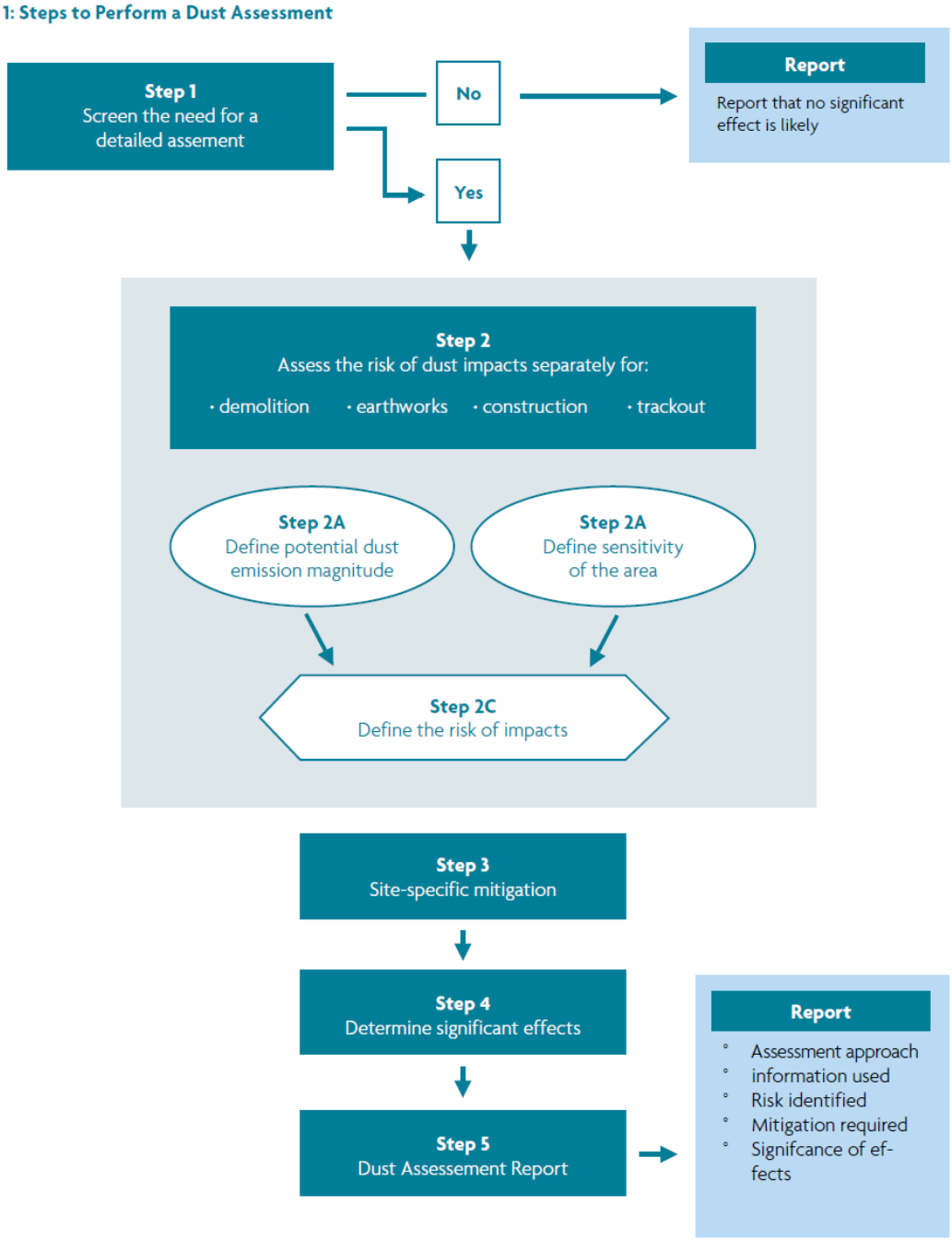
# APPENDIX 10.6- DUSK RISK ASSESSMENT PROCEDURES

**Figure 1: Steps to Perform a Dust Assessment**



**Demolition**

Examples:

- **Large**: Total building volume >50 000 $m^3$, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >20 m above ground level;
- **Medium**: Total building volume 20 000 $m^3$ – 50 000$m^3$, potentially dusty construction material, demolition activities 10-20 m above ground level; and
- **Small**: Total building volume <20 000 $m^3$, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10m above ground, demolition during wetter months.

**Earthworks**

Examples:

- **Large**: Total site area >10 000 $m^2$, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >8 m in height, total material moved >100 000 tonnes;
- **Medium**: Total site area 2 500 $m^2$ – 10 000 $m^2$, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 4 m - 8 m in height, total material moved 20 000 tonnes – 100 000 tonnes; and
- **Small**: Total site area <2 500 $m^2$, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <4 m in height, total material moved <10 000 tonnes, earthworks during wetter months.

**Construction**

Examples:

- **Large**: Total building volume >100 000 $m^3$, piling, on site concrete batching; sandblasting
- **Medium**: Total building volume 25 000 $m^3$ – 100 000 $m^3$, potentially dusty construction material (e.g. concrete), piling, on site concrete batching; and
- **Small**: Total building volume <25 000 $m^3$, construction material with low potential for dust release (e.g. metal cladding or timber).

**Trackout**

Examples:

- **Large:** >50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100m;
- **Medium:** 10-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road lengths 50m-100m;
- **Small:** <10 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50m.

These numbers are for vehicles that leave the site after moving over unpaved ground, where they will accumulate mud and dirt that can be tracked out onto the public highway.

**Table 2: Sensitivity of the Area to Dust Soiling Effects on People and Property [a b]**

| Receptor Sensitivity | Number of Receptors | Distance from the Source (m)[c] | | | |
|---|---|---|---|---|---|
| | | ‹20 | ‹50 | ‹100 | ‹350 |
| **High** | **›100** | High | High | Medium | Low |
| | **10-100** | High | Medium | Low | Low |
| | **1-10** | Medium | Low | Low | Low |
| **Medium** | **›1** | Medium | Low | Low | Low |
| **Low** | **›1** | Low | Low | Low | Low |

[a] The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout. See **STEP 2B**, **Box 6** and **Box 9.**

[b] Estimate the total number of receptors within the stated distance. Only the *highest level* of area sensitivity from the table needs to be considered. For example, if there are 7 high sensitivity receptors ‹ 20m of the source and 95 high sensitivity receptors between 20 and 50 m, then the total of number of receptors ‹ 50 m is 102. The sensitivity of the area in this case would be high.

[c] For trackout, the distances should be measured from the side of the roads used by construction traffic. Without site-specific mitigation, trackout may occur from roads up to 500 m from large sites, 200 m from medium sites and 50 m from small sites, as measured from the site exit. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50m from the edge of the road.

**Table 3: Sensitivity of the Area to Human Health Impacts [a b]**

| Receptor Sensitivity | Annual Mean $PM_{10}$ concentration[c] | Number of Receptors[d] | Distance from the Source (m)[e] | | | | |
|---|---|---|---|---|---|---|---|
| | | | ‹20 | ‹50 | ‹100 | ‹200 | ‹350 |
| **High** | ›32 µg/m³ (›18 µg/m³ in Scotland) | **›100** | High | High | High | Medium | Low |
| | | **10-100** | High | High | Medium | Low | Low |
| | | **1-10** | High | Medium | Low | Low | Low |
| | 28-32 µg/m³ (16-18 µg/m³ in Scotland) | **›100** | High | High | Medium | Low | Low |
| | | **10-100** | High | Medium | Low | Low | Low |
| | | **1-10** | High | Medium | Low | Low | Low |
| | 24-28 µg/m³ (14-16 µg/m³ in Scotland) | **›100** | High | Medium | Low | Low | Low |
| | | **10-100** | High | Medium | Low | Low | Low |
| | | **1-10** | Medium | Low | Low | Low | Low |
| | ‹24 µg/m³ (‹14 µg/m³ in Scotland) | **›100** | Medium | Low | Low | Low | Low |
| | | **10-100** | Low | Low | Low | Low | Low |
| | | **1-10** | Low | Low | Low | Low | Low |
| **Medium** | - | **›10** | High | Medium | Low | Low | Low |
| | - | **1-10** | Medium | Low | Low | Low | Low |
| **Low** | - | **›1** | Low | Low | Low | Low | Low |

[a] The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout. See **STEP 2B**, **Box 7** and **Box 9**.
[b] Estimate the total within the stated distance (e.g. the total within 350m and not the number between 200 and 350m), noting that only the highest level of area sensitivity from the table needs to be considered. For example, if there are 7 high sensitivity receptors ‹ 20m of the source and 95 high sensitivity receptors between 20 and 50 m, then the total of number of receptors ‹ 50 m is 102. If the annual mean $PM_{10}$ concentration is 29µg/m³, the sensitivity of the area would be high.
[c] Most straightforwardly taken from the national background maps, but should also take account of local sources. The values are based on 32µg/m³ being the annual mean concentration at which an exceedence of the 24-hour objective is likely in England, Walesand Northern Ireland. In Scotland there is an annual mean objective of 18µg/m³.
[d] In the case of high sensitivity receptors with high occupancy (such as schools or hospitals) approximate the number of people likely to be present. In the case of residential dwellings, just include the number of properties
[e] For trackout, the distances should be measured from the side of the roads used by construction traffic. Without site-specific mitigation, trackout may occur from roads up to 500 m from large sites, 200 m from medium sites and 50 m from small sites, as measured from the site exit. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge of the road.

**Table 4: Sensitivity of the Area to Ecological Impacts [a b]**

| Receptor Sensitivity | Distance from the Source (m)[c] | |
|---|---|---|
| | ‹20 | ‹50 |
| **High** | High | Medium |
| **Medium** | Medium | Low |
| **Low** | Low | Low |

[a] The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout and for each designated site. See **STEP 2B**, **Box 8** and **Box 9**.
[b] Only the highest level of area sensitivity from the table needs to be considered.
[c] For trackout, the distances should be measured from the side of the roads used by construction traffic. Without site-specific mitigation, trackout may occur from roads up to 500 m from large sites, 200 m from medium sites and 50 m from small sites, as measured from the site exit. The impact declines with distance from the site.