Update on Strand Road Cycle Route

5th Nov 2020

Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

Introduction

- Strand Rd trial cycle route consultation closed on the 14th September
- On the 5th of October we received an Alternative Proposal to provide cycle facilities on Strand Road from the STC (Serpentine Avenue, Tritonville Road, Claremont and other adjoining roads) Community group
- As part of its ongoing engagement with interested groups DCC met with this group on the 9th of October
- Following two emergency motions at the South East area committee meeting on the 12th of October and requests from elected members that the DCC executive should properly assess this proposal we had agreed to undertake an assessment of the alternative proposal.
- Please note that the original STC proposal was modified further and a version 2 was received on the 23rd October

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Introduction

- DCC appreciate the engagement and effort from the STC community group and their stated aim

- The proposals have allowed DCC to examine in detail and reconsider aspects of the proposed trial.

- The NTA as the authorising authority and approver of the government stimulus package funding, was also asked to review both proposals and give us their views.

STC Proposal

- A rapid deployment cycle route Alternative proposal
- Original proposal was to use the existing seaside footpath as a cycletrack
- Version 2 proposed keeping a 2m footpath on the seaside and extending the footpath to create a cycle track
- Version 2 proposes shuttle running at Merrion Gates.
- 2 way cycletrack would be at the same level as the footpath separated by orcas
- Cycletrack width varies from 2m – 4m for a 2 way cycletrack
- 6m carriageway proposed
- Cyclists to merge with traffic at bus stops

Each of these have been examined

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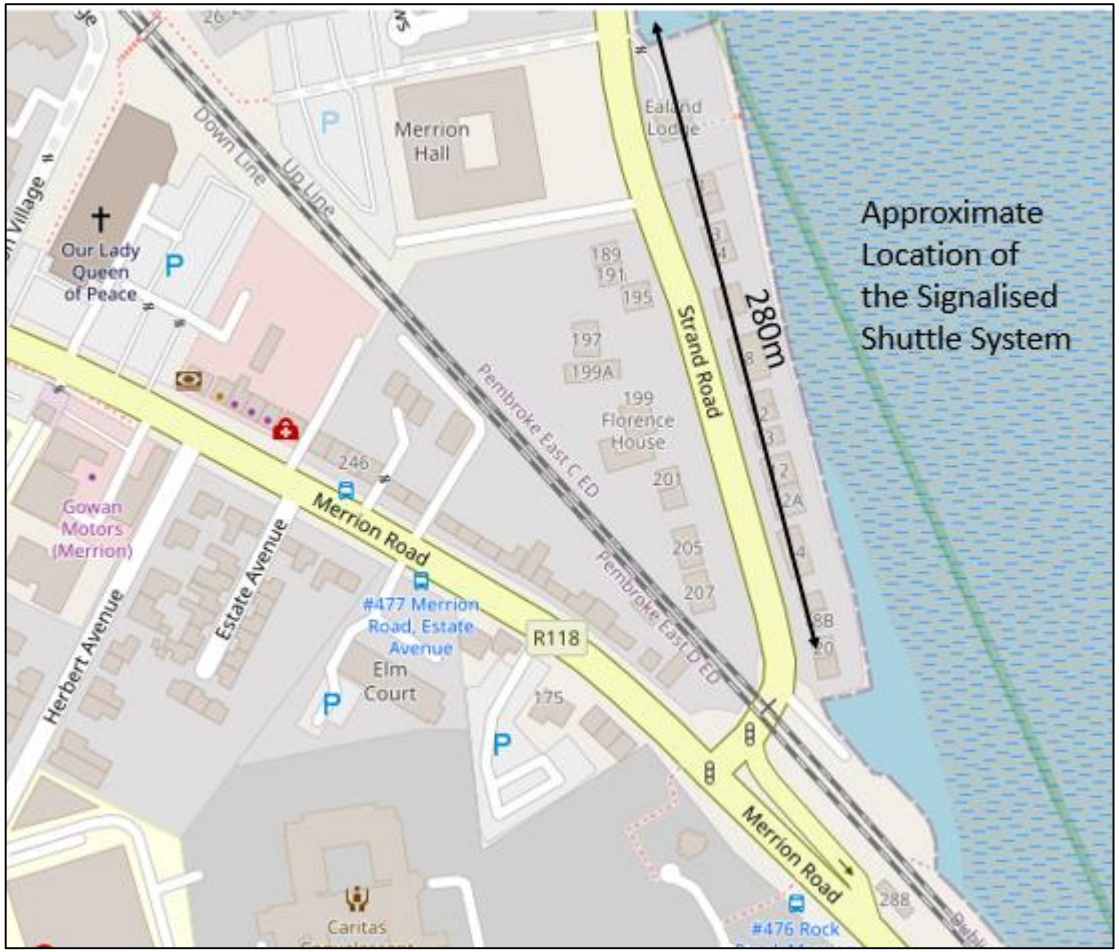
STC Proposal – Merrion Gates section

- The original STC proposal was for cyclists to merge with traffic and use the roadway
- Version 2 proposed a shuttle system where one lane is converted to a two way cycle track and in the other lane the traffic alternates in direction under traffic signal control . This was also suggested by SAMRA

- DCC undertook to have a detailed assessment of this layout to determine if it was feasible, as it would provide the same level of service for cyclists as the DCC proposals.,



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Shuttle systems are normally used during road works but there are a number of permanent ones operated by DCC

For safety, shuttles require a clearance time between alternate directions of travel. This makes them inherently inefficient.

This is to allow vehicles who proceed in the last second of green to clear the one lane section before opposing traffic is introduced.

This example is 44 metres in length with a 15 s clearance time.

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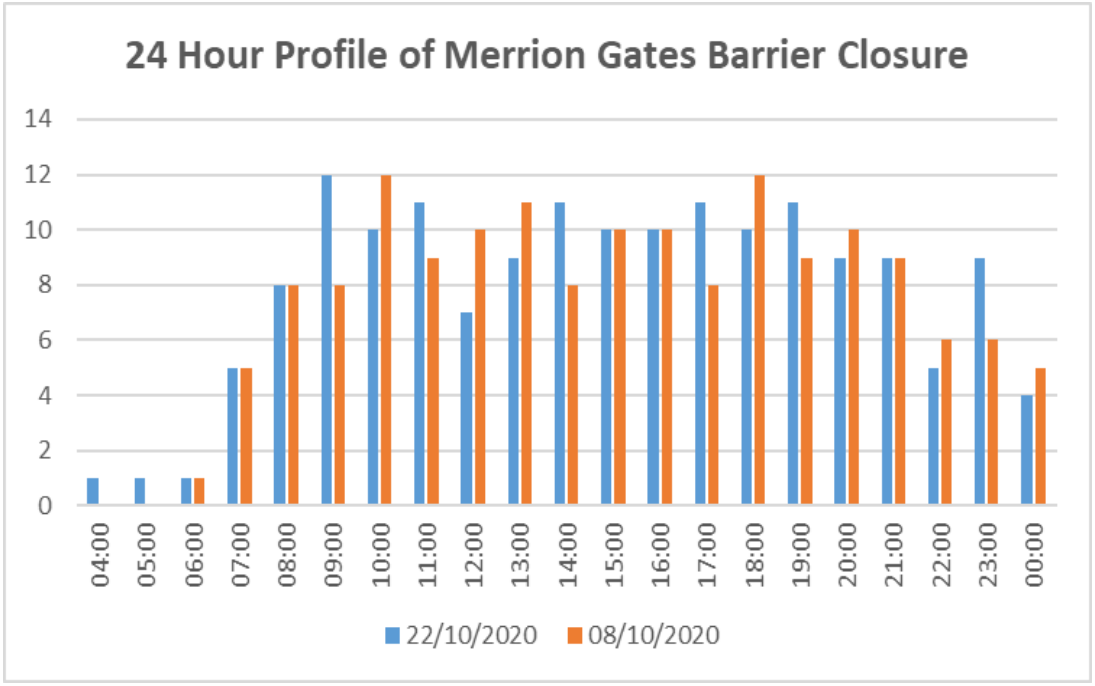
STC Proposal – Merrion Gates section

- Merrion gates closures add a complexity to the operation of a shuttle



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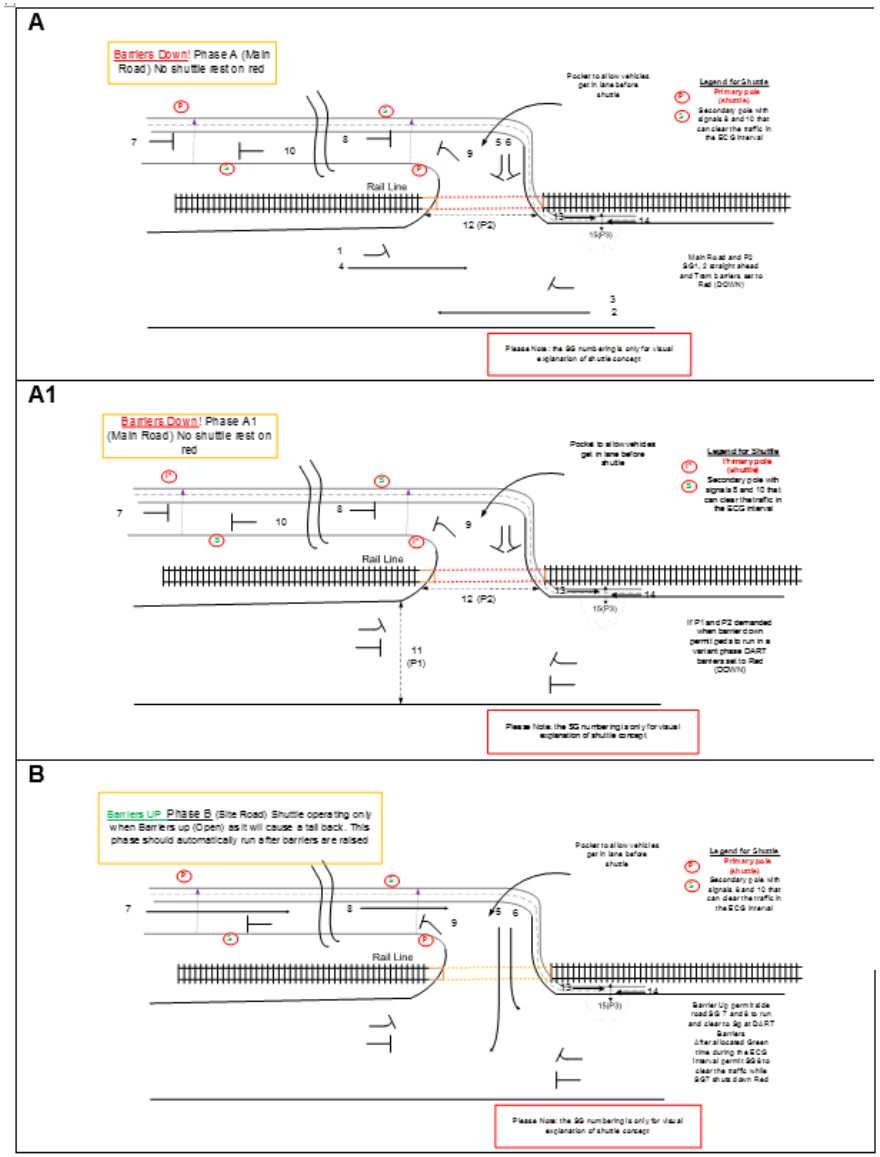

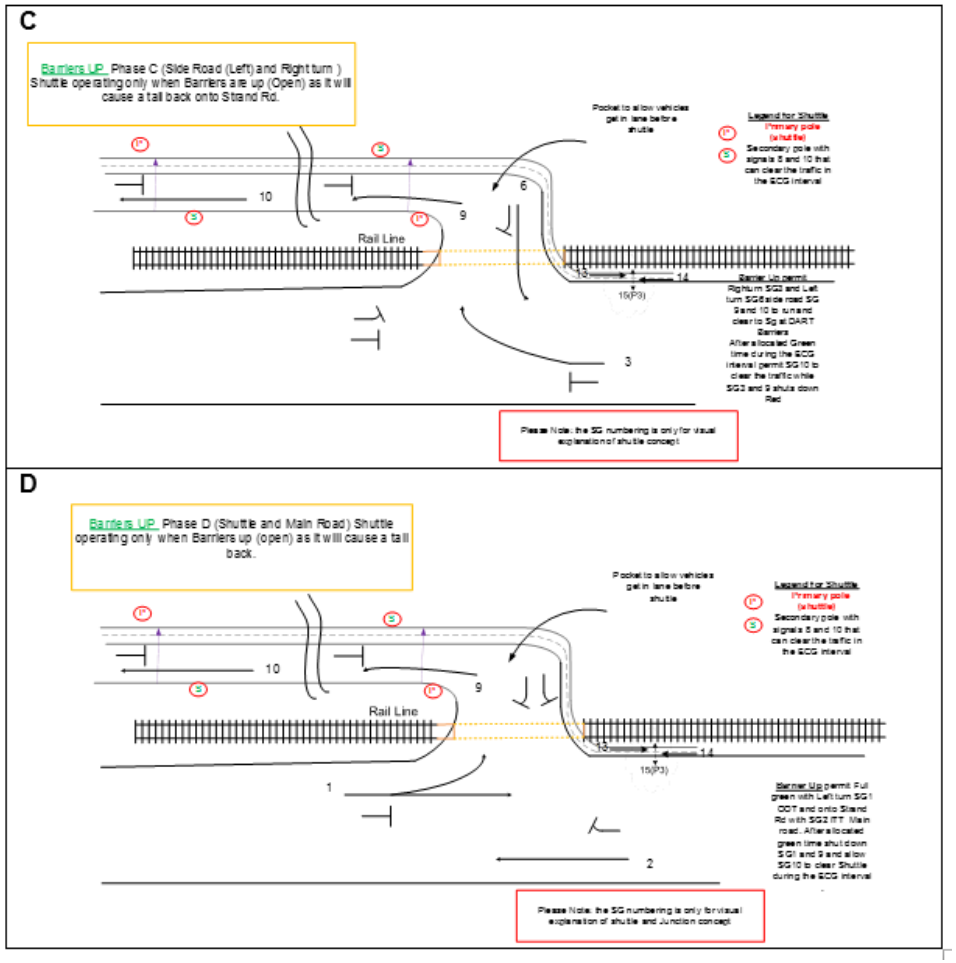

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Length = 280 m clearance time is 35 seconds.

80 CL											
SG	A Phase SB				B Phase NB				SUM
SG7	5	3	30	2	40				80
SG8	5	30	3	2	40				80
SG9	40				5	3	30	2	80
SG10	40				5	30	3	2	80

100 CL											
SG	A Phase SB				B Phase NB				SUM
SG7	15	3	30	2	50				100
SG8	15	30	3	2	50				100
SG9	50				15	3	30	2	100
SG10	50				15	30	3	2	100

120 CL											
SG	A Phase SB				B Phase NB				SUM
SG7	25	3	30	2	60				120
SG8	25	30	3	2	60				120
SG9	60				25	3	30	2	120
SG10	60				25	30	3	2	120

Interval	Green	Early Cut Off Green	Amber	Red
Colour				

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The capacity of a single lane approach to a signalised junction is given simply by the following relationship:

$$c = s \times g/C$$

where: c is the capacity in veh/hour,
s is the saturation flow in veh/hour,
g is the effective green time (s),
C is the cycle length in seconds.

For example, if the shuttle operates at 120 seconds Cycle Length with a saturation flow of 1800 veh/hour and effective green time of 26 seconds then the capacity in each direction is simply 390 veh/hour

Adjusting for impact of the Merrion Gates closure capacity is estimated at

Volume to Capacity Ratio (v/c)				
Hour Ending	100s Cycle Length		120s Cycle Length	
	NB	SB	NB	SB
07:00	1.51	1.51	1.20	1.4
08:00	2.23	2.23	1.76	2.0
09:00	2.15	2.15	1.70	2.0
10:00	2.15	2.15	1.70	2.0
11:00	1.99	1.99	1.58	1.8
12:00	1.91	1.91	1.51	1.7
13:00	1.93	1.93	1.52	1.8
14:00	1.96	1.96	1.55	1.8
15:00	1.84	1.84	1.46	1.7
16:00	2.05	2.05	1.63	1.9
17:00	1.79	1.79	1.42	1.6
18:00	1.78	1.78	1.41	1.6
19:00	1.88	1.88	1.49	1.7
20:00	1.68	1.68	1.33	1.5
21:00	1.25	1.25	0.99	1.1

Northbound

Cycle Length	120	Adj Capacity (veh/hr)	v/c Ratio	Cumulative	Unsatisfied	Cumulative	As % of Cumulative
# Adj Cycles	21	273.0	per cycle	Travel Demand	Demand	Unsatisfied Demand	Travel Demand
Hour End	Vol veh/cycle	Cap veh/cycle		veh/hr	veh/hr	veh/hr	
07:00	16	13	1.20	327	54	54	17%
08:00	23	13	1.76	808	208	262	32%
09:00	22	13	1.70	1273	192	454	36%
10:00	22	13	1.70	1737	191	645	37%
11:00	20	13	1.58	2167	157	802	37%
12:00	20	13	1.51	2579	139	941	36%
13:00	20	13	1.52	2995	143	1084	36%
14:00	20	13	1.55	3418	150	1234	36%
15:00	19	13	1.46	3816	125	1359	36%
16:00	21	13	1.63	4259	171	1529	36%
17:00	18	13	1.42	4647	115	1644	35%
18:00	18	13	1.41	5031	111	1755	35%
19:00	19	13	1.49	5438	134	1889	35%
20:00	17	13	1.33	5801	91	1979	34%
21:00	13	13	0.99	6071	-3	1976	33%

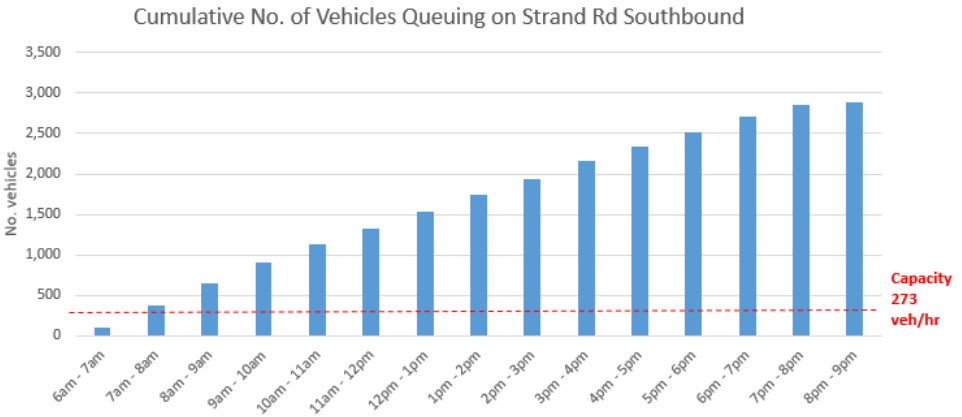
Southbound

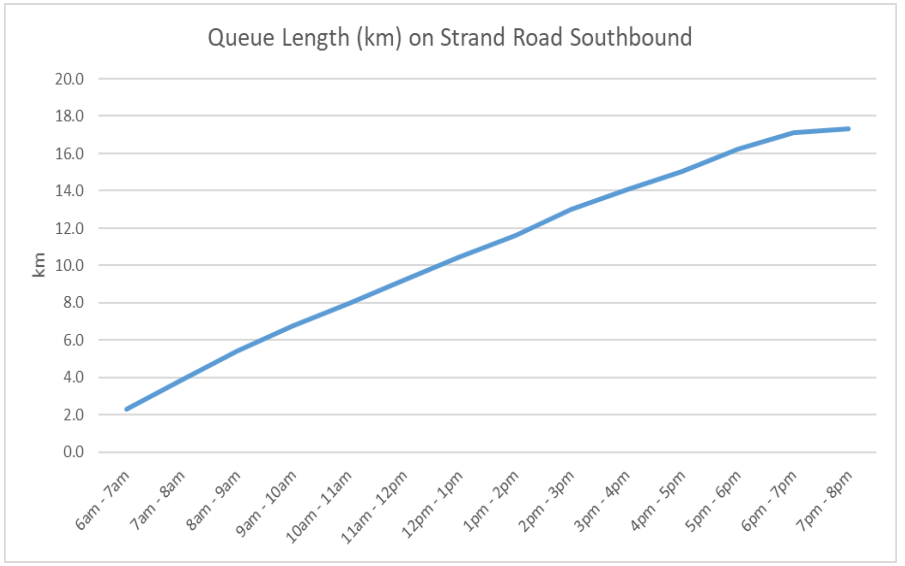
Cycle Length	120	Adj Capacity (veh/hr)	v/c Ratio	Cumulative	Unsatisfied	Cumulative	As % of Cumulative
# Cycles	21	273.0	per cycle	Travel Demand	Demand	Unsatisfied Demand	Travel Demand
Hour End	vol veh/cycle	Cap veh/cycle		veh/hr	veh/hr	veh/hr	
07:00	18	13	1.4	376	103	103	27%
08:00	26	13	2.0	929	280	383	41%
09:00	25	13	2.0	1464	261	645	44%
10:00	25	13	2.0	1997	260	905	45%
11:00	24	13	1.8	2492	222	1127	45%
12:00	23	13	1.7	2966	201	1328	45%
13:00	23	13	1.8	3444	205	1533	45%
14:00	23	13	1.8	3930	213	1746	44%
15:00	22	13	1.7	4388	185	1931	44%
16:00	24	13	1.9	4898	237	2168	44%
17:00	21	13	1.6	5344	173	2341	44%
18:00	21	13	1.6	5785	169	2509	43%
19:00	22	13	1.7	6253	195	2704	43%
20:00	20	13	1.5	6671	145	2849	43%
21:00	15	13	1.1	6981	37	2886	41%

STC Proposal – Merrion Gates section

- Cumulative unsatisfied travel demand to cumulative travel demand is approximately 34% in each hour for northbound traffic rising to 43% for southbound traffic.
- The number of vehicles unable to get through the shuttle quickly builds up
- The queue length on Strand Rd by 9am will exceed the length of Strand Rd itself
- There will be a queue of vehicles on Strand Rd all day long
- A vehicle joining the back of the queue at 1pm would not clear the shuttle till almost 6pm
- This will result in a large amount of vehicles diverting through Sandymount in both directions

- The result of this measure is extremely severe





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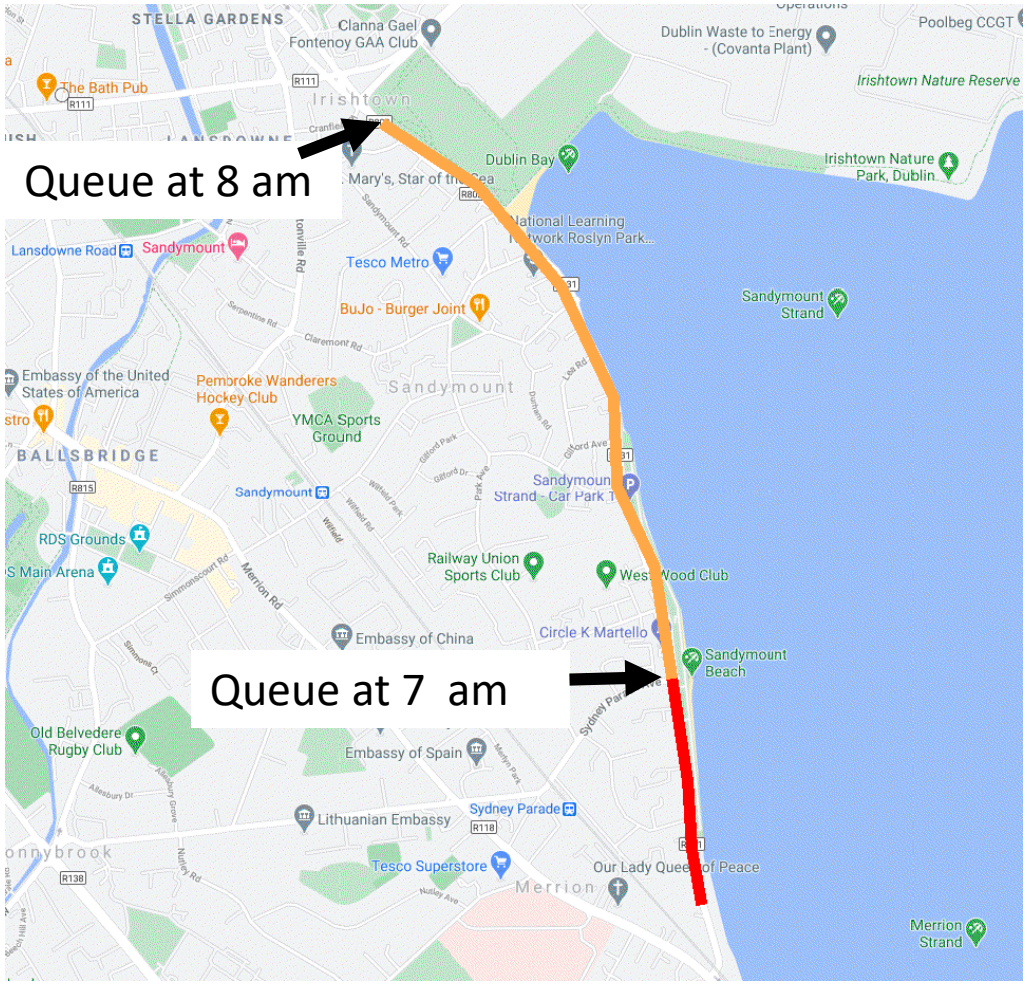

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STC Proposal – Merrion Gates section

There are a number of reasons for not recommending this option:-

- The lack of capacity which this option has and which would lead to long standing queues on both Strand Road and the Blackrock Road leading to Merrion Gates.

- The sensitivity tests show that there is no capacity to absorb any traffic increases or increase in the duration or frequency of the barrier closures in the future.

- The likely queues on both roads would severely affect the operation of Public transport services.

- Traffic on Strand Road in a one lane queue will either have to endure excessive queueing time impacting all vehicular movements along the Strand Road and potentially Sean Moore Road and Ringsend or will be forced to divert via the side roads.

- Safety issues concerning lack of sight lines along the one lane section and the unresolved issues of how residents in this section may safely exit their driveways.

Clontarf Rd layout

Clontarf Rd layout

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Strand Road

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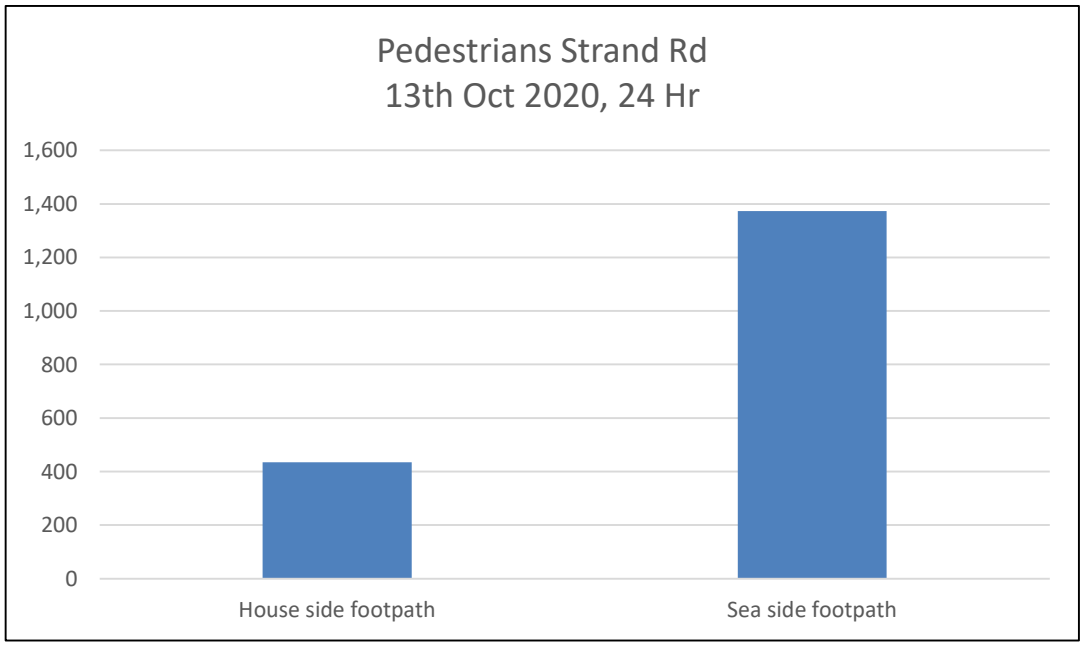
STC Proposal

2m footpath on the sea side

- Original proposal removed the sea side footpath for the entire length (2.5km)
- Version 2 proposes a footpath on the sea side of 2m

- A pedestrian count in October 2020 showed that on Strand Rd over 3 times as many pedestrians used the sea side footpath compared to the house side



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STC Proposal

2m footpath on the sea side

Proposal is to provide a footpath extension for the cycle lane. Footpath and cycle lane is at the same level separated by orcas.

Difficulties:

- The existing kerb lines are too low to provide a footpath extension (min 100mm kerb required) and would require to be raised.

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STC Proposal

2m footpath on the sea side/ Cycle lane

Difficulties contd:

- Entire footpath would have to be rebuilt
- Involves significant drainage works due to the camber of the road.
- In general DCC would look to provide a height differential between the footpath and the cycle track, new requirement from NTA is to have 60mm difference. Clontarf to City Center project will have this height.

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STC Proposal

2m footpath on the sea side

- All lighting columns would have to be moved to the back of the footpath
- Significant and costly civil works required

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STC Proposal

2m footpath on the sea side

Alternative considered

- Cutting the footpath back to 2m and having the cycle lane at road level
    - Significant civil works involving relocating lighting columns, new carriageway construction, drainage and watermains works required. Likely requirement to consider flood defence requirements also.
    - Project would now be a major civil engineering project
    - Clontarf section cost =12 million for cycle track, water main, flood defence and reconfiguration of footpaths etc.
    - Rapid build would not be possible.

STC Proposal

Varying width 2-way cyclelane (between 2 – 4m)

- For a 2-way cyclelane the desirable width is 4m, minimum width is 3m
- STC proposal will have a cyclelane less than 3m for majority of the route, typically between 1.8 – 2.6m
- Clontarf is 3.5 reducing to 3.00 metre at pinch points.

STC Proposal

6m carriageway

- 6m carriageway was the width originally proposed on the Clontarf route
- Road had to be widened to 6.3 m to remove issues with two way buses and to provide additional space to enter driveways.
- STC proposal will mean the removal of all on street parking on Strand Rd
- A 6m carriageway creates difficulty for residents to access their driveways without crossing the centre line of road
- On Clontarf rd driveway entrances had to be widened so that vehicles could safely enter from the road. On Strand Rd most driveway entrances would need to be widened (108 driveways). This would involve significant expenditure and disruption as well as possible issues with heritage.

STC Proposal

Assessment of proposed widths

- Proposed widths are unsuitable
- 3m minimum width required for cycle lane
- 6.3m minimum carriageway width required for 2 way carriageway with buses

section

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STC Proposal in this section:

- 2m Footpath
- 6m Carriageway
- 2.6m – 3m cycletrack
- All Parking removed

Minimum standard required widths :

- 2m Footpath
- 6.3m Carriageway
- 3m cycletrack
- All Parking removed

However there is not consistent 11.3 metres along all sections and even where there is enough space -- extensive civil works are required to make it usable.

DCC Proposal in this section

- Footpaths remain as it (2.5 – 3m)
- 3m cycletrack
- 3m carriageway
- 2m for on street parking

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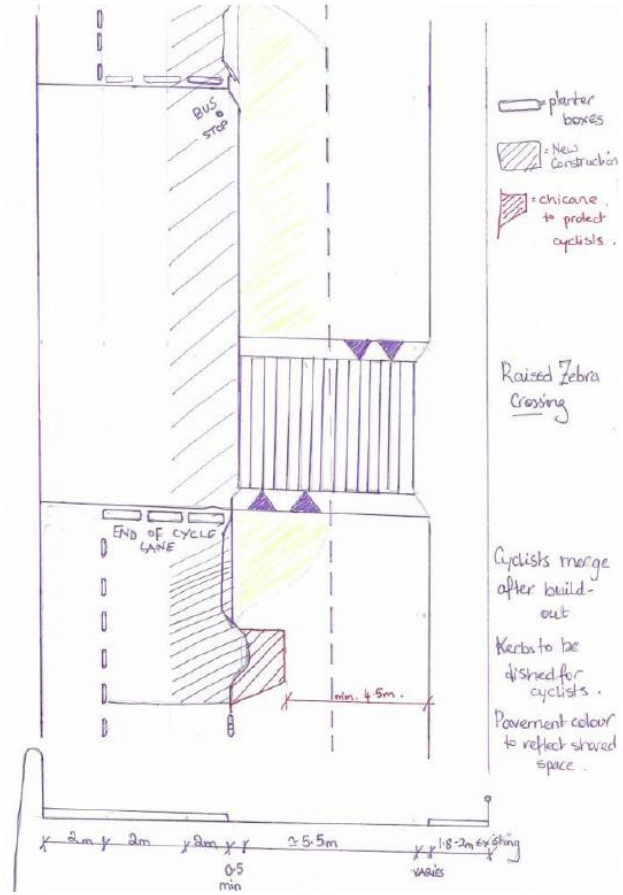
STC Proposal - bus stops

STC Proposal - Version 2 proposed at bus stops the cycle lane merged with traffic so pedestrians and cyclists don't mix at bus stops. A Zebra uncontrolled crossing behind the bus stop is proposed.



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STC Proposal - bus stops

- This road and location is not suitable for a Zebra or uncontrolled crossing. It creates a potentially hazardous situation where pedestrians crossing behind a stopped bus would be unable to see oncoming traffic. At the same time vehicles are crossing over into the other traffic lane due to a proposed build out. The layout as proposed could not be used in practice.

- Dublin City Council does not normally use Zebra crossings at these type of locations as they are not considered suitable for visually impaired users as there is no audio or tactile indication to users that it is safe to cross any crossing points would need signalisation.

- In the opposite direction the cyclist will have to come on to the roadway directly into on coming traffic. We cannot see how this arrangement can be safely implemented.

- If the cyclists are directed into the traffic lane at bus stops then traffic would have to be stopped for this manoeuvre to safely occur as this will be a two way cycle track and not cyclist in one direction.

STC Proposal – mini roundabouts

- Proposal didn’t include details at the roundabouts
- Proposal for rest of the scheme applied in these locations for assessment
- Extreme difficulties in fitting the realigned reduced roadway and cycle facilities at these junctions
- Roundabouts would need to be removed
- A junction, potentially signalised, or a shuttle system would be required at each location

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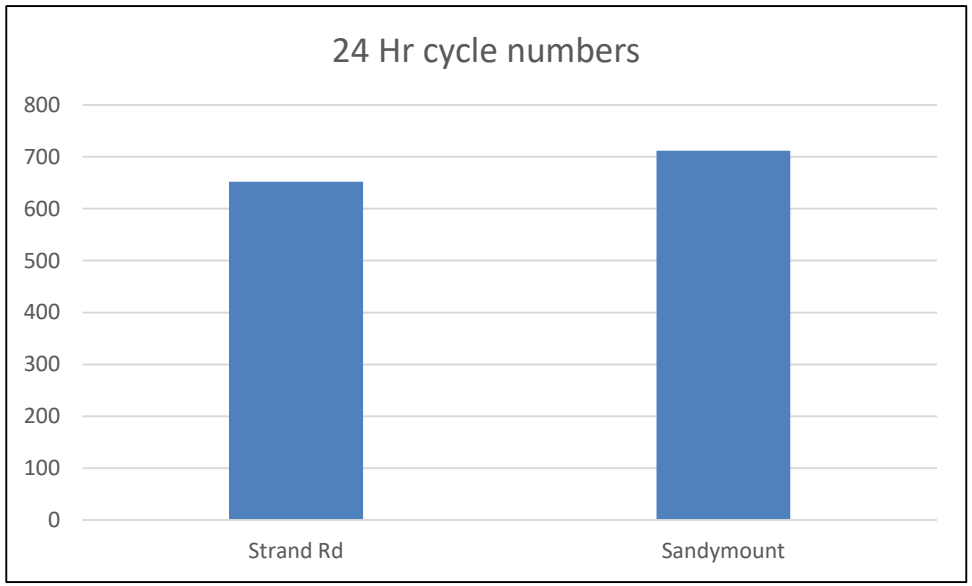
Cycling numbers Strand Road versus Sandymount



October 2020 counts

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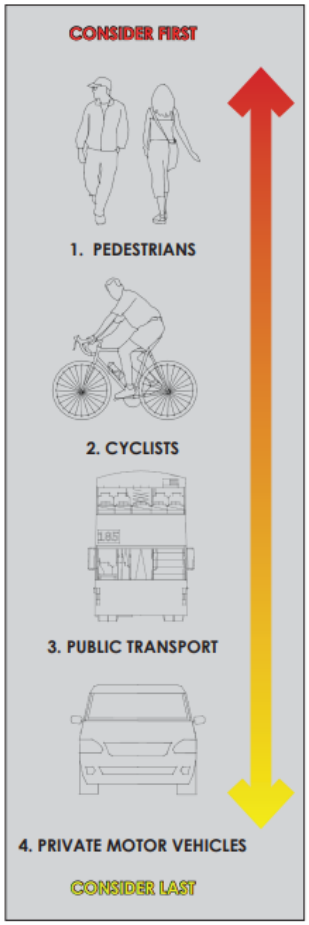
STC Proposal – Assessment Summary

Proposed widths – The minimum widths required to maintain 2 way traffic are for a 3m cycle lane a 6.3m carriageway and a 2m footpath on the sea side. The widths are not available to install this particularly in the section where there is no green space and no other options.

Pedestrians – A footpath extension is not viable due to the civil works involved. Similarly cutting the footpath back and the moving of lighting columns involves extensive civil works.
Cyclists – a minimum 3m segregated cycle lane is required. This is not possible with the STC proposal
Public Transport – Merging cyclists with traffic at bus stops is not ideal
Vehicles - Extreme queuing on Strand rd and Merrion gates due to the proposed shuttle arrangement. Would have an extremely negative impact on the Sandymount, Ringsend, Irishtown and Merrion area. No parking possible on Strand Rd.



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STRAND ROAD TRIAL RAPID DEPLOYMENT CYCLE ROUTE – AN ALTERNATIVE PROPOSAL

BY STC COMMUNITY GROUP
(SERPENTINE AVENUE/TRITONVILLE ROAD, CLAREMONT AND OTHER ADJOINING ROADS)

Proposed scheme is not a trial or a rapid deployment scheme as it would involve

- Rebuilding the footpath
- Relocating Lighting columns
- Carriageway reconstruction
- Drainage works
- Watermain works
- Driveway entrance widening

Proposal is actually more similar to Clontarf scheme than a rapid deployment proposal however the road widths are not similar.

Having assessed it DCC believe the alternative is not viable and cannot be installed.

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NTA Assessment

Original Alternative Proposal

"the NTA does not consider that the proposal is workable, adequate, safe or appropriate"

- insufficient footpath width available to safely accommodate two-way cycling
- numerous poles, signs and other street furniture located on the footpath, further reducing the effective width to an unacceptable level
- Given the space available for directional cycling, a kerb would need to be installed along the path edge. Again this further restricts the available width to an unacceptable level
- no segregated cycling facilities are provided from approximately Merrion Hall through Merrion Gates to Merrion Road. This means that the benefits of any segregated cycling facility further north of this point, would be completely eroded by requiring cyclists to merge with general traffic along this section
- The proposed arrangements at bus stops are inadequate and unsafe for bus passengers seeking to board or alight at these locations

NTA Assessment

Version 2 Alternative Proposal

Shuttle running

- This arrangement would not be supported by the NTA for a number of reasons
  - dramatically reduced capacity of this junction
- *Risk Profile at Level Crossing*
  - NTA has a concern that the provision of a long section of single lane running, directly in advance of the level crossing, may increase the level of risk at the railway crossing

- *Inadequate Widths*

Inside Edge Allowance	Cycling Regime	Outside Edge Allowance	Physical Width of Outside Traffic Divider	Total width Required for Basic Two-way
Footpath Kerb	Basic Two-way	Kerb / bollard		
0.25m	1.75m	0.5m	0.25	2.75m

- *CONCLUSION*

"the NTA would not be able to support, or fund, these proposals"

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STC Proposal – Conclusion

DCC welcome the proposal from the STC and the opportunity to assess in detail this option

However the proposal is not viable due to:

- Proposed widths do not meet the requirements for cyclist and carriageway
- Extensive civil works required including new footpaths, carriageway reinstatement, drainage works, watermain works, moving lighting columns and extending driveway entrances
- Severe knock on effects due to excessive queuing on Strand Rd and Merrion Rd with the shuttle system arrangement at Merrion Gates
- The proposal is not supported by and will not be funded by the NTA

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DCC Trial Benefits

The benefits of proceeding with the trial are :

- The nature of the trial means it can be quickly installed, monitored, adjusted and removed if necessary

- Provides the best indication of what works

- The trial arrangement has major benefits for Strand Rd, Ringsend and Irishtown with the reduction in traffic

- Overall the DCC proposed trial has benefits a greater area and is a strong move to providing a viable alternative for a safe cycle route which will join with the Dun Laoghaire route to provide a route as far as Sandycove

- The concerns regarding additional traffic in Sandymount have been well flagged and will be monitored carefully.

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Next Step measure:	Status
Engagement with a number of residents groups who have requested meetings.	Meetings have been held with: Sydney Parade Avenue Residents Association SAMRA, STC Community Group Strand Road Residents
Sandymount Village	
Work will begin on the new pedestrian crossings in Sandymount Village	Work is underway, due to be complete by Dec
New CCTV and Smart detection will also be put in the village.	Commenced
Merrion Gates	
Work will commence on modifying the median to allow for the new right turn.	Design work almost complete, to commence shortly
Additional ducts and cabling will be installed for the new signalised exit.	Design work ongoing
A new pedestrian crossing will be installed	Design work ongoing
The existing signals will be upgraded and Smart Micros added.	Commenced
Rock Road	
Design work for the section from Merrion Gates to the DLRCC boundary will be completed in tandem with the section in DLRCC from the DCC boundary to Blackrock Park.	DCC have been working with the NTA and DLRCC on joining the sections
Sean Moore Road/ Beach Road Junction.	
Upgrade works to junction to allow one way operation unless major difficulties with this change are flagged during consultation.	Design for 1 way from Beech Rd to Marine Drive to be brought for consultation next week
Strand Road	
Some of the mini roundabouts need come changes to allow for the cycle track to be installed.	Minor changes identified, to be undertaken as trial is installed
Pedestrian crossings will all be upgraded and fitted with Smart Micros to allow cycle counting and vehicle classification.	Design complete
Protection equipment, signage and road markings to be finalised and ready for completion.	Design complete
Bus services	
Dublin Bus require eight weeks' notice of change of services stop locations.	DCC, the NTA and Dublin Bus have been meeting regularly to determine new bus stop locations
Trial Area	
Speed and traffic count surveys	October counts complete
Statutory signage review and planning	
Publicity campaign	To commence before trial starts
Preparation of the necessary information campaign for people affected	Commenced
Ensuring that advance notification and signage is in place prior to start of trial.	Traffic management design underway

Next steps

- Forum for residents to hold it's first meeting late Nov
- Speed and traffic count surveys to continue
- Preparation of the necessary information campaign for people affected
- Ensuring that advance notification and signage is in place prior to start of trial

Trial proposed to commence 15th January for six months.

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