Yr 11 GCSE Geography

Coursework

Hempsted Bypass

By Nicholas Haynes

Other wise known as Hempsted bypass

Introduction

Introduction

For my Year 11 GCSE Geography coursework I have chosen to study the Hempsted bypass, which forms part of an overall South West bypass system within the city of Gloucester. This topic is a current issue for the people who live in and around Hempsted. The principle objectives for the southwest bypass system is as stated in appendix 1 page 1. This system, sometimes referred to as a scheme, comprises five sections, from the South these are as follows:

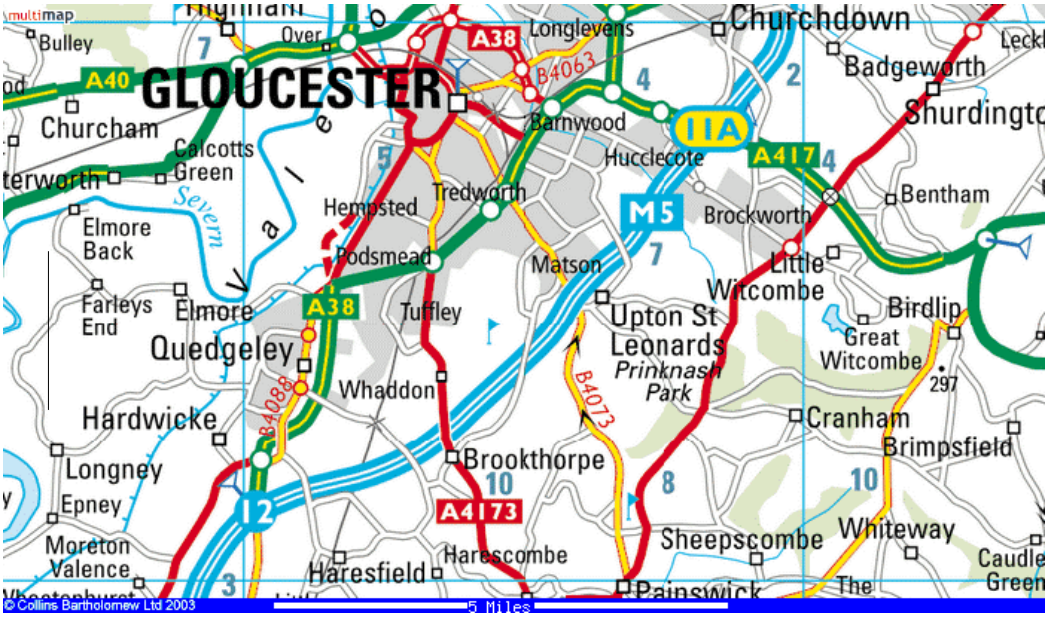
1. Cole avenue junction improvement
2. The Netheridge section
3. Hempsted bypass
4. Llanthony road improvement
5. The castle meads section

The main reason a have chosen this topic out of the wide range of choices is that the Hempsted bypass will over time be linked to the A38 which in turn links to the M5 South which is the motorway surrounding Gloucester. Currently, I live just off the Bristol Road (A430) which much of the traffic travelling out of the city towards Quedgeley, Hardwick and surrounding areas as well as junction 19 of the M5 motorway. On most days Bristol Road is congested with traffic and one of the schemes objectives is to “improve road safety, reduce road accidents and to improve the environment of the Bristol road area for the many residents living along the route”. Another objective is ”to relieve congestion on the existing (A430) Bristol Road and provid e improved access for in industrial and commercial premises” (appendix 1 p1). Therefore, as a cyclist, pedestrian and resident in this area, I welcome the bypass

Location of study area

Gloucester

Map of study area



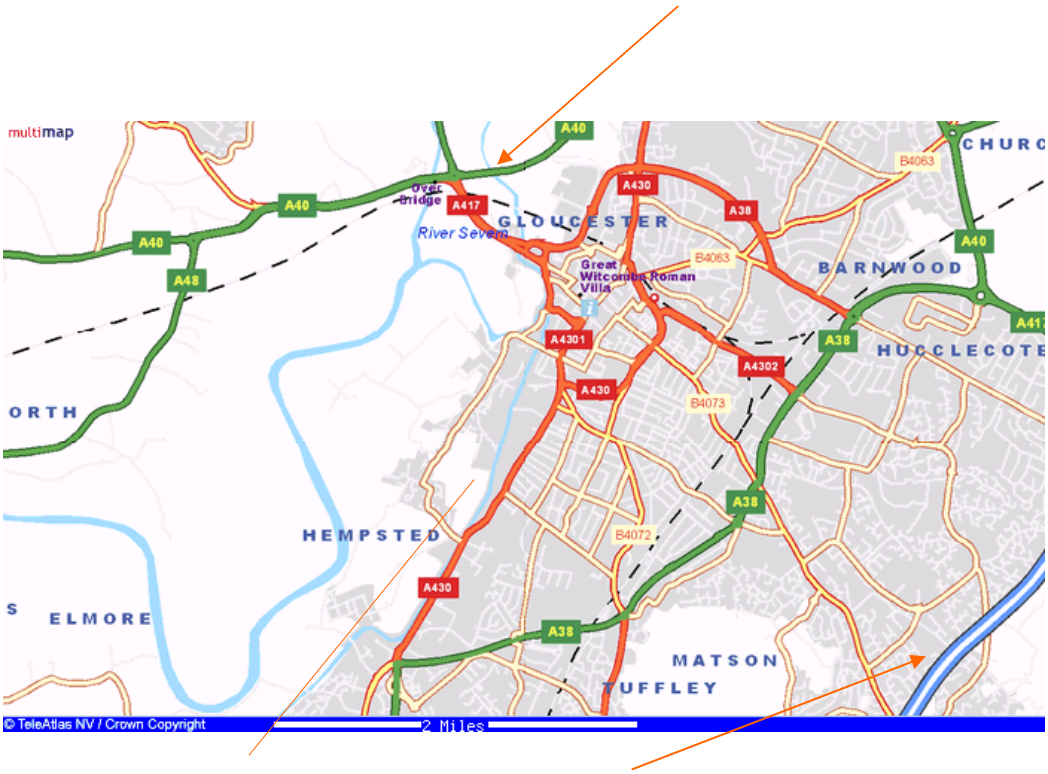
The building of the bypass has created new houses for people to move to the area, there are now estates either side of the bypass, this has used what is known as regeneration of brown field sites to create what was once industrial land, into houses that pe ople will pay any thing from £130,000+ to live in.

Ariel photo of area

Information

What route will the South-West bypass take?

The South-West bypass will go from Cole Avenue in the south it will cross the Gloucester and Sharpness canal and run northwards parallel to Bristol Road on the west side of the canal. It then connects into the already constructed Hempstead Bypass and will continue northward along L lanthony Road. At the junction of Llanthony Road and Severn Road the bypass crosses the East Channel of the River Severn over Castle Meads and connects into the A417 just west of Westgate Bridge.



What will the Bypass do?

- Reduce traffic on Bristol Road and provide better bus, cycling and pedestrian facilities.
- Provide a quicker and more effective route for vehicles wishing to travel from the south of the city to the city central area and vice versa.
- Open up access to land locked brown field sites within the city.
- Enable further development to the south of the city to take place.

See also appendix 2.

What has been done so far?

The contractors Norwest Holst have completed three of the five sections of the Bypass and they are now open to traffic.

These are:

- Cole Avenue junction where a roundabout has been replaced with a traffic signalised junction;
- Hempsted bypass, which has enabled development to occur and also provide funds towards the cost of the bypass; and
- Llanthony Road was resurfaced and generally improved last summer-2002.

When will it be finished?

The last two sections they need to complete are:

- The Castle Meads section in the north; and
- The Netheridge section in the south.

The contractors started work on the Castle Meads section on the 28 April this year and it is programmed for completion by January 2005. The council plan to start work on the Netheridge section in the near future, but this depends on securing developer funding.

How much will it cost?

Current estimates are predicting that the entire scheme costs including works, land and design will be in the region of £38 Million.

The embankments are virtually complete and all that is left on the main run of the road is to lay several lengths of *culvert and to date, 50% of this is complete. The embankment you see now is 1.5 metres higher than the finished level, this is to provide a surcharge to speed up the settlement process. This will now be left for up to a year to settle, with the whole process being monitored, so that the carriageway can be constructed as soon as the settlement has finished.

All material for the embankments has been obtained within the vicinity of the works, which has meant that this aspect of the scheme has been very sustainable. Material has been gained from the old Over Causeway road, the disused Dock Branch railway, and a portion of Castle Meads car park and mounds of earth, adjacent to the East Channel of the River Severn. In fact these mounds have been over dug and will be filled with material from the causeway road to the car park when it is no longer needed to access the site offices. The removal of these obstacles will improve the flow of floodwater and help reduce the impact of flooding in the area.

Diagrams of Material settling




Diagrams of improving flow

The structures are progressing, with the construction of the deck on the flood viaduct well advanced and it is hoped that this structure will be completed by November, also the *flood channel to improve the flow of floodwater through this area is now virtually complete. The bridge over the Severn in Llanthony Road is coming on, with all piling work completed, the central piers in place and the abutments well advanced. It is expected that the steel beams f orming the spans of the bridge will be put in place in December 2003.

Some road works for the tie-in in Llanthony Road are ongoing and work will start on the construction of the junction of the Bypass with the A417 in mid October. Now that the Dock Branch railway embankment has been removed, work on the new cycleway has started and the base for this is now in place. Normally sub-base is made up of this recycled material.

The work is unlikely to be affected by any flooding that may now take place during the flood seasons.

Norwest Holst are now into the contract and the section of disused railway embankment from the Llanthony Railway bridge, as far as the section of disused sidings, has now been completely removed.

Part of the Castle Meads car park and the section of the old Over Causeway Road have also been removed.

It had been hoped that the railway embankment alongside the old Over Causeway could have been removed at the same, however, the contractors are encountering difficulty with the owner, Network Rail, who seem to think that the disused railway siding area is a viable development site. The removal of these embankments form part of the flood remedial measures associated with the scheme which has the objective of minimising the impact of future f looding in the area and the City itself.

As the contactors are unable to obtain the section of disused railway embankment mentioned above, the contactors have found themselves short of fill material. Fortunately there are some mounds of earth adjacent to the embankment of the East Channel of the River Severn, which are suitable for use in the *earthworks. Although this is beneficial, in that it will assist to reducing the impact of flooding, it is not as good as removing the disused railway embankment refe rred to above. However, it does mean that material doesn't have to be imported, thereby keeping costs down and minimising disruption to traffic, as it doesn't have to be hauled in by road.

*Piling works for the structures for the 50m long flood relief *vi aduct and for the western abutment of the new bridge over the East Channel of the River Severn have now been completed.

Work is progressing well on the new bridge to be constructed over the River in Llanthony Road with piling complete for the northern *ab utment and the central piers now in place. Piling work for the southern abutment is about to start. Unfortunately due to the complexity of the construction work here it will be necessary to have traffic signals in Llanthony Road which are likely to be ther e until March of next year.

Part of the works in Llanthony Road involved the removal of the disused pedestrian bridge over the railway, which was carefully dismantled and donated to the Hereford and Gloucester Canal Trust. They are looking to use section s of the bridge at various locations as part of their restoration works of the canal

The removal of the Dock Branch Railway has been an important part of this entire scheme in that it is providing material for the road embankment and its removal will assist in minimising the impact of flooding to the City.

Methodology

Methods

The methods I have chosen to help me gain information are as follows: -

Primary data

- Traffic count on Hempsted bypass. Providing information that people do use the by-pass
- Traffic count on Hempsted Bridge. Providing information that will help me find out
- Questionnaire handed out to residents on the three estates and in Hempsted village.

Secondary data

- Letters to Gloucester City Council, Gloucestershire County Council and other organisations.
- Online maps from multimap.com
- Internet sites such as; www.gloscc.gov.uk
  www.gloucester.gov.uk
  www.thisisgloucester.com

Aims

I have chosen these aims, which I hope to prove right and wrong over the course of my investigation, into the Hempsted area.

- What roads have been relieved of serious traffic problems?
- Whether the Bristol road has been relieved of serious traffic problems?
- What the advantages of the bypass are?
- What roads now have more traffic on them?
- Should the bridge be wider at Hempsted?
- Will the advantages of the bypass increase after the extension is built?
- Will the advantages of the bypass only be significant once the bypass system has been built?
- What the disadvantages of the bypass are?

Hypothesis

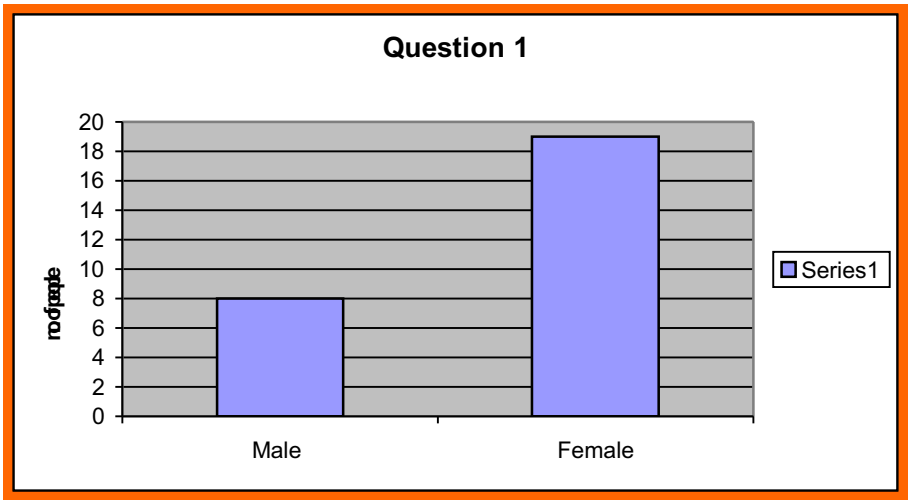
The bypass has been of limited benefit in terms of fulfilling the objectives of the scheme.

I believe that my hypothesis is correct; as there are still daily traffic jams on Bristol Road. In addition the Hempsted bypass is also very congested with traffic, worsened by the problem of a bottleneck that exists at Hemp sted Bridge. This problem might be eradicated once the whole scheme has been completed

Results

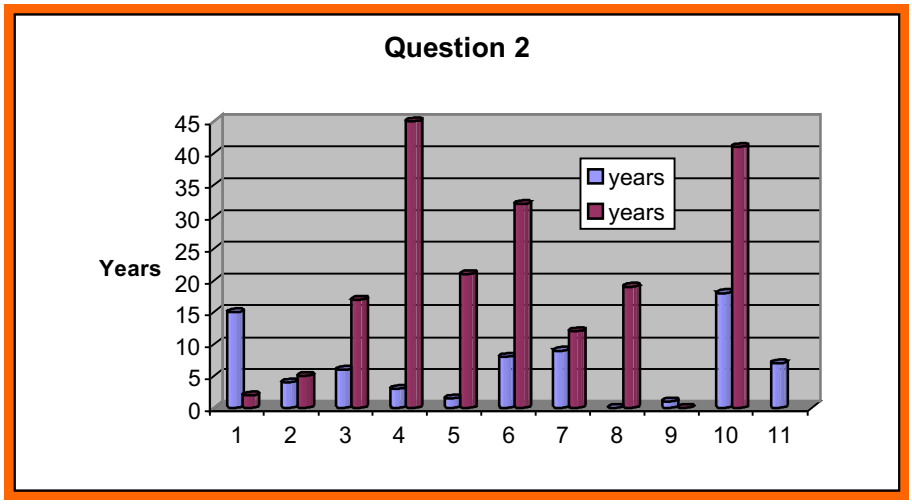
Question 1

Male	Female
8	19



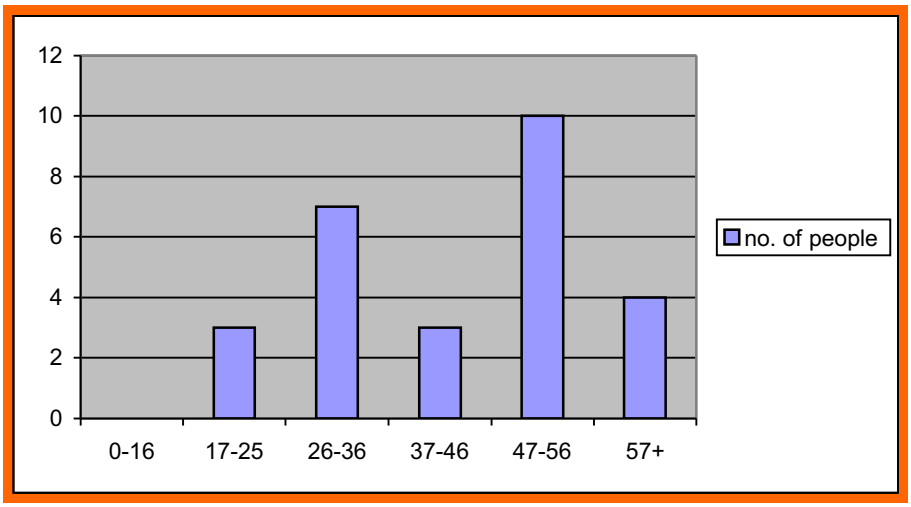
Question 2

Years	Amount	Years	Amount
15	1	2	1
4	2	5	1
6	2	17	1
3	3	45	1
1.5	1	21	1
8	1	32	1
9	1	12	2
50+	3	.	.
1	2	0	1
18	1	41	1
.	.		



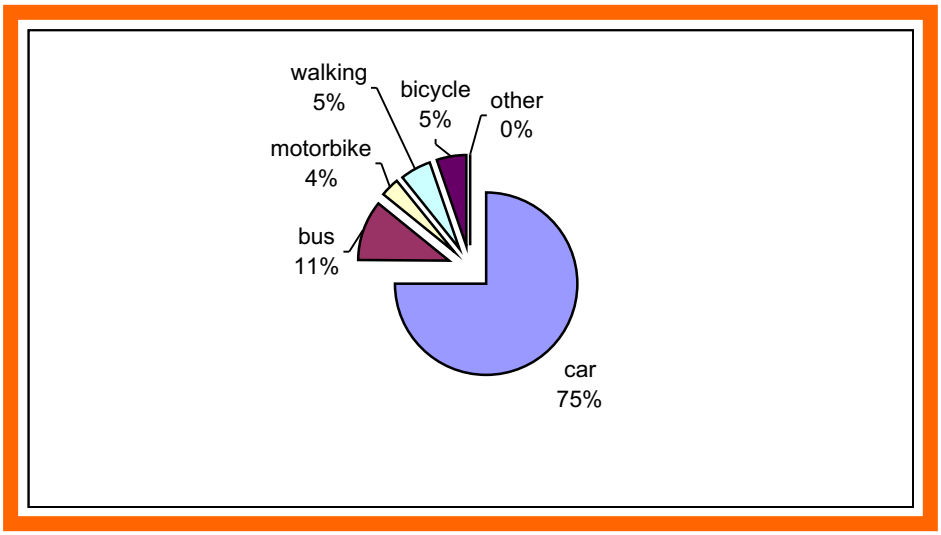
Question 3

Age	No. of people
0-16	0
17-25	3
26-36	7
37-46	3
47-56	10
57+	4



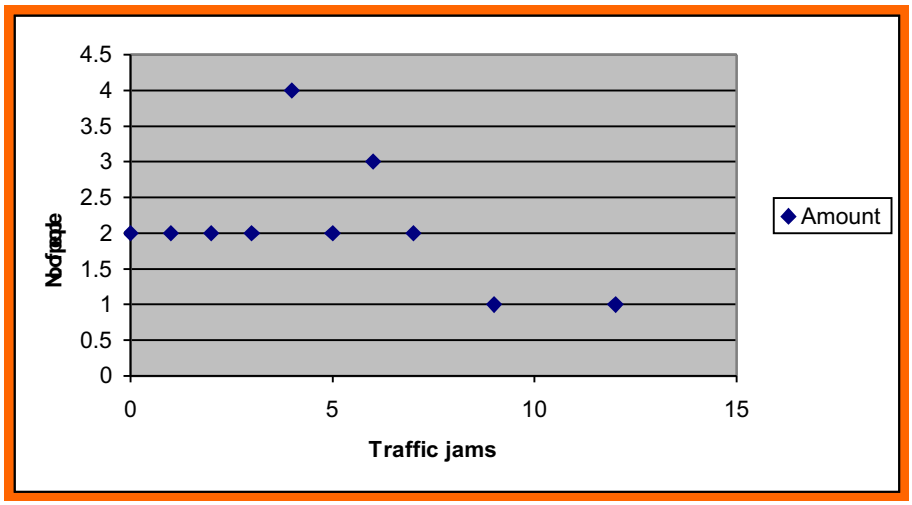
Question 4

Car	21
Bus	2
Motorbike	1
Walking	1.5
Bicycle	1.5
Other	0



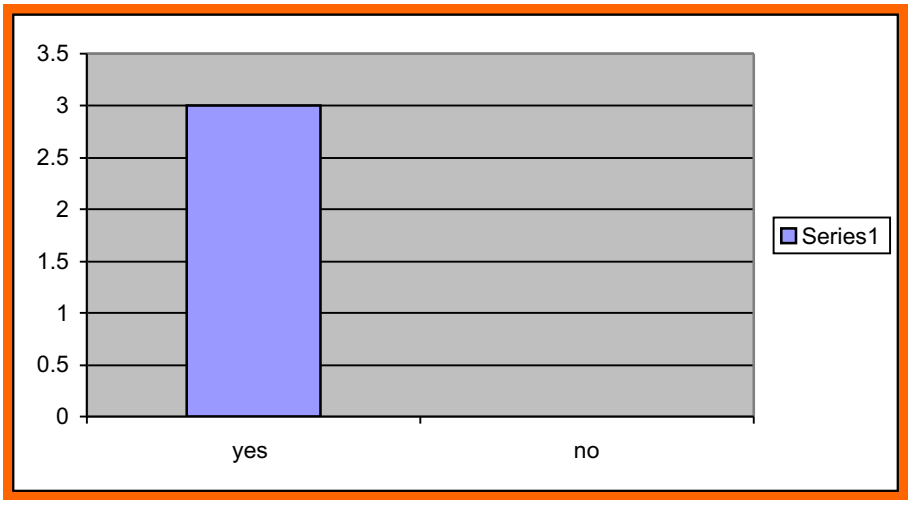
Question 5

Traffic jams	Amount
3	2
6	9
2	2
4	4
7	2
9	1
5	2
12	1
1	2
0	2



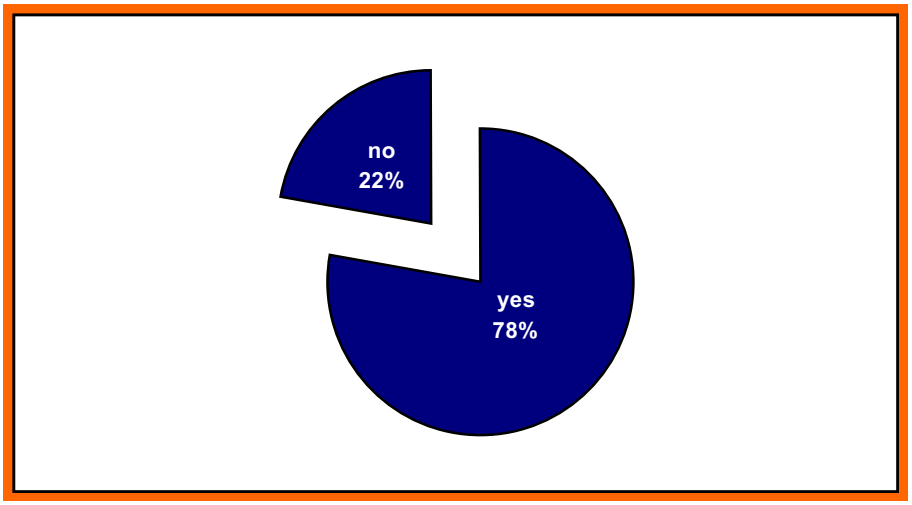
Question 6

Yes	No
3	0



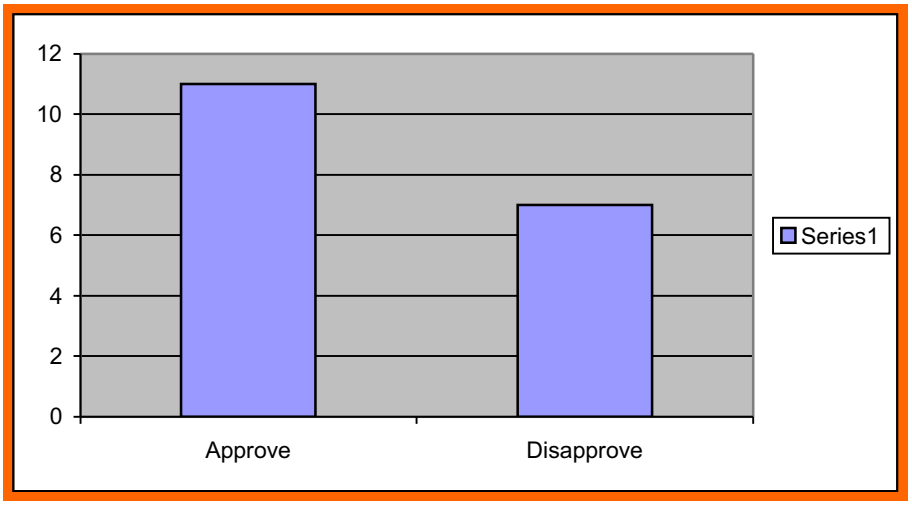
Question 7

Yes	No
21	6



Question 8

Approve	Disapprove
11	6



Approve

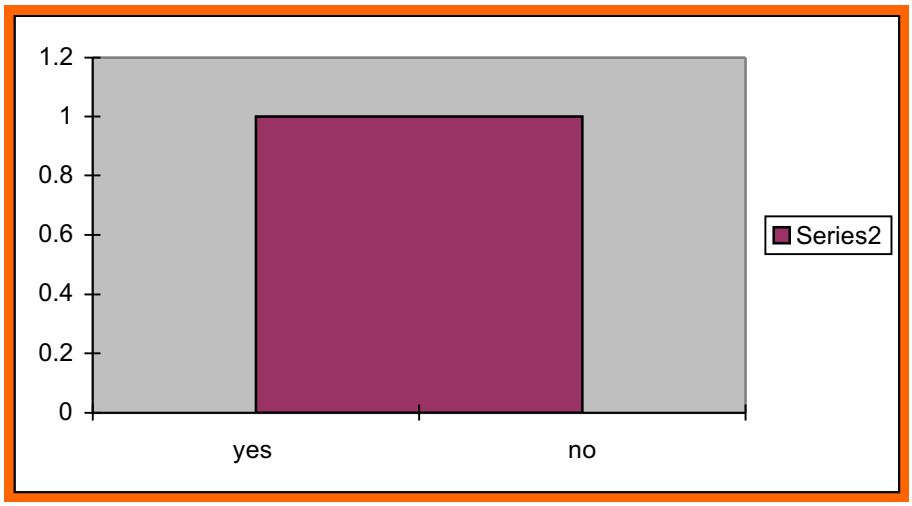
- Decrease in travel times
- More business

Disapprove

- Dangerous for children
- More noise+ traffic

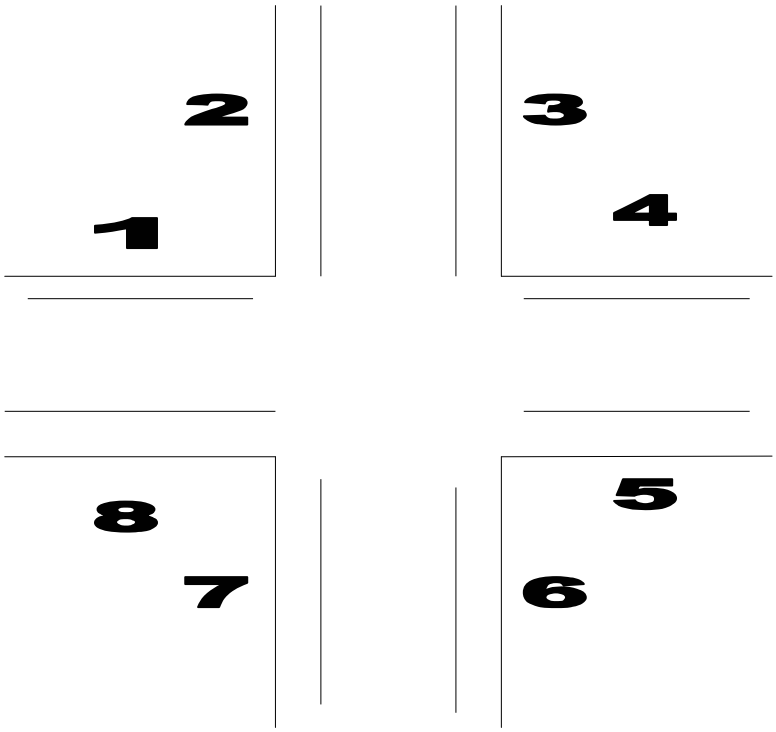
Question 9

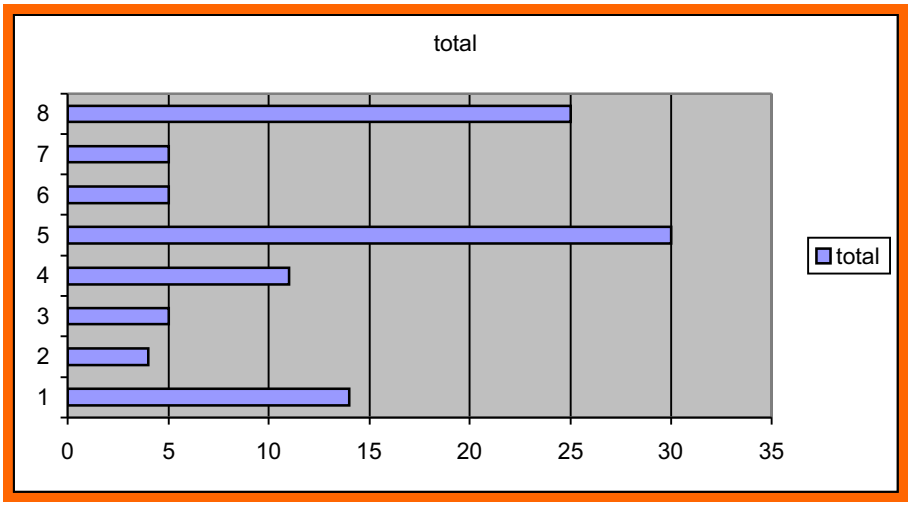
Yes	No
1	1



Hempsted bypass
Traffic count.

Time taken: 5.30pm-5.35pm
Date taken: Monday 11th August

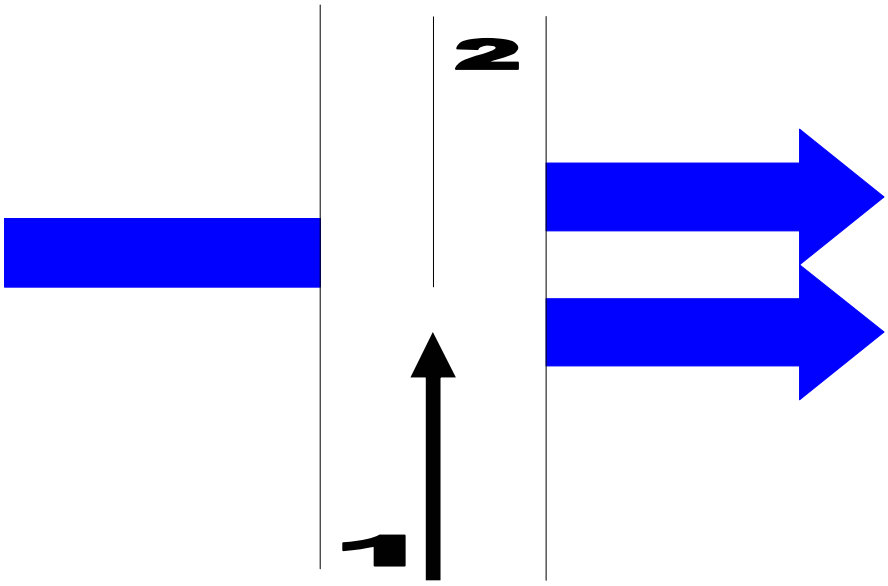


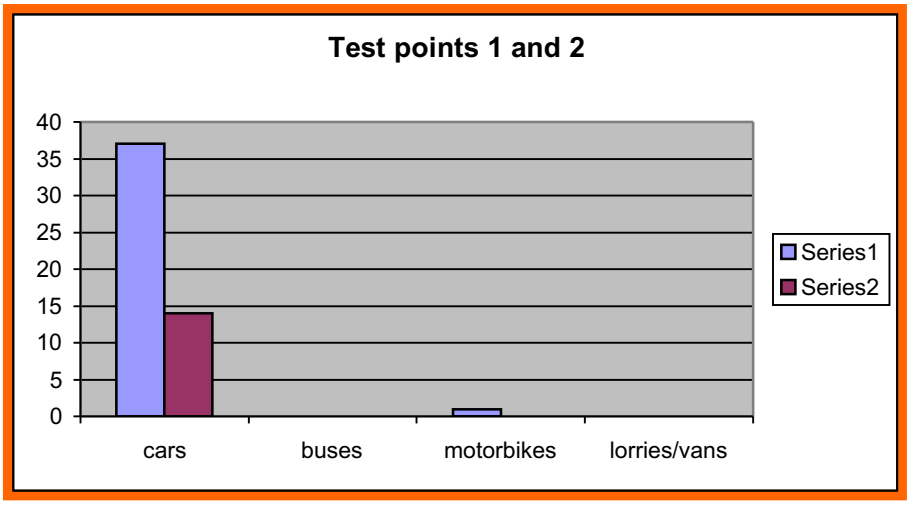


Test point	Cars	Buses	Motorbikes	Lorries/vans	Total	Percentage
1	13	1	0	0	14	13.86
2	3	0	1	0	4	3.96
3	5	0	0	0	5	4.95
4	9	1	0	1	11	10.89
5	27	0	2	1	30	29.7
6	5	0	0	0	5	4.95
7	4	0	1	0	5	4.95
8	23	0	0	2	25	24.75
					Total	
					99	Per 5mins

Hempsted Bridge
Traffic count.

Time taken: 5.35pm-5.40pm
Date taken: Monday 11th August





Test	Cars	Buses	Motorbikes	Lorries/vans	Total

point					
1	37	0	1	0	38
2	14	0	0	0	14
					52
					Per 5mins

Analysis

Data interpretation

All the results opposing and agreeing to the bypass where affected and did not gain a fill set of results, as the questionnaires handed out to the estates, the people have been only living there since the building of the bypass as their houses were built in the space made by the bypass. However they were still able to give answers to how they feel about the bypass now.

The main age range for the people filling in the questionnaire was 26-46, which is very good as these are the people who are more likely to be using the by-pass more often than the older people who may me retried so may not experience the bypass at peak times so could throw the results off track as the questionnaire would not show the right type information which would be helpful.

The results for question 4 where totally what I expected as the car and bus travel option came out on top for the most used method of transport, so the information grained about the traffic jams are shown trough the eyes of 90% of those who answered the questionnaire giving a detailed picture of what the bypass is like in terms of amount of traffic jams. The amount of traffic jams faced by the people living in this area varies greatly from 2 people who reported experiencing no traffic jams what-so-ever to 1 unlucky person who reported experiencing 12 traffic jams in the test period of 3 days, that is 4 traffic jams a day!

The issue then turns to the state of cycle paths in Hempstead, which the three people who answered this question thought are very ample. The cycle paths run to town along side the Gloucester and Sharpness canal and to Sharpness in the other direction towards the city centre, but the only part of the canal path that is not up to standard is the part about 200 meters just past Hempsted in the direction of Sharpness, as this part is very narrow. This will hopefully be brought up to standard after the straighteni ng of the canal, when the bypass crosses it.

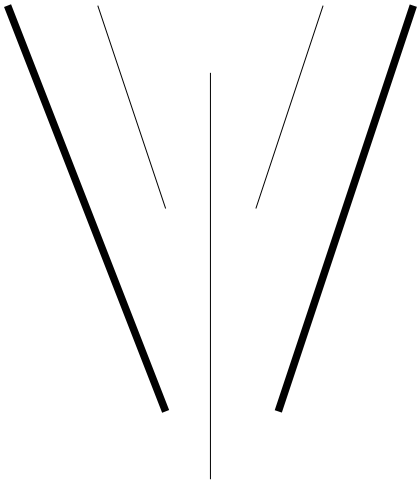
Only 6 people out of the 27 people who answered the questionnaire felt that the bypass has made their journey times slower. This may be due to the large number of traffic jams faced by the people living in the Hempsted area. These 6 felt that there where better travel times before the bypass was constructed. The 21 others felt that even though the bypass does have a large number of traffic jams, it does decrease their journey times in the long run.

All of the views about the building of the bypass came from the Hempsted village. The results show that 11 people who did want the bypass to be built gave reasons such as: it will decrease traffic flow on Hempsted road and improve links with the city centre. The other 7 that disapproved of the building of the bypass had reasons such as it would cause more noise in the area and it would be unsafe for children, even though the traffic and noise would be taken away from the main village area and may lower the house prices .

The final question from the questionnaire was directed to the shop owners/workers and is about if the shops have seen an increase in sales figures as there are now more houses which means more people, so in turn

more potential customers. But out of the two shops tested 1 said they had seen an increase and the other said the bypass had not improved sales.

The traffic count carried out on the Hempsted bypass provided very useful information and showed me that the traffic problem lies not in the bypass i tself but in Hempstead Bridge. The traffic cannot exit from the bypass as fast as it comes in, thus causing traffic jams which in turn might lead to people finding different ways home a cause smaller roads to be swamped with traffic they weren't built to carry. The Hempsted traffic problem will hopefully disappear as soon as the bypass system has been finished and is completely operational.



Ultimately, I feel that I have investigated and achieved my aims through the questions I asked in my question naire, and the information I gained from various sources.

The data in the appendices part of this project played a great part as the information in found here about the south west system, made it possible to see the whole picture and all the benefits gai ning for creating the bypass system, some of which do not just help traffic flow, such the why the estates where built.

Conclusion

During this investigation what was found is that the Hempsted bypass i s part of a larger project, which involves linking with the use of the bypass the M5

south to the A417 in four sections. I found out that the reasons the bypass has so many large traffic jams is that the traffic gets slowed down in the exit from the bypass, the bridge causes this as it acts like a bottle neck. Thus it shall hopefully be corrected when the bypass system is completed in January 2005.

The traffic counts have turned out very well as the traffic counts taken by the council by means such as manu al counting and electronic counts support the findings in my survey, but also provides information on other roads which have benefited from Hempsted bypass

In the appendixes there is more information about what made the council deicide to build the bypass system the data gained showed that before the bypass was built Bristol road carried over 21,000 vehicles a day, which is now down to 18,000 that is a 14% reduction. So it seems that the bypass has been useful at lowering the number of vehicles on other ro ads.

Evaluation

The method used to test the hypothesis was very useful and gained a lot of information from various sources. The data which help the most was the

questionnaire results as those results are from the people who live close to and use the Hempsted bypass instead of information written by someone who does not use the bypass every day so only has the perspective of a visitor to the area. The information gained from Mr Dorian. Whiting who is part of the network improvement team helped very much.

Another thing I could do to gain more information could have maybe asked people visiting the local shop what their views were on different questions. The results helped a lot in making a valued and clear conclusion about the whole project. Things that could be done to develop this into a further study would be, handing out more questionnaires to hopefully increase the amount of answers, which in turn will increase the accuracy of the results, giving a more in depth picture into the people's views about the bypass.

The data gained though this research would be able to make proposals about this area because of the before and after traffic counts received from Mr Whiting, these show that Hempsted bypass carries 5000 vehicles a day now, so just imagine how many this may rise to after it has been completed, even though now to someone with one the information it would seem like the bypass has just created traffic problems. The other data gained from Mr Adrian Clarke from the City Council was really helpful and easier to use and gain information of the objectives the scheme; these show everything that will have to happen to complete the bypass system.

Appendix 1

Appendix 2

Acknowledgements

All maps came from multi map.com or received in the letters from the City and County Council.

Mr Adrian Clarke from Gloucester City Council and Mr Dorien Whiting from Gloucestershire County Council for all the information in appendixes 1 and 2

All of the data in the information part of this project has been adapted from Internet sites such as www.gloscc.gov.uk and www.gloucester.gov.uk