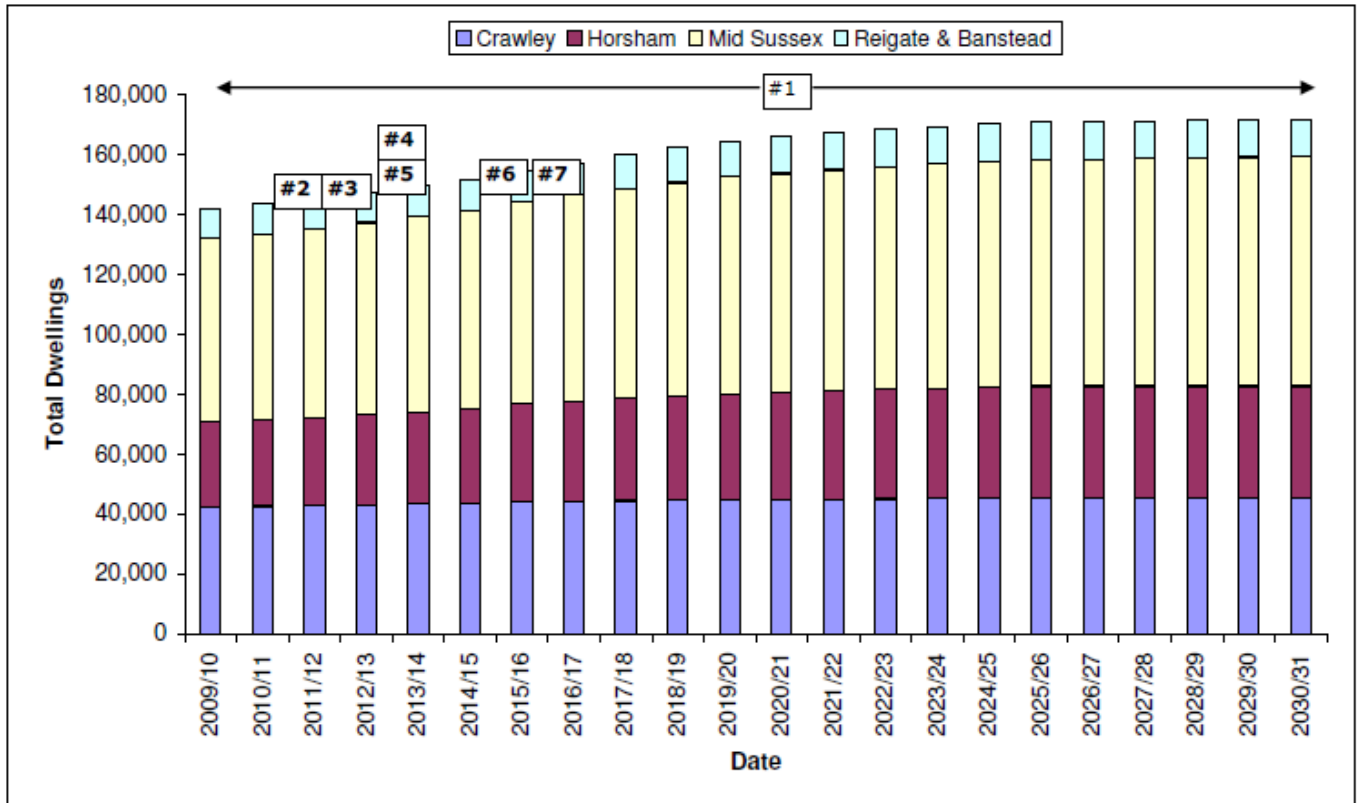
Figure 7.1 Indicative Development Strategy (Water Related Infrastructure) Scenario 1: Strategic Development at North East Sector



- #1** Continue dialogue with Steering Group over growth rates and preferred options
 Monitor capacity of WwTW, watercourses and growth rates in Crawley, Horsham and Eden Vale sewer catchments
 Policies in Core Strategy to ensure new development meets 105 l/h/d and implement SuDS
 Promote awareness and education of conserving water
- #2** Undertake Detailed WCS to review potential infrastructure solutions for development in the Crawley, Goddards Green (Burgess Hill), Felbridge (East Grinstead), Horsted Keynes and Handcross sewer catchments and impacts on water quality to determine most sustainable options. Review water efficiency procurement (WRAP review) and Environment Agency's position of WFD and future status
- #3** Southern Water to review upgrade requirements at Goddards Green and Felbridge WwTW in advance of planned development during AMP6, in liaison with Environment Agency
- #4** Southern Water to review upgrade requirements at Eden Vale during AMP6 for potential breach of flow capacity by 2026. Thames Water to review potential upgrade to Crawley WwTW during AMP6 to manage flows post 2021
- #5** Review potential impact of Gatwick airport development on Crawley WwTW flow capacity
- #6** Assessment of infrastructure requirements for potential new market town from 2026 onwards. Solutions may require early planning consideration and allow for construction period
- #7** Review revised River Basin Management Plans



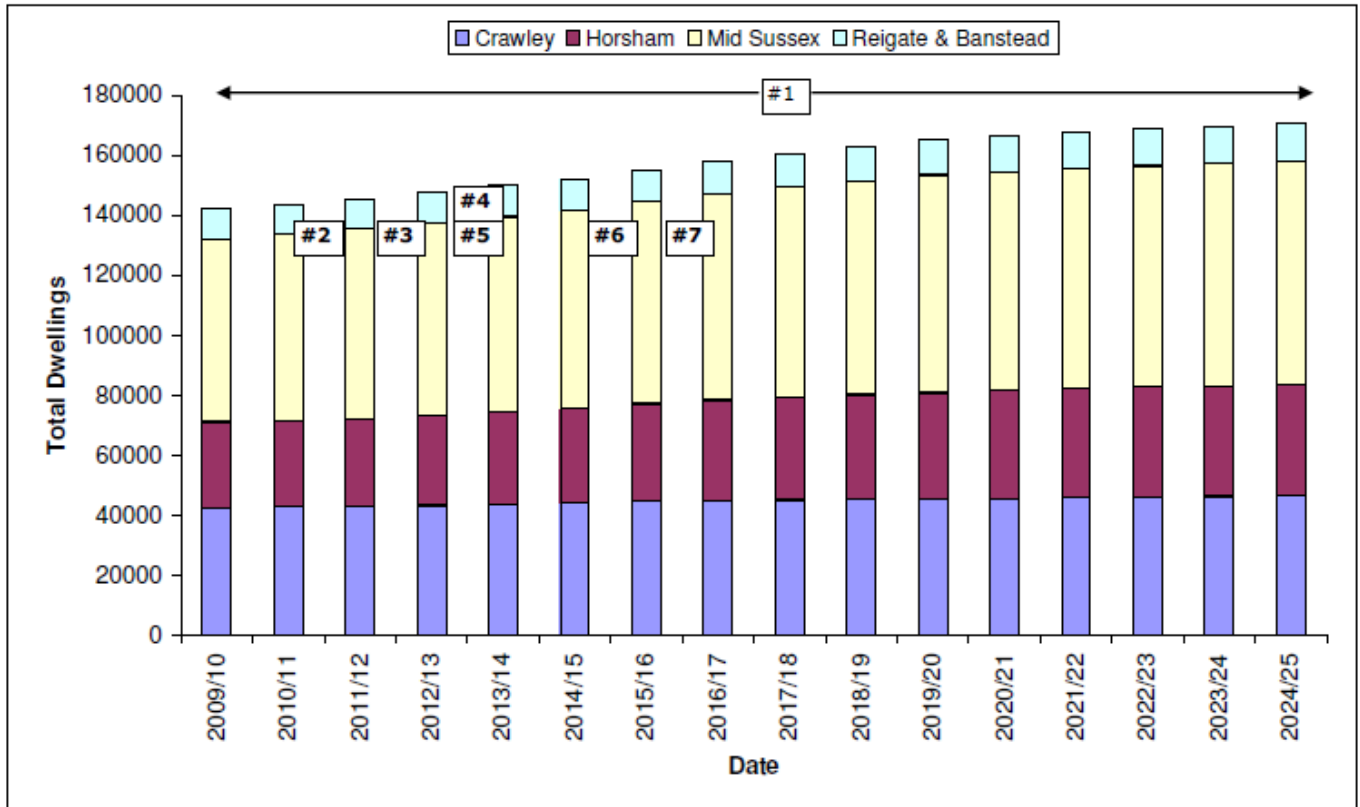
Figure 7.2 Indicative Development Strategy (Water Related Infrastructure) Scenario 2: Strategic Development at Crabbet Park



- #1 Continue dialogue with Steering Group over growth rates and preferred options
 Monitor capacity of WwTW, watercourses and growth rates in Crawley, Horsham and Eden Vale sewer catchments
 Policies in Core Strategy to ensure new development meets 105 l/h/d and implement SuDS
 Promote awareness and education of conserving water
- #2 Undertake Detailed WCS to review potential infrastructure solutions for development in the Crawley, Goddards Green (Burgess Hill), Felbridge (East Grinstead), Horsted Keynes and Handcross sewer catchments and impacts on water quality to determine most sustainable options. Review water efficiency procurement (WRAP review) and Environment Agency's position of WFD and future status
Review trajectory if this option is progressed. Risk that strategic sites will come forward earlier than assumed in Outline Study, with subsequent risks of reaching capacity at Crawley WwTW before 2021
- #3 Southern Water to review upgrade requirements at Goddards Green and Felbridge WwTW in advance of planned development during AMP6, in liaison with Environment Agency
- #4 Southern Water to review upgrade requirements at Eden Vale during AMP6 for potential breach of flow capacity by 2026. Thames Water to review potential upgrade to Crawley WwTW during AMP6 to manage flows post 2021
- #5 Review potential impact of Gatwick airport development on Crawley WwTW flow capacity
- #6 Assessment of infrastructure requirements for potential new market town from 2026 onwards. Solutions may require early planning consideration and allow for construction period
- #7 Review revised River Basin Management Plans



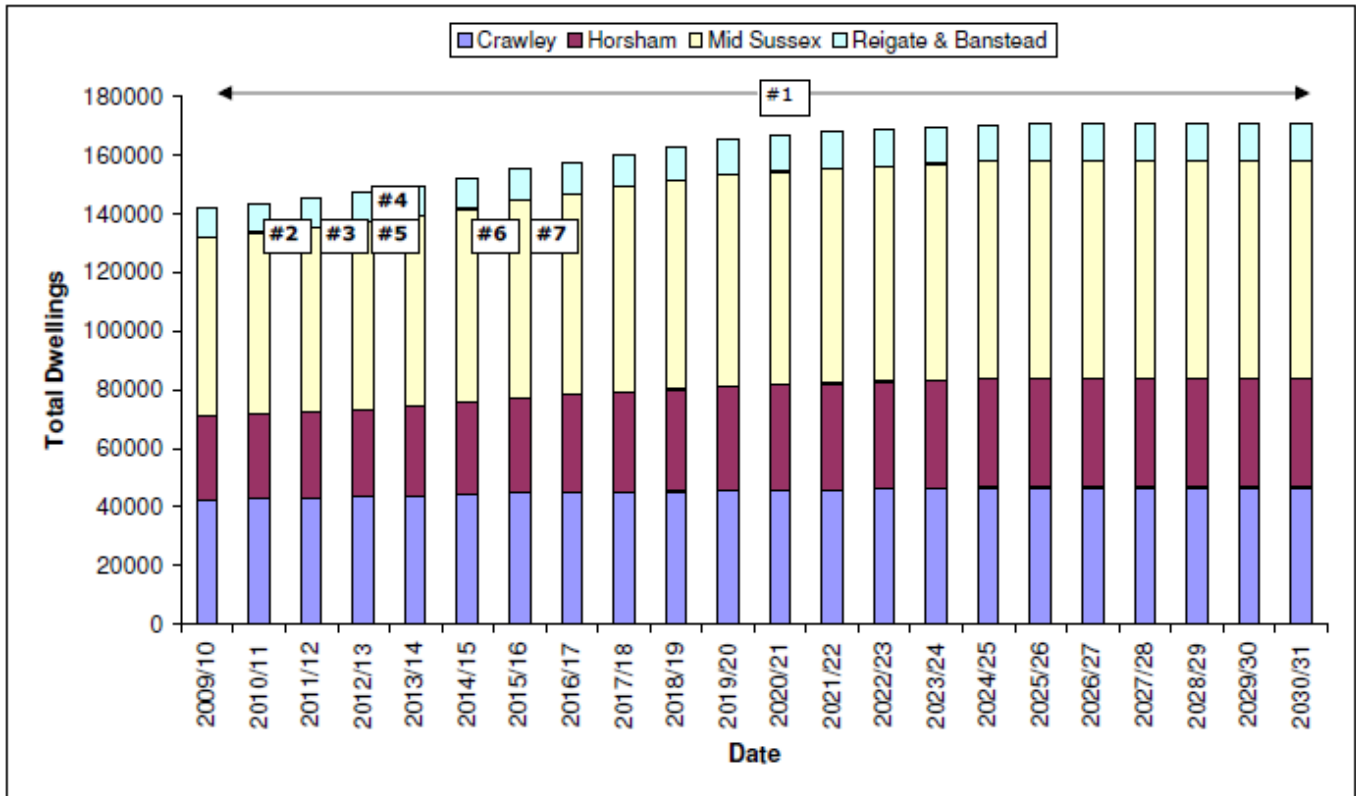
Figure 7.3 Indicative Development Strategy (Water Related Infrastructure) Scenario 3: Strategic Development at West of Ifield and North Horsham



- #1 Continue dialogue with Steering Group over growth rates and preferred options
 Monitor capacity of WwTW, watercourses and growth rates in Crawley and Eden Vale sewer catchments
 Policies in Core Strategy to ensure new development meets 105 l/h/d and implement SuDS
 Promote awareness and education of conserving water
- #2 Undertake Detailed WCS to review potential infrastructure solutions for development in the Crawley, Goddards Green (Burgess Hill), Felbridge (East Grinstead), Horsted Keynes and Handcross sewer catchments and impacts on water quality to determine most sustainable options. Review water efficiency procurement (WRAP review) and Environment Agency's position of WFD and future status
- #3 Southern Water to review upgrade requirements at Goddards Green and Felbridge WwTW in advance of planned development during AMP6, in liaison with Environment Agency
- #4 Southern Water to review upgrade requirements at Eden Vale during AMP6 for potential breach of flow capacity by 2026. Thames Water to review potential upgrade to Crawley WwTW during AMP6 to manage flows post 2021
- #5 Review potential impact of Gatwick airport development on Crawley WwTW flow capacity
- #6 Assessment of infrastructure requirements for potential new market town from 2026 onwards. Solutions may require early planning consideration and allow for construction period
- #7 Review revised River Basin Management Plans



Figure 7.4 Indicative Development Strategy (Water Related Infrastructure) Scenario 4: Strategic Development at West of Ifield and Southwater



- #1** Continue dialogue with Steering Group over growth rates and preferred options
 Monitor capacity of WwTW, watercourses and growth rates in Crawley and Eden Vale sewer catchments
 Policies in Core Strategy to ensure new development meets 105 l/h/d and implement SuDS
 Promote awareness and education of conserving water
- #2** Undertake Detailed WCS to review potential infrastructure solutions for development in the Crawley, Goddards Green (Burgess Hill), Felbridge (East Grinstead), Horsted Keynes and Handcross sewer catchments and impacts on water quality to determine most sustainable options. Review water efficiency procurement (WRAP review) and Environment Agency's position of WFD and future status
- #3** Southern Water to review upgrade requirements at Goddards Green and Felbridge WwTW in advance of planned development during AMP6, in liaison with Environment Agency
- #4** Southern Water to review upgrade requirements at Eden Vale during AMP6 for potential breach of flow capacity by 2026. Thames Water to review potential upgrade to Crawley WwTW during AMP6 to manage flows post 2021
- #5** Review potential impact of Gatwick airport development on Crawley WwTW flow capacity
- #6** Assessment of infrastructure requirements for potential new market town from 2026 onwards. Solutions may require early planning consideration and allow for construction period
- #7** Review revised River Basin Management Plans





8. Future Recommendations

The Outline Water Cycle Study has reviewed where there are likely to be constraints upon the deliverability of development from both the water environment and water services infrastructure. Potential phasing and capacity issues have been identified in the study, using the predicted growth for the four scenarios provided by the sub-regional authorities. This section provides recommendations for policies in the sub-regional authorities' Development Plan Documents (DPDs) and for further assessment in some technical areas. Box 8.1 summarises the recommended policies and actions.

8.1 Include Policies for Water Efficiency Measures

The capacity assessment in this study has shown that even with a higher growth scenario, a saving of approximately 4 MI/d could be achieved if all new homes were built to water efficient levels and maintained these consumption rates through promotion and education in water conservation.

The three water companies have forecast that there will be a surplus in supply over the growth period, dependent on a combination of demand management (achieving an efficient level of consumption per head) and increasing abstraction where available. To reduce the pressure on water resources in the region and to support the water company's management plans, it is essential that the sub-regional authorities bring forward recommendations for all new homes to be water efficient in their Core Strategies.

Annex C of the South East RBMP advises Local Authorities to include the recommendations from water cycle studies within Local Development Documents by 2012. Specifically it suggests consideration of the reduction in demand through specification of water efficient fittings in new and refurbished homes under Building Regulations and to ensure that local spatial planning policies for new development set out strong requirements for water efficiency measures.

Recommendations in the Thames RBMP (covering Crawley, East Grinstead, and Horley) include the encouragement of all rural businesses to adopt water efficiency measures, such as rainwater harvesting and recycling and use of storage reservoirs to support summer irrigation.

It is therefore recommended that requirements for water efficiency are embedded in new development planning applications. All new houses should be built as a minimum to the water efficiency requirements of the Level 3/4 of the Code for Sustainable Homes (105 litres per head per day internal / indoor water usage). Currently all social housing is required to be built to CSH Level 3/4, but this would ensure that all privately funded homes would be built to a more efficient level than the standard Building Regulations of 125 litres per head per day including external water usage. This would support the recommendations made in the Thames and South East RBMPs and in Government policies such as Defra's Future Water.



Policy recommendation 1 relates to CSH levels of water consumption in new homes, in Box 8.1. This could be covered under a wider sustainable design policy within the DPDs which may expect homes to meet a certain minimum level of the Code for Sustainable Homes. This would therefore need to be level 3 or above to meet the water efficiency standard discussed.

BREEAM standards exist for different building types, from industrial and commercial to buildings used for office, retail or education, for example. It is also recommended that for non-household development, the sub-regional authorities' policies include a mandatory assessment by a BREEAM assessor for non-household developments, with the expectation that the developments meet the Good standard, as a minimum, with regard to the water consumption targets for the development type.

A recent review on water efficiency through procurement has been prepared for WRAP, the Waste and Resources Action Programme. The output is a draft guide and model clauses to help clients and developers ask for water-efficient practice when procuring design, construction and facilities management services in commercial buildings. The draft guide is currently out for consultation (http://www.wrap.org.uk/construction/tools_and_guidance/water_efficient_proc.html). It is recommended that the sub-regional authorities review the final outputs to be aware of the latest guidance on water efficiency in procurement and non-household developments, to potentially inform future policy.

Local Authorities have an important role supporting the efforts of the water companies to raise awareness of the need to use water wisely, and for helping to distribute information to customers explaining how they can use water more efficiently and what the benefits are to them. The Environment Agency has highlighted that the planning authorities have a key role in managing water resources via spatial plans that contain policies promoting the efficient use of water resources.

A recent study completed by Entec UK Ltd for the London Development Agency has demonstrated that basic water efficiency measures (6/4 litre dual flush toilets, standard rather than power showers, restrained flow bathroom taps etc) are feasible in terms of performance and customer satisfaction, and are sufficient to enable all types of new households to reach Level 3/4 of the Code for Sustainable Homes.

It is recommended that in addition to policies for water efficiency in new buildings, the sub-regional authorities promote awareness in the communities of the need to save water, for example through hosting or co-sponsoring annual events to promote water conservation. The annual Water Festival co-sponsored by Hampshire County Council is a good example. For information and ideas see the Hampshire Water Festival website⁸. Other options include schemes to undertake water audits of existing households and to support retrofitting of water efficient appliances such as showerheads, taps and flow controllers. The sub-regional authorities may choose to lead by example by employing policies to minimise the unnecessary use of resources in its own buildings, vehicles and in all its activities.

⁸ <http://www.hampshireswater.org.uk/festival.html>



8.2 Consider Policies for SuDS

Surface water flooding should be a material planning consideration. New developments should apply sustainable drainage techniques to control flood risk, whilst also providing benefit in terms of water quality, amenity value and green infrastructure targets. A high level assessment of infiltration potential, the preferred method of SuDS by the EA, has been prepared for the study area and has indicated that most sites have medium to low potential. However this is based on large scale groundwater vulnerability and aquifer classification, and it is recommended that all new developments undertake more detailed assessments to consider the most appropriate SuDS method for each site.

The sub-regional authorities may wish to investigate further a specific policy for SuDS in their Core Strategies. Suggested policy wording is provided below and includes a recommended hierarchy of preferred SuDS, in line with Policy 4A.14 of the London Plan. This advises that surface water should be managed as close to its source as possible in line with the following drainage hierarchy:

- Store rainwater for later use;
- Use infiltration techniques, such as porous surfaces in non-clay areas;
- Attenuate rainwater in ponds or open water features for gradual release to a watercourse;
- Attenuate rainwater by storing in tanks or sealed water features for gradual release to a watercourse;
- Discharge rainwater direct to a watercourse;
- Discharge rainwater to a surface water drain;
- Discharge rainwater to the combined sewer.

It is recommended that new development in the study area does not discharge surface water into combined sewers. It is also recommended that the sub-regional authorities adopt a policy that surface water and / or highway drainage is disconnected from foul or combined sewers when brownfield sites are redeveloped. In this way the flow volume entering the foul sewer can be decreased from the existing arrangement where surface water run-off is discharged to the foul sewer network.

All developers should make contact with the relevant sewerage provider at the earliest opportunity so that the foul network can be assessed and if necessary developer contributions identified for new infrastructure to connect to existing mains.



Suggested policy wording for a SuDS Policy could be:

SuDS Recommendation

All development should include appropriate sustainable drainage systems (SuDs) for the disposal of surface water, in order to avoid any increase in flood risk or adverse impact on water quality.

For brownfield developments SuDs features shall be required so as to achieve a reduction from the existing runoff rate but must at least, result in no net additional increase in runoff rates.

SuDs features should normally be provided on-site. If this cannot be achieved, then more strategic forms of SuDs may be appropriate. In such circumstances, developers will need to contribute toward the costs of provision via Section 106 Agreements or the strategic tariff. In all cases, applicants will need to demonstrate that appropriate long term management arrangements are funded and in place so that the infrastructure is properly maintained in future.

SuDs should be sensitively designed and located to promote improved bio-diversity, an enhanced landscape and good quality spaces that improve public amenities in the area.

The preferred hierarchy of managing surface water drainage from any development is through first infiltration measures, secondly attenuation and discharge to watercourses, and if these cannot be met, through discharge to surface water only sewers.

The Council may wish to consider producing a SuDs and Green Infrastructure SPD which provides design guidance for the delivery of SuDS on strategic sites.

A new guidance document *Planning for SUDS – making it happen* is currently being prepared by CIRIA, focussing on delivery of SuDS within the planning and development process to ensure successful sustainable drainage is effectively specified by planners and delivered by developers. The sub-regional authorities should take account of this guidance when developing their SuDS policies.

8.3 Consider Policy Requirement for Water Sustainability and Drainage Assessment

This study makes recommendations that new developments aim to meet water efficiency standards and provide SuDS to manage surface water run-off and prevent increases in flooding. In order to manage this process as well as to facilitate infrastructure planning for new developments both on and off site, it is recommended that a policy is adopted that requires developments of 10 dwellings or more and commercial developments demonstrate that water supply and efficiency, sewerage and flood risk has been considered during the planning application. Where a Flood Risk Assessment is required if the development is greater than 1 hectare or within Flood Zone 2 or 3, this additional information could be combined with the FRA. The information that should be included is listed below under Recommendation 4 and it is advised this is submitted to show that water sustainability and drainage has been considered.

8.4 Undertake Surface Water Management Plans

It is recommended that Surface Water Management Plans (SWMP) are prepared, particularly for Horsham, Burgess Hill and Haywards Heath, in order to build on the work done in the Level 1 SFRA and this Outline WCS. These



plans provide the vehicle for local organisations to develop a shared understanding of local surface water flood risk in line with the sewerage providers' planned improvements. This will include setting out priorities for action, maintenance needs and links to the LDF and emerging plans.

The SWMPs can be used to coordinate and strategically plan the drainage provision where piecemeal actions would be inefficient and do not support consistent ownership and maintenance regimes for SuDS. Furthermore, through new development, there are opportunities to reduce existing surface water flood risk and the proportion of storm water that enters the sewerage system. Therefore an advantage of the SWMP would include potential increase in capacity at the Horsham and Goddards Green wastewater treatment works, by planning for more sustainable management of storm water.

SWMPs can also inform Green Infrastructure Strategies. Green Infrastructure is an important method of providing flood storage and SuDS whilst also maximising potential benefits for water resources, water quality and amenity value.

The Floods and Water Management Act (April 2010) also sets out a duty for lead local flood authorities to establish and maintain a register of assets that will have a significant impact on flood risk. The Flood Risk Regulations (2009) require that flood risk and flood hazard maps in areas of significant risk are produced. The SWMP will also contribute to these tasks contributing to development of an asset register capturing information on the relevant assets, their ownership and condition and through mapping surface water flood risk and associated flood hazard.

8.5 Undertake a Detailed Water Cycle Study

The primary aim of the Outline Phase is to identify potential environmental and water infrastructure constraints to development in order to provide an evidence base that supports the DPDs and identification of preferred sites for development. Areas of uncertainty that may require further detailed studies should also be identified. Detailed WCSs aim to resolve areas of uncertainty and identify water cycle management measures and infrastructure needed, where and when they are needed, who is responsible for providing the systems, and by what deadline.

This Outline WCS has identified that environmental constraints and the current limit on wastewater treatment technology presents potential constraints to development within the sewer catchments to Goddards Green, Eden Vale, Felbridge, Handcross and Horsted Keynes WwTW. Additional flows from Goddards Green wastewater treatment works may need to be discharged to a new discharge point to prevent deterioration of the River Adur. Planning for potential solutions to treat wastewater could take up to two AMP cycles (i.e. 10 years) to resolve. This could affect the timing of planned growth in Burgess Hill, Mid Sussex beyond 2,600 additional properties. When development plans are confirmed by adopted LDFs Southern Water will plan investment to accommodate planned growth in this area. Parts of East Grinstead that drain to Eden Vale WwTW could also potentially be constrained by the flow consent at the treatment works.

Additional modelling of waste flows and water quality are required to determine the impacts of growth on water quality against WFD targets, and review potential infrastructure solutions. It is therefore recommended that a



Detailed Water Cycle Study is prepared, covering the study area, to resolve the current uncertainties surrounding wastewater treatment process and environmental quality. It is likely that the Environment Agency and Southern Water may have a more updated view on capacity issues at these locations where capacity issues have been identified, following a review of this study, and may have confirmed if future quality standards are likely to be tightened to contribute to WFD Good Status. For this reason it is advised that the whole study area is included, in case additional investment, treatment or solutions are required for Horsham or parts of Mid Sussex, even where constraints are not currently identified.

The Crawley WwTW is undergoing a growth upgrade during AMP5 (2010-2015) that will enable approximately 7,600 more homes to be delivered up to 2021 assuming an occupancy rate of 2.4. The four housing scenarios reviewed would deliver approximately 7,970 new homes between 2010 and 2026, therefore capacity at the works based would be exceeded between 2021 and 2026. If other developments were to come forward over and above those in the trajectory, such as the East of Brighton Road site or Russell Way or from windfall development, the capacity at the works would be constrained even further. A Detailed WCS is recommended to review in more detail the capacity at the works following the planned upgrade. During a detailed study, modelling could take account of population movement, water efficiency campaigns and occupancy rates to assist in the planning of required sewerage infrastructure.

The Outline WCS has been prepared during a period of uncertainty with regard to the water resource management area covered by South East Water. During the preparation of this study, the Final South East Water Resource Management Plan has been subject to public inquiry and the outcome of the inquiry is still pending at the time of writing. A decision is expected around late 2010. The Draft WRMP has therefore been used as the latest available information to prepare the Outline WCS. A Detailed WCS would involve a review of the Final WRMP compared to the planned resource schemes and demand management set out in this report to ensure that the conclusions regarding water resources are correct.

It has been identified that the potential strategic sites will require local infrastructure and strategic infrastructure to connect the sites to the WwTWs. It is recommended that the Detailed WCS also reviews the network capacity in relation to supply pipes and foul sewers in partnership with the utilities providers, to inform in more detail the development strategy for the proposed strategic development sites.

8.6 Continued Liaison with Steering Group

Based on the potential for growth to erode capacity at Crawley and Goddards Green wastewater treatment works (and Eden Vale WwTW) toward the end of the growth period due to potential housing levels being close to the capacity, or from windfall developments using up capacity ahead of sites on the trajectory, it is recommended that the sub-regional authorities continue to liaise with the Steering Group members to monitor and assess the impacts of growth on the wastewater capacity beyond completion of the water cycle strategy. In this manner potential changes to growth projections, or impacts from development not considered in detail in this study, such as expansion to Gatwick Airport, can be tracked. This ongoing dialogue will also facilitate a regular review of



recommended water efficiency policies on water resources management in the study area. The delivery of a Detailed WCS and Surface Water Management Plan for various settlements in the study area will facilitate this communication in the short term. Following these studies it is recommended that a longer term structured arrangement is set up, such as annual updates to Steering Group members with the latest information on growth rates and environmental and infrastructure capacity. This will enable the sub-regional authorities and the water and sewerage providers to continue to inform each others plans for investment.

Box 8.1 Summary of Outline WCS Recommendations

Recommendation 1: Policy for water efficiency

The DPDs should require developers of private homes to design new homes to meet the minimum water use standard in Level 3/4 of the Code for Sustainable Homes (105 l/p/d) or ensure any wider sustainable design policy or policies provided meets this standard for water use. The sub-regional authorities should consider a policy for non-household development making it mandatory for commercial buildings to be assessed by a BREEAM assessor, with the expectation that buildings meet Good standard for water consumption targets for the building type (industrial/commercial/office/retail/education etc).

Recommendation 2: Water efficiency campaign

It is recommended that in addition to policies for water efficiency in new buildings, the sub-regional authorities promote awareness in the communities of the need to save water, for example through hosting or co-sponsoring annual events to promote water conservation. The sub-regional authorities may choose to lead by example by employing policies to minimise the unnecessary use of resources in its own buildings, vehicles and in all its activities.

Recommendation 3: Consider policies for SuDS

The WCS recommends that the DPDs include policies that promote sustainable drainage techniques (SuDS) that mimic natural drainage, rather than using traditional piped systems in all new developments. Suggest wording is provided above in Section 8.2. As part of suggested policies for SuDS it is suggested that a policy is adopted to ensure redeveloped brownfield sites disconnect any surface water drainage from the foul network. These issues should be assessed during the planning application (see Recommendation 4)

Recommendation 4: Water sustainability and drainage assessment for all new developments of more than 10 dwellings

It is suggested that the sub-regional authorities each consider a policy which makes it compulsory for all new developments for more than 10 dwellings to submit a Water Sustainability and Drainage Assessment as part of their planning application. This would enable developers to demonstrate:

1. the development will meet the water consumption level 3/4 from the Code for Sustainable Homes for all residential developments
2. non-residential developments should demonstrate that they have been assessed by a BREEAM assessor, with the expectation that buildings meet Good standard for water consumption targets for the building type
3. for all developments SuDS have been incorporated to control surface water run-off
4. for the redevelopment of brownfield sites, any surface water draining to the foul sewer network has been disconnected and is managed through SuDS
5. a Flood Risk Assessment has been completed where required. This should be approved by the Environment Agency and in line with the requirements of Planning Policy Statement 25
6. the developer has contacted the sewerage provider to determine if capacity exists offsite for foul and surface water provision. Where capacity off site is not available plans are in place for it provision ahead of the development's occupation of the receiving foul sewer network and the need to contribute to any additional off site connections for the development
7. the developer has contacted the water supply provider to assess the requirements for supply infrastructure to the development

Recommendation 5: Undertake Surface Water Management Plans

Potential constraints to development exist in the sewerage network as well as wastewater treatment works flow capacity, especially in Horsham, Burgess Hill and Haywards Heath. Sewerage providers consider SWMPs a valuable tool in alleviating network capacity issues, by addressing surface water management and reducing storm overflows into the combined sewer system.

In line with CFMP recommendations, the Outline WCS recommends that SWMPs are considered for Horsham, Burgess Hill and Haywards Heath to determine where improvements in the drainage can be delivered.



Recommendation 6: Detailed WCS

It is recommended that a Detailed Outline WCS is prepared in order to:

- review the Final WRMP for South East Water and confirm plans can accommodate growth;
- undertake water quality modelling to review impacts of growth on receiving waters and potential solutions for wastewater treatment within the Goddards Green, Eden Vale, Felbridge, Handscross and Horsted Keynes WwTW catchments, assessed in this Outline study as reaching flow capacity within the growth period;
- undertake detailed modelling to assess requirements for upgrades at Crawley WwTW;
- review supply and sewerage network capacity and solutions for strategic sites across the study area
- prepare a Water Cycle Strategy for provision of infrastructure solutions to potential growth over the planned period; and
- facilitate ongoing communication between Steering Group members

Recommendation 7: Continue liaison with Steering Group

The Outline WCS has identified potential constraints at Horsham and Crawley WwTW. Although the planned housing trajectories can be accommodated at the works, any increase in growth in particular as a result of phasing could potentially erode current headroom in the flow consent. Through monitoring growth rates and increased flows at the works, informed decisions can be made on future investment and planning permissions. The Outline WCS provides a starting point to arrange regular updates between Steering Group members, for example through ongoing SWMPs/WCS update or through agreed meeting dates at suitable intervals.

