

Measure title: **Time control access restriction**

City: **Norwich**

Project: **SMILE**

Measure number: **6.3**

A Introduction

Norwich is a historic medieval City where it can sometimes be difficult to balance the conflicting needs of pedestrians, cyclists, drivers, public transport, deliveries etc. Within the core of the City many streets are pedestrianised during the periods of peak pedestrian activity with deliveries allowed outside those peaks. There are also other streets that are pedestrianised but where access and deliveries are allowed throughout the day. At present no pedestrianised street is open to general traffic at any time of the day.

A1 Objectives

Measure objectives

To restrict access to two City Centre streets to pedestrians, cyclists, accessible collective passenger transport, and service vehicles only during hours of maximum pedestrian activity (e.g. between 10:00 and 16:30), consistent with the City council's Quality Plan. Access to all traffic at other times.

The measure objectives are:

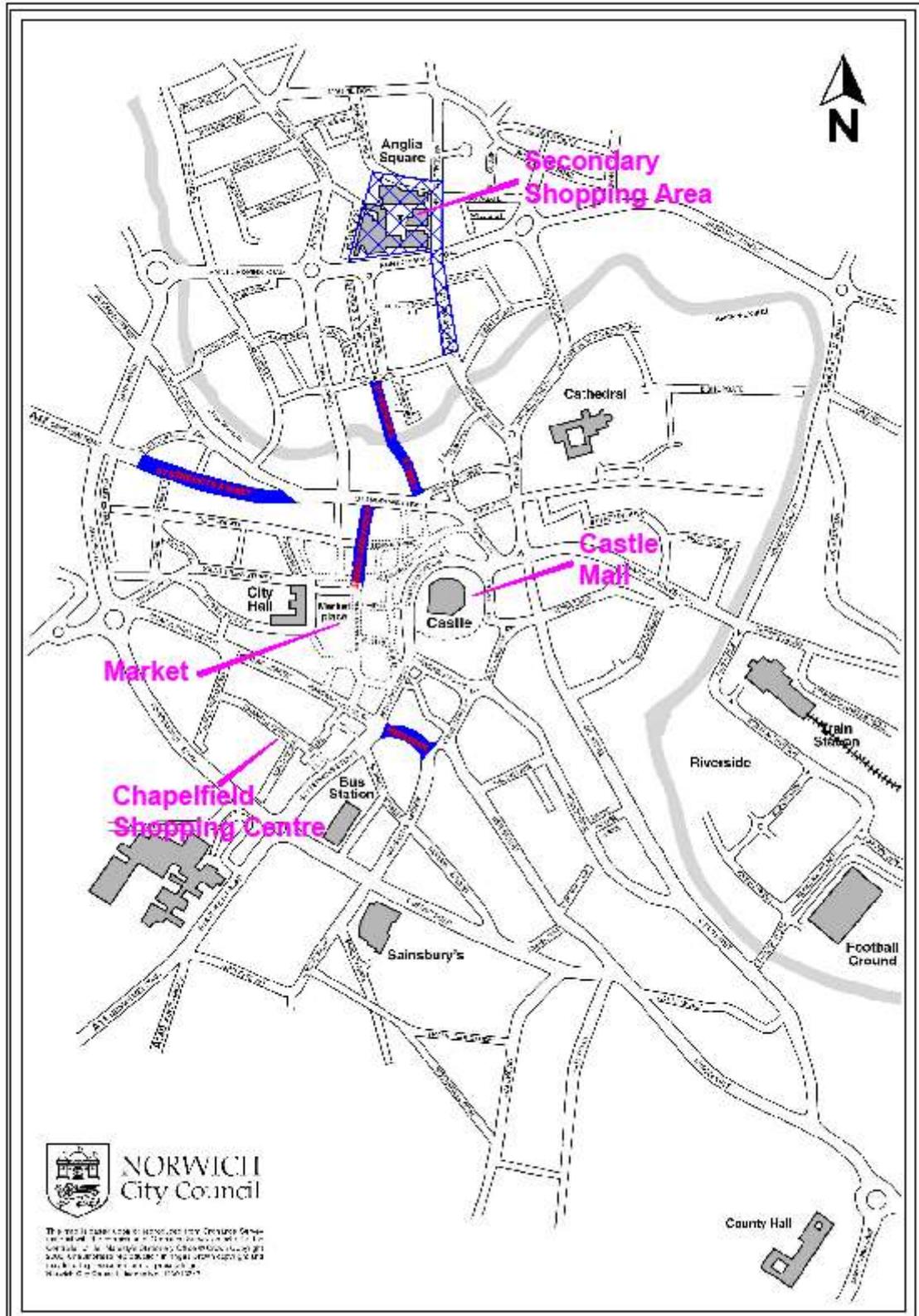
- **Objective 1** - Increase number of pedestrians
- **Objective 2** - Improve road safety – This was later omitted as the numbers of recorded injury accidents in both streets prior to the closures were too small to be significant.
- **Objective 3** - Improve environment for pedestrians
- **Objective 4** - Reduce noise pollution
- **Objective 5** - Reduce the number of vehicles during restricted periods and not increase the numbers of vehicles at other times

A2 Description

The purpose of this project was to create 2 streets within Norwich where pedestrians own the street at certain times of the day, either during the core shopping hours eg 10am to 4pm or during the evening when bars and restaurants are at their busiest e.g. 7pm to 1am. It was expected that during the pedestrian hours there may have to be some access retained for loading, cyclists and possibly buses. Outside these hours the street would be used by general traffic. This is contrary to the accepted norm for pedestrianised streets where admittance outside pedestrianised hours is usually reserved for access and loading. It raised road safety challenges that needed to be addressed through sensitive 'pedestrian, cyclist and bus friendly' speed management.

Identifying the streets proved problematic, for the reasons outlined in this report but eventually 2 streets were chosen; St Benedict's and St George's. St Benedict's was to be closed on Saturdays and St Georges at all times but access retained for deliveries, a deviation that was agreed by the EU and explained later in the report.

Attached is a plan of the City Centre with the streets that were under consideration highlighted.



B Measure implementation

B1 Innovative aspects

Innovative Aspects:

- New organisational arrangements

The innovative aspects of the measure are:

- **New organisational arrangement, regionally** - Within a historic City Centre it is not often possible to share space between different road users. Most sharing therefore has to have a temporal dimension. There are a number of streets in the City, which are pedestrianised during core shopping hours (e.g. 10:00 to 17:00 [or 19:00 to 24:00 night time economy]) but in which only access traffic is allowed at other times. In other commercial streets such an approach could lead to unnecessary congestion problems (with consequent impact on air quality, etc.). In this demonstration the innovation would be in having no access restrictions outside core shopping hours to assist with peak hour vehicle demands. This raises road safety challenges that would need to be addressed through sensitive 'pedestrian, cyclist and bus friendly' speed management

B2 Situation before CIVITAS

There are no streets in Norwich that are limited to pedestrians, cyclists, etc. during hours of maximum activity but where through access to all traffic is allowed at other times.

B3 Actual implementation of the measure

The measure was implemented in the following stages:

Stage 1: Identification of streets to be included (June 2004 – July 2004) – While the bid for the project to be included within the CIVITAS initiative was being determined, work commenced on identifying the streets to be included the project. The 2 streets identified were Westlegate and Exchange Street, both of which were considered suitable for closing between 10am and 4pm everyday with general traffic being allowed to use them before 10am and after 4pm. Both streets are on the edge of the core shopping centre; Westlegate is the main approach to the John Lewis department store from the busy St Stephens Street / The Walk / Market shopping area, while Exchange Street runs alongside the independent Jarrolds department store and links the award winning 1000 space St Andrews car park to the Market area.

Stage 2: Removal of Exchange Street as a potential street (Sept 2004) – Before even the bid was approved, the City Council decided that it wanted to enhance the setting of the War Memorial in Norwich, and embarked on a major environmental improvement St Peters Street. It can be seen from the plan above that St Peters Street is the main alternative route for traffic using Exchange Street and it was decided that encouraging more traffic to use St Peters Street between 10am and 4pm, was contrary to the aspiration to improve the environment around the War

Memorial. For this reason the possibility of including Exchange Street in the project was lost.

Stage 3: Consultation on Westlegate (Oct 2004-Feb 2005) – The aspiration to improve Westlegate was considered a scheme that was worthwhile regardless of whether approval was received to include it in the CIVITAS initiative and therefore prior to the contract being signed a public consultation on whether Westlegate should be fully pedestrianised, pedestrianised between 10am and 4pm, or left as it was, was undertaken. While the majority of the public supported the full pedestrianisation option, there was concern among the business stakeholders about the effects on congestion in the City centre and it was decided to progress the 10am to 4pm pedestrianisation option and a report recommending that such a restriction was introduced on an experimental basis was considered by the Highways Agency Committee in February 2005. The Committee chose to not to support the officers recommendations and decided instead to widen the footpaths in Westlegate and leave it open to general traffic all times. This meant that Westlegate was no longer eligible to be included in the CIVITAS project.

Stage 4: Identification of alternative streets (April 2005 to Jan 2007) – With the failure of the first 2 streets, the City Council embarked on looking at alternative sites where the part time pedestrianisation could be trialled. Consideration was given to looking at closing roads outside schools while the children were arriving at and leaving school. However a suitable example could not be found, as in most instances the questions were, if the road was suitable for closing in the morning peak traffic period, then was there really a need for it to be opened at other times, and why wasn't a full time closure introduced.

Another alternative considered was an evening closure of Tombland, a busy part of the City's night time economy. However the practicalities of this, and its effect on public transport proved too difficult to resolve in the lifetime of the CIVITAS initiative, and therefore the idea was not progressed. However it remains a possible option for the long term future of Tombland.

Finally it was decided that the project should concentrate on St Georges and St Benedicts. St Georges is a narrow street linking the primary City centre shopping area with a secondary shopping area in Magdalen Street that is fronted by a major concert venue, the Playhouse Theatre and the Art School. The proposal was to introduce a pedestrianised zone, with no restriction on access or loading, but with a flush shared use surface provided. As this was a deviation from the original plan in terms of no time restriction, EU approval was sought and obtained to include this street. St Benedicts is a secondary shopping area that has a mixed frontage of retail, commercial and residential uses, which is popular with independent retailers. It was chosen to be pedestrianised on Saturdays only.

Stage 5: St Georges Street Implementation (Jan 2007 to Jan 2008) – Following a major repaving scheme outside of St Andrews Hall, and improvements to St Andrews Street it was decided to extend the benefits in St Georges Street and embark on a pedestrianisation scheme. The appropriate traffic regulation orders were secured and the repaving scheme was completed in June 2007. However it quickly became apparent that the signing and paving scheme alone were not sufficient for drivers to amend their behaviour and act responsibly in the pedestrianised area. A decision was taken therefore to introduce a physical closure in the street.

Stage 6: St Benedicts Implementation (March 2008 to Present) – The St Benedict's Traders Association approached the City Council with a request to close the street on Saturdays. They had previously held street fairs with road closures twice a year in the street. In March 2008 the Highways Agency Committee agreed to introduce a closure on St Benedicts on Saturdays only with all traffic being allowed through at other times. The closure was to be introduced on an experimental basis, for up to 18 months, and authority was given to the Head of Transportation and Landscape to vary the times on a Saturday when the road was to be closed, and to vary the sections of the street to be closed.

The scheme was introduced for the first time on 7th June 2008. In the first 3 weeks of operation a considerable number of complaints were received from traders in the street about the negative impact of the closure. Many traders complained that they were not an active part of the traders association and had not been included in the original survey that resulted in the decision to request a Saturday closure, others said they had moved into the street in the 12 months between the original traders survey and the date of the first closure. It was therefore decided to carry out a consultation with all traders to determine if the experimental closure should continue. This survey showed that of the commercial frontages on the street 35% supported the Saturday closure and 65% opposed it. In light of this and the problems associated with enforcement, it was decided to cancel the experiment after six weeks.

B4 Deviations from the original plan

The deviations from the original plan comprised:

- **Deviation 1 Change of streets to be included** – Although the original bid did not name the streets to be included, the bid was put together with 2 streets in mind. For the reasons explained above, these proved not to be viable, due to lack of political support and other political objectives.
- **Deviation 2 Removal of time restriction** – Being unable to identify the a second street where a time controlled access restriction would be appropriate, the CIVITAS Board agreed that a pedestrianised street with no time restriction could be included in the measure.

B5 Inter-relationships with other measures

The measure is not related to any other measures in SMILE.

C Evaluation – methodology and results

C1 Measurement methodology

C1.1 Impacts and Indicators

Table of Indicators.

NO.	EVALUATION CATEGORY	INDICATOR	DESCRIPTION	DATA /UNITS	How will it be measured?
12	ENVIRONMENT	Noise perception	Perception of noise	Index	Derived from traffic flows
14	SOCIETY	Acceptance level	Attitude survey of current acceptance with the measure	Index, qualitative, collected, survey	Public opinion surveys
21	TRANSPORT	Vph by vehicle type - peak	Screenline flow survey	Vph, quantitative, derived	Vehicle counts
22	TRANSPORT	Vph by vehicle type -off peak	Screenline flow survey	Vph, quantitative, derived	Vehicle counts
local	TRANSPORT	No of pedestrians using street	Has the number of pedestrians increased	Quantitative, measurements	Simple counts

Detailed description of the indicator methodologies:

- **Indicator 1 (Noise Perception)** – This is to be derived from traffic flow data, both for the before and after situations, and with the St Georges Scheme, taking it further and including the situation when traffic was physically removed from the street.
- **Indicator 2 (Acceptance Level)** – This will be shown for both streets by looking at the before and after on street opinion surveys.
- **Indicator 3 and 4 (Vehicles per hour by vehicle type)** – Indicators 3 and 4 are now combined as no longer looking at removing traffic in peak hours. These will be obtained by simple counts.
- **Indicator 5 (No of Pedestrians Using the Street)** – Before and after simple count data will be obtained by vehicle counts.

Please note that no specific monitoring of the safety aspects occurred. This was originally planned when the schemes involved were to be Exchange Street and Westlegate, as they had a history of accidents. On St Georges and St Benedict's there was no significant accident history, and it was unlikely that the changes introduced would create accidents, especially in the timescales involved. The only information we have about safety is public perception of the issue rather than recorded accidents. It is extremely difficult to quantify this.

C1.2 Establishing a baseline

For both streets, and to avoid repetition of data the baseline case for noise, traffic volumes, pedestrian volumes and acceptance are included within the measure results category.

C1.3 Building the business-as-usual scenario

Looking at the business as usual situation it is unlikely that there would be much change to any of the indicators, under a do nothing scenario traffic volumes within the inner ring road are constant and it is unlikely they would either increase or decrease in St Georges and St Benedict's without any intervention from the local authority.

C2 Measure results

C2.1 Economy

This has not been measured for this project. However previous experience of pedestrianisation projects in Norwich shows that where they are successful, they often improve the economy of the streets, with an increase in property values and rents, and increased footfall to the retail units. For example when Gentleman's Walk was pedestrianised in the 1980's rents for the retail units went from being about the national average, to being in the top 10 in the Country.

C2.2 Energy

Not applicable to this project.

C2.3 Environment

The noise levels in St Benedict's and St Georges Street have been derived for vehicle flows using the an online calculator found at <http://www.xs4all.nl/~rigolett/ENGELS/vlgcalc.htm>

In St Benedict's the noise levels were determined to be 53db when traffic was using the street and 44db when traffic was removed from the street.

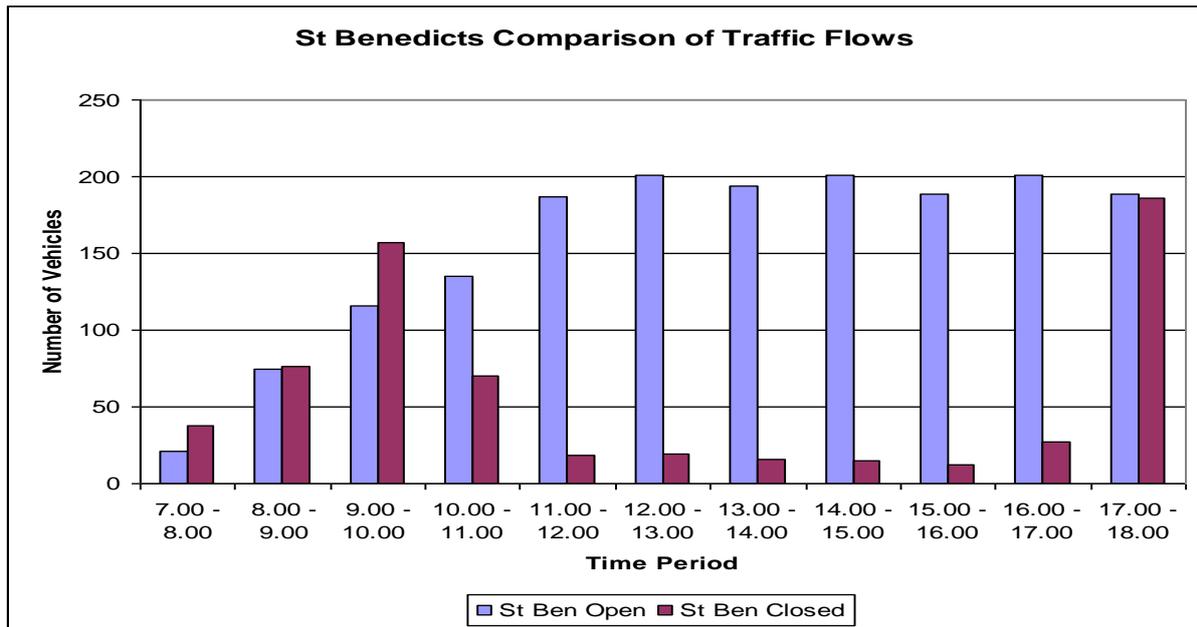
In St George's Street the noise levels were determined to be 52db prior to any work taking place, 52db when the road was re-paved and the access only restriction was introduced and 44db when the closure was implemented. The reason for there being no reduction in noise when the access only order was implemented despite the reduction in traffic was that the block paved surface was noisier.

C2.4 Transport

St Benedicts Street

Vehicle Flows

The graph below shows the number of vehicles using St Benedict's on a Saturday, both when it was open and when it was closed to all vehicles, except the Road Train, a tractor unit with 3 carriages that takes people on sightseeing tours of the City, and those requiring access to a handful of off street parking spaces between 10am and 5pm. The figures are an average of 4 Saturdays when the street was open and 4 Saturdays when it was closed so the data is considered representative.

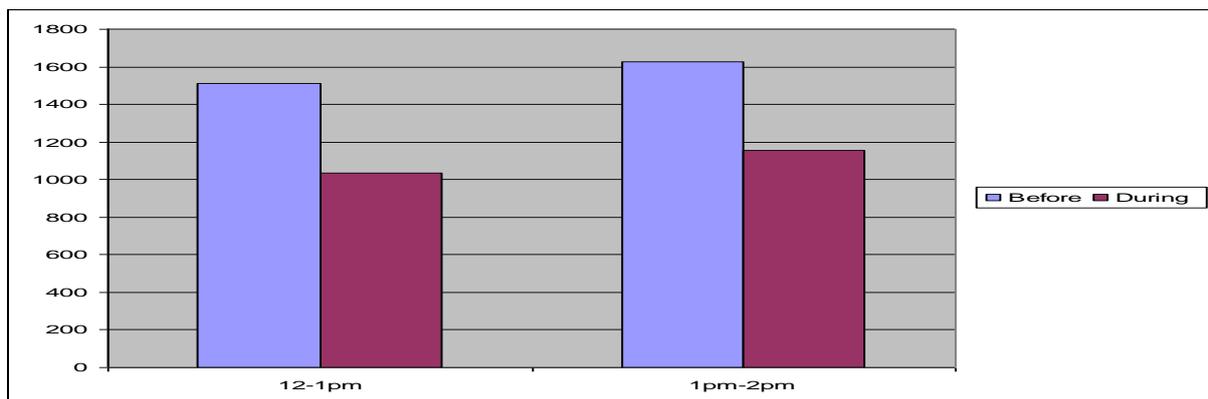


It can be seen from the graph that in the hour prior to the closure there was a significant increase in traffic, suggesting that people who needed to vehicular access to the street conducted their business prior to the restriction being implemented.

Pedestrian Flows

From the graph below it can be seen that the numbers of pedestrians using St Benedict’s fell significantly during the closure period. This would appear to support the traders concerns about the drop in business during the closure.

Comparison of pedestrian flows before and during the closure

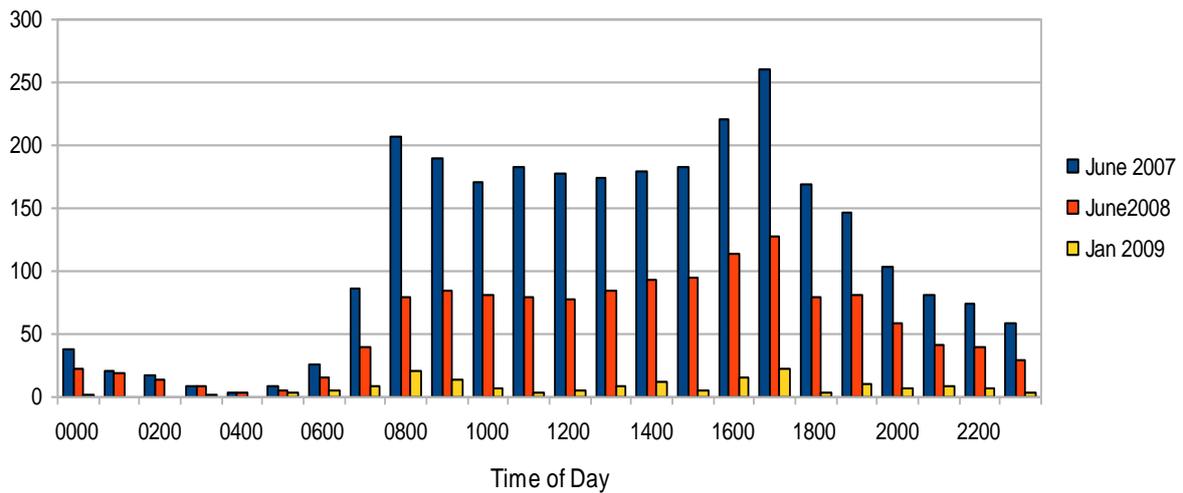


St Georges Street

Traffic Flows

The graph below shows the number of vehicles using St Georges Street throughout an average day (counts taken over a period of 2 weeks in each year). It can be seen from this, that if it is assumed that the Jan 2009 traffic represents those that genuinely need access then the access only restriction only remove approximately half of the through traffic.

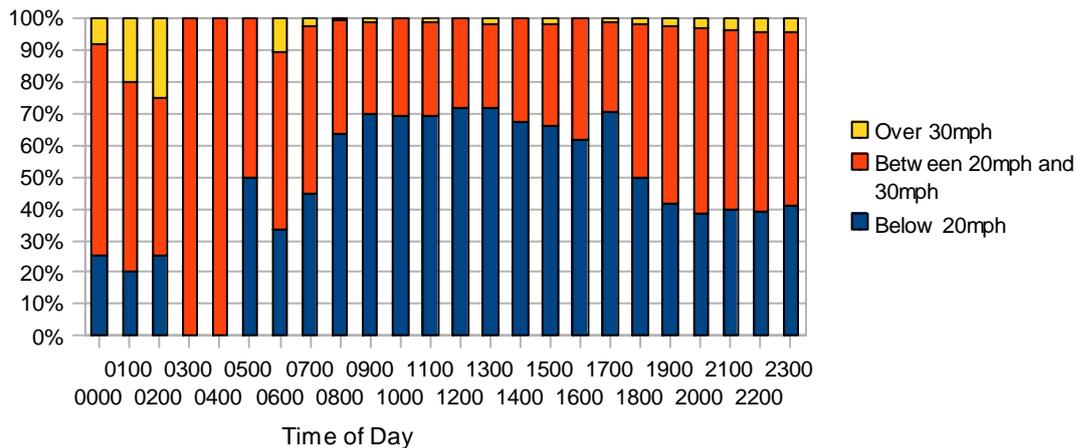
St Georges Street – Comparison of Vehicle Flows



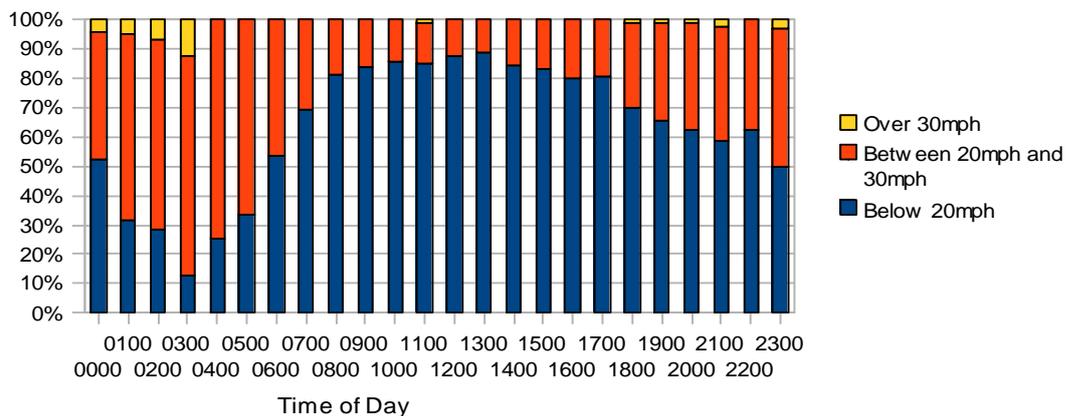
Speed Measurements

Speeds in the street were measured both before and after the pedestrianisation was implemented. The following graphs show the distribution of speeds throughout the day

Breakdown of Vehicle Speeds 2006



Breakdown of Vehicle Speeds 2007



The graphs show that while the paving scheme reduced vehicle speeds in the area, there were still a significant number of vehicles travelling in excess of 20mph through St George's. This supported the complaints from the police, local residents and users of the street who raised concerns about pedestrian safety, given the speed that some vehicles were travelling at. The vehicle speeds were the main driver to the decision to implement a physical closure in the street.

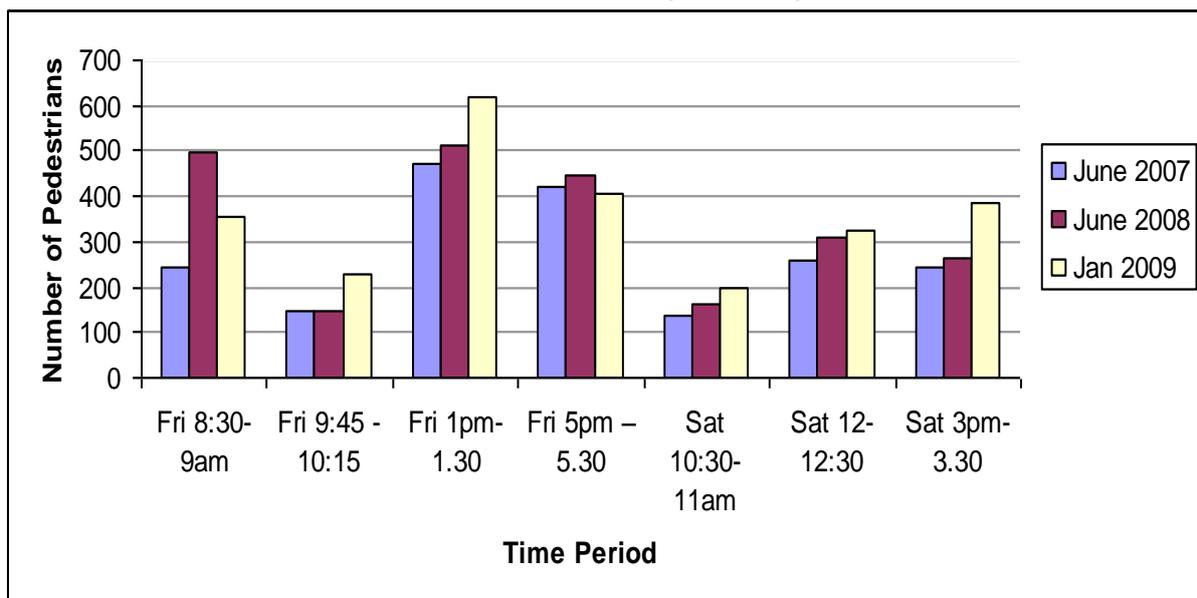
There was a particular concern amongst the public about the vehicle speeds in the evening when the vehicle numbers were lower, and given the numbers of pedestrians in the area using the theatre, concert hall, bars and restaurants, who may not be expecting to see vehicles in a paved area, and who may be under the influence of alcohol.

Speed data for the period after the road was physically closed was not collected as it was thought to be irrelevant.

Pedestrian Flows

Pedestrian flows were counted at intervals on Fridays and Saturdays at every stage of the project. Ideally they would all have been carried out at the same time of the year, but this was not possible with the counts taken once the road closure was in place.

The graph below shows the results of the pedestrian surveys. Looking at the Saturday data, the numbers of the pedestrians using the street have steadily increased, suggesting that more people have chosen to use the street at times when they have options of where to be. During the week when the Art College and nearby offices are open there is a reason for people to be using St Georges.



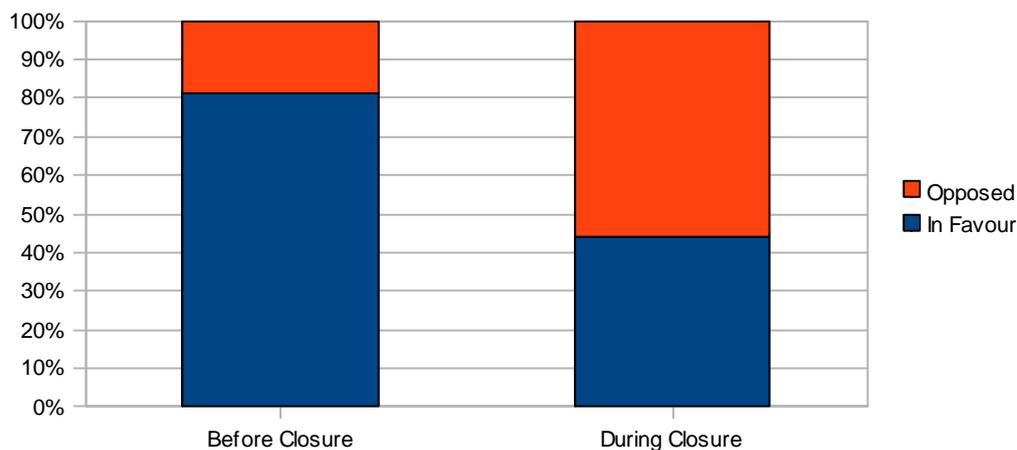
C2.5 Society

St Benedicts Street

Trader Attitudes

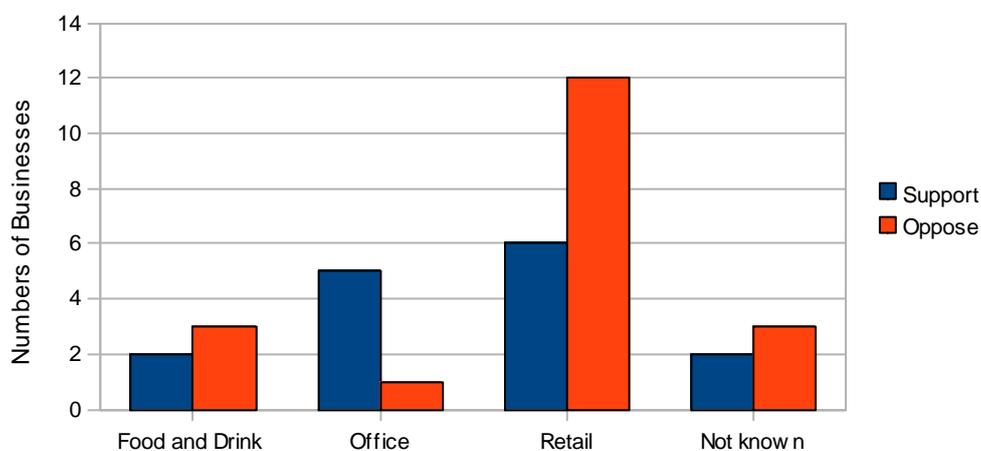
The St Benedict's Street project was initiated by the traders themselves, and prior to the scheme being implemented over 80% of traders supported the proposal. However it quickly became apparent when the closure was implemented that the support was not sustained and quickly fell to 44%.

Trader Reaction to Saturday Closure



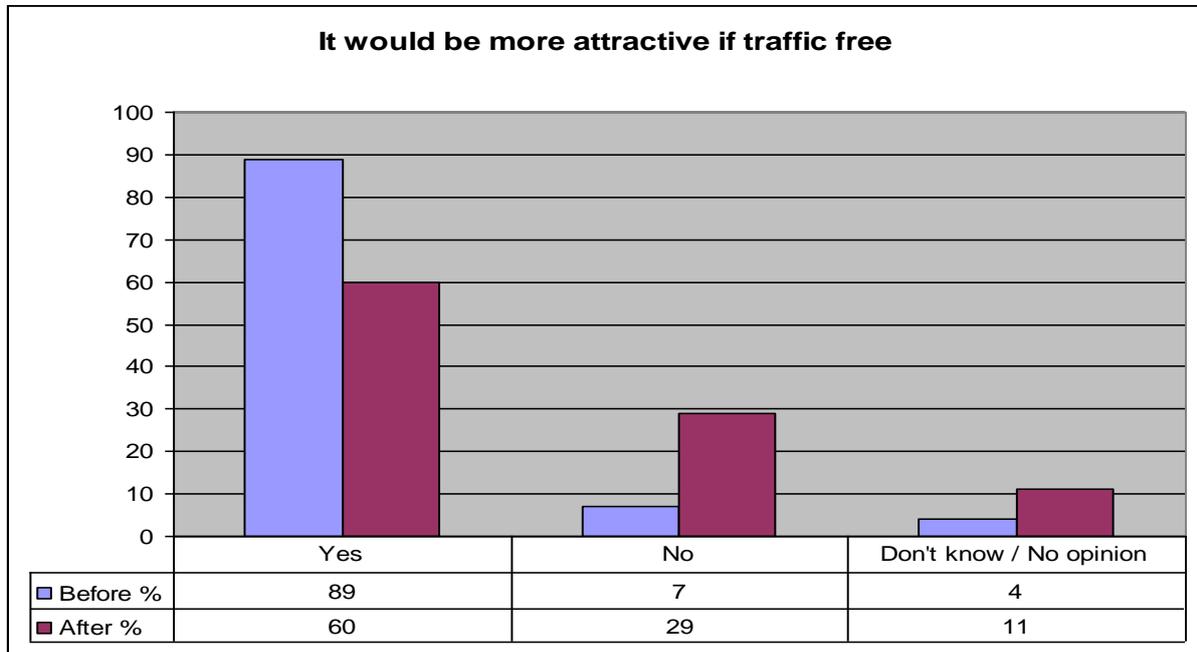
The following graph shows the responses from the traders broken down by the different business types. This clearly shows that it was the retail traders who did not like the closure, whereas the commercial operations (accountants, PR firms etc) supported the closure. However the commercial operations admitted that as the closure was on a Saturday it had little direct impact on them.

Support for Closure Broken Down by Business Type

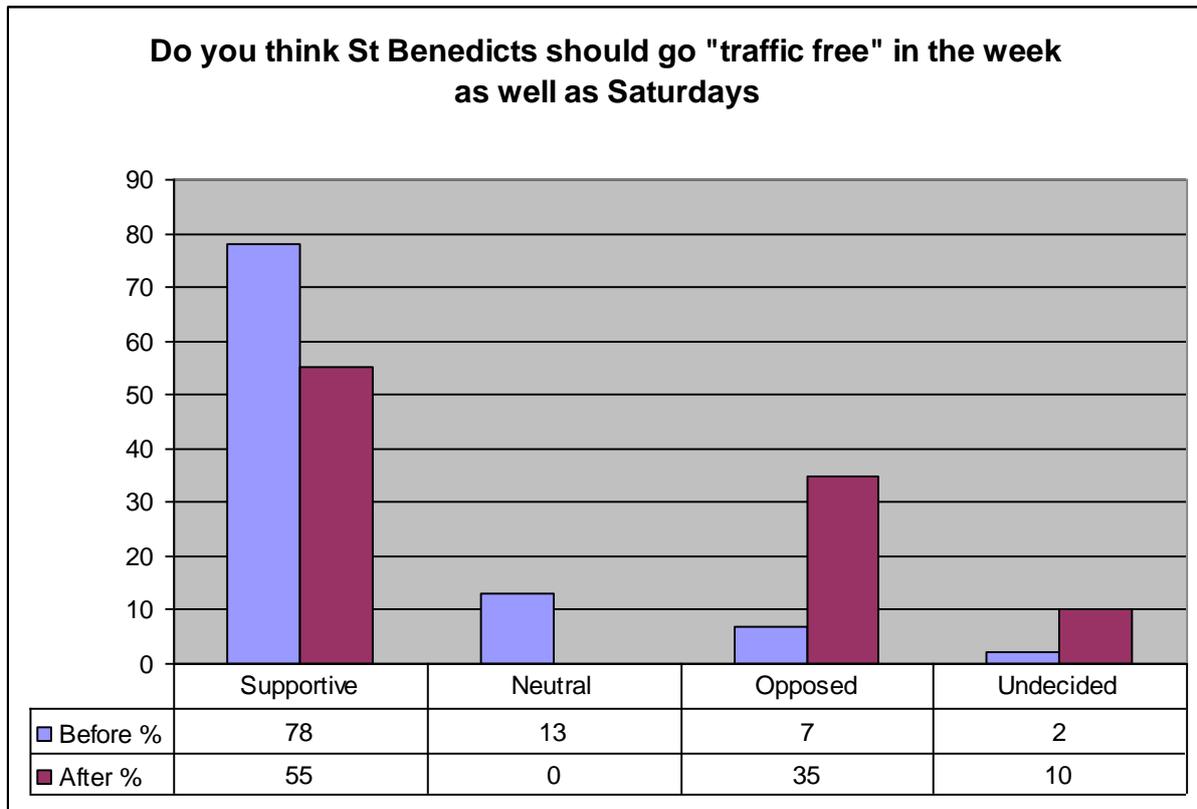


Public Perception

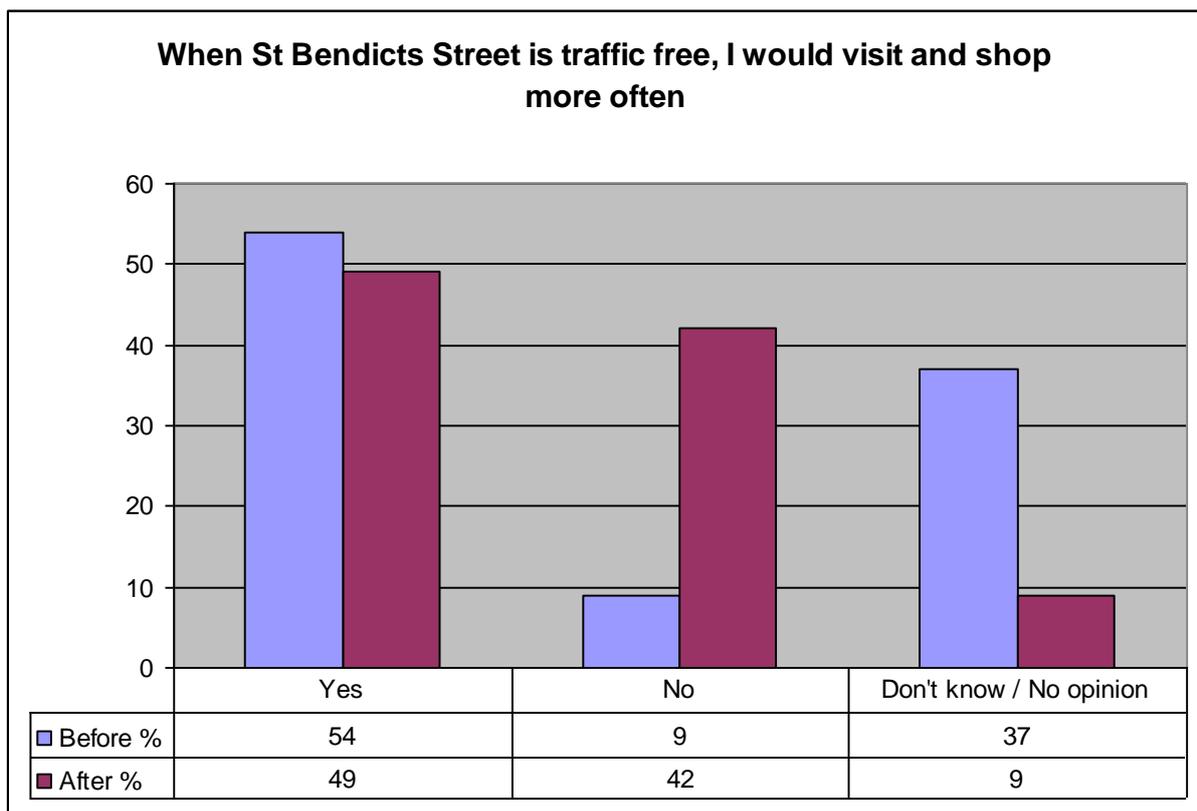
The following graph shows that there was a high level of public support for removing vehicles from St Benedict’s, prior to the closure being implemented. However once the closure was in place, that support fell. Anecdotally people commented that the street felt “dead” during the Saturday closure.



Both before and during the closure people were asked what they thought of the idea of removing traffic from St Benedict’s Street at all times. Again, this idea was strongly supported before the closure was introduced, but reduced by almost 25% once the Saturday closure was in place. This is demonstrated by the graph below.



When asked if they would use the street more often if it was traffic free, while the numbers who said they would remained almost the same, a significant number went from don't know to saying they wouldn't.



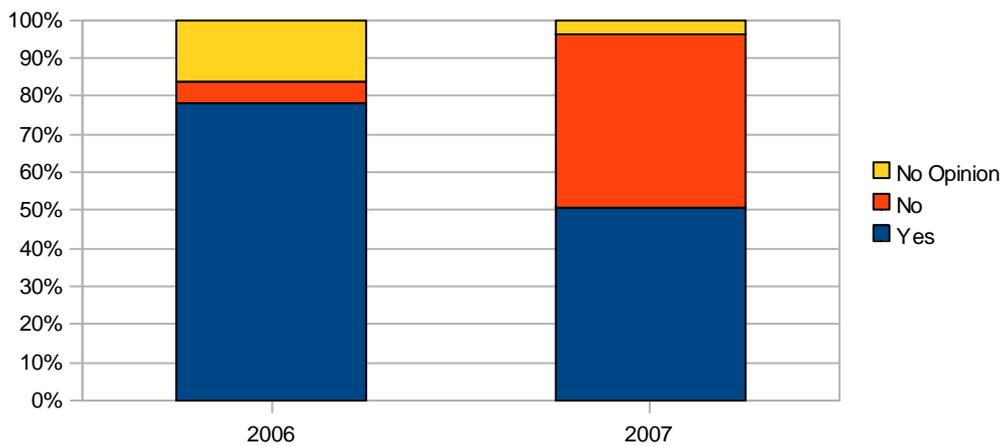
St Georges Street

Public Perception

Prior to any work taking place in St Georges, public perception surveys were undertaken

These showed that almost 80% of people thought that traffic in St Georges was too intrusive. The survey was repeated once the flush surface had been provided and while the number of people who felt that reduced, still 50% of people felt intimidated by the traffic which is unacceptable in a pedestrianised area, and contributed to the decision to physically close the road.

Public Opinion on Whether Traffic In St Georges is too Intrusive



C3 Achievement of quantifiable targets

No.	Target	Rating
1	Increase number of pedestrians St Benedict's Street St George's Street	0 **
2	Improve Environment for pedestrians St Benedict's Street St George's Street	0 **
3	Reduce Noise Pollution St Benedict's Street St George's Street	0 **
NA = Not Assessed 0 = Not achieved * = Substantially achieved (> 50%) ** = Achieved in full *** = Exceeded		

C4 Up-scaling of results

Theoretically it is possible to introduce time controlled access restrictions on other streets, and indeed it still remains the long term of the City Council to complete the scheme originally identified to be part of the project – Westlegate. However the type of street suitable for such an approach needs to be carefully considered, there needs to be a reason why the closure is part time, a reason for the street to be closed in the first place and an understanding of however the part time closure can be physically achieved.

C5 Appraisal of evaluation approach

The evaluation of the St Benedict's Street scheme was compromised by the short duration of the project, which meant that by the time a mistake was discovered in the data collection, the scheme had been pulled and repeat surveys were not possible.

The evaluation of the St Georges Street scheme was hampered by the fact that the decision to include it within the CIVITAS Project was not taken until after the project had started which meant that some elements of the before data were not collected. It would also have been useful to do some direct consultation with the businesses in the street to gauge their response to the scheme. Anecdotally, this is extremely positive.

The use of extensive automatic traffic counts proved invaluable to both projects, although with hindsight the speed bins for the counts could have been made smaller to allow for a more detailed analysis of the vehicle speeds to be undertaken. (e.g. 2 or 5 mph bins rather than the 10mph that was used.)

C6 Summary of evaluation results

The key results are as follows:

- **Key result 1** – For part time pedestrianisation schemes to work there needs to be a clear reason for closing the street, and this needs to be communicated to businesses and the public.
- **Key result 2** – If a street is re-paved to provide a shared use surface, this visual prompt can deter drivers from using the street. In St Georges traffic volumes halved.
- **Key result 3** – The St Georges Street scheme would suggest that by making a street more attractive to pedestrians it can encourage people to use the street more often for discretionary trips.
- **Key result 4** – Re-paving a street to provide a flush surface, while slowing vehicle speeds, does not necessarily reduce speeds enough to make pedestrians feel safe using the street.

D Lessons learned

D1 Barriers and drivers

D1.1 Barriers

- **Barrier 1** – Political acceptance. While working on the Westlegate project it was apparent that there was considerable political and public support for the scheme among the City's stakeholders, residents and politicians. However this support was not forthcoming from the County Councillors. Given the political set up in Norwich the County Councillors have the final vote on all transport related issues in Norwich and therefore they were able to stop the scheme going ahead.
- **Barrier 2** – Stakeholder support. In St Benedict's Street, the Traders Association were the original instigators of the Saturday closure. However when the scheme received negative feedback, the association, which was going through its own internal wranglings, was quick to distance itself from the scheme.
- **Barrier 3** – Cost of traffic management – As the St Benedict's scheme was being trialled as an experiment, and because a complete length between 2 sections of the main road network was not closed, extensive traffic management needed to be installed by way of advance signing, barriers and cones to close the street. The cost of this was £500 per day, which would need to be funded on an on-going basis.
- **Barrier 4** – Lack of enforcement. In both St Georges and St Benedict's there was no enforcement of the restriction from the Police. In both streets concerns about road safety due to drivers ignoring the restrictions were a major factor in the decision not to continue with the schemes in their original forms.

D1.2 Drivers

- **Driver 1** – The driver for the original idea for Westlegate was the desire to integrate the John Lewis department store with the main shopping area and the new Chapelfield shopping centre that was under construction at the time. The Store and their consultants were very supportive of the project.
- **Driver 2** -The St Benedict's project was very much driven by the Traders Association. However caution needs to be exercised in such instances as the association may not reflect the views of the whole street, and too much reliance can be put on the views of one section of the community.
- **Driver 3** – The driver for the St Georges Street scheme was the desire for the setting of St Andrews and Blackfriars Halls, The Playhouse Theatre and the Art School to be improved and for more pedestrians to visit the area. This is proven by the fact that it was the City Council's lead conservation officer which led the project.

D2 Participation of stakeholders

- **Stakeholder 1** – St Benedicts Traders Association – See Barrier 2 and Driver 1 above.
- **Stakeholder 2** – Politicians – Members of the Norwich Highway Agency Committee who made the decisions relating to the legal orders associated with both schemes.
- **Stakeholder 3** – East of England Development Agency – Provided funding for St Georges Street.

- **Stakeholder 4** – The Art School and The Playhouse Theatre. Key parties in St Georges Street who had servicing needs that had to be met.

The comments form asked whether the police were stakeholders. In reality they carried out no enforcement on either scheme and were not involved in the decision making.

D3 Recommendations

- **Recommendation 1** – Consider location. To aid implementation and enforcement any street that is to have a time controlled access restriction should have a very limited number of points of entry and, for ease of enforcement, should not give access to significant amounts of off street parking to which access needs to be maintained.
- **Recommendation 2** – Consider justification. When choosing a street that should have a time controlled access restriction it is important that the public can see a reason why the street is closed at certain times and not at others, otherwise enforcement will become an issue.
- **Recommendation 3** – Properly manage stakeholder involvement. While it is essential to involve stakeholders, care should be taken not to rely on the views of a small group. Effort should be made to consult all stakeholders at an early opportunity.
- **Recommendation 4** - Consider economic climate. When the economic climate is uncertain commercial interests are quick to look for things to blame for any down turn in their fortunes. It is easy to blame a road closure for a change in business patterns as the closure is tangible, in reality the closure may have no adverse affect on the business.
- **Recommendation 5** – Engage politicians at an early opportunity. A lot of time and effort was spent on the Westlegate Scheme that was ultimately rejected by the politicians.

D4 Future activities relating to the measure

Neither the St George's or St Benedict's scheme worked as time controlled access restrictions, but both schemes taught valuable lessons. St Georges Street now has a physical closure on it and it is unlikely that further work will be needed in the street. The St Benedict's project has highlighted the fact that the public and the traders would like to see improvements in the street, but the commercial interests in particular are not ready to see significant access restrictions and loss of on street parking. In the future it is possible that a one way system may be introduced, this will allow for pavement widening, but will retain access.

In terms of time controlled access restrictions the City Council are keen to progress Westlegate at a future date, and also possibly Tombland. If the appropriate location presented itself, further streets could be considered, but as this Measure shows, finding the right location, at the right time, is difficult.