The Safer Parks Dashboard: Data Layer Guidance

How to use the dashboard layers to improve park safety and inclusion for women and girls

safer-parks.github.io
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Data layer	What is this layer?	How to use this information? (Safer Parks guidance)	How to use this information? (10 Principles of Crime Prevention)	Where is the data from?	Other data layers to use alongside	Notes
PARK STRUCTURE						
Park Boundary	The boundary of each park. The boundary is displayed as a polygon.	Use the Park Boundary layer as the spatial reference for all other data. It helps to: • Define park extent: What area does the park cover? All other layers are interpreted in relation to this boundary. • Natural surveillance: What surrounds the park perimeter? Nearby streets, buildings, and open land influence visibility and natural surveillance (See Escape: The Safer Parks guidance). • Connectivity: How well does the boundary connect to the surrounding street network? Strong connections can improve access and movement (See Escape: The Safer Parks guidance).	—	This data combines Ordnance Survey and OpenStreetMap greenspace datasets into a single park boundary layer. Parks and formal gardens were identified using the following classifications: Public Park or Garden (Ordnance Survey), Park (OpenStreetMap), and Garden (OpenStreetMap).	Use as spatial reference for all other layers.	—
Access and Exit Points	The location of external park entrances or access and exit points. Access points are displayed as points.	Identify entry and exit points across your chosen park to consider: • Visibility at entry points: Are entrances clearly visible from surrounding streets and from within the park? Poor visibility can undermine feelings of safety (See Escape: The Safer Parks guidance). • Sufficiency of access: Are there enough entry and exit points? Limited options can create a feeling of entrapment (See Escape: The Safer Parks guidance).	Principle 5: Access Control Reducing or managing access to vulnerable areas limits criminal opportunity. Understanding entry and exit points supports decisions about park access design and management.	Access and exit points distinguish between primary entrances (as mapped by Ordnance Survey and OpenStreetMap data) and secondary or additional entry points to the park (i.e. calculated where a footpath intersects with a Park Boundary).	Use with: Predicted Route Popularity, Visibility Analysis, Street Lighting.	—

		• Location on popular routes: Are entrances located on or near popular routes? Access points on busier paths often feel safer (See Busyness and Activation: The Safer Parks guidance). • Secondary access points: Are there well-used secondary access points? Frequently used secondary routes may indicate key access points or desire lines that could benefit from improvements such as enhanced surfacing, visibility, signage or lighting. • Lighting: Are access and exit points adequately lit? (See Lighting: The Safer Parks guidance). • Public transport links: Are entrances well connected to public transport, such as bus stops or cycle stations? (See Access and Location: The Safer Parks guidance).				
Active Travel Route	Cycling and walking infrastructure within and around parks. The network is displayed as lines.	Use this layer to understand how parks connect to the wider active travel network and where improvements could support safer, more inclusive use, considering: • Visibility and lighting on active routes: Are key routes through the park visible, open, and well-lit, especially those used at peak times? Poor visibility can deter use, even on busy routes (See Visibility and Openness: The Safer Parks guidance and Lighting: The Safer Parks guidance). • Connections to access points: Do routes connect well to access and exit points? Weak connections can reduce use and natural footfall (See Escape: The Safer Parks guidance). • Signage and wayfinding: Is navigation clear along routes within or alongside the park? (See Wayfinding and Layout: The Safer Parks guidance). • Catchment coverage: Does the network serve the full local population, including those who	—	This layer uses OpenStreetMap data downloaded via Geofabrik and filtered to extract active travel infrastructure across England and Wales. The data is split into two layers: cycling (cycleways, cycle lanes, shared paths, bridleways, and tracks) and walking (footways, pedestrian areas, shared paths, bridleways, and tracks). Shared paths, bridleways, and tracks appear in both layers as they serve both cyclists and pedestrians.	Use with: Predicted Route Popularity, Street Lighting, Visibility Analysis, Access and Exit Points, Demographics Data.	—

		rely on walking or cycling?				
Basemap	A schematic background map that provides visual context for the park and its surroundings. It shows roads, buildings, green spaces, and water in a simple, stylised format.	Use the basemap to support interpretation of the other layers. It is particularly useful for: • Understanding surroundings: Identifying nearby streets, buildings, and green spaces around the park boundary. • Orientation: Locating yourself within the dashboard before exploring other layers. • Cross-referencing: Comparing analytical layers with the area's overall layout.	—	This layer uses OpenStreetMap data, styled by Carto.	Use as background for all other layers.	This is a reference layer only, not an analytical layer. It helps orient users and place other data layers within their spatial context.
PARK INSIGHTS						
Predicted Route Popularity	Illustrates how people are likely to move through streets and paths, showing potential movement patterns at a neighbourhood scale, around a 10-minute walk. Higher values indicate greater potential for pedestrian movement, footfall, and co-presence. It is displayed as a line network.	Some routes that are more likely to be used for movement through and around the park, based on the structure of the surrounding street network. Use this layer to identify routes with higher potential to be busier and assess how movement patterns relate to safety and design. Consider: • Busyness and perceived safety: Which routes are likely to have higher footfall? These routes may feel safer due to increased presence of people (See Busyness and Activation: The Safer Parks guidance). • Lighting and visibility on popular routes: Are popular routes open, visible, and well-lit? Poor lighting or sightlines can undermine safety, even where routes are busy (See Visibility and Openness: The Safer Parks guidance; Lighting: The Safer Parks guidance). • Connection to entrances: Do higher-use routes connect clearly to access and exit points? Stronger connections can support movement, accessibility and natural footfall (See Wayfinding and Layout: The Safer Parks guidance). • Supporting safety on key routes: Are important routes, particularly	Principle 6: Surveillance Natural surveillance is strengthened by the presence of people. Routes with higher footfall support informal surveillance through activity and visibility.	This layer is based on Space Syntax (University College London, UCL) analysis, using Normalised Angular Choice (NACH) at 800m (approximately a 10-minute walk), derived from OpenStreetMap street network data.	Use with: Visibility Analysis, Street Lighting, Access and Exit Points, Park Features.	—

		those used after dark, supported by lighting, signage, or passive surveillance? Additional measures may include patrols, CCTV, or locating activity-generating features (e.g. cafés, ranger bases) nearby. • Improving the path network: Are there gaps, dead ends, or misaligned routes? Enhancing connections and aligning with desire lines can improve movement and perceived safety (See Wayfinding and Layout: The Safer Parks guidance). • Placement of features and amenities: Are facilities located in areas with sufficient footfall? Positioning amenities on or nearby busier routes can increase use and passive surveillance (See Busyness and Activation: The Safer Parks guidance).				
Visibility Analysis	This layer shows how visually connected different parts of the park are. It considers factors such as elevation, tree canopy height, and shrub height. The layer is displayed as a hexagonal grid.	Areas with higher visibility allow people to see and be seen more easily. Use this layer to identify areas of higher and lower visibility in your chosen park. Consider: • Vegetation management: Are there areas where dense vegetation limits visibility? Targeted management, such as reducing hedge height or lower-level planting along paths, can improve sightlines (See Visibility and Openness: The Safer Parks guidance). • Tree canopy height: Are low tree canopies obstructing views? Raising canopies (i.e. above 2 metres) can help improve lines of sight (See Visibility and Openness: The Safer Parks guidance). • Visibility at access and exit points: Are entrances and exits clearly visible from inside and outside the park? Improving visibility at these points can enhance feelings of safety (See Escape: The Safer Parks guidance).	Principle 6: Surveillance Clear sightlines support natural surveillance. Areas with poor visibility may reduce the perception of safety and limit informal oversight.	This layer uses DEFRA LIDAR data and author-generated analysis. For England, it draws on the 2022 composite dataset (Digital Surface Model and Digital Terrain Model). For Wales, a 32-bit LiDAR dataset is used. Full details: https://github.com/Safer-Parks/park-vga and https://github.com/Safer-Parks/park-vga/blob/main/notebooks/finding_lidar_tiles/README_downlaoding.md).	Use with: Trees, Street Lighting, Predicted Route Popularity.	Parks play an important ecological and wellbeing role, and vegetation is a key part of this. While some vegetation can reduce visibility and block sightlines, the aim is not widespread clearance. Use the dashboard with local knowledge to identify targeted, proportionate improvements along key routes and around facilities.

		• Wayfinding and signage: Are there areas where low visibility may make navigation difficult? Additional signage and clear routes can support wayfinding (See Wayfinding and Layout: The Safer Parks guidance).				
CONTEXTUAL DATA						
Demographics Data	This layer shows the demographic profile of people living within walking distance of park access or exit points. The area is defined by a 15-minute walking radius of each park, displayed as a polygon. Data includes health, economic activity, ethnicity, country of origin, religion, and household deprivation.	Use this layer to understand the communities surrounding your chosen park. It helps identify who the park's potential users are and whether the provision reflects their needs. Consider: • Catchment population: Which communities fall within walking distance of the park? This helps identify who the park primarily serves. • Identifying underserved groups: Does the catchment include groups who may face additional barriers to park use? This may include women, girls, older people, disabled people, and minority ethnic communities (See Belonging and Familiarity: The Safer Parks guidance). • Facilities and design: Do park features and facilities reflect the diverse needs of the local population? (See Access and Location: The Safer Parks guidance). • Community engagement: How can this data inform co-production and engagement? Understanding local demographics can help shape inclusive design and decision-making (See Co-production and Engagement: The Safer Parks guidance). • Access and connectivity: Are there areas where new or improved access and exit points could better serve nearby communities? • Catchment coverage: Do access points and routes serve the full catchment area, including those living at its edges? (See Access and Location: The Safer Parks	—	Catchment buffers are based on isochrone maps: 15-minute walking isochrones from every park access and exit point, using the street and path network (assuming 4 km/h walking speed). Demographic data is drawn from Census Output Areas (OAs), generally containing 40–250 households and 100–625 residents. Output areas where at least 20% of the area falls within the catchment are included. A Location Quotient (LQ) is used to compare park catchment demographics with the wider local authority.	Use with: Park Features, Access and Exit Points, Visibility Analysis, Catchment Buffer, Predicted Route Popularity.	—

		guidance). • Funding applications: Can this data support evidence-based funding bids by demonstrating need and potential impact?				
PARK INFRASTRUCTURE						
Park Features	This layer shows facilities within parks, such as gardens, sports pitches, car parking, monuments, cafés, and other amenities. This layer is displayed as points and polygons.	Use this layer to understand how facilities are distributed across your chosen park. Parks with a wider range of features tend to attract more visitors and a broader mix of people. Certain facilities, such as cafes and playgrounds, can encourage co-presence and increase activity, contributing to greater 'eyes on the park'. Consider: • Gaps in provision: Are there areas with few or no facilities? These areas may attract less footfall and feel more isolated (See Busyness and Activation: The Safer Parks guidance). Use this layer to understand: • Gendered provision: Do existing facilities reflect the needs and interests of women and girls? Parks dominated by certain features (e.g. sports pitches or Multi-Use Games Areas) may not support inclusive use (See Belonging and Familiarity: The Safer Parks guidance). • Visibility and accessibility: Are facilities visible and accessible from popular routes? Can you see one destination within the park from another? Well-located features can support use and improve perceived safety (See Wayfinding and Layout: The Safer Parks guidance). • Reflecting local diversity: Does provision reflect the needs of the local population? Use alongside the Demographics Data layer to assess alignment (See Access and Location: The Safer Parks guidance).	Principle 7: Environmental Change Well-designed and maintained environments are less likely to experience crime. Facilities and amenities attract activity and contribute to a sense of care and ownership of space.	This data comes from combined Ordnance Survey and OpenStreetMap data.	Use with: Predicted Route Popularity, Demographics Data.	—

Trees	Tree locations and vegetation coverage within parks. It is displayed as a heatmap.	Vegetation plays an important ecological role while also shaping sightlines and the overall character of the park. Use this layer to identify where trees and dense vegetation are located within your chosen park. The dashboard reflects a 'worst case' visibility scenario, assuming full leaf coverage in summer. Consider: • Sightlines along paths: Are there areas where vegetation close to paths reduces visibility? Dense or overgrown planting may obstruct views and affect perceived safety. Use alongside the Visibility Analysis layer (See Visibility and Openness: The Safer Parks guidance). • Targeted maintenance: Are there locations where maintenance could improve visibility? Measures such as raising tree canopies or managing shrub and hedge height can enhance sightlines without widespread removal (See Visibility and Openness: The Safer Parks guidance). • Boundary and access point visibility: Does vegetation near park edges or entrances restrict visibility from surrounding streets? Improving visibility at these locations can support safety and wayfinding (See Escape: The Safer Parks guidance).	Principle 7: Environmental Change Vegetation contributes to environmental quality but can also reduce sightlines. Thoughtful planting and maintenance support both amenity and safety.	This layer uses DEFRA LIDAR data capturing elevation, tree canopy height, and shrub height. For England, it uses the 2022 composite dataset (Digital Surface Model and Digital Terrain Model). For Wales, a 32-bit LiDAR dataset is used. Full details: https://github.com/Safer-Parks/park-vga and https://github.com/Safer-Parks/park-vga/blob/main/notebooks/finding_lidar_tiles/README_downlaoding.md).	Use with: Visibility Analysis.	Parks provide important ecological and wellbeing benefits, and vegetation is central to this. While some planting can reduce visibility, the aim is not widespread clearance. Use the dashboard alongside local knowledge to identify targeted, proportionate improvements along key routes and around facilities.
Street Lighting	Locations of street lighting within and around parks. The layer is displayed as a heatmap.	Lighting plays a key role in how safe parks feel, particularly after dark, including during early mornings and afternoons in Autumn and Winter. Parks often form part of active-travel routes, but many women and girls feel unsafe using them in low-light conditions. Use this layer to identify areas that are unlit or poorly lit within and around your chosen park. Consider:	Principles 6 and 9: Surveillance; Increase the Chances of Being Caught. Lighting supports both natural and formal surveillance and increases the likelihood that offenders will be seen and identified.	This layer uses data provided by local authorities. Street lighting data may not capture all assets. Verify with local authority records and on-the-ground knowledge, and ensure lights are regularly checked and maintained.	Use with: Visibility Analysis, Access and Exit Points, Predicted Route Popularity.	

		• Unlit paths: Which paths lack lighting, particularly those that are well-used or likely to attract higher footfall? These routes may be priority areas for improvement (See Lighting: The Safer Parks guidance). • Lighting at access and exit points: Are entrances and exit points adequately lit? Poor lighting at these points can deter use and reduce perceptions of safety (See Lighting: The Safer Parks guidance). • Targeting improvements: Where should lighting interventions be prioritised? Combining this layer with Visibility Analysis can help identify locations where lighting and sightlines together present higher risk. • Supporting safe use after dark: Are areas likely to be used in low-light conditions supported by appropriate management measures? Enhancing lighting may require complementary approaches such as patrols, CCTV, or updated park management plans, including decisions about opening and closing times.				
Benches and Picnic Tables	The location of seating within parks. The layer is displayed as points.	Seating encourages people to spend time in the park, supporting activity, comfort and a sense of belonging. Well-used seating areas can also provide greater 'eyes on the park', helping spaces feel safer. Use this layer to understand where seating is and is not located within your chosen park. Consider: • Gaps in seating: Are there areas with no or limited seating? Lack of seating may discourage use, particularly by women, older people, parents, and disabled users (See Belonging and Familiarity: The Safer Parks guidance). • Location and safety: Is seating located in visible, well-lit areas? Seating in concealed or isolated spots may feel unsafe or attract	Principle 7: Environmental Change Seating encourages people to spend time in parks, increasing natural surveillance and a sense of community ownership of space.	This layer uses Ordnance Survey and OpenStreetMap.	Use with: Visibility Analysis, Trees, Predicted Route Popularity, Street Lighting.	—

		unwanted behaviour (See Visibility and Openness: The Safer Parks guidance). • Accessibility and diversity of seating: Does the type and distribution of seating meet a range of needs? Features such as circular seating, back-rests, accessible picnic tables, and shelter from sun or rain can support inclusive use. Consider this alongside the Demographics Data layer (See Access and Location: The Safer Parks guidance).				

Key References and Links

- **Safer Parks guidance:** Safer Parks Consortium (2025). Safer Parks: Improving Access for Women and Girls (2nd ed.). University of Leeds. https://doi.org/10.48785/100/352
- **10 Principles of Crime Prevention:** Secured by Design (n.d.). The Ten Principles of Crime Prevention. https://crimeprevention.securedbydesign.com/the-ten-principles-of-crime-prevention
- **College of Policing. VAWG evidence:** Home Office (2025). What works to reduce violence against women and girls: A summary of the evidence. https://assets.publishing.service.gov.uk/media/6943f8a5143d960161547e74/31.260_VAWG_03_Evidence_Review_FINAL_181225_WEB.pdf
- **DEFRA LiDAR data:** Department for Environment, Food & Rural Affairs (DEFRA) (2022). LiDAR composite digital surface model and digital terrain model. https://www.data.gov.uk/dataset/f0db0249-f17b-4036-9e65-309148c97ce4/national-lidar-programme
- **OpenStreetMap:** OpenStreetMap contributors (2024). OpenStreetMap data via Geofabrik. https://download.geofabrik.de/
- **The Safer Parks Dashboard:** safer-parks.github.io/dashboard.html