Appendix – Travel Time Modelling

1. Rationale

Early in the consultation period, following feedback from early online survey respondents and focus group participants, it became apparent that a key risk identified was the additional time it would take to travel from a family home to a new centre. In all options there was a reduction in centres remaining open, and this would mean a likely greater travel time for some families. To estimate those impacts the council developed a travel time model using existing centre use information alongside travel time data and local area deprivation data.

2. Methodology

The location, demographics and current service use of the existing centre user base was modelled to estimate the potential travel time impacts of the options proposed in the consultation. To further the analysis, travel time changes were then matched to levels of deprivation in the areas where current centre users travel from (their registered home address).

Two separate travel time models were created - one to assess access for people registered at Children's Centres for group work sessions and one for current and previous childcare users. The two models were created to account for the fact that not all existing centres were used for childcare.

The travel time models used Google Maps data to calculate walking, public transport and drive times from households to children's centres at both peak and off-peak times of day. With this, the models estimated the best combination of location of centres in a 3-centre model, as well as the travel time differences.

3. Travel time impacts where Option 1 was the preferred option

Reducing the number of centres open would increase the travel time for some families if they move from using an existing centre that was closer to home than a new centre that was kept open.

The summary impacts if Option 1 were to be the preferred option are:

- The following proportion of attendees could arrive within 30 minutes at peak time using the following modes of transport:
    - 72% of group session attendees could walk to a centre
    - 93% of group session attendees could take public transport to a centre
    - 64% of childcare attendees could walk to a centre
    - 71% of childcare attendees could take public transport to a centre
- 100% of group session and childcare attendees could drive to a centre within 13 minutes at peak time.

The proportion of attendees able to attend sessions within 30 minutes of travel time from home by walking or public transport would reduce in the scenario of Option 2 or Option 3 where fewer centres were kept open.

4. Modelling a scenario: What would the optimum combination of centres be if 3 centres was the preferred number remaining open

The travel time models developed were then used to consider what the optimum combination of centres would be if 3 centres were the preferred number remaining open. Based on early results from the online survey and focus groups it was likely that Option 1 would be selected by respondents as the preferred option, and therefore the modelling was extended further to inform the decision.

It should be noted that the modelling considers the variable of travel time. There are a wide range of other factors to consider in deciding the final response to the consultation.

For group session attendees, if 3 centres were to remain open, then to optimise travel time the best configuration of centres remaining open would-be Romsey Close, Elliman Avenue, and St Andrews Way.

Option 1 configuration	Optimum configuration
Chalvey Grove	Elliman Avenue
Romsey Close	Romsey Close
Penn Road	Saint Andrews Way

For childcare attendees, if 3 centres were to remain open, then to optimise travel time the best configuration of centres remaining open would-be Romsey Close, Chalvey Grove, and Monksfield Way.

Option 1 configuration	Optimum configuration
Chalvey Grove	Chalvey Grove
Romsey Close	Romsey Close
Yew Tree Road	Monksfield Way

The difference in the total travel times for attendees between the Option 1 configuration and the optimum configuration is outlined in the full results section below.

5. Full travel time modelling results

5.1 Analysing the impacts on users of group session for families and children

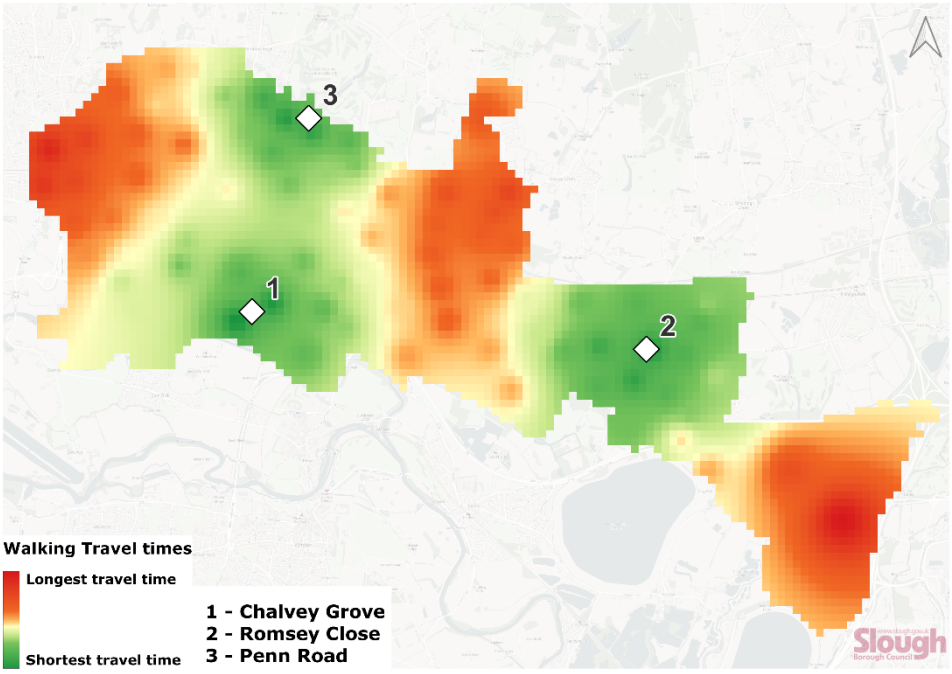
All Children's Centres across the borough currently have the facility to provide group work.

The three-centre model with the best access for group work users is the same for both peak and off-peak travel times, therefore only peak hours results are included here for information.

Walking – peak hours

Access within (minutes)	Option 1 - CG, RC, PR	Optimum - EA, RC, SAW
10	22.1%	31.0%
20	50.8%	64.8%
30	71.5%	91.7%
40	91.9%	97.0%
50	97.0%	97.0%
60	100.0%	100.0%

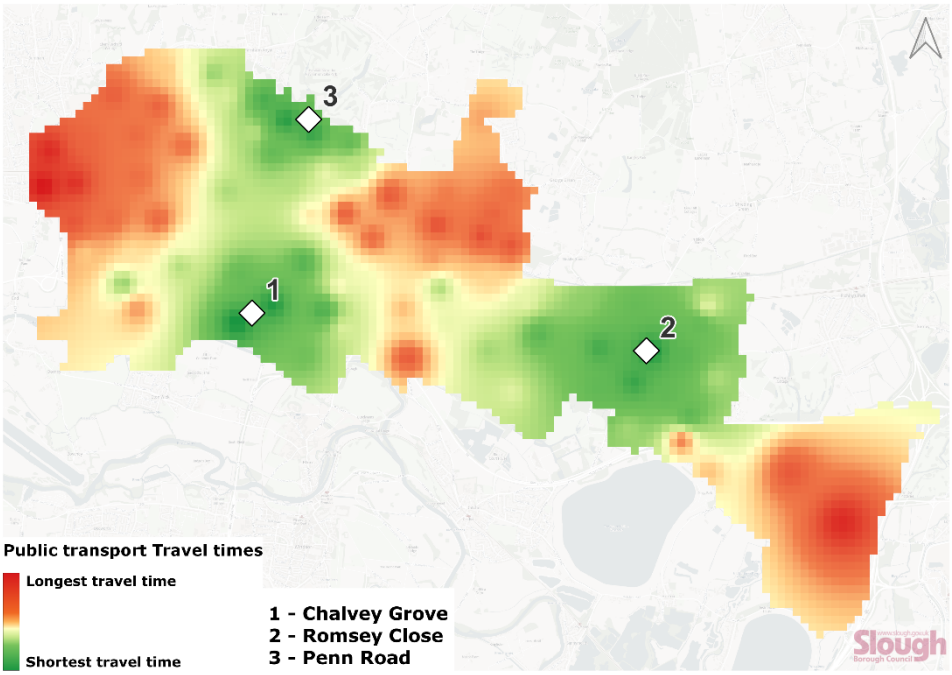
Figure 1: Walking travel times for option 1



Public Transport – peak hours

Access within (minutes)	Option 1 - CG, RC, PR	Optimum - EA, RC, SAW
10	9.6%	14.7%
20	59.6%	71.9%
30	92.6%	97.0%
40	100.0%	100.0%

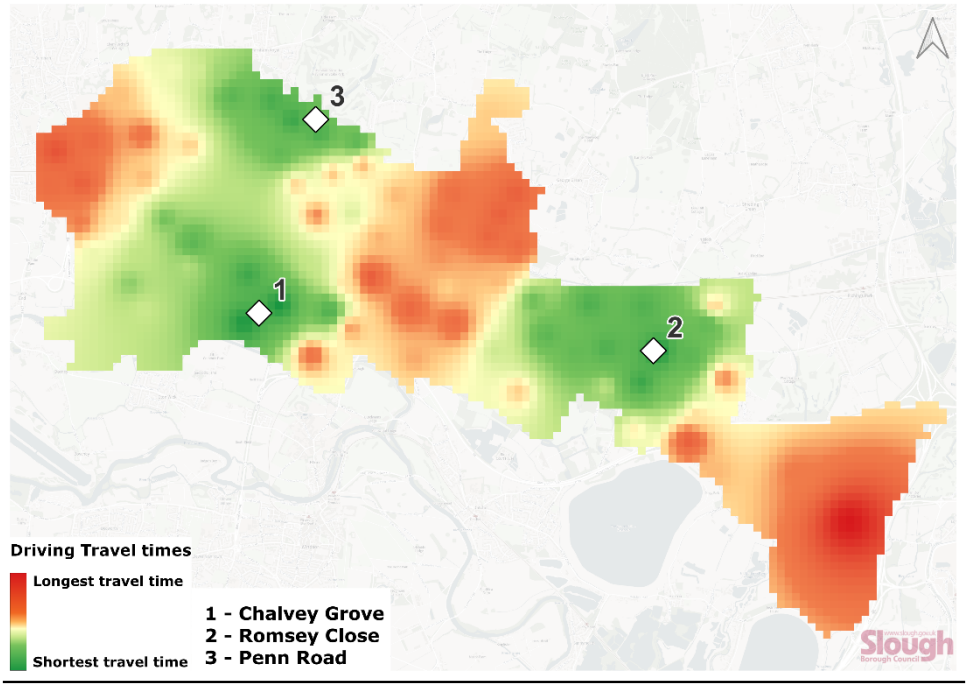
Figure 2: Public transport travel times for option 1



Driving – peak hours

Access within (minutes)	Option 1 - CG, RC, PR	Optimum - EA, RC, SAW
1	2.5%	5.8%
2	5.9%	10.6%
3	14.0%	21.8%
4	25.2%	37.3%
5	32.1%	49.7%
6	42.7%	59.6%
7	68.6%	79.1%
8	82.4%	92.0%
9	95.8%	97.0%
10	97.0%	97.0%
11	97.0%	97.0%
12	97.0%	97.0%
13	100.0%	100.0%

Figure 3: Driving travel times for option 3



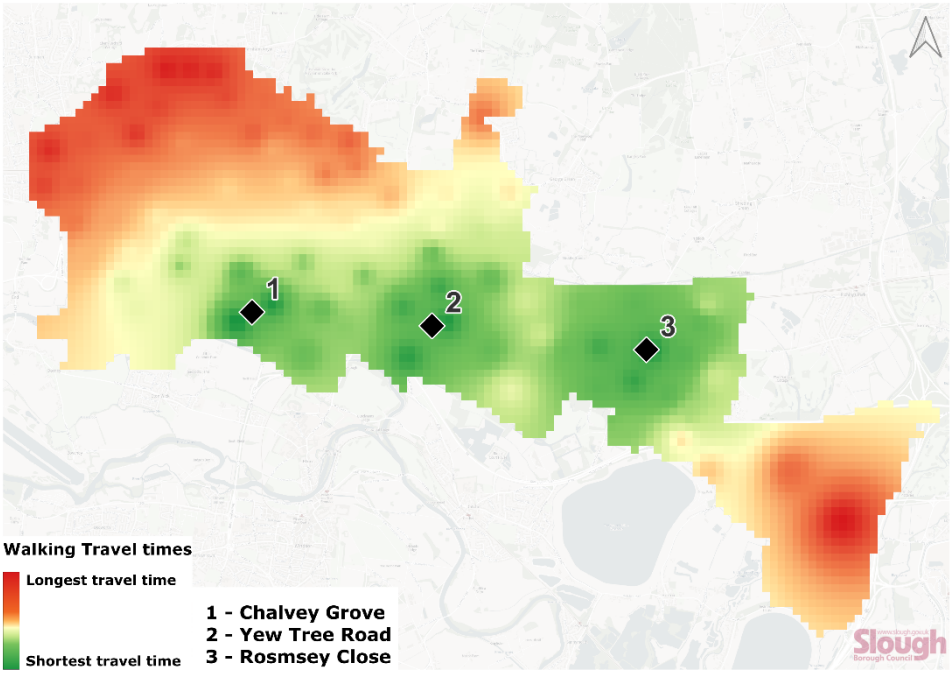
5.2 Analysing the impacts on users of childcare services for families and children

Childcare cannot currently be provided from Saint Andrews Way and Elliman Avenue, and therefore these centres were removed from the model when assessing impacts.

Walking – peak hours

Access within (minutes)	Option 1 - CG, RC, YTR	Optimum - CG, RC, MW
10	22.7%	28.2%
20	46.1%	57.7%
30	63.5%	82.6%
40	84.2%	96.9%
50	94.7%	98.2%
60	100.0%	100.0%

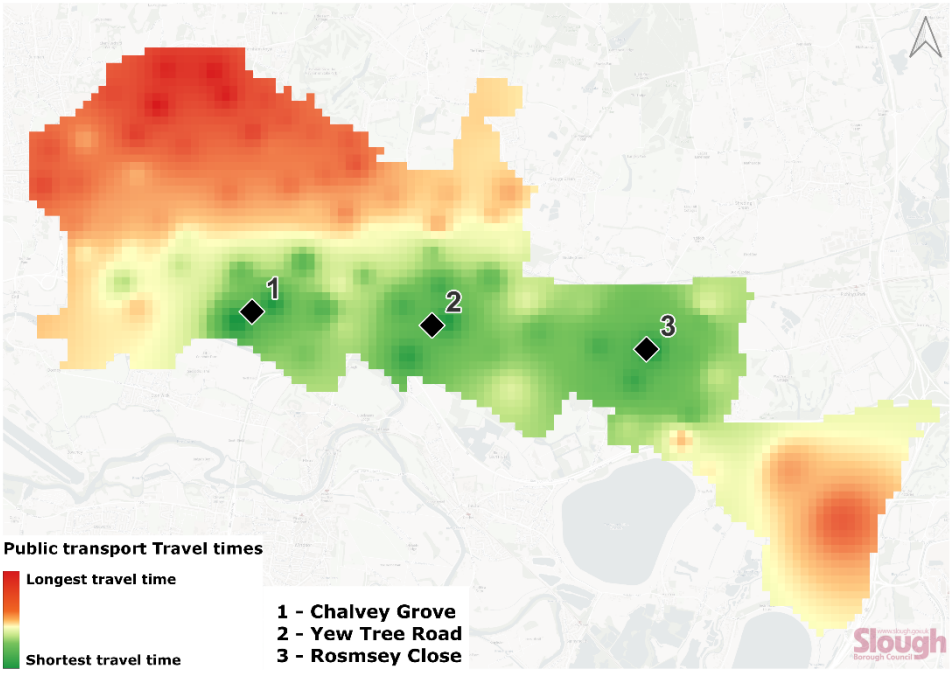
Figure 4: Walking travel times for option 1



Public Transport – peak hours

Access within (minutes)	Option 1 - CG, RC, YTR	Optimum - CG, RC, MW
10	16.5%	23.3%
20	44.5%	57.6%
30	71.1%	97.6%
40	100.0%	100.0%

Figure 5: Public transport travel times for option 1



Driving – peak hours

Access within (minutes)	Option 1 - CG, RC, YTR	Optimum - CG, RC, MW
1	7.4%	13.4%
2	12.8%	17.5%
3	24.9%	30.1%
4	30.5%	38.4%
5	37.6%	53.6%
6	48.1%	62.8%
7	56.0%	76.1%
8	67.9%	85.2%
9	75.0%	98.4%
10	80.2%	98.7%
11	91.2%	98.7%
12	98.7%	98.7%
13	100.0%	100.0%

Figure 6: Driving travel times for option 1