

GREAT ADDINGTON PARISH COUNCIL Street Lighting Refurbishment 2015 - 2017

Introduction.

The Parish Council has agreed to place a contract with Balfour Beatty to upgrade / replace the street lighting in Great Addington. Whilst this may appear at first sight to be an expensive undertaking it is believed that the cost will be balanced by lower energy bills and maintenance charges. Additional benefits include lowering our carbon footprint, removing our dependence on hazardous mercury discharge lamps and replacement of the five existing concrete columns that are considered to be a safety hazard. By acting at this time we are able to benefit from competitive prices due to Balfour Beatty's contract with Northants County Council. The Council has decided to fund the contract by borrowing from The Public Works Loan Board whose current interest rates are relatively low.

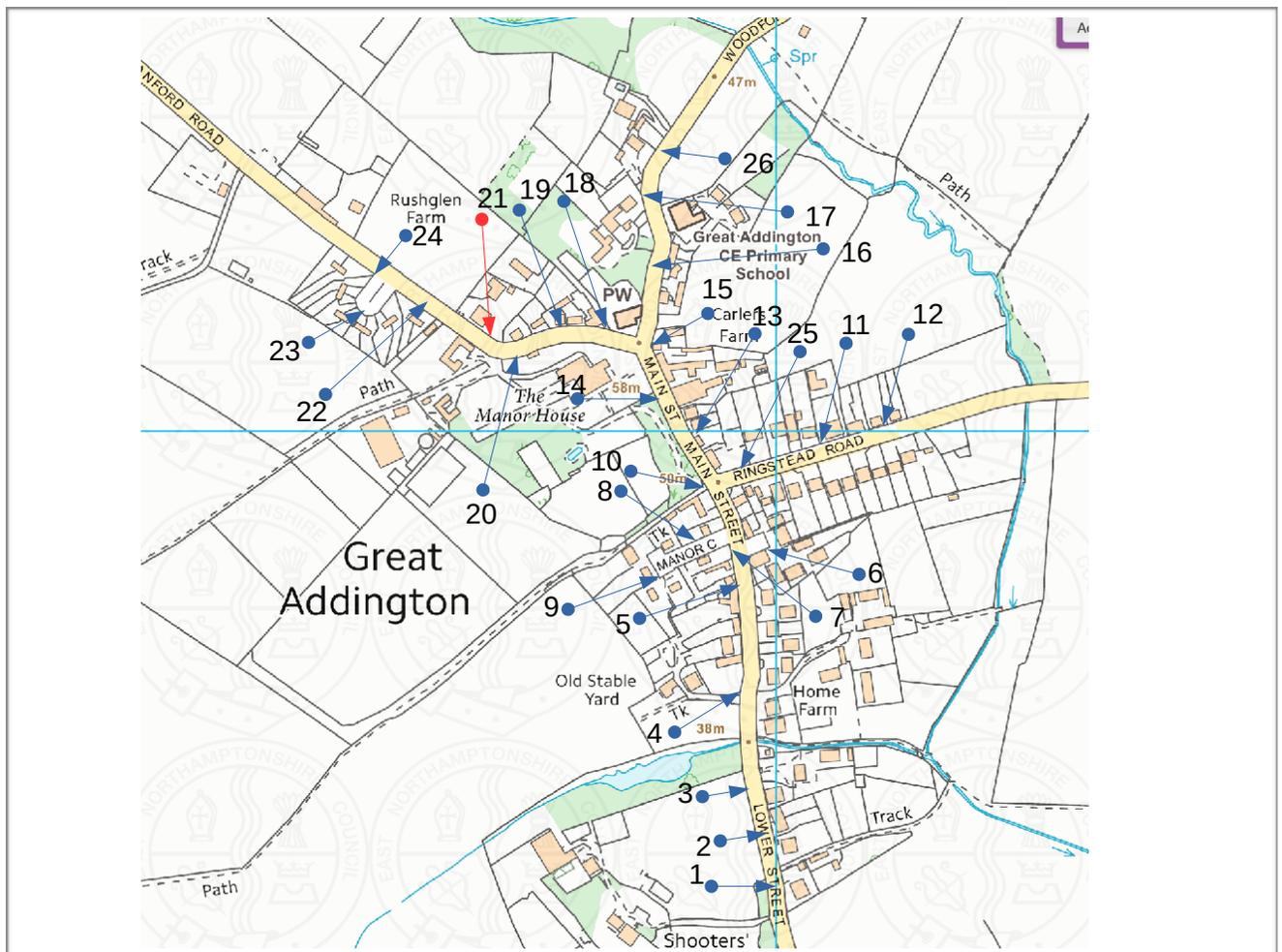


Figure 1. Approximate Locations of 26 Street Lighting Units.

Background.

Great Addington Parish Council (GAPC) have a contract with E-ON for the supply of unmetered electricity to the 26 street lamps within the parish. There is an additional contract, also with E-ON, for the maintenance of the same lamps. In March 2015 GAPC was informed of a significant price increase (circa 50%) for unmetered electricity supply. E-ON claimed there this was the first increase

for nine years and that their new rates were in line with those currently charged by their competitors. As an illustration, the Council was invoiced for

January – March 2015 £221.18 ex VAT

January – March 2016 £320.51 ex VAT

Northants County Association of Local Councils (NCALC) undertook a review of the unmetered supply situation - Electricity Procurement Report V2_2415. Their report confirms E-ON's view that the new rates were still competitive and that changing supplier is unlikely to result in significant cost savings. However NCALC suggest that upgrading lamps to more energy efficient units could produce significant savings.

Five lighting columns in Great Addington are reinforced concrete. Corrosion of the reinforcing steel has caused the concrete to crack at the top of the column close to the lantern attachment point. At some time in the past a metal sleeve has been fitted over the concrete to provide a more secure attachment point. It has to be assumed that corrosion has continued underneath the metal sleeve. In that case these columns are considered to be an unquantifiable health and safety risk.

Existing lamps in Great Addington all contain small amounts of sodium and / or mercury. Both substances present hazards that require special handling processes for disposal. Replacement Mercury lamps are no longer available within Europe and so complete new luminair heads would be needed when an existing Mercury lamp (Blueish white) next failed.

Bidding Process.

Five potential suppliers were contacted during the latter part of 2015 and asked for their recommendations. By March 2016 only three had responded. One of these quotes was difficult to interpret and appeared to bear no resemblance to GAPC needs. The two remaining quotes, both from large, established contractors were for £16325.00 and £11646.00, both ex VAT. The lower quotation recommended that six of current lamps were “non-productive” and should be removed and not replaced.

GAPC advertised the potential redundancy of the six units on the GAPC website, in Saints Alive! and by attaching notices to the six columns. As a result of feedback received the lower bidder was asked to re-quote for the replacement of five of the six units. The revised cost submitted is £13972.51 ex VAT.

In our analysis GAPC considered that the two quotes were for similar products and services and that both would match our requirements. It was therefore agreed to award the contract to the low bidder - Balfour Beatty.

Workscope.

Current lighting columns are a mixture of free standing steel, aluminium and concrete columns and metal brackets mounted on wooden transmission poles. Current lanterns are a mixture of Mercury and Sodium discharge lamps.

Balfour Beatty will install new galvanised steel columns in place of all the concrete columns which are regarded as safety concerns (see above) and two aluminium columns in Manor Close that are not compatible with the new lanterns. Due to the age of the eight metal bracket arms on the wooden poles six will be replaced with new arms. The arm on unit No. 17 was renewed when the pole was

recently replaced by Western Power and is fit for purpose. Unit No.1 will be replaced with a galvanised steel column as it is fed by underground supply rather than overhead as all other wooden pole units.

Lighting unit No. 21, on the inside of the bend in Cranford Road will be disconnected and removed. This lamp has not worked for several months, has never been reported and is overgrown with vegetation. There was no support for its retention in the survey conducted by GAPC. It is considered that the two new units No. 20 and No.22 on the outside of the bend will provide sufficient illumination.

At the end of the installation GAPC will have an Electrical Test Certificate recording that the electrical system is fit for purpose for six years, after which time it will need re-inspection.

All street lights will be fitted with the same design of lantern - see above. The LED units will be rated at 15 watts, compared with current values ranging from 60 to 80 watts depending on the existing lantern type. This reduced energy consumption will be reflected in GAPC's energy bills. LED technology results in a brighter light, all of which is directed towards the street, where it is needed, rather than escaping upwards where it contributes to light pollution. LED's have a longer life span than traditional lamps and do not deteriorate so quickly, so they need replacing less frequently. They are free of harmful substances such as mercury and need no special processes to be applied when they do eventually fail. The light coming from LED's is more natural than the current mercury (bluish) and sodium (brownish) lamps, so illuminated objects appear in their natural colours. The carbon footprint of LED street lights is smaller than other lights due to lower energy



Figure 2. Indo Air 1 LED Lantern

usage. Moreover LEDs last 4 to 10 times longer than any other bulbs, further reducing the carbon footprint of manufacture over the life time.

Indo Air lamp units are backed with a manufacturer's 10 year warranty.

Financing.

The Public Works Loans Board (PWLB) is a statutory body appointed by the Crown to regulate Central Government lending to Local Government bodies. Loans may be made to finance capital payments for which a (parish) council has a formal borrowing approval. Approval is obtained through the County Association of Local Councils. Under the provisions of the Public Works Loan Acts of 1965 and 1967, loans from PWLB are secured by an automatic charge on the revenues of the council and not on any council assets. PWLB interest rates vary from day to day, but are fixed at that day's rate once a loan is agreed. They are traditionally set low compared to commercial loan rates, which themselves are currently at a very low level. GAPC expect an interest rate between 2% and 2.5% for a loan of the size and duration required.

GAPC calculate that the savings in energy costs, plus the reduced maintenance of LED lamps will balance the interest and capital repayments of a 20 year loan from PWLB.

Energy saving (15 watts from 60 watts per unit) estimated to be 75% reduction in current bills of £320 per quarter equates to £960 per year. Maintenance savings £360 per year. Total savings £1200 - £1300 per year. Cost of PWLB borrowing £14000 over 20 years estimated at £1100 per year in year one. Reducing each year as outstanding capital diminishes.

In the event that these savings were not realised GAPC would need to increase its Parish Precept with consequent impact on Council Tax for all residents.

Summary Scope of Work

Scope of Work	Locations
Replace existing column or wooden pole with 5 metre galvanised steel column and Indo Air 1 LED lantern. Sited in grass verge.	1,3,14,20 and 22
Replace existing column with 5 metre galvanised steel column and Indo Air 1 LED lantern. Sited in tarmac footpath.	8,9 and 24
Replace existing bracket, control box and lantern with new bracket, box and Indo Air 1 LED lantern	2, 10, 13, 16, 18, and 19
Replace existing lantern with Indo Air 1 LED lantern.	4, 5, 6, 7, 11, 12, 15, 17, 23, 25 and 26
Disconnect and remove existing bracket and lantern.	21
Transfer existing traffic signs to new column.	14