A10 Stoke Newington Gyratory

Report on Implications of Removing One-Way System

Transport for London

December 2008

A10 Stoke Newington Gyratory

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Lynnfield House, Church Street, Altrincham, Cheshire, WA14 4DZ
Telephone: 0161 927 8200 Fax: 0161 927 8499 Website: http://www.fabermaunsell.com

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1 Executive Summary

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- The A10 Stoke Newington Gyratory lies in the London Borough of Hackney and forms part of the Transport for London Road Network (TLRN).

- The gyratory system was originally introduced to relieve congestion in Stoke Newington, which the gyratory sought to relieve by splitting north and southbound flows between 2 parallel routes that were better able to cope with heavy two-way traffic flows.

- A study has been undertaken to investigate the operation of the Gyratory in order to investigate whether the current road layout could feasibly be altered to re-introduce two-way traffic flow on some or all of the roads that form the current one-way system. The implications have been assessed in terms of traffic capacity, benefits to users and cost-benefit

- Two options have been assessed to determine their relative benefits:
  1. High Street made two-way with access for buses, cycles and loading only during the daytime with Rectory Road made two-way to accommodate all through traffic; and
  2. High Street and Rectory Rd routes made two-way for all traffic with a part-closure of Rectory Road at the Common to discourage southbound traffic.

- In both options, there would be problems associated with converting key junctions to two-way operation and an inevitable loss of capacity that would increase congestion. To maximise junction capacity, land acquisition might be required, including demolition of existing properties.

- ***Option 1*** provides benefits to buses and pedestrians with enhanced integration. Overall the High Street environment will benefit from the scheme. However, restricting access to High Street will reduce parking provision to shops and restrict vehicular access for passing traffic. Diverting all general traffic to the east via a two-way Rectory Road will place a significant additional burden on this route, with a very large increase in flow levels and removal of on-street parking for residents.

- ***Option 2*** simplifies routing throughout the area and benefits Rectory Road by encouraging a reduction in southbound traffic on this route, particularly during the morning peak hours. However, conversion of all major roads to two-way operation will require release of road space by removing bus lanes and on-street parking and loading bays. High Street in particular will suffer a reduction in amenity for frontage shops, and existing bus priority measures would need to be removed to provide sufficient lane allocations for two-way traffic. Bus journey times and punctuality are therefore likely to suffer if this option were delivered.

- In summary, there would be major dis-benefits to Rectory Road if access to High Street were restricted, and these would not balance against the environmental benefits that would be gained for High Street. If un-restricted two-way flow were re-introduced on both roads there would be benefits for Rectory Rd, but these would be offset by the dis-benefits for High Street in terms of increased congestion and loss of public transport priority.

- A Business Case Assessment has indicated that options to deliver two-way traffic flow on all or part of the network would not deliver value for money in terms of the benefits gained compared to estimated costs. This is largely due to the high levels of additional vehicle delay caused by the changes required to introduce two-way flow.

- In conclusion, this study has illustrated that the one-way system at Stoke Newington is able to accommodate high levels of through traffic in conjunction with bus priority measures. It is not ideal for cyclists or for clarity of bus routing and there is some indication that speeds on the one-way network have lead to higher than average accident levels.

- However, reinstatement of two-way traffic on all or part of the network would have wide-ranging implications for both the TLRN and LB Hackney roads. These include increased congestion, reduced on-street loading and parking provision and increased delays for buses.

- There are, therefore, fundamental technical difficulties associated with the introduction of two-way flow in Stoke Newington and the benefits that might be gained from re-instating two-way flow have not been demonstrated to merit the investment required to deliver this change.

- Moving forward, there may be suitable alternate solutions to the problems created by the one-way system. In particular, consideration could be given to provision of contra-flow cycle facilities on High Street; enhancement of public realm with a view to improving safety for pedestrians and; reducing the speed of through traffic, including enhanced enforcement measures.

2 Introduction

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2.1 Introduction

The A10 Stoke Newington Gyratory lies in the London Borough of Hackney. It forms part of the Transport for London Road Network (TLRN), as shown in **Figure 2.0**

The gyratory system has been in operation for more than twenty years. However, the term “gyratory” is in many ways a misnomer as it is effectively an extensive one-way road system located within a complex and highly permeable road network.

Stoke Newington High Street operates one-way northbound. It is a busy shopping street with high levels of on-street activity. Southbound traffic uses Northwold Road/Rectory Road to the east, which is one-way for all southbound movements, linking back to the High Street via Manse Road/Evering Road. Both Rectory Road and Manse Road are partly fronted by residential property. These three routes form a clock-wise one-way road system and are part of the A10 corridor.

The gyratory system was originally introduced to relieve congestion through, and on the approaches to, Stoke Newington High Street.

The restricted capacity of the A10 at Stoke Newington created a bottle-neck, which the gyratory sought to relieve by splitting north and southbound flows between 2 parallel routes, which were better able to cope with heavy two-way traffic flows.

This study has been undertaken to investigate the operation of the Gyratory in order to investigate whether the current road layout could feasibly be altered to re-introduce two-way traffic flow on some or all of the roads that form the current gyratory system.

It considers the implications of these changes in terms of traffic capacity, benefits to users and cost-benefit.

2.2 Operation of the Road Network

Roads within the one-way system include:

- Stoke Newington High Street;
- Rectory Road;
- Northwold Road;
- Manse Road; and
- The western end of Evering Road.

All of these roads are within the Transport for London Road Network (TLRN).

Figure 2.0 shows the location of the gyratory in the context of the wider strategic road network and **Figure 2.1** illustrates the existing highway layout.

The highways that form the one-way system form part of the Transport for London Road Network (TLRN). All other highways are administered by the London Borough of Hackney.

2.2.1 Existing Road Layouts

- ***Stoke Newington High Street*** consists of three northbound lanes, varying between three general traffic lanes and two lanes where bus lanes have been introduced. There are currently 2 nearside bus lanes which extend
    - From Victorian Road to Brooke Road; and
    - From Stoke Newington Church Street to Northwold Road.

Stoke Newington High Street has a considerable number of loading and waiting bays, providing the servicing and parking facilities required for businesses that front the High Street. There are also three bus stops in the northbound direction.

- ***Northwold Road***, between the junction of Stoke Newington High Street and Rectory Road, consists of a single eastbound general traffic lane, aligned by three sets of loading and waiting bays. At the Junction of Rectory Road, the route splits into three lanes, one lane continues eastbound and two lanes continue southbound to Rectory Road.

- ***Rectory Road*** varies considerably in layout throughout its length. Between its junction with Northwold Road and Brooke Road, there is a southbound bus lane and a single lane for general traffic. This bus lane ends at Stoke Newington Common junction, where the route widens to three lanes southbound to Brooke Road.

The lane configuration alters again between Brooke Road and Evering Road, with a single southbound general traffic lane and bus lane, finally widening again approaching Manse Road, where general traffic can continue southbound or right towards Stoke Newington High Street.

- ***Manse Road and Evering Road*** form a one-way link west to Stoke Newington High Street, with a 2 lane configuration for much of the link's length and some limited parking activity.

- ***Brooke Road*** links Rectory Road to Stoke Newington High Street one-way westbound, providing a key link for traffic requiring access to Stoke Newington Church Street. It consists of two westbound lanes of general traffic, narrowing to one westbound lane at its junction with Stoke Newington High Street.

2.2.2 *Traffic Flows.*

Appendix A shows traffic flows on the one-way system in both AM and PM peak periods.

Flows on Stoke Newington High Street are currently close to, or at, the capacity of the road network, evidenced by the extensive queuing and delays evident during peak periods.

Flows are relatively consistent between the

AM and PM peak periods, although those in the PM peak period are slightly higher.

Stoke Newington High Street is subject to maximum flows of approximately 1000 to 1100 vehicles/hour in both AM and PM peak periods.

On Northworld Road, Rectory Road and Manse/Evering Roads (the southbound section of the gyratory) there is a pronounced tidal effect, with a maximum of 1500 vehicles/hour travelling south in the AM peak period on Rectory Road compared to 900 per hour in the PM peak period.

High Street flows divide between the following vehicle types over a 12 hour weekday period:

- Cars – 60%
- Light Goods Vehicles – 20%
- Heavy Goods Vehicles – 5%
- Buses – 6%
- Motorcycles – 4%; and
- Cycles – 4%

2.2.3 *Accidents.*

Appendix B contains a table illustrating the numbers of incidents that have occurred on the various roads that make up the one-way system for a 36 month period leading to March 07:

The only notable problem area is on High Street between its junction with Evering Rd and Brooke Road, where there is a higher incidence of serious car accidents than the Borough of Hackney average. Accident reports indicate that a significant number of the incidents that have occurred on this section of road are related to excessive speed and/or aggressive driving.

Elsewhere on the network, there are no notable areas where accident levels are excessive or where clear “clusters” of incidents have occurred.

2.2.4 *Buses*

The core high-frequency 149 bus service passes north and south on the A10 via the one-way system.

Stoke Newington is served by a large number of bus routes (routes 67, 73, 76, 106, 149, 243, 276, 349, 393 and 476). Consequently, over 110 buses an hour pass through some sections of the route.

Existing bus lanes are provided northbound on the High Street and southbound on Rectory Road (see Figure 2.1).

Bus lanes on the High St operate from 1pm to 7pm, covering the afternoon and evening peak period. On Rectory Rd, bus lanes operate all day, between 7am and 7pm.

Buses therefore bypass much of the queueing at major junctions on the gyratory and there are bus stands located on Stoke Newington Common and Evering Road.

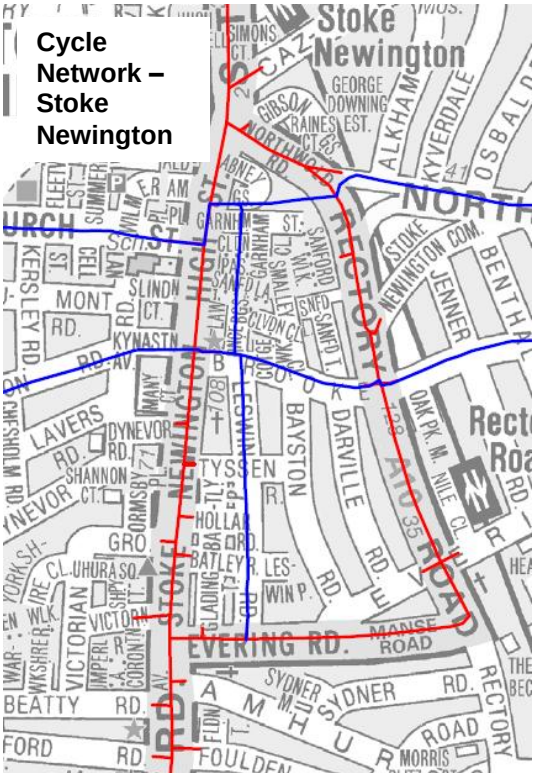
2.2.5 *Cyclists*

The current one way system presents impediments to cycling in the area.

Cycle flows northbound on High Street average at approximately 50 per hour during peaks, 580 in total between 7am and 7pm. Cycle flows on Rectory Road are similar during peaks, at between 40 and 50 per hour, reducing to 10 to 20 per hour off-peak.

The current one way system does not allow

cyclists to follow the most direct southerly route on A10, requiring them to divert around the gyratory or to cycle illegally against the one-way flow (see photo). Additionally, the intermittent nature of the current bus lanes does not protect cyclists from general traffic throughout the gyratory, and in particular at junctions.



Key

Red = TLRN

Blue = London Cycle Network

The London Cycle Network (LCN) does not pass over any of the streets that form part of the one-way traffic system through Stoke Newington.

However, cyclists are encouraged to utilise a "quiet" route running parallel to High Street. This route is bisected at two locations, where Brooke Rd and Stoke Newington Church St joins High Street.

It may be feasible to provide a contra-flow cycle lane on the northerly section of High Street leading to the LCN route with associated direction signing for southbound cyclists. Consideration would need to be given to cycle crossing facilities on Evering Rd (to the south)

2.2.6 *Pedestrians*

Stoke Newington is a vibrant District Centre, with heavy pedestrian demands along both sides of Stoke Newington High Street.

Controlled pedestrian crossing facilities are provided at several locations and footway widths are relatively generous in areas of high-footfall, ranging from 3 to more than 5 metres wide.

Footway conditions are generally good, with well maintained flagged paving and high-quality kerb units.

One-way traffic creates natural breaks in traffic flow and facilitates crossing between authorised crossing points. However, the one way system does encourage higher vehicle speeds and there have been 9 pedestrian incidents on the high street (see Appendix B).

Rectory Road is mainly residential, therefore pedestrian demands are lower. However, Stoke Newington Common and Rectory Road Station are both accessed from Rectory Road.

2.2.7 *Loading*

Provision of loading bays is crucial for an area like Stoke Newington due to the large number of businesses that front the High Street.

A trader survey was undertaken in early 2008 to determine the requirement for on-street loading facilities.

Of 35 traders interviewed, it was found that;

- 71% have no rear servicing facilities;
- 85% currently service their businesses from the front; and
- 69% require servicing during the daytime (between 7am and 5pm).

Provision of on-street loading is therefore essential for the continued viability of frontage businesses.

The current gyratory system allows for a large number of marked loading areas, with most shops being within 100 metres of these bays. Loading is restricted to 20 minutes within bays, with time restrictions in place where loading bays conflict with bus lanes.

2.2.8 *Parking*

Similarly to the provision of loading areas, the provision of parking close to shops is perceived as being of critical importance to the viability of small shops.

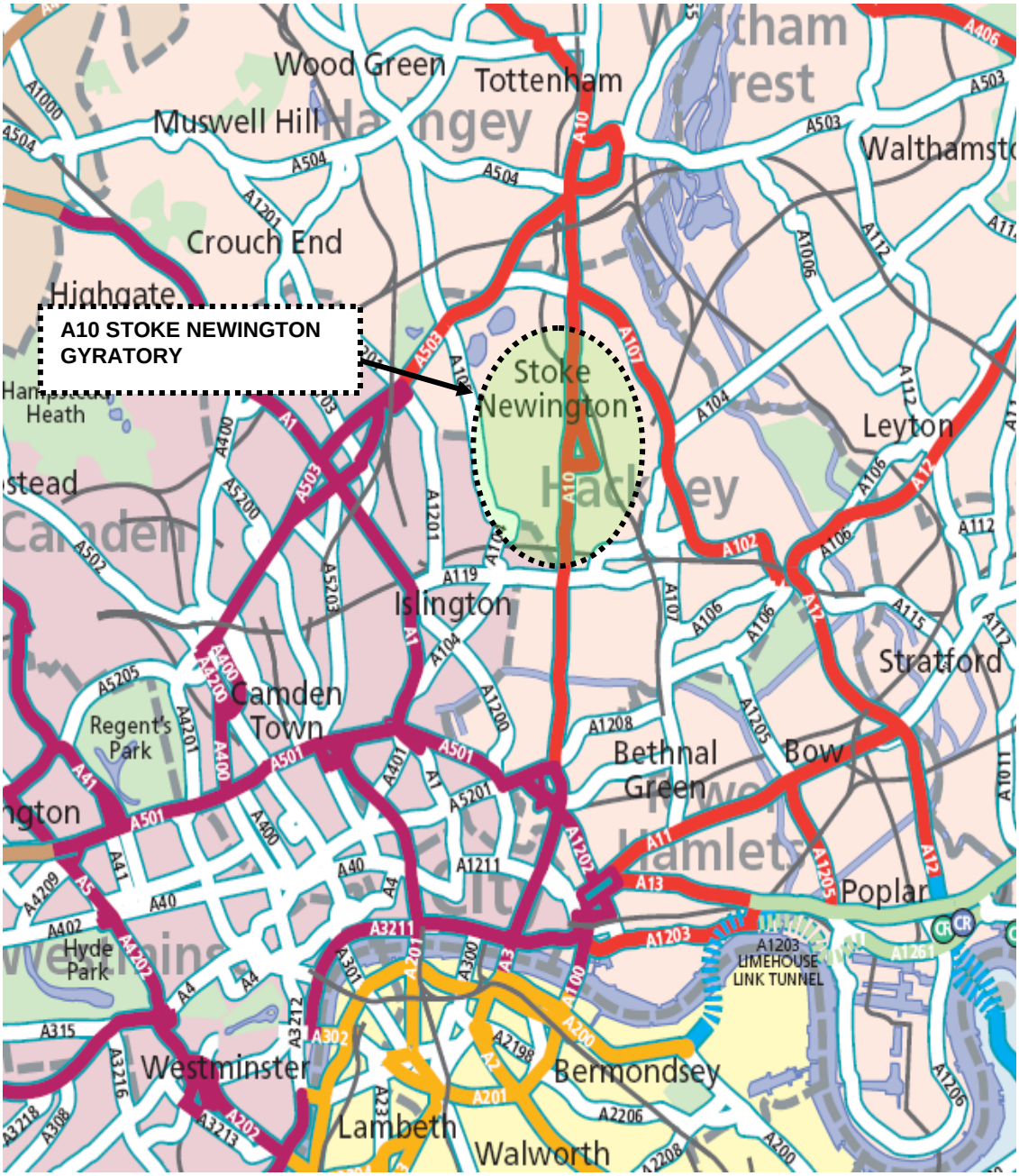
There is currently 1 hour time-limited parking provision on the high street between 7am and 7pm when parking in marked bays. Disabled parking is permitted within loading and parking bays for a maximum of 3hours. Figure 2.1 indicates the locations of existing parking and loading spaces.

Consultations with traders have indicated that current parking provision is perceived to be inadequate. There may therefore be strong resistance to any changes that might further reduce or constrain parking.

Elsewhere on the gyratory, there is Borough controlled residential parking provision on Rectory and Evering Roads, as well as on many of the side streets bounded by the one-way system. Residential parking on Rectory Road (as shown) creates a narrowing of the carriageway to a single traffic lane and bus lane. On Evering Road parking bays are set back from the road, allowing for 2 lanes of one-way traffic westbound towards High Street.

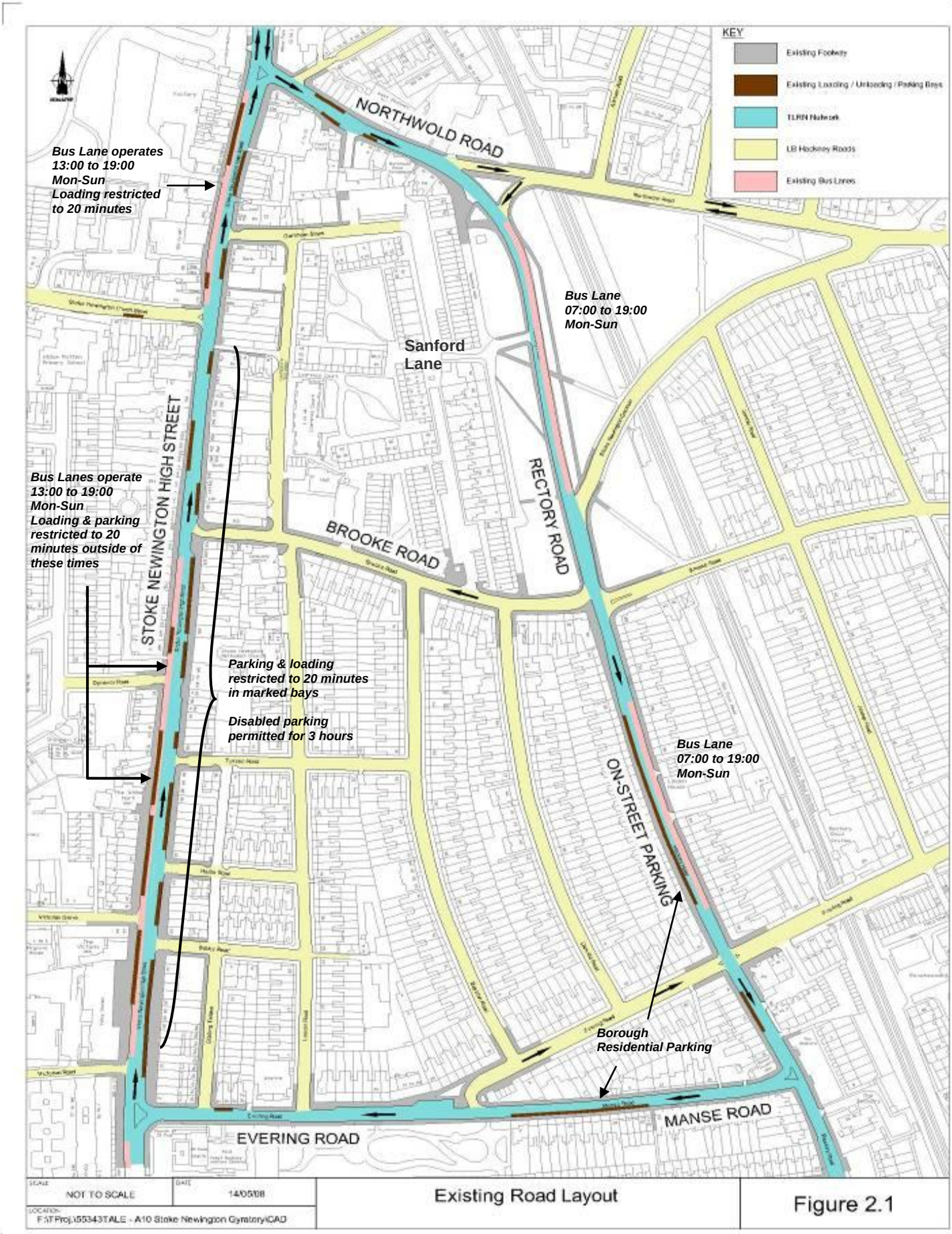
Residential Parking on Rectory Rd & Evering Rd

Figure 2.0: Location of Stoke Newington Gyratory



Key to Transport for London Road Network Routes

Figure 2.1: Existing Layout and Operation of Stoke Newington Gyratory



3 Option Development

3 Option Development

3.1 Introduction

The current one-way gyratory arrangement at Stoke Newington has a number of perceived dis-benefits. Firstly, it directs commuter traffic past residential properties on Rectory Road, Manse Road and Evering Road, particularly during morning peaks. It also increases the effective distance by which through traffic must travel to proceed south as well as creating a more circuitous route for cyclists.

Bus services are divided between the two separate north and southbound routes, which reduces clarity and convenience for some users, i.e. those that catch the bus to work from Rectory Rd to work disembark on Stoke Newington High St on their return journey, which in some cases will be more inconvenient.

A potential solution to these problems could be to make some or all of the one-way streets two-way in order to provide a single two-way A10 route through Stoke Newington.

Stoke Newington High Street is arguably the most appropriate route to operate as a two-way corridor as it is not so heavily fronted by residential property. If through traffic were encouraged to use this route it might therefore reduce the impacts of the one-way system on surrounding semi-residential roads. This would also have the benefit of concentrating bus flows along the same corridor in both directions (i.e. along High Street), which would create a more coherent and logical route for users.

However, this change could increase congestion for general traffic, reduce bus punctuality, constrain parking and loading facilities and potentially increase hazards for vulnerable users. It would also require major physical changes to the highway network to accommodate necessary changes to major junctions. The associated costs and implications of these network changes might not out-weigh the benefits of the gyratory system's removal.

Options for introducing two-way streets have therefore been developed for assessment purposes, with consideration given to the implications on traffic congestion; bus punctuality; vulnerable users and; road safety.

3.2 Option Development

The key drivers to developing realistic options for Stoke Newington are the need to ensure the punctuality of bus services by ensuring that existing levels of priority are at least maintained, or preferably improved.

Current traffic levels also need to be accommodated on the network as far as is possible, as it is assumed that severe long-term congestion on the approaches to Stoke Newington would not be a desirable outcome. In addition, loading facilities on High Street need to be maintained, or replaced with like-for-like facilities.

Four options were initially considered for removing the one-way system:

A. **Two-way Bus Only Highway (Stoke Newington High Street**) / **Access Only -** This option proposes reverting Stoke Newington High Street to two-way operation for buses only between Evering Road and Stoke Newington Church Street. Access would be permitted for loading/unloading and parking as existing, but would be limited to certain times of day. Rectory Road would then become the main two-way route for all through traffic
B. **Two-way Stoke Newington High Street -** This option proposes reverting Stoke Newington High Street to two-way operation for all traffic and extending the existing northbound bus lane to make it continuous from the existing bus lane south of the junction with Evering Road right through to the junction with Northwold Road.
C. **Two-way Stoke Newington High Street with part closure of Rectory Road) -** This option proposes making Stoke Newington High St and Rectory Rd two-way with a part closure of Rectory Road between Northwold Road and Stoke Newington Common to

increase amenity in this area and discourage use of Rectory Rd by non-essential through-traffic.

D. **Two way Bus Only Highway (Part) and Northbound General Traffic (Stoke Newington High Street) -** This option involves retention of the northbound bus lanes on Stoke Newington High Street and the introduction of an additional contra-flow bus lane in a southbound direction.

Options B & D would require permanent removal of existing parking and loading facilities on High Street, which was not considered to be a viable. Options A & C were therefore taken forward for more detailed assessment, nominated below as Options 1 & 2.

3.3 Option 1 – Two-way Bus Only Highway (Stoke Newington High Street) / Access Only.

Figure 3.1 illustrates this option. In summary, it involves:

- Converting all roads to two-way operation; and
- Restricting the part of Stoke Newington High Street between Evering Road & Stoke Newington Church Street to buses only highway.

3.3.1 General Description

This option proposes reverting Stoke Newington High Street to two-way operation and making the carriageway a bus only highway between Evering Road and Stoke Newington Church Street. Access would be permitted for cycles and taxis with access for loading/unloading limited to certain times of the day. This option would provide scope for additional footway in some locations.

The junctions of Stoke Newington High Street with Northwold Road, Stoke Newington Church Street, Brooke Road and Evering Road would all require re-aligning to enable the two-way traffic flows to take place.

Stoke Newington High Street, north of its junction with Stoke Newington Church Street, would have the existing northbound bus lane removed to permit general traffic to access Stoke Newington Church Street when travelling from the north.

The existing southbound route consisting of Northwold Road / Rectory Road / Manse Road and the western section of Evering Road would revert to two-way operation and the bus lanes on Rectory Road would be removed. This would enable southbound traffic to proceed as existing, but in addition provide the route for northbound general traffic.

The junctions of Rectory Road with Brooke Road, Evering Road and Manse Road would require re-aligning to enable the two-way traffic flows to take place.

Brooke Road (between Rectory Road and Stoke Newington High Street), would be converted to two-way operation, although its' junction with Stoke Newington High Street would remain one-way westbound, with the restriction that only buses could access the High Street from Brooke Road. General traffic travelling east to west would use Rectory Road / Northwold Road / Stoke Newington High Street to access Stoke Newington Church Street. The advantage of this approach is that it would retain access to the properties on Brooke Road as well as to those on the minor roads running off Brooke Road.

Overall, the scheme would necessitate major changes to a number of junctions to accommodate swept paths of HGVs and allow two-way movement of traffic. Most notably, the junctions of High Street with Evering Road & Northwold Road and the junction of Rectory Road with Manse Road would require changes to signal arrangements, removal of existing islands and, potentially, land acquisition to allow additional lanes and pedestrian facilities to be accommodated.

In addition, existing bus lanes and on-street parking arrangements on Rectory Road would need to be rationalised to release sufficient carriageway space to permit two-way traffic operation.

3.3.2 *Cost Estimate*

A budget cost for this scheme has been estimated at approximately £7m. This estimate has been based on assumed construction costs plus allowances for extensive new public realm, traffic management, contingencies, design costs and monitoring.

3.4 Option 2 Two-way Stoke Newington High Street (Part Closure of Rectory Road)

Figure 3.2 illustrates this option. In summary, it involves:

- All one-way roads converted to two-way operation, with the exception of Brooke Road which would remain one-way;
- Rectory Road between Northwold Road and Stoke Newington Common to be closed to all traffic; and
- Removal of bus lanes on Stoke Newington High Street and Rectory Road.

3.4.1 *General Description*

This option proposes reverting Stoke Newington High Street to two-way operation. It involves the removal of the northbound bus lanes, significant loss of loading and parking facilities and reduction in footway width may have to be made to enable the two-way traffic flows to take place.

The junctions of Stoke Newington High Street with Northwold Road, Stoke Newington Church Street, Brooke Road and Evering Road would all require re-aligning to enable the two-way traffic flows to take place.

Northwold Road, Stoke Newington Common, part of Rectory Road, Brooke Road (between Rectory Road and Stoke Newington High Street), Manse Road and the western section of Evering Road would all become two-way. The existing bus lane along Rectory Road south of Brooke Road would need to be removed to provide the extra carriageway width for the two-way traffic flow and the junctions of Rectory Road with Brooke Road, Evering Road and Manse Road would need to be amended.

Rectory Road between Northwold Road and Stoke Newington Common would be closed to all traffic. However, access to Sanford Lane would need to be maintained over part of the route. Alternatively, the current junction could potentially be relocated to permit a longer length of highway closure.

All the comments in Option 1 with regard to the major junction improvements would apply if this Option were progressed.

There would be impacts on bus service provision for residents living on Rectory Road and the likelihood that a number of services would need to be maintained on Rectory Road to meet passenger demand.

3.4.2 *Cost Estimate*

A budget estimate for this scheme has been calculated at approximately £3.5m.

Figure 3.1: Proposed Layout for Option 1

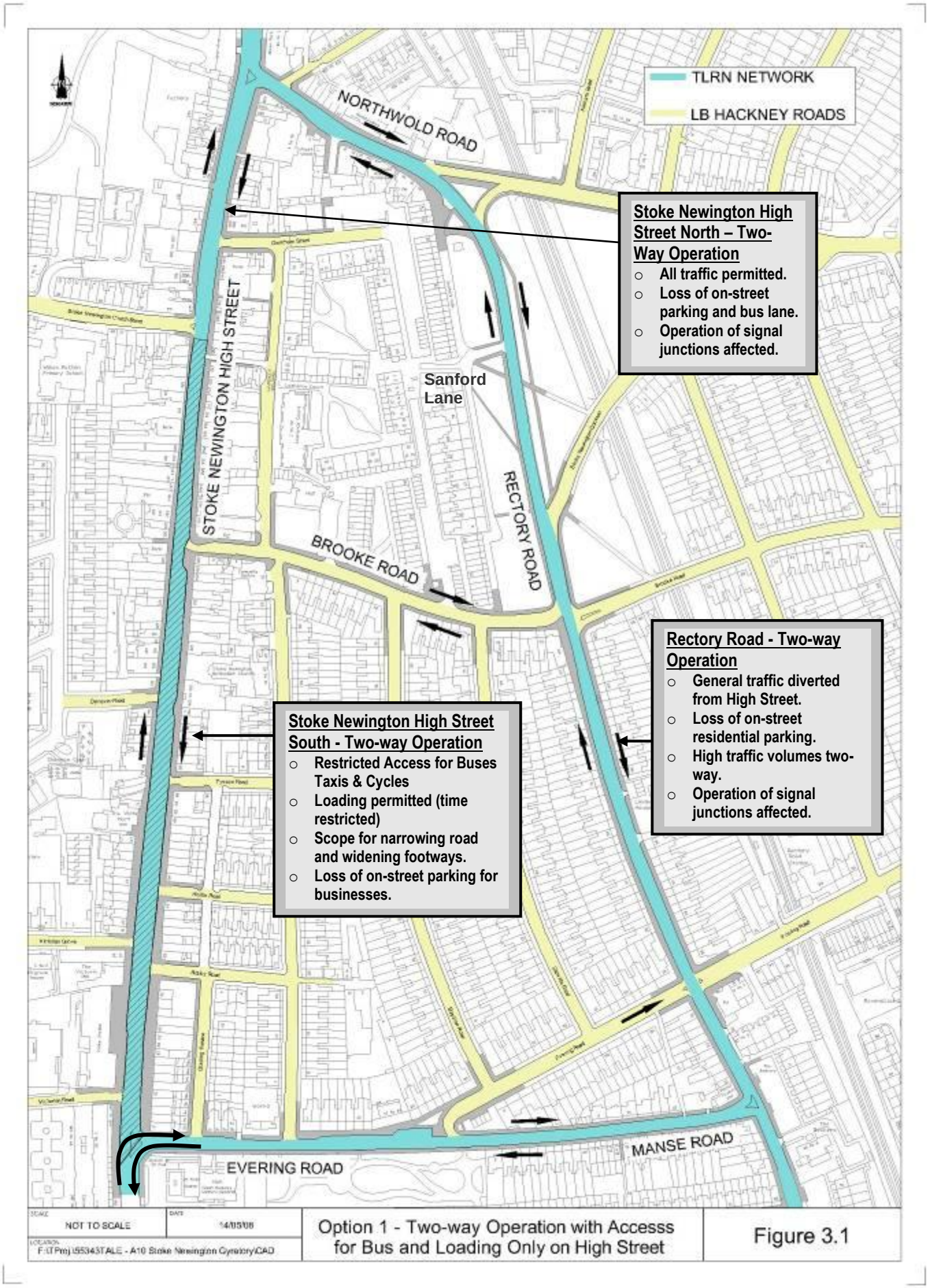
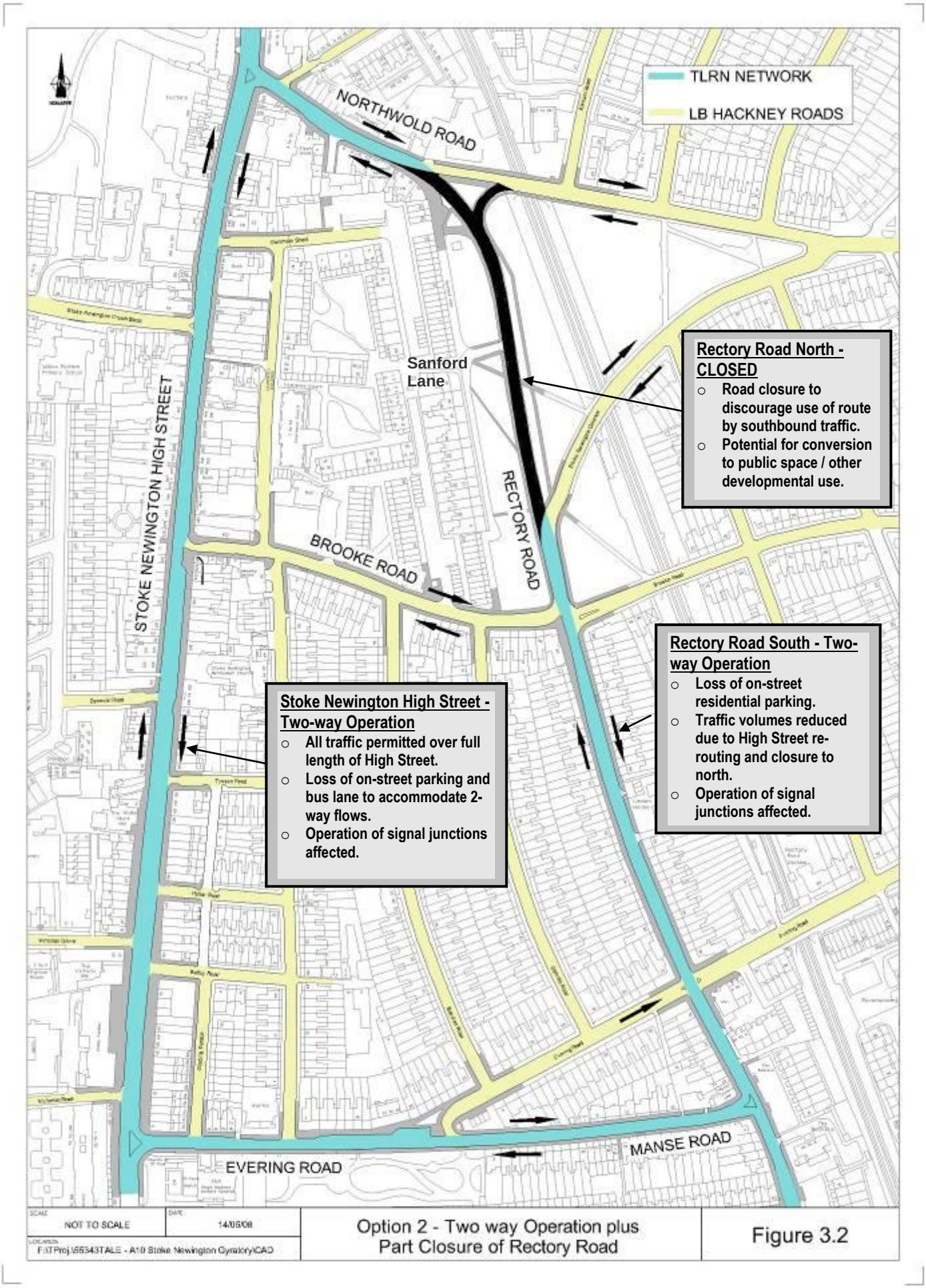


Figure 3.2: Proposed Layout for Option 2



4 Option Assessment

4 Option Assessment

4.1 Method of Assessment

The 2 options described in Section 3 have been assessed in terms of:

- Predicted Scheme benefits; and
- An outline business case evaluation framework.

It should be noted that this study has not involved detailed traffic modelling of the scheme options. However, assessment of traffic impacts has been undertaken assuming that there will be no change in the total volume of traffic currently using the one-way system i.e. there is no suppression/ induction of trips or rerouting away from the area.

4.2 Road Layout Implications (Both Options)

For both scheme options, bus stops would need to be provided to service the southbound routes which presently use the stops on Rectory Road and Manse Road. This would impose a greater pressure on the eastern kerbspace on Stoke Newington High Street and together with the carriageway width required for two-way operation, loading and parking bays would have to be removed.

Making Northwold Road, Rectory Road, Manse Road and Evering Road two-way for general traffic would necessitate the removal of existing bus stands, along with some of the bays used for loading, disabled parking and residents parking.

In particular, bus stands adjacent to Stoke Newington Common would need to be relocated in both options, with consequent difficulties experienced with finding suitable alternate sites for stands to be provided.

Rectory Road would be reduced to two-lane two-way running in parts, which could potentially create problems during road-works or vehicle break-downs, where one lane would need to be closed for extended periods of time, necessitating shuttle-working and inevitably creating long delays.

As regards bus movements, both options could create potential problems for services approaching the High Street from the north or south. Despite the potential for bus priority facilities and layout improvements within the study area, the capacity reduction at key junctions approaching the centre is likely to create additional delays for buses.

Detailed investigations regarding the wider implications of this problem lie outside of the scope of this study. However, it is noted that consideration could be given to introducing full-time bus lanes on the A10 approaching Stoke Newington to allow buses to by-pass the queues that would develop. Traffic through the High Street might then be “metered” using traffic signal control to restrict the inbound flow and ensure that traffic on High Street moves in freer flowing conditions. Existing bus lanes on these approaches operate within peak hours only, allowing loading activity outside of these hours. However, given the more constant nature of 2-way traffic flow activity on High Street and the possible use of queue management techniques, these bus lanes may need to be converted to full time operation. This could create problems with the extent of current loading provision on High St approaches and might not be feasible. In addition, extensive queues forming on approaches to the High Street may also extend to nearby areas, effectively transferring problems from Stoke Newington to elsewhere on the network.

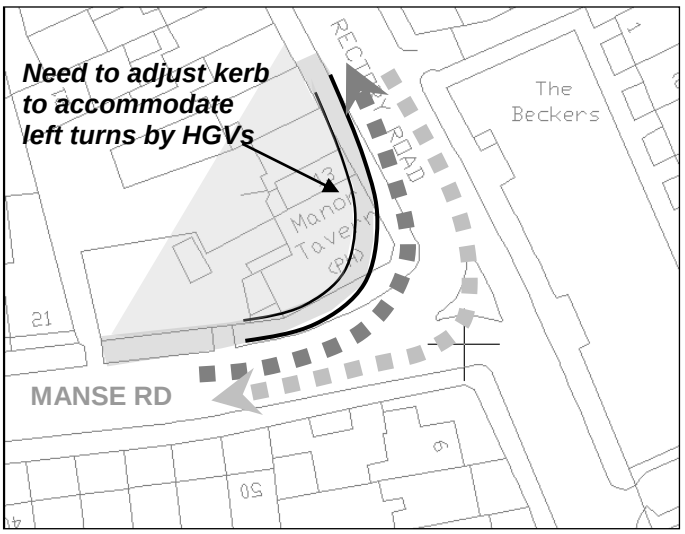
As regards conversion to two-way operation at junctions, there are a number of locations where heavy goods vehicles and articulated buses would not be able to make necessary turning movements.

This could be a particular issue for left and right turning HGVs at Northwold Road and Manse Rd/Rectory Rd, which may require separate traffic signal staging to prevent conflicts, or very long stop-line set-backs to prevent turning vehicles conflicting with waiting traffic. This will then have a detrimental impact on junction capacity.

To maintain the capacity of junctions it would be necessary to acquire land and/or private property to accommodate the swept path requirements of HGVs so that traffic can keep moving during different signal cycles, thereby maximising junction throughput.

For example, at Rectory Road/Manse Road, an existing public house on the junction corner would ideally need to be acquired to ease left-turn HGV movements and allow provision of associated traffic signal islands and furniture, as illustrated in this sketch layout.

This layout assumes that left turns on Rectory Rd northbound would not be permitted. However, if they were allowed, the south westerly junction corner may also need to be adjusted to accommodate larger vehicles.



4.3 Impact on Traffic Movement

4.3.1 *Option 1*

Conversion of Stoke Newington High Street to bus only operation will result in all through traffic being routed onto Rectory Road.

Rectory Road would experience an increase in flow from:

- ***1500*** vehicles/hour 1-way in the morning peak; to
- Approximately ***2200*** travelling 2-way.

Evering Road would experience an increase in traffic volumes from:

- ***700 to 900***; to
- ***1100 and 1300*** in the AM and PM peaks respectively.

High Street would see a significant fall from approximately 700 vehicles one-way northbound to no more than 70 to 80 buses per hour (see App A).

For southbound traffic, there would be no change to routing, but there will need to be significant changes to the layout and operation of key signal junctions to accommodate two-way flow, including:

1. Stoke Newington High Street & Northwold Road
2. Rectory Road & Brooke Road
3. Rectory Road & Evering Road
4. Rectory Road & Manse Road
5. Stoke Newington High Street & Evering Road
6. Stoke Newington High Street & Stoke Newington Church Street

The following table provides the outcome of capacity assessments undertaken at these junctions:

	Stoke New'ton High St & Northwold Rd	Rectory Road & Brooke Road	Rectory Road & Evering Road	Rectory Road & Manse Road	Stoke Newington High Street & Evering Road	Stoke New'ton High St & Stoke New'ton Church St
Operational Capacity	0.54	0.79	0.81	0.77	0.64	0.54
Demand	0.73	0.83	0.58	1.03	0.63	0.50
Over Capacity?	**Yes**	**Yes**	**No**	**Yes**	**No**	**No**

These results show that;

- The junctions of Stoke Newington High St/Northwold Rd, Rectory Rd/Brooke Rd and Rectory Rd/Manse Rd would operate significantly over capacity;
- Rectory Rd/Evering Rd, Stoke Newington High St/Evering Rd and High Street/Church St junctions would all operate satisfactorily, largely due to peak time reduction in flow created by proposed High Street bus only access restrictions.

4.3.2 *Option 2*

Conversion of Stoke Newington High Street to two way operation will allow southbound through traffic to remain on the High Street, i.e. without being diverted onto Rectory Road.

Rectory Road would experience a reduction from;

- ***1500*** vehicles/hour one-way in the morning peak; to
- Approximately ***1200*** two-way.

On both the High Street and Rectory Road routes, the lane configuration would need to be amended to provide sufficient capacity for two-way flow. This will require removal of much of the on-street parking and loading, as well as existing bus lanes.

Evering Road would experience the largest predicted fall in traffic volumes, from 900 to 400 in the morning peak.

The High Street would see a predicted rise from:

- Approximately ***700*** vehicles one-way northbound; to
- Two-way flows of up to ***1200*** vehicles per hour (see App A).

No additional road space can be made available for this increased volume of traffic and the following junctions will require significant changes to their layout and operation:

1. Stoke Newington High Street & Northwold Road;
2. Stoke Newington High Street & Stoke Newington Church Street;
3. Stoke Newington High Street & Brooke Road; and
4. Stoke Newington High Street & Evering Road.

Junctions on Rectory Road would require less alteration due to the predicted reduction in traffic flows and turning movements.

The following table provides the outcome of capacity assessments at the 4 critical junctions listed above:

	Stoke New'ton High St & Northwold Rd	Stoke New'ton High St & Stoke New'ton Church St	Stoke New'ton High St & Brooke Road	Stoke Newington High Street & Evering Road
Operational Capacity	0.54	0.57	0.59	0.56
Demand	0.65	0.59	0.37	0.56
Over Capacity?	**Yes**	**Marginal**	**No**	Neutral

The results show that the junction of Stoke Newington High St/Northwold Rd would be over capacity and Stoke Newington High St/Evering Road would operate close to capacity – these are effectively the critical gateway junctions in the network.

4.3.3 *Benefit Assessment*

Assessment of scheme benefits has been undertaken using a matrix of indicators taken from the Mayor's Transport Strategy document. The following tables describe the results of this assessment:

Option 1 – Bus Only High Street / General Traffic Two-Way on Rectory Road

Assessment of Impact on:	Stoke Newington High Street	Rectory, Manse & Evering Roads	Overall Impact of Proposals
Buses	• Reliability Improved • Journey time improved • Clearer bus routing	• Bus flows reduced / operational changes • Reduction in access for residents in the immediate area to S/B bus services	• Reliability Improved • Journey time improved • Clearer bus routing
General Traffic – volumes	• Significantly reduced	• Significantly increased and two way flow introduced	• No change
General traffic - Capacity	• External Junctions will be over-capacity	• Reduction in capacity with conflicting movements at junctions	• Reduced as two way traffic introduced at key junctions
General Traffic – Journey Time	• N/A	• Increased – higher traffic volumes, introduction & conflicting traffic movements will result in an increase in delay	• Increased delays due to introduction of conflicting traffic movements and reduction in capacity
Freight – journey times & reliability	• As General Traffic	• As General Traffic	• As General Traffic
Freight deliveries	• Improved with reduction in traffic in High Street • Times of loading restricted	• N/A	• Improvement – as majority of freight deliveries will be to properties in the High Street
Pedestrians	• Conditions significantly improved with reduced traffic flow and increased footway width	• Conditions worsened as traffic volumes increased • More difficult to cross roads	• Improved – as the largest number of pedestrians are in the High Street area
Safety	• Pedestrian – potential reduction in conflicts • Vehicular – potential reduction in conflicts	• Pedestrian – potential for slight worsening with increased flows • Vehicular - potential for increase in conflicts with increased flows	• Overall the scheme is likely to produce a neutral impact, although numbers of serious incidents on High Street will be reduced
Parking – Commercial	• Loss of parking for shops	• N/A	• Overall reduction

Parking – Residential	• N/A	• Significant reduction as carriageway space is required for two way traffic and increased volumes	• Overall significant reduction
Cycling	• Significant improvement with reduction in traffic flow	• If destination is local roads conditions will worsen • Through cyclists will avoid busy routes by using High St	• More direct routing with removal of existing gyratory • Can avoid more Rectory, Manse & Evering Roads
Urban Realm	• Significant improvement with reduction in traffic volumes and potential to reallocate carriageway	• Negative impact with additional traffic volumes and introduction of two way working	• Improvement overall but with worsening conditions for residential frontages on Rectory Rd

Option 2 – Two-way General Traffic on High Street / Part Closure Rectory Road

Assessment of Impact on:	Stoke Newington High Street	Rectory, Manse & Evering Roads	Overall Impact of Proposals
Buses	• increased journey time • reduced reliability • clearer bus routing	• Bus flows reduced / operational changes • Reduction in access for residents in the immediate area to S/B bus services	• increased journey time • reduced reliability • clearer bus routing
General Traffic – volumes	• Traffic flows increased S/B	• Flows reduced to local traffic only	• No change overall
General traffic - Capacity	• Reduced as conflicting movements introduced at junctions	• Reduction with introduction of conflicting movements at junctions, but as demand will decrease impact likely to be minimal	• Overall reduction as existing junctions are converted to two way operation
General Traffic – Journey Time	• Increased traffic volumes, conflicting traffic movements and reduction in capacity will result in an increase in delay	• Minimal impact, flows will decrease but conflicting movements at the junctions may slow traffic	• Increased – diversion of all through traffic into High Street with restricted road space, the introduction of conflicting traffic movements at junctions and the consequent reduction in capacity is likely to result in an overall increase in delay

Freight – journey times & reliability	• As General Traffic	• As General Traffic	• As General Traffic
Freight deliveries	• Significantly worse as loading is largely removed in the High Street	• Unchanged	• Significantly worse as loading is largely removed in the High Street, the area of highest demand for loading
Pedestrians	• Significantly worsened as traffic volumes are increased and two way working is introduced making it more difficult to cross	• Improvement as traffic volumes are decreased, but the introduction of two way traffic may make it more difficult to cross the road	• Overall a worsening of conditions for pedestrians as most pedestrians are in the High Street where conditions will worsen
Safety	• Introduction of two way traffic likely to result in increase in conflicts	• Likley reduction in conflicts with reduction in traffic flow, but introduction of two way working may increase the possibility of conflicts	• Overall, it is anticipated that the impact on safety will be negative.
Parking – Commercial	• Significantly worse – all parking for shops is removed as carriageway is required to accommodate two-way operation	• No impact	• Significantly worse as parking is removed in the High Street, the area of highest demand for parking for the shops
Parking – Residential	• N/A	• Significant impact to permit two-way operation	• Minimal impact
Cycling	• Significantly worse for through cyclists as the volume of traffic is increased and conflicting movements are introduced	• Improvement for local cyclists as traffic flows will be reduced, however opposing traffic flows are introduced which may increase the possibility of conflict.	•
Urban Realm	• Negative impact with additional traffic volumes and introduction of two way working	• Significant improvement with reduction in traffic volumes	•

Benefit Assessment Matrix

Key to Symbols:

Minor Improvement	✓	Improvement	✓✓	Major Improvement	✓✓✓
No Significant Change	-				
Minor Deterioration	✘	Deterioration	✘✘	Major Deterioration	✘✘✘

Option 1 – Bus Only High Street / General Traffic Two-Way on Rectory Road

Assessment of Impact on:	Stoke Newington High Street	Rectory, Manse & Evering Roads	Overall Impact
Buses	✓✓	✘	✓
General Traffic – volumes	✓✓	✘✘✘	✘
General traffic - Capacity	✘	✘✘	✘✘✘
General Traffic – Journey Time	-	✘✘	✘✘
Freight – journey times & reliability	-	✘✘	✘✘
Freight deliveries	✓	-	✓
Pedestrians	✓✓✓	✘	✓✓
Safety	✓	✘	-
Parking – Commercial	✘✘✘	-	✘✘✘
Parking – Residential	-	✘✘	✘✘
Cycling	✓✓	✘	✓
Urban Realm	✓✓✓	✘✘	-
Outcome Summary	*+ve*	*-ve*	*-ve*

Option 2 – Two-way General Traffic on High Street / Part Closure Rectory Road

Assessment of Impact on:	Stoke Newington High Street	Rectory, Manse & Evering Roads	Overall Impact
Buses	✘✘	✘	✘✘✘
General Traffic – volumes	✘✘	✓✓	-
General traffic - Capacity	✘✘	✘	✘✘✘
General Traffic – Journey Time	✘✘	-	✘✘
Freight – journey times & reliability	✘✘	-	✘✘
Freight deliveries	✘✘	-	✘✘
Pedestrians	✘	-	✘
Safety	✘	-	✘
Parking – Commercial	✘	-	✘
Parking – Residential	-	✘✘	✘✘
Cycling	✘	✓	-
Urban Realm	✘✘	✓✓	-
Outcome Summary	*-ve*	*+ve*	*-ve*

In summary, the assessment shows that:

- ***Option 1*** provides benefits to buses and pedestrians with enhanced integration. Overall the High Street environment will benefit from the scheme. However, restricting access to High Street will reduce parking provision to High Street shops and restrict vehicular access to those stops for passing traffic. Diverting all general traffic to the east via a two-way Rectory Road will place a significant additional burden on this route, with a very large increase in flow levels and reduction in on-street parking provision for residents. There are also difficulties associated with converting key junctions to allow two-operation that will have a detrimental impact on road capacity. Overall, the dis-benefits to Rectory Road do not balance against the benefits that would be gained for High Street.
- ***Option 2*** simplifies routing throughout the area and benefits Rectory Road by encouraging a reduction in southbound traffic on this route, particularly during the morning peak hours. However, conversion of all major roads to two-way operation will require release of road space by removing bus lanes and on-street parking and loading bays. High Street in particular will suffer a reduction in amenity for frontage shops, and existing bus priority measures would need to be removed to provide sufficient lane allocations for two-way traffic. Bus journey times and punctuality are therefore likely to suffer if this option were delivered. Again, the dis-benefits to High Street counter the benefits that would be gained for Rectory Road, and overall the scheme would deliver a negative benefit.

4.4 Business Case

A business case evaluation has been undertaken to determine the potential cost benefits of the 2 options. The evaluation has been undertaken in accordance with TfL's Business Case Submission Template V3, as contained in Appendix D.

To determine the impacts of the schemes, journey time changes have been calculated by assessing the numbers of vehicles that would not be able to pass through a junction in a single cycle when it is over-saturated.

Predicted accident savings have been calculated by assuming that serious casualties on High Street would be reduced to LB Hackney averages.

On this basis, the cost-benefit assessment indicates that:

- Option 1 would cost ***-£317k p.a***.; and
- Option 2 **-328k p.a**.

The Business Case Assessment has therefore indicated that both options would have a negative value in terms of the benefits gained against predicted scheme costs.

Neither project has therefore been demonstrated to deliver value for money.

5 Summary

5 Summary

This study has been undertaken to investigate the operation of Stoke Newington Gyratory in the London Borough of Hackney with a view to developing and assessing options for potential re-instatement of a two-way road system.

Consideration has been given to various options available for partial or total conversion of the network to two-way operation. Two of the most practical options have been taken forward from a number of potential variants. These options have been assessed in detail to allow a full evaluation of their impact on the local network. They are:

1. **Option 1** – make High Street two-way with access restricted to buses only during the daytime and make Rectory Road two-way to accommodate all through traffic; and
2. **Option 2** – make all key routes two-way for all traffic and discourage southbound traffic on Rectory Road by introducing a part closure.

Assessment of these options has indicated that:

Option 1

- Restricting access to High Street to buses only during the daytime provides benefits to vulnerable road users as well as a simplification of bus routing.
- However, restricting access to High Street will reduce parking provision to High Street shops and restrict vehicular access to those stops for passing traffic.
- Diverting all general traffic to the east via a two-way Rectory Road will place a significant additional burden on this route, with a very large increase in flow levels and reduction in on-street parking provision for residents.
- There are also difficulties associated with converting key junctions to allow two-operation that will have a detrimental impact on road capacity.
- Although flows along High Street are likely to be much reduced, with consequent benefits to buses, capacity constraints on key junctions will create additional delays on approaches to the High Street and are therefore likely to counter any journey time or punctuality benefits that would be gained.

Option 2

- This proposal simplifies routing throughout the area and benefits Rectory Road by encouraging a reduction in southbound traffic on this route, particularly during the morning peak hours.
- Conversion of major roads to two-way operation will require release of road space by removing bus lanes and on-street parking and loading bays.
- High Street in particular will suffer a reduction in amenity for frontage shops, and existing bus priority measures would need to be removed to provide sufficient lane allocations for two-way traffic. Bus journey times and punctuality are therefore likely to suffer if this option were delivered.

A Business Case Assessment has indicated that neither option would represent “value for money” in terms of the benefits gained when compared to estimated costs.

The current one-way system is able to accommodate high levels of through traffic. Even if two-way flow could be successfully accommodated, the likely benefits to other road users, traders and residents would not be great enough to merit the investment required to deliver this project.

In conclusion, there are considered to be fundamental technical problems relating to the introduction of two-way traffic flow within Stoke Newington.

Moving forward, there may be suitable alternate solutions to the problems created by the one-way system. In particular, consideration could be given to provision of contra-flow cycle facilities on High Street, enhancement of public realm with a view to improving safety for pedestrians and reducing the speed of through traffic, including enhanced enforcement measures.

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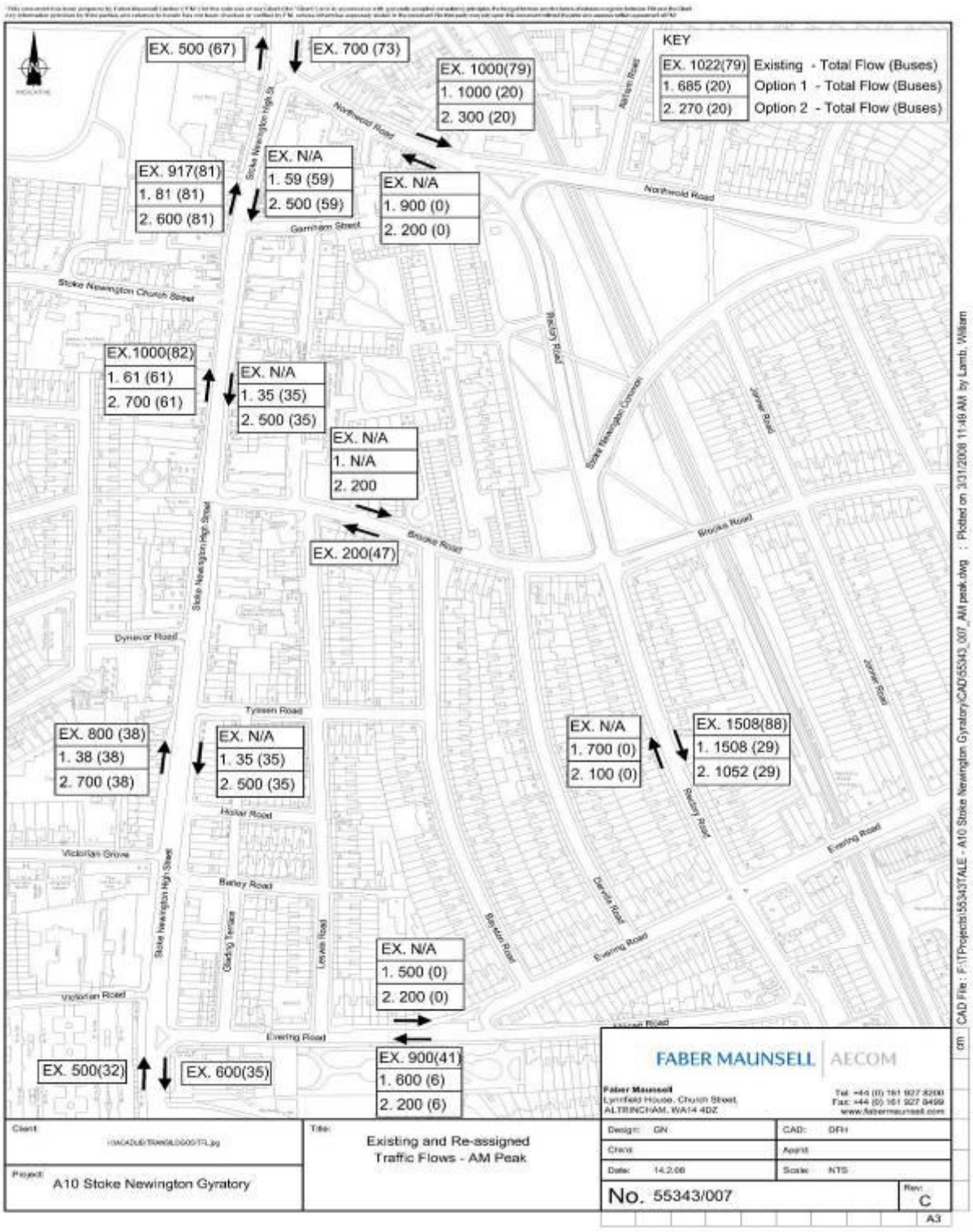
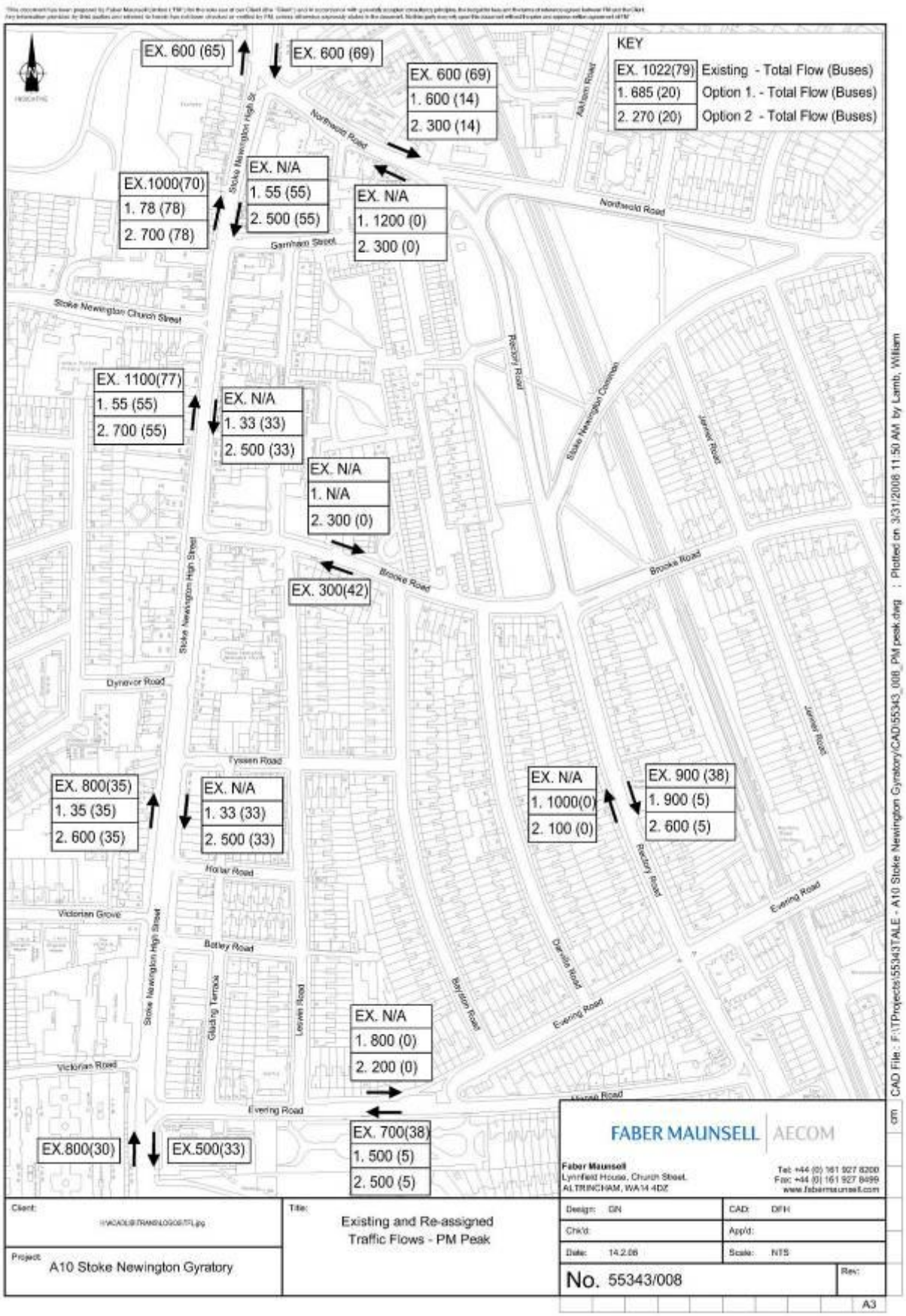
Appendices

Appendix A

Existing and Forecast Traffic Flows – AM Peak Period [Average Hour]



Existing and Forecast Traffic Flows – PM Peak Period [Average Hour]



Appendix B

Accident Record

Accident Record	All Vehicles				Vulnerable Users			
Location	**Fatal**	**Serious**	**Slight**	**Total**	**Cycle**	**Pedestrian**	**Motor Cycle**	**Bus**
Stoke Newington High Street/ Evering Road			2	**2**				
Stoke Newington High Street		5	17	**22**	2	9	2	3
Stoke Newington High Street/ Brooke Road		1	3	**4**			1	1
Stoke Newington High Street			1	**1**		1		
Stoke N'ton High St/ Stoke N'ton Church St			4	**4**		1		
Stoke Newington High Street		2	5	**7**	2	3	1	
Stoke N'ton High Street/ Northwold Road		1	1	**2**	1			
Northwold Road/ Rectory Road		1	2	**3**				
Rectory Road/ Stoke Newington Common			3	**3**	1		1	
Rectory Road/ Evering Road		2	2	**4**	1	1		
Evering Road		2	2	**4**		1		
Rectory Road/ Manse Road		1	2	**3**	1		1	1
Manse Road			2	**2**			1	
Manse Road/ Evering Road			1	**1**				
Evering Road		1	2	**3**		1	1	
Totals	**0**	**16**	**49**	**65**	**8**	**17**	**8**	**5**
Accident Type %		**25**	**75**		**12**	**26**	**12**	**8**
Hackney Average %		**14**	**86**		**14**	**25**	**22**	**12**

Appendix C

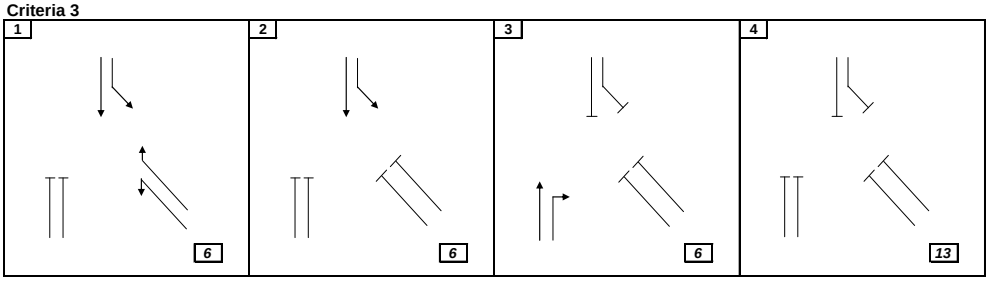
Assumed Criteria for Junction Operational Assessments

OPTION 1

Stoke Newington High Street & Northwold Road

Proposed Staging

Criteria 3



Summary: widen Northwold Road to provide two lanes at the junction with Stoke Newington High Street, and smooth the radius of the turn from Stoke Newington High Street southbound into Northwold Road, requiring some landtake from the Abney Park Court

AM Peak Period

	Capacity
Operational	0.54
Demand	0.73
Over Capacity?	Yes

In the AM Peak period, the junction would be significantly overcapacity.

Heavy Goods Vehicles travelling south into Northwold Road would swing into the path of northbound traffic exiting from Northwold Road, therefore it will be necessary to have these movements occurring during separate signal stages. To alleviate this, the radius of the turn could be lessened by extending the carriageway into the Abney Park Court on the north-eastern corner of the junction. Doing so allows for these two movements to occur concurrently.

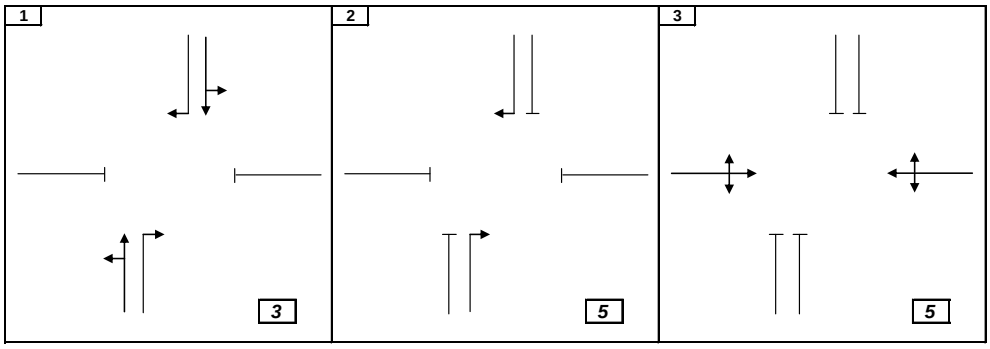
Also, for Heavy Goods Vehicles to access Stoke Newington Church Street from the south, they will be required to turn from Northwold Road left into Stoke Newington High Street, which will require them to cross the centreline both before and after the apex of the turn. This would require the stop line on Stoke Newington High Street northbound to be set back significantly from the junction, increasing the lost time per cycle (the effect of the setback of the stop line has not been incorporated in the capacity assessment, as it would only make the junction further over-capacity).

Rectory Road & Brooke Road

Summary: redesigned junction would need to allow for all turning movements. Rectory Road southbound and northbound would require a separate right turn lane, otherwise significant blocking back is likely to occur (depending on turning volumes). Movements from Brooke Road would be from a single lane, allowing all movements.

The volume of southbound traffic turning into Brooke Road may require a separate right turn signal stage at this junction, especially if the Route 73 articulated buses continue to use this routing. However, assessment of the junction capacity has been undertaken on the basis that right-turning traffic can turn in gaps or at the end of its green stage.

Proposed Staging



AM Peak Period

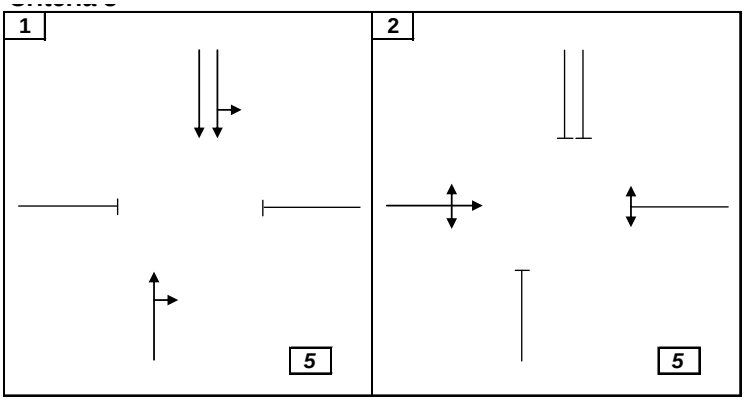
	Capacity
Operational	0.79
Demand	0.91
Over Capacity?	Yes

In AM peak period, junction would be significantly over-capacity, even with no specific provision for pedestrian movements.

Rectory Road & Evering Road

Summary: widen Rectory Road southbound to allow two lanes (the demand level of 0.58 shown will be higher if the two lanes are required to merge close to the exit from the junction). With Rectory Road being made two way, the effective capacity of this junction for traffic on Rectory Road will be halved, as the number of lanes available for southbound movements is reduced to one (removal of the parking on the western side of Rectory Road would not increase this without some carriageway widening).

Proposed Staging



AM Peak Period

	Capacity
Operational	0.81
Demand	0.58
Over Capacity?	No

Note that the junction will be overcapacity unless Rectory Road is widened to two lanes for southbound traffic.

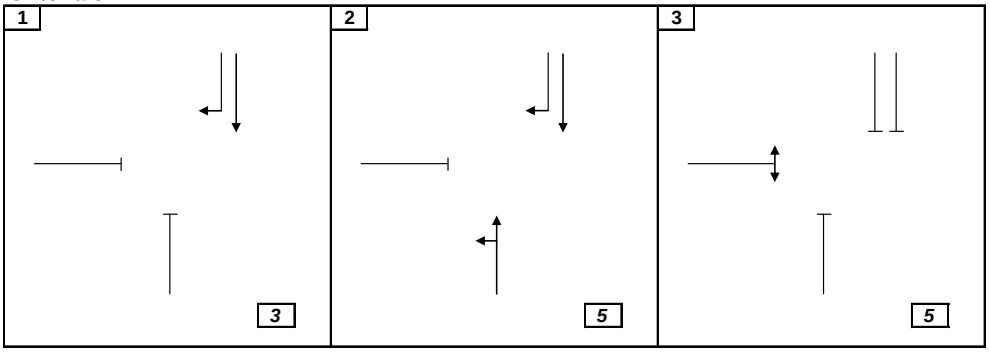
Rectory Road & Manse Road

Summary: remove parking on eastern side of Rectory Road and widen southbound to allow two lanes, one for straight ahead and the other for right turns into Manse Road.

Conversion of Rectory and Manse Roads to two way operation will require significant changes to this junction. In particular, it will need to be converted to signal operation, as the opposing movements which will occur with two way operation cannot be safely accommodated with a priority junction (as well as restricting the traffic than can enter and leave the minor arm).

The current road width will allow only one lane at the stop line from each of the three arms of the junction. Any additional lanes would require reallocating footway space. It is likely that the footway will not provide enough space, so some additional land will need to be acquired.

Criteria 3



AM Peak Period

	Capacity
Operational	0.77
Demand	1.03
Over Capacity?	Yes

In the AM Peak period, junction will be significantly overcapacity even with widening of the Rectory Road northern approach.

Stoke Newington High Street & Evering Road

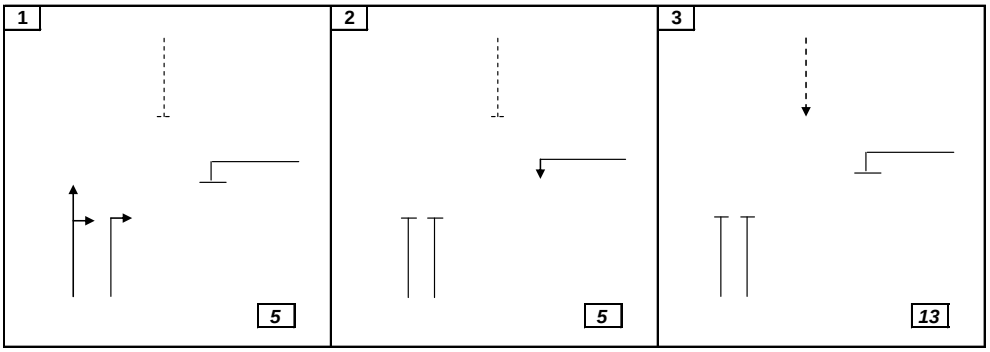
Summary: allow right turns northbound on Stoke Newington High Street from lanes 1 and 2 (lane 1 shared with buses heading straight). Will require widening of entry to Evering Road to allow for a limited length of two lanes prior to merging back to one lane.

Conversion of the Stoke Newington High Street and Evering Road junction to two way operation (with the restriction of bus only access to/from the northern arm) will also require significant changes to this junction.

As the bus only restrictions relating to Stoke Newington High Street north of Evering Road only apply during the AM and PM peak periods, the junction needs to be designed to allow these movements at other times (as well as allowing for bus movements).

Vehicle tracking of Heavy Goods Vehicles northbound into Evering Road and southbound into Stoke Newington High Street indicates that there is very little clearance. This will prevent northbound movements on Stoke Newington High Street and westbound movements from Evering Road from sharing the same signal stage. It will also require the northbound stop line on Stoke Newington High Street to be set back significantly from the junction.

Proposed Staging



AM Peak Period

	Capacity
Operational	0.64
Demand	0.63
Over Capacity?	No

Vehicles will need to use both lanes on Stoke Newington High Street northbound to turn into Evering Road. This is likely to delay buses heading northbound straight through the junction.

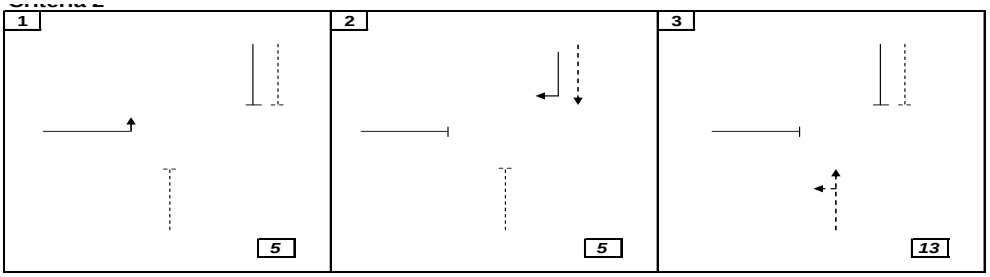
Stoke Newington High Street & Brooke Road

With Brooke Road one-way westbound through its' junction with Stoke Newington High Street, and restricted to buses only during the AM & PM peak periods, this junction does not require any significant modifications (beyond the provision of signals for southbound traffic on Stoke Newington High Street and conversion to two-way operation).

It is not anticipated that there will be any capacity issues at this junction, due to it only being used by buses during the AM & PM peak periods.

Stoke Newington High Street & Stoke Newington Church Street

Summary: allow two-way traffic on Stoke Newington High Street between Stoke Newington Church Street and Northwold Road, as well as access to Stoke Newington High Street south of the junction for buses (during the AM & PM peak periods) and all traffic (outside the peak periods).



PM Peak Period

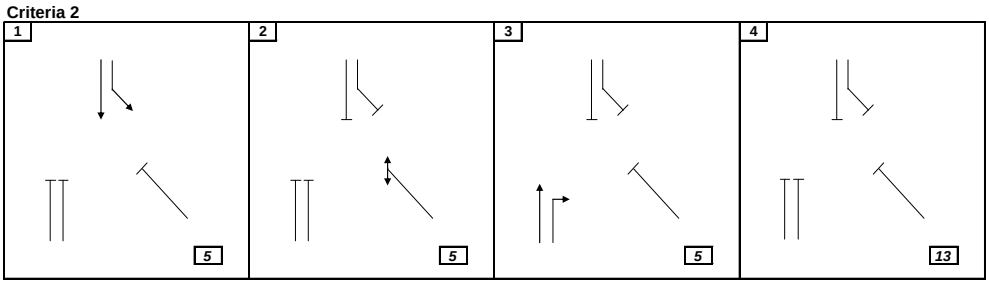
	Capacity
Operational	0.54
Demand	0.50
Over Capacity?	No

In the PM peak period, this junction is not expected to be overcapacity.

OPTION 2

Stoke Newington High Street & Northwold Road

Summary: the junction layout required is similar to that required for Option 1, with Northwold Road being made two way, so vehicles will be entering the junction from this direction. However, it is unlikely that the issues related to large vehicles turning will cause a significant problem, as the majority of these vehicles will remain on Stoke Newington High Street.



AM Peak Period

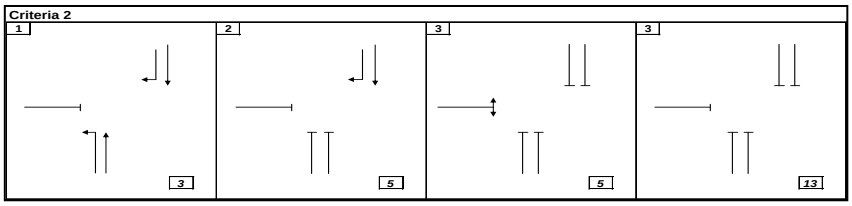
	Capacity
Operational	0.54
Demand	0.65
Over Capacity?	Yes

In the AM Peak period, this junction will be significantly over capacity.

Stoke Newington High Street & Stoke Newington Church Street

Summary: conversion of this junction to two way operation is severely restricted by the limited amount of road space available. From Stoke Newington Church Street, only one lane is available for both left and right turns into Stoke Newington High Street.

The provision of two lanes for southbound traffic on Stoke Newington High Street is likely to require the bus stop on the western side of the High Street to be moved northwards for a short distance.



PM Peak Period

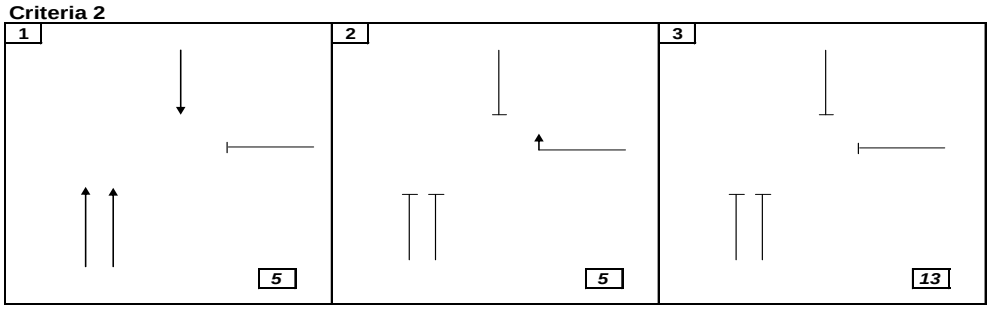
	Capacity
Operational	0.57
Demand	0.59
Over Capacity?	Marginally

In the PM peak period, junction will be marginally overcapacity.

Stoke Newington High Street & Brooke Road

Summary: add all red pedestrian phase to allow pedestrian movements across both Stoke Newington High Street and Brooke Road.

Despite the conversion of Stoke Newington High Street to two-way operation, Brooke Road will remain as one-way, with traffic only able to exit from it onto the High Street, with the current restriction that only right turns (northbound) are allowed remaining in place.



AM Peak Period

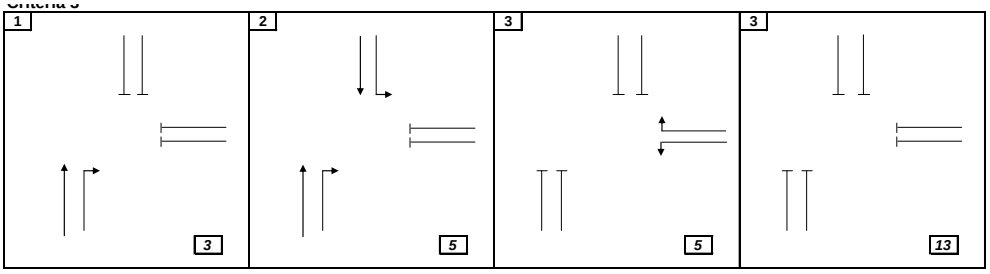
	Capacity
Operational	0.59
Demand	0.37
Over Capacity?	No

In the AM peak period, junction will not be overcapacity.

Stoke Newington High Street & Evering Road

Summary: widen Evering Road approach to two lanes, which will necessitate the acquisition of some land on the southern (or northern) side of Evering Road at the junction).

Vehicle tracking of Heavy Goods Vehicles northbound into Evering Road and southbound into Stoke Newington High Street indicates that there is very little clearance. This will prevent northbound movements on Stoke Newington High Street and westbound movements from Evering Road from sharing the same signal stage. It will also require the northbound stop line on Stoke Newington High Street to be set back significantly from the junction.



AM Peak Period

	Capacity
Operational	0.56
Demand	0.56
Over Capacity?	No

In the AM Peak period, junction will operate at capacity with widening of the Evering Road approach.

Northwold Road & Stoke Newington Common

Movements between the western end of Northwold Road and Stoke Newington Common will become more frequent. As traffic will also be using Stoke Newington Common to access the eastern end of Northwold Road, it may be necessary for this junction to be signalised to segregate the different movements. It is recommended that this junction be investigated further if this option progresses.

Rectory Road & Stoke Newington Common

Despite the conversion of both Rectory Road and Stoke Newington Common to two way, the closure of Rectory Road turns this into a simple straight-on movement.

Appendix D

Business Case Appraisal