

Balgray Link

Baseline Report



15 July 2022

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Executive summary

This project¹ aims to increase active travel in East Renfrewshire by constructing a 2km segregated route between Barrhead and Newton Mearns and associated links. This report summarises the baseline monitoring for the proposed route along Aurs Road, which includes plans to straighten the road to improve visibility and provide a segregated cycle lane. This section of Aurs Road is currently national speed limit and narrow and winding in character. A current path around Balgray Reservoir in Dams to Darnley Country Park is used for leisure with 100% of people surveyed reporting their trip purpose was 'recreation'. There are currently no on-road cycle paths in the area, and many roads do not have footpaths.

A number of monitoring tools were used to gain insight into active travel and vehicle traffic in the area surrounding Balgray Reservoir:

- Six automatic traffic counts (ATC)
- Video manual count (VMC)
- A Route User Intercept Survey (RUIS), including a manual count
- Video monitoring and analysis of a pedestrian crossing

From this monitoring, it is clear that vehicle traffic is dominant. For example, a crossing analysis at the intersection between Aurs Road and the Balgray Reservoir traffic-free path observed 30 interactions between vehicles and pedestrians/cyclists. There were no instances of vehicle yielding behaviour in these interactions.

Among users of the traffic free path around Balgray Reservoir, 100% had driven to the path to then either walk or cycle around the reservoir. This may indicate that path users do not feel safe to use active travel on the roads around the traffic-free path.

The construction of a segregated link will increase safety levels for existing path users and encourage increased levels of active travel between the two towns.

¹ ERC-PFE-2815 Balgray Active Travel Link Construction

Introduction

This short report presents the findings of a study into the transport patterns in the area around Balgray Reservoir in the Dams to Darnley Country Park. In early to mid-2019 a number of tools were used to monitor the area where new cycling and pedestrian infrastructure is scheduled to be built. These included:

- Six automatic traffic counts (ATC)
- Video manual count (VMC)
- A Route User Intercept Survey (RUIS), including a manual count
- Video monitoring and analysis of a pedestrian crossing

Figure 1 shows the area the scheme encompasses. This report focuses mainly on the route along Aurs Road and boardwalk overlooking the reservoir which form phase one of the project. Phase two of the project is currently in the concept design phase and includes a number of links between the Aurs Road route and the town centres of Barrhead and Newton Mearns.

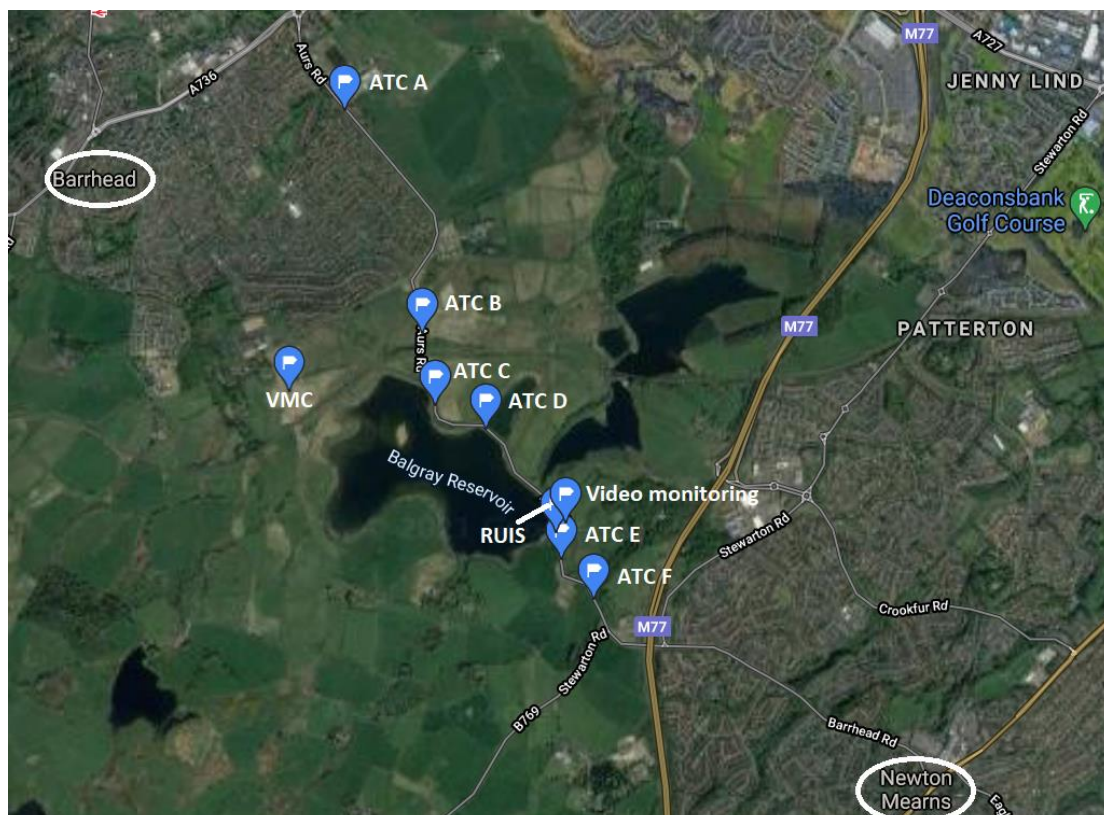


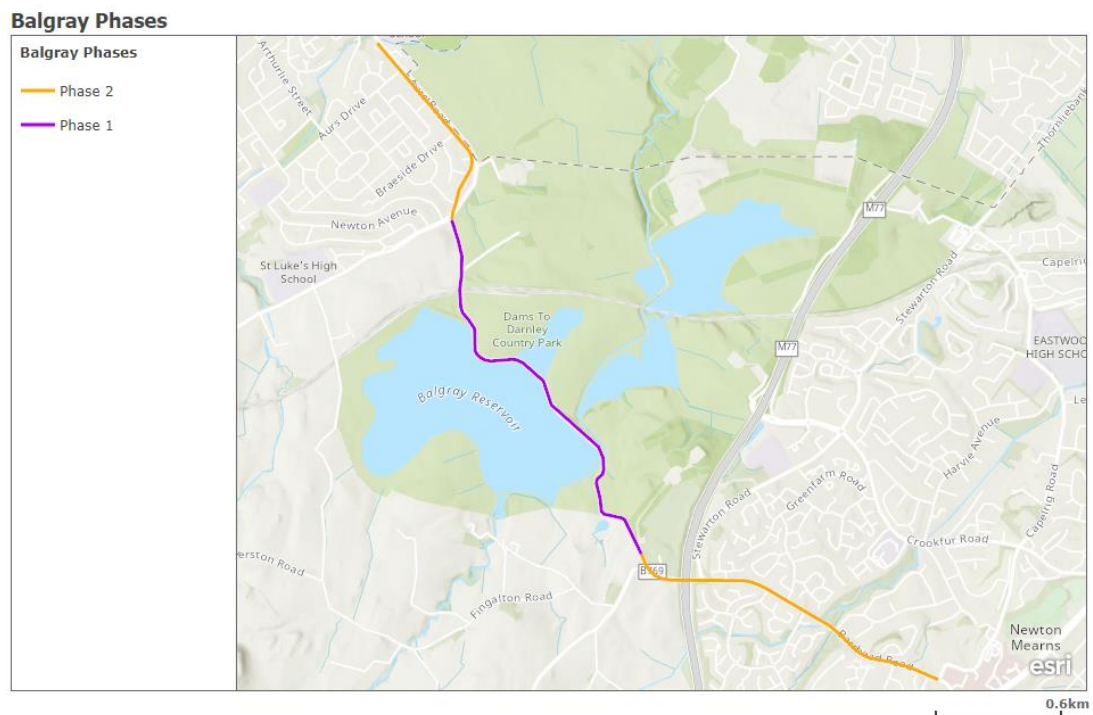
Figure 1: Scheme area and monitoring sites

Scheme overview

The Balgray Active Travel Links scheme involves the construction of a two kilometre segregated link between Barrhead and Newtown Means (circled on the Map, Figure 1). This link consists of a 700m boardwalk overlooking the reservoir as well as connecting paths to Barrhead and Newton Means along Aurs Road. The scheme is the first part of an intended larger project, East Renfrewshire Council's Strategic Cycling Corridor 5, and therefore the paths will intercept with other corridors in the developing network. The map below shows the extent of the two phases.

Currently, there is minimal cycling and pedestrian infrastructure in the area. Barrhead and Newtown Means are connected by a single carriageway (Aurs Road – where the ATCs were carried out) with no pavements running through the area. There are some shared use, traffic free paths around the reservoir (where the RUIS was carried out), but these do not connect to any other active transport infrastructure.

Construction on the project is set to begin in August 2022.



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Findings

In the first section of the report, vehicle traffic patterns are analysed, including interactions between cars and walkers/cyclists. In the second section, cycling and walking patterns in the area are analysed.

Vehicle traffic patterns

Vehicles dominate the transport environment in the scheme location, as shown by the ATCs and video monitoring.

Zero cycles (or motorcycles – ATCs cannot accurately differentiate between the two) were counted across all six ATC sites (see Figure 1 for site locations ATC A to ATC F). As seen in Figure 2, cars and vans accounted for approximately 95% of all vehicles counted at each ATC site.

Video monitoring was carried out at the intersection between Aurs Road and an off-road pedestrian and cyclist path. This intersection, during the video monitoring time period, was not particularly busy with either motor vehicle traffic or people travelling actively; therefore, less than 60% of people crossing the road had to stop for vehicles to pass before they crossed (the rest would only hesitate, checking the road was clear, and then cross). However, despite the overall low traffic volume, when vehicles and pedestrians or cyclists did interact, the vehicles never yielded: out of 30 interactions, zero vehicles yielded.

This demonstrates the current dominance that motorized traffic has in the area. As discussed below in the '[Active travel in the area](#)' section, cyclists and pedestrians may not feel safe from the motorized traffic on these routes, and this could partially explain the low numbers of active transport users observed.

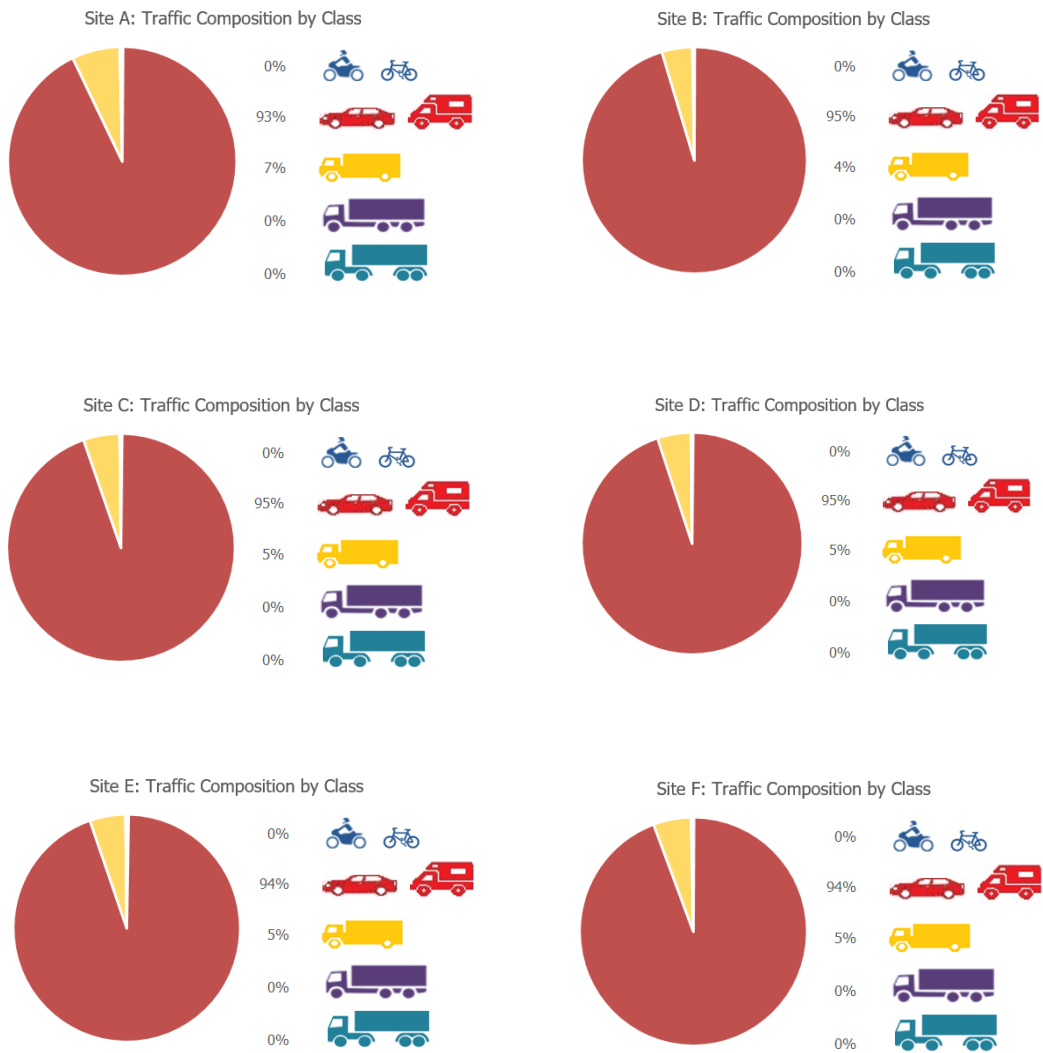


Figure 2: Traffic Composition by Class - all ATC sites

Traffic Speed

The ATC data also provided insight into traffic speed along Aurs Road. At site ATC A – Aurs Road near Aurs Place – the speed limit was 30mph. At all other sites, the speed limit was 60mph. However, as shown in Figure 3, the average 7 day speed across all sites was around 30mph. Part of the Balgray Boardwalk scheme is to reduce the speed limit in the area to 40mph where needed. The ATC data indicates this would not have a major impact on vehicles travelling on Aurs Road. Furthermore, the average low traffic speeds could indicate that this is an area where traffic conditions are not unsuitable for active travel, and if better active travel infrastructure was provided, cycling and walking rates could increase.

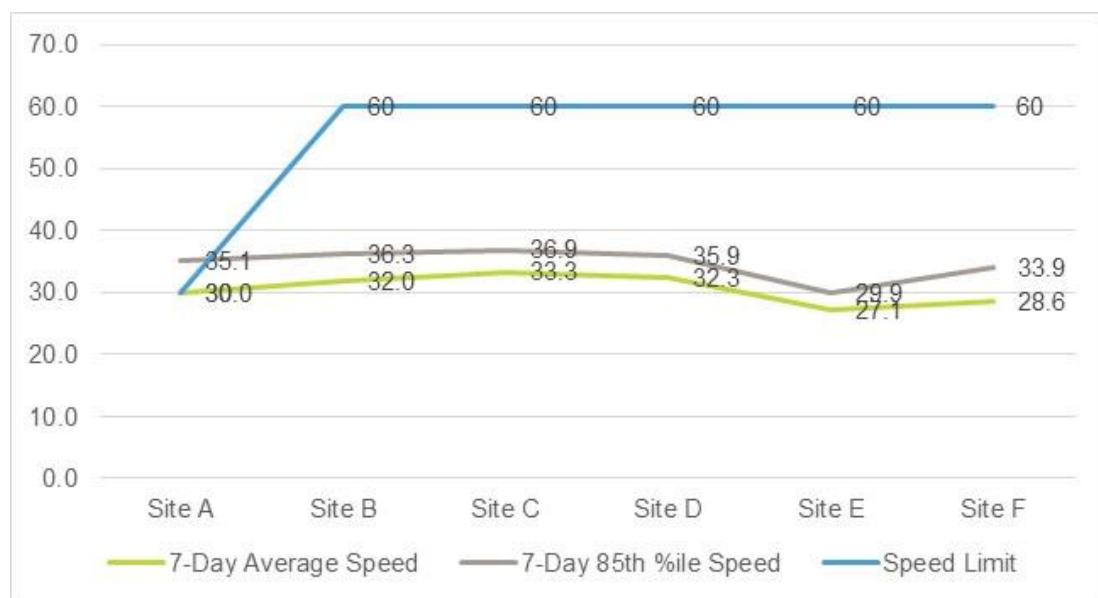
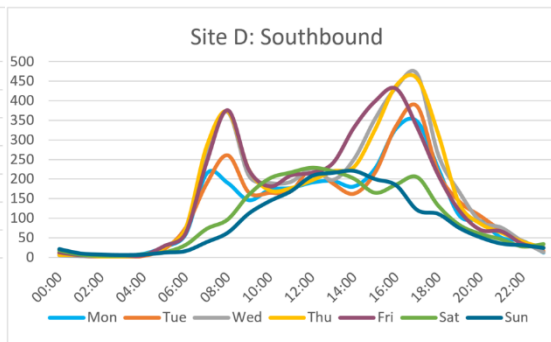
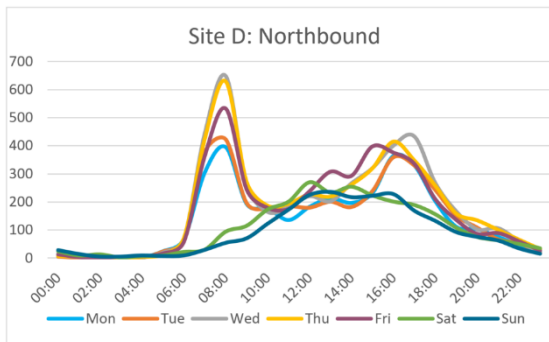
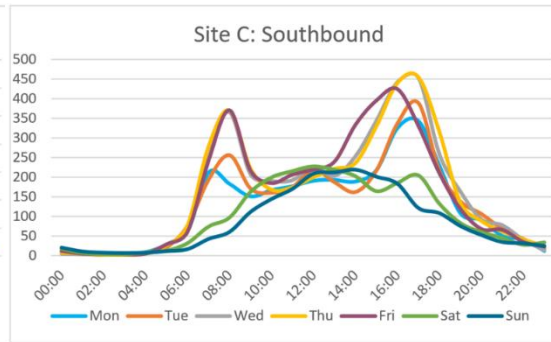
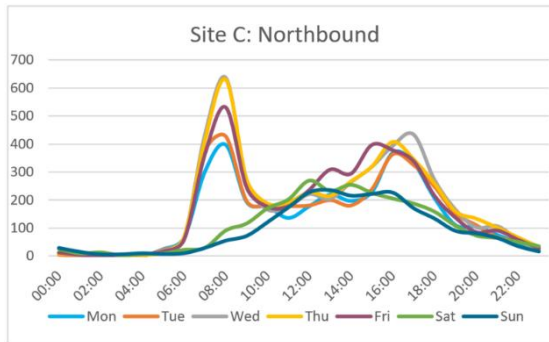
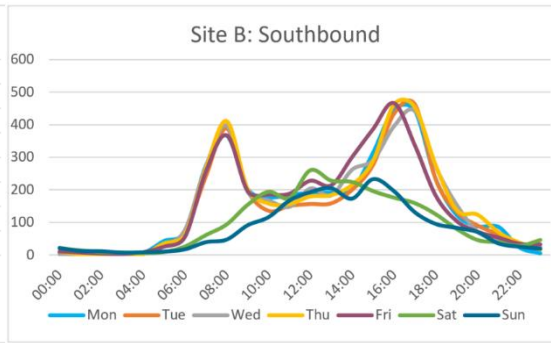
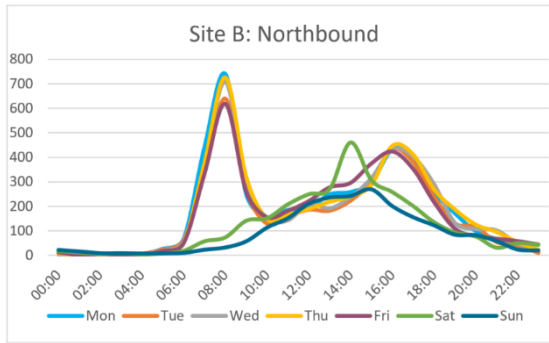
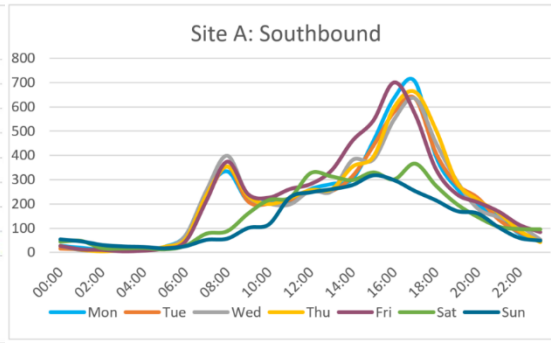
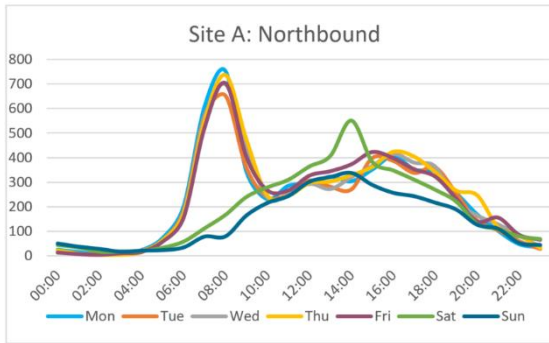


Figure 3: Speed analysis across six ATC sites (both directions combined)

Traffic Flow

Traffic patterns were relatively consistent across all six ATC sites (Figure 4). When looking at traffic flow in the northbound direction on weekdays, there's a morning peak at around 0800. There is a peak on weekdays in the southbound direction between 1600 and 1700. Southbound traffic also has a smaller peak on weekday mornings, while some northbound locations also had a small afternoon peak. Weekend traffic in both directions followed a similar pattern: rising then declining throughout the day with a small peak in the early afternoon.



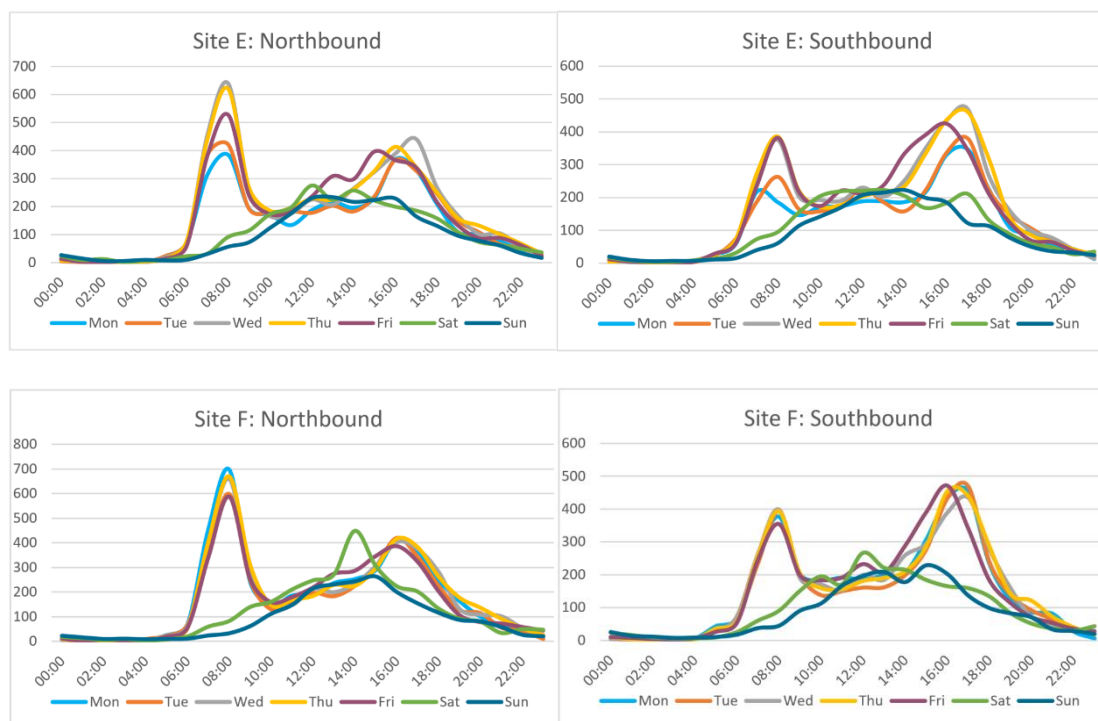


Figure 4: 7 Day traffic flow patterns at 6 ATC sites

Traffic volume

At each ATC site, a higher volume of traffic travelled northbound than southbound, as shown in Figure 5. There was also higher traffic volume at site ATC A – 69,000 total – compared to the other sites which had between 47,000 and 49,000 vehicles counted. This is possibly

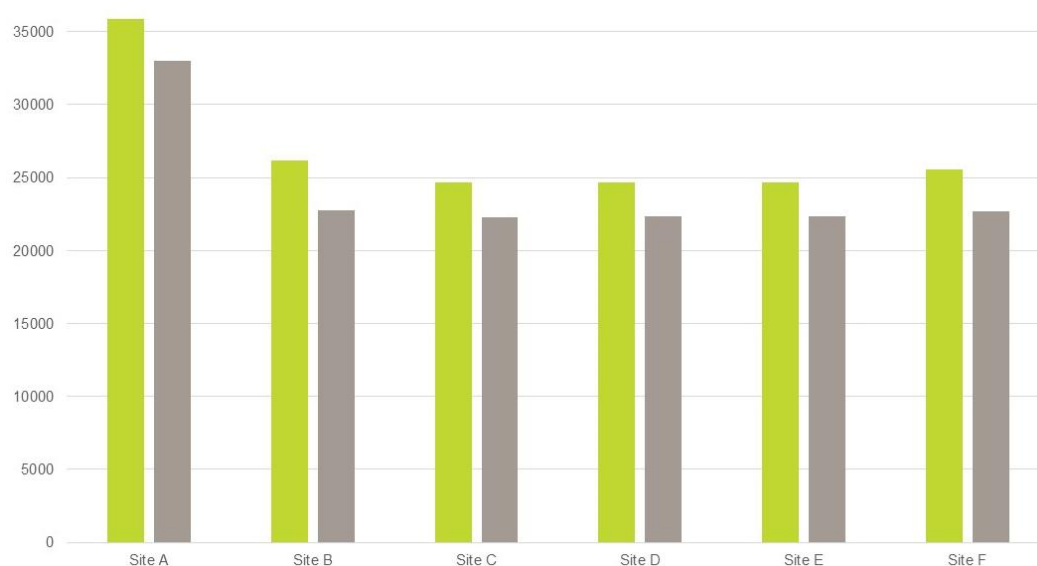


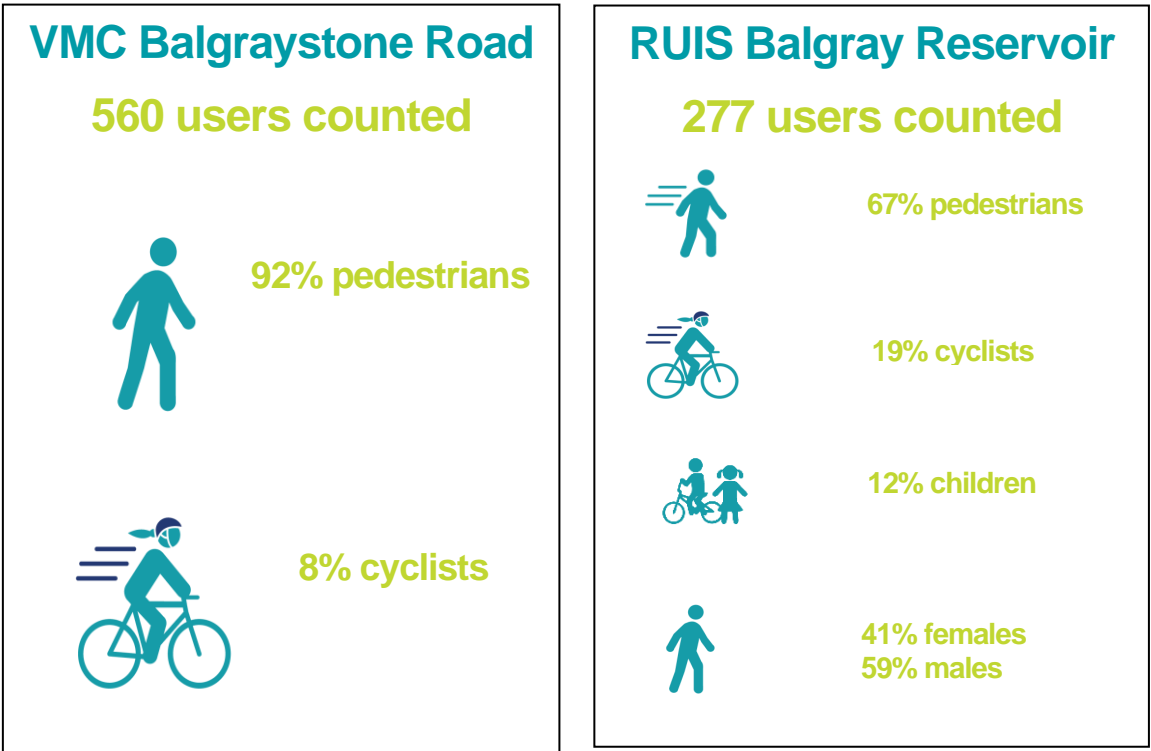
Figure 5: Weekly traffic total

because there are more interest points at site ATC A, for example, it is close to a school, cafes and shops.

Active travel in the area

A RUIS, including a manual count, and a VMC were carried out in different locations in the overall scheme area (see Figure 1 for locations). These monitoring tools provided insight into walking and cycling in the area.

Both the RUIS and VMC showed that active travel was not widely used in the area. Over four days in April 2019, 277 people were counted on the RUIS site – an off-road, shared use path off Aurs Road near the reservoir. Of this, 54 were cyclists and 185 were pedestrians. The VMC recorded a total of 560 people – 513 pedestrians and 47 cyclists. The VMC was carried out over 7 days in May-June 2019 on a one lane road with no footpath which connects to some off road paths around the reservoir.



It should be noted that on one of the VMC days (Friday May 31st), 241 pedestrians were counted over the space of one hour, travelling southbound. This accounts for 43% of total

users counted and 47% of total pedestrians. In all further analyses, figures including and excluding the 241 are presented.

People may be discouraged from cycling or walking in the area because of a lack of footpaths and cycle lanes. Nearly 60% (33) of those surveyed at Balgray Reservoir had travelled by car to the path, despite 91% (30) of those who drove living five miles or less from the path.

It appears that the majority of people travelling actively in the area were cycling or walking for recreation, as opposed to commuting, running errands or travelling to or from education. This is seen most clearly in the survey data: 100% of respondents selected recreation as their trip purpose. The VMC showed that people were more likely to walk or cycle in the area on the weekend than on weekdays (when the spike in pedestrian usage on the 31st May is excluded), indicating that those counted were mostly likely not travelling to or from work or education (Table 1).

Table 1: VMC - average number of users by mode, weekday and weekend

Mode	Weekday Average	Weekend average
Pedestrian	81 (33 without the 241)	53
Cyclists	5	12

As was found in the ATC data, cyclists and pedestrians counted through the VMC were more likely to be travelling northbound than southbound (see Figure 7).

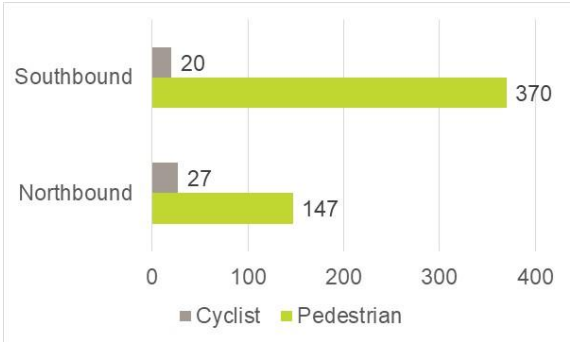


Figure 6: VMC - volume by direction of travel, including 241

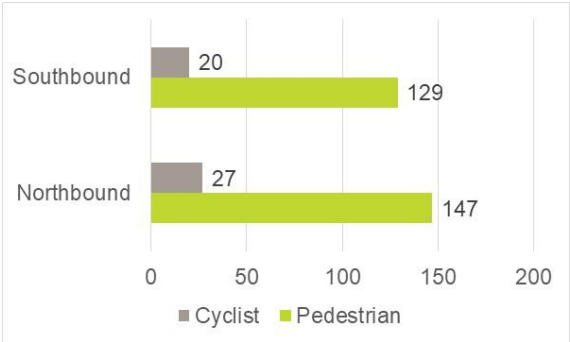


Figure 7: VMC - volume by direction of travel, excluding 241

The RUIS collected data on route users' perceptions of the current off-road, shared use path around the Balgray reservoir. The vast majority of route users had very positive views on the path. All respondents agreed or strongly agreed that they liked the surroundings of the path.

More than 80% of respondents agreed or strongly agreed that the route was convenient, well-maintained, easily accessible, and fit for purpose (Figure 8 and Figure 9). Seventy-nine percent of respondents agreed the route meets the needs of the community but 16% (9 respondents) were neutral on this (Figure 9). Another interesting finding from the survey was that, although over 90% of respondents agreed the route felt safe, 72% disagreed or strongly disagreed that the route was well-lit. The feelings of safety were most likely due to the

surveys being done during the day – people who feel unsafe on the dark path would not use it at night.

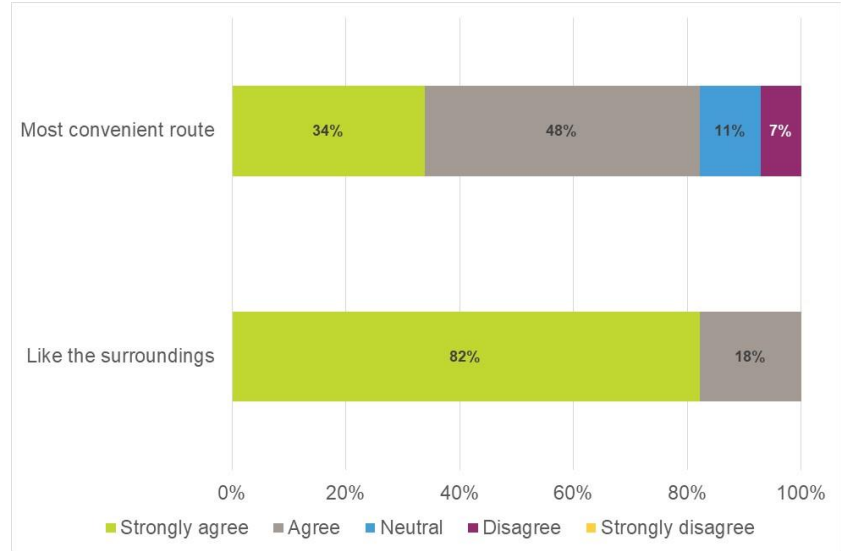


Figure 8: RUIS at Balgray reservoir - To what extent have the following factors influenced your decision to walk, cycle or use wheelchair today? (Out of 56 respondents)

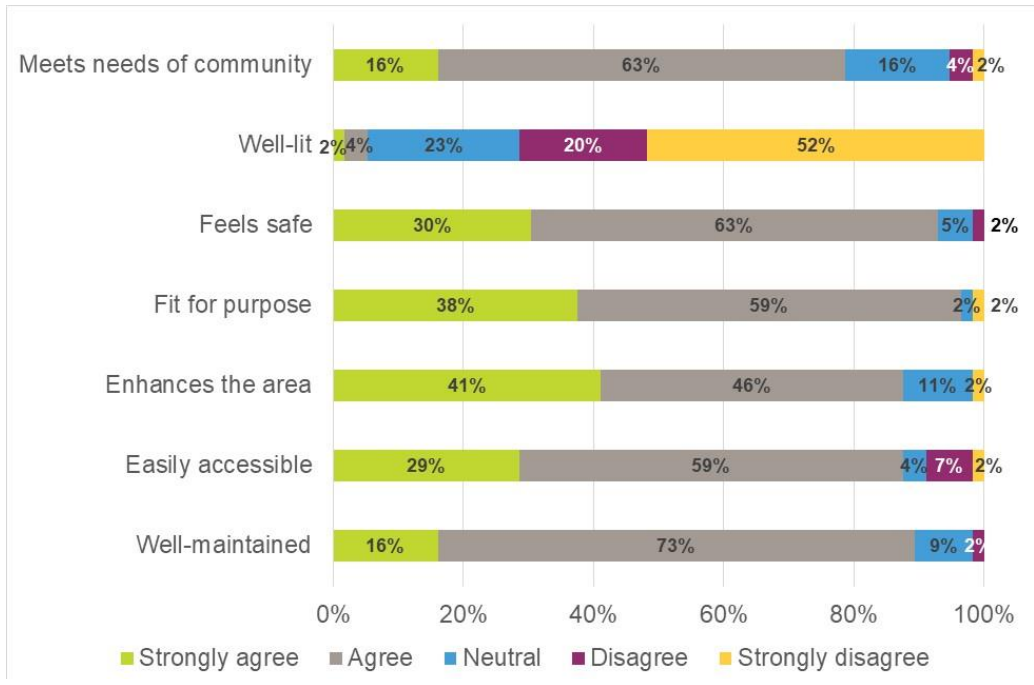


Figure 9: RUIS at Balgray Reservoir - How much do you agree or disagree with the following statements about the path? (Out of 56 respondents)

Summary

Monitoring of different sites in the scheme area showed that motor vehicle traffic appeared to dominate the transport environment, and there were low numbers of active transport users.

- ATC (over 7 days) counted no bikes/motorbikes
- VMC (over 7 days) recorded 513 pedestrians (of which 47% were counted in the space of two hours on one day) and 47 cyclists
- A manual count (over four days) recorded 185 pedestrians and 54 cyclists

The low numbers of active travel users could be because of minimal active transport infrastructure in the area – for example, there are few footpaths or cycle lanes. There are some walking and cycling paths around the reservoir; however, 100% of people surveyed using those paths had driven to use those paths, rather than travelling actively.

Further evidence of vehicle dominance was found in the video monitoring where the Balgray Reservoir active travel path intersects with a road. This showed that out of 30 interactions between pedestrians or cyclists and vehicles, no vehicles yielded to the pedestrians/cyclists.

The following traffic patterns were observed in the area:

- More vehicles traveling northbound than southbound – this was found in both the ATC monitoring of vehicles and the VMC monitoring of active travel users.
- Highest number of vehicles observed around schools/shops etc at site ATC A.
- Despite majority of ATC sites having a 60mph speed limit, the average motor vehicle speed in the area was approximately 30mph.
- ATC monitoring of vehicles observed an AM peak in northbound direction, and a PM peak southbound on weekdays. Weekend traffic in both directions followed a similar pattern of rising steadily throughout the morning to a small peak in the early afternoon, and then declining throughout the rest of the day.

A survey of users of the active travel paths around Balgray Reservoir found that the majority of users had positive views of the paths. However, 21% of users surveyed did not agree the route met the needs of the community (16% were neutral and 5% disagreed/strongly disagreed), indicating that some improvements could be made in this area. There was also some contradictory findings in the survey about lighting and safety; this could be another area of improvement.

Methods

The following section outlines the dates and locations of the various monitoring tools used in the Balgray Reservoir area.

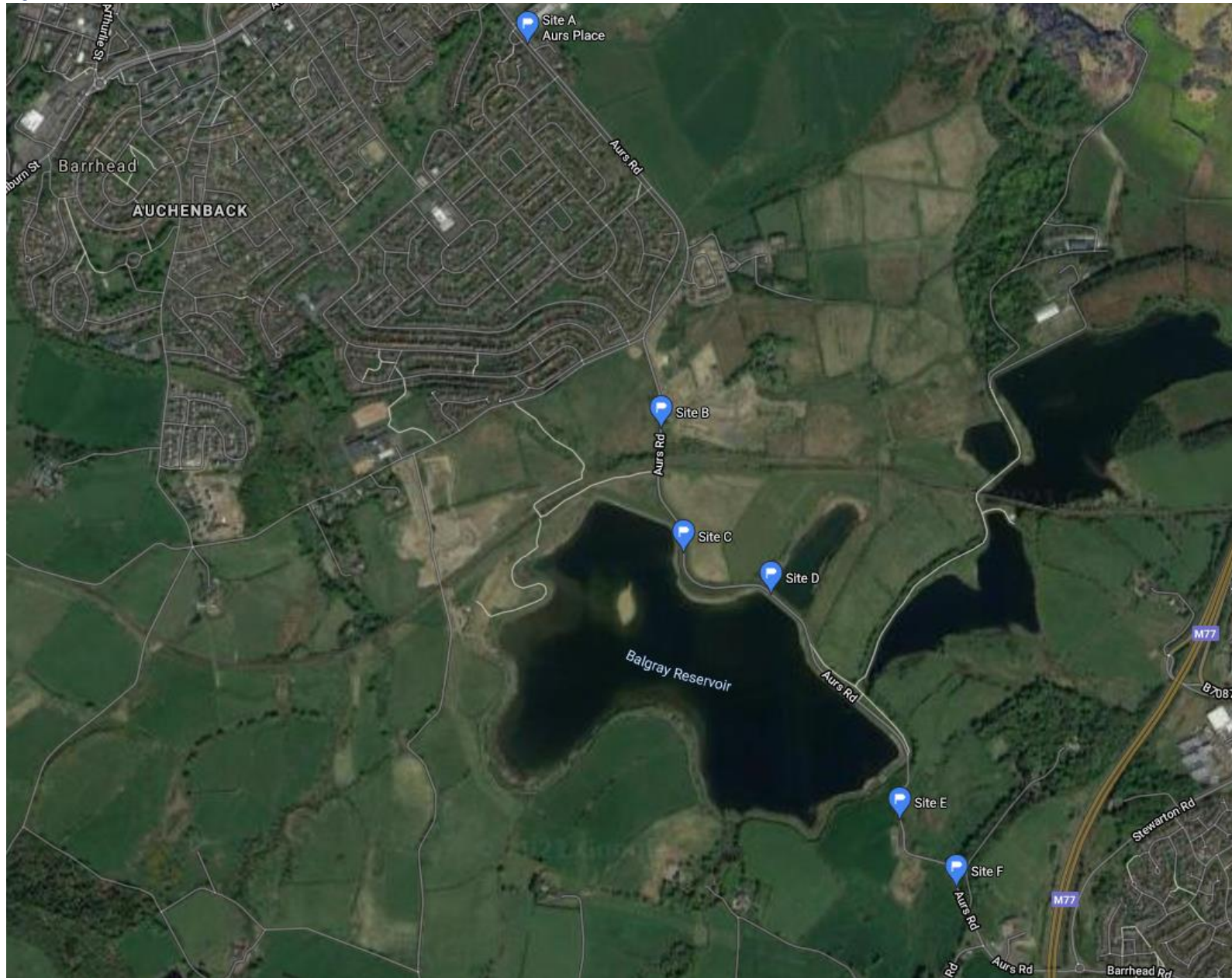
Automatic Traffic Counts (ATCs)

Automatic Traffic Counts (ATCs) were done at six locations along Aurs Road between January and February 2019. The locations of the ATCs are outlined in Table 2 and Figure 10. The ATCs collected data on traffic volume, traffic flow, vehicle type, and traffic speed at each of the locations. This was used to provide an overview of the traffic environment in Aurs Road. ATCs cannot accurately differentiate between motorbikes and bicycles, nor do they record pedestrians. Therefore, other tools were also used to give insight into active travel use in the area.

Table 2: Summary of ATC sites and dates

Tool	Location	Dates
Automatic Traffic Counts	A - Aurs Road nr Aurs Place	29 th Jan – 4 th Feb, 2019
	B - Aurs Road btw Springfield Road & railway	29 th Jan – 4 th Feb, 2019
	C - Aurs Road between railway & reservoir	9 th Feb – 15 th Feb, 2019
	D - Aurs Road at reservoir	9 th Feb – 15 th Feb, 2019
	E - Aurs Road south of reservoir	9 th Feb – 15 th Feb, 2019
	F - Aurs Road north of Whitecraigs Rugby Club	29 th Jan – 4 th Feb, 2019

Figure 10: ATC locations



Video Manual Count (VMC)

A video manual count (VMC) was undertaken on a small rural road that connects to traffic-free paths around the reservoir. The VMC collected data on the number of pedestrians and cyclists on this road and the flow of active travel traffic – direction, peaks, and so on. This helped to provide some insight into active travel use in the area. The VMC was done in late May – early June 2019. Table 3 and Figure 11 outline the VMC location.

It should be noted that on one of the days (Friday May 31st), 241 pedestrians were counted over the space of one hour, travelling southbound. This accounts for 43% of total users counted and 47% of total pedestrians. In most analyses of the VMC data in this report, the data is presented both with this 241 included and without the 241.

Table 3: Summary of VMC site and dates

Tool	Location	Dates
Video Manual Count	Balgraystone Road	21 st May – 4 th June, 2019

Figure 11: VMC location



Video Monitoring

Video monitoring was undertaken at a junction between Aurs Road and a traffic-free, shared-used path at the reservoir between late May and early June 2019. The camera was positioned to the north of the route user crossing looking southwards. The video monitoring was done to ascertain how motor vehicles and active travel users interact in the area. Table 4, Figure 12 and Figure 13 outline the video monitoring location.

To produce a representative sample of different types of road users, an off-peak (12.00-13.00) and an on-peak hour (16.00-17.00) of use were selected. Two behavioural parameters were extracted from the video footage: pedestrian priority and vehicle yielding.

Table 4: Summary of video monitoring site and dates

Tool	Location	Dates
Video Monitoring	Aurs Road by Balgray reservoir	29 th May – 4 th June 2019

Figure 12: Video monitoring location



Figure 13: Video monitoring location - streetview



Route User Intercept Survey (RUIS) (and manual count)

A Route User Intercept Survey (RUIS) and manual count was carried out on a traffic-free, shared-use path near the Balgray Reservoir during April 2019. Users of the shared-use path were asked a variety of questions about their travel choices, trip purpose, perceptions and opinions of the route and surrounding environment, and demographic information. The manual count recorded number of path user trips per survey day, broken down by mode, gender and age group (child, adult or 65+). These two monitoring tools provided insight into active travel use in the area, as well as people's perceptions and use of the current active travel infrastructure. Table 5, Figure 14, Figure 16, and Figure 15 outline the RUIS location.

Table 5: Summary of RUIS site and dates

Tool	Location	Dates
Route User Intercept Survey (and manual count)	Balgray reservoir	9 th April, 13 th April, 27 th April, 30 th April 2019

Figure 14: RUIS location



Figure 16: RUIS site location - streetview



Figure 15: RUIS site location - streetview