

Evidence 1: Logistics report

1 Introduction

This report details the options for transporting construction materials to the site of the new data centre, and subsequent removal of spoil. All potential sites were identified as being suitable for either road or rail transportation.

As soon as building materials are delivered, spoil is created. **ONE** unit of building materials creates **TWO** units of spoil (two units of building materials creates four units of spoil, and so on). Spoil can be removed as soon as the building materials are unloaded.

A total of **TEN units of building materials** are required at the construction site, and all spoil must be removed (but not necessarily all at the same time).

2 Costs

The cost associated with delivering to and removing from each site are shown in Table 1.

Site	Cost per single trip (£)	
	Road	Rail
Braemar	15	30
Eskdalemuir	12	32
Leuchars	15	28
Nairn	12	25
Paisley	18	30
Stornoway	25	-
Tiree	30	-
Wick	12	30

Table 1: Caption

Note that Stornoway and Tiree are located on islands and as such do not have a rail link.

A single trip is defined as from the depot to the construction site **OR** from the construction site to the depot (so a round-trip from the depot to the construction site and back is classed as **two trips**).

3 Road

For all sites, the use of road transportation operations under the following constraints:

- Only **three** lorries are available. Each lorry can carry a maximum of **two units** of either building materials OR spoil (but never a mixture of the two). The same lorry can both deliver building materials and remove spoil.
- Multiple lorries can travel in the same direction at the same time, but each lorry will count as a single trip and will be charged accordingly (for example, two lorries delivering building materials will count as two trips).
- Lorries can run empty, but will still be charged for the trip.

4 Rail

For all sites with a rail link, the use of rail transportation operates under the following constraints:

- Only **one** train is available, but it can pull a maximum of **10 wagons**. Two types of wagon are available - one for carrying building materials, and one for carrying spoil. Neither wagon can carry the other type of cargo. Each wagon can carry **one unit** of their respective cargo (i.e., one unit of building materials or one unit of spoil).
- A train can only change its wagons at the depot, and **not** at the construction site (i.e., a train that leaves the depot with 10 building materials wagons can only return with 10 building materials wagons).

- For safety reasons, a train must always be at least half-full (i.e., pulling at least **five units** made up of either material, or a combination of both). If necessary, both types of cargo can move in either direction to ensure this constraint is met (i.e., building materials can be taken from the construction site, or spoil can be taken to it). A train does not have to unload all its cargo (e.g., spoil taken to the building site to meet the safety constraint can be brought straight back to the depot).

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