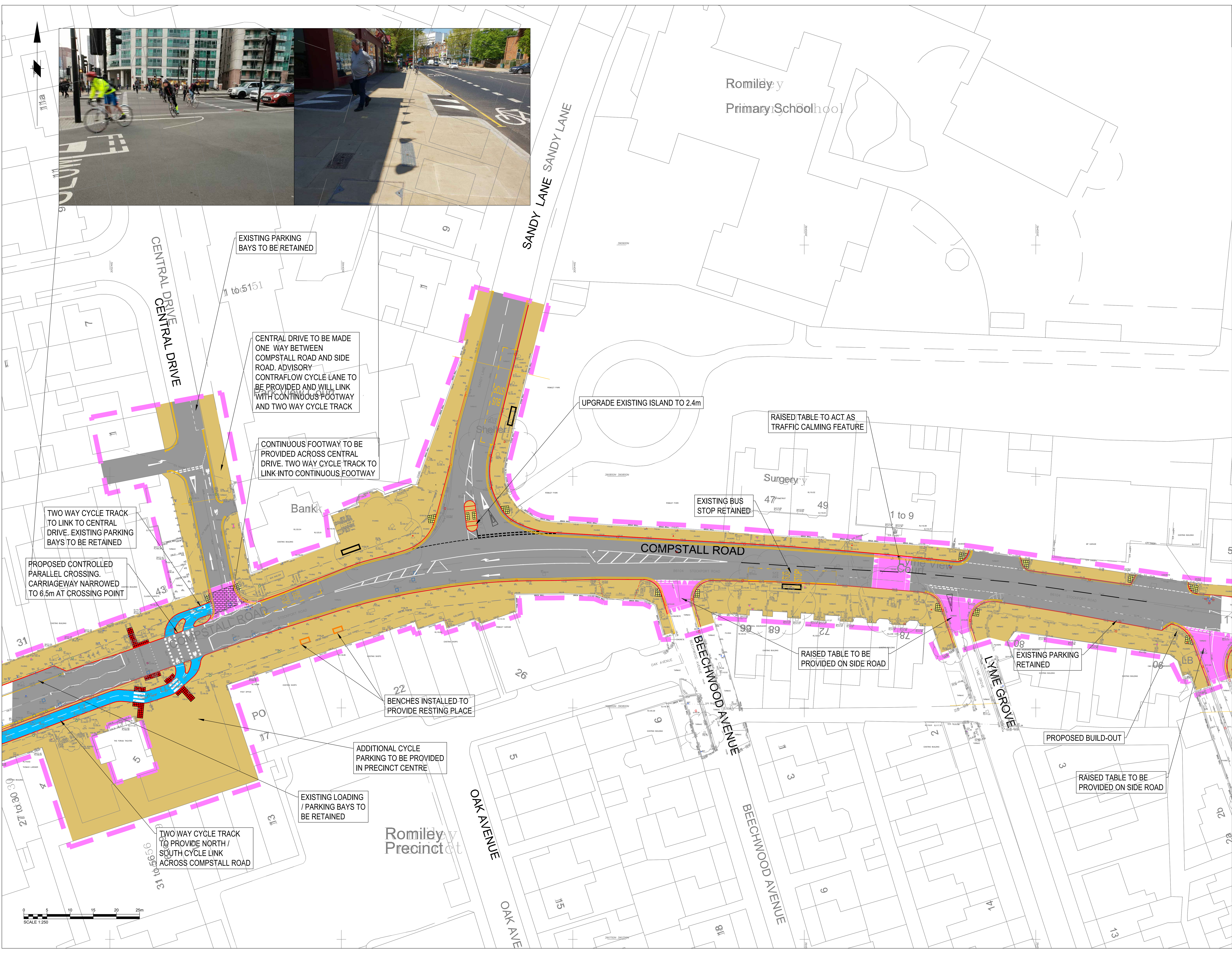
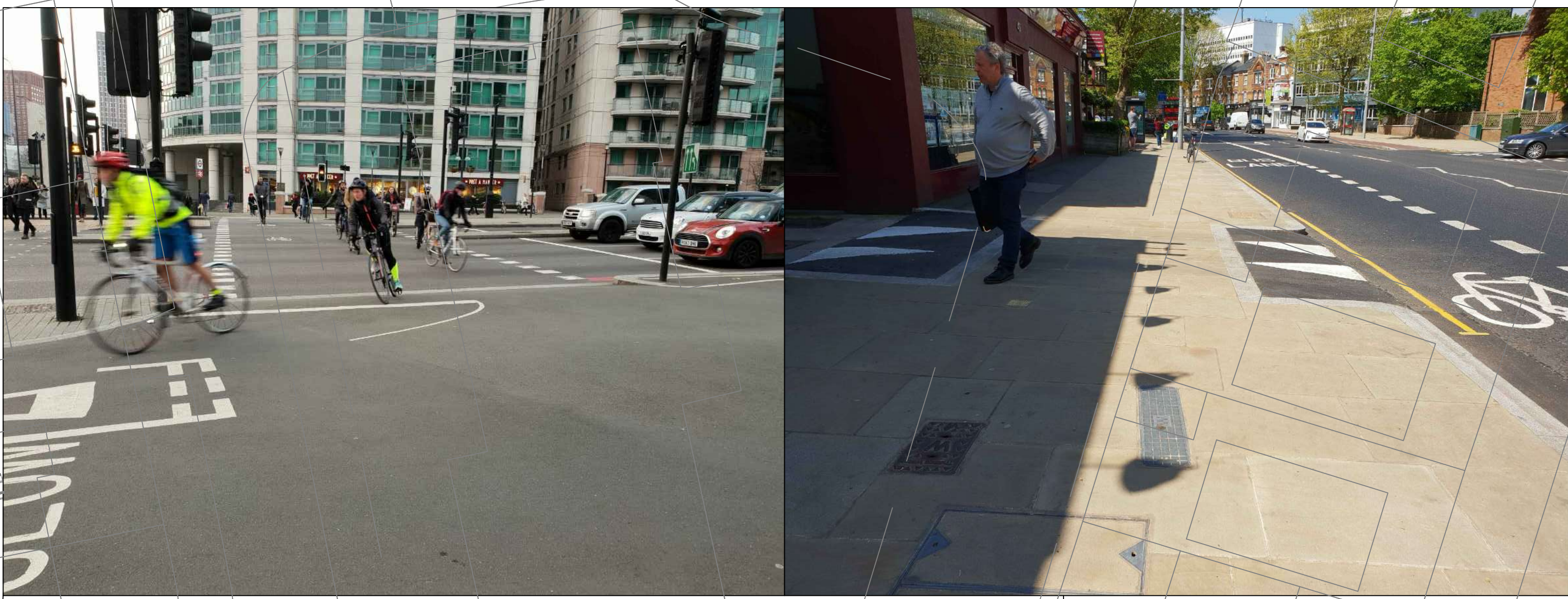
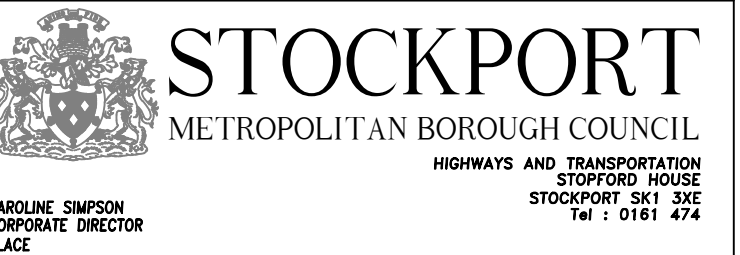




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|---|----------------------------------|
| KEY: | |
|  | CARRIAGEWAY RESURFACING |
|  | FOOTWAY |
|  | SEGREGATED CYCLEWAY |
|  | CONTROLLED TACTILE PAVING |
|  | UNCONTROLLED TACTILE PAVING |
|  | TRAFFIC CALMING FEATURE |
|  | CONTINUOUS FOOTWAY |
|  | PROPOSED NEW KERB |
|  | PROPOSED NEW BENCH |
|  | BUS SHELTER |
|  | DROPPED VEHICLE CROSSING EXTENTS |
|  | SCHEME EXTENTS |

B	JH	AV	03/06/21	REVISED STOP LINES
A	JH	JG	24/02/21	REVISED TO CENTRAL DR UPDATE
Rev.	Drawn	Checked	Date	Revision Details
AMENDMENTS				

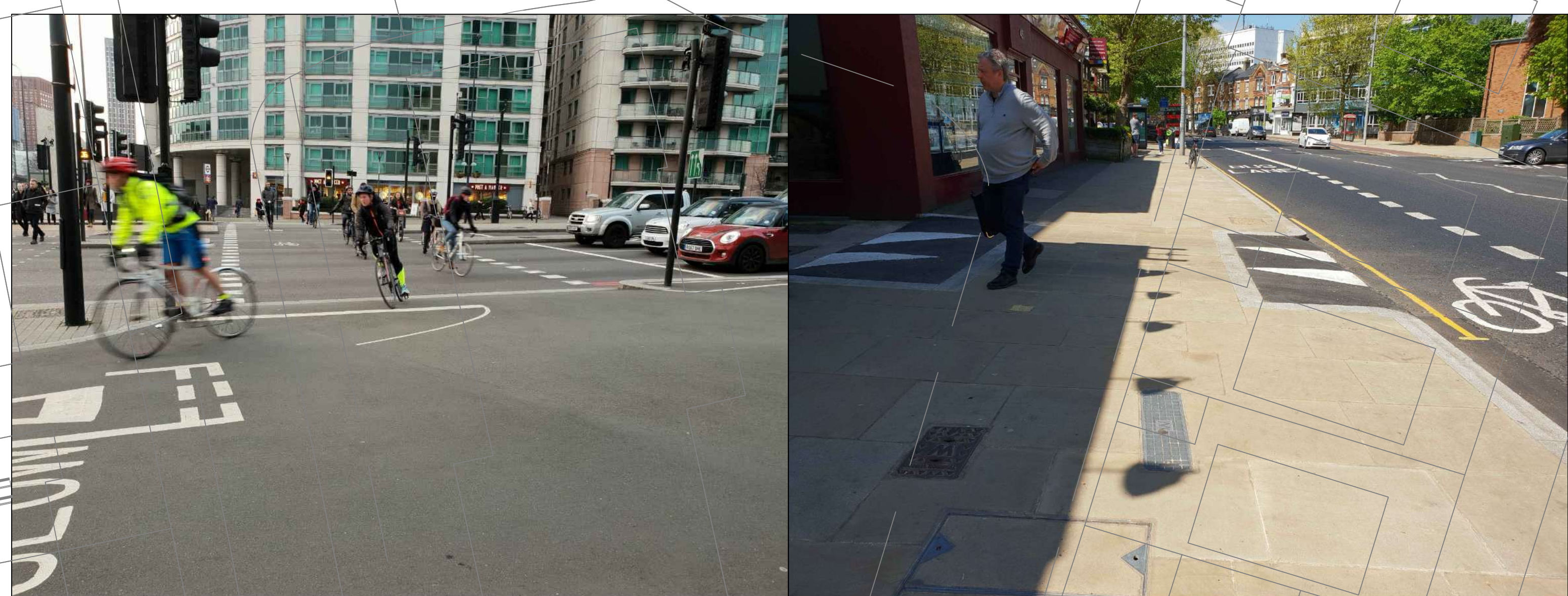
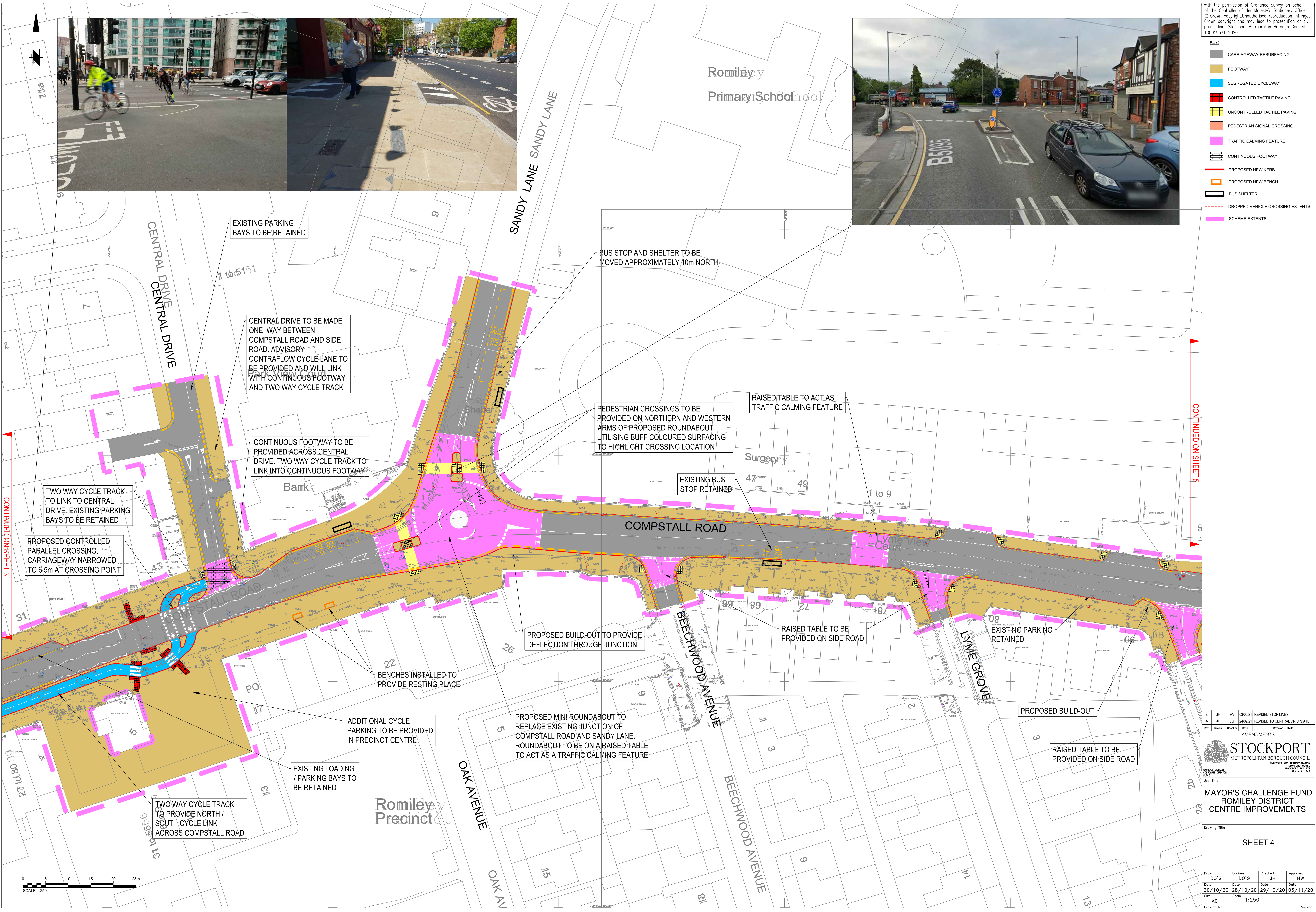


MAYOR'S CHALLENGE FUND
ROMILEY DISTRICT
CENTRE IMPROVEMENTS

Drawing Title

SHEET 4

Drawn LS	Engineer TB	Checked JG	Approved NW
Date 17/11/21	Date 17/11/21	Date 17/11/21	Date 17/11/21
Size A0	Scale 1:250		
Drawing No. F 0284/000/013			Revision C



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KEY:

- CARRIAGEWAY RESURFACING
- FOOTWAY
- SEGREGATED CYCLEWAY
- CONTROLLED TACTILE PAVING
- UNCONTROLLED TACTILE PAVING
- PEDESTRIAN SIGNAL CROSSING
- TRAFFIC CALMING FEATURE
- CONTINUOUS FOOTWAY
- PROPOSED NEW KERB
- PROPOSED NEW BENCH
- BUS SHELTER
- DROPPED VEHICLE CROSSING EXTENTS
- SCHEME EXTENTS

CONTINUED ON SHEET 5

S	JH	AV	03/06/21	REVISED STOP LINES
A	JH	JG	24/02/21	REVISED TO CENTRAL DR UPDATE
Rev	Drawn	Checked	Date	Revision Details

AMENDMENTS

STOCKPORT
METROPOLITAN BOROUGH COUNCIL
ROADWAYS AND TRANSPORTATION
STOCKPORT TRAFFIC PLANNING
Job Title

**MAYOR'S CHALLENGE FUND
ROMILEY DISTRICT
CENTRE IMPROVEMENTS**

Drawing Title

SHEET 4

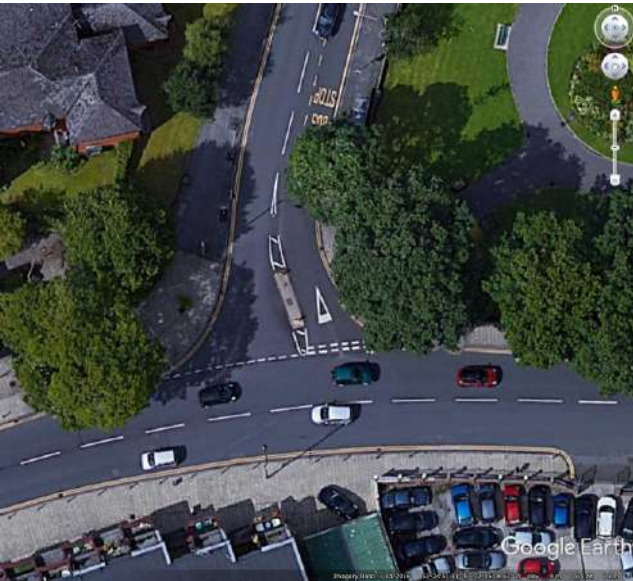
Drawn	Engineer	Checked	Approved
DO'G	DO'G	JH	NW
Date	Date	Date	Date
26/10/20	28/10/20	29/10/20	05/11/20
Size	Scale		
A0	1:250		

Drawing No. | Revision

INTRODUCTION

Stockport Council have been developing an active travel scheme within Romiley as part of the Mayor's Challenge Fund (MCF) programme.

As part of the design development, proposals were considered for the improvement of the B6104 Compstall Road / Sandy Lane junction. The junction is currently a priority T-junction, as shown in the Google Earth image below.



This note summarises the options considered, and the traffic modelling undertaken to support a final recommendation.

DESIGN OPTIONS CONSIDERED

The following three options have been considered in this assessment:

- **Do Nothing** – Retain existing layout
- **Do Something 1** – Revised priority T-junction layout including new right turn pocket for movements into Sandy Lane. The pedestrian refuge on the minor arm would also be widened to meet design standards
- **Do Something 2** – Remodelling of the junction to a mini-roundabout.

As a part of the wider development of the active travel scheme, it was agreed to close Central Drive to southbound traffic. This is to facilitate the construction of a new Sparrow controlled crossing of Compstall Road. It will still be possible to turn into Central Drive and enter the residential area, but it will no longer be possible to exit onto Compstall Road.

FLOW DATA

The optioneering process has made use of traffic flow count data. Due to the impacts of the pandemic on travel patterns it was not considered to be appropriate to collect traffic data during the early phase of scheme development as demand was unrepresentatively low. In June 2021 it was decided to collect data as traffic levels had broadly recovered to pre-pandemic levels and it was considered importance to have analytical evidence to inform the optioneering process, prior to the scheme business case being finalised.

TECHNICAL NOTE

SUBJECT: Romiley Crossings MCF, Sandy Lane junction modelling

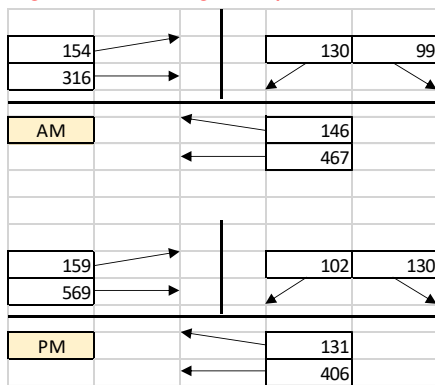
DATE: 18 November 2021

EXISTING FLOWS

Turning count data was collected on Sunday 13th June, and between Tuesday 15th and Thursday 17th June 2021. Data was collected at the Sandy Lane junction, but also at the adjacent Central Drive junction which is to be amended by the scheme (as traffic reassignment from this change will have an impact on flows using the Sandy Lane junction).

Data was collected for a 24 hour period on each day, and analysed to identify the busiest periods. This identified a weekday AM Peak Hour from 0800-0900 and a PM Peak Hour from 1700-1800. These time periods have been the focus for the optioneering analysis as the most critical periods of operation. The flow diagrams presented in Figure 1 show the existing demand as observed in the counts, in Passenger Car Units (PCUs).

Figure 1: Existing Compstall Road / Sandy Lane Flows (as observed)



CENTRAL DRIVE ADJUSTED FLOWS

A second flow matrix for the junction has also been calculated which accounts for the impact of closing Central Drive to southbound movements. Alternative routes out of the residential area for traffic will be via Guywood Lane or Sandy Lane; using junctions marked in Figure 2.

Figure 2: Central Drive reassignment routes



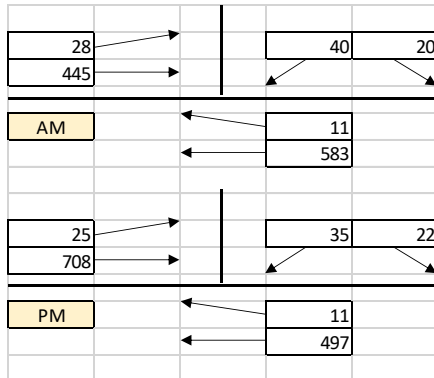
The observed flows at the Central Drive junction in the AM and PM Peak Hours are shown in Figure 3. Flows turning out of Central Drive are modest (60 pcus in AM and 57 pcus in PM).

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SUBJECT: Romiley Crossings MCF, Sandy Lane junction modelling

DATE: 18 November 2021

Figure 3: Existing Compstall Road / Central Drive Flows (as observed)

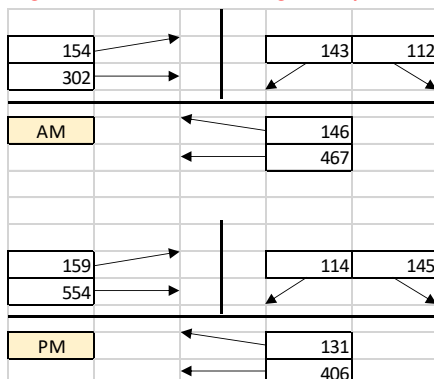


In the Do-Something flow matrix, this Central Drive demand has been reassigned to alternative routes on the principle that 2/3 of people will gravitate towards their final travel direction and 1/3 will use the alternate exit (as they may just live so much closer). It is assumed that all vehicles that currently turn left out of Central Drive continue straight ahead on Compstall Road rather than turn left into Sandy Lane. This methodology is explained further, for the AM Peak Hour data below.

- Observed data shows 60 PCUs exiting Central Drive in the AM Peak Hour – 40 PCUs travel westbound, 20 PCUs travel eastbound
- Of the 40 PCUs that currently turn right out of Central Drive, we assume that 2/3 reassign to Guywood Lane as this should shorten their journey based on their onward direction of travel (27 PCUs). The other 1/3 (13 PCUs) are assumed to turn right onto Sandy Lane (from any of the three alternative junctions), travel southbound and then make a right turn through the Compstall Road / Sandy Lane junction.
- Of the 20 PCUs that currently turn left out of Central Drive, we assume that 2/3 reassign to use Sandy Lane (13 PCUs). We assume these trips will then travel southbound and make a left turn through the Compstall Road / Sandy Lane junction. The other 1/3 are assumed to travel to Guywood Lane and turn left from there and so still travel through the Compstall Road / Sandy Lane junction in the same way as the existing situation.

The net impact of this reassignment methodology is shown in the flow diagram presented in Figure 4.

Figure 4: Do-Something Compstall Road / Sandy Lane Flows



TRAFFIC MODELLING

The three design options were modelled for both flow scenarios using Junctions10 software. The results are presented in the Table 1.

Table 1 – Traffic modelling results

Flow scenario		AM Peak 0800-0900				PM Peak 1700-1800			
		Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Do Nothing									
Existing flow	B-AC	1.4	20.12	0.59	C	1.7	24.53	0.64	C
	C-AB	1.5	7.67	0.46	A	1.4	8.38	0.44	A
Central Drive Adjusted	B-AC	1.7	23.03	0.64	C	2.2	29.51	0.70	D
	C-AB	1.4	7.61	0.45	A	1.4	8.30	0.44	A
Do Something 1: Revised T-Junction									
Existing	B-AC	1.4	19.75	0.58	C	1.7	24.55	0.64	C
	C-AB	0.4	9.51	0.30	A	0.4	11.02	0.31	B
Central Drive Adjusted	B-AC	1.7	22.50	0.64	C	2.2	29.48	0.70	D
	C-AB	0.4	9.42	0.30	A	0.4	10.89	0.31	B
Note: In the T-junction layouts, arms are labelled as follows, A - Compstall Road (W), B – Sandy Lane, C - Compstall Road (E)									
Do Something 2: Mini Roundabout									
Existing	1	1.7	12.31	0.64	B	15.8	73.91	0.98	F
	2	0.8	10.90	0.43	B	1.6	22.79	0.62	C
	3	1.1	6.15	0.54	A	0.8	5.16	0.46	A
Central Drive Adjusted	1	1.6	11.70	0.62	B	12.8	62.10	0.96	F
	2	0.9	11.56	0.47	B	2.0	26.30	0.68	D
	3	1.2	6.29	0.54	A	0.9	5.25	0.46	A
Note: In the mini-roundabout layout, the arms are labelled as follows, 1 - Compstall Road (W), 2 – Sandy Lane, 3 - Compstall Road (E)									

The analysis indicates that of the two Do-Something options, the Revised T-Junction option is predicted to be better-performing than the Mini Roundabout layout.

The Revised T-Junction is predicted to reduce queuing on Compstall Road compared to the existing operation. Delays and queuing on Sandy Lane will increase slightly from existing; the largest modelled impact is in the PM Peak Hour when delays increase by around 5 seconds (from 24.53 to 29.48). The RFC values reduce for stream B but increase slightly for stream C as would make sense based on the designs.

The analysis of the mini-roundabout option predicts that it would not operate effectively in the PM Peak Hour, with a Level of Service 'F'. There is a notable build-up of queuing on the Compstall Road (W) arm. Queuing is show to be

TECHNICAL NOTE

SUBJECT: Romiley Crossings MCF, Sandy Lane junction modelling

DATE: 18 November 2021

12.8 PCUs with a total delay of 62.10 seconds. This would be traffic which backs up along the High Street. This is because this movement would have the give way to traffic turning right into Sandy Lane (which is a free-flow movement in the T-junction layout). This impact would not be desirable and would not align with strategic objective for the schemes which is aiming to make the High Street traffic feel less imposing for pedestrians and cyclists.

The Do Nothing is presented for comparison but is not considered a realistic option to take forward as it would not implement any of the walking and cycling improvements which the Strategic Case for the scheme demands are necessary.

Comparing the results for the Existing and Central Drive Adjusted flow scenarios shows the impact which the Central Drive southbound closure could have. It shows that delays on Sandy Lane are predicted to increase by 3-5 seconds per vehicle as an impact on the reassignment of flow (e.g. with the Revised T-Junction, PM Peak Hour delays change from 24.55 seconds to 29.48 seconds).