# A66 Northern Trans-Pennine Project
TR010062

# 3.4 Environmental Statement Appendix 11.1 Operational Materials Consumption and Waste Generation Estimates

**APFP Regulations 5(2)(a)**

**Planning Act 2008**

**Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009**

**Volume 3**

June 2022

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009**

# A66 Northern Trans-Pennine Project Development Consent Order 202x

## 3.4 ENVIRONMENTAL STATEMENT APPENDIX 11.1 OPERATIONAL MATERIALS CONSUMPTION AND WASTE GENERATION ESTIMATES

| | |
|---|---|
| **Regulation Number:** | Regulation 5(2)(a) |
| **Planning Inspectorate Scheme Reference** | TR010062 |
| **Application Document Reference** | 3.4 |
| **Author:** | A66 Northern Trans-Pennine Project Team, National Highways |

| Version | Date | Status of Version |
|---|---|---|
| Rev 1 | 13/06/22 | DCO Application |

# CONTENTS

# 11.1 Operational Materials Consumption and Waste Generation Estimates

## 11.1.1 Introduction

11.1.1.1 This appendix sets out the assumptions used to provide estimations of the operational materials used and waste generated for the existing A66 carriageway. Headline figures were provided by National Highways Area Managers for the existing A66 route.

11.1.1.2 Those figures were considered alongside industry guidance and benchmarks to establish a reasonable baseline set of assumptions.

11.1.1.3 The assumptions used to generate an overview of existing A66 operational materials use and waste generation are outlined in Table 1: Operational material and waste sources of existing A66 and wastage rate assumptions.

Table 1: Operational material and waste sources of existing A66 and wastage rate assumptions

| Material / Waste Source | Wastage Assumptions |
|---|---|
| Pavement Asphalt | 2.5% wastage rate |
| Road Markings | Scoped out no waste |
| Road Studs | Scoped out no waste |
| Traffic Sign (Non-Elec) | Equivalent old signs will be replaced and be classified as waste |
| Lighting | Equivalent old lighting will be replaced and be classified as waste |
| Bridge Joint | Scoped out no waste |
| Vehicle Restraint | Equivalent old vehicle restraint will be replaced and be classified as waste |
| Pavement Pothole Repair Asphalt | 2.5% wastage rate |
| Pavement Patch Repair Asphalt | 2.5% wastage rate |
| Vehicle Restraint System (VRS) Posts - Assumed Post 0.75m x 1m x 0.2 m | Equivalent old VRS posts will be replaced and be classified as waste |
| Vehicle Restraint System (VRS) Beams | Equivalent old VRS beams will be replaced and be classed waste |
| Drainage Gullies | Equivalent old drainage gullies will be replaced and be classified as waste |
| Fence (timber) | No waste |
| Fence Posts (timber) | Scoped out no waste |
| Fence Rail (timber) | Scoped out no waste |

11.1.1.4 The figures provided by the National Highways Area Managers, alongside the calculations used to estimate operational materials use and waste generation are provided for the entire A66 route in Table 2: Operational materials quantities and calculations used to estimate materials use and waste generation for existing A66.

Table 2: Operational materials quantities and calculations used to estimate materials use and waste generation for existing A66

| Element Type | Material | Average (2019/20 - 2020/21) | Unit | Length (m) | Width (m) | Thickness (m) | Volume (m3) | Conversion Factor (tonnes / $m^3$) |
|---|---|---|---|---|---|---|---|---|
| **Renewals** | | | | | | | | |
| Pavement | Asphalt | 24 | LKm | 24 | 7.3 | 0.2 | 8.76 | 2.1 |
| Road Markings | Thermoplastic / waterbased paint/MMA/ epoxy resin | 30754 | lin.m | 30754 | 0.2 | 0.02 | 30.75 | |
| Road Studs | Aluminium / LED / Plastic | 3086 | no. | 0 | 0 | 0 | 0.00 | n/a |
| Traffic Sign (Non-Elec) | Aluminium | 68 | no. | 2.4 | 2 | 0.02 | 0.82 | 2.7 |
| Lighting | n/a | 2 | no. | 0 | 0 | 0 | 0.00 | n/a |
| Bridge Joint | n/a | 4 | no. | 0 | 0 | 0 | 0.00 | n/a |
| Vehicle Restraint - Non Conc | Steel | 1246 | lin.m | 1246 | 1 | 0.02 | 6.23 | 7.85 |
| Pavement Pothole Repair | Asphalt | 100 | no. | 2 | 2 | 0.2 | 10.00 | 2.1 |
| Pavement Patches Repair | Asphalt | 80 | no. | 30 | 7 | 0.2 | 420.00 | 2.1 |
| Vehicle Restraint System (VRS) Posts | Steel | 248 | no. | 1.5 | 2 | 0.4 | 37.20 | 7.85 |
| **Maintenance** | | | | | | | | |
| Vehicle Restraint System (VRS) Beams | Steel | 110 | no. | 6 | 1 | 0.06 | 4.95 | 7.85 |
| Drainage Gullies | Cast Iron | 8 | no. | 0.9 | 0.9 | 0.2 | 0.16 | 7.85 |

| Element Type | Material | Average (2019/20 - 2020/21) | Unit | Length (m) | Width (m) | Thickness (m) | Volume (m3) | Conversion Factor (tonnes / $m^3$) |
|---|---|---|---|---|---|---|---|---|
| Fence | Timber | 4 | no. | 3.6 | 4 | 0.02 | 0.14 | 0.5 |
| Fence Post | Timber | 8 | no. | 0.2 | 4 | 0.2 | 0.16 | 0.5 |
| Fence Rail | Timber | 4 | no. | 0.1 | 3.6 | 0.1 | 0.02 | 0.5 |

11.1.1.5 Final estimations of operational material use and waste generation for relevant materials scoped in using the calculations and assumptions set out in Table 1: Operational material and waste sources of existing A66 and wastage rate assumptions and Table 2: Operational materials quantities and calculations used to estimate materials use and waste generation for existing A66 above are provided in Table 3: Operational materials consumption and waste generation estimates of existing A66 below.

Table 3: Operational materials consumption and waste generation estimates of existing A66

| Element Type | Material | Material Volume ($m^3$) | Material Mass (tonnes) | Waste Volume ($m^3$) | Waste Mass (tonnes) |
|---|---|---|---|---|---|
| **Renewals** | | | | | |
| Pavement | Asphalt | 8.8 | 18 | 0.2 | 0.5 |
| Traffic Sign (Non-Electric) | Aluminium | 0.8 | 2.2 | 0.8 | 2.2 |
| Vehicle Restraint | Steel | 6 | 49 | 6 | 49 |
| **Maintenance** | | | | | |
| Pavement Pothole Repair | Asphalt | 10 | 21 | 0.3 | 0.5 |
| Pavement Patches Repair | Asphalt | 420 | 882 | 11 | 22 |
| Vehicle Restraint System (VRS) Posts | Steel | 37 | 292 | 37 | 292 |
| Vehicle Restraint System (VRS) Beams | Steel | 5 | 39 | 5 | 39 |
| Drainage Gullies | Cast Iron | 0.2 | 1 | 0.2 | 1 |