ATTACHMENT B

Shelford and Newton Parish Council

and

S.A.G.E

Response to:

Nottinghamshire County Council
Minerals Local Plan Consultation
Additional Consultation on Shelford West

December 2014

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This document has been prepared for Nottinghamshire County Council by Shelford and Newton Parish Council and SAGE in response to the Consultation on the Shelford West site.

Summary

The Requirement for Sand and Gravel

- Evidence has been produced which we believe shows that the forecast demand for aggregates is overstated.
- We have shown, using a tonne/miles analysis, that Shelford is not an optimum site to meet the demand in the south of the county.

Access and Transport

- It has been argued that increased heavily laden, slow moving lorries, moving onto and off an already severely congested A6097, with all the attendant risks, is not acceptable as a sustainable transport solution.
- The unlikelihood of barge transport being used has been demonstrated and this has been affirmed by industry sources.

Flood Risk

- The long term risk in the Sustainability Analysis is undetermined. We have argued that the long term risk is as uncertain as the operational risk. Factors that we have noted include risk of flooding from all points of the compass and "pit capture".

Climate Change and Energy Efficiency

- Because of the use of a long conveyor system, Shelford West compares unfavourably with other sites where loading and transportation are less carbon and energy intensive. Access to the main trunk road is also more energy and carbon inefficient. We cannot see any attempt to maximise renewable energy opportunities due to the high energy loads required to drive the plant and equipment.
- We also argue that in the long term climate change will be negatively impacted as a result of the permanent loss of carbon absorbing plants, trees and hedges and their replacement with open water. No renewables are mentioned in the developer's plans to offset 14 years of negative carbon emissions.

Biodiversity

- The ecological impacts following new proposals by the developer have not been adequately considered and have far reaching damaging consequences for biodiversity.

Historic Environment

- The impact of sand and gravel extraction on this heritage has not been adequately considered. Not only are heritage sites themselves under threat but also the means of access to them.

Landscape

- Sand and gravel extraction at Shelford West would add to the unacceptable change to the traditional and cherished landscape character of the Trent Valley.
- We have argued that at Shelford West views over the Trent Valley from Shelford Hill have not been accorded sufficient value in the landscape assessment. We also contend that with the proposed after-use, the cumulative damaging impact of yet more lagoons on the Trent Valley landscape has not been given sufficient weight.

Air Quality and Pollution

- Because of the nature of the valley as a natural bowl which collects emissions and then spills them into surrounding settlements, we believe that the additions to the particulates caused by quarrying and traffic movements would be very detrimental to health of both human, plant and animal life.
  These arguments are supported by a local doctor and his evidence is included as an appendix.

Employment

- It has been demonstrated that the potential job losses resulting from the development of this site are far reaching and well in excess of any minor job opportunities that are created.

Human health and Quality of Life

- The villagers of Shelford are very active and strongly value their close knit community and quality of life. We strongly contend that the social capital of a community, built up over the years, should be given equal consideration alongside environmental factors when development proposals are being assessed. So far this has not been the case.
- We have argued that continuing anxieties over flood risk, loss of amenities such as the popular Trent Valley Way, access to the river, the probable extension of the site to its original size together with the development of Shelford East and the significant risk of mosquitoes breeding in the lagoons would have a very detrimental effect on quality of life.

- These effects would be in the long term as well as the operational period and the argument that increased flood defences “could have a beneficial effect” has been rejected as having no substance.

Other Observations

- We have noted that the Shelford West should be restored to “high quality agricultural land if that is possible”.
- The restoration proposals do not allow for any agricultural land of any quality. The loss of 550 acres of food production, two farms and a family home are a very negative trade off for the excavation of gravel.

Conclusion

As a result of the evidence and arguments that we have produced we have revised the Sustainability Analysis scores as follow:

Period	Current NCC	Amended
Operational	-9	-26
Long term	0	-15

2 The Requirement for Sand and Gravel

2.1 Supply

2.1.1 The current numbers for the 7 year supply indicator are fluctuating very close to that figure. In 2013 the Local Aggregates Assessment was slightly above and in 2014 slightly below, based on the 10 year moving average.

2.1.2 There is considerable doubt about the sustainability of current trends in the demand for aggregates and both national and local indicators point to a flattening of both house price indicators, new housing starts, economic growth (which it is reported co-relates closely to demand) and sales of sand and gravel. (See figures 1 and 2)

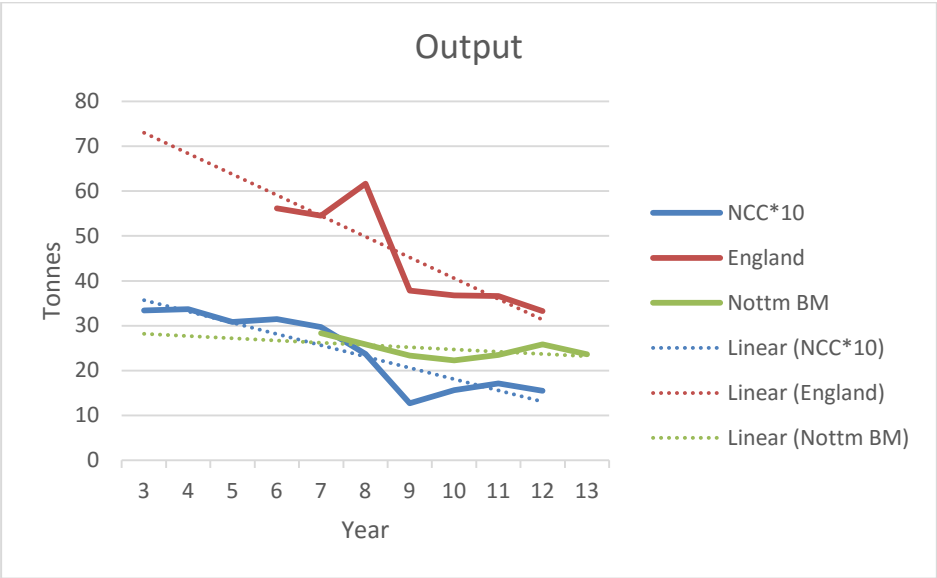


Fig. 1 Output of Sand and Gravel (Nottm. BM is the area's largest builder's merchant)

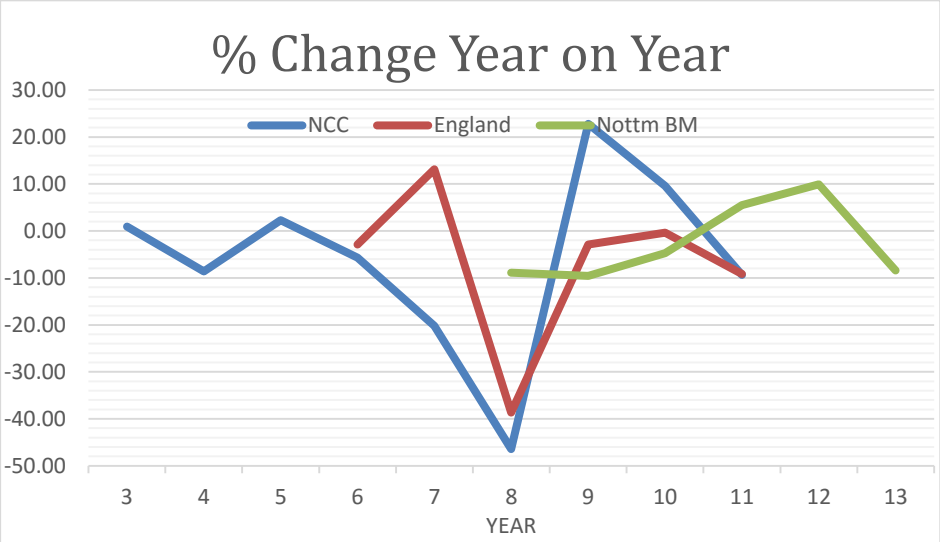


Fig. 2 Change in output of sand and gravel.

Demand at Nottingham's largest builder's merchants has remained fairly resilient over the last 6 years, only reducing slightly during the recession. It has now started to fall back along with national and local indicators. The figures from the merchant are unaffected by exceptional items like the extension of the tram network.

2.1.3 On 24th October the BBC reported that:

House prices in England and Wales fell by 0.2% in September - the biggest monthly fall in nearly a year, according to the Land Registry.

Annual house price inflation also fell, from 8.4% in August, to 7.2% in September.

That is the first time since May 2013 that the yearly rate has gone down, the Land Registry said.

The largest monthly fall was in Yorkshire and Humberside, where prices declined by 2.2%

2.1.4 On the same day, the Guardian reported:

A rise of 0.7% – a slowdown from 0.9% in the second quarter – was in line with most forecasts. But after recent economic indicators showing a weaker housing market, and slower manufacturing and consumer spending, some had feared growth could be weaker.

Economists said that while growth remained strong, it was unlikely to return to the pace seen earlier in the year. "We expect the recovery to soften a little further in the fourth quarter as the single currency area records little growth while a confluence of factors – principally the potential for rate hikes in the next 12 months and political uncertainty – drag a little on domestic growth," said Rob Wood, chief UK economist at the Berenberg bank.

And on the same date The Times stated that the number of mortgage approvals were down 10% year on year and that the effects of *"more stretched house price-to-earnings ratios, prospective interest rate rises and tighter checks by lenders"*

2.1.5 It has been stated that there is a linkage between GDP and output of aggregates. This linkage was tested using ONS GDP statistics and output figure supplied in the LAA. The result is shown in both the comparative and scatter charts shown below.

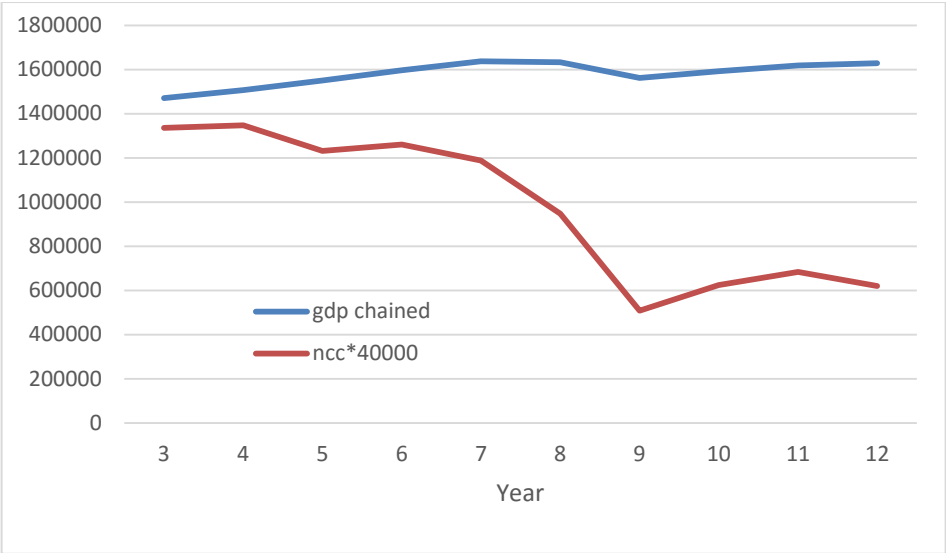


Figure 3 GDP and Notts aggregate output

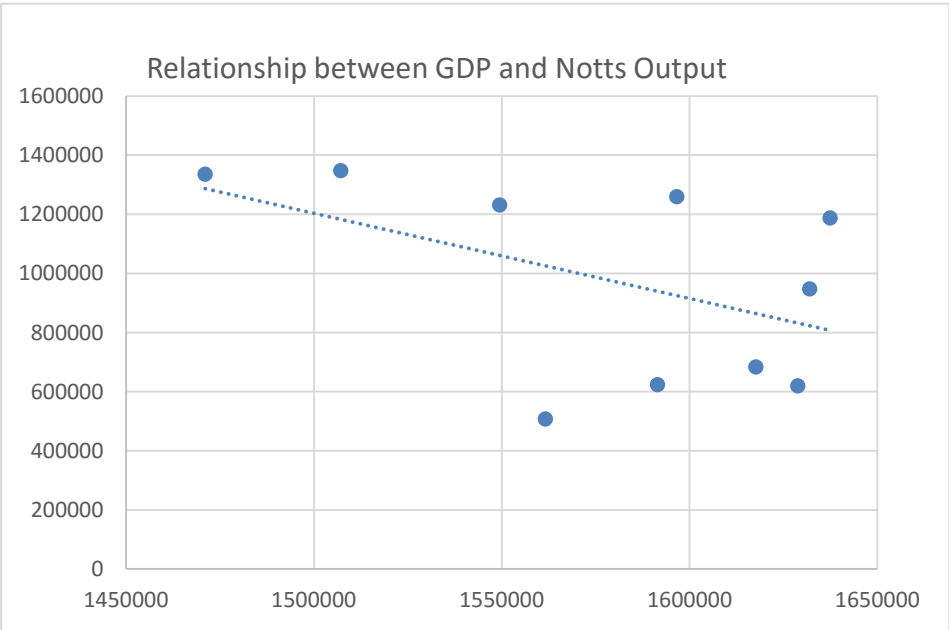


Figure 4 Scatter Diagram

It may be thought that a declining trend line would indicate a weakening of the relationship between output and GDP. However correlation analysis between the data was carried out and tested for significance. ***There exists no statistically significant relationship between GDP and Notts output of aggregates.***

2.1.6 It appears that no allowance has been made for imports or recycled materials as a component of demand although the Local Aggregates Assessment (LAA) states that

250,000 tonnes (including sandstone) were imported in 2009 and 6.8 million tonnes of alternative aggregates are forecast to be produced in the East Midlands up to 2020.

The URL/Scott Wilson SFRA produced for the Council in 2011 notes:
"Although resource depletion will not be a problem, finding sufficient environmentally acceptable sites to continue production at current levels much beyond the plan period is likely to be a fundamental issue for the future. This can only reinforce the need for significant long-term reductions in dependence on sand and gravel for meeting demand for aggregates".

2.1.7 Trent Farm, which is just in Derbyshire, produces around 220,000 tonnes p.a. all of which is transported to Attenborough in Nottinghamshire. Imports may well be understated.

2.1.8 On a population basis, an alternative aggregates figure for Nottinghamshire would be 1.5mt p.a. which is a very significant contribution to meeting demand.

2.1.9 It is recognised that forecasting is not an exact science and that over a period of 7 years there can be many variable shifts**, but we do believe that in view of at best, flat predictions and the evidence produced above, the requirement for new sites is overstated.**

The trend before the recession in 2008 was already downwards. Even at an annual growth rate of 10%, it would take until 2020 to reach the output levels of the beginning of the decade; at this point the 10 year rolling average would be 2.27mt. The 3 year average is 1.61mt and **the most that we can see is 2mt over the next 5 years and this would remove the need for at least one additional new allocation.**

It is suggested, that in the light of these projections and the considerable variations and uncertainty in establishing the requirement to 2030, a shorter planning time frame is adopted and that monitoring and review of data is conducted every five years.

2.2 Demand

2.2.1 Analysis of housing figures for the south Nottinghamshire districts of Rushcliffe, Broxtowe and Nottingham City are shown in **Appendix A.**

2.2.2 Based on the projections provided by each authority and an average quantity of aggregates used in a standard three bedroomed detached house, a tonne miles figure has been calculated for each of the sites that could best serve these districts. Google maps were used to calculate distances.

2.2.3 The average figure of 50 tonnes of aggregates used in a build was taken from three separate industry sources and is shown in **Table 1** below:

Source	Estimate of amount of concrete (m3)*	Estimate other building applications (tonnes)	Total (Tonnes)
Builder 1	40	15	65
Builder 2	35	12	57
Concrete Manufacturer	30	10	48
Average			56.6

Table 1 Average weight of aggregates per 3 bed house

**1m³ of concrete weighs 2.2 tonnes and one tonne comprises 582kgs of aggregate, 286kgs of cement and 142kgs of water.*

2.2.4 **Table 2** shows a summary of the results. In terms of meeting the needs of the principal markets in South Nottinghamshire (Rushcliffe, Broxtowe and Nottingham City), **Shelford clearly has the second highest tonne/miles total by a factor of 29%.** If Gedling is factored in, the figure reduces to 11% but a combination of Barton (for South Notts) and Averham (for Gedling) results in a 13% difference. (See **Table 3**)

Housing Tonne/Miles per District/Borough							
District	Shelford	Barton	East Leake	Coddnton	Averham	Diff. Shelford v Barton	%
Rushcliffe	4,875,119	3,747,738	4,395,833			1,127,381	
Broxtowe	4,007,240	2,703,322	3,677,341			1,303,918	
Nottm. City	5,264,750	3,616,350	6,289,450			1,648,400	
Total South Notts.	**14,147,109**	**10,067,410**	**14,362,624**			**4,079,699**	**28.8**
Gedling	3,640,217	5,842,828		6,959,192	5,355,276	-2,202,611	
Total inc. Gedling	**17,787,326**	**15,910,238**				**1,877,088**	**10.6**

Table 2: Tonne/miles to major housing markets from selected sites

	Shelford	Barton + Averham	Difference Shelford v Barton +Averham	%
Total inc.Gedling	**17,787,326**	**15,422,686**	**2,364,640**	**13.3**

Table 3: Tonne/miles to major housing markets from selected sites

2.2.5 The analysis shows that house building accounts for a very small proportion of total output.

	Housing tonnes required
Rushcliffe	528,500
Broxtowe	266,350
City	659,150
Gedling	296,800
Ashfield	336,000
Mansfield	318,000
Newark	444,000
Bassetlaw	210,000
Total housing demand	3,058,500
Total extraction @ 2.58mt pa over 13 yrs	33,540,000
Exports at say 65%	(21,801,000)
Imports 260kt x 13yrs	3,380,000
Alternative Aggregates 1.5mt x 13yrs	19,500,000
Total Local Supply	34,619,,000

Table 3 Total Local Housing Demand and Supply

2.2.6 This seems to indicate that Nottinghamshire housing alone is less than 10% of supply or that total demand is overstated as the previous section argues. However several other components need to be included:

- Housing infrastructure - roads, pedestrian routes, medical centres, schools etc. It is estimated that this could double the housing tonnes required.
- Industrial and Commercial infrastructure. This will be a substantial element of demand.
- Public infrastructure. This will include major public works like extensions to the tram network and the building of HS2.

All of the above additional elements of demand are likely to be significant users of recycled materials.

Although all districts/boroughs are planning employment space (which will be adjacent or within a short travel distance of housing developments), the major areas will be in Greater Nottingham.

The Nottingham City Aligned Core Strategy (ACS) states *"develop 310,000 sq. m of office space by 2028" and ""develop 37 hectares of industrial and warehouse uses (Broxtowe 15 hectares, Gedling 10 hectares and Nottingham 12 hectares)"*

In addition, B1, B2 and B8 industrial premises are proposed for Clifton South and the Boots complex at Thane road has been designated an Enterprise Zone.

The development of public infrastructure will be **centred to the south of the county** and will consist of HS2 building works and associated transport links. It is not clear at the time of writing whether the Hub Station will be at Toton or Breaston. These sites are only 3 miles apart and will be best served from extraction sites adjacent to the M1 junction with the Cemex plant at Trent Farm making a major contribution.

The ACS makes the assumption that Toton is the preferred site for the HS2 hub and states *"The preferred location for an HS2 hub station at Toton will …….make the area attractive to inward investment, will lead to significant job creation and will add to the sustainability of appropriate mixed use development in close proximity to the station."*

2.2.7 An analysis of the siting of concrete plants in Nottinghamshire has been conducted and the findings show that they are relatively evenly dispersed. Most major developments use on-site mixing plants and fixed plants serve smaller schemes and are generally close to the markets they serve. The average concrete plant consumes around 13,000 tonnes of aggregates p.a.

One major producer of concrete has plants in Basford, Heanor, Loughborough, Mansfield and Newark. Other manufacturers' facilities are similarly placed around the county.

The assumption is therefore made that tonne/miles for concrete plants will broadly follow that for housing.

In conclusion it is clear that the housing demand, together with major developments to the south of the county, point to Shelford West being a significantly sub-optimum site.

3 Access and Transport

We object to the inclusion of Shelford West as a possible excavation site for sand and gravel because of the proposed access point from site direct on to the A6097 and the additional issues referred to below:

3.1 The most recent Brett Proposal indicates that 36% of the 500,000 tons per annum is to be transported by barge from Shelford to Colwick and that access for all of the Brett HGVs would be directly onto or off the A6097 just south of Gunthorpe Bridge i.e.

a) Immediately adjacent to the renowned "bottleneck" for traffic travelling southwards over the Bridge and

b) Part way up the 1:33/1:35 gradient hill leading to the A46

3.2 At a meeting with Shelford and Newton Parish Council on 16 October, an officer from NCC Highways Department confirmed that HGV processing plant access will be allowed in both directions onto and off the A6097. At the same time it was suggested that, for safety reasons, additional traffic lights would need to be installed about 800 yards downhill from the existing signals at East Bridgford and only about 350 yards from Gunthorpe Bridge. Significant congestion already occurs here from both directions (as confirmed by the longstanding Highways signs warning of congestion (see Appendix B, Picture 1).This is as a result of:

a) Vehicles travelling south being held up by those attempting to turn right in to Manor Lane across the oncoming traffic

b) Vehicles travelling north held up by those turning right into Gunthorpe

b) Vehicles exiting out of Manor Lane and Trent Lane.

3.3 Current NCC Highways Policy:

a) On Nottinghamshire A roads, restrictions will normally be applied "*on new access for vehicles on roads with a speed limit above **40mph**".*

The speed limit on the A6097 at the proposed site access point is ***60mph.***

b) That "*new development is only permitted if the environment is not harmed, including through increased **congestion***".

Such a policy would clearly be contravened by means of this new access as there will without doubt be ***substantially increased congestion***. As a result it is difficult to see how such a new development can be contemplated and approved.

3.4 Brett's proposal would add further congestion and safety hazards:

3.4.1 For southbound traffic:

a) there are already very regular tailbacks towards Lowdham whilst waiting for vehicles attempting to turn right in to Manor Lane (and also due to vehicles exiting from both Manor Lane and Trent Lane).

b) once past the Manor Lane junction, there will be an additional delay and backed up traffic caused by:

- proposed new signals to allow site access and egress. If the light delay is, say 20 seconds, then the tail back would be around 12 vehicles which equates to a vehicle queue of about 60 metres.
- once the lights have changed to green, those same vehicles will then have to follow a fully laden minimum 32 gross weight HGV carrying a 20 ton load which will be starting from a stationary position at the site entrance and immediately climbing up the 1:33/1:35 gradient hill. It is suggested that this will result in the ensuing queue not reaching 40mph (in what is a 60mph limit) by the time these vehicles reach the lights at the top of the hill, thus further adding to the delay caused by the original signals.
- When the lights change to green, returning HGVs will be waiting to turn into the site causing further tail backs. These vehicles will be attempting to turn right across continuous northbound traffic travelling at 60mph down the hill from the East Bridgford traffic lights. We suggest that since there is not the space for a filter lane, the increased congestion would be very significant and our synchronisation modelling does not show any alleviation of this. The timing of the East Bridgford traffic lights is such that in the 1 1/2 minutes green light phase as many as 36 vehicles travel down the hill**.** This could prevent the returning Brett HGVs from turning right until the northbound carriageway becomes clear which would result in southbound traffic building up **by a further 36 vehicles** or an additional queue of over 325 metres. This assumption makes no allowance for the fact that subsequent traffic coming out of East Bridgford and Newton onto the A6097 has not yet caught up with the original 36 vehicles. This could create totally unacceptable delays and significantly breach the NCC Highways Policy.

3.4.2 For northbound traffic:

After the East Bridgford traffic lights turn green for 1 1/2 minutes, approx 36 vehicles can start down the hill at 60mph towards the proposed new signals. Since these will be installed only around 800 yards from the existing lights, the vehicles will only just have reached 60 mph before some, dependant on the synchronisation of the lights, will have to stop again. There is inevitably an increased safety risk for vehicles travelling down a hill at 60 mph as they approach the new lights, especially in conditions of poor visibility.

Often there are also long tailbacks to the south; for example, on 30 Oct 2014 traffic was stationary all the way back from Lowdham roundabout to the slip road from the A46.

3.5 Other issues

3.5.1 Following heavy rains in 2013 a section of the A6097 collapsed at a point where the site entry and exit is planned and there need to be serious questions raised about the proposal to allow an additional 126 HGVs weighing 32 tonnes to access this major road. There will also be very substantial earthworks necessary to create vehicular access from the processing plant which will be as much as 6 metres below the level of the A6097 (see Appendix B, Pictures 3 - 6). Such work could well have a direct impact on the adjacent land bordering the A6097 which may already be subject to future instability and floods from drainage water in periods of heavy rain.

3.5.2 There is a significant risk of site vehicles, including wide transporters, mistakenly attempting to access the site due to satnav etc directions through narrow roads in Radcliffe, Newton or Shelford despite signposted restrictions. All of these roads are especially narrow in parts and are the main bus routes connecting local villages. There is an existing 7.5 ton maximum limit (see Appendix B, Picture 1) already applying from Shelford Hill through Shelford to Gunthorpe Bridge.

3.5.3 In the past 10 years there have been on average 11.1 casualties annually on this stretch of the A6097 and 1.2 of these have been serious. For example, on Monday 13th October 2014, at 1.45pm on a weekday, there was a serious accident between a lorry and car on Gunthorpe Bridge when the fire brigade had to cut a driver out. We believe that a combination of 126 HGV movements per day and a new set of traffic lights on such an incline will give rise to an increased risk of casualties. It should be noted that more than half the children at a Gunthorpe school are bussed to and from the village along the A6097.

3.5.4 This road is part of Notts Strategic Road Network and there is an inevitable risk of serious delays for Emergency Services vehicles due to the increased congestion delays likely to be caused by this new access to the development. There is no room for vehicles to move out of the way of emergency services on the west side of the A6097 due to an immediate drop of approx 6m to the fields below and also very limited room on the east side where there is only a narrow pavement adjacent to a further steep drop. This is also of course the ***only access*** across the River Trent between Newark and West Bridgford and the implications of such delays for Ambulances, Fire Engines and Police Vehicles could be critical.

3.5.5 126 HGV movements per day have been predicted but it has also been recognised that the risk of increased congestion could result in, for example, the restriction of HGVs from entry/exit to the site during peak hours. If this plan were adopted it would automatically increase the number of HGV movements per hour during the remaining hours in the day in order to maintain proposed production levels. If there was a restriction to site

access of 1½hrs am and pm, then to achieve the daily output, the HGV movements would need to increase from around every 5 minutes to every 3.75 minutes.

The only access for residents to and from Gunthorpe village is via two junctions with the A6097. Very recently a Gunthorpe resident counted 107 vehicles pass at 3.30pm before they could exit on to the A6097. (See Appendix B, Picture 2). Traffic flows at peak times (07:00 to 09:00 and 16:00 to 18:00) have increased slightly (4%) since 2007 but the road is already at saturation with an average of **one vehicle every 1.7 seconds at these times** *(Source: NCC Traffic data June and September 2014).* Any delays whatsoever cause extensive queuing, often the whole length of the A6097 in both directions.

3.5.6 This proposal could never be regarded as "temporary". When the 1st phase at Shelford West is completed after around 14 years the site is likely to be extended into Phase 2 (The third that was removed from the original Brett proposal) and then to Shelford East as a 3rd Phase (for which there is already a plan). This would result in a total of around 25 years of operations and several years of “restoration” works.

3.5.7 The congestion caused by the proposed site traffic lights will inevitably encourage an increasing number of vehicles to avoid East Bridgford Hill by taking the "rat run" down the narrow Manor Lane and create even longer queues for south bound traffic. This will exacerbate the bus problems noted earlier and cause difficulties for agricultural vehicles.

3.5.8 Interestingly, the Highways Agency Design Manual for Roads provides under clause 5.9 that for single carriageways *"a climbing lane can be considered if it can be justified on hills with gradients greater than **2%** and longer than **500** metres"*. The gradient on the A6097 hill up to East Bridgford is between **2.86%** and 3**%** and the distance is approx **690** metres but there is insufficient land available to even contemplate this (see para. 3.5.4).

3.5.9 It is obvious that both the fuel consumption and pollution resulting from HGVs having to stop/start on the A6097 would be very considerably more than for HGVs having a straight run allowing speeds to remain constant.

3.5.10 Using models developed in a study by Leeds University and inputting variables of 24 stop/starts over a distance of 4.8Kms and then accelerating to a speed of 15kph it can be demonstrated that 45% more fuel is used than at constant cruising speeds. A similar increase in emissions can be assumed.

3.5.11 It is likely that however well mud, water and other debris from the site is controlled (for instance by wheel washing plant) some will find its way onto the main highway. This will increase accident risks significantly, especially for vehicles braking sharply from 60 mph when faced with a slow moving lorry.

3.6 Barge Movements

3.6.1 We are extremely surprised that Brett have now suggested moving 36% of their annual production by barge after their initial proposals were considered inappropriate. At a public meeting in Shelford in January 2009 when they first submitted their proposals, Mr Mike Courts, a Director of Brett Aggregates, confirmed to village residents that they would definitely not consider barging any sand/gravel as it was uneconomical to do so.

3.6.2 We have checked with industry sources and operators who have used barge transport in the past and discovered the following information:

- An existing operator in Nottinghamshire only uses barges "because there are no suitable roads"
- The economics of double handling and double processing make barging non-viable
- One operator provided a cost estimate of £13 to £15 per tonne for moving sand and gravel by barge which makes this a very uncompetitive solution – especially since Brett will need to develop market share in what is a new territory to them.
- There are doubts about whether the depth of the Trent would be sufficient at all times of the year to carry a fully laden barge.
- The publication "Gravel Extraction: History of the Aggregates Industry in the Trent Valley" states: *"Since the mid-1950s, haulage economics have dictated that the vast majority of sand and gravel aggregates are transported by road*"
- Lafarge Tarmac has objected to the proposal at Shelford West, saying:*" It is suggested that the 180,000 tonnes per annum to be transported to Colwick for use in concrete batching plants will be unprocessed. How will it be processed or used at Colwick? Processing at Colwick would require washing and screening, generating a significant volume of fines that will require appropriate management. Barge transport is a fundamental aspect of the Shelford proposal, and supporting evidence should be provided to clarify the existing or proposed mineral handling and processing operations at Colwick.*
  Based on the lack of robust evidence we have strong doubts over the deliverability of the Shelford West site".

3.6.3 We must as a result now seriously question whether Brett would actually use barges. A failure to proceed with barging as proposed would result in an increase of 71 to a total of 197 HGV movements per day on the A6097 i.e. every 3.5 minutes.

If restrictions in peak hour movements were applied, reducing the working day by 3 hours, this would increase the statistic to one lorry every 2.5 minutes. This clearly would be

impracticable whether or not controlled by signals at the junction of the A6097 and the site access.

3.6.4 Inevitably if barges are used there would be very considerable noise issues for those living near and opposite the barge wharf due to aggregates being dropped in to the barges from a height. A public house and private houses are extremely close to the proposed wharf and noise travels efficiently over water. It is difficult to see how baffling could be installed.

In concluding all the issues relating to transport and because of the major factors of:

- **increased heavily laden, slow moving lorries moving into and out of an already severely congested A6097 with all the attendant risks and**
- **the unlikelihood of barge transport being used**

we believe the Sustainability Analysis scores under Heading 3 "Promote sustainable patterns of movement and the use of more sustainable modes of transport" should read:

Period	Current NCC	Amended
Operational	+2	-2
Long term *(Shelford West only)*	0	0

4 Flood Risk

We object to the inclusion of Shelford West as a possible excavation site for sand and gravel because the flood risk has not been assessed.

4.1 The Environment Agency in its letter of 30th September 2014 to the Minerals team states "*It will be necessary to produce a Flood Risk Assessment (FRA) to demonstrate the risk of the development to others as well as to the site itself during times of flood. The FRA will need to demonstrate the effect of the phased operations upon neighbouring land. Any increased risk of flooding will need to clearly identify adequate and appropriate measures to manage this flood risk, in order that no property or land is placed at increased risk of flooding, without the agreement of landowners and the Minerals Planning Authority."*

4.2 The excavation area is classed as Flood Zone 3 and therefore is assumed to be a functional floodplain (3b) until shown to be otherwise. Considerable time could be saved together with avoiding the loss of an allocated site at the planning stage if a detailed FRA were conducted early.
One of the minimum requirements (set out in Annex E, Planning Policy Statement 25) for site specific Flood Risk Assessments (FRAs) are that they should:
*"Be undertaken **early**, by competent people".*
Further guidance states: *"The effects of flooding events (including extreme events) on people, property, the natural and historic environment and river and coastal processes should be considered"*

In 2000, Shelford village came very close to flooding with river water almost overtopping the inner flood defences. An Environment Agency letter in response to questions from the Parish Council, stated "*The sudden rise in water level which was reported, happened later in the week following the gates (at Colwick) being fully open. This may have been due to the right bank failure at Holme Pierrepont, which occurred about 9.00am on Tuesday 7th November. Other than that, **it can only be the interaction of storage areas filling and overspilling."***

Minerals Policy Statement 1 (MPS1) says: "*developers should consult the EA prior to planning application submission to evaluate the hydrological, chemical and ecological impact of any workings on groundwater and surface water supplies."*

We believe that the absence of an FRA and a more in depth analysis by the Environment Agency at this stage is a substantial obstacle to the allocation of the Shelford West site since many of the elements that need to be examined in detail would indicate an unacceptable degree of risk.

4.3 Minerals Policy Statement 1 (MPS1) says:
-that local authorities should identify sites and preferred areas having taken account of environmental considerations to provide greater certainty of where future sustainable mineral working will take place. In addition, it states that local authorities should consider the benefits, in terms of reduced environmental disturbance and more efficient use of

mineral resources including full recovery of minerals, of extensions to existing mineral workings rather than new sites.
Paragraph 17 of MPS1 requires the following:
• In areas at risk of flooding, mineral extraction proposals should not have a significant adverse impact on flood flows or storage capacity; and
• Operators should not materially increase the risk of flooding at other properties and should increase the flood storage capacity.

4.4 URL/Scott Wilson's Strategic Flood Risk Assessment for the Council in April 2011 made the following comments: *"Stockpiles and ancillary buildings can reduce the storage capacity of the floodplain. In addition, they could alter the natural flow of the flood water by blocking flow paths and increasing flood risk to adjacent land. Typically in floodplain quarries, sand and gravel extracted in the spring and summer months are sold directly resulting in small stockpiles. However, stockpiles are often increased in late summer and autumn to provide sales during the winter months when pumps are switched off and excavation is inhibited.*
It should be noted that aquatic habitat areas often have minimal flood storage capacity as they are already filled with water. Therefore, the potential flood risk management options using aquatic habitat may be limited."

The observations above are directly relevant to the proposals for Shelford West. A significantly more detailed study needs to be carried out which we believe will rule this site out of contention.

4.5 We would question why Brett have indicated that they will provide extra flood defences. They state that this is because of the availability of spoil but our belief is that this measure is as a consequence of additional flood risk.

4.6 There are no flood defences to the east of the village and this is where floods regularly occur. Most years Manor Lane floods to some extent, particularly during a period of heavy rainfall and our concerns are that the additional flood water storage requirements of the plain as a result of quarrying would need to be accommodated by this area. The village would then be inundated from this unprotected side. Pictures of recent flood events can be seen in **Appendix C, 1 and 2.**

4.7 The Environment Agency letter to the Minerals Team referred to earlier states "*The FRA should also consider the conveyor and its route as well as the processing plant which is also located within flood zone 3. There will need to be a minimum easement of 45m between the banks of the River Trent and any excavations, to prevent against the risk of the works becoming breached. It is advised that the operating company build into their contingency plans a procedure and operations to deal with the breach of the River Trent into the working area."*
Brett's proposed conveyor which is to be set 1 metre below ground level runs through the area which regularly floods and gives us reason to believe that this means of transporting the aggregates to the processing plant is not practicable.

4.8 It is also noted that the proposed site of the processing plant also floods from surface and drainage water in conditions of heavy rainfall. **The effects of this on the stability of the embankment and access road make this an extremely doubtful proposition.**

4.8 British Geological Survey data from 2009 shows groundwater flooding hazard to be high in this area and through the proposed workings and conveyor route **(see Appendix C, 5).**

4.9 Within the last 10 years the area on Manor Lane which the proposed conveyor is to cross, suffered major subsidence caused by flood waters weakening the ground structure. A large hole appeared in the road and a car drove into this and was badly damaged.
The Abandoned Mine Mapping is shown in **Appendix C, 7.**
The continuous pumping required for the proposed conveyor transport solution and ground instability is likely to prove uneconomical for the operator.

4.10 Rushcliffe Borough Council's own assessment of areas liable to flood in Shelford notes the following areas and the type of risk:

- Burden Lane Surface Water flooding
- Manor Lane Surface Water flooding
- The Holmes River Water flooding
- Road off Manor Lane River Water flooding
- Manor Lane River Water flooding

4.11 In 2013 an additional flood risk was identified when very heavy rainfall caused surface water to flow down Shelford Hill flooding Main Street and West Street to a depth of 600mm **(see picture in Appendix C, 3)**. **This, in conjunction with an increased risk of the river Trent overtopping the defences and flooding encroaching from the undefended east, creates an unacceptable situation.**

4.12 In the longer term there are considerable risks of the bend in the Trent which enfolds the proposed workings becoming an oxbow lake and diverting the river back to its previous course **(see Appendix C, 4).** This would reduce the flood storage area on the east bank and cause potentially increased risks not only for Shelford but also for settlements across the river and downstream. This phenomenon known as **"pit capture"** is described in **Appendix C, 6.**

4.13 The Sustainability Analysis for Shelford West currently recognises the flood risk with a score of -3 during the operational phase.
The long term score is undetermined. We would argue that the long term risk is as uncertain as the operational risk. Factors that we have noted above, particularly risk of flooding from all points of the compass and "pit capture" cause us to believe that a score of -3 is equally applicable to the long term.

Period	Current NCC	Amended
Operational	-3	-3
Long term	0	-3

5 Climate Change and Energy Efficiency

We object to these proposals because of the impact on climate change and energy usage through the extensive use of plant and transportation methods.

5.1 A quotation from a large supplier of conveyors for a track 1600m long with a 45 degree bend after 600m carrying 200 – 300 tonnes per hour indicates a total motor power of 167.5 Kw. In addition, motors would be needed to lift the conveyor at both the processing plant and the barge loading wharf.

5.2 We have established from the developers that lighting would be required throughout the dark autumn and winter hours, at both the plant and the length of the conveyor. We have also been told that normal operating hours are 07:00 until 18:00 during the week and 07:00 to 13:30 on Saturday.

5.3 On this basis we have assumed that lighting would be required for on average 3 hours each day for 108 days. At 50m centres this would equate to 32 lamps at say, 500w.

5.4 Total energy consumption is shown in Table 1.

Use	Estimated Kw	Annual operating hours	Kw hours
Conveyor	167.5	2750	460625
Lift units	40	2750	110000
Lighting	16	324	5184
Total	223.5	5824	575809

Assumptions: Conveyor and lift units operate for 11 hours per day over 250 days p.a.
Lights operate for 3 hours per day over 108 days

5.5 Since, according to the Department for Energy and Climate Change (2013 statistics), an average household uses around 4170Kw hours p.a. then total energy consumption on the Shelford West site would equate to that of 138 homes.

5.6 We have not evaluated the additional energy usage from dewatering the conveyor trench which is below the average water table. This is likely to be considerable as electric pumps would need to be operating continuously.

5.7 Nor have we calculated the additional energy usage from the need for two operating plants (since the cost of carrying “dirty” gravel to Colwick would be prohibitive, a mobile plant would be necessary on the excavation site).

5.8 Additionally there is the energy usage deriving from "double handling" of the barged aggregates.

5.9 The most significant energy usage would be from the main site dewatering pumps which since they would be running continuously, are likely to use around 500,000 Kw p.a. Since other sites would be faced with similar issues we have not included this usage in our analysis, although the scale of the Shelford site would point to much higher energy consumption.

5.7 Removal of hedges, grassland and arable fields in the excavation area on the scale proposed will have a large carbon footprint in terms of the loss of the area's ability to absorb carbon dioxide.

5.8 In addition, the release of carbon dioxide into the atmosphere from the carbon rich floodplain soils will have an impact greater than those areas not on a functional floodplain.

5.9 We argue under Access and Transport (see para. 3.5.10) that the stop start nature of heavily laden lorries entering the A6097 and half of these turning right up a 1 in 34 incline will significantly effect both carbon emissions and fuel economy. Other traffic will also be subject to stop/start conditions as a result of slow moving vehicles.

We dispute the score under both energy efficiency and climate change in the operating phase. Because of the use of a long conveyor system, Shelford West compares unfavourably with other sites where loading and transportation are less carbon and energy intensive. Access to the main trunk road is also more energy and carbon inefficient. We cannot see any attempt to maximise renewable energy opportunities due to the high energy loads required to drive the plant and equipment.

We also dispute the score in the long term as a result of the permanent loss of carbon absorbing plants, trees and hedges and their replacement with open water. No renewables are mentioned in the developer's plans to offset 14 years of negative carbon emissions.

Sustainability Analysis	**Operating period score**		**Long term score**	
	NCC	Amended	NCC	Amended
Minimise any possible impacts on and increase adaptability to climate change.	?	-1	|	-1
Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?	-2	?	-1

6 BIODIVERSITY

We object to sand and gravel extraction at Shelford West because the ecological impacts following new proposals by the developer have not been adequately considered and have far reaching damaging consequences for biodiversity.

6.1 The ecological value of the land for the proposed sand and gravel site and associated activities is notable for its variety of habitats. These include floodplain meadowland, arable fields, copses, hedgerows, ditches and streams, riparian woodland and the river Trent. Together these provide important botanical and breeding sites as well as a network and corridor for wildlife.

6.2 Natural England in their National Character Area Profile for Trent and Belvoir Vales (2013) confirm that ditches, hedges, copses and field margins in the farmed environment of the flood plain provide important connections across the landscape and provide habitats for farmland birds.

6.3 The relevant 1Km. Grid squares covered in the biodiversity assessment are SK6442, SK6443, SK6541, SK6542 (proposed quarry site and barge wharf on the Trent), SK6642 (quarry site and conveyor), SK6743 (conveyor) and SK6843 (processing plant).

6.4 There are four Local Wildlife Sites (formerly SINCs) within or adjacent to proposed extraction activities. Shelford Carr, a Willow Carr, hosts Mudwort (Limosella) which is recorded as a rare aquatic plant on the Nottingham Rare Plants Register. Similarly Field Lane Dyke supports Whorl-grass (Catabrosa) also recorded on the Rare Plants Register.
Both these sites would be vulnerable to pollution from the proposed route of the conveyor belt.

6.5 Swallow Plantation Local Wildlife Site is located on the southern boundary of the proposed quarry. The full importance of this site is unknown as a full survey is needed to give a complete picture. Currently it is known that the site contains an impressive 43 recorded species of aquatic and woodland plants.
This site would be vulnerable to water pollution, air particulates and disturbance from the adjacent quarry.

6.6 The banks of the River Trent from Burton Joyce to Lowdham are recorded as a Local Wildlife Site for the variety of aquatic plants. These include Tutsan (Hypericum androsaemum) recorded as a rarity on the Nottingham Rare Plants Register.
This site would be vulnerable to pollution from the proposed barge wharf.

6.7 Rivers and streams are local and UK key habitats suffering from fragmentation and modification. This habitat once supported water voles at Shelford, a scarce and protected species, but now reappearing in several areas and also potentially at Shelford.
The barge wharf on the Trent would jeopardise the ecological opportunities of this riparian habitat.

6.8 The Royal Society for the Protection of Birds (RSPB) reported its concern in October 2014 at the rapid decline in farmland birds. Pastureland, hedgerows and copses in the proposed site harbour Yellowhammers, Skylarks, and Grey Partridge, identified as 'Red Status' species, and therefore in serious decline, by the RSPB and are also the hunting ground for two pairs of Barn Owl identified as 'Amber Status' species.
The proposed quarry site would remove the habitat of these declining species.

6.9 The Trent Valley is a recognised two-way migration route for birds flying between their northern breeding grounds and their wintering quarters further south. Such birds regularly stop to rest and feed on meadowland adjacent to the Trent at Shelford. Typically these birds include Wheatear, Whinchat ('Amber Status') and Yellow Wagtail ('Red Status') whilst Passerines (perching birds) recorded on migration here include Whitethroat, Chiffchaff and Willow Warbler.
The proposed quarry site and barge wharf would impact upon such migratory birds.

6.10 During winter the meadowland fields around Shelford provide habitat for birds from their northern breeding grounds. These typically include amongst the thrushes both Fieldfare and Redwing, and in hard weather large flocks of Skylark. In winter flocks of Yellowhammer move from higher ground to feed on stubble fields around Shelford. Observations on fields adjacent to Stoke Ferry Lane recorded 22 Yellowhammers on 22nd September 2009 and more recently a flock of 11 on 1st November 2014.

6.11 Natural England's National Character Area Profile: 48 Trent & Belvoir Vales (2013) also recognises under its Biodiversity opportunities that overwintering stubble on farmland can provide an important winter food source particularly for seed eating birds.
Quarrying would remove this valuable winter habitat.

6.12 Wild geese and swan recorded on the pastureland regularly include Pink-footed Geese, resting here as they move between wintering grounds in Lancashire and Norfolk, together with the occasional White-fronted Goose. The most common wild swan to regularly winter and feed on the fields around Shelford is the Whooper Swan joining the very large numbers of Mute Swan already found here.
Quarrying would remove these wintering grounds and the line of the conveyor belt through Hams Bridge would cause significant disturbance.

6.13 The river Trent is a valuable habitat for wintering wildfowl. The relatively warm water regularly attracts duck such as Goldeneye, Wigeon, and Tufted Duck; Great Crested and Little Grebes, and sawbills such as Goosander. An outflow from Stoke Bardolph sewage works brings both warm water and nutrients into the Trent and is therefore particularly attractive to wildfowl where they are joined by many Black-headed Gulls. In severe weather both the rarer Black-throated and Great Northern Diver have been recorded here near the outflow.
The location of the barge wharf almost opposite the sewage outfall would drive away wintering birds.

6.14 The South Nottinghamshire Bat Group report that along the Shelford stretch of the Trent there would be as many as 8 species of bat : Daubenton's Bat, Noctule Bat, Brown Long-eared Bat, Whiskered Bat, Brandt's Bat and 3 species of Pipistrelle (Common, Soprano and Nathusius Pipistrelle).

6.15 There are long established nesting colonies of Common and Soprano Pipistrelle and Daubenton's Bat under Gunthorpe Bridge. **These nesting colonies are very close to the proposed processing plant so could be subject to disturbance.**
The Brown Long-eared Bat was recorded March 2010 at wintering quarters in Barns at Shelford Manor. **These barns are close to the line of the conveyor belt.**
The Noctule Bat, which feeds out in the open over meadowland has been recorded both at Gunthorpe Bridge and also over Burton Meadows – **the latter location is opposite the proposed barge wharf.**

6.16 The main foraging areas for the bats are along the woodlands, such as Swallow Plantation, and hedgerows in the area of proposed gravel extraction.
The proposed quarrying site would destroy feeding opportunities for the bats.

6.17 As bats are a protected species and there are regulations against their disturbance then legal advice would need to be sought from Natural England.

6.18 A wide range of typical farmland animal species are recorded breeding in the area including Brown Hare whilst sightings of Roe Deer are increasingly reported from woodland copses including Swallow Plantation. There is an active Badger sett off Stoke Ferry Lane and as Badgers are a protected species then Natural England would have to be informed of any potential disturbance.
The Badger sett would be destroyed as it is located within the middle of the proposed quarry site.

6.19 Recently, national and local publications have emphasised the conservation and enhancement of the ecological value of the Trent Valley. Nottinghamshire County Council's

Sustainable Community Strategy 2010 –2020 emphasises "safeguarding countryside green space and animals and plants including nature conservation sites and the enhancement of wildlife corridors." Natural England's National Character Profile (2013) for the Trent Valley Washlands calls for management that "strengthens wildlife habitats, woodland and the hedgerow network." They refer in SEO 3 to enhancing the rivers and flood plains for their ecological, historical and recreational importance, their contribution to biodiversity and the important role they play in underpinning the character of the area. Priority for protection and enhancement is drawn towards flood plain grazing marsh and other grassland habitats, with on Page 19 a photographic example of "Grazing land beside the River Trent near Shelford"

Quarrying activity at Shelford West would run contrary to such guidelines and objectives.

6.20 The developer's proposals for after-use at Shelford West are to return the site to open water and wetland. Whilst wetland is one of the habitats identified in national and local Biodiversity Action Plans (eg. Nottingham Local Biodiversity Action Plan) as contributing to wildlife-rich green spaces so too are species-rich grassland, woodland and hedgerows as found at Shelford. We contend that the Trent Valley is now over-supplied with wetland habitat and that it is the traditional wildlife profile associated with a mixed farming environment which now needs protection and enhancement. Recent statements by the Environment Secretary, the RSPB and HRH The Prince of Wales (October and November 2014) support the conservation and enhancement of the farmland ecology. The developer has not produced any information on the ownership and management regime for the after-use phase of the site and there is the prospect that all that will be left would be deep, cold, lakes and unmanaged wetland of little ecological value.

The after-use proposals should be rejected on grounds of insufficient detail and over-supply of wetland in the Trent Valley.

We contend that taking into account the impact of new proposals by the developer (now including conveyor belt, processing plant and barge wharf as well as a quarry), and following a new ecological evaluation, **the Sustainability Score for Biodiversity : Objective 2 should read as follows:**

Period	Current NCC	Amended
Operational	-1	-2
Long term *(Shelford West only)*	2	0

Further detail on the ecological evaluation is provided in **APPENDIX D**, ecological impact.

7 Historic Environment

The cultural and heritage stock of Shelford and surrounding area makes a significant contribution to the richness of the County's history and heritage.
The proposals for the site at Shelford West should be rejected because the impact of sand and gravel extraction on this heritage has not been adequately considered. Not only are heritage sites themselves under threat but also the means of access to them.

Sites that would be lost or impacted upon include the following:

7.1 Stoke Ferry : the ferry at the end of Stoke Ferry Lane is of great antiquity and the name Shelford itself, recorded in the Domesday Book, derives its name from the old English for "shallow ford." A ferry is recorded here from at least the late thirteenth century. The historic stonework and landing stage still exist but **access from the village to these features and recent Local History Board would be lost.**

7.2 The Holmes House and its barns would be lost to the proposed quarry: The buildings are of some antiquity and possibly date back to the mid-eighteenth century. Certainly a building known as Lower Holm is shown on a map of 1776 (Plans and Surveys of the Earl of Chesterfield).

7.3 Mill Bridge : the area today known as the Dam was the original course of the Trent with a mill at Mill Bridge where there was a weir with an early example of a 'pound lock'. **Mineral extraction at Shelford West would impact on this medieval feature.**

7.4 Church of St. Peter and St. Paul: a church is mentioned at Shelford in the Domesday Book and this was a site of religious significance throughout the Middle Ages. Parts of today's church date from the thirteenth century. During church renovation work in the 1870s a fragment of Anglo-Saxon cross was uncovered, dated circa 900AD. This is considered by experts to be of great religious significance and would have stood at a crossing point over the river Trent just outside the village. Its presence in the church attracts visitors today.
The Church is listed by English Heritage as Grade II *. The historical and architectural significance of the church would be severely compromised by quarrying a mere field away.

7.5 Shelford Manor: **is also a Grade II* listed building.** Buildings here date back to the Iron Age. An Augustinian Priory was maintained on the site until the Dissolution of the Monasteries in 1536 with the floor of the Priory being uncovered in 2001.
Shelford Manor passed to the Stanhope family after Dissolution of the Monasteries and then the Manor, together with the Church, took on major historic significance during the English Civil War. Shelford was a Royalist stronghold and Shelford Manor a Royalist garrison

during the second stage of the Parliamentary campaign of 1645. A bloody battle took place here with other skirmishes centred around the Church. **The historic significance of the whole area around Shelford cannot be underestimated and its setting within the context of the English Civil War would be jeopardised by near-by quarrying activities. The Civil War Society, the Sealed Knot, regularly re-enacts the historic events between the Church and the Manor**. **This attracts many visitors but their pageant between Church and Manor would be inhibited by the construction of a conveyor belt and this educational and popular event lost.**

7.6 **A Civil War gun battery**, built by the Royalists as defensive work designed to protect western approaches to Shelford, is located 50 metres to the south west of the Church (SK 466132). It is scheduled as an **Ancient Monument** by English Heritage and would be **subject to disturbance from adjacent quarrying activities.**

7.7 A further **Ancient Monument** is found south west of Shelford Manor (SK 466875). These are cropmarks of Romano-British rectangular and sub-rectangular enclosures, ditch lines and pits.
Additionally it is thought cropmarks of a ring ditch with a central cross may indicate a site of a medieval post-mill. Late prehistoric lithic implements (man-made stone artefacts such as tools and other chipped stone) have also been found here indicating a significant prehistoric archaeological site.
The significance of this Ancient Monument would be jeopardised as it falls along the route of the proposed conveyor belt.

7.8 **Referring to gravel extraction and historic features in the Trent Valley, Natural England has expressed concern for both earthworks and archaeological sites visible from cropmarks (National Character Area Profile : 48: Trent and Belvoir Vales, 2013).**

7.9 **Pillow Mound**: a late medieval development of a low stone mound covered with earth and used as an artificial rabbit warren is situated close to Shelford Manor. **This is one of only a few left in Nottinghamshire and would be severely compromised by the route of the conveyor belt.**

7.10 **Saxon loom weights** have been found in Shelford on land adjacent to the proposed conveyor route. **These are now in Newark Museum and along with other artefacts, demonstrate significant Saxon settlement on the banks of the Trent.**

7.11 **In addition to the two Grade II* buildings already referred to above,** there are a further nine Grade II Listed Buildings in and around the village **comprising of farmhouses, barns, and a granary, gates and walls associated with Shelford Manor. When considering the impact of quarrying, conveyor belt and processing plant upon Shelford's heritage it is**

contended that the setting for listed buildings, ancient monuments and archaeological features is equally important for protection as their precise site location.

Whilst the minerals developer acknowledges the area has high archaeological potential there is no detail as to its form or to any protection measures other than to suggest the use of a metal detector on the conveyor belt**. The use of metal detectors on the conveyor belt would not be sufficient to protect the full range of non-metallic artefacts that are bound to be present in such an historic area. It is unacceptable that the minerals developer provides such scant information.**

There are risks from pollution, vibration and dewatering affecting ancient foundations, especially those of the church.

A detailed archaeological assessment would show that this proposal should be rejected because of the potential risk to historical sites and settings, and the damage that would be caused to potential new discoveries.

In view of this and the adverse impact acknowledged in the SA we would amend the scores as follows:

Period	Current NCC	Amended
Operational	-2	-3
Long term	-2	-3

8 Landscape

We object to the inclusion of Shelford West as a site for sand and gravel extraction as the landscape value of the area has not been adequately and appropriately assessed and if permitted would have a devastating effect on an iconic and well loved landscape.

8.1 The Greater Nottingham Landscape Character Assessment (GNLCA) report (July 2009) identifies three landscape types/zones pertinent to the proposed site for sand and gravel extraction at Shelford.

8.2 Zone TW PZ 51, Stoke Lock Meadowlands, and Zone TW PZ 7, Shelford Village Farmlands, are both assessed with a landscape as coherent, characteristic and historic and where the character should be conserved and reinforced.

8.3 Zone SN 05, East Bridgford Escarpment Farmlands overlooks the proposed quarry site at Shelford West. The view from the escarpment between Radcliffe-on–Trent and Newton is considered by many to be an iconic view over the Trent Valley and one of the best in the County. The GNLCA acknowledges this extensive and distinctive view and recommends action to conserve and enhance opportunities for its appreciation from adjacent roads (Shelford Road) through careful management of hedgerows and woodlands so as to retain the view.

8.4 Findings from a one-day workshop held at County Hall, Nottinghamshire, on 6th April 2009 and attended by "specialist" stakeholders identified ridges providing long views over low lying farmland landscape as most valued views. Particular reference was made to Rushcliffe where linear roads provided long views over the landscape (GNLCA Report 2009).

8.5 The view over the Trent Valley from Radcliffe-on-Trent to Newton has been recorded and championed for generations. The view has been painted by professional Victorian artists such as Edward Price (1801-1889) and given national recognition in a previous edition of Michelin's East Midlands Tourist Map, in Arthur Mee's 'The Kings England' series for Nottinghamshire (1938) and more recently in Rural Community Action Nottinghamshire's 'Nottinghamshire's Hidden Gems: East of the City'. **Details in Appendix E.**

8.6 The European Landscape Convention (ELC) which came into effect in the UK in March 2007 defined landscape as "landscape means an area as perceived by people". The Countryside Agency/Scottish Natural Heritage's Landscape Character Assessment guidance (2002) strongly promotes "community involvement" and recommends an approach which includes the relationship between people and place and the way people perceive their local environment.

8.7 Taking a lead from such guidance, and which was subsequently endorsed by Natural England's 'An Approach to Landscape Character Assessment' (2012), a group of enthusiastic villagers at Shelford organised its own community landscape assessment of the view over the valley from Shelford Hill in 2009.

8.8 People were surveyed at Radcliffe-on-Trent Carnival and East Bridgford Post Office in 2009 and again at Shelford Feast week-end in 2012. Visitors were shown a photograph of the view over the Trent Valley from Shelford Hill top and asked to rate it as 'excellent, good, fair, poor or indifferent'. A total of 416 people rated the view with most of them coming from surrounding villages. Only 84 responses came from people actually living in Shelford. 92% of respondents rated the view as "excellent" and 8% as "good". The affection and appreciation given to the view by the wider community is particularly noteworthy.
When asked for reasons for their response the majority fell into the categories of 'uplifting one's spirits', 'a sense of place and belonging', 'relationship to memories', or simply 'the enjoyment afforded by the view'. Several people mentioned that the view was very accessible with one respondent saying that it was "the only accessible view of an unspoilt panorama".
A selection of typical comments from respondents can be found in Appendix E.

As part of the survey visitors were asked how important it was to protect the view from development. Of the 416 respondents**, 96% deemed it 'very important'** and **4% as 'important',**
Not one person was indifferent or considered protection 'unimportant'.
Quarrying and its associated activities at Shelford West would destroy one of the finest and most iconic views in Nottinghamshire.

Evidence from the Community Landscape Survey is available on request.

8.9 The proposed after-use for the Shelford West site of lakes and wetland would result in yet more flooded pits along the Trent Valley at the expense of the traditional farmed landscape.
The cumulative effect of so many lakes, particularly in this part of the Trent Valley, would alter its whole landscape character.

8.10 The problem of the cumulative impact of sand and gravel extraction in the Trent Valley has not gone unchallenged by Nottinghamshire Minerals Planning Team. Paragraph 6.14 of the **Nottinghamshire Minerals Local Plan** (adopted December 2005) draws attention to "the major issue of **unacceptable** change to the landscape character of the Trent Valley."

Sand and gravel extraction at Shelford West would add to the unacceptable change to the traditional and cherished landscape character of the Trent Valley.

We contend that at Shelford West views over the Trent Valley from Shelford Hill have not been accorded sufficient value in the landscape assessment. We also contend that with the proposed after-use, the cumulative damaging impact of yet more lagoons on the Trent Valley landscape has not been given sufficient weight.

We would therefore revise the SA scores as follows:

Period	Current NCC	Amended
Operational	-2	-3
Long term	-1	-2

9 Air Quality

We object to the proposals because of the impact of reduced air quality in a valley environment.

9.1 Nottinghamshire County Council and Nottingham City Council have announced a joint initiative to reduce air pollution which in Nottingham is amongst the worst in the country (Nottingham Post 3rd November 2014).

9.2 Shelford Valley is a natural bowl which collects both organic and inorganic allergens. The prevailing winds are generally south westerly to westerly; both of these wind directions blow directly across the proposed site and into the village.

9.3 Air Quality UK reports "*Concentrations of pollutants can be greater in valleys than for areas of higher ground. This is because, under certain weather conditions, pollutants can become trapped in low lying areas such as valleys. This happens for example, on still sunny days when pollution levels can build up due to a lack of wind to disperse the pollution. This can also happen on cold calm and foggy days during winter. If towns and cities are surrounded by hills, wintertime smogs may also occur. Pollution from vehicles, homes and other sources may become trapped in the valley, often following a clear cloudless night. Cold air then becomes trapped by a layer of warmer air above the valley".*

9.4 Local doctors talk about the Shelford Valley syndrome which, because of the collection of particles in the bowl, can create respiratory problems and worsen asthma symptoms. In the Post article a Bulwell doctor states that air pollution was a concern from a GP's point of view:

"It can affect your cardiovascular system, which is your heart, cause problems with lungs, cause difficulties breathing and increase attacks of asthma," he said.

"People who are exposed to air pollution for a long time, the chances are they will get lung cancer and also bladder cancer".

9.5 Dr Chris Cope, an East Bridgford doctor makes a strong case for the negative effects on health of quarrying in the Shelford valley **(see Appendix F).**

9.6 There are several steps in the process of extraction that can lead to fugitive emissions – loading into the hopper, loading from the hopper to conveyors, loading into the processing plant and loading/unloading into/out of barges or lorries.

9.7 In addition there is the significant increase in air pollutants from diesel emissions from lorries ascending the gradient to the A6097 and the hill to the East Bridgford traffic lights.

9.8 The Traffic section of this report clearly states the stop/start nature of vehicle movements on the A6097 and this leads to both increased energy consumption and particulate emissions.

9.9 Particulates may be seen as the most critical of all pollutants, and some estimates have suggested that particulates are responsible for up to 10,000 premature deaths in the UK each year. The extent to which particulates are considered harmful depends largely on their composition.

9.10 The following extract is from Air Quality UK:

Particulate matter is a complex mixture of organic and inorganic substances, present in the atmosphere as both liquids and solids. Coarse particulates can be regarded as those with an aerodynamic diameter greater than 2.5 µm (micrometres), and fine particles less than 2.5 µm. Coarse particles usually contain earth crustal materials and ***fugitive dust from roads and industries***

Particulate matter is emitted from a wide range of sources, the most significant primary sources being road transport (20%), homes (20%), construction, mining and quarrying (13%), industrial combustion plants and processes (10%) and public power generation (10%).

UK National Air Quality Strategy (2004)

particles	50µg/m^3 not to be exceeded more than 35 times per year 40µg/m^3	24 hour mean annual mean	31.12.04 31.12.04

Percentage of Emissions from Industry and Transport in the UK

POLLUTANT	**% FROM INDUSTRY**	**% FROM TRANSPORT**
benzene	20%	67%
1,3 butadiene	13%	77%
carbon monoxide	12%	75%
lead	18%	78%
nitrogen oxides	37%*	46%
particles	59%	26% (PM_{10}) 50% (black smoke)
sulphur dioxide	89%	2%
NMVOCs	53%	29%

9.11 This information clearly shows the impact that the emissions of the construction, mining and quarrying industries and transport have on the environment.

Because of the nature of the valley as a natural bowl which collects emissions and then spills them into surrounding settlements, we believe that the additions to the particulates would be very detrimental to health of both human, plant and animal life. We would therefore revise the Sustainability Scores as follows:

Period	Current NCC	Amended
Operational	-1	-2
Long term	0	0

10 Employment

We object to the case put forward in the Sustainability Analysis since we believe that there is a duplication of the national/wider economic argument and insufficient weight attached to local economic impacts.

10.1 Under the heading "Support wider economic development", the Sustainability Analysis (S.A.) comments about supporting the demands of the construction industry because it "*has the potential to produce a very large quantity of aggregate which is important in supporting the wider economy….*"

10.2 This comment replicates the argument under Heading 1 of the S.A. which states *"the very large estimated reserve of this site would contribute very positively to national demand….."*

10.3 The above two points duplicate the same argument. In reality, quarrying at Shelford West would have no impact on the national economy or employment. Aggregates would continue to be used and jobs maintained in construction industries wherever the sand and gravel are sourced.

10.4 We believe the emphasis needs to be on local jobs and the local economy.

10.5 At best, around 12 operators would work on the site. It is extremely likely that some of these would be either existing Brett employees or transfers from other sites that have ceased working.

10.6 The potential job losses as a result of the Shelford West quarry could far exceed any positive employment effect. The table below shows some of the current employment and jobs at risk in the valley. Farming related jobs are based on land lost.

Business	Job type	Full time employees	Part time employees/ Contractors	Casual labour	Jobs at risk
Farm 1	Farming Harvesting Seasonal sales Maintenance Game keepers Beaters	4	8	6	8
Farm 2	Contractors		2		1
Farm 3	Farming Harvesting Equestrian	3	3		6
Farm 4	Farming Contracting	1	9		5
Farm 5	Contractors	1	4		1
Business 1	Events	4	4++	20	10
Pub1	Food/Drink	5	10		2
Pub 2	Food/Drink	5	10		2
Pub 3	Food/Drink	5	10		2

Restaurant 1	Food/Drink	6	12		
Leisure	Boats	2	2		1
Leisure	Campsite	2			2
Business 2	Caravans	2			2
Total		40	74	26	42

10.7 The numbers in the above table do not take account of suppliers or the economic impact of the loss of major equestrian events regularly held at Shelford Manor.

10.8 The pubs in particular rely on walkers along the Trent Valley Way (to be rerouted away from the river) or the path from Gunthorpe to Stoke Bardolph and beyond. Many pub customers enjoy a meal and then a walk on the History Trail or down to the river. One pub relies on outdoor drinking and dining by the river in the spring and summer.

10.9 Several of the farmers supply local farm shops with their produce and one is a major producer of quality lamb for these outlets.

10.10 The Countryside Agency (now no longer existing) produced a report on Rural Economies in 2003. Some of the statements from this report are shown below:

The (rural) economies are generally strong. Their attractive environment and other qualities of life draw in migrants from urban areas. These incomers are often an important source of new businesses and new jobs and increase connections to distant markets and networks.

There are many self employed people in the village operating small businesses. They choose to be here because of the environment. Several of these have stated that they will not remain if quarrying were to happen.

We have demonstrated the link between an attractive and diverse countryside and healthy rural economies and have noted that the fabric of the countryside, its villages and its market towns – our Countryside capital – is essentially the product of economic activity.

Because of this loss of our "Countryside Capital" and its potential impact on local businesses and employment we believe that the SA has understated the score.

Our revision would be:

Period	Current NCC	Amended
Operational	+3	-2
Long term	0	-1

In the long term, little would improve as farming and associated jobs would still have disappeared along with the land. There may be an increase in visitors but not to previous levels. There are too many cold lakes in the Trent Valley to attract any significant numbers to yet another one.

11 Human Health and Quality of Life

The proposals should be rejected because although it is recognised in the SA that the operational phase the development could have a ”very negative effect” on “a number of settlements”, the long term impact has not been assessed and will be equally as negative.

11.1 Quality of Life and Social capital

11.1.1 A ‘Quality of Life’ report by the Audit Commission (2002) argues that at the heart of sustainable development is “the idea of ensuring a better quality of life for everyone, now and for generations to come.” This should include a measurement of “what you value” as much as what is easily measurable. One of the quality of life indicators suggested is **strengthening community involvement**. The report encourages Local Authorities to produce their own Community Strategies and Nottinghamshire County Council subsequently produced their Sustainable Community Strategy 2010 – 2020 in which they declared the aspiration to see people satisfied with their communities. Included is a priority for Rushcliffe Borough Council to encourage people to “get involved in helping shape what their communities look like in the future”.

11.1.2 The concept of “social capital” arises when considering the depth of community involvement. This “describes the pattern and intensity of networks among people and the shared values which arise from those networks.” “Greater interaction between people generates a greater sense of community.” (Office for National Statistics, Guide to Social Capital).

11.1.3 The community of Shelford has built up its social capital over many years and has a very energetic approach to community involvement in line with the emphasis placed by the Nottinghamshire Sustainable Community Strategy. Community involvement in Shelford is quite remarkable.

11.1.4 The local pub has been purchased by the community to prevent its closure and to continue providing a focal meeting point in the village. This is the only community owned pub in the County. The Church has a dedicated congregation with a popular Flower Festival attracting visitors from a wide area and a well supported Harvest Supper. Various clubs and societies regularly use the village hall but perhaps the most noteworthy is the weekly community run and award winning (Rushcliffe Community Awards) ‘Coffee Pot’ which gives villagers a chance to meet and talk.

11.1.5 Recently a Local History Trail has been established to disseminate information on Shelford’s rich history. Initiated by the village Local History Group and supported by grant aid from Nottinghamshire County Council, the trail winds around both Shelford and the surrounding countryside. **The route and setting of this important educational resource would be lost by the proposed quarry and line of the conveyor belt.**

11.1.6 The community regularly hosts re-enactments of the Civil War by the Sealed Knot Society. The annual Shelford Feast day and bi-annual street market brings the community

together with many villagers involved. Children of the village are catered for with a grant aided playing field and well equipped play area.

The villagers of Shelford can therefore be seen as very active and strongly value their close knit community and quality of life. We strongly contend that in this day and age the social capital of a community, built up over the years, should be given equal consideration alongside environmental factors when development proposals are being assessed. So far this has not been the case.

11.2 Human Health

11.2.1 Physical health issues have been addressed under "Air Quality"; this section will deal with well being and mental health.

11.2.2 The 2000 Rural White Paper stated:
"The countryside is an enormous recreational asset, with its high quality landscapes, fresh air, open space and tranquillity. Recreation can improve the mental and physical health of participants and the revenue from millions of visitors to the countryside every year is an important component of the economy of rural England."

and

"Many people go to the countryside to admire the scenery, listen to the sounds of nature and generally feel that they are 'away from it all'."

The Government renewed its commitment to the measurement of tranquillity in 2004 with the publication of the Rural Strategy which stated: *"The countryside provides many benefits. It is valued for its wildlife, landscape and cultural heritage and also tranquillity*". The 2004 Mori Poll "*Landscapes in Britain*" revealed that 49% of those who visit the countryside do so in search of a tranquil environment.

National Planning Policy Framework is concerned with *"identifying and protecting areas which are relatively undisturbed by noise"*

11.2.3 On 18th December 2008, Brett produced its own Noise Monitoring report on Shelford. The monitoring sites nearest Shelford West were "The Willows" off Church Street and The Ferry Boat Inn at Stoke Bardolph.

	15 minute noise levels		**Background noise levels**	
Site	Range dB(A)	Average dB(A)	Range dB(A)	Average dB(A)
The Willows	44.0 – 47.2	45.8	40.4 – 41.7	40.9
Ferry Boat Inn	52.6 – 59.1	56.4	43.1 – 45.2	44.2

Comments for "the Willows" location were: ***"Noise sources at this location consisted of localised traffic movements in the village, birdsong and occasional aircraft activity".***

And at the Ferry Boat Inn: ***"passing road traffic on Stoke Lane, birdsong, distant industrial noise and rail movements".***

11.2.4 CPRE's Tranquillity map for Nottinghamshire identifies three areas of "most tranquillity" adjacent to the excavation site.

We contend that the tranquillity of this area will be lost with its consequent effects on human health and well being.

11.2.5 In the operational phase of quarrying the communities will face:

- The loss of a family home
- The loss of two working farms
- The loss of amenities including the local History Trail and their effect on the village owned pub
- The inability of people to sell their houses or loss of value
- Continuing anxiety over flood risk
- The fear of "planning blight" as Shelford West becomes an easy option to extend and Shelford East is allocated
- The loss of river access from Stoke Ferry Lane and the rerouting of the Trent Valley Way away from the river **(See Appendix G, 2)**

All of these will have a significant effect on people's mental state and well being.

11.2.6 In the long term the communities in the valley will face:

- A possible scenario of quarrying for over 20 years
- The age profile of the communities affected means that many people will not live to see the restoration of the quarries
- Continuing anxiety over flood risk
- The replacement of farmland and footpaths with deep, steep sided cold water pits which are unattractive both to people and wildlife and replicate the very many which exist along the Trent valley.
- Site After-use proposals for lagoons and wetlands are causing concern amongst villagers in Shelford because of the very real threat of mosquitoes breeding in this area. **(See Appendix G, 1)**
- The permanent loss of river access from Stoke Ferry Lane and the rerouting of the Trent Valley Way away from the river **(See Appendix G, 2)**

People moved into the valley communities to enjoy well being and tranquillity in a rural setting. They accepted the lack of facilities, slow broadband, few shops, infrequent buses and no mains gas as a trade off for a peaceful farming village life.
They have made closely knit societies, buying their own pub and setting up community enterprises and entertainments.
There is no choice about whether to buy a house next to gravel workings – we already live there.

The comments made under “long term” in the SA are that improvements to flood defences “***could have a beneficial effect***”.
We totally reject this statement as having no supporting evidence or basis in fact.

We consider the Long Term scoring in the current SA to be positively overstated.

Period	Current NCC	Amended
Operational	-3	-3
Long term	+3	-1

12 Other Observations

12.1 **Heading 8 of the Sustainability Analysis “Protection of high quality agricultural land and soil”** notes that Shelford West should be restored to “high quality agricultural land if that is possible”.

12.2 The restoration proposals do not allow for any agricultural land of any quality. The loss of 550 acres of food production, two farms and a family home are a very negative trade off for the excavation of gravel.

12.3 Because of the very large scale of this loss we believe the score for both the operational and long-term time frames should be amended to -3.

Appendix A Tonne/Mile Analysis

					Distance from					
	No. of houses	**Years**	**Ave p.a.**	**Tonnes Agg.**	**Shelford**	**tonne mls over build period**	**Barton**	**tonne mls over build period**	**East Leake**	**tonne mls over build period**
Capacity 000's tonnes pa					**500**		**200**		**180**	
Period					**2017-2030**		**2017-2030**		**2017-2020**	
Area										
Rushcliffe										
Clifton	3000	2015-2028	214	10714	15	1928571	3	450	7	900000
Edwalton	1500	2015-2028	107	5357	12	771429	8	514286	9	675000
Tollerton	2500	2016-2028	179	8929	9	964286	10	1071429	9	1044643
Newton	550	2015-2020	92	4583	2	36667	16	293333	19	348333
Cotgrave	470	2015-2021	67	3357	7	117500	11	184643	10	167857
North Bingham	1050	2015-2023	117	5833	5	204167	16	653333	18	735000
East Leake	400	2018-2023	67	3333	17	340000	6	120000	1	20000
Keyworth	450	2018-2023	75	3750	14	315000	9	202500	7	157500
Radcliffe on Trent	400	2018-2023	67	3333	3	60000	13	260000	13	260000
Ruddington	250	2018-2023	42	2083	11	137500	5	62500	7	87500
Total	**10570**		**1025**	**51274**		**4875119**		**3362474**		**4395833**
Broxtowe										
Boots Beeston	550	2018-2027	55	2750	14	385000	7	192500	12	330000
Field farm	300	2015-2017	100	5000	16	80000	9	45000	14	70000
Awsworth	312	2015-2025	28	1418	17	216982	10	127636	20	255273
Brinsley	163	2015-2027	13	627	22	151715	22	151715	23	158612
Eastwood	1018	2015-2027	78	3915	23	990592	21	904454	22	947523
Kimberley	538	2015-2026	45	2242	21	470750	19	425917	20	448333
Nottingham/Broxtowe urban	2146	2018-2027	215	10730	14	1502200	7	751100	12	1287600
Other	300	2023-2027	60	3000	14	210000	7	105000	12	180000
Total	**5327**		**594**	**29682**		**4007240**		**2703322**		**3677341**

Nottingham City										
Waterside Trent Basin	3000	2017 - 2028	250	12500	8	1200000	6	900000	11	1650000
Boots campus Thane Road	600	2017 - 2028	50	2500	12	360000	5	150000	10	300000
Stanton tip, Cinderhill Road	500	2017 - 2028	42	2083	16	400000	9	225000	18	450000
Siemens, Woodyard Lane	118	2017 - 2028	10	492	14	82600	7	41300	12	70800
City Link	1425	2017 - 2028	119	5938	8	570000	7	498750	11	783750
Padstow School, Gainsford Cres	171	2017 - 2028	14	713	14	119700	11	94050	15	128250
Bobbers Mill Road	120	2017 - 2028	10	500	15	90000	8	48000	13	78000
Lighthouse, Huntingdon St.	207	2017 - 2028	17	863	9	93150	7	72450	11	113850
Sandfield Centre, Lenton Bvd	203	2017 - 2028	17	846	13	131950	7	71050	11	111650
Land Registry, Chalfont Drive	475	2017 - 2028	40	1979	14	332500	7	166250	11	261250
Freeth Street	345	2017 - 2028	29	1438	8	138000	7	120750	11	189750
Meadows	150	2017 - 2028	13	625	8	60000	6	45000	11	82500
Nottingham Station	150	2017 - 2028	13	625	9	67500	7	52500	12	90000
Bus depots Southwell Rd	186	2017 - 2028	16	775	8	74400	7	65100	13	120900
Post Office, Huntingdon Street	120	2017 - 2028	10	500	9	54000	7	42000	11	66000
Clifton West, Hartness Rd	165	2017 - 2028	14	688	13	107250	2	16500	6	49500
Denewood Ctre, Denewood Cr	110	2017 - 2028	9	458	15	82500	9	49500	14	77000
Park Yacht Club, Trent Lane	337	2017 - 2028	28	1404	8	134800	7	117950	13	219050
1 Brook Street	244	2017 - 2028	20	1017	9	109800	7	85400	11	134200
Meadow Lane	830	2017 - 2028	69	3458	8	332000	6	249000	11	456500
Haywood School, Edwards Lane	110	2017 - 2028	9	458	11	60500	10	55000	15	82500
Speedo Ascot Road	41	2017 - 2028	3	171	15	30750	8	16400	13	26650
Severn Trent Hucknall Road	60	2017 - 2028	5	250	14	42000	10	30000	15	45000
Siegel Maiden Lane	41	2017 - 2028	3	171	9	18450	7	14350	11	22550
Huntingdon Street	86	2017 - 2028	7	358	9	38700	7	30100	11	47300
Southglade School, Ridgeway	58	2017 - 2028	5	242	14	40600	11	31900	17	49300
Playing Fields Beckhampton Rd	85	2017 - 2028	7	354	14	59500	11	46750	16	68000
Forest Mill Alfreton Road	43	2017 - 2028	4	179	10	21500	7	15050	12	25800
Radford Mill Garden Street	48	2017 - 2028	4	200	10	24000	7	16800	12	28800
Sketchley Vernon Road	87	2017 - 2028	7	363	15	65250	9	39150	14	60900
Bestwood Day Ctre Moorbridge	67	2017 - 2028	6	279	14	46900	11	36850	20	67000

Queen's House, Queen's Rd	92	2017 - 2028	8	383	8	36800	7	32200	11	50600
Bildun Site, Station St	50	2017 - 2028	4	208	8	20000	7	17500	12	30000
Cowan St/Beck St	55	2017 - 2028	5	229	9	24750	7	19250	11	30250
Eastcroft Depot	82	2017 - 2028	7	342	8	32800	7	28700	11	45100
Iremonger Rd	67	2017 - 2028	6	279	8	26800	7	23450	11	36850
Western Boulevard	55	2017 - 2028	5	229	15	41250	8	22000	13	35750
Spinney, Sturgeon Avenue	77	2017 - 2028	6	321	11	42350	3	11550	7	26950
Fairham School, Clifton	94	2017 - 2028	8	392	11	51700	4	18800	8	37600
Total	**10754**		**896**	**44808**		**5264750**		**3616350**		**6249850**

Capacity 000's tonnes pa									**Coddington**	**tonne mls over build period**	**Averham**	**tonne mls over build period**
Period									**500**		**250**	
									2023-2043		**2017-2130**	
Gedling												
Top Wighay Farm		1000	2017 - 2028	83	4167	16	800000	25	1250000	27	1350000	22	1100000
North of Papplewick Lane		600	2015 - 2022	75	3750	15	450000	22	660000	25	1125000	21	945000
Bestwood Village		1010	2012 - 2028	59	2971	16	808000	20	1010000	27	962471	22	784235
Calverton		1962	2015 - 2028	140	7007	8	784800	16	1569600	22	1849886	14	1177200
Ravenshead		562	2015 - 2023	62	3122	14	393400	28	786800	24	899200	19	711867
Arnold	116	292	2014 - 2028	19	973	10	146000	11	160600	26	303680	21	244975
Carlton	86	216	2014 - 2028	14	720	8	86400	10	108000	22	190080	20	172971
Bestwood village	31	78	2014 - 2028	5	260	16	62400	20	78000	27	84240	22	68585
Burton Joyce	12	30	2014 - 2028	2	100	5	7500	12	18000	20	24000	18	21722
Calverton	26	65	2014 - 2028	4	217	8	26000	16	52000	22	57200	14	36605
Lambley	10	25	2014 - 2028	2	83	7	8750	13	16250	21	21000	19	19107
Linby/Papplewick	4	10	2014 - 2028	1	33	14	7000	27	13500	25	10000	20	8045
Ravenshead	34	85	2014 - 2028	6	283	14	59500	28	119000	24	81600	19	64965
Total		**5935**		**474**	**23687**		**3639750**		**5841750**		**6958356**		**5355277**

Appendix B Access and Transport

Picture 1: Gunthorpe Bridge facing down Manor Lane

Picture 2: Congestion on the A6097. 3pm weekday

Appendix B

Picture 3: Embankment approaching Gunthorpe from the south.
(Proposed site of processing plant)

Picture 4: Proposed site of processing plant access road from Shelford side
(11:00 am Tuesday 18th November)

Appendix B

Picture 5: Proposed site of processing plant access road from Shelford side.
(11:00am Tuesday 18th November)

Picture 6: Vulnerable embankment on A6097 from Shelford side.
(11:00am Tuesday 18th November)

Appendix C Flood risk

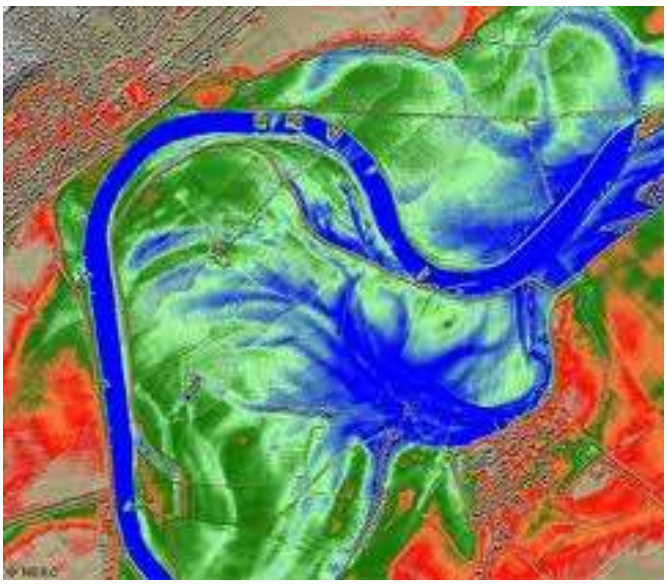
1. Flooding on Manor Lane

Flooding along Manor Lane, Shelford occurs most years.

2. Flooding east of Shelford village

Flooding at the Hams, east of Shelford, another regular occurrence. This would be the route of the conveyor

British Geological Survey Lidar Map showing flood potential



Appendix C

3. Flooding on West Street, Shelford

4. The old course of the River Trent

The probable migration of the Trent after pit capture

Appendix C

5. **Ground Water** (information from British geological Survey 2009 Study)

Flooding adversely affects the Trent Valley. The groundwater flooding hazard in Shelford was calculated based on the simulated hydraulic heads and the elevation of the ground surface. The assumption in this process is that there are no low permeability soil layers above the superficial deposit aquifer.
The groundwater level in the study area was highest on 31/12/2000 and 31/07/2007. In 2000 the areas around Shelford were flooded, especially where subsidence occurs due to coal mining, such as in the northwest of Shelford. The village itself however was not affected by flooding.
The groundwater flood hazard in Shelford itself is low (about 0.5 above the ground surface), **while in the area around the stream to the northwest of Shelford it is high (about 3.8 m above the ground surface)**. It is important to clarify that a positive value of flooding depth does not necessary correspond to an occurrence of groundwater flooding. For example, in Shelford, the superficial deposits are covered by 0.5 m clay layer, which could stop the water reaching to the ground surface to some extent. On 31/07/2007 Shelford village and the surrounding areas had a low groundwater flooding hazard (about 0.5m above the ground surface) except for rivers, streams, and ditches around Shelford with 2.5 m above the bed of river / stream / ditch. The model predicts that groundwater entered the surface water cycle in the form of baseflow on 31/07/2007, and that the rise in river levels at this stage could subsequently have resulted in fluvial flooding in some areas.

6. Pit Capture

Appendix C

The aerial photograph above, from an American study, shows the effects of quarrying for sand and gravel in an oxbow bend in a river. The river has breached the quarry walls and "captured" it. The sediment effects noted below are causing new channels to be cut and the pit has become the new river course. The appearance is very similar to the bend in the Trent in the proposed Shelford West excavation site.

US Best Management Practices from the Department of Wildlife and Fisheries states *"A sand and gravel pit shall be located in an area* ***that precludes pit capture****. Pit capture occurs when a natural buffer separating a pit from a river is breached by stream bank erosion, channel migration or overflowing floodwaters."*

A Texas State University study states *"Many breaches into floodplain gravel mines are observed along the Colorado River. Stream bed incision, widening and channel straightening (through meander cut-offs) are documented results of gravel mining in fluvial environments."*

The phenomenon occurs when a gravel extraction site is close to an active channel. The river captures the excavation and the headcut migrates upstream as the local slope increases. The pit then refills with sediment, a lot of which is entering the pit but not much is exiting. This causes a "hungry water" effect downstream which causes the downstream channel to incise. An unstable habitat is created throughout the region until slowly, sediment transport continuity is regained and the rate becomes the same. This constant transport rate is in effect, a definition of stability in the system.

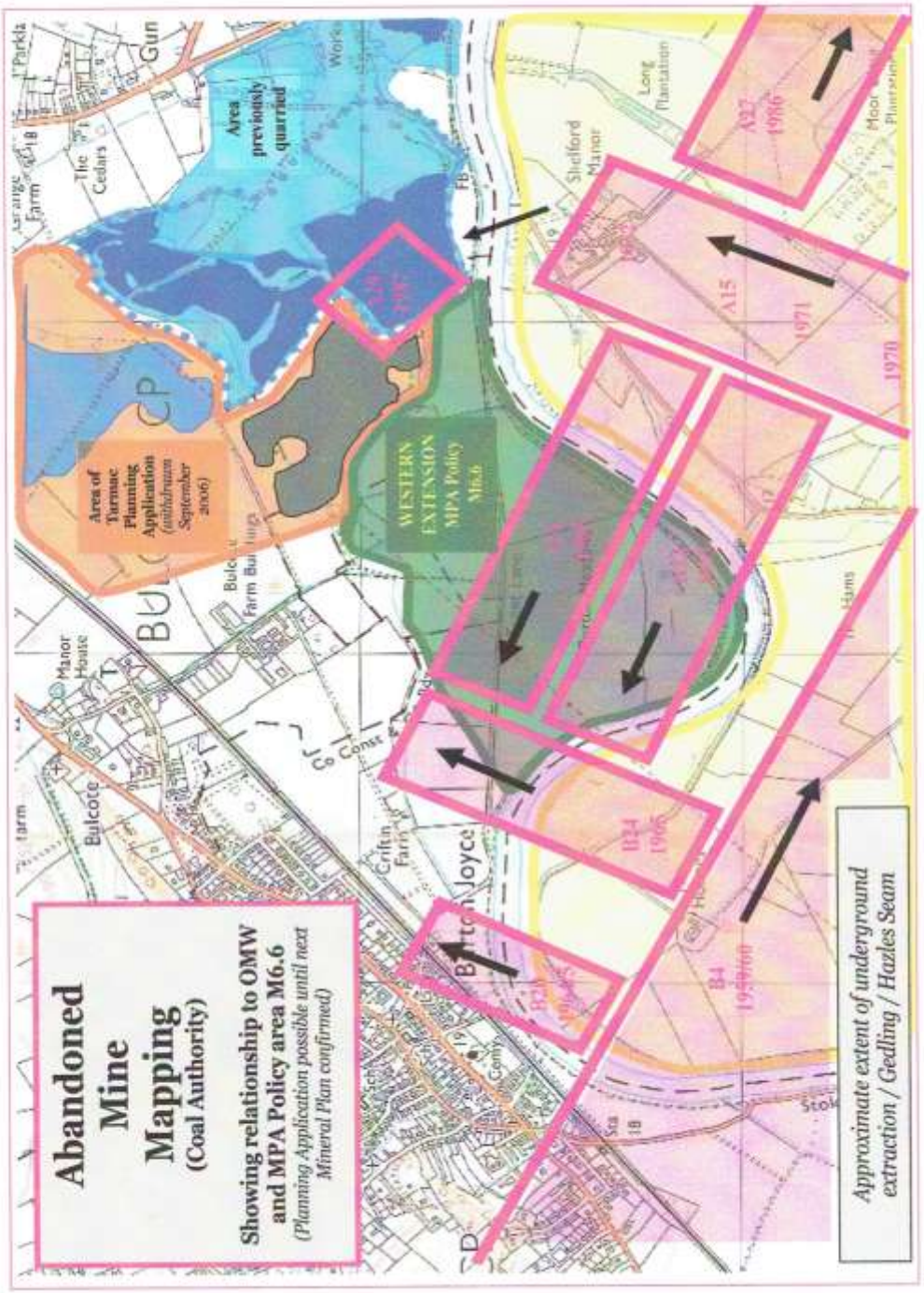
There is a very real probability of this occurrence in Shelford West as the conditions observed mirror those on this site which in itself goes against best global practise.

7. Abandoned Mining Map

This shows the extent to which Gedling Colliery seams reached into Shelford. In particular they cover much of the area where the conveyor is to be sited and which is regularly flooded.

As a further note – there is a 9 inch water main under Manor Lane and this crosses the route that will be followed by the conveyor.

Appendix C


Abandoned Mine Mapping
(Coal Authority)
Showing relationship to OMW and MPA Policy area M6.6
(Planning Application possible until next Mineral Plan confirmed)
Area of Tarmac Planning Application (withdrawn September 2006)
Area previously quarried
WESTERN EXTENSION MPA Policy M6.6
Approximate extent of underground extraction / Gedling / Hazles Seam
Manor House
Bulcote
Farm
The Cedars
Arrage Farm
Shelford Manor
Long Plantation
Hams
Crifin Farm
Bilborough
Joyce
A15
1971
1970
A27
1986
B4
1959/60
B24
1966

Appendix D

ECOLOGICAL IMPACT

1 Methodology

1.1 A Desk-top Study has been carried out around the proposed sand and gravel site at Shelford West including the area covered by conveyor belt and processing plant. This covers the 1Km grid squares SK6442, SK6443, SK6541, SK6542 (quarry site and barging wharf on the Trent); SK6642 (quarry site and conveyor); SK6743 (conveyor); SK6843 (processing plant).

1.1.1 Information and survey data from:

1.1.2 the South Nottinghamshire Bat Group; Nottinghamshire Birdwatchers (and Trent Valley Birdwatchers) Annual Reports and "The Status of Birds in Nottinghamshire"(2009).

1.1.3 The Greater Nottingham Landscape Character Assessment report (July 2009).

1.1.4 Information on SINCs as recorded by Nottinghamshire Biological and Geological Records Centre.

1.1.5 Field data from the records of an experienced local birdwatcher.

2. Habitat Description

Habitats affected include floodplain meadowland, arable fields, copses, hedgerows, riparian areas and the river Trent. The meadowlands include riparian tree cover of Willow and Ash such as at Swallow Plantation and hedgerows predominantly of Hawthorn with Ash hedgerow trees. This gives an important network/corridor for wildlife and breeding habitat for numerous bird species. Copses in the area on farmed land are of mixed tree species with Beech, Oak, Ash and Hazel and Hawthorn shrubs on the periphery. There are also linear blocks of deciduous woodland such as Water Furrows Plantation and Moor Close Plantation providing habitat for wildlife. Arable field size vary from medium to large and during Autumn/Winter stubble remaining in these fields provide valuable feeding areas for flocks of birds particularly Yellowhammers.

There are four Local Wildlife Sites (formerly SINCs) covered by the Grid Squares. These are Swallow Plantation, Shelford Carr, Field Lane Dyke, and the Trent from Burton Joyce to Lowdham. These sites are predominantly of botanical interest with Shelford Carr and Field Lane Dyke both containing a County rare aquatic plant. Shelford Carr, a Willow Carr

woodland hosting Mudwort (Limosella) recorded on the Nottinghamshire Rare Plants Register is vulnerable to pollution from the proposed conveyor belt and vehicle access route. Similarly Field Lane Dyke, containing Whorl-grass (Catabrosa) a plant also recorded on the Nottinghamshire Rare Plants Register, is vulnerable for the same reason.

Swallow Plantation is directly affected being on the southern boundary of the proposed quarry site. This site contains 43 recorded species of aquatic and woodland plants but as the last survey was carried out early in the year (April 2010) a full survey later in the year will be needed to give the complete picture of the importance of this site. The banks of the river Trent from Burton Joyce to Lowdham are recorded as a local Wildlife Site due to their importance for the variety of aquatic plants including Tutsan (Hypericum androsaemum) which is recorded on the Nottinghamshire Rare Plants Register. This wildlife site would be vulnerable to pollution from the proposed barging wharf.

3 Ornithological Interest

3.1 The Trent Valley has been a long established two-way migration route for many bird species passing between their breeding grounds in the north and warmer wintering grounds further south. Birds such as Yellow Wagtail, Wheatear and Whinchat are regularly seen feeding and resting on pastureland on the banks of the Trent during both Spring and Autumn migration.

Passerines (perching birds) recorded on migration in the meadowland hedgerows include Whitethroat, Chiffchaff, and Willow Warbler amongst the warbler species. Both pasture and hedgerows in the proposed quarrying area would therefore provide valuable habitat.

3.2 Resident birds on this pasture and meadowland with its hedgerows include Yellowhammer, Goldfinch, Dunnock, Great and Blue Tit, Pied Wagtail and Grey Heron on field margins with most of these found breeding in the area. There are at least two pairs of Barn Owl in the area and which use the proposed quarry site as their hunting territory. The Royal Society for the Protection of Birds reported in October 2014 that it was farmland birds that were continuing to decline nationwide. Mute Swan and Moorhen regularly breed in the streams crossing the proposed quarry site and the elusive Kingfisher has been seen from the bridge on Stoke Ferry Lane flying down the stream.

3.3 Winter brings birds from their northern breeding grounds to the fields and river Trent covered by the 1Km grid squares. Passerines including northern thrushes such as Redwing and Fieldfare, and frequently Skylarks (in large flocks during hard winters), pass the winter feeding in the area. Wild geese from the north are attracted both on Autumn migration and especially in winter to the Hams Bridge meadowland often attracted

down by the calls of the resident flocks of Greylag and Canada Geese found here. Pink-footed Goose is the most common as they move between wintering grounds in Lancashire and Norfolk. Other geese species observed at Hams Bridge have included the scarce White-fronted Goose and Brent Goose.
Pastureland around Shelford provides winter resting and feeding grounds for Whooper Swan another breeding bird from the arctic.

3.4 The river Trent is also a valuable habitat for wintering wildfowl. Duck species spending the winter on the Trent at Shelford regularly include Goldeneye, Tufted Duck, and Wigeon; Grebe including Great Crested and Little Grebe, and Sawbills such as Goosander.
An outflow from the Stoke Bardolph sewage works opposite the proposed barging wharf spills warm water into the Trent at this point. The warm water is particularly attractive in winter to the above wildfowl and where they are joined to feed by many Black-headed Gulls.
Disturbance from the barging wharf would drive these birds away.

3.5 Stubble on arable fields also provide important winter feeding for Yellowhammer. Its conservation status is defined as a "red" species (rapidly declining) by The Royal Society for the Protection of Birds. This species is largely sedentary (breeding on farmland margins at Shelford) but in the winter large flocks move down from higher ground to feed on the stubble.
Flocks of Yellowhammer feeding on stubble fields along Stoke Ferry Lane in September 2009 rose to 22 on 23rd with the same number being present one week later. A flock of 11 was present on 1st November 2014.

A full list of the status of birds observed at Shelford can be found in **Appendix D1.** Individual species observed on two one hour walks in proposed quarry area in **Appendix D2.**

4 Mammal Interest

4.1 Bats

The South Nottinghamshire Bat Group report that along the Shelford stretch of the River Trent there would be 8 species of bat : Daubenton's Bat, Noctule Bat, Brown Long-eared Bat, Whiskered Bat, Brandt's Bat, and 3 species of Pipistrelle , Common Pipistrelle, Soprano Pipistrelle,and Nathusius Pipistrelle. Their main feeding areas are woodland such as Swallow Plantation and hedgerows all of which are within the area covered by the proposed quarry.

There are long established nesting colonies of Pipistrelle (Common and Soprano) and Daubenton's Bats under Gunthorpe Bridge which would be in close proximity to the proposed site for the sand and gravel processing plant. The Noctule Bat which feeds out in the open over meadowland has also been recorded at Gunthorpe Bridge, and in 2009 over Burton Meadows, a site opposite the proposed barging wharf. The Brown Long-eared Bat was recorded in March 2010 at their wintering quarters in barns at Shelford Manor close to the proposed conveyor route.

Bats are a protected species and there are regulations against "the deliberate capturing, killing or disturbance and against the damage or destruction of a breeding site or resting place of such an animal". If planning permission is sought for a processing plant adjacent to Gunthorpe Bridge then a licence may be necessary from Natural England. As most bat activity is in close proximity to habitats such as woodland and hedgerows, as found in the proposed quarry location, then their commuting and foraging areas would disappear and could lead to a decline in bat activity in the area. The legal advice of Natural England would need to be sought in these circumstances.

4.2 Mammals other than Bats

Several species of mammal have been observed or recorded over recent years. These include, Brown Hare, rabbit, fox, grey squirrel, weasel, stoat, hedgehog, mole and a variety of species of vole, shrew and mouse. Sightings of Roe Deer are increasingly being reported particularly from the woodland copses including Swallow Plantation.

There is an active badger sett off Stoke Ferry Lane which would be lost due to its location within the proposed quarry area. Natural England would have to be informed about any disturbance which would threaten this sett.

4.3 Amphibia and Reptalia

Amphibia of the order Anura including the Common Frog (Rana temporia), Common Toad (Bufo bufo) and Common Newt (Lissotriton vulgaris) are found widely in the ponds and ditches throughout the area covered by the proposed developments.

Reptalia of the order Squamata include breeding Grass Snake (Natrix natrix) with a juvenile found recently (22nd September 2014) dead on Stoke Ferry Lane, again within the development area.

5 Conclusion Nottinghamshire County Council's Sustainable Community Strategy 2010 – 2020 emphasises "safeguarding countryside green space and animals and plants including nature conservation sites and the enhancement of wildlife corridors".

The proposed developments i.e. quarry, conveyor, processing plant and barging wharf, will all have an impact on the wildlife significance of the area either through habitat loss, pollution or disturbance.

The proposed after-use of the site is open water and wetland. Whilst taken in isolation this type of habitat is highly regarded as significant to the ecological value of an area. However taking a strategic view of habitat creation elsewhere in the Trent Valley it appears that there is already over-supply of this type of habitat. A mix of habitat supporting floodplain meadowland, hedgerows and copses is the habitat which now needs protection in the Trent valley so that bio-diversity can be maintained and enhanced. It is on land such as this that the Royal Society of Birds reported in October 2014 a continuing decline in farmland birds. Natural England likewise identify priority for safeguarding and enhancing flood plain grazing marsh and other grassland habitats in their 'National Character Area Profile: 48 Trent and Belvoir Vales (2013).

If unmanaged the proposed after-use of the site at Shelford West could end up consisting of deep, cold pits and unmanaged wetland with little ecological value. The main organisations responsible for the management of wildlife sites in the Trent Valley ie Nottinghamshire Wildlife Trust and the RSPB are already heavily involved at Attenborough and Langford Lowfields respectively. Without more detail on the ownership and practical management of the after-use of the site there is the danger that any bio-diversity would be sacrificed for a more old fashioned approach of cosmetic treatment or simply abandonment.

It is interesting to note that the after-use of one of the more recent abandoned sand and gravel sites at Hoveringham falls into the category of cosmetic only treatment. This appears to have been simply grass cutting and limited tree planting. The area has become mainly an area very popular with dog walkers disturbing any wildlife that there is. The management issues and problems related to after-use can be deduced at Hoveringham where one of the lakes and surrounding land covering 18.098 hectares is currently up for sale (Autumn 2014).

Appendix D1
Checklist of Birds Observed on Fields and Riverside in and around Shelford (excluding River Trent)

Checklist conforms to the European check-lists of Prof. Voous and Editors of Birds of the Western Palearctic

Species	**Status**
Cormorant	Resident
Little Egret	Scarce visitor

Grey Heron	Resident breeder
Mute Swan	Resident breeder
Whooper Swan	Winter visitor
Pink Footed Goose	Scarce winter visitor
White-fronted Goose	Rare winter visitor
Greylag Goose	Resident
Canada Goose	Resident
Brent Goose	Rare winter visitor
Wigeon	Winter visitor
Shelduck	Scarce winter visitor
Mallard	Resident breeder
Sparrowhawk	Resident
Buzzard	Resident breeder
Kestrel	Resident breeder
Hobby	Summer visitor
Red-legged Partridge	Resident breeder
Grey Partridge	Resident
Pheasant	Resident breeder
Moorhen	Resident breeder
Coot	Resident breeder
Little Ringed Plover	Passage migrant
Ringed Plover	Scarce visitor
Golden Plover	Winter visitor
Lapwing	Resident
Dunlin	Scarce visitor
Curlew	Scarce visitor
Herring Gull	Scarce visitor
Black-headed Gull	Resident
Common Tern	Passage migrant
Arctic Tern	Passage migrant
Black Tern	Passage migrant
Woodpigeon	Resident breeder
Collared Dove	Resident breeder
Cuckoo	Summer visitor
Barn Owl	Resident breeder
Little Owl	Resident breeder
Tawny Owl	Resident breeder
Swift	Summer visitor & breeder
Kingfisher	Resident
Green Woodpecker	Resident
Great Spotted Woodpecker	Resident breeder
Skylark	Resident
House Martin	Summer visitor
Swallow	Summer visitor & breeder
Pied Wagtail	Resident breeder
Wren	Resident breeder
Dunnock	Resident breeder
Robin	Resident breeder
Whinchat	Passage migrant
Wheatear	Passage migrant
Blackbird	Resident breeder

Fieldfare	Winter visitor
Song Thrush	Resident breeder
Redwing	Winter visitor
Mistle Thrush	Resident
Whitethroat	Summer visitor
Blackcap	Summer visitor
Chiffchaff	Summer visitor
Willow Warbler	Summer visitor
Goldcrest	Resident
Long-tailed Tit	Resident breeder
Marsh Tit	Resident
Coal Tit	Resident
Blue Tit	Resident breeder
Great Tit	Resident breeder
Magpie	Resident breeder
Jackdaw	Resident breeder
Rook	Resident breeder
Carrion Crow	Resident breeder
Starling	Resident breeder
House Sparrow	Resident breeder
Tree Sparrow	Scarce resident
Chaffinch	Resident breeder
Greenfinch	Resident breeder
Goldfinch	Resident breeder
Linnet	Scarce resident
Bullfinch	Resident
Yellowhammer	Resident breeder
Reed Bunting	Scarce winter visitor

Birds Recorded on the River Trent at Shelford

Species	**Status**
Black-throated Diver	Rare winter visitor
Great Northern Diver	Rare winter visitor
Little Grebe	Scarce visitor
Great Crested Grebe	Common visitor
Shoveler	Scarce winter visitor
Pochard	Common winter visitor
Tufted Duck	Common winter visitor
Goldeneye	Common winter visitor
Smew	Scarce winter visitor
Goosander	Scarce winter visitor

Appendix D2
Bird Species Count around Shelford:

20th July 2012 (Stoke Ferry Lane)

Yellowhammer	2	(two singing males)
Whitethroat	1	
Tree Sparrow	2	
Linnet	several	
Goldfinch	"	
Greenfinch	"	
Chaffinch	1	
Great Tit	several	
Buzzard	1	
House Martin		
Swallow		
Grey Heron		
Woodpigeon		
Jackdaw		
Crow		
Rook		
Pied wagtail	several	
Black-headed Gull	"	
Mallard	1	

5th September 2014 (Western Part of Shelford West Gravel Extraction Site)

Moorhen	3
Goldfinch	2 large flocks
Robin	several
Crow	several
Great Tit	numerous
Woodpigeon	many
Dunnock	several
Pied Wagtail	numerous
Yellow wagtail	2 (passage migrant)
Whinchat	2 (passage migrant)
Wheatear	1 (passage migrant)
Yellowhammer	2 (pair)
Grey Heron	several
Jackdaw	numerous
Swallow	numerous
Green Woodpecker	1
Great Spotted Woodpecker	1
Blue Tit	numerous
Coal Tit	2
Blackbird	numerous
House Sparrow	numerous
Sparrowhawk	1
Magpie	several
Chaffinch	several

Appendix E

1 Landscape Assessment

1.1 The Greater Nottingham Landscape Character Assessment (GNLCA) Report (July 2009) identifies three landscape types/zones pertinent to Shelford and the proposed area for sand and gravel extraction.

1.2 Zone TW PZ 51, Stoke Lock Meadowlands, is described as an area relatively undeveloped and the pattern of landscape elements as coherent. The local distinctiveness is characteristic of the Trent Valley washlands and has continuity/time depth in history (post 1600). The flat landscape allows longer distance views up and down the Trent Valley.
Zone TW PZ 7, Shelford Village Farmlands, is reported as having historic field boundaries which are intact around the village. The area is described as visually unified with a coherent functional integrity/habitat for wildlife and gives a good landscape condition. The historic field pattern is largely intact and gives a good landscape condition.
The landscape assessment of both these zones is described as coherent, characteristic and historic, and where the character should be conserved and reinforced.

1.3 Zone SN 05, East Bridgford Escarpment Farmlands, is not directly in the proposed mineral extraction area. However this area has great significance for the impact the proposal would have on the landscape around Shelford. The escarpment from Shelford Road between Radcliffe–on-Trent and Newton has a steeply sloping northern edge down to the Trent washlands. The GNLCA emphasises the extensive and distinctive views across the low-lying farmland along the River Trent and to the village of Shelford. The report suggests landscape action to conserve and enhance opportunities for distinctive views across the Trent Washlands from adjacent roads (Shelford Road) on higher ground through careful management of hedgerows and woodlands to retain views.
This iconic view, one of the best and most loved views in Nottinghamshire, will be addressed later under "community involvement".

1.4 Whilst appreciative of the findings of the 2009 GNLCA where all three zones received a good commentary there is concern to the lack of stakeholder, as interpreted by **community,** involvement in the landscape assessment.

1.5 The GNLCA approach to landscape assessment included a technical and somewhat mechanistic Desk Study followed by a Field Study carried out by both “car and foot from publicly accessible locations”. There was an element of Public Consultation but this took the form of a one-day workshop of invited stakeholders on 6th April 2009. These stakeholders were “specialists” including landscape architects, planners, heritage specialists and nature

conservationists. These “specialists” saw the river valleys and in particular the Trent Valley as a key landscape asset. They identified ridges as valued for their long views they afforded over the landscape. Such a “long view” over the Trent Valley from a ridge brings us back to the view from Shelford Road over the Trent Washlands.

1.6 The difficulty in broadening stakeholder involvement to include the “general” public and local communities is widely recognised. If however one looks to national guidance from Europe and the UK it is evident that community involvement should be sought in local landscape assessment.

1.7 The European Landscape Convention (ELC) which came into effect in the UK in March 2007 defined landscape as “landscape means an area as perceived by people”. Locally, the Nottinghamshire Landscape and Reclamation Team declared they would review the 1997 Nottinghamshire Landscape Guidelines in line with Government advice. This advice was contained in the 2002 Countryside Agency/Scottish Natural Heritage’s Landscape Character Assessment guidance for England and Wales and with which Nottinghamshire commenced their landscape assessment in 2003. This guidance strongly promotes “community involvement” and recommends an approach which includes the relationship between people and place and the way people perceive their local environment.

1.8 Recently guidance contained in “An Approach to Landscape Character Assessment” by Natural England (2012) stresses the importance of involving people at all stages of landscape assessment, Desk Study, Field Study, and area definition. This report emphasises that people’s links with, and perception of, place are very important. The perceptual and aesthetic factors including “memories, associations and perceptions, should be obtained via stakeholder (community) engagement.” Nottinghamshire County Council would now no doubt support community involvement in landscape assessment as their Sustainable Community Strategy 2010 –2020 seeks to “enhance community engagement and fuller participation”.

2 Local Community Involvement

2.1 Taking a lead from UK government advice (2002) a survey of local community opinion and perception was undertaken of the iconic landscape view from Shelford Road overlooking the Trent Valley flood-plain.

2.2 This view has already been painted by professional Victorian artists such as Edward Price (1801-1889) and given national recognition in a previous edition of Michelin’s ‘East Midlands Tourist Map’ and Arthur Mee’s ‘The Kings England’ series for Nottinghamshire (1938). Mee describes the view from Malkin Hill (now known as Shelford Hill top) as “a luxuriant patchwork of pasture and ploughland and winding river, Nottinghamshire has few

prettier or more typical scenes to show us". Recently, Rural Community Action Nottinghamshire in 'Nottinghamshire's Hidden Gems : East of the City' describes for Shelford the "breathtaking view from the high road between East Bridgford and Radcliffe-on-Trent".

2.3 Consequently, in 2009 a Landscape Community Survey Questionnaire elicited the views of local people as to their perception of the view from Shelford Hill top over the Trent Valley including surveys at Radcliffe-on-Trent carnival, East Bridgford Post Office, and in 2012 at Shelford feast week-end.

2.4 Visitors were shown a photograph of the view over the Trent valley and asked for their evaluation of the view. A total of 416 people rated the view as "Excellent", "Good", "Fair", "Poor" or "Indifferent". 92% rated the view as "excellent" and 8% as "good". Only 84 responses came from people living in Shelford whilst the remainder, 332, came from people living in surrounding villages. The appreciation of the view by the wider public is particularly noteworthy.

2.5 Reasons for responses included 'a sense of place and belonging, relationship to memories, a feeling of uplifting of spirits and simple enjoyment of the view'. Examples included "it raises one's spirit", "soothes and calms", "the view gives a sense of place", "and the view is part of my heritage", "one of the best views in the County". Several people mentioned that this was a very accessible view such as "only accessible view of an unspoilt panorama" as reported by one respondent. **A selection of typical comments from respondents can be found at para. 2.8.**

2.6 When asked how important it was to protect the view from development 96% of the 416 respondents deemed it "very important" and 4% as "important.

Evidence from the Community Landscape Survey is available on request.

2.7 Results from the Community Landscape Survey endorse the views held by the "specialist" stakeholders at the one-day workshop (6th April 200 2009) and from Zone SN 05 that the long views over the Trent Valley landscape were an asset and should be conserved and enhanced.
There is little doubt that the view from Shelford Hill top overlooking the Trent Valley floodplain is one of the finest views in the County. **This iconic and historic view of mixed farmland with its mosaic of hedges and copses would be lost forever if mineral extraction were to be allowed at Shelford West.** Replacement of this landscape with yet more flooded pits would culminate in a vast series of lakes down the Trent Valley all at the expense of the traditional farmed landscape. This problem of the cumulative impact of sand and gravel extraction in the Trent Valley has not gone unnoticed by Nottinghamshire Minerals Planning

Team. Paragraph 6.14 of the Nottinghamshire Minerals Local Plan (adopted December 2005) draws attention to "the major issue of unacceptable change to the landscape character of the Trent Valley". **Sand and gravel extraction around Shelford would only add to this unacceptable cumulative change to the traditional cherished landscape of the Trent Valley.**

View to the West from Shelford Hill overlooking the Trent valley

View to the North from Gibbet Hill overlooking the Shelford West quarry site

Painting of the Shelford Valley by Edward Price (1801 – 1889)

Hoveringham; one of the multiple wet pits in the Trent valley

Gunthorpe with National Watersports Centre in the distance; further evidence of steep sided, cold water pits which are common in the Trent valley.

2.8 Selection of Comments from People Responding to Landscape Community Survey (View over Trent Valley from Shelford Hill Top)

" it lifts the spirit "

" gives pleasure to thousands of passers-by "

" soothes and calms "

" the view is part of my heritage – it represents what rural England means to me "

" my daughter calls Shelford 'Toy Town'. We look across the view from Shelford top and as we drive down our troubles disappear. It looks like a toy village from the top."

" the view provides a changing picture of the seasons "

" its like a Constable painting which changes throughout the year "

" only easily accessible view of an unspoilt panorama "

" breathtaking view "

“ one of the best views in our County ”

“ cars pull in to admire the view ”

“ many cyclists can be seen sitting on the bench admiring the view ”

“ ease of access for such a lovely view ”

“ views of this quality are few and far between ”

“ nearest view of its type close to the city ”

“ unique view, replacement by more water based environment of which Nottinghamshire already has too much, is a poor substitute ”

“ I like the view and don’t want to see diggers and holes ” (Grace aged 8 years)

Appendix F Air Quality

To whom it may concern,

I write this in my capacity as a local GP working at East Bridgford Medical Centre. Our practice boundary includes Shelford, Gunthorpe, Caythorpe, East Bridgford and up the A46 to Farndon.

There is a lot of talk in the Medical Centre amongst staff and patients about what a detriment the gravel extraction will be to the locality in terms of loss of scenery, possible flood risk and large concern about effects on the traffic flows of the already saturated A6097.

One of my concerns that has not been particularly focussed upon is the worsening air quality of the area. It is well known that the Trent Valley this side of Nottingham causes a worsening of respiratory conditions. It is very common for me to see patients who have recently moved into the area and worry about a worsening of their respiratory problem such as asthma or COPD (emphysema). This often requires extra treatment to control their symptoms. This is well known and reported in the area.

I cannot offer a proven scientific reason for this but I can offer hypotheses:

1. Patients often feel that the low sloped valley funnels allergens and particulate matter so that it does not diffuse and dilute itself with surround air flow streams. I am not a meteorologist but this funnel effect could reduce pollution rising up above ground floor level.
2. This funnelling effect would be worsened by the fact that the Prevailing West, South Westerly winds bring pollution directly from Ratcliffe-on-Soar power station and the city of Nottingham up the Trent Valley towards Shelford and other villages along the Trent Valley. It was reported very recently in the Nottingham Evening Post that Nottingham was one of the worst cities for air pollution using the attention grabbing headline 'Choking to death'. For the majority of the time, the prevailing wind blows this pollution directly up the Trent Valley exacerbating point 1.

I propose that this will be worsened by the planned gravel extraction at Shelford for three reasons:

1. Diesel and particulate matter from the considerable development of the site and continued extraction of the gravel and pumping of water throughout the lifetime of the proposal.
2. Dust generation from the site which will again be blown directly along the Trent Valley for the majority of the year with the Prevailing wind.
3. Diesel and particulate matter from the A6097. This road is almost at saturation and has standing queues of traffic on a daily basis stretching from Gunthorpe bridge to Lowdham roundabout. We know from the application by Brett Aggregates that they plan to put a large number of diesel heavy goods vehicles onto the A6097 throughout the day. These will be leaving and returning on a very regular basis. Since the road is already saturated (as Gunthorpe Parish Council have pointed out to Nottinghamshire County Council on many occasions) this will lead to very real worsening of the situation as lorries pull out onto the A6097 and immediately have to accelerate up a steep incline to the East Bridgford traffic lights (where they will have to stop again and once more accelerate up the hill). Their presence will also

cause braking and accelerating of other traffic and more standing traffic which will further increase pollution levels.

I am concerned that this will further worsen the health of the surrounding villages. I am aware of the policy document produced in partnership between the Nottinghamshire Local Authorities, the Environment Agency, The Health Protection Agency and the Highways Agency. The work was
led by the Nottinghamshire Environmental Protection Working Group and was entitled 'A breath of fresh air for Nottinghamshire – An Air Quality Improvement Strategy for the Next Decade'. This was produced in 2008 so is presumably still current but if it has been superseded please accept my apologies but I could not find a newer version.

I note that the policy advises that air quality is a material consideration when assessing planning applications and, where a significant deterioration in air quality is predicted, put in place conditions to mitigate the effects. I feel that this is just such an application.

The policy also states that wherever possible all new developments are accessible by alternative means of transport, minimising the need to travel by supporting mixed development schemes. I could not agree more with this and it would reduce the pollution in point 3 above. I understand that Brett Aggregates have suggested they could use a barge on the River Trent for some of the gravel to be transported to Colwick. We know from previous applications around the UK for gravel extraction that these are put into applications and then never completed as 'problems' arise further down the line so I am sceptical that this would ever happen.

According to the policy document, the Highways Agency is meant to look for solutions to:
• Avoid impact on pollution and traffic through Sustainable Location
• Minimise impact through realistic Travel Plans
• Manage access appropriately
• Capacity enhancements (e.g. building new roads) as a last resort and only where compatible with suitable principles.

If this goes ahead then I can see that the dust and pollution in the area will worsen and have a further effect on people's health. I can also see the A6097 grinding to a halt for even longer periods through the day. There is not the money to improve the road infrastructure of the A6097 in the next 5-10 years so the four points above for the Highways Agency do not see achievable.

I hope that you will see that there are better places with better road infrastructure and much lower levels of surrounding population further up and down the Trent. I am genuinely concerned about increasing air pollution down the Trent Valley; I already see the effect that it has on respiratory problems on a daily basis.

Yours Faithfully

Dr Chris Cope BMedSci (Hons), BM BS, MRCGP

Appendix G Quality of Life and Human Health

1. The incidence of mosquitoes has been increasingly rapidly in recent years, mainly due to climate change leading to wetter winter and springs and warmer summers. A study by the Department of Biological Sciences at Reading University reports the incidence of the mosquito species An. plumbeus in the late season of 2012 had seen a devastating increase from the previous year. Although there are 34 different species of mosquito in the UK this species is the dominant species in rural areas.

   The main habitat for mosquito larvae to breed is standing fresh water ranging from lagoons, wetlands, and marshes to ponds. "Adult mosquitoes tend to travel limited distances, thus are found nearby their breeding sites" (www.stratford.gov.uk). The Government's Public Health Agency is concerned about the continued spread of invasive mosquito species in Continental Europe and believe that the UK could be the next target (July 2014).

   The proximity of new lagoons and wetland habitat so close to Shelford village brings the real prospect of mosquito problems and future health risks.

2. The Trent Valley Way (TVW) is a popular walking route for both serious ramblers and the casual walker. It is of significance both on a local and national scale. Several local ramblers groups regularly use the footpath along the stretch at Shelford and its popularity could well increase with the intention of extending and completing the 170mile route from its source on Biddulph Moor to Alkborough on the Humber Estuary.

   The stretch of the TVW at Shelford provides a very popular circular route from Radcliffe-on-Trent and back. The site of the proposed quarry severs this route, a local route which provides opportunity for the enhancement of health and well-being. The significance of this circular route should not be underestimated as it was selected for national prominence when the journalist Mark Rowe wrote about it in 'the Independent' on 2nd December 2007 for his "Walk of the Month." He described his walk which began and ended at Shelford Church as "the setting is intensely rural", the view from Gibbet Hill "with impressive views of the River Trent" and whence he returned to the Church via Stoke Ferry Lane.

   The proposed re-routing of the TVW around the proposed quarry site is a poor substitute for the views and ambience afforded by the current walk along the Trent flood bank and which would be lost with its severance on Stoke Ferry Lane. **We contend that the Minerals Planning Team's commentary that "significant improvements to the Trent Valley long-distance footpath are proposed from the beginning of the development" has little credibility in practice.**