Ardleigh Green Bridge

TfL Lane Rental Industry Publication

TRANSPORT FOR LONDON

TFL LANE RENTAL SCHEME

Introduction

The Ardleigh Green Bridge was built in 1923, and was at the end of its useful life. The bridge is a dual carriageway and carries the A127 Southend Arterial Road over the four National Rail lines in Romford. The new bridge would provide improved headroom for Crossrail and domestic trains running to and from London, provide a utility service bridge mitigating future disruption and increase the life expectancy of the bridge for 100 years.

Given the number of pedestrians, cyclists and vehicles that use this route an approach had to be design which would keep the highway open to traffic, cyclists and pedestrians while the demolition and replacement of the bridge took place, avoiding a full road closure and sever disruption. This was achieved through a series of extraordinary measures.

The Project

The project comprised of 3 key phases;

- Demolition and replacement of the Essex bound carriageway
- Demolition and replacement of London bound carriageway
- Demolition of existing bridge piers and foundation at rail track level.

During these phases the following extraordinary working practices were implemented;

- Use of contraflow system for demolition and construction of new bridge, rather than a full closure of the A127
- Innovative use of utility services bridge for temporary pedestrian and cyclist diversion with specific measures;
    a. using bespoke deck panels to enable its use by pedestrians and cyclists, thereby avoiding a diversion for these modes of 2 km
    b. bespoke scaffold walkway to allow for wheelchair access
    c. provision of night time security guard to walk the pedestrian diversion
- Provision of free vehicle recovery through the contra-flow area
- Reduction of speed restrictions from 40mph to 30mph
- Use of Variable Message Signs (VMS) in strategic locations during key rail/road possessions rather than on the A127 alone

Outcomes

The use of these innovate working practices has achieved the aims of this project to mitigate the impact of works on traffic, cyclists and pedestrians.

The £630,000 approved by the Lane Rental Governance Committee has enabled the project to provide a social cost delay saving of £23M.

Key benefits and their performance;

1. Contraflow traffic management: Since the commencement of works in July 2016, the project has only had three daytime weekend road closures, with other closures limited to night time. At all other times a contra-flow traffic management has allowed traffic over the bridge, thereby minimising major disruption to the local area.
2. Pedestrian and cyclist diversion using utility services bridge: The utility service bridge was used for pedestrians and cyclists throughout the project and remained open until the completion of works.
3. Use of strategic variable message sign (VMS): During all daytime weekend road closures a total of 8 VMS were used to inform motorists of the upcoming closures. The information distribution was further enhanced by use of Highways England VMS on M25 and TfL's on A12/A13/A406. This helped in reducing disruption during the works.
4. Free vehicle recovery: As an extraordinary measure, a free vehicle breakdown recovery was provided, in event of vehicles breaking down on the single lane section of contraflow. Although the provision was there, there were no breakdowns within the single lane section of the works.

Lessons Learnt

Key lessons learnt;

- Inform and consult stakeholders at least 6 months in advance of works.
- Use local schools and social media to publicise works.
- The need for free vehicle recovery should be assessed; as this service was not used.
- Minimise disruption by utilising night time and weekend road/lane closures.

Conclusion

There are definite benefits for the use of these extraordinary measures and they should be considered as a suite of potential solutions when undertaking this type of work, particularly in busy areas of London.

TfL Lane Rental Scheme

Optimising customer journeys through the delivery of safer, innovative and sustainable roadworks

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