Metropolitan Railway. The Princes Risborough–Grendon Underwood section was opened for freight traffic in 1905 and for passenger trains on 2 April 1906. The Great Western made a junction at Ashendon from which its new line extended through Ardley tunnel and Bicester and over the viaducts at Souldern to Aynho. There it joined the Company's original route to the north, opened from Oxford to Banbury in 1850 and to Birmingham in 1852. The new line, built by Scott, Middleton & Co, opened to freight traffic on 4 April 1910 and for passenger trains on 1 July of that year.

The original GWR line through Banbury was built to I K Brunel's broad gauge of 7 ft 01/4 inches. However, junctions with standard (4 ft 8 1/2 inches) gauge lines, particularly the Shrewsbury & Birmingham at Wolverhampton and the Oxford, Worcester & Wolverhampton at Wolvercote, made for operating difficulties. As early as September 1858 mixed gauge track enabled excursionists from Banbury to travel in standard gauge carriages through Oxford, Reading and Basingstoke and on over the lines of the London & South Western Railway to Portsmouth. Third rails from 1861 enabled standard gauge trains to run into Paddington. The Banbury Guardian that year reported on great alterations that were being made to services through Banbury. By 1868 all but one of the passenger trains between Oxford and Birmingham ran on the standard gauge, and the following year the GWR began to take up the broad gauge rails north of Oxford. The longitudinal baulks on which broad gauge rails ran were replaced by conventional sleepers (or cross ties) between Oxford and Leamington in a large scale operation in the winter of 1876-77.

In 1865 five trains from Paddington to Birmingham and beyond stopped at Banbury, the fastest taking 1 hour 55 minutes for the journey, the slowest 3 hours 20 minutes. Two down expresses, the 15.40 and 18.15 slipped coaches at Banbury, and another slip coach arrived at 20.22 off the 19.25 from Snow Hill. In 1902 there were seven daily through-services from Paddington to Banbury, and two non-stop expresses dropped slip coaches. One of the four trains from Merton Street to Bletchley carried through coaches for Euston, reached in 3 hours 5 minutes. There was an equivalent down service, the 11.00 from Euston which covered the distance in 2½ hours. Into the 1930s one train a day in each direction carried through carriages between Merton Street and Euston. Even in the years after the Second World War there remained long gaps in the service between Banbury and Paddington along the new line, making it advantageous to use other routes.