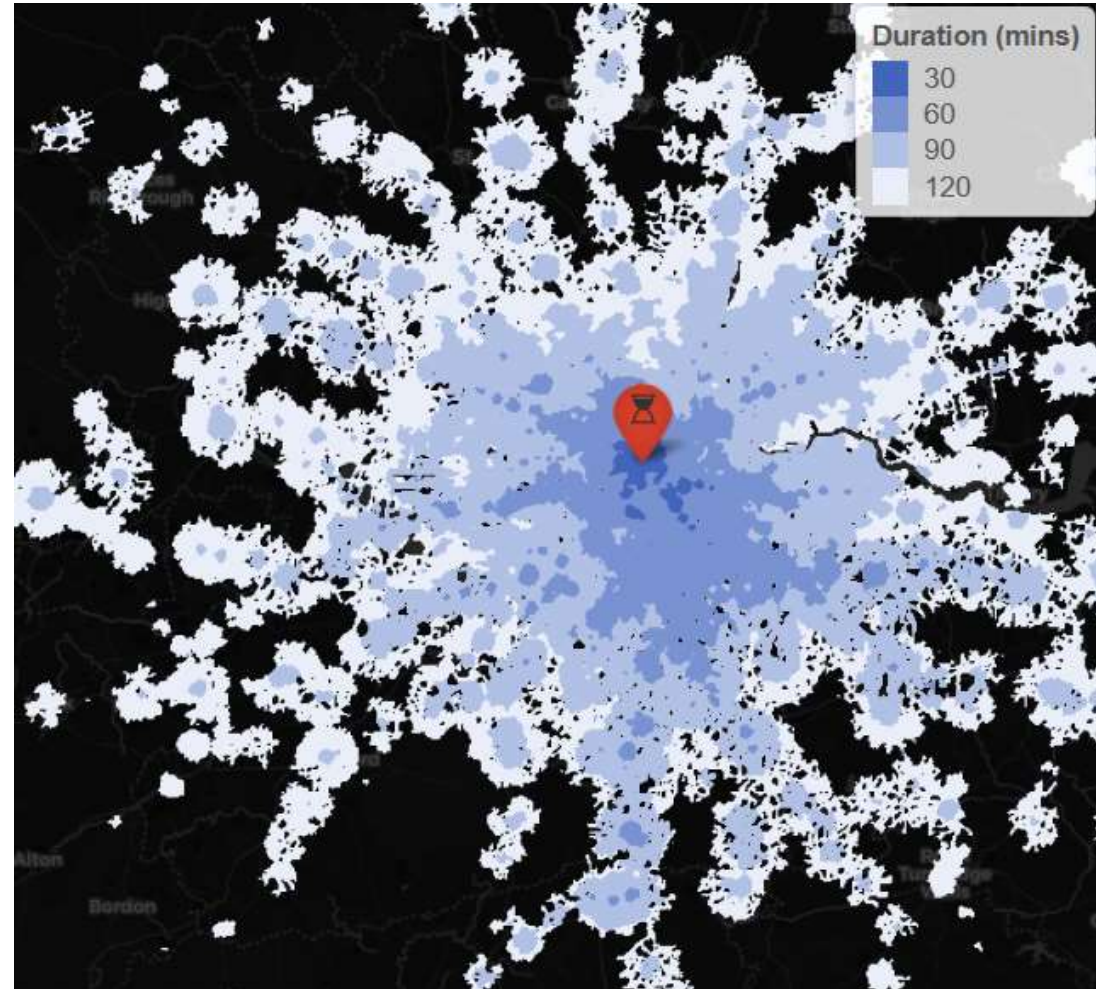


Journey Time Analysis at the NAO

Dr Marc Adams & Dr Helen Roberts

Introduction

- NAO's journey into journey time analysis
- Considerations in conducting journey time analysis
- Changing the network
- Beyond the analytical - other considerations of access



NAO's journey into journey time analysis

It all started with an at the desk conversation:

“DWP have announced they are transforming their Job Centre Estate. It would be really interesting if we could understand what the impacts on claimants will be. Can we do that?”

And that started some interesting thinking and conversations among some in the analytical community.

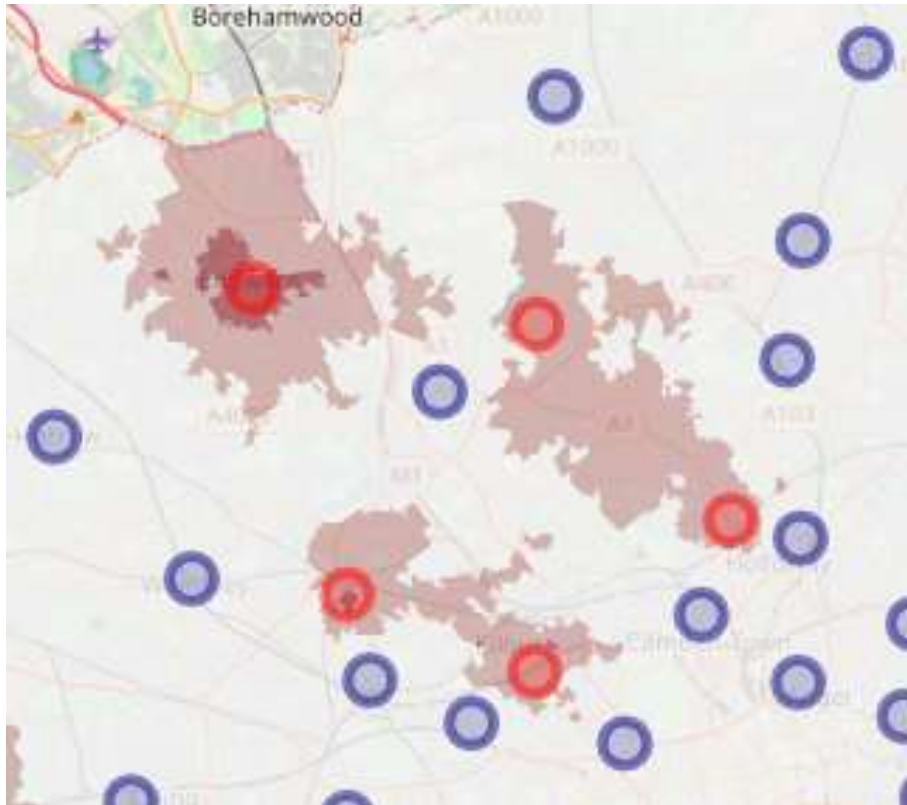
- How do we do that?
- What data would we need?
- Do we know where claimants are?
- Does the current location of even matter claimants matter?
- What modes of transport do we consider?
- Do we model the propose transformation plans we model the optimal configuration of the estate
- What would the output even look like?
- What's the client done or doing?



Modelling impact of DWP's estate transformation

With help of DfT's journey time accessibility team:

- Interactive app and an audit insight
- Public transport journey times to Job Centres before and after transformation and the impact.



Why do it at all?

In auditing the economy, efficiency and effectiveness of public service delivery it is important to remember that all public services are delivered somewhere.

Accessibility is a key driver to delivery of front line public services in and of themselves but also feeds into many other areas of policy delivery:

- Reduce carbon emissions and move towards achieving net zero by 2050 (DEFRA, DfT, BEIS)
- Deliver an ambitious industrial strategy (HMT and BEIS)
- Create socially and economically stronger and more confident communities (MHCLG)
- Improve air quality (DEFRA, DHSC and DfT)
- Deliver a strategy to support disabled people and people with long-term health conditions to find and remain in work (DWP and DfT)

To name but a few areas...

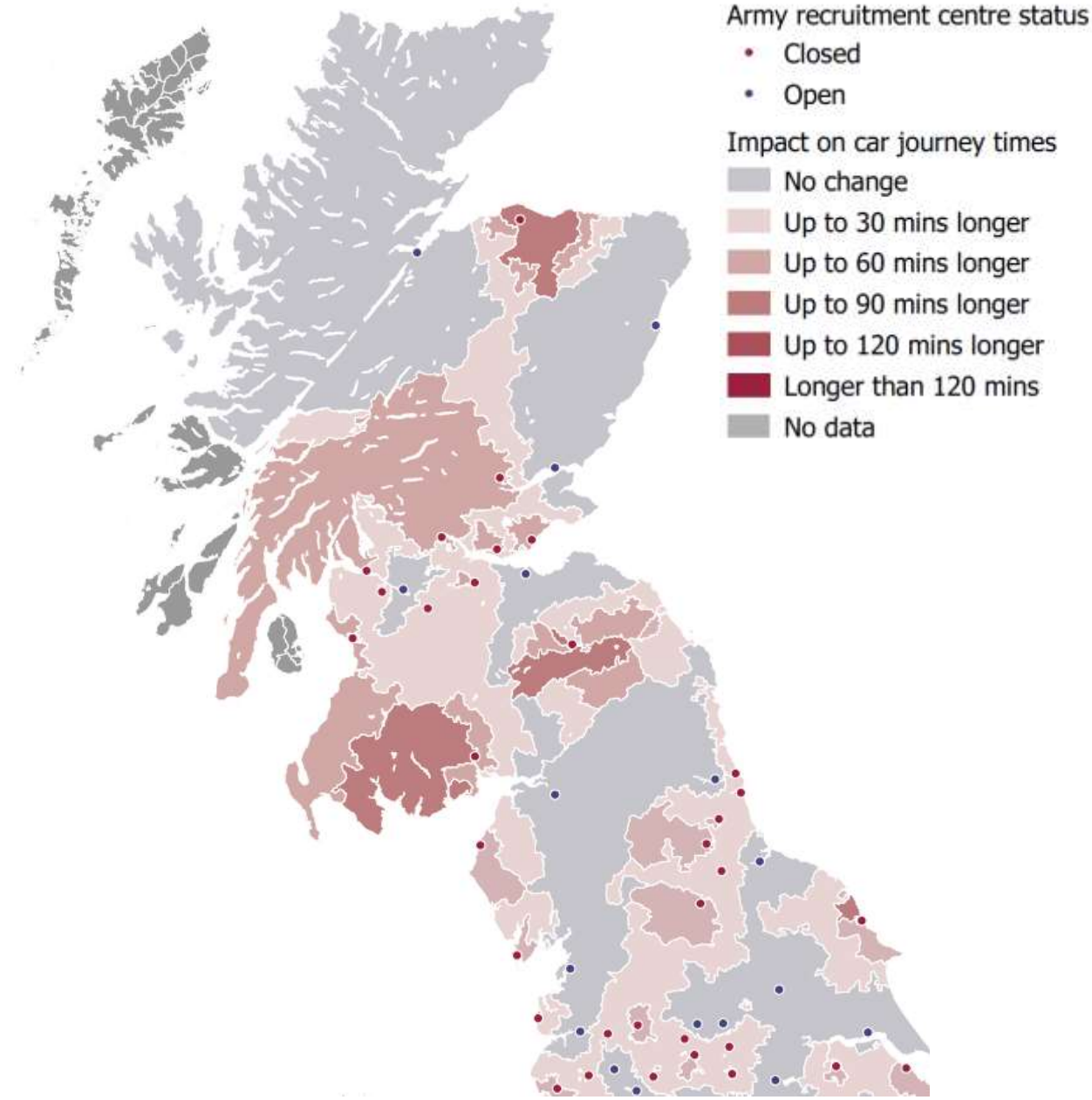
Closure of Army Recruitment Centres

“The Army has not analysed the impact of closing local recruitment offices on enlistment numbers. In 2016, the Army’s consultants indicated that closing offices had not made any significant difference to the number of applications.”

“Our review of Army data shows that the closures have increased car journey times to local recruitment centres (Figure 5).”

“In addition, between 2010-11 and 2016-17, the reduction in enlistments in Scotland and the north of England correlated with these closures.”

Source: Investigation into the British Army’s Recruitment Partnering Project, 2018



Audit of HMCTS use of journey time modelling

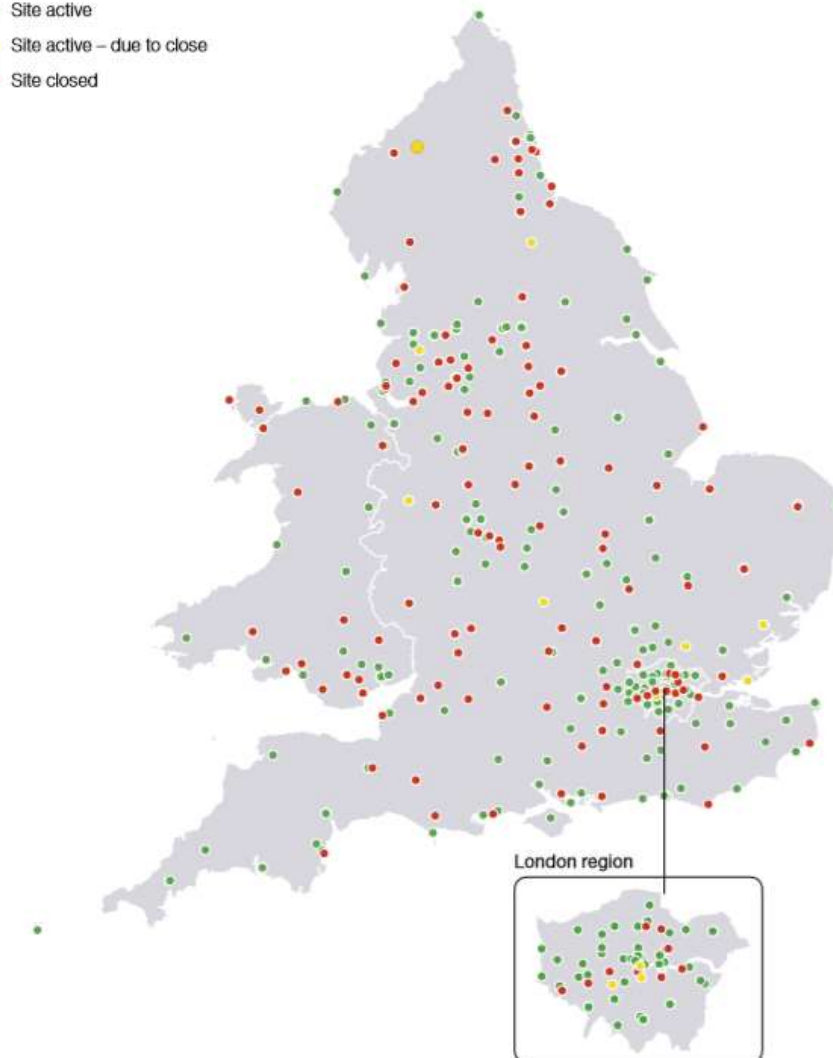
- Audited HM Courts and Tribunals Service use of journey time analysis in planning its estate transformation.
- HMCTS has assessed all closures to date against three key principles:
 - Access to justice (Ability to access and alternatives to mitigate)
 - Value for money (costs of running and sale proceeds)
 - Operational efficiency (Ability to upgrade or use sites more flexibly)
- “Broadly, it aims to examine three themes around access to justice, costs to court users and fairness, drawing on a range of methodologies.”
- “it has not yet determined how these criteria will be balanced against each other in selecting sites to propose to ministers for public consultation.”
- “To ensure completeness we have reviewed HMCTS’s listing against the online court and tribunal finder and identified a number of discrepancies.”

Figure 10

The HM Courts & Tribunals Service (HMCTS) estate in England and Wales, as at March 2019

There are currently 341 active courts and tribunals in the estate

- Site active
- Site active – due to close
- Site closed



Considerations for journey time analysis

Defining the parameters for the analysis is key

Population

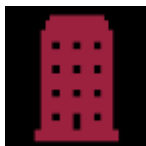


- Do you need a population? (population unconstrained accessibility)
- Containerisation of population (OA, LSOA, other?)
- What are the accessibility characteristics of your population and how might these change the network flow dynamics e.g:
 - Walking/waiting times
 - Modality
 - Max journey length

Considerations for journey time analysis

Defining the parameters for the analysis is key

Destination

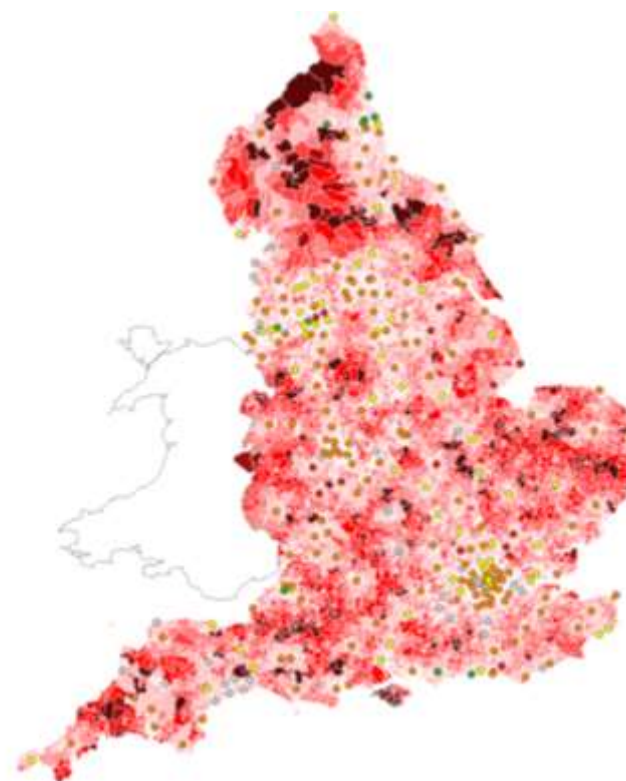


- Where are the destination sites
- Is access to a location or access to a service?
- Are all locations equal?
- Are there alternative service provisions?

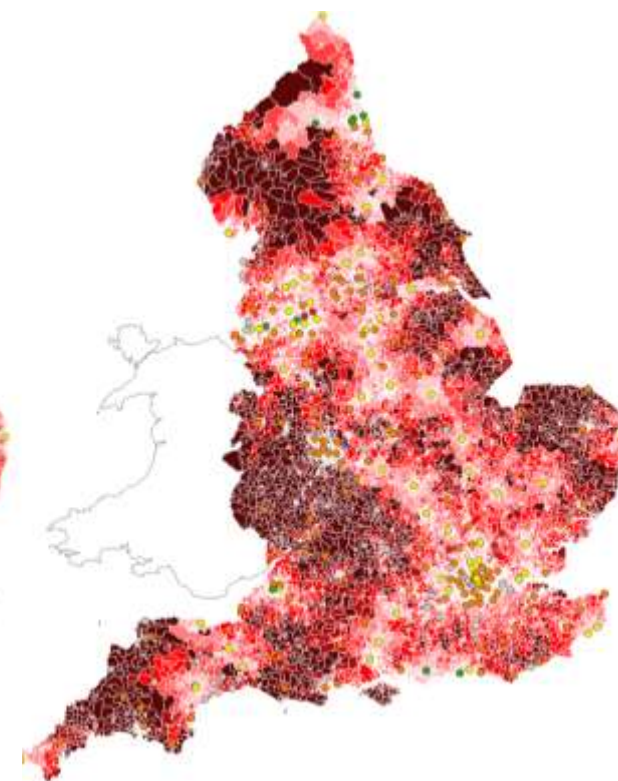


Journey times by public transport to hospitals in England

Any

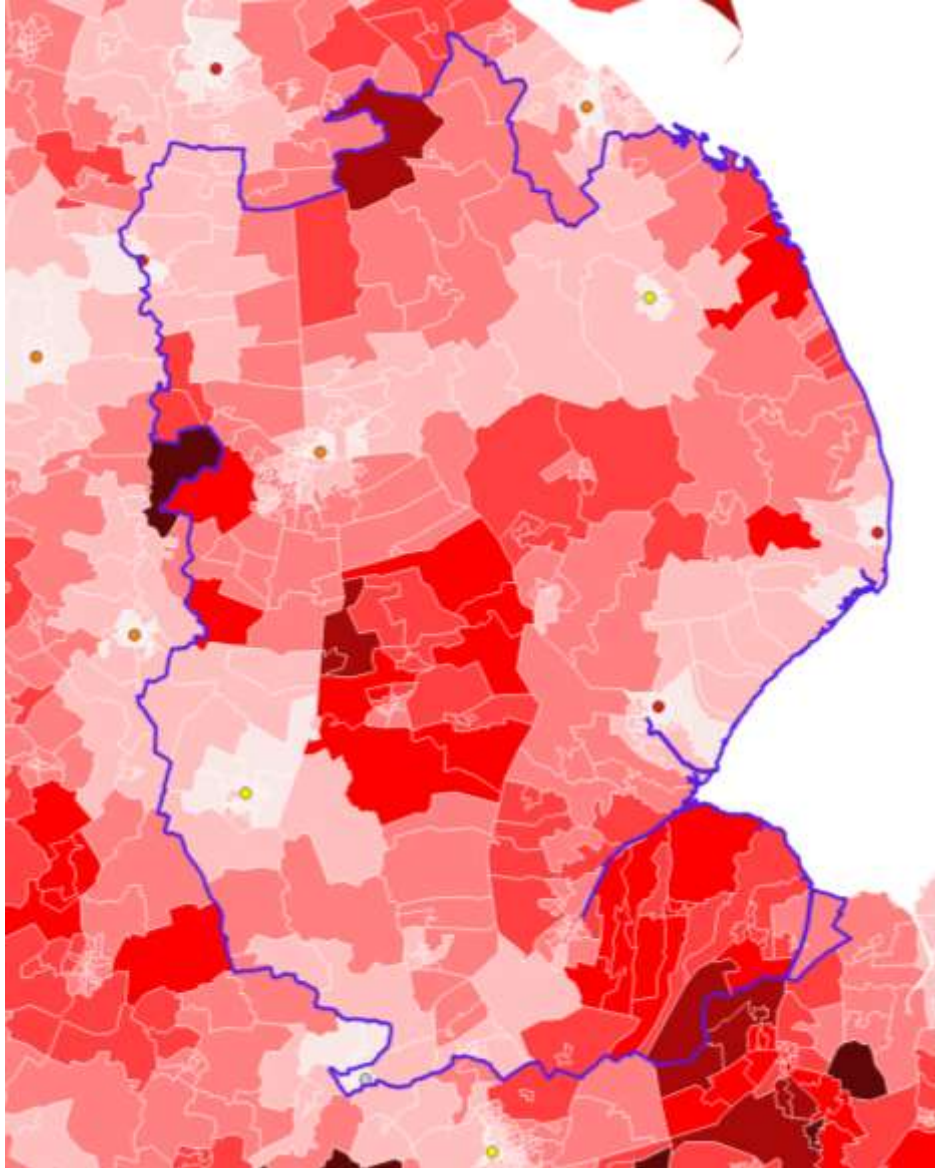


CQC rated
outstanding / good

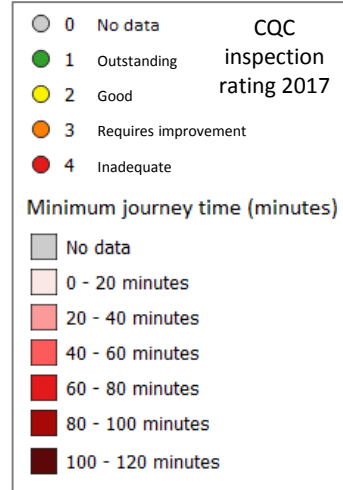
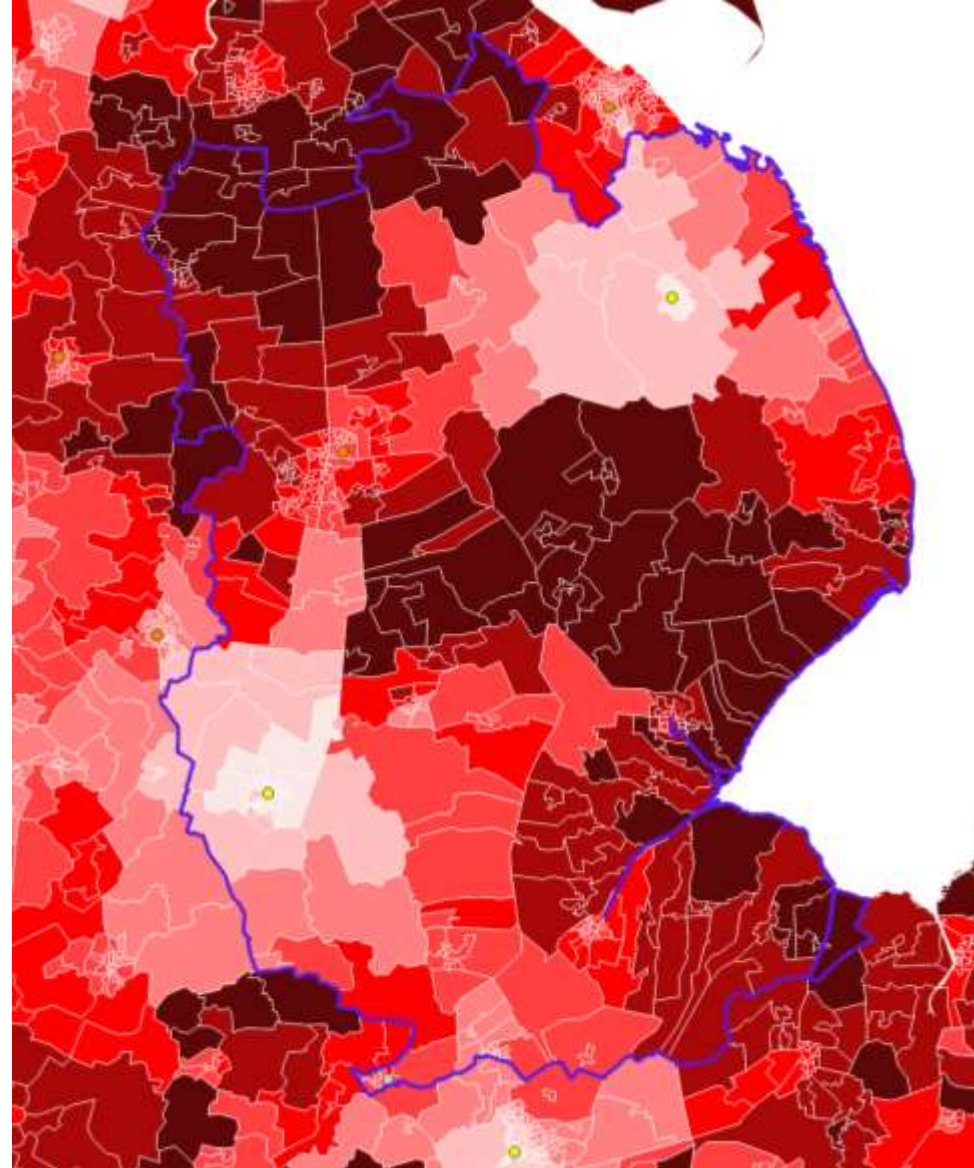


Considerations for journey time analysis

Journey times by public transport to any hospital in Lincolnshire County



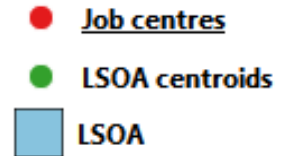
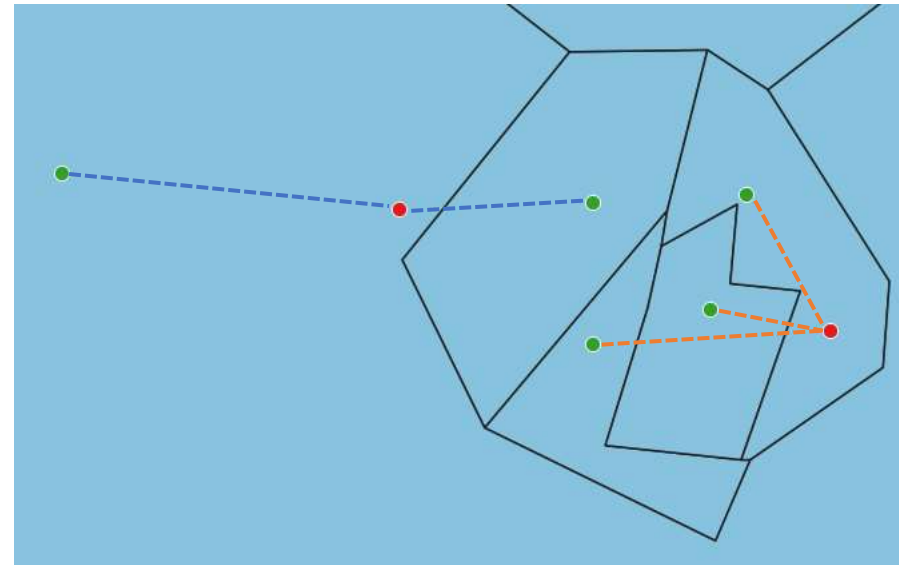
Journey times by public transport to good and outstanding hospitals in Lincolnshire County



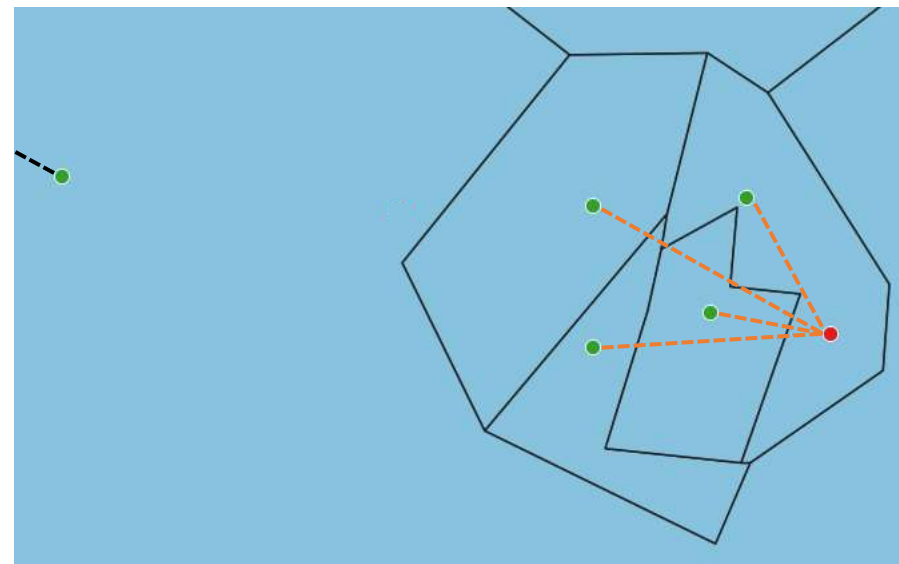
Changing the network

Accessibility, whilst useful is only part of the story.

- If a department closes service locations in their network there may be some questions we might ask:
 - Where will users go? (Accessibility question)
 - Will all users go to the same location? (Preference question)
 - How many users will go where? (Volume question)
 - Is there sufficient capacity in the remaining network? (Capacity question)
 - What assumptions have been built into that planning? (Robustness of capacity question)



ID	Num	Cap
1	100	150
2	200	250



ID	Num	Cap
1	Closed	
2	275	250

Jobcentre 2 becomes over capacitated by closure of Jobcentre 1

Other considerations

- Cost
 - Cost has an important role to play in access to service
 - But the lack of comprehensive data on public transport costs limits evaluation of access to services where cost may be a factor.
 - Proxy measure is public transport but is this sufficient?
- Service catchment areas
 - Highly variable over time and can be a primary determinant of access (capacity question)
- Journey time analysis assumes journey to the quickest, but this may ignore:
 - Other user preferences and/or
 - Cultural barriers to travel and accessing a service
- Non-typical transport services not captured in traditional modelling data and how these might be evaluated.



Conclusion

- Journey time analysis can be an essential part of design, monitoring and implementation of public services
- By extension the NAO is interested in journey time analysis as part of the economy, efficiency and effectiveness of public service delivery.
- Specification of the analysis is key (just like any other modelling problem)
- Journey time analysis on its own is rarely the whole answer