

Midland Metro

2.6 System Specification

2.6.1 Vehicles

It is envisaged that the light rail vehicles will be similar to those currently used on Line 1, being 35 m in length and no more than 2.65 m wide, and articulated. Vehicles will run at a maximum speed of 48 kph (30 mph) on street running sections and up to 80 kph (50 mph) elsewhere.

The vehicles will have capacities of approximately 70 seated and 130 standing passengers and there will be low floor access from platforms to provide for mobility-impaired passengers. In total there will be approximately 14 vehicles in use on the proposed scheme, allowing for spare vehicles, subject to operational requirements

2.6.2 Power Supply and Infrastructure

Vehicles will be powered by 750 dc volt overhead electric lines, via current drawn from substations located adjacent to the alignment, which is fed to tram vehicles through contact wires and returned to the substation through the running rails.

There will be a minimum clearance of 5.8 m between contact wires and the highway surface, with a lesser clearance of 5.2 m in areas accessible by the public, but not by vehicles. Where the alignment follows the railway corridor, headspan wires will be supported by central poles located between the two sets of tram tracks. On street-running sections of the scheme, at Dudley and at Brierley Hill, where appropriate, and with any necessary consent of the owner and Dudley MBC or Sandwell MBC, contact wires may be fixed to buildings or other structures in order to minimise the use of poles.

The use of building fixings in preference to poles to reduce visual impact has also been recommended by the Commission for Architecture and the Built Environment (CABE) ⁽¹²⁵⁾ and has been incorporated into the Design Guidelines created for Midland Metro ⁽¹²⁶⁾. Where possible, shared poles (eg for lighting, signage, traffic signals and/or overhead line equipment) will also be used to minimise visual impact. The diameter of poles will be up to 400 mm. The need for support and, therefore, poles will be greatest on bends in the alignment to maintain a curve in the overhead wires.

It is envisaged that four substations will be required along the length of the alignment to house the electrical equipment that serves the scheme. These will be structures similar to those used on Line 1. Track paralleling huts, which will be around one-third of the size of a substation, will also be required. Five possible sites have been identified for substations, although only four of these sites will be required:

- Horseley Road park and ride site (see *Section 2.6.5* below);
- site adjacent to the Tipton Road stop;
- site adjacent to the alignment, east of Thornleigh Trading Estate;
- site adjacent to the Pedmore Road stop, on Buxton Road; and
- site adjacent to Level Street, Merry Hill.

Ducts for control and communications cables required for CCTV coverage, contact with the tram drivers and passengers will be laid on one or both sides of the track. Power cables may also be required to ensure that the voltage of the contact wire is sufficient to power the tram.

Platform equipment boxes will be mounted on the stop platforms and tram signal heads will be installed to control tram movement. These will be fixed upon existing traffic signal poles or on new poles.

2.6.3 Service Characteristics

It is envisaged that the proposed scheme would operate over seven days a week, between the hours of 0600 to 2400 as detailed below:

- 0700 to 1900 Monday to Saturday – every six minutes;
- 0600 to 0700 and 1900 to 2400 Monday to Saturday – every 10 minutes; and
- 0600 to 2400 on Sunday – every 10 minutes.

Since the scheme is not totally segregated from road traffic, time delays may be introduced during busy periods and at signalled junctions. As a result, the frequency of operations described above is the average separation of services. The estimated journey time from Wednesbury to the terminus in Brierley Hill is 24 minutes, with 11 minutes for the Wednesbury to Dudley town centre section and 13 minutes for the Dudley to Brierley Hill section ⁽¹²⁷⁾.

A comparison of the journey times by car and bus is provided in *Table 2.1*.

Table 2.1 Comparison of Journey Times

Section of Route	Journey Time (minutes)		
	Midland Metro	Car	Bus
Wednesbury to Dudley Town Centre	10.5	11.5	20.0
Dudley Town Centre to Brierley Hill	13.0	7.6	14.0

Wednesbury to Brierley Hill	23.5	16.3	34.0
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Since the proposed scheme is an extension to the existing Midland Metro, the operation of the extension may cause the frequency of operations on the existing line to change. This change in operations could give rise to indirect impacts, which have been considered as part of this EIA.

The exact nature of the service frequency on Line 1 and on the proposed extension will be determined by the Concessionaire, selected by Centro to design, build, operate and maintain the scheme. Two service scenarios have been considered as part of this EIA, as described below.

- Operations run at six to 10 minute intervals from the city centre through to Wolverhampton (as is currently the case). In addition, a six minute shuttle service is operated between Wednesbury and Brierley Hill and as a result, any passengers wishing to travel between the city centre and Brierley Hill would be required to change at Wednesbury. In this case, the service frequency would remain at six to 10 minutes on Line 1.
- Operations run at six to 10 minute intervals from the city centre through to Wolverhampton (as is currently the case). In addition, services also run from the city centre through to Brierley Hill at six minute intervals. This causes the frequency of services between Snow Hill and Wednesbury to increase from between six and 10 minutes, to around three minutes.

2.6.4 Stops

Up to 17 tram stops will be constructed along the proposed route. Four of the stops are provisional and subject to developments proceeding and would be funded by developer contributions, although they will be included in the TW Order application. The location of each stop is illustrated in *Figure 2.1* and described below:

- Gold's Hill (provisional stop);
- Great Bridge;
- Horseley Road (also a park and ride site);
- Dudley Port (also a park and ride site);
- Sedgley Road East;
- Birmingham New Road;
- Tipton Road;
- Station Drive (provisional stop);
- Dudley Bus Station;
- Flood Street (provisional stop);
- New Road (also a park and ride site);
- Cinder Bank (also a park and ride site);
- Pedmore Road;
- Canal Street (provisional stop);
- Waterfront;
- Merry Hill; and
- Brierley Hill Terminus.

The system will be designed to comply with the Disability Discrimination Act 1995 and developed to an equivalent or better quality standard used on the existing Midland Metro Line 1. Stops will be restricted to a length of around 30 m. Low level boarding to the platforms will allow easy access and facilitate integration into the existing streetscape through Dudley and Brierley Hill town centres.

Stops will consist of either a single island platform with a double canopy or two side platforms each with its own canopy. All stops will include access for the mobility impaired via lifts and/or ramps where the alignment is located within the railway corridor, and will be served by CCTV and a Personal Assistance Unit (PAU). The shelters will be similar to those on Line 1, which consist of a glazed canopy and side screens, and lighting will be provided on the underside of the canopies and along the rest of the platform. An example of a typical stop from Line 1 is illustrated below in *Figure 2.2*.

Passenger information systems, including audible announcements, at the stops will provide up to date Metro travel information. Stops may also contain a ticket machine, seating and signage including banners, in addition to CCTV. Secure cycle parking will be provided wherever possible.

Variations to the design of stops may be necessary due to local townscape character, and in relation to the location of each stop within the railway corridor or on street-running sections. This will be dealt with as detailed matters as part of any subsequent planning approvals. Design Guidelines created for Midland Metro ⁽²⁸⁾ set out the general design principles, which should be taken into account during the detailed design of the scheme.

On street-running sections, new surfacing will be introduced as part of the complementary measures of the project, to ensure that the design of hard landscaping works improves the visual quality of the street. A review of existing and proposed street furniture will be undertaken in order to minimise street clutter. This will be achieved through the use of sensitively designed modular units, which would accommodate lighting, litterbins, overhead line equipment and CCTV.

2.6.5 Park and Ride Sites

Up to four park and ride sites have also been proposed for certain tram stops along the route as indicated in the following list of stops:

- **Horseley Road** – a park and ride site will be provided on land north of Horseley Road and adjacent to Railway Street. The site will be accessed from Horseley Road.
- **Dudley Port** - a park and ride site will be provided directly adjacent to the stop, with access from Park Lane East.
- **New Road** – a park and ride site will be provided with access from New Road.
- **Cinder Bank** - a park and ride site will also be provided, although this is located on the opposite side of Blowers Green Road to the stop.

However, a signal-controlled pedestrian crossing will be provided on Blowers Green Road to allow pedestrians to cross the road safely.

All park and ride sites will be designed for compliance with the 'Secured Car Park Status' initiative. This was launched by the Association of Chief Police Officers (ACPO) to encourage the improvement of security standards at car parks, thus reducing criminal activity and the fear of crime in car parks and vehicle retention areas. This standard is fully supported by the WMPTA and forms part of the WMPTA/Centro 20-year strategy targets for personal security. The standard also complies with the Department for Transport's

disability policy, which considers the needs of those with disabilities when designing and operating park and ride facilities.

The following facilities will be implemented:

- CCTV cameras to cover the entire park and ride site;
- CCTV fixed cameras to cover all entrances/exits and pedestrian access/egress giving facial and vehicle number plate recognition;
- appropriate lighting levels;
- park and ride sites will be enclosed with fencing to guide people towards openings covered by CCTV cameras;
- parking areas will be arranged in straight rows and a circulatory movement of vehicles around the car park will be allowed if possible, to aid with surveillance of vehicles within the car park;
- appropriate signage will be introduced to make the public aware of walking/driving routes;
- disabled persons parking facilities will be located close to access points;
- pedestrian routes will be protected from vehicle usage; and
- help points and public address systems will be installed.

In addition proposals for complementary car parking are being considered by a third party at Canal Street and for expansion of the existing facilities at Wednesbury Parkway.

2.6.6 Depot Facility

The proposed Wednesbury to Brierley Hill scheme (and the proposed Birmingham City Centre scheme) will utilise the existing depot facilities at Wednesbury, which currently serve Midland Metro Line 1. However, in order to accommodate the stabling, cleaning and maintenance of the additional vehicles associated with both extensions, it will be necessary to carry out works to the existing depot. This is likely to comprise the following:

- installation of three new stabling roads and connections;
- construction of an additional cleaning slab ⁽²⁹⁾;
- provision of tram roof access to the central maintenance bay;
- provision of a new control room (to serve all three lines);
- provision of a new train crew messing facility; and
- an extension to the existing site stores.

These facilities can be provided within the extent of the existing depot boundary.