Scotstoun Primary School Parent Council

Traffic Behaviour at the Beginning and End of the School Day

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Summary

The behaviour of traffic, cars and other vehicles, and their drivers, at the beginning and end of the school day has been a concern for the parents and teachers at Scotstoun Primary School for some time. In early 2017 the school's Parent Council organized a systematic weeklong survey in order to address a perceived deficit of objective data about the problem.

Over the week of the survey 199 discrete issues (112 pre-defined incidents, 87 further observed issues) were recorded during the 30 minutes around the beginning and end of the school day. Incidents were more common in the mornings, and on Mondays and Fridays. Mounting the pavement and stopping on zigzags were the most frequently recorded examples. A number of near miss incidents were witnessed; parking across corners and general congestion were implicated in these incidents, and were frequently observed.

The data suggested that targeting congestion, and behaviour at the corners of the intersections, may prove most effective in enhancing safety, and suggested measures which may be effective in achieving these objectives. Enhanced road furniture at intersections, and a formal or informal one-way system around the school were felt to be achievable solutions, which have the potential to significantly enhance the safety of children arriving at and leaving the school.

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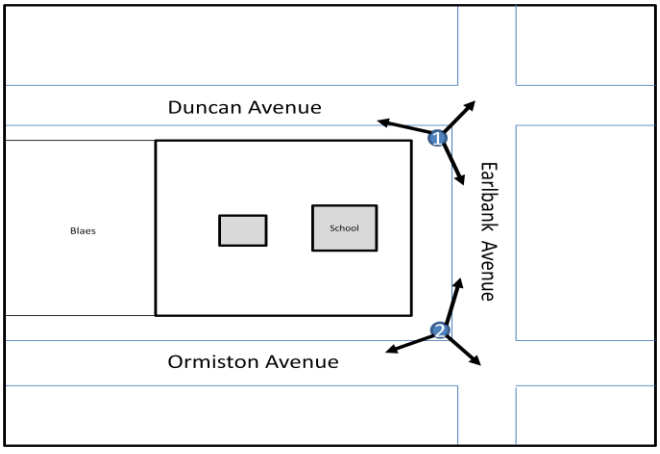
Introduction

In common with many primary schools [1], the behaviour of traffic, cars and drivers, at the beginning and end of the school day has been a concern for the parents and teachers at Scotstoun Primary School. In the summer of 2016 the Parent Council met with local Councillors to discuss the problem, and have since met with the Council's Road Safety Officer, and Community Police representatives. The pupil road safety team has been engaged, and 'The Pledge'[2] (which encourages positive behaviour) has been issued to parents. To date, however, the concern has been fuelled by anecdotal observation of hazards posed by traffic, disregard of safe crossing zones marked by 'zigzags', and a perception of a lack of a safe road behaviour culture around the school. There has been no objective data which to verify the concern, suggest targets for action, or which could provide a baseline against which to measure the efficacy of any interventions. In early 2017 the school's Parent Council organized a systematic survey in order to address this deficit.

Method

During the week of 30 January to 3 Feburary (Monday – Friday), observers were placed at the two key intersections, with sight lines across the zigzags at both the Duncan Avenue and Ormiston Avenue entrances to the school. The observation period was the 15 minutes both before and after the school day beginning and end (i.e. 08.30-09.00 and, 14.45-15.15). A tally sheet was devised, with pre-defined incidents based on a similar tally sheet provided by the Glasgow City Council, but with space for additional miscellaneous incidents and freetext notes. Pre-defined incidents were: 'Stopping/parking/drop-off on zigzags '; 'Dangerously mounting/dismounting pavement (e.g. close to pedestrians, fast)', 'Double parking' (not otherwise defined); and 'Verbal confrontation ('Road rage')'. Observers were asked to simply mark on the sheet the number of such incidents. Observers were drawn from the membership of the Parent Council assisted by other parents. Where indicated simple statistical analysis was performed (N-1 chi-squared test for comparison of proportions, 'MedCalc').

Figure 1. *Locations '1' and '2' show the position of the observers. Zigzags are located adjacent to the school gates along Ormiston and Duncan Avenues adjacent to these locations.*



Results

Data was collected for all 20 of the separate observation periods and locations. There were 112 pre-defined incidents, and a further 87 other observed issues.

With respect to the pre-defined incidents, most occurred in the morning, and were observed equally often at each side of the school. Friday mornings were significantly worse than other days ($p < 0.05$), and there was a trend towards a similar pattern on Mondays ($p = 0.05$). Mounting of the pavement that was deemed unsafe was the most common pre-defined incident (n = 51, 46%), followed by stopping or parking adjacent to the zigzags (n = 37, 33%).

Of the other observed issues, parking across the corners at intersections was frequently observed (19 incidents), as was congestion (15) at these locations with cars needing to reverse frequently (14). A number of 'near miss' incidents, where children were potentially endangered, were observed; congestion at the intersections and parking/mounting the corners were implicated in these. Taxis were involved in several incidents including stopping on or obstructing zigzags, and idling. As there was a risk of some 'double counting' across some categories (e.g. a taxi idling on the lane opposite zigzags), full descriptive statistics are not presented.

Chart 1. *Pre-defined Incidents by time of Day (%, n=112)*

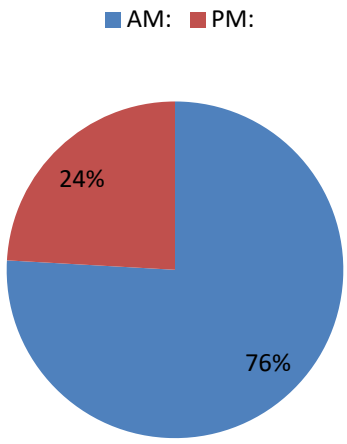


Chart 2. *Pre-defined Incidents by location (%, n=112)*

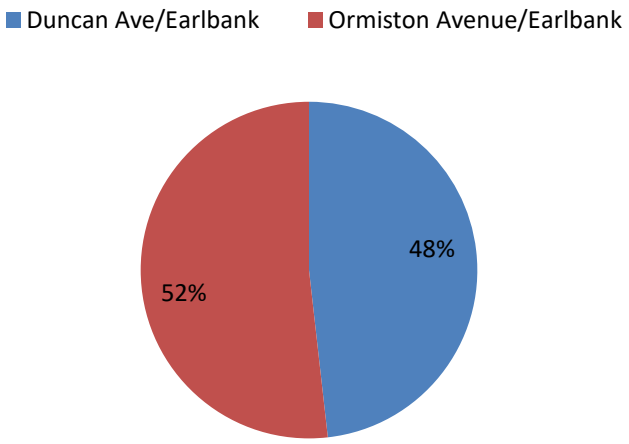


Chart 3. *Incidents (pre-defined) by day of the week*

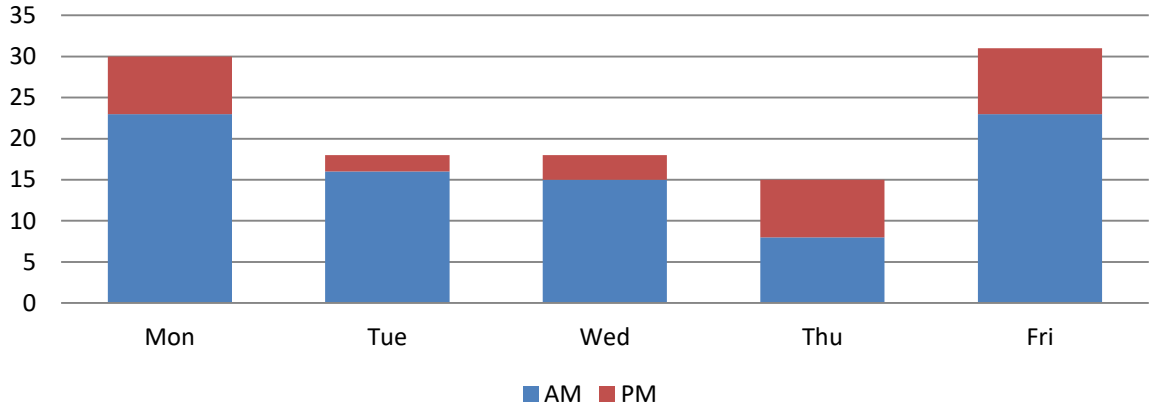


Chart 4. *Incidents (pre-defined) by type*

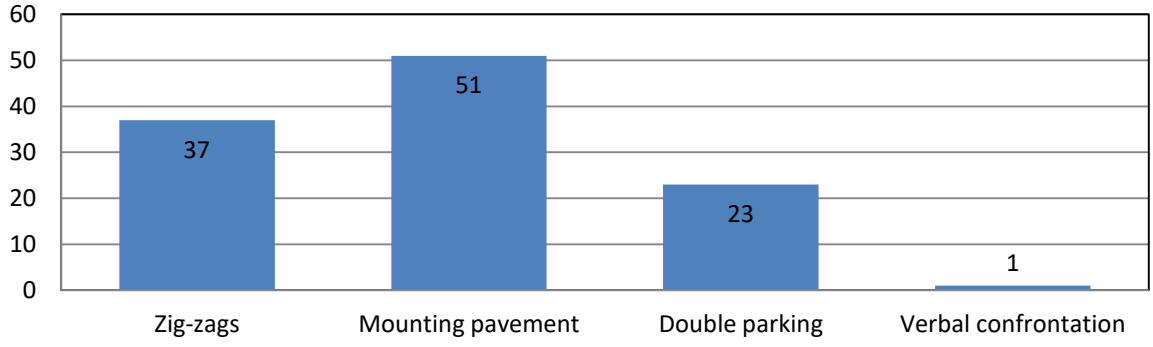
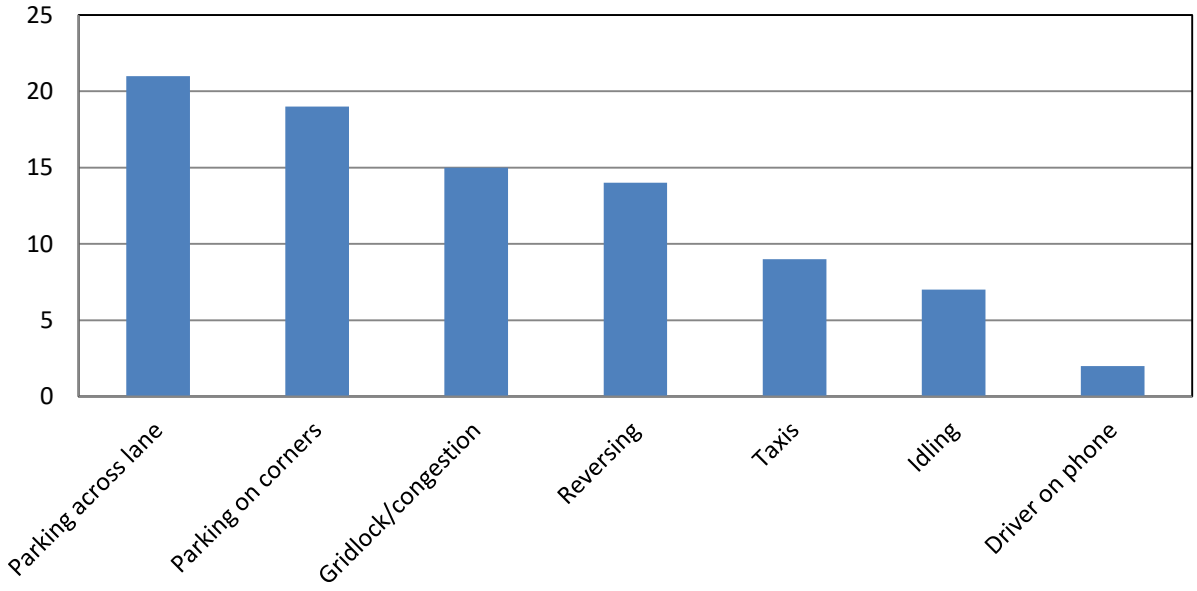


Chart 5. *Incidents (others) by type*



Box 1. *Examples of recorded 'near miss' incidents.*

"A child ran out behind a car (that was parked very close to a junction) and into the path of a car travelling east on Earlbank approaching the junction of Duncan. Fortunately the driver was proceeding very slowly and was aware of the danger."

"One driver, as was pulling in to park at corner, waved a child across the road, when it was clearly not safe to do so (the driver had not checked for other vehicles passing)."

"One particularly bad incident which involved a large van parked at corner then reversing into Ormiston/Earlbank junction"

Discussion

These data confirm that the impression of problematic behaviour of drivers and traffic around the school remains evident when examined objectively. Although there is no 'standard' against which these data can be compared, the observation of near misses which were directly attributable to driver behaviour (and not error by the pedestrians involved) verifies the pertinence of the problem.

The strengths of our study include its largely objective nature and the completeness of the data set for the period. The data is however not perfect and elements of subjectivity cannot be fully excluded, particularly where some interpretation of driver behaviour was required. Double-parking, an objective pre-defined incident was never actually defined for the observers and interpretation of this element could have suffered more significantly from inter-observer variation. Our data could be enhanced by knowledge of what influences the choices of parents and drivers at these times, and this could be a worthwhile area for further study.

Several instances where children were potentially endangered were observed, and the insights afforded by observing near misses and the associated traffic conditions can point toward the most suitable targets for intervention. Behaviours which directly led these incidents, or which breach current measures to prevent such endangerment (i.e. zigzags) are those which are in most need of being targeted. To this end measures aimed at reducing congestion around the school, especially at the intersections, and preventing parking across corners and opposite zigzags, were considered to be most likely to effect the most improvement.

Response

The traffic problem is self-reinforcing; a perception of poor safety for children around the school leads to more parents spurning active travel options and driving their children to school, or being more reluctant to drop them off further away, thus adding to the very congestion we have identified as a major contributor to the whole issue. However, any measure that enhances road safety around the school will be similarly self-reinforcing, but in a contrary direction, and its effects have the potential to be substantially amplified.

It must be assumed that that behind every one of the negative behaviours we observed is a driver of a vehicle who has no intent to cause harm to children at the school. Presumably, a variety of unavoidable pressures, such as work commitments, cause these drivers to make a number of small but poor decisions which in aggregate create the overwhelming culture of poor and unsafe behaviour which we observed. We could speculate that the increased frequency of incidents observed at the beginning and end of the working week may be a reflection of these influences.

In addressing the issues then a collaborative approach is essential- merely penalizing, condemning, or coercing drivers is likely to exacerbate some of the negative influencing factors without truly facilitating better behaviour. Similarly, only solutions that adequately align the incentives of parents, other drivers, children, and the school and wider community are likely to be successful.

Finally, although measures such as road closures may be successful [1], the Parent Council has limited powers to pursue these in the short to medium term, and such measures need also to be in the considered interests of the local community. Thus, we have focussed here on pragmatic, achievable

measures with a good likelihood of being successful and limited impact on the community. Having gathered hard data we can at least now assess and measure any effect objectively.

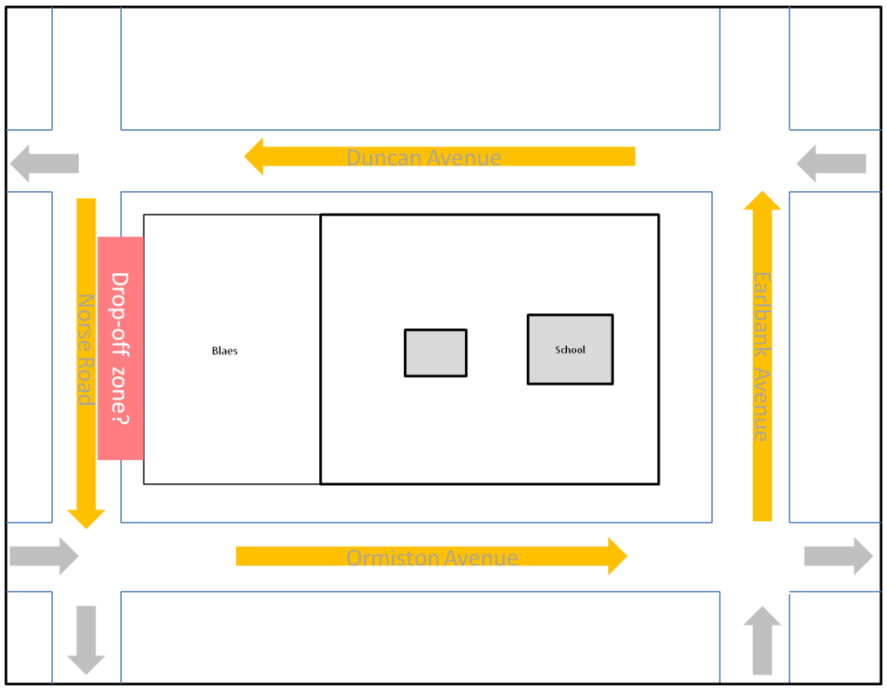
The following proposals seek to embody these guiding principles.

Easing congestion

Congestion was the main culprit responsible for hazardous behaviour- whether it was reversing at the intersections, or causing stopping of vehicles obstructing the safe-crossing areas at the zigzags. It will be a source of stress for drivers trying to see children to school on time, as well as make it to onward commitments, and result in more poor decisions being made.

If traffic could be encouraged to flow around the school, some of these congestion issues would be significantly eased, creating the conditions for these other measures.

Figure 2. *Potential one-way system. This could be informal, or formal.*



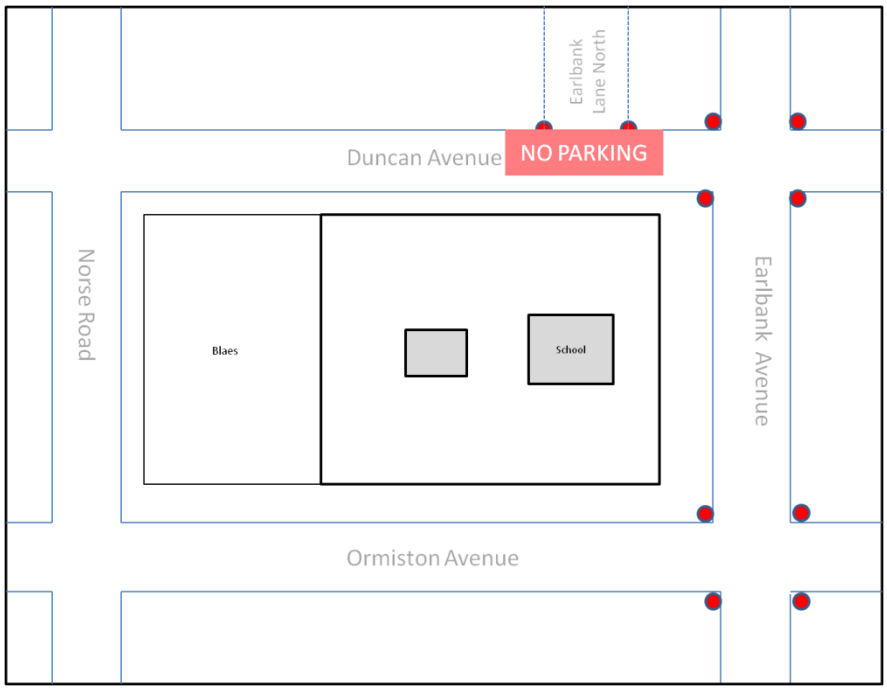
If drivers who had to arrive in the immediate vicinity of the school could be encouraged to circulate in an anti-clockwise manner, as illustrated, congestion would be improved. A *formal* one way system would require comprehensive planning for the whole of the Scotstoun Conservation Area and would have implications for local residents; even if approved such a proposal would take a good deal of time. However, an informal system proposed by the school to parents could still be effective and beneficial; a leaflet explaining the system, pupil education and support, and perhaps banners on school railings may be sufficient to engender a culture of this behaviour. if successful, drivers would quickly learn that more straightforward progress could be made by adhering to it. Anti-clockwise circulation would facilitate the designation of a suggested drop-off zone where children could exit vehicles at the nearside. Clearly

drop-off zones much further from the school would be ideal, but as discussed, unless congestion and hazards in the immediate vicinity for the school are first addressed, these are unlikely to be adopted.

Road markings and furniture

Mounting the pavement at corners contributes to congestion and was directly causative in near misses. While the measures above would help with many issues, ultimately some direct prevention of unsafe behaviour is likely to be needed. Some simple and unobtrusive road markings, which are either physical barriers, or which would facilitate legal enforcement would be of value.

Figure 3. *Locations of potential road furniture or markings*



Unlike any informal approaches to traffic flow, these measures would require full engagement with local community in order to find the most acceptable and effective means of managing the problem be it bollards, raised kerbs, or road markings. Similarly the area at Earlbank Lane North which is opposite the zigzags but is not marked to prevent vehicles stopping could be addressed this way.

Taxis

It was notable how, as a group, taxis contributed to some of the observed incidents. Writing to all local companies highlighting the concerns raised by the survey and including them in any campaign to introduce informal traffic flow measures would be important.

[1] Traffic ban outside six Edinburgh primary schools. BBC News http://www.bbc.co.uk/news/uk-scotland-edinburgh-east-fife-34321010 [accessed 21/3/2017]
[2] Brake Road Safety Pledge. http://www.roadsafetyweek.org.uk/pledge [accessed 21/2/2017]