Report for Resolution

Report to	Norwich Highways Agency Committee 24 March 2011	**Item** 8
Report of	Head of city development services	
Subject	Contra-flow Cycling in the City Centre	

Purpose

To consider the feasibility and priorities for introducing contra-flow cycling into the one-way streets within the inner ring road, and to seek approval to commence statutory procedures for introducing contra-flow cycling in Duke Street (Colegate to St Andrew's Cycle Park) in 2011/2012.

Recommendations

The committee is recommended to:

(1) note the priorities for future years for the introduction of contra-flow cycling in one way streets set out in appendix 15, to be introduced as and when funding allows;

(2) ask the head of city development services to commence public consultation for the introduction of a contra-flow cycle lane in Duke Street between Colegate and St Andrews Cycle Park, as shown on appendix 12.

Financial Consequences

The Duke Street contra-flow cycle lane will be funded from S106 monies allocated to the cycling improvements in the north of the city. Funding for implementation of other schemes could potentially come from the local transport plan (see separate report on this agenda), the local sustainable transport fund or other s106 monies

Strategic Priority and Outcome/Service Priorities

The report helps to meet the strategic priority "Strong and prosperous city – working to improve quality of life for residents, visitors and those who work in the city now and in the future" and the service plan priority promoting cycling and encouraging modal shift.

Contact Officers

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Background Documents

None

Report

Introduction

1. There are a number of streets in the city centre that are one-way for all vehicles, and as such, are a significant constraint on cycle access. Cyclists have identified these as a barrier to the attractiveness of cycling, as they often involve lengthy detours. This may also contribute to, and encourage, pavement cycling.

2. Over the past few years, contra-flow cycling has been provided in St Margarets Street, Pottergate and Upper Goat Lane. These facilities appear to be operating successfully. There have been no reported injury accidents between cyclists and motor vehicles in Pottergate or Upper Goat Lane, and none in St Margaret's Street since 2002.

3. The remaining one-way streets have been reviewed to assess both the need and the feasibility of allowing cycling in both directions.

One Way Streets without contra-flow cycling facilities

4. Appendices 1 to 9 consider all the one way streets in the city centre that currently do not accommodate contra-flow cycling and assess whether contra-flow facilities could be provided, and the priority based on cost and deliverability for each street. The streets considered are;

    - Westwick Street (appendix 1)
    - St Swithins Road (appendix 1)
    - Ten Bell Lane (appendix 1)
    - Cow Hill (appendix 2)
    - Willow Lane (appendix 2)
    - Chapelfield North (appendix 2)
    - Cleveland Road (appendix 2)
    - Bethel Street (Cleveland Road to Little Bethel Street (appendix 2)
    - Little Bethel Street (appendix 2)
    - St Giles Street (appendix 2)
    - Bank Street (appendix 3)
    - Prince of Wales Road (appendix 3)
    - St Vedas Street (appendix 3)
    - Rose Lane (appendix 3)
    - Cattle Market Street (King Street to Market Avenue) (appendix 3)
    - Market Avenue (appendix 3)
    - Exchange Street (appendix 4)
    - Duke Street (appendix 5)
    - Muspole Street (appendix 5)

- Farmers Avenue (appendix 6)
- Golden Ball Street (appendix 6)
- All Saints Green (appendix 6)
- Westlegate (appendix 6)
- Elm Hill (appendix 7)
- Redwell Street (appendix 7)
- Tombland (appendix 7)
- Magdalen Street (Edward Street to Magdalen Road) (appendix 8)
- Cowgate (Magdalen Street to Peacock Street) (appendix 8)
- Carrow Hill (appendix 9)

Conclusions

5. All the one way streets in the city centre have been reviewed to assess the feasibility of introducing contra-flow cycling. For some of these streets, contra-flow cycling would be provided for as part of future proposals. The remaining one-way streets have been assessed as being either HIGH, MEDIUM or LOW priority, as shown in appendix 15.

6. A scheme to provide contra-flow cycling in part of Duke Street forms part of a wider city centre to airport cycle route, that is due to be implemented in 2011/12 using S106 funding. Members are asked to approve for consultation the proposals for Duke Street as shown on the plan attached as appendix 12.

APPENDIX 1

Westwick Street (Charing Cross to Coslany Street)

1. There is an existing contra-flow cycle lane on Westwick Street from Coslany Street to the 2 way section of Westwick Street, but not from Charing Cross to Coslany Street. Extending the existing route up to Charing Cross would provide an alternative to the St Benedicts Street / St Margarets Street route for cyclists heading towards Heigham Road, and would create a more direct route from the city centre to the Coslany Street and Oak Street route (the National Cycle route) out of the city.

2. For cyclists heading towards Heigham Road, the existing alternative is via St Benedicts Street and St Margarets Street. This is a 20mph zone, but can be slow and difficult due to the on-street parking and pedestrian activity on St Benedicts Street.

3. For cyclists heading for Coslany Street and Oak Street (the National Cycle Route), the existing alternative is via Duke Street and Colegate. Duke Street is a multi-lane one way traffic route for motor vehicles leaving the city, and traffic speeds can be quite high.

4. To provide a contra-flow cycle lane on Westwick Street between Charing Cross and Coslany Street would necessitate the removal of one of the two traffic lanes. It may be possible to retain some loading facility for the St Benedicts Street businesses which back onto Westwick Street, but is likely to require a parking ban on the north side. Construction would involve a new traffic island at the Charing Cross end of Westwick Street to provide separation of cyclists from motor vehicles, and the removal of the build-out at the Coslany Street end.

5. The draft layout is shown as appendix 10.

6. Conclusion - The creation of this link would provide a safer and quieter route from the City Centre to the National Cycle Route on Oak Street, and could be achieved with some reduction in carriageway space for motor vehicles. Estimated cost **£10,000 - £15,000**, priority **HIGH**

St Swithins Road

7. Contra-flow cycling on St Swithins Road would provide a link from the existing Westwick Street cycle lane to the Dereham Road / Grapes Hill junction. The alternative is via St Margaret's Street / St Benedict's Street, which is not as direct. Although this route is within a 20mph Zone, St Margaret's Street is cobbled and the right turn at the top can be difficult for cyclists.

8. Contraflow cycling could be accommodated partly on the carriageway and partly on the footway. The draft layout is shown as appendix 11.

9. Conclusions - A contra-flow cycle facility would provide a useful alternative to St Margarets Street / St Benedicts Street and could be easily achieved. Estimated cost **£10,000 - £15,000**, priority **HIGH**.

Ten Bell Lane

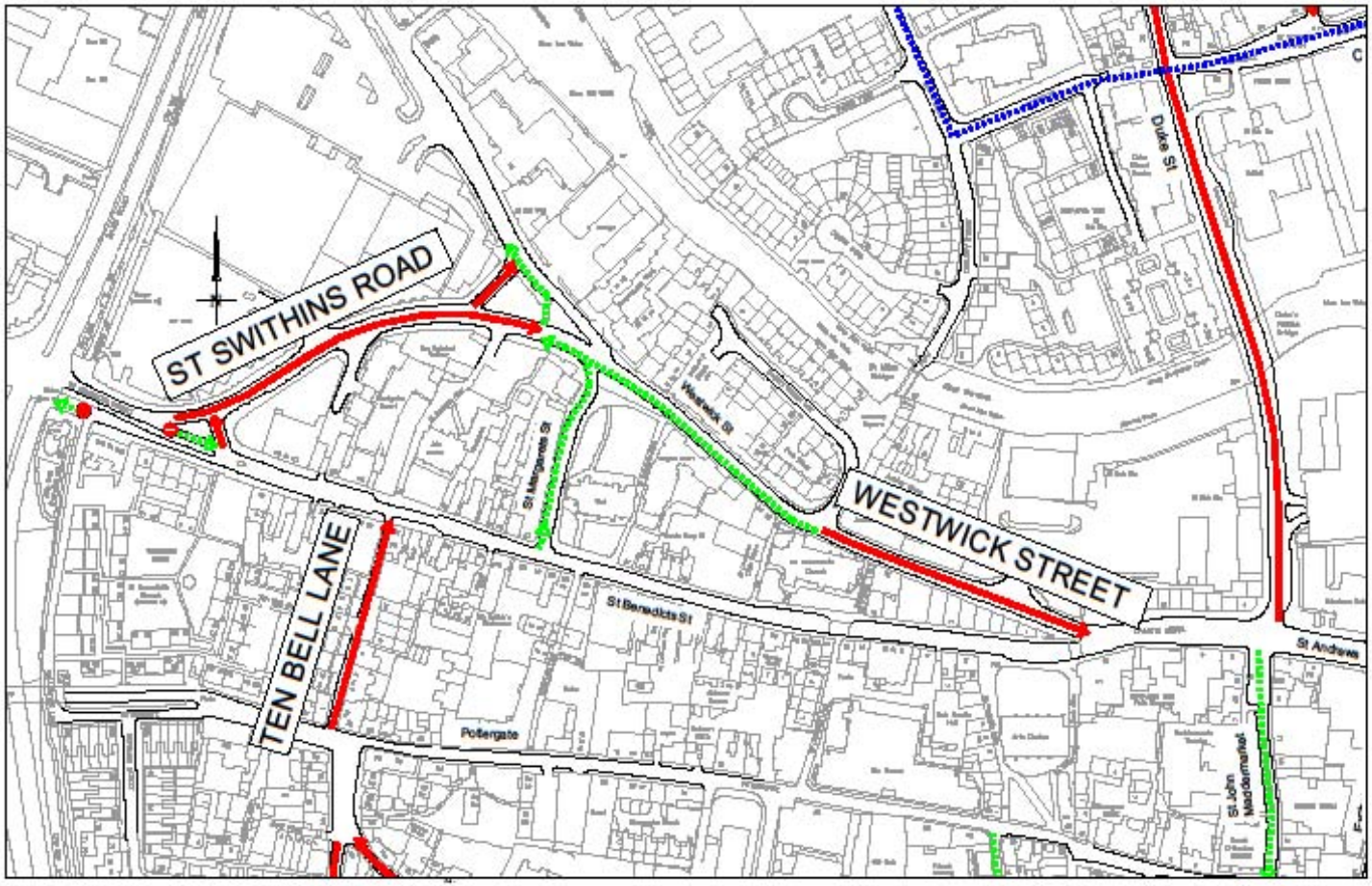
10. Contraflow cycling on Ten Bell Lane would provide a link from St Benedicts Street to Pottergate. The existing alternative is Wellington Lane, which is a quieter road and one way, but less direct.

11. Ten Bell Lane is lightly used by traffic, speeds are generally low and there is no on-street parking, however the road is narrow, paved with cobbles and there would be conflict points at either end where visibility is poor.

12. To ensure safety for cyclists it may be necessary to repave Ten Bell Lane to create a ‘shared’ surface. This would require careful design and be expensive to construct.

13. Conclusions - Providing this link would be expensive. The existing alternative is less direct but is acceptable. Priority **LOW**

APPENDIX 1



NORWICH City Council

One way (all traffic)
Existing contra-flow cycling facilities
National Cycle Route

Contra-flow cycling
St Benedicts area

Date Nov 2010	Scale(s) Not to scale
Drawn By PJS	Designed By PJS
Checked By	NEG. No.
DWG. No. 10HD059/1	

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APPENDIX 2

Cow Hill

1. Cow Hill is one way southbound. The alternative route for northbound traffic is Willow Lane.

2. There is little benefit in cyclists being allowed to cycle northbound along Cow Hill as Willow Lane provides a convenient alternative.

3. Conclusions – Cow Hill would not bring any significant benefits to cyclists. Priority **LOW**

Willow Lane

4. Willow lane is one way northbound. The alternative for southbound cyclists is Cow Hill, or Upper Goat Lane which is further away.

5. Cycling up Cow Hill is difficult due to the gradient so contra-flow cycling in Willow Lane would provide a useful link to St Giles Street, however the road and footpaths are narrow and it would be necessary to remove on-street parking.

6. Conclusions -Priority **LOW**

Chapelfield North/ Cleveland Road / Bethel Street / Little Bethel Street

7. The Chapelfield North scheme that is part of the NATS implementation plan includes for Cleveland Road, Bethel Street and Chapelfield North to become 2 way, and Little Bethel Street to be closed to motor vehicles.

8. Conclusion – **No action required at this time**. If the Chapelfield North scheme goes ahead, the accessibility for cyclists in this area will be greatly improved, enabling cyclists to reach the Grapes Hill Roundabout from the city centre via Bethel Street and Cleveland Road.

St Giles Street

9. St Giles Street is currently one way into the city, and represents a barrier to cyclists heading out towards the Unthank Road / Earlham Road areas.

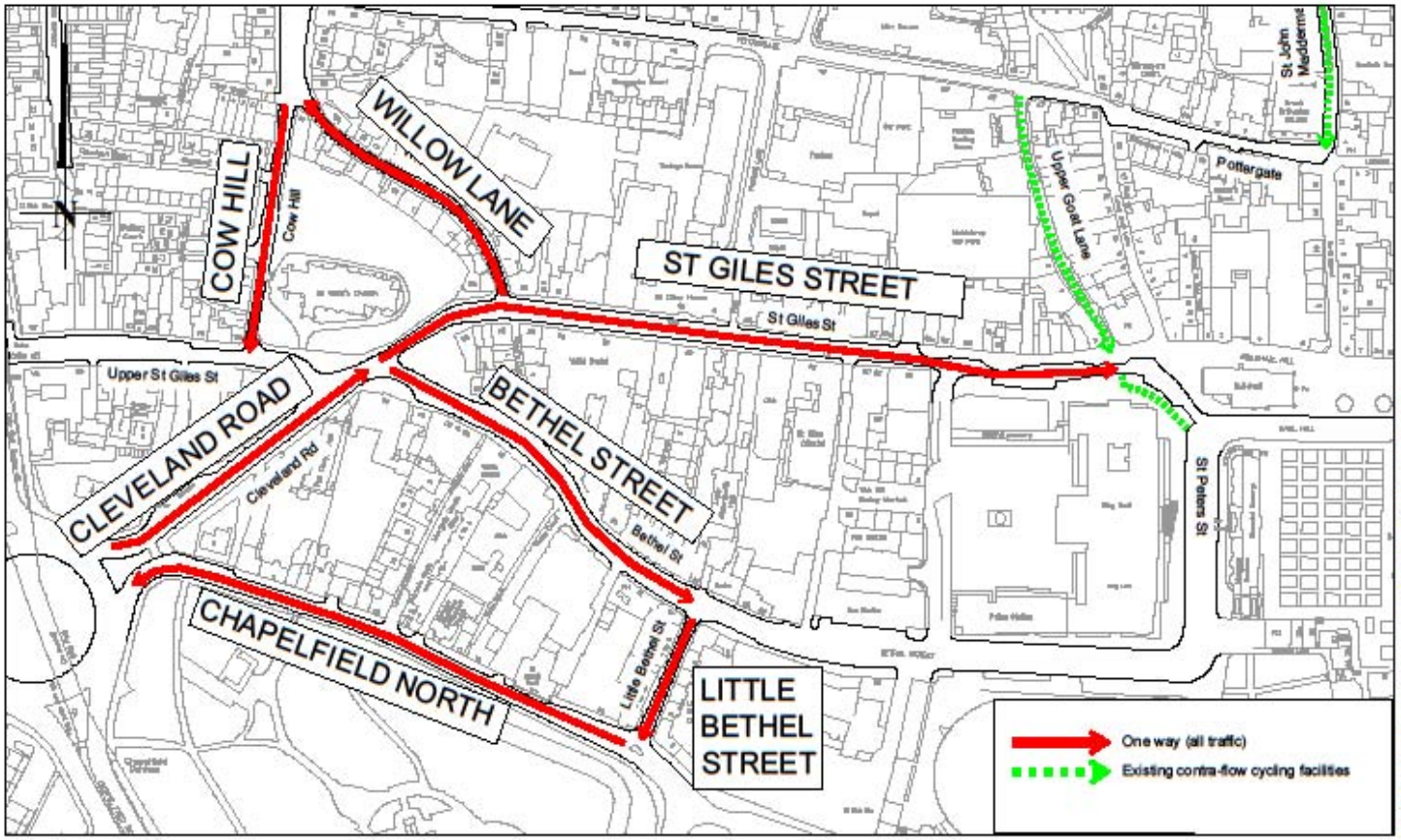
10. St Giles Street has on-street parking on the north side leaving one traffic lane on the south side. To create a contra-flow cycle facility would be difficult due to the narrowness of the carriageway and the loading which occurs on the south side. It would involve changes to the kerb lines at the start of the route (opposite the St Giles Car park entrance), and changes to the kerb line and pelican crossing at the Willow Lane end.

11. If Bethel Street and Cleveland Road become 2-way as part of the Chapelfield North scheme, it would therefore not be necessary to make any changes to St Giles Street because Bethel Street would provide a route for cyclists to get to either the Chapelfield roundabout or Upper St Giles Street.

12. If the Chapelfield North scheme does not go ahead, consideration should be given to make Bethel Street 2-way cycling rather than St Giles Street. This would provide the link to Upper St Giles Street.

13. Conclusions – **No action required at this time**. It the Chapelfield North scheme goes ahead, Bethel Street and Cleveland Road become 2-way and the provision of contra-flow cycling on St Giles Street would be un-necessary. If the Chapelfield North scheme does not proceed, consideration should be given to providing contra-flow cycling on Bethel Street.

APPENDIX 2



NORWICH City Council

Title
CONTRA-FLOW CYCLING

ST GILES STREET AREA

No.	Date	Notes	REVISIONS	Int.	Ckd.

Date FEB 2011	Scale(s) NOT TO SCALE
Drawn By PJS	Designed By PJS
Checked By	NEG. No.
DWG. No. 10 HD 059 2	

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APPENDIX 3

Bank Street

1. Bank Street is currently one way from Upper King Street to Bank Plain

2. The existing alternatives for cyclists from Bank Street to Upper King Street are via Queen Street, or via Agricultural Hall Plain.

3. Conclusions – As the alternatives are relatively easy and close by, there is little benefit in providing contra-flow cycling in Bank Street. Priority **LOW**

Prince of Wales Road / St Vedas Street / Rose Lane / Cattle Market Street / Market Avenue

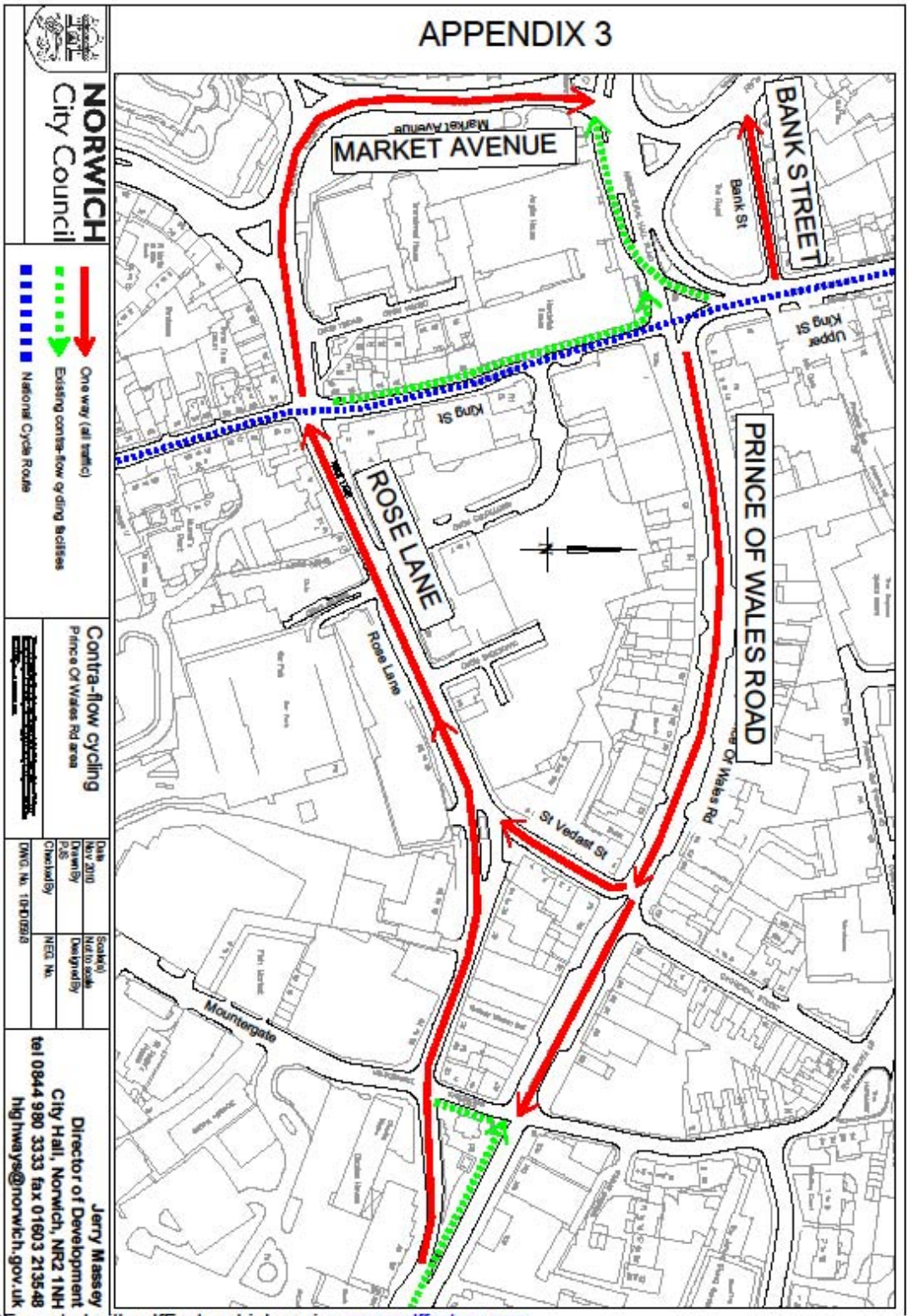
4. Prince of Wales Road, Rose Lane, Cattle Market Street and Market Avenue form a 'gyratory' system. Rose Lane has a bus lane which cyclists are able to use, and Prince of Wales Road has been 'traffic calmed' by signalled pedestrian crossings.

5. For cyclists heading towards the city centre, they have the option of going via St Faiths Lane to Tombland, or via the Rose Lane bus lane, Grayfriars Road and the shared path on King Street to Agricultural Hall Plain.

6. It would be difficult to provide contra-flow cycling in Prince of Wales Road. Cycling on the carriageway would require all the signalled crossings to be altered, and cycling on the footway would be difficult due to the levels of pedestrian activity.

7. Conclusions – Although a contra-flow on Prince of Wales Road would be desirable, it would require major changes to achieve it. A long term aim of the NATS implementation is to make Prince of Wales Road buses only, and potentially contra-flow cycling could be achieved as part of that.The existing alternative are relatively safe and convenient. Contra-flow cycling on Rose Lane, Cattle Market Street and Market Avenue would be very difficult to achieve and would not be of significant benefit to cyclists. Priority **LOW**

APPENDIX 3



APPENDIX 4

Exchange Street

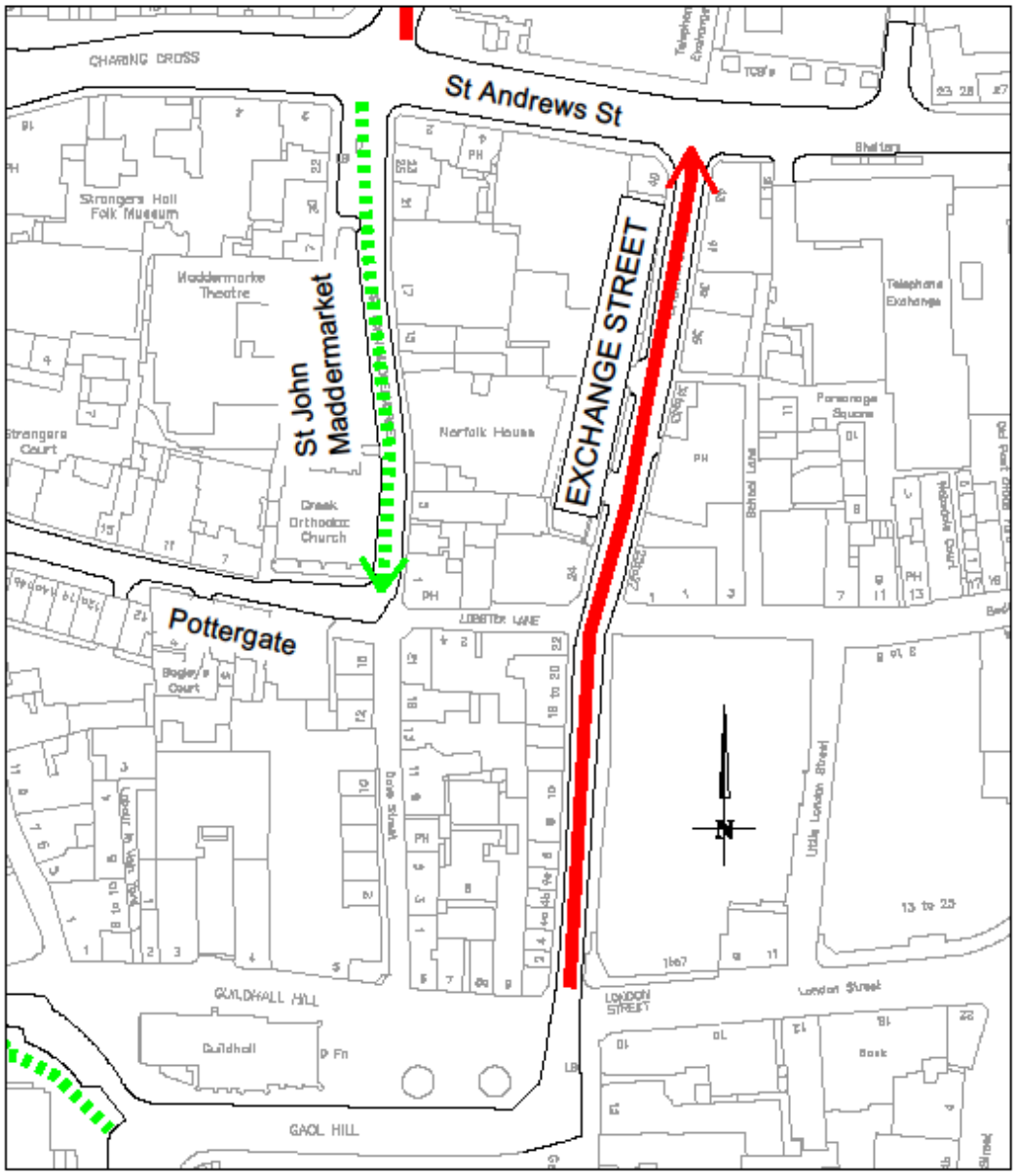
1. Exchange Street is one way from London Street to St Andrews Street. The footways are narrow and are heavily used by pedestrians, and the road has loading bays which create difficulties for other motor vehicles trying to pass. At the northern end there are traffic signals with an advanced cycle stop line.

2. The existing alternative for north bound cyclists is via St John Maddermarket, Pottergate and Upper Goat Lane. St John Maddermarket / Dove Street would be a more direct link but cycles are currently banned from entering Dove Street from Pottergate.

3. To provide contra-flow cycling on Exchange Street would be difficult to achieve with the current levels of traffic and pedestrian activity. It would involve changes to the signals at the northern end and banning of the on-street loading. This would impact on the viability of the many businesses in this street

4. Conclusions – Expensive and difficult to achieve without changes to the traffic signal, loading arrangements and reducing the volume of traffic. The existing alternative of St John Maddermarket, Pottergate and Upper Goat Lane is safer, although less direct. Priority **LOW**

APPENDIX 4



NORWICH City Council

Contra-flow cycling
Exchange St area

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One way (all traffic)

Existing contra-flow cycling facilities

Date	Scale(s)
Nov 2010	Not to scale
Drawn By PJB	Designed By
DWG. No. 10HD059/4	

APPENDIX 5

Duke Street

1. Duke Street is one way from St Andrews Street to the Duke Street Roundabout.

2. The existing alternatives for cyclists are via Oak Street, Coslany Street, Westwick Street, St Margarets Street, St Benedict's Street and Charing Cross, OR St Georges Street, St Andrews Street.

3. Contra-flow cycling along Duke Street would provide a direct route into the city and to the cycle park in St Andrews car park. This route has been divided into two sections.

Section 1 - Colegate to St Andrews Cycle Park

4. This section would provide a links from the National Cycle Route (Colegate) to the cycle park in the St Andrews multi-story car park.

5. The construction of this link could be funded by the Northern City Cycle Links scheme (Section 106) in 2011-12

6. Design work to provide a contra-flow cycle lane on this section of Duke Street has commenced, and public consultation will take place in Spring 2011.

7. The draft layout is shown as appendix 12.

8. Conclusions – A contraflow cycle lane from Colegate to Charing Cross is currently being developed and should be constructed during 2011. Estimated cost **£10,000 - £15,000**, priority **HIGH**

Section 2 – Duke Street Roundabout to Colegate

9. Duke Street from the roundabout to Muspole Street has 3 traffic lanes, and a contra-flow cycle lane could be provided if one of the lanes was removed. The section from Muspole Street to Colegate has 2 traffic lanes and this would need to be reduced to a single lane. This would impact on capacity.

10. Muspole Street could be used to allow cyclists to bypass the narrow section of Duke Street, however this is not a direct route, and many cyclists may still continue to cycle illegally along Duke Street.

11. As part of the Anglia Square re-development, the new footway / cycleway on Pitt Street is to be extended to St Crispins Road and a new signalled crossing is to be provided, to replace the subway. This will provide a safer crossing of the Inner Ring Road and will link up to Winterton Lane, St Georges Street and Colegate, providing an alternative to Duke Street. The need for contra-flow cycling in Duke Street between Duke Street roundabout and Colegate should therefore reduce.

12. Conclusions -The section of Duke Street from the roundabout to Colegate is difficult to achieve as it would impact on traffic capacity. An alternative to

bypass this section of Duke Street is currently being developed which may reduce the need to develop a route in this section of Duke Street. Priority **LOW.**

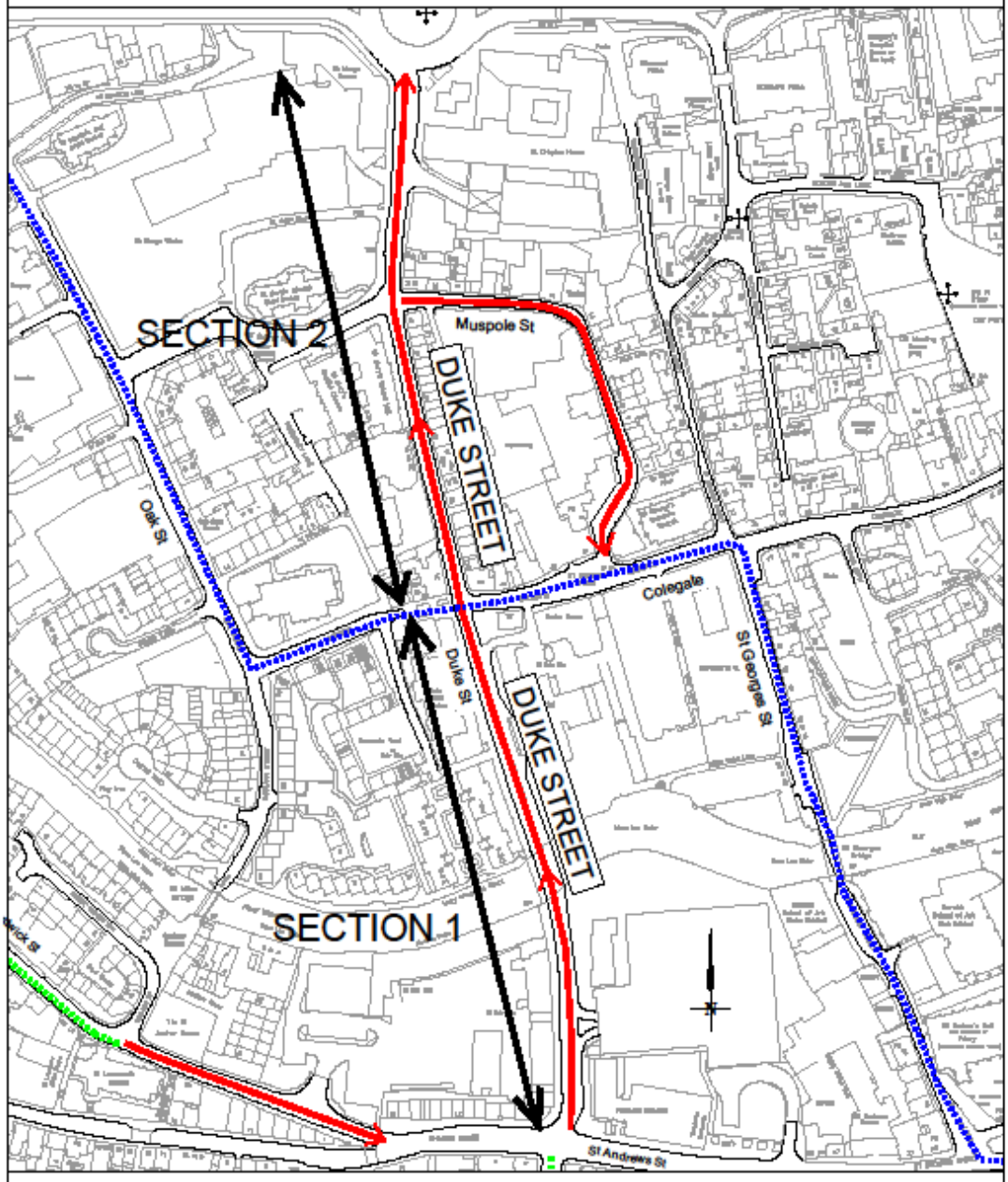
Muspole Street

13. Muspole Street is one way from Duke Street to Colegate. It has low traffic volumes and is considered suitable for 2 way cycling. Whilst of little advantage to cyclists as a through route, it could benefit the staff of businesses on Muspole Street

14. Access into Muspole Street from Colegate could be allowed by changing the traffic regulation order and signing from a 'no entry' to a 'no motor vehicles except cycles'.

15. Conclusions – This could be achieved with a change in the TRO and would provide a useful access for premises in Muspole Street. Estimated cost **£2,000 - £5,000**, priority **MEDIUM**

APPENDIX 5



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Contra-flow cycling
Duke St area

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One way (all traffic)
Existing contra-flow cycling facilities
National Cycle Route

Date: Nov 2010	Scale(s): Not to scale
Drawn By PJB	Designed By
DWG. No. 10HD059/5	

APPENDIX 6

Westlegate and All Saints Street

1. It is a stated aim of the NATS implementation plan and a long standing desire of the city council that Westlegate should be pedestrianised. As part of any pedestrianisation scheme two way cycling will be permitted..

2. Conclusions – **No action required at this time**.

Farmers Avenue

3. Contra-flow cycling on Farmers Avenue would create a link from Rouen Road to the city centre.

4. The existing alternative is via Cattle Market Street and Market Avenue, OR via Golden Ball Street and Westlegate

5. A cycle lane on the north east side of Farmers Avenue (castle side) could be provided but the junctions at either end may require extensive modifications.

6. There is little benefit in creating this link as cyclists cannot easily reach the Market area from the bottom of Farmers Avenue. It would be preferable to direct cyclists along Golden Ball Street, Westlegate and Rampant Horse Street.

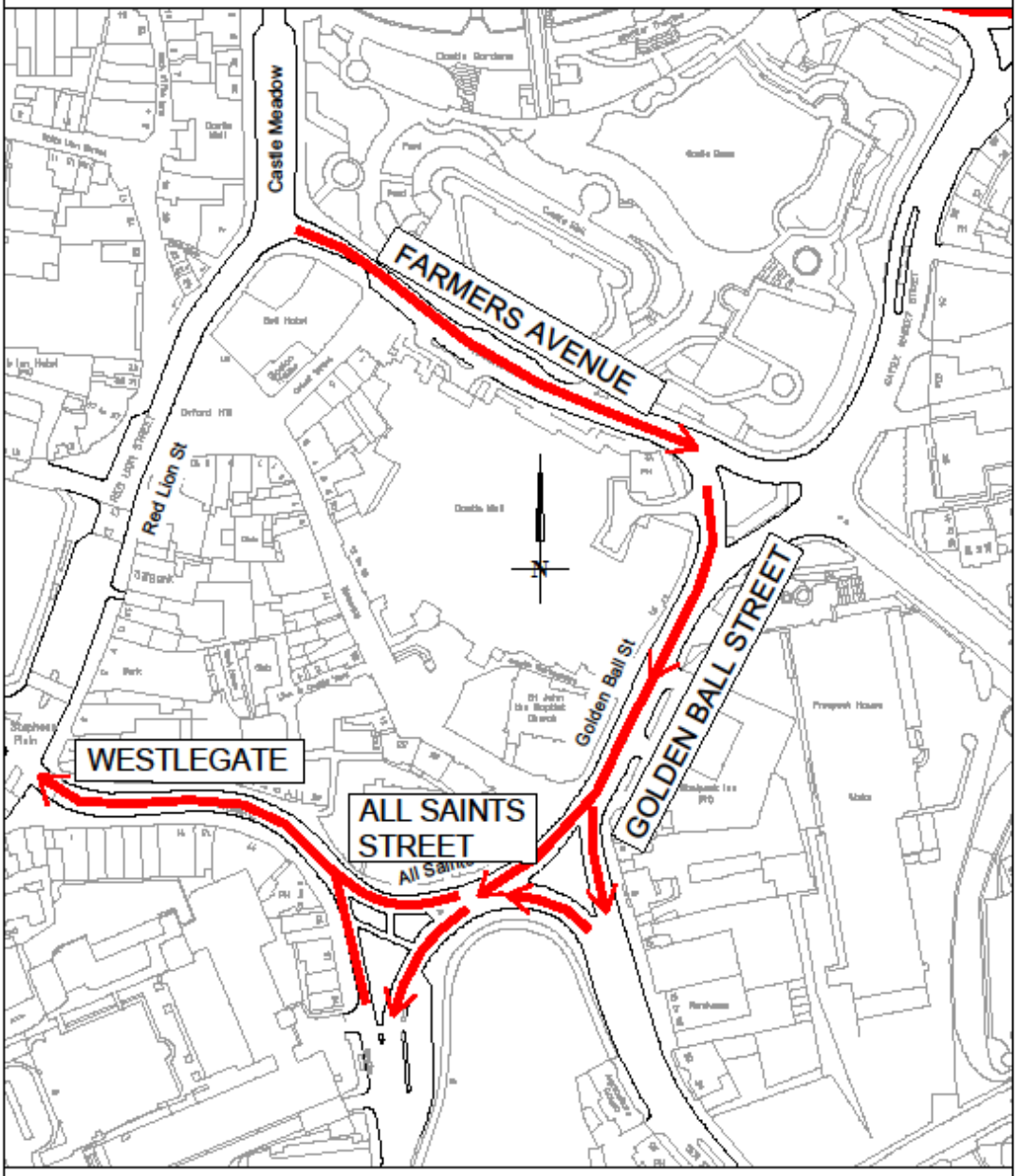
7. Conclusions – Difficult and expensive to provide and of little benefit. Priority **LOW**

Golden Ball Street

8. The St Stephens Masterplan and the NATS implementation plan both promote removing general traffic from St Stephens Street. To achieve this Golden Ball Street will need to be made two way for all traffic. It would be premature to introduce a contra-flow cycle lane on Golden Ball Street ahead of those proposals.

9. Conclusions – **No action required at this time**. It is proposed that 2 way flow along Golden Ball Street will form part of removal of through traffic from St Stephens Street.

APPENDIX 6



NORWICH City Council

Contra-flow cycling
Timberhill area

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One way (all traffic)

Date: Nov 2010	Scale(s): Not to scale
Drawn By PJS	Designed By
DWG. No. 10HD059/6	

APPENDIX 7

Elm Hill

1. Elm Hill is one way from Wagon and Horses Lane to Wensum Street. The existing alternative is Wagon and Horses Lane or Princess Street for vehicles accessing properties in Elm Hill or to reach Redwell Street.

2. Elm Hill is a narrow street with narrow pavements, and has short term parking at the Wensum Street end making contra-flow cycling difficult to provide. It has a cobbled surface which is not comfortable for cyclists, and the additional signage required would be detrimental to the streetscape. A contra-flow cycle facility on Elm Hill would not provide any significant benefits for cyclists.

3. Conclusions – This would be difficult and expensive to achieve and of little benefit to cyclists. Priority **LOW**

Redwell Street (Princess Street to St Andrews Street)

4. Redwell Street is a narrow road with narrow footways. The alternatives are via St George Street and Princess Street OR via Queen Street, Tombland and Princess Street.

5. Contra-flow cycling would only be of benefit for access to properties in Princess Street or Elm Hill. It would require changes to the kerb line at the St Andrews Street end and may require the banning of on-street parking.

6. Conclusions - This would be of little benefit to cyclists. Priority **LOW**

Tombland triangle (Tombland to Ethelberts Gate)

7. The eastern side of the Tombland triangle is one way southbound and the southern side is one way westbound. This southern leg provides a link for cyclists heading into the city via St Faiths Lane or through Cathedral Close, but is a barrier to cyclists heading out of the city along the same route.

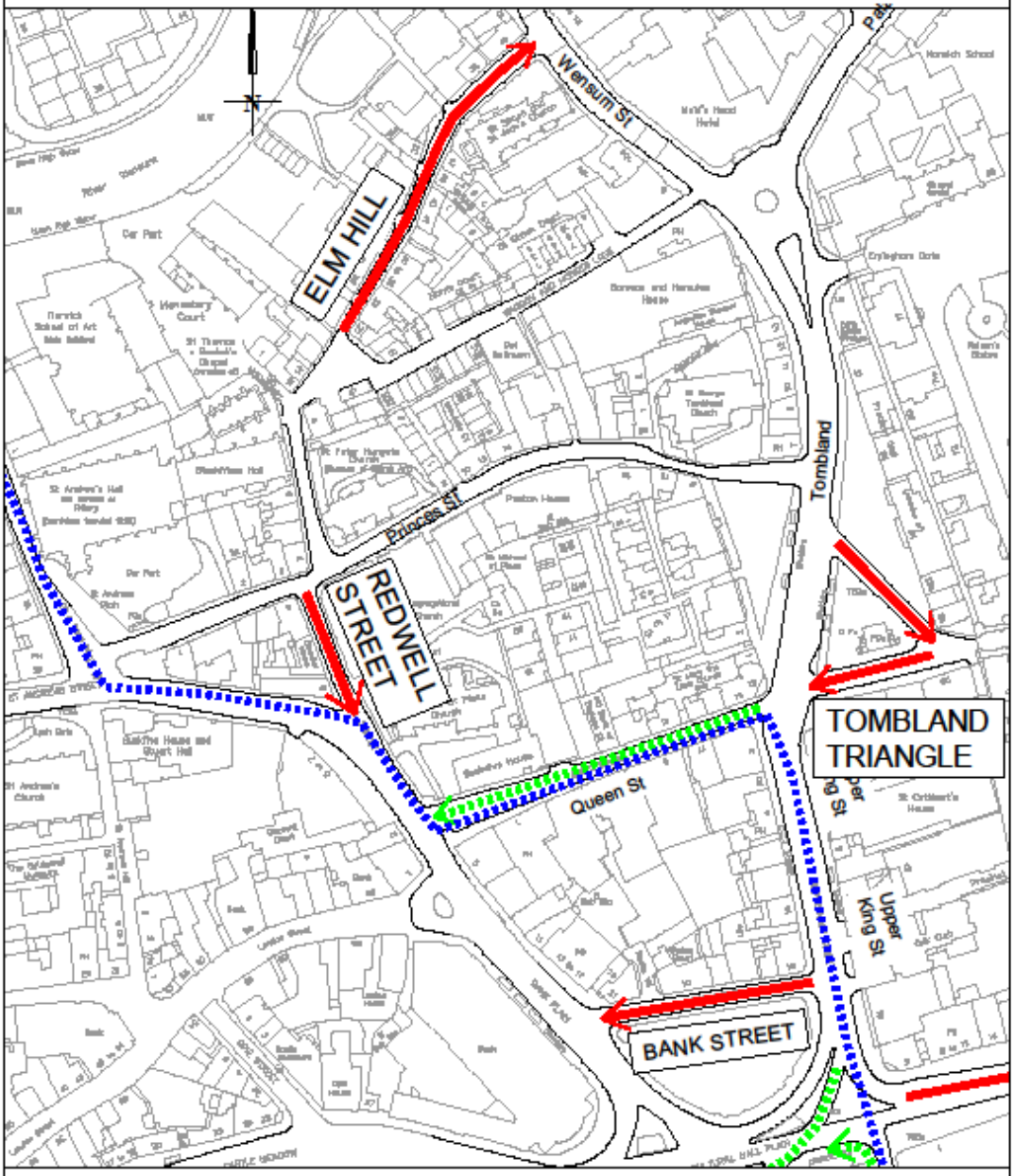
8. The alternative for cyclists heading from Queen Street to Cathedral Close or St Faiths Lane is to turn left into Tombland and right into the triangle area.

9. Contra-flow cycling could be achieved from Upper King Street to Ethelberts Gate by footway widening at the Upper King Street end. It would also be desirable to convert the Pelican crossing to a Toucan crossing, however this could be carried out as part of any future proposals for Tombland.

10. The draft layout is shown as appendix 13.

11. Conclusions – Contra-flow cycling on the southern leg of the Tombland triangle would provide a useful link from Queen Street to St Faiths Lane / Cathedral Close. Estimated cost **£15,000 - £20,000**, priority **HIGH**

APPENDIX 7



NORWICH City Council

Contra-flow cycling
Tombland area

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One way (all traffic)
Existing contra-flow cycling facilities
National Cycle Route

Date	Scale(s)
Nov 2010	Not to scale
Drawn By PJB	Designed By
DWG. No. 10HD059/7	

APPENDIX 8

Magdalen Street

1. The section of Magdalen Street from Magdalen Gates to Colegate is one way northbound for all vehicles.

2. There is a high demand for southbound cycling along this section, and many cyclists currently do this by cycling on the narrow footways.

3. The alternative for cyclists approaching via Magdalen Road is currently via Shipstone Road, Heath Road, Magpie Road, and then onto the new shared footway / cycleway on Edward Street and Pitt Street. Cyclists then have to rejoin the carriageway at the Duke Street roundabout and make a difficult manoeuvre to leave the roundabout via a gap in the guardrail near the Duke Street exit.

4. It would not be possible to provide for contraflow cycling on this section of Magdalen Street without a major highway redesign, including changes to traffic signals.

5. As part of the Anglia Square re-development, the new shared route on Pitt Street is to be extended along the northern side of St Crispins Road, the sub-way is to be removed and a new signalled crossing provided across St Crispins Road. This will provide a safe crossing of the Inner Ring Road for cyclists, who will then be able to access Magdalen Street via the path along side the flyover.

6. Conclusions - Providing a contra-flow cycle facility in this section of Magdalen Street would be desirable but very expensive and difficult to achieve. Priority **MEDIUM.**

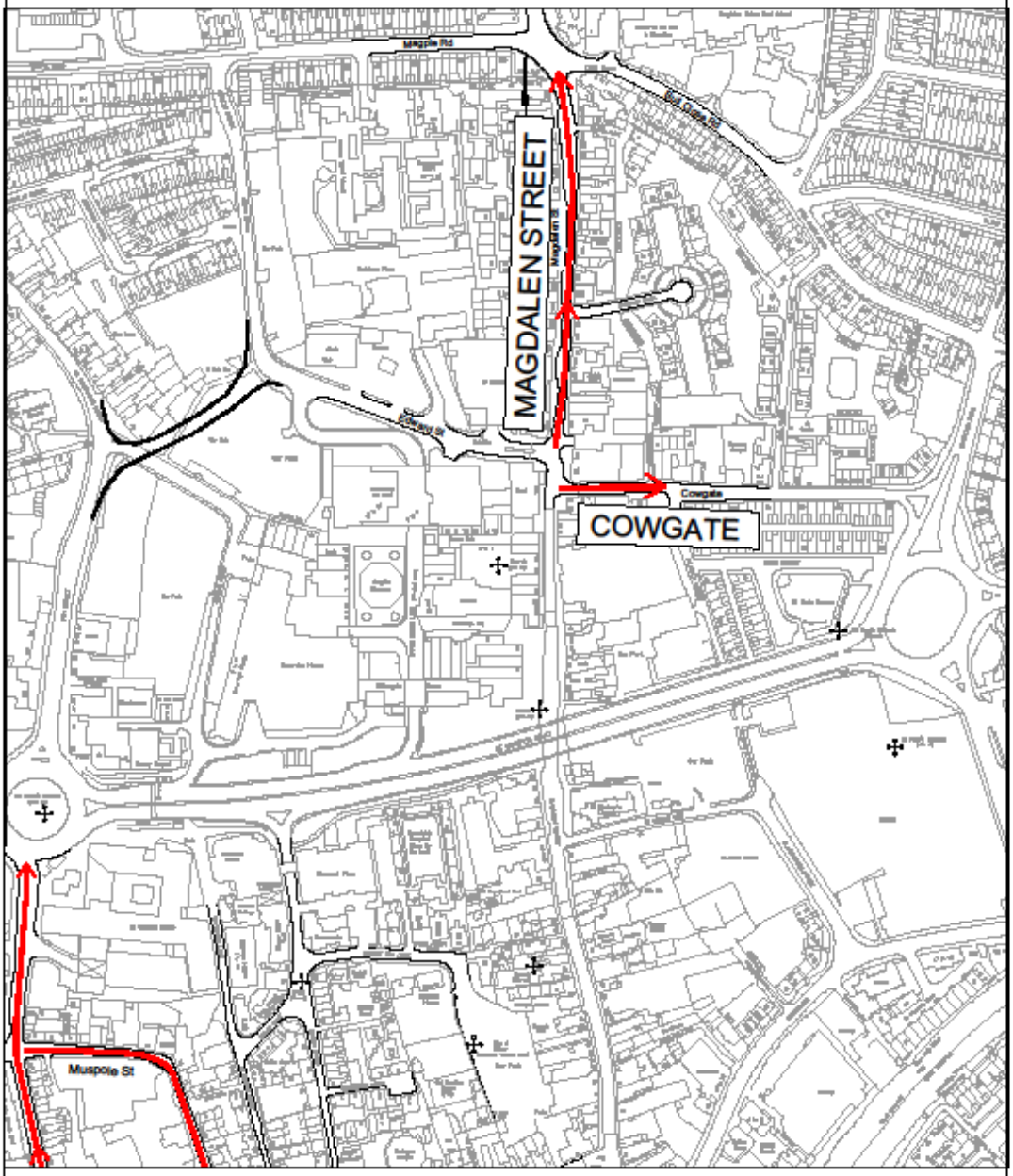
Cowgate

7. Cowgate is a two way road which has a ‘no entry’ restriction at it’s junction with Peacock Street (known as a ‘false’ one way).

8. Cycle access could be allowed by changing the signs to ‘no motor vehicles except cycles’ and changing the traffic regulation order.

9. Conclusions – This would be a useful link for cyclists and could be achieved fairly easily. Estimated cost **£2,000 - £5,000**, priority **HIGH**

APPENDIX 8



NORWICH City Council

Contra-flow cycling
Magdalen St area

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One way (all traffic)

Date Nov 2010	Scale(s) Not to scale
Drawn By PJB	Designed By
DWG. No. 10HD059/8	

APPENDIX 9

Carrow Hill

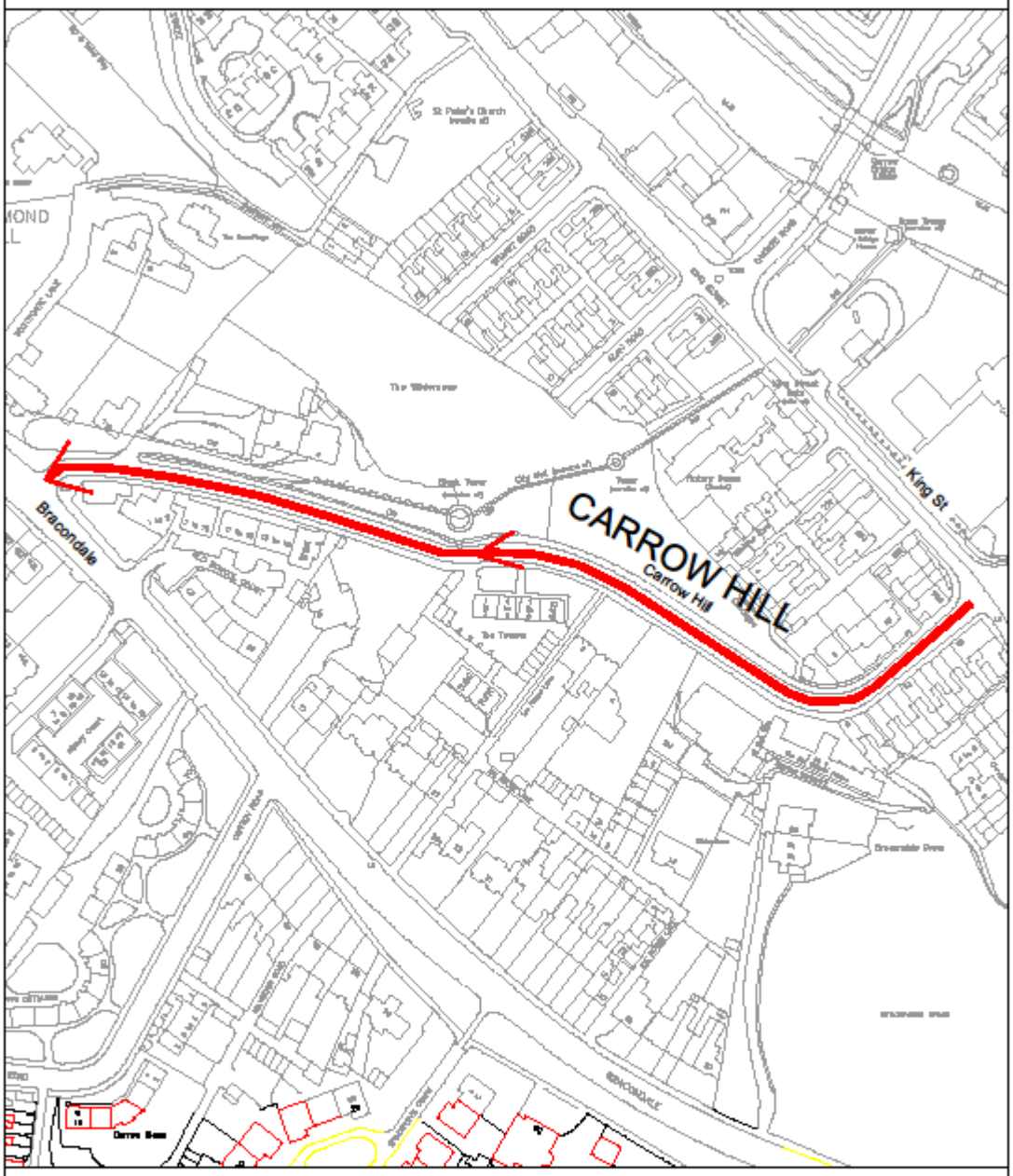
1. Carrow Hill is one way from King Street to Bracondale. The alternative route for cyclists is to continue down Bracondale and turn left at the traffic signals into King Street.

2. The entrance to Carrow Hill at the Bracondale end could be easily changed to allow cyclists to bypass the 'no entry' signs, but some double yellow lines and cycle lanes may be required on the bends to remove the cycle / vehicle conflict.

3. The draft layout is shown as appendix 14.

4. Conclusions – Contra-flow cycling in Carrow Hill would provide a route to enable cyclists to bypass the busy Bracondale King Street junction. Estimated cost **£5,000 – 10,000**, priority **HIGH**

APPENDIX 9



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Contra-flow cycling
Carrow Hill

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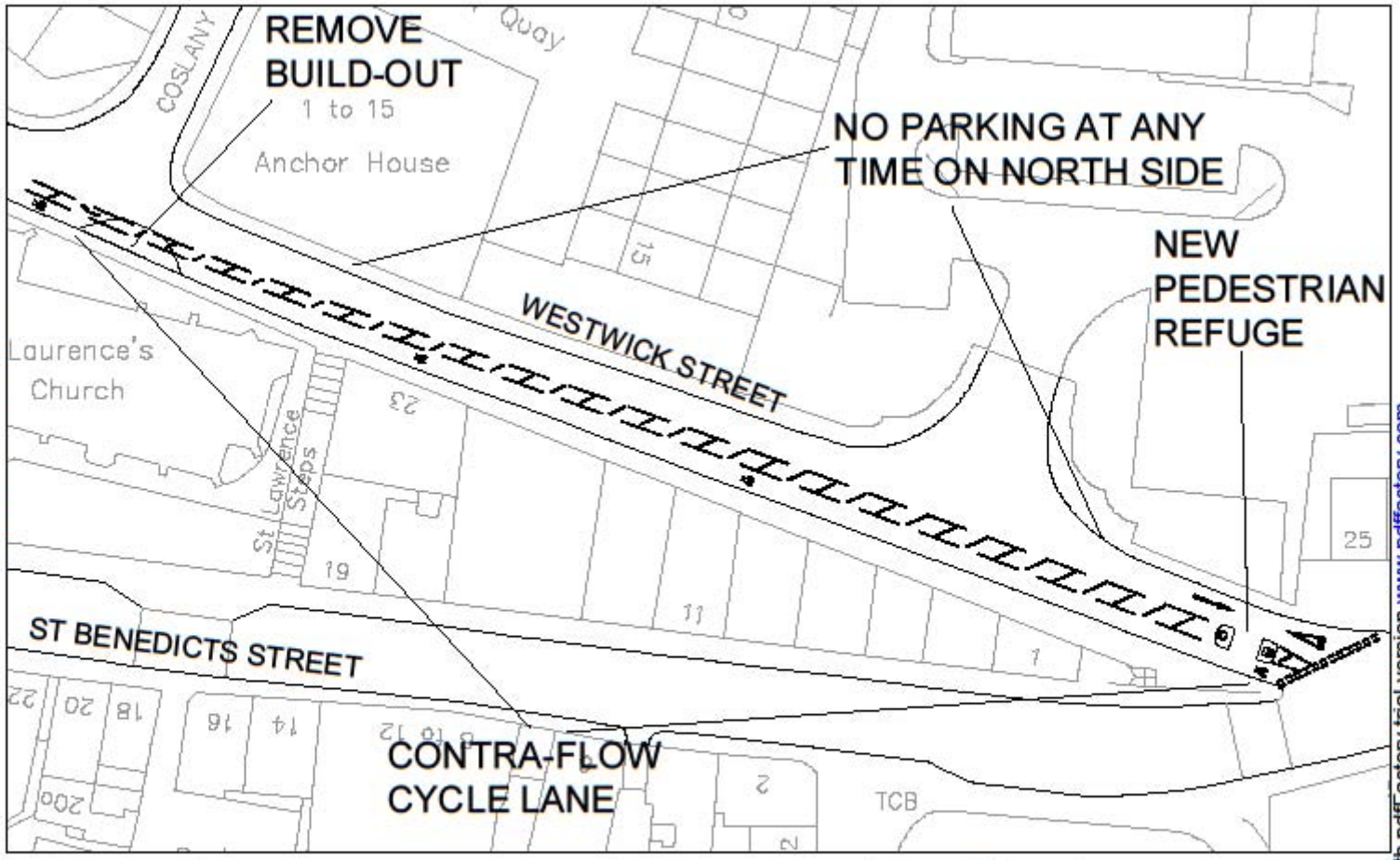
One way (all traffic)

Date	Scale(s)
Nov 2010	Not to scale
Drawn By PJS	Designed By
DWG. No. 10HD059/9	

APPENDIX 10



NORWICH City Council

Contra-flow cycling
WESTWICK STREET
Draft Proposals

Date FEB 2011	Scale(s) 1:500
Drawn By PJS	Designed By
Checked By	NEG. No.
DWG. No. 10 HD 059 10	

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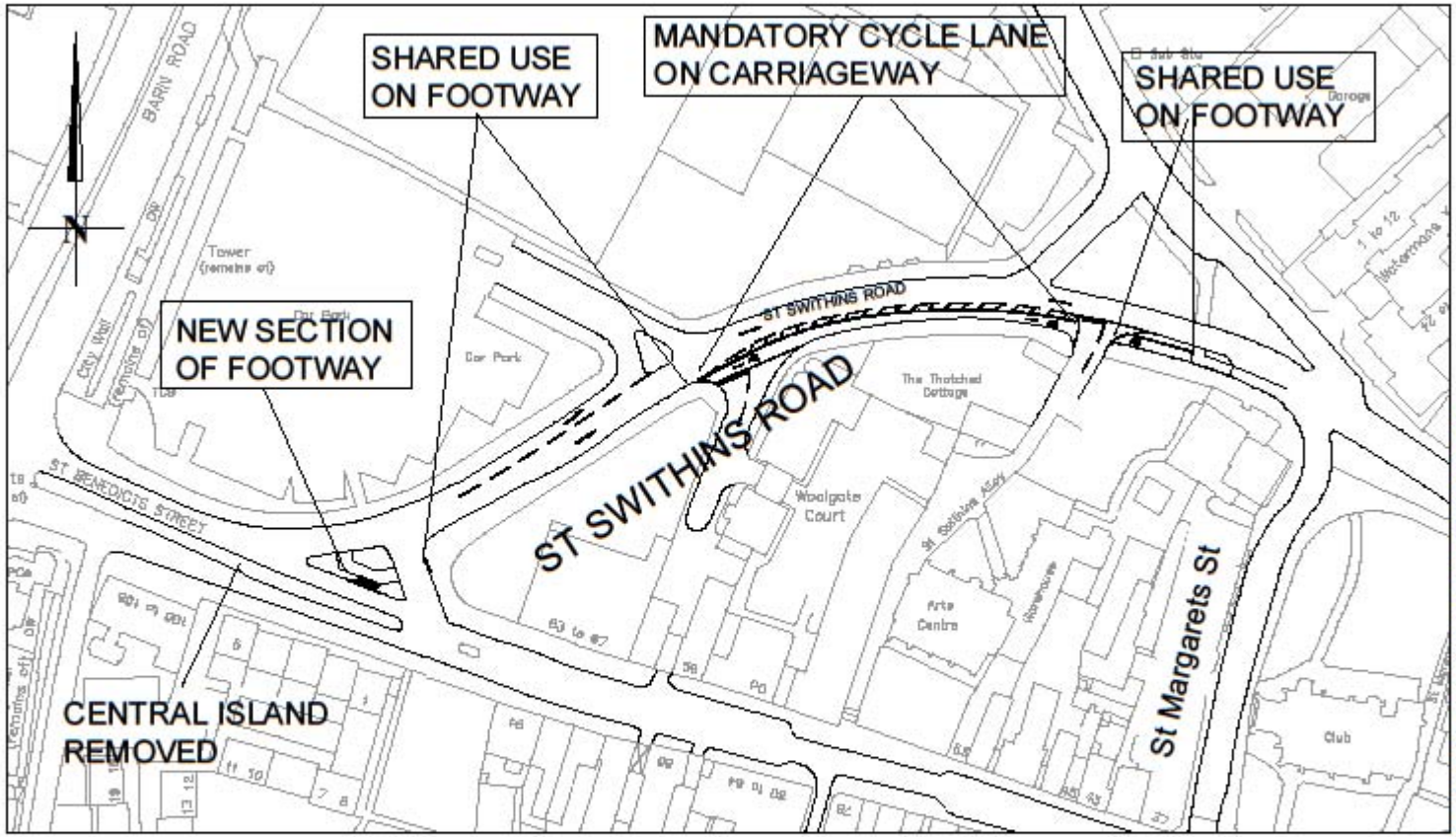
APPENDIX 11



NORWICH City Council

Contra-flow cycling
ST SWITHINS ROAD
Draft Proposals

Date FEB 2011	Scale(s) 1/1000
Drawn By PJS	Designed By
Checked By	NEG. No.
DWG. No. 10 HD 059 11	

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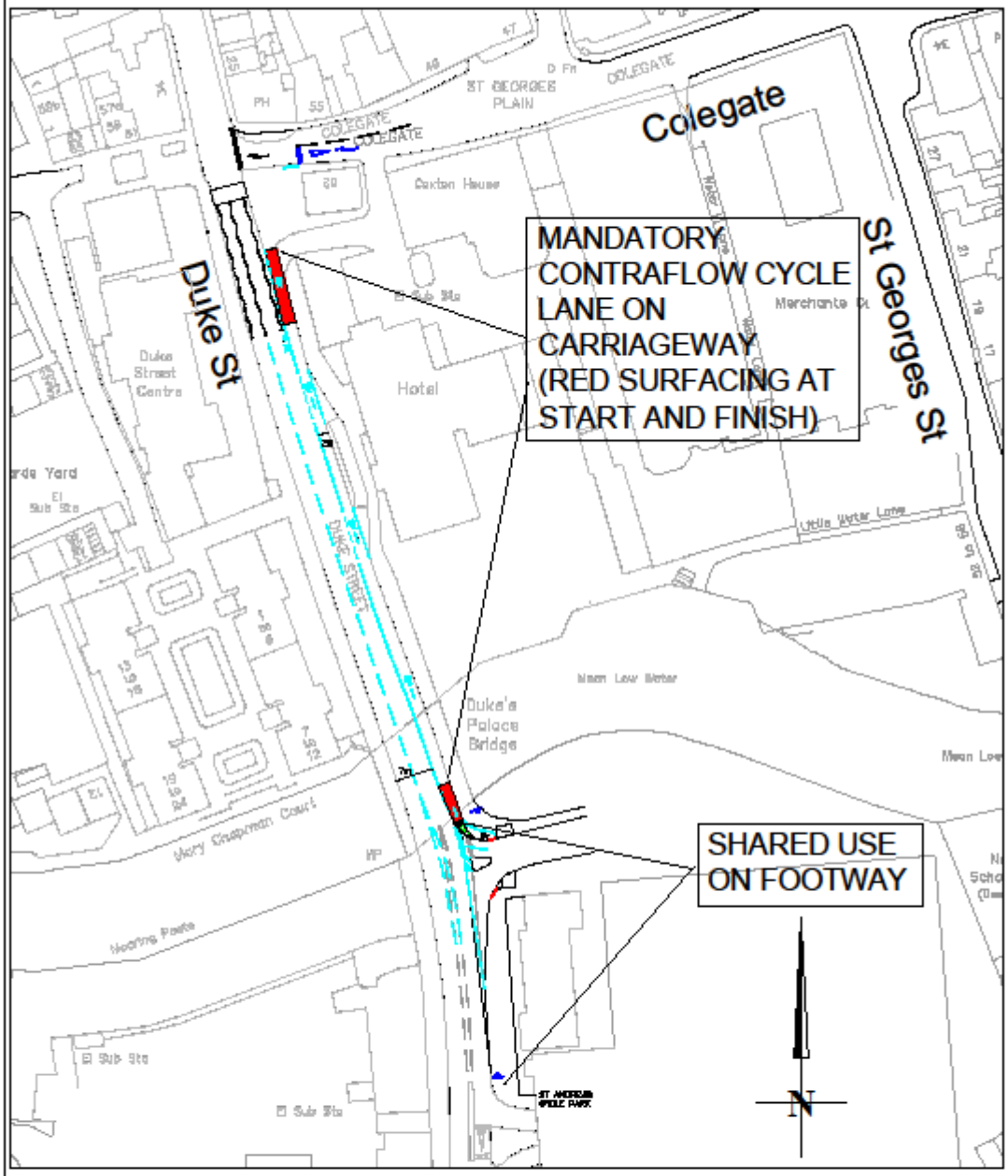
APPENDIX 12



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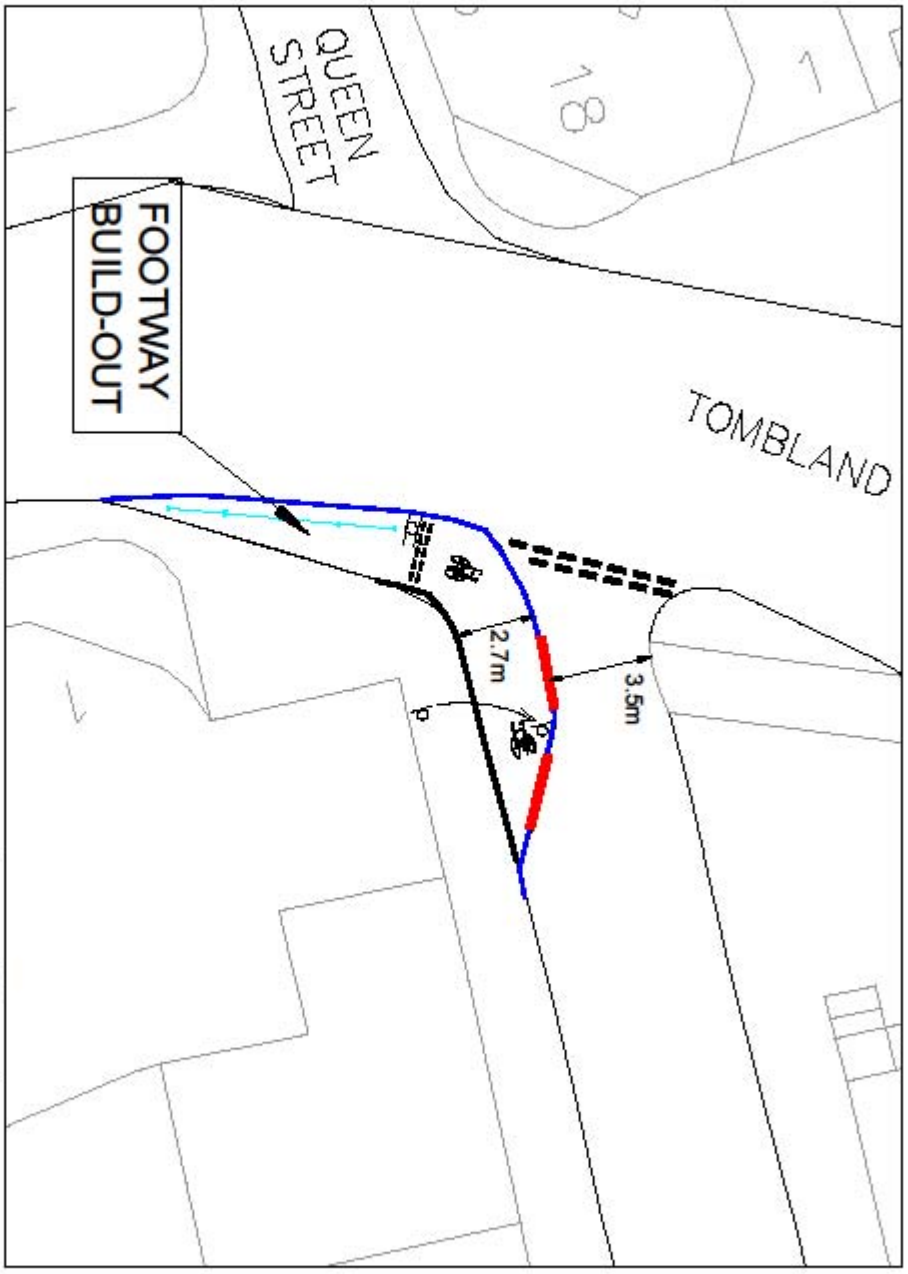
Title
CONTRAFLOW CYCLING
DUKE STREET (COLEGATE TO ST ANDREWS CYCLE PARK)
DRAFT PROPOSALS

Date FEB 2011	Scale(s) 1/1000
Drawn By PJS	Designed By PJS
Checked By	NEG. No.
DWG. No. 10 HD 059 12	

No.	Date	Notes REVISIONS	Int.	Ckd.

APPENDIX 13



NORWICH City Council

Contra-flow cycling
TOMBLAND
Draft proposals

Date: Nov 2010
Drawn By: PJS
Checked By:
Scale(s): 1:200
Designed By:
NEG. No.
DWG. No. 10 HD 059 13

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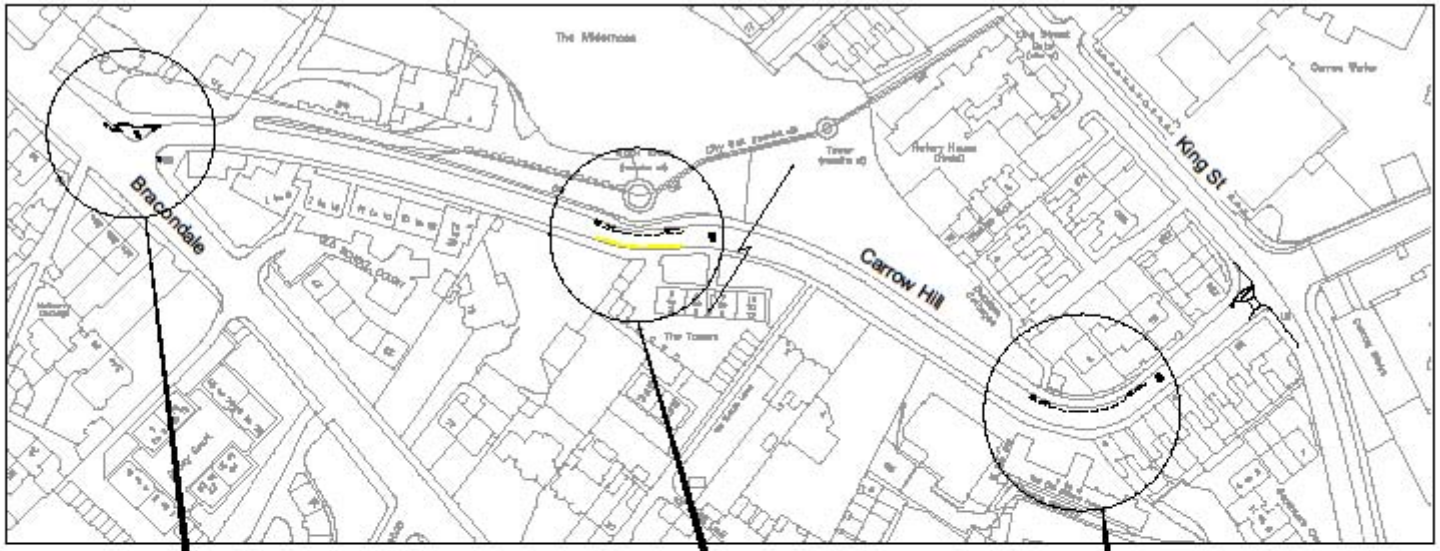
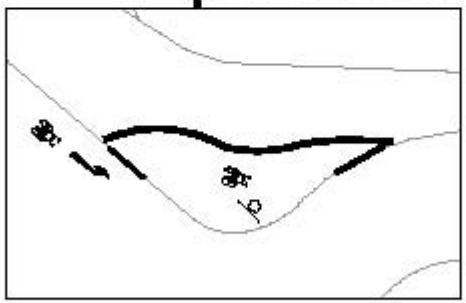
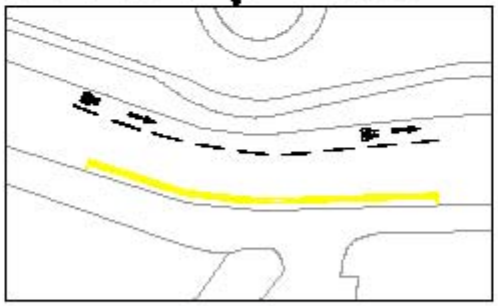
APPENDIX 14

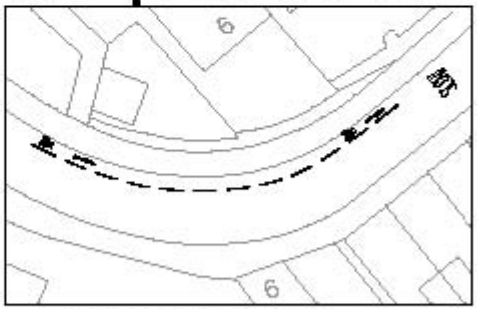




CYCLE LANE ON FOOTWAY



WAITING RESTRICTIONS AND
CYCLE LANE ON BEND



CYCLE LANE ON BEND

NORWICH City Council

Contra-flow cycling
CARROW HILL
Draft Proposals

Date Nov 2010	Scale(s) 1/1000
Drawn By PJS	Designed By
Checked By	NEG. No.
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APPENDIX 15 (1)
SUMMARY OF PRIORITIES FOR CONTRA-FLOW CYCLING

ROAD	APPENDIX. NO.	PROS	CONS	ESTIMATED COST	PRIORITY
Westwick Street (Charing Cross to Coslany Street)	1 and 10	provides a safer and more direct route from City centre to national Cycle Route	Requires a parking ban on north side	£10k - £15k	**HIGH**
St Swithins Road	1 and 11	provides a safer and more direct route from Westwick Street to Dereham Road	None	£10k - £15k	**HIGH**
Ten Bell Lane	1	more direct than Wellington Lane	Narrow carriageway and footways. Would require repaving of street to create shared surface, which would be expensive		**LOW**
Cow Hill	2	Cow Hill is steep for cyclists	Would require removal of on- street parking in both roads. Little advantage to cyclists		**LOW**
Willow lane					
Bank Street	3	None	Would require removal of on-street parking.		**LOW**
Prince of Wales Road	3	Prince of Wales Road would provide a more direct route into the City Centre	Expensive to achieve. Quieter route for cyclists are available. Consideration of two way movements for cyclists should be included nay future scheme to make Prince of Wales Road buses only.		**LOW**
St Vedas Street	3				
Rose Lane	3				
Cattle Market Street	3				
Market Avenue	3				
Exchange Street	4	None	Narrow carriageway and footways. Would require removal of loading bay. Conflict with pedestrians. Existing alternatives more direct		**LOW**
Duke Street - Section 1 (Colegate to St Andrews Cycle Park)	5 and 12	Will link the National Cycle Route to the cycle park in St Andrews car park	None	£10k - £15k	**HIGH - PROGRAMMED FOR 2011/12**
Duke Street - Section 2 (St Crispins Roundabout to Colegate)	5	Would provide a continuous route along Duke Street	Requires the removal of traffic lanes which will impact on capacity. Safer alternatives are available		**LOW**

ROAD	APPENDIX. NO.	PROS	CONS	ESTIMATED COST	PRIORITY
Muspole Street	5	Would provide better access for businesses in Mountergate. Can be achieved easily	Of little benefit as a through route	£2k - £5k	MEDIUM
Farmers Avenue	6	Would allow cyclists to reach Castle meadow	Difficult to achieve, and of little benefit as better routes will become available		LOW
Elm Hill	7	None	Poor riding surface, removal of parking may be necessary, and of little advantage		LOW
Redwell Street	7	None	May involve removal of parking. Of little benefit to cyclists as other alternatives available		LOW
Tombland Triangle (south side)	7 and 13	Would provide a direct link from Queen Street to St Faiths Lane / Cathedral Close	None	£15k - £20k	HIGH
Magdalen Street (Magdalen Road to Edward Street)	8	Would provide a more direct link to the City Centre from the north	Difficult and expensive to achieve. Would require a complete redesign of Magdalen Street	£100k-£200k	MEDIUM
Cowgate	8	A useful link	None	£2k - £5k	HIGH
Carrow Hill	9 and 14	Would enable cyclist to avoid the busy King Street / Bracondale junction	Requires removal of some parking	£5k - £10k	HIGH