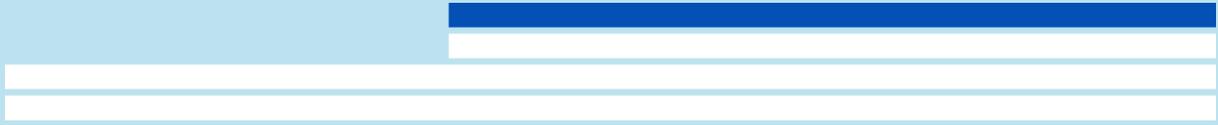


Transport for London

**LU Engineering
Works Maps
Research Report
11098
22 March 2012**





Introduction to the research

London Underground (LU) alerts customers to weekend closures via a range of communications channels. Almost eighty per cent of customers now 'check before they travel'. One element of the communication mix provided by LU are the week ending engineering works maps displayed in stations.

Research is required to understand the role of the maps for customers in their current repertoire of travel / checking tools as well as customer response to the three map designs and how effective the various designs are at meeting customer needs.

Three versions of **engineering works maps** were explored in research to gauge customer response:

- Version 1: current engineering works map
- Version 2: current engineering works map BUT only with areas that have no service coloured (ie majority of Circle Line not coloured as the stations are still serviced with other lines)
- Version 3: reverse of current map all of the closed lines and stations faded to grey – basically the reverse of the current maps

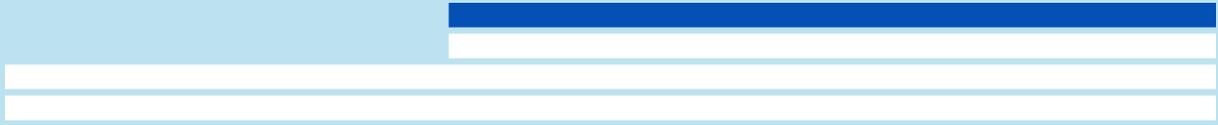
Three focus groups with LU customers:

Group	Gender	Life stage	Primary weekend journey type	Location
1	Equal Mix	Pre-family	Leisure, utility and commute	Mix of Inner and Outer
2	Equal Mix	Family	Leisure, utility and commute	Mix of Inner and Outer
3	Equal Mix	Post-family	Leisure, utility and commute	Mix of Inner and Outer

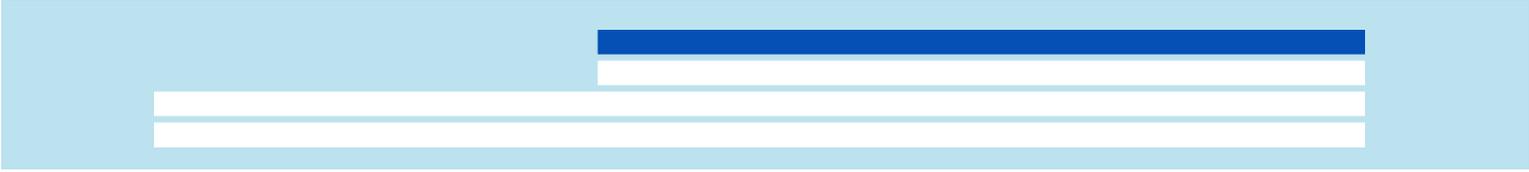
Two sessions of observations and intercepts were also conducted following the groups:

Session	Location	Date and time
1	King's Cross / St. Pancras and Baker Street	16 th March 8-11am
2	Earl's Court and South Kensington	17 th March 11am-2pm

This document details the key insights from the qualitative groups and intercept sessions. Research was conducted by 2CV in March 2012.

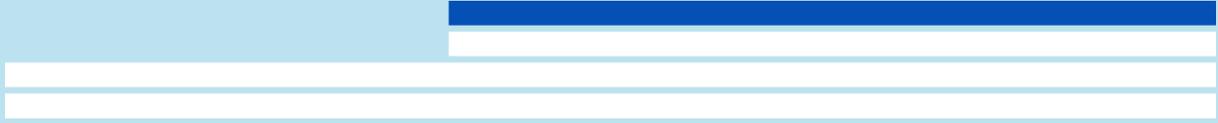


Executive summary



Executive summary:

- Of the three maps presented in the research, the current map (showing the circle line) is the least confusing for customers
- However, the map alone does not (and possibly cannot) provide all of the information and support needed by customers in the context of the weekend engineering works
- At present, the map works best when it is used with other resources (online, with a member of staff, supplementary maps) and is most relevant to customers on the weekend when the works are taking place.
- Unfamiliar and infrequent travellers have the greatest need for this information as they require more support in planning around / rerouting in comparison to familiar users who have a better understanding of the Tube.
- There is an opportunity for the posters to stand out more in stations by simplifying the text (making closure information more prominent) and considering strategic placement in relation to other information / staff within stations



**Customer feedback on Tube
engineering works poster**

Response to the three versions of the Engineering Works Maps:

When prompted to consider what role the poster should serve, customers want it to address two needs:

- Help them to understand what is closed / open
 - Help them to reroute / plan their journeys
- ➔ This makes for a complex information design challenge which is unlikely to be met by a single map

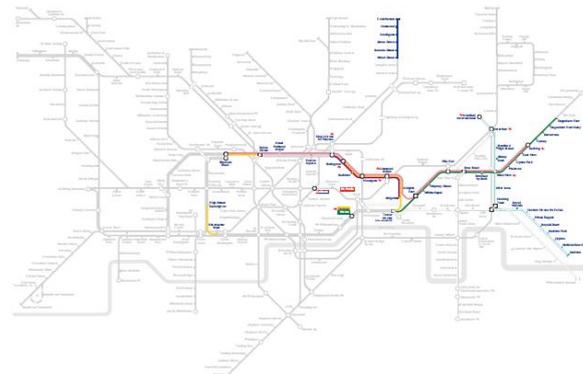
None of the three versions of the maps explored in the research meet both of these needs:

- The current style (with the whole Circle Line coloured) is most effective in communicating the full extent of closures and works across the system
 - Preferred to the other version (without the circle line coloured in where it is serviced with other lines) for the following reasons:



Version 1: Current map

- ✓ Shows the full scale of closures
- ✓ All customers (even unfamiliar) recognise the presence of another line alongside the Circle Line (even if they can't name it)

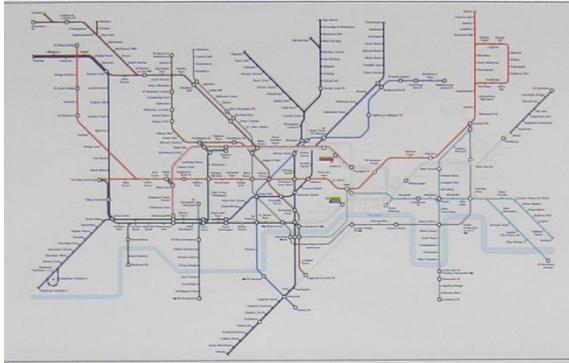


Version 2: only areas that have no service coloured

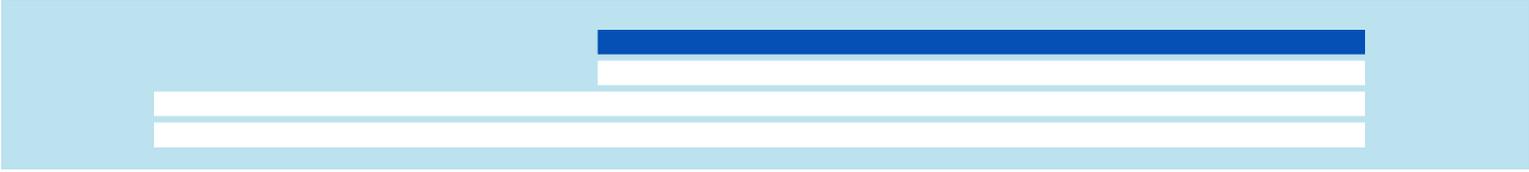
- ✗ Perceived as inaccurate – lines are perceived to be either open or closed, there is no in-between
- ✗ Could cause confusion when way finding and on the platform (some imagine they would continue to wait for the Circle Line train)
- ✗ For familiar customers, this approach is felt to be misleading and potentially deceptive coming from TfL
 - Eg does not warn of decrease in train frequency

Version 3: Reversed Map – rejected in practice

While reversing the colours is intuitive in theory, it adds complexity and provokes confusion in practice.



- ✘ Does not alert customers to closures (just looks like a normal map)
- ✘ Showing the whole system makes the map too difficult to read
- ✘ Presents the opposite from what customers are used to – breaks consistency from current communications
- ✘ Incongruous with maps online, which many familiar users had seen/used
- ✘ Counter intuitive to colour scheme where grey represents the Jubilee Line

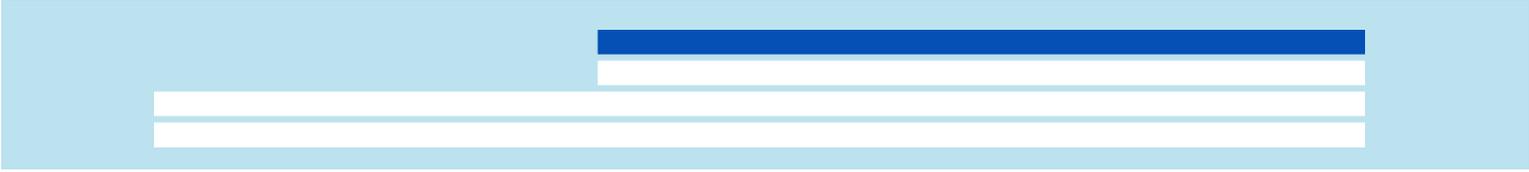


Overall response to maps:

Overall, the poster does not offer a stand-alone solution to meeting customer needs when there are planned works. However, it is playing a role in alerting some customers to closures, in conjunction with other information sources (pre-journey and in station)

The impact of the poster maps varies depending on the audience:

- **Familiar customers:** while they immediately understand that the coloured-in lines indicate closures, many are not entirely clear on what role the maps serve in the context of other information sources available to them
 - Most tend to prefer online sources/ mobile apps, often shortly before they travel
 - Only a small minority claimed to have seen the maps in station, although people do recall seeing the map design online
 - Once in the station, familiar customers prefer to glance at other information sources (especially digital rainbow maps), or rely on cues from fellow passenger behaviour
 - For a minority, the maps may help alert/remind them of disruptions 'on the go' but most are not certain they have a need for the map
- **Infrequent customers:** as they are open and looking for information prior to entering the system, the map attracts their attention but often falls short of helping them plan their journey
 - Primarily approach the map interested in checking their route prior to going through the barriers
 - For most, the map clearly indicates that there are closures
 - However, their limited understanding of the system requires that they use other information sources in conjunction with the closure map, in order to way-find and truly understand how the engineering works will impact on their journeys

- 
- **Unfamiliar customers:** a majority are attracted to the map expecting that it will help them plan their journey but ultimately they default to other sources (larger maps, leaflets, and staff)
 - Many do not recognise that the map communicates system closures
 - Limited knowledge of the system stops them from taking in information that will help them on their journey
 - In the absence of other sources, customers revert to using the map to journey plan (eg once past the barriers at South Kensington)
 - ➔ *Maps currently working best for Infrequent customers who are seeking this information*
 - ➔ *Information before the barriers needs to do more to alert unfamiliar customers about engineering works prior to entering the system/going through the barrier*

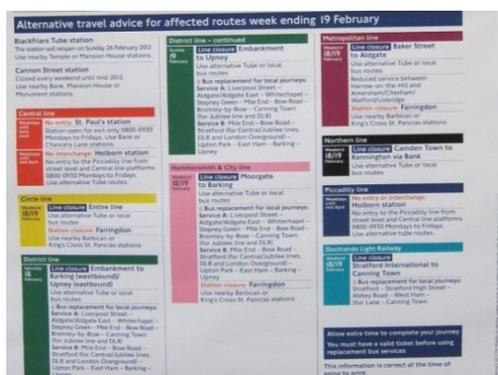
Customer feedback on written information:

The written information has an important role to play in explaining the map to customers. Due to its size and differing levels of familiarity with the map, written information is often easier to digest quickly.

However, the volume, layout and language of the information currently provided on the engineering works poster is confusing and complicated for serving customer needs when on the go.

In general, customers prefer simple and direct information to tell them about lines that are out of service, not a comprehensive picture of the entire network (most of which is irrelevant to them), eg customers easily recall and are drawn in-station to the Rainbow style posters which allow them to see if their line is affected at a glance.

Engineering Works Poster copy



Rainbow poster copy



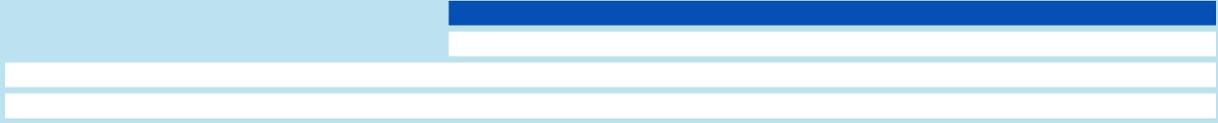
Map Poster text: detailed and difficult to understand at a glance

- ✗ Visually confusing – column layout makes it difficult to be drawn to read information
- ✗ 'Line closure' not as direct as 'Circle Line Closed'
- ✗ Information on how to reroute is only understood by familiar customers who are comfortable with this already – does not help unfamiliar customers re-plan their journeys

The Rainbow poster – simple and direct

- ✓ Visually familiar and attracts attention
- ✓ Language is clear and direct - customers walk away with simple messages that they can remember for future journeys 'ie Yellow line is closed'
- ✓ 'Weekend of 18/17th March' makes this relevant to 'my journey now'

- ➔ Overall, customers are looking for the simplest form of communication to tell them what is not running
- ➔ Since information on how to reroute is often sought through other in-station sources, simplifying the written information on the maps and directing customers to other sources may help to minimise confusion



Response to maps in stations

Placement of the posters:

Each station explored in the intercepts presented a different scenario for how customers interact with the maps. Taking these variations into account is important for understanding when and how customers come into contact with the maps, and how this fits into their wider experience of the system during the weekends

There are three main factors that determine how useful the maps are:

- ***When they are encountered (weekday vs. weekend)***

For all customers, the maps only become relevant at the weekend when most engineering works are taking place:

- Familiar customers associate planned engineering works with the weekend and are less likely to expect them at other times
 - *“If there are closures during the week, I’d just assume that they aren’t to do with the upgrades; it’s more likely to just be something that’s gone wrong”*
 - *“I don’t really look for this information until maybe Friday to know what is happening over the weekend”*
 - For infrequent and unfamiliar customers, the impact of the maps during the week is often negative as they are not planning for upcoming weekend journeys but are focussed on their current need in the moment. The maps therefore, distract from general/current Tube information
- ➔ Maps are only relevant to most customers at the weekend – the rest of the time they are ignored or distracting

- ***Where they are located in the station***

- The maps worked to maximum effect when they were placed among the flow of traffic as this resulted in people glancing at the poster as they filtered around it (eg Earl’s Court)
- Customers benefit most from this information when it is presented on entry, before the barriers and prior to committing to a journey that potentially needs to be re-planned (eg unlike South Kensington).
- Maps placed on exit are not helpful for current journeys (as customers have already arrived) and most are not using them to planning for future / weekend journeys and customers are more focused on their destination/leaving the station by this point of their journey

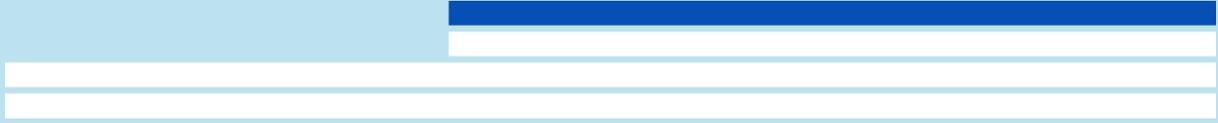
- **Proximity to other sources of information:**

In their current form, the maps require customers to compare to normal Tube map in order to re-plan their route

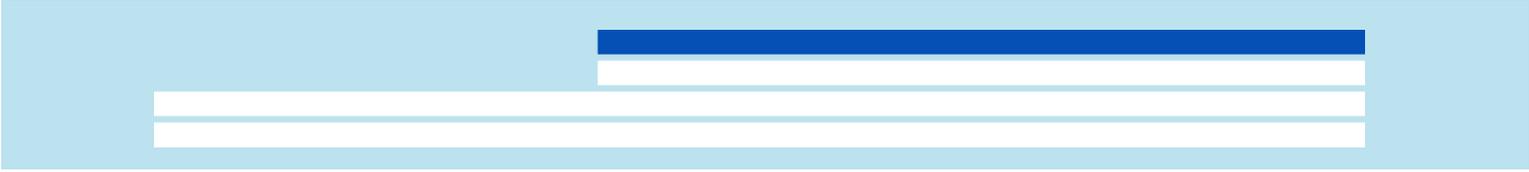
- In some cases customers have to travel to a different area of the station to look at larger Tube maps but lose the ability to make sense of how the closures impact their journey as they have to memorise the planned closures map first (eg King's Cross and Earl's Court)
 - When placed on their own (without access to any other nearby information sources) unfamiliar customers actually try to use the incomplete Engineering poster as a regular map without success (eg South Kensington)
 - Conversely, the map loses impact when placed in and amongst all other information as customers don't know where to start and are ultimately put off (eg Baker Street)
 - Having the posters placed near to staff around the entrance barriers gives customers an opportunity to seek clarification/further explanation - especially for infrequent and unfamiliar customers - providing additional reassurance for familiar customers (eg King's Cross)
- ➔ A challenge to find a happy medium between helping customers to contextualise news of the engineering works amongst other relevant information relating to their journeys without overloading them with too much information

Maps currently supporting staff in serving customers during weekends:

- Staff members play a key role in explaining engineering works to customers and are often the first to communicate that there are engineering works. Staff members value the maps for helping them explain the closures; they are using the maps in two ways:
 - To inform and remind themselves about the status of the network:
 - *'This changes every week so sometimes it is nice to have it here to look over at just so I am sure I am giving the correct information to customers when they ask'*
 - As a tool to help customers reroute:
 - *'It's good for us as a visual aid to explain the closures, especially at the weekends when there are lots of tourists who don't always have a good grasp of English. At least with the map, we can point at it and use hand signals to show what's not open'*
- ➔ Maps playing an important role in helping staff to explain closures

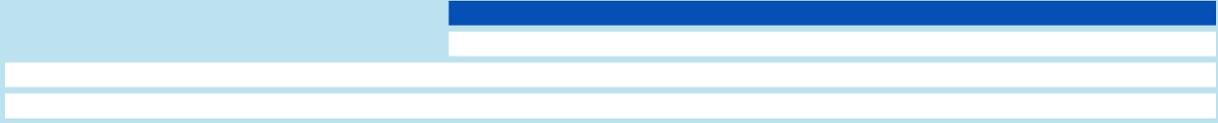


**Customer checking
behaviours in context**



Customer checking behaviours vary according to frequency and familiarity with the system:

- **Familiar / frequent customers** have more working knowledge about the system / engineering works and are accustomed to checking before they travel (via online and mobile apps).
 - These customers use a wide range of resource available to them
 - Most check online shortly or just before travelling on weekends
 - Information in stations is sometimes used to confirm or reassure on the go
 - *“I’ve seen the posters but I kind of ignore them because I just follow the mobile app – with that there is somebody at the end of the computer updating things as it happens”*
 - *“I might glance at them as I walk by, but normally it just confirms what I have already seen online”*
- ➔ Most customers check on the day of travel, or 1-3 days before (weekend Checking Behaviour – TUP), eg if making an important journey
- ➔ If they encounter problems once at the station, familiar customers usually understand the network well enough to be able to re-route their journeys if needed
- **Infrequent customers** with some knowledge of system (often visitors) actively look out and check for information in the ticket hall before going through the barriers
 - From some experience of travelling in London, they expect there may be closures
 - Welcome information in stations as they are less likely to have checked before travelling
- ➔ Most likely to actively seek out in-station information ‘in the moment’ prior to entering the system
- **Unfamiliar/inexperienced** (first time visitors and tourists) expect to journey plan their journey once they arrive at the station
 - Often not expecting closures and do not understand or recognise a need to re-route from the normal Tube map until they have started their journey
- ➔ Can easily miss or misunderstand information in station
- ➔ Once they recognise a need to re-route, they tend to seek information that allows them to complete the next step of their journey



Conclusions and recommendations

Leveraging information about engineering works in stations for those who need it:

The current engineering works map cannot be considered as a complete solution to meeting customer needs in the station. It is unlikely that a single poster could stand alone to meet customer needs, given the complexity of the network, the range of closures, and the range of customer and journey types.

The posters play an important role in helping staff to explain closures to customers and a role in alerting customers to closures.

The posters should:

- ➔ Be unambiguous and require minimal interpretation: the current version is marginally the preferred option but it is the least-worst option rather than an ideal option
- ➔ Ideally have simpler text and potentially adopt the layout of the rainbow style posters (or positioning adjacent to the rainbow posters as at Earl's Court) – this could well be unfeasible given the complexity of the system and the closures
- ➔ Be positioned in the right places
 - Near (within eye/ear shot) to other key information sources required when rerouting – LU staff, main Tube map etc
 - Before the barriers and aligned to the flow of people traffic
 - Possibly made available for customers towards the end of the week and at weekends, and in a prominent location
- ➔ Given as a hand out to staff (and potentially customers on request)
- ➔
- ➔
- ➔
- ➔
- ➔ **Confidentiality**
- ➔
- ➔ Please note that the copyright in the attached report is owned by TfL and the provision of information under Freedom of Information Act does not give the recipient a right to re-use the information in a way that would infringe copyright (for example, by publishing and issuing copies to the public).
- ➔
- ➔ Brief extracts of the material may be reproduced under the fair dealing provisions of the
- ➔
- ➔ Copyright, Designs and Patents Act 1988 for the purposes of research for non-commercial purposes, private study, criticism, review and news reporting.
- ➔
- ➔ Details of the arrangements for reusing the material owned by TfL for any other purpose can be obtained by contacting us at enquire@tfl.gov.uk.