Belmont Avenue
Traffic Calming Initiative
Dublin City Council

2nd March 2021
Quality information

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<th>Verified by</th>
<th>Approved by</th>
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<td>Kevin O'Sullivan&lt;br&gt;Graduate Engineer&lt;br&gt;BEng</td>
<td>Mary Bartzi&lt;br&gt;Senior Engineer&lt;br&gt;MSc</td>
<td>Joseph Seymour&lt;br&gt;Director&lt;br&gt;BEng MEngSc CEng&lt;br&gt;FIEI FCIHT</td>
<td>Mary Bartzi&lt;br&gt;Senior Engineer&lt;br&gt;MSc</td>
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Revision History

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Prepared for:
Dublin City Council

Prepared by:
Kevin O’Sullivan
Graduate Engineer, BEng
M: 0873227817
E: kevin.osullivan1@aecom.com

AECOM Ireland Limited
1st floor, Montrose House
Carrigaline Road
Douglas, Cork T12 P088
Ireland

T: +353 21 436 5006
F: +353 21 436 5156
aecom.com

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Prepared for: Dublin County Council  
AECOM
1. Introduction – Area Description

Belmont Avenue is a two-way road between Donnybrook Road and Sandford Road. It is approximately 500m long. It forms part of the Belmont Avenue / Mount Eden Road & Environs Architectural Conservation Area. The road is comprised mainly of residential properties and also serves as the access route for a number of cul-de-sacs, a local school (St. Mary’s National School) and the St. Mary’s Lawn Tennis Club.

Belmont Avenue is subjected to substantial traffic issues, particularly during peak hours, primarily due to the lack of adequate width for two-way traffic and parking to coexist. The width of the existing carriageway throughout the street varies between 5.5 and 8.5 meters. Parking spaces (of approximately 2.1 meters in width) are located on the southern side of the street, resulting in a remaining carriageway width of approximately 4.2 meters for lengthy periods. This is significantly narrower than the carriageway width of 4.8 meters proposed in the Design Manual for Urban Roads and Streets (DMURS) - 4.4.1 - Carriageway Widths, which allows for two-way traffic.

During peak hours, the area is invariably gridlocked, as a consequence of the volume of cars attempting to progress up and down its length. Motorists, frustrated by the lengthy delays, become stressed, aggressive and engage in dangerous manoeuvres. Vehicles often illegally mount and drive along the footpath, endangering pedestrians, cyclists and other motorists. There have been a number of near misses reported involving school children exposed to unsafe driving manoeuvres. Cars utilising the on-street parking have been damaged on a multitude of occasions.

The existing footway width varies between 1.0 and 1.7 meters on each side of the carriageway (and as narrow as 0.6 meters behind lighting columns). Both footpaths are substantially below the minimum footway width of 1.8 meters, as specified in DMURS - 4.3.1 - Footways, Verges and Strips. Consequently, pedestrians using the street are unable to walk two abreast.

A traffic survey was undertaken on 4th March 2020 (prior to the introduction of COVID-19 pandemic restrictions) aiming to collect information on traffic speeds and volume along Belmont Avenue. The key results are summarised in Table 1 below.

### Table 1: Belmont Avenue traffic counts

<table>
<thead>
<tr>
<th>Direction of Travel</th>
<th>AM Peak (7-10am)</th>
<th>PM Peak (4-7pm)</th>
<th>Total</th>
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<tr>
<td>Westbound (Donnybrook Road -&gt; Sandford Road)</td>
<td>778</td>
<td>299</td>
<td>2479</td>
</tr>
<tr>
<td>Eastbound (Sandford Road -&gt; Donnybrook Road)</td>
<td>112</td>
<td>745</td>
<td>2547</td>
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</table>
2. Traffic Congestion Solutions

There is not one clear traffic solution to solve the traffic congestion issue on Belmont Avenue. Options that have been considered at this initial stage are listed below:

1. **Speed Limit Reduction**

   The existing speed limit for Belmont Avenue is 50km/h, which is considerably high for a residential and school area. A 30km/h speed limit is soon to be implemented in the wider area. **This measure will not have a significant impact, if introduced on its own, however it could compliment one of the other options listed below.**

2. **Removal of Parking Bays to Create Horizontal Deflection:**

   Removal of spaces to create pockets in which westbound vehicles can pull in and allow oncoming traffic to pass by. Parking loss is expected to be minimal – summary provided in Table 2. Proposed design can be found in Drawing No. 60615775-ACM-BTA-SK-0105-06.

   **Table 2: On-Street Parking summary**

<table>
<thead>
<tr>
<th>Existing Parking</th>
<th>Proposed Parking</th>
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<tbody>
<tr>
<td>Spaces</td>
<td>Spaces</td>
</tr>
<tr>
<td>57</td>
<td>54</td>
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</table>

   Spaces are calculated by dividing the length of each individual parking bay by the recommended space length for parallel parking (6.0m), as specified in DMURS - 4.4.9 - On-Street Parking and Loading. Existing parking bay measurements are based on available mapping and aerial photography data and will need to be confirmed against a topographical survey.

   **This measure will not have a significant impact, if introduced on its own, however it could be one element of the final design alongside other options listed below.**

3. **Removal of Parking in its Entirety**

   Alternatively, removal of all or most of the on-street parking would greatly increase the carriageway width made available to traffic along Belmont Avenue, lessening motorist conflict. With a minimum of 5.5 meters made available for the carriageway, the remaining of the existing width can be allocated to widening the footpath on both sides, making it safer for the more vulnerable road users.

   **However, this may be met with opposition by residents, who do not have private driveways and currently use the existing parking bays.** Additional information on existing on-street parking spaces and private driveways on Belmont Avenue can be found in Drawing No. 60615775-ACM-BTA-SK-0101-04 and Table 3.

   **Table 3: Existing residential parking information for Belmont Avenue**

<table>
<thead>
<tr>
<th>On-Street Parking Spaces</th>
<th>Properties with Private Driveways</th>
<th>Properties without Private Driveways</th>
<th>Residential Parking Permits</th>
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<tr>
<td>57</td>
<td>34</td>
<td>47</td>
<td>67</td>
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4. **One-Way System**

This would allow for the carriageway and footway widths to fall within the necessary minimums, as set out in DMURS. On-street parking will be retained on the southern side of the street. **However, only with-flow cyclists can be accommodated, as the available width does not allow for a contra-flow cycling facility.** The traffic volumes to and from Sandford Road are practically identical and reversed for the AM and PM peak (Table 1), which suggests that even with the one-way system, Belmont Avenue will still be busy either during the morning or evening peak. The introduction of effective physical traffic calming, such as road humps, is very important in this scenario. Proposed design can be found in Drawing No. 60615775-ACM-BTA-SK-0107-10.

5. **Filtered Permeability Scheme**

This measure is synonymous with the implementation of a cul-de-sac. The feasibility of vehicle turning heads on either side of the filters (usually bollards and / or planters) is key for selecting the location of the road closure. **Two options were identified for the filter location, either at junction with Sandford Road or with Mount Eden Road.** The latter is considered less preferable, as it would have a negative effect on school drop-off and would also encourage turning manoeuvres close to St. Mary’s National School entrance. Proposed design showing a road closure at junction with Sandford Road can be found in Drawing No. 60615775-ACM-BTA-SK-0111.

Emergency vehicles and cyclists will have access through these filters. However, Belmont Avenue will still accommodate two-way traffic and pockets for motorists to give way to each other still need to be considered.

6. **Restricted Access**

Introduction of a no-entry system at the Sandford Road junction, to reduce traffic volumes and prevent motorists using the road as a “rat run”. Belmont Avenue will continue to be a two-way road and all cyclist movements will be facilitated. The traffic survey (Table 1) suggests that a significant number of vehicles will still be moving towards Sandford Road in the morning peak and will be opposed by eastbound residential traffic. **Undoubtedly, unless effective traffic calming and horizontal deflection are carefully considered, the existing issues will persist.** Proposed design can be found in Drawing No. 60615775-ACM-BTA-SK-0112-0115.

Belmont Avenue works in a network with other streets in the Donnybrook and Ranelagh area, most notably Marlborough Road, where congestions issues are also observed. Although Marlborough Road is an arterial route designed to accommodate heavier traffic flow, the impact on this road from any interventions implemented on Belmont Avenue, will have to be carefully considered.
3. Supplementary Sketches

The following high-level sketches are presented in this section:

- Drawing No. 60615775-ACM-BTA-SK-0101-04 – EXISTING ARRANGEMENT
- Drawing No. 60615775-ACM-BTA-SK-0105-06 – REMOVAL OF PARKING BAYS TO CREATE HORIZONTAL DEFLECTION
- Drawing No. 60615775-ACM-BTA-SK-0107-10 – ONE-WAY SYSTEM
- Drawing No. 60615775-ACM-BTA-SK-0111 – FILTERED PERMEABILITY
- Drawing No. 60615775-ACM-BTA-SK-0112-15 – RESTRICTED ACCESS
Existing Arrangement
Removal of Parking Bays to Create Horizontal Deflection
One-Way System
Restricted Access