

4.6 Mitigating Flood Risk

4.6.1 Developing in areas at risk of flooding can increase the risk on and off site. In addition to the increased footprint, naturally vegetated land with hard, impermeable surfaces can increase the burden on surface watercourses, culverts and drainage systems which can increase flood risk. Developments should aim to maximise floodplain storage through use of green infrastructure and sustainable drainage measures. There should be no net loss in floodplain storage, or in exceptional circumstances, providing adequate off site compensatory storage on a level for level basis. Overland flow routes should not be obstructed.

4.6.2 To help combat this, the incorporation of Sustainable Drainage Systems (SuDS) into new developments is an effective way of mitigating flood risk, and as such is encouraged in policy LP21. These include measures such as green roofs, permeable surfaces and storm water retention basins which can reduce both the rate and amount of run-off. An added benefit of SuDs is that they can improve the water quality of rivers, lakes and streams (in accordance with the objectives of the Water Framework Directive) by removing many pollutants and much of the particulate matters from storm water before it leaves the development site. They can also be multifunctional and provide biodiversity benefits.

4.6.3 Surface water should be managed as close to its source as possible, in line with the drainage hierarchy in the London Plan (2016). Where it is not possible to achieve greenfield run-off rates it should be as close to this as possible (a greenfield run-off rate is one that reflects the natural rate of water run-off from a site before it was developed).

4.6.4 Major developments will be required to constrain runoff volumes for a 1 in 100 year, 6 hour rainfall event, where feasible. A drainage report should be submitted with all major applications, basement

developments and other vulnerable development in areas identified at risk of flooding. This should include:

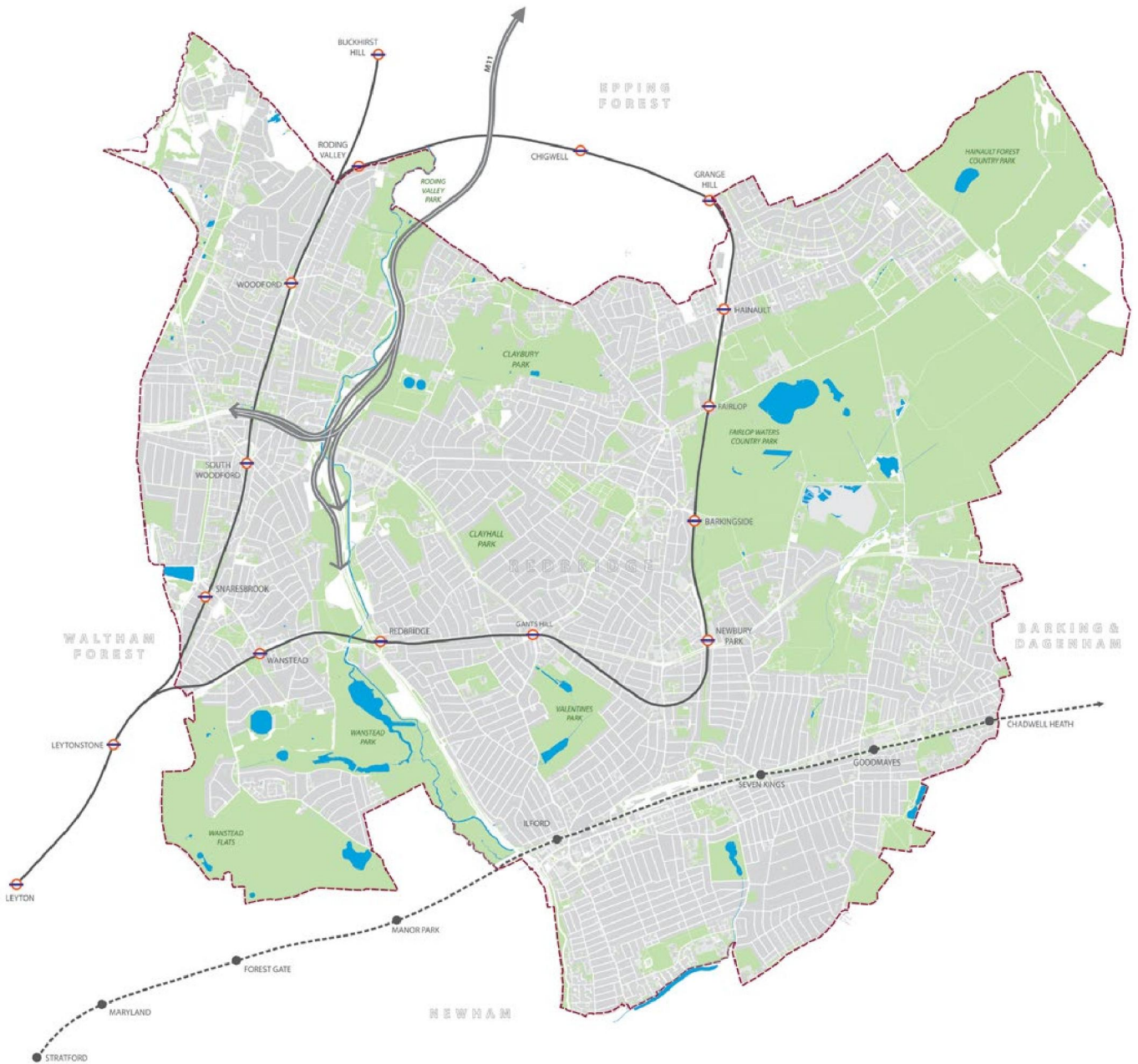
- identification of flood risk;
- assessment of existing run-off rates;
- calculation of greenfield run-off rates;
- identification of measures, in line with the drainage hierarchy, to reduce runoff rates; and
- calculation of proposed run-off rates.

4.6.5 The Floods and Water Management Act 2010 requires that local planning policies and decisions on planning applications relating to major development⁹ must ensure that sustainable drainage systems for the management of run-off are put in place, unless demonstrated to be inappropriate.

4.6.6 As part of this process, local planning authorities should consult the relevant lead local flood authority on the management of surface water as part of the planning application process for major developments, satisfy themselves that the proposed minimum standards of operation are met and ensure through the use of planning conditions or planning obligations that there are clear arrangements in place for ongoing maintenance over the lifetime of the development. The sustainable drainage system should be designed to ensure that the maintenance and operation requirements are economically proportionate.

9. Developments of 10 dwellings or more; or equivalent non-residential or mixed development (as set out in Article 2(1) of the Town and Country Planning (Development Management Procedure) (England) Order 2010).

FIGURE 19: Waterways



- Key**
- Redbridge Borough Boundary
 - Motorway
 - Elizabeth Line (Crossrail)
 - Central Line
 - Blue Ribbon Network

4.7 Vulnerable development

4.7.1 Basements can affect the ability of the ground to absorb rain when soil is replaced by an impervious structure and can be particularly susceptible to flooding. In such cases the use of basements may be restricted to non-habitable uses.

4.7.2 The Council shall require all new basement developments whether domestic or non-domestic to conduct a Basement Impact Assessment (BIA), as set out in LP31, which considers both groundwater and surface water flooding. A BIA should demonstrate that the impacts of the proposed development are acceptable, or that appropriate mitigation measures will be adopted.

4.8 Promoting Sustainable Transport

4.8.1 Promoting a sustainable passenger and freight transport network is essential to ensuring the delivery of sustainable development in the borough. Developing a sustainable transport network will enhance connectivity both within and outside Redbridge ensuring that the borough is a vibrant, safe and healthy place to travel, live and work. A sustainable transport network will facilitate regeneration, growth and investment by enabling residents to access new homes, jobs and other facilities. It also enables new and existing businesses to attract new business and also have access to growing markets and locations, particularly in central London and the Thames Gateway. In addition, a more efficient transport system will minimise congestion and pollution in the borough.

LP22: Promoting Sustainable Transport

- 1 The Council will work with partners to support the delivery of the Mayor's Transport Strategy, London Freight Plan and Local Implementation Plan (LIP). To deliver a more sustainable and efficient transport network that supports growth and a prosperous economy, reduces car dependency, encourages sustainable forms of transport, improves air quality and reduces greenhouse gas emissions it will:
 - (a) Direct new development which generates high transport demands to highly accessible locations such as the Investment and Growth Areas, town centres and transport corridors;
 - (b) Support transport projects that improve the usage, reliability, quality, safety and integration with other transport modes of the public transport network, particularly where it improves the accessibility and connectivity to Investment and Growth Areas;
 - (c) Support and facilitate the delivery of Crossrail by resisting development in safeguarded land and delivering station and public realm improvements at Ilford, Seven Kings, Goodmayes, Chadwell Heath;
 - (d) Support improvements to Central Line stations including lifts to platforms at Newbury Park and level access improvements at all other stations;

- (e) Actively encourage walking and cycling providing an attractive public realm, safe, convenient and accessible cycle and footpath networks, through Investment and Growth Areas and that connect to the sub-regional network;
- (f) Work in partnership with TfL and bus service providers to increase the number of routes in the borough, improving the frequency and efficiency of the bus network, and ensure integration of night bus services with all night Underground services;
- (g) Require major development to provide a Transport Impact Assessment to inform the design process, evaluate the impact of the development on the existing transport network, and provide mitigation measures to alleviate any adverse effects;
- (h) Require major development to provide Travel Plans to demonstrate what measures will be introduced to ensure that the future users of developments will be less reliant on private motor vehicles, and promote sustainable forms of transport such as walking and cycling;
- (i) Resist new development that results in an unacceptable adverse impact on traffic congestion within the Local and Strategic Road Network at key junctions and links or public transport system unless it incorporates effective mitigation measures, as listed in the Transport Assessment Supplementary Technical Note (2017);

- (j) Facilitate the safe, reliable and efficient movement of freight and servicing trips to, from, within and through Redbridge to support the borough's economy, in balance with the needs of other transport users, the environment and residents' quality of life;
- (k) Require new development to provide a Servicing and Delivery plan to ensure that development can be adequately serviced within the site, to encourage shared servicing arrangements and consolidation of deliveries; and
- (l) Require major development to provide a Construction Logistics Plan to particularly demonstrate how it will manage trips generated throughout the demolition and construction programme.

Implementation

- 1 Delivery of the Mayor's London Transport Strategy and London Freight Plan;
- 2 Support the delivery of the Local Implementation Plan and maintenance and improvements to the regional transport infrastructure; and
- 3 The Council will seek to implement the adopted Cycling Strategy in order to achieve a comprehensive network of safe and attractive cycling routes throughout the borough and connected to the wider area and strategic routes.