



CARLTON IN COVERDALE

WATER SUPPLY, TREATMENT & DISTRIBUTION
UPDATED REVIEW 20th Dec 23

Introduction

- ▶ Following being approached by the Parish Council to review the existing Private Village water supply, the following report details my findings.
- ▶ I'd like to thank Jenny Walker in initially providing useful previous correspondence together with offering her knowledge of the current installations and operations.
- ▶ Raymond Brown for his understanding of the operation and alternative proposals / solutions
- ▶ Peter Dinsdale for his assistance in offering personnel to advise / assist in resolutions with regards the alternative sources
- ▶ It has been very frustrating in contacting and engaging suitable contractors to show any interest, they have either been too busy elsewhere or nervous in taking on such a large scheme and subsequently declined any interest.
- ▶ Unfortunately only one contractor has been prepared to provide a proposal and quotation despite approaches to numerous providers.
- ▶ It has therefore not been possible to obtain alternative solutions or 'like for like' quotes as each provider approached were to investigate the best solution in their opinion however they subsequently failed to submit any proposals quoting reasons as stated above.

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SOURCE - Melbeck Quarry (Option 1)

- ▶ The treatment plant is currently supplied by 2 Nr 50mm blue MDPE pipes laid above ground and fed into a pool within the quarry face to collect water. Previously the plant was supplied by an earthenware pipe which collapsed and failed due to a rock fall.
- ▶ The supply is neither ideal or sufficient in its current form with relatively frequent blockages affecting the volume and pressure of water available, as such a suitable solution needs to be found.
- ▶ It has been advised that this requires to be of suitable diameter to reduce the risk of blockages and maintain sufficient pressure. The recommendation is a MDPE pipe of a minimum of 100 mm diameter be installed within a trench to replace the existing MDPE pipes, this is to be fed into the existing chamber where any silt / gravel etc can be collected which must be periodically removed and cleaned.
- ▶ A pot holer has been contacted who is prepared to enter the quarry to install the pipework into the existing supply pool
- ▶ It is estimated the cost of installing this supply is **circa £5,000**



SOURCE - Previous Spring (Option 2)



It has been found and established that a previous supply from an alternative spring on Parish Land is still running constantly but discharges directly into Melbeck and not currently utilised.



Tests have been carried out on this supply which indicate this to be of a slightly better quality with less contaminants and discoloration.



It has been recommended that a 1000 / 2000 litre storage tank is installed behind the existing building to collect and utilise this water prior to it entering the treatment plant. This will also assist in settlement of matter and aid filtration.



The storage tank would be fitted with controls to maintain levels, should the level fall and the supply be insufficient, then it is recommended that the existing Melbeck quarry supply is also fed into the tank and operate only as a back up to ensure supply is maintained.



The cost of installing the storage tank and adapting the pipework is circa **£2,000 - £3,000**

SOURCE- New Spring (Option 3)



- ▶ The adjacent field owned by Mr Suttill has an existing spring which again constantly runs even through times of drought. This spring also supplies land owned and used by Michael Horner.
- ▶ It is proposed a trial pit is formed to establish the flow rate of this supply to establish if it meets requirements. Preliminary tests carried out during a dry spell by Raymond Brown indicate a supply rate of 20 litres per hour
- ▶ This spring supplies land owned and used by both Mr Suttill and Mr Horner which must be maintained for use by the respective owners. To ensure this, it is proposed that the existing supply from Melbeck quarry is diverted into the new spring.
- ▶ Tests again have been carried out on this source which have indicated it to be again of a slightly better quality and colour than both the Melbeck or previous spring supplies referenced in Options 1 & 2.
- ▶ This option would be to divert this new supply to the treatment plant by installing a 100mm dia MDPE pipe below ground through Mr Suttills field and collect it in a 1,000 / 2,000 litre storage tank prior to it entering the treatment plant.
- ▶ This supply and levels will be maintained within the tank via controls , should the levels drop then it is recommended that the previous supply spring and / or the existing Melbeck supply are also connected to the tank as back up supplies.
- ▶ The costs for this option would be circa
 - ▶ Trial pit to establish flow rate £500
 - ▶ Storage tank and pipework connection adaptations £2,000 - £3,000
 - ▶ Pipework from new spring supply to storage tank, approx. 100m £3,000
 - ▶ Divert pipework from Melbeck to new spring £1,000
 - ▶ Compensation to field owner for access to spring tba
 - ▶ **TOTAL £7,500**

Supply Source Costing Review

Option 1

Replace existing supply pipework to Melbeck Quarry

- **Total £5,000**

Option 2

Install storage tank, connect previous supply £2,000 - £3,000

- Plus replacing supply to Melbeck Quarry £5,000
- **Total £7,000 - 8,000**

Option 3

Lay pipework to new spring supply in adjacent field, connect Melbeck & previous supply to storage tank £7,500

- Plus replacing supply to Melbeck Quarry £5,000
- **Total £12,500**

TREATMENT PLANT

Overview

The existing plant has been installed for circa 30 years with additions being added as and when required

The plant is supplied both from Melbeck Quarry and the Borehole through periods of heavy rainfall to reduce the extent of discoloration

The plant has been maintained and inspected by Culligans for a number of years, their latest annual inspection in April 23 however identified a number of components that are now obsolete and in consequence a full service can no longer be provided. The necessary compliance certificate required by insurers for the Parish Council will however be issued following the upcoming service for insurance renewal.

It is dangerous to speculate a period of time the plant will continue to provide a suitable supply to meet statutory standards however time is of the essence and plans must be investigated and solutions sought to ensure the village supply is maintained and insurance remains in place.

The 2 options are

1. Overall and / or replace the existing Private Water Treatment Plant
2. Install a Public Supply to the village, ie Yorkshire Water

Private Water Treatment Plant

OVERHAUL AND / OR REPLACEMENT OF EXISTING PLANT

CONTRACTORS

Designers & Installers

The following contractors have been approached to determine whether they are interested and prepared to provide a scheme / solution and costings for overall and / or replacement of the existing plant.

1. Trevor Bowen
2. Cleanstream Oldham (owned by Marshalls Pumps)
3. Springhill
4. Hydroserve
5. JN Environmental
6. Dales Water
7. Culligans
8. Private Water Co. Ltd

Contractors

1. Trevor Bowen

trevor@bowenwater.co.uk

01765 658293

A meeting was held at the plant 5th June. Initially he felt the scheme was too large, the largest installation he had previously carried out was for Bolton Estate.

Despite this he became less concerned and requested he returned the following week with another of his engineers to review the installation and offer a proposal. He did however state under no circumstances would he entertain taking over and maintaining the existing installation, a complete new system would be required.

After making numerous attempts to arrange the follow up meeting he responded by email on the 27th June advising he would unfortunately decline to provide a solution or quote as the scheme is 'quite a big undertaking and he is over run with work'.

2. Cleanstream Oldham

The company is owned by Marshalls Pumps and no longer service domestic clients

3. Springhill

info@springhillwater.co.uk - Jack

01423 833121

They have taken over a number of previous Cleanstream clients and have stated they would be interested in providing a proposal. They offered to arrange a visit however despite numerous attempts to arrange attendance they failed to respond. It can be reasonably assumed they are therefore not interested in offering a solution or quotation.

Contractors

4. Hydroserve (Halifax)

richard@hydroserve.uk

01422 580240

07967 391010 - Richard Harrison

This contractor currently has equipment installed within the Melmerby Water Treatment Plant and carries out their annual servicing.

A meeting was held on the 2nd August 23 at which time they stated a proposal and quotation would be provided by the end of August.

Frequent contact has been made to obtain their proposal and quotation.

A voicemail response was received 5th October stating they have been unable to source suppliers who are prepared to offer a chemical solution. A UV system has however been proposed albeit without any costings, furthermore they have stated further treatment would be required as bacteria and contamination could enter the aged distribution pipe following treatment, a UV system would also not resolve any discolouration.

As such, it is recommended their proposal is not to be considered as a solution.

5. JN Environmental

0161 523 6357

Again despite numerous calls and messages, they have failed to respond and return calls.

As such I do not intend to make any further contact.

Contractors

6.Dales Water

Their initial quotation dated 10th July 20 is summarised as follows

Use existing borehole and Melbeck supply, replace treatment plant **£99,714 + Vat**

Annual Servicing costs between **£7,000 - £10,000 + Vat**

Install UV filters **£26,500 + Vat**

Annual Servicing costs between **£3,500 - £5,000 + Vat**

Provide new 100m deep borehole, pump and chamber **£47,500 + Vat**

Cost to carry out water testing is **£2,800 + Vat**

Points of Note

- a) Dales Water have stated an abstraction licence is required if more than 20m³ of water is drawn on any day, this is not an average but a maximum daily draw off.
- b) Proposal is to install a 3m x 5m x 2m high storage tank and connect both the bore hole and Melbeck supply into it.
- c) A further cost has been provided for the addition of UV filters, it has been stated by others that these filters should only be fitted at point of use (within the household) since contamination can re-occur within the distribution pipework, it is understood the existing distribution pipework is steel.
- d) The proposal only treats iron and not any discolouration
- e) A concrete pad 4m x 6m requires to be laid by others to withstand 40 tonnes
- f) A 5Kw supply is required. What supply is currently installed ?
- g) Charge out rates to attend meetings / submit proposals is between **£100 - £175 / hr**

I have refrained from making contact and obtaining an updated quotation due to :-

- The initial costings being so excessive
- The high annual servicing costs

Should the Parish Council however wish this to be obtained, then then I will pursue further.

Contractors

7. Culligans

markevans@culligan.co.uk

01494 430194

Culligans have provided 3 quotes for the project following a presentation to the Parish Council in 2020 as follows

Quote dated 28th Sept 20 £62,293 + Vat

Updated Quote dated 13th June 23 £89,657.77 + Vat

Revised Quote dated 27th June 23 following meeting on site 20th June 23 **£82,734.95 + Vat** (this is held for 3 months to 27th September 23, this has now elapsed, I have requested whether the quotation requires further updating)

Their quotation includes for

- Removal of existing equipment
- Installing temporary by-pass pipework
- Removal of debris and redundant pipework
- Installation of new plant

They have however stated a further enclosure requires to be built for housing a stand by generator, I would estimate this to cost around £2,000. Would planning permission be required ?

Savings could be obtained if we (villagers) carried out

1. Removal of existing equipment £7,000 + subsistence reduction £1,300
2. Collection of equipment from High Wycombe £2,250 although costs would be incurred for the hire of a 7.5 tonne flat bed van & fuel say £800

A further quotation has been provided to install UV at point of entry to each property at a cost of £383.48 + Vat per property based upon 100 properties

Contractors

An adjusted quotation would therefore be

Culligans quote 27th June 23 £82,734.95

Generator enclosure £2,000

Savings

Removal of plant -£8,300

Collection of equipment -£1,450

This would result in an actual cost of £74,984.95 + Vat

Annual Service £2,000 - £3,000 + Vat including consumables

Points of Note

- a) Culligans, in my opinion, so far have been the most helpful and professional company in their input and support in providing updated costings in a timely manner.
- b) The quote was scrutinised and queried at a meeting on the 20th June 23 with possible savings requested along with queries raised and comparisons made as to the level of increases incurred from their quotation dated 28th Sept 20.
- c) Following the meeting they again revised the quote for errors identified and reviewed their labour costs which resulted in a £7k reduction
- d) A further follow up discussion has taken place and they have confirmed the savings noted above are acceptable should we wish to proceed on that basis however careful planning would be needed to ensure equipment was removed and the new plant available for their engineers to prevent any abortive costs and / or lost time.
- e) The supply would be disrupted for a period of 3 weeks so water would have to be boiled during this time.

Contractors

8.Private Water Company Ltd

inbox@privatewater.co.uk - Oliver

01539 530756

Contact was been made 14th July 23 where they confirmed they would be interested in providing a proposal.

A meeting was finally attended on the 7th September, where they indicated interest in the project with a proposal and quotation to be submitted.

An email has been received 26th September stating they will NOT be providing a quotation.

Reasons for declining have been received stating ‘the proposed system may struggle to address the issues with discolouration, a more suitable system is not practical given the size of the treatment plant housing and ongoing costs of salt tablets’.

They have stated ‘the cost of addressing the water colour alone (without fittings and labour) would start at £100k + Vat’.

They are not confident in addressing all the issues and can envisage unhappy customers with subsequent negative reviews on their website and therefore have declined to submit a proposal and quotation for consideration.

Public Supply - based on 107 Nr Properties

Yorkshire Water

Phil.s.ward@yorkshirewater.co.uk

An estimate was received in 2021, updated 30th May 23, Option 2 revised 20th Dec 23 as follows

Option 1

Is to construct a new pump station with generator on Peter Dinsdale's land at the bottom of the village, lay a new pipe within the tarmac road and track up Melbeck to feed the existing storage tanks situated by the treatment plant.

The existing distribution pipe down Melbeck and to each property is to remain in use in their present condition and not replaced.

The current estimate for this option is **£693,977.92 + Vat** = £6,485.77 + Vat / household

It would be assumed the land would also have to be purchased from Peter Dinsdale, the land owner, in order to construct the pump station.

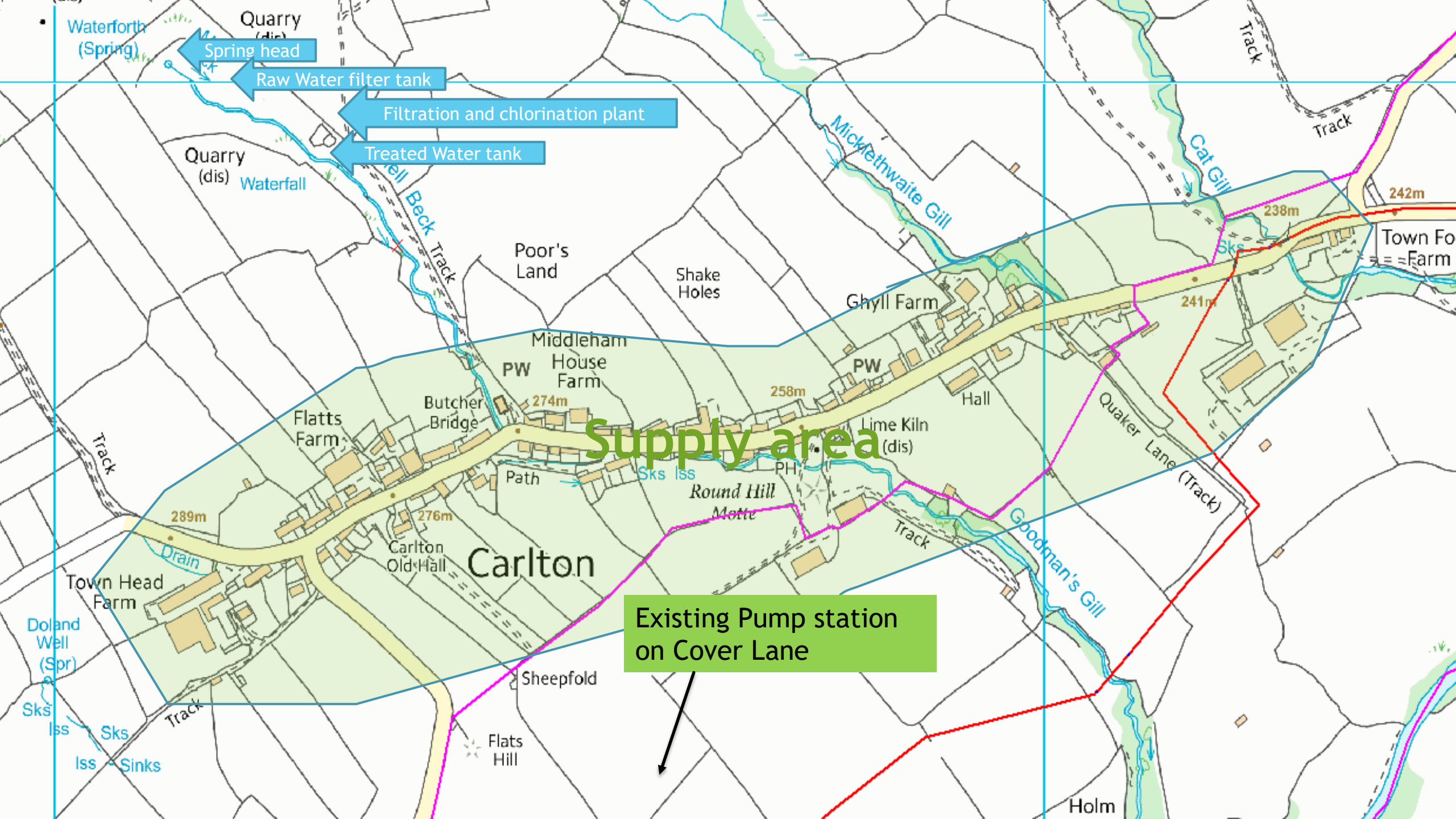
Option 2

Is to utilise the existing pump station on Cover Lane at the top of the village, lay a new distribution pipe within the tarmac road, provide a new connection at point of entry to each property (107 Nr)

The existing distribution pipework would therefore become obsolete.

The revised estimate for this option is **£887,163 + Vat** = £8,291.24 + Vat / household

Works would take approx 18 weeks and involve traffic management and/or diversions being in place



Spring head

Raw Water filter tank

Filtration and chlorination plant

Treated Water tank

Supply area

Existing Pump station on Cover Lane

Waterforth (Spring)

Quarry (dis)

Quarry (dis)

Waterfall

Poor's Land

Shake Holes

Ghyll Farm

Middleham House Farm

PW

PW

Flatts Farm

Butcher Bridge

274m

258m

Lime Kiln (dis)

Round Hill Motte

Carlton

276m

Carlton Old Hall

Town Head Farm

Doland Well (Spr)

Sks

Iss

Sks

Sinks

Sheepfold

Flats Hill

Holm

Town Farm

242m

238m

241m

289m

Track

Track

Track

Track

Track

Track

Track

Track

Micklethwaite Gill

Cat Gill

Goodman's Gill

Quaker Lane (Track)

Track

Highest Property Town Head Farm approx 285.7m a.o.d
 They can expect 13mh at peak times when the pumps are off (Same as existing pressures)
 This is a risk to poor pressure but is compliant to DG2 standards

Approx 650metres of 110mm HPPE (89.1mm ID) from the WPS to the village
 Approx. 1.1km through the village mains replacement
 1750metres in total

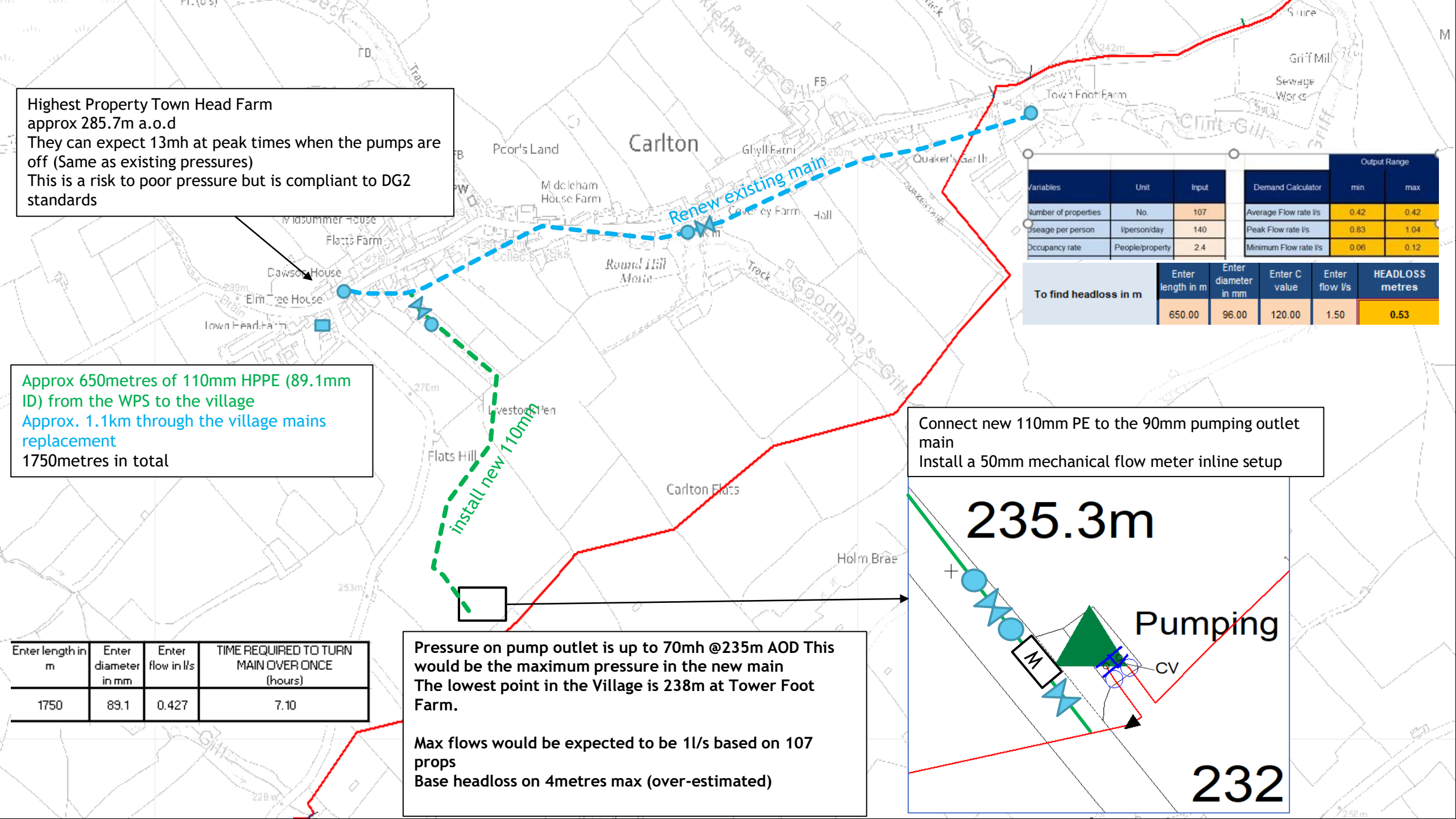
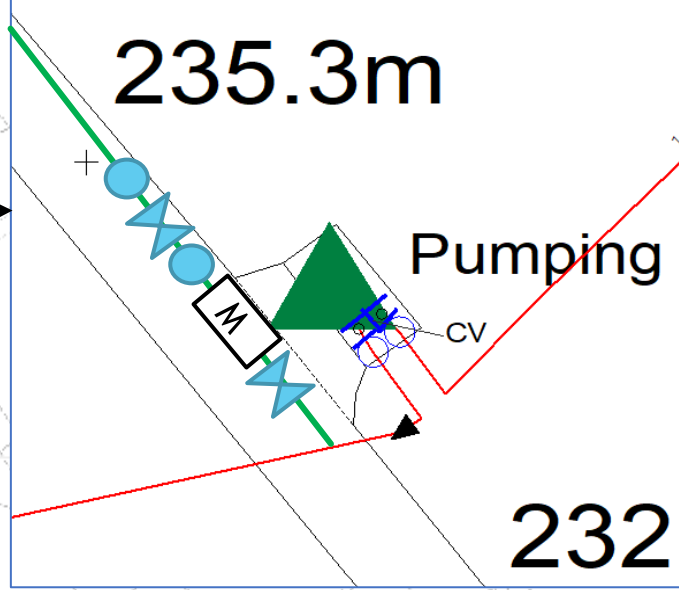
Connect new 110mm PE to the 90mm pumping outlet main
 Install a 50mm mechanical flow meter inline setup

Variables	Unit	Input	Demand Calculator	Output Range	
				min	max
Number of properties	No.	107	Average Flow rate l/s	0.42	0.42
Usage per person	l/person/day	140	Peak Flow rate l/s	0.83	1.04
Occupancy rate	People/property	2.4	Minimum Flow rate l/s	0.06	0.12

To find headloss in m	Enter length in m	Enter diameter in mm	Enter C value	Enter flow l/s	HEADLOSS metres
	650.00	96.00	120.00	1.50	0.53

Enter length in m	Enter diameter in mm	Enter flow in l/s	TIME REQUIRED TO TURN MAIN OVER ONCE (hours)
1750	89.1	0.427	7.10

Pressure on pump outlet is up to 70mh @235m AOD This would be the maximum pressure in the new main
 The lowest point in the Village is 238m at Tower Foot Farm.
 Max flows would be expected to be 1l/s based on 107 props
 Base headloss on 4metres max (over-estimated)



Option 1 - Pump Station to feed existing storage tanks at Melbeck - based on 107 Nr Properties

Estimate 2021

○ Pump Station	£48,299.92
○ 2 Pumps	£84,468.58
○ Generator	£43,439.56
○ Pipe in road	£176,187.08
○ Pipe up Melbeck	£91,044.65
▶ Total	£443,439.79 + Vat =£4,144.30 + Vat / household

Estimate 30th May 23

• Pump Station	}	£693,977.92
• 2 Pumps		
• Generator		
• Pipe in road		
• Pipe up Melbeck		
▶ Total		£693,977.92 + Vat =£6,485.77 + Vat / household

This indicates an increase of £250,000 from their previous quotation.

A more detailed breakdown has been requested but not provided to date

This option is not considered as the current distribution pipework will not be replaced

Option 2 - Utilise existing Pump Station, new distribution pipe through village, new supply to stop cock at each property boundary

Estimate 2021

○ Pump Station	£48,299.92
○ 2 Pumps	£84,468.58
○ Generator	43,439.56
○ Pipe in road	£236,239.79
○ Connections (92Nr)	£184,000.00
▶ Total	£596,447.85 + Vat =£5,574.28 + Vat / household

Estimate 20th Dec 23

• Upgrade existing Pump Station	}	£595,000
• Install 1.8Km of 125mm HPPE pipe		
• Excavate, backfill & reinstatement		
• Ancillary activities		
▪ Connections (107Nr)		£75,000
▪ Risk Money		£53,525
▪ YW Overheads, Consultants, Modelling etc		£163,638
▶ Total		£887,163 + Vat =£8,291.24 + Vat / household

This indicates an increase of £ 290,000 from the quotation in 2021

A detailed breakdown has been requested but not provided to date

This is a budget estimate with actual costs being due upon completion which may be greater or less than above

RATEABLE VALUE v METERED CHARGES

Charges based upon rateable values were phased out in the 1990's, these being replaced with meters which were required to be fitted to every new household connection.

On average each person uses approx. 250 litres per day including leakages. The following table provides an indication of the annual charges for water supply based upon the occupancy of the dwelling

Current charges (per cubic metre used) for households with a meter installed are

1. Water	91.09p
2. Sewerage	196.69p
Total charge per m3 used	287.78p (£2.88)
Plus Fixed Charges	
1. Standing Charge	£46.50
2. Surface Water	£54.89
Total charge £ per annum	£101.39

On average

- A person uses **145** litres per day.
- 109** litres per property are lost through leakage every day.

Shower

- Power shower: 13 litres is used per minute.
- Mixer shower: 8 litres is used per minute.
- Electric shower: 5 litres is used per minute.

Bath

- A full bath uses 80 litres.

Toilet

- 5 litres per flush using a modern cistern.
- 9 litres per flush for older toilets.

Washing Machine

- 50 litres per cycle.

Dishwasher

- 14 litres per cycle for a modern dishwasher.
- 10 litres per cycle on eco-setting.

Washing up by hand

- 6 litres per minute is used with a running tap.
- 8 litres per bowl wash.

Car wash

- 250 litres per hose pipe use.
- 30 litres per bucket wash.

METERED BILLING

The screenshot shows a web browser window with the URL `yorkshirewater.com/bill-account/water-meters/could-i-save-with-a-water-meter/`. The page title is "Yorkshire Water - Could I save with a water meter?". The main heading is "How much could I save with a meter?". Below the heading is a paragraph: "Depending on your house and who lives there, will determine whether a water meter is going to save you money or not. So if you're thinking of taking the plunge and applying for one, you might like to know what the average metered bill is for a house like yours." Below this is a decorative wavy line. The main content area contains five cards representing different household types and their average metered bills:

Household Type	Estimated Bill Range
Living on your own	£240 - £380
Just the two of you	£380 - £519
Three's company	£519 - £658
Growing family	£658 - £797
Full house	£727 - £866

Each card includes a simple line-art icon representing the household type: a single person for "Living on your own", two people for "Just the two of you", three people for "Three's company", four people for "Growing family", and five people for "Full house".

PRECEPT PAYMENTS V METERED CHARGES

▶ Current Precept Payments

Amounts recovered attributable to water

Band A	£ 111.05
Band B	£ 129.56
Band C	£ 148.06
Band D	£ 166.58
Band E	£ 203.59
Band F	£ 240.61
Band G	£ 277.62
Band H	£ 333.15

▶ Current Average Annual Metered Charges

Per Household Occupation

1 person	£240 - £380
2 person	£380 - £519
3 person	£519 - £658
Growing family	£658 - £797
Full house	£727 - £866

Distribution

Existing Distribution

Numerous discussions have been had regarding the amount of treated water being distributed throughout the village with daily usage ranging from 50 - 80m³. (50 - 80,000 litres / day)

This equates to 0.54 - 0.86 m³ (ie 540 - 860 litres) per household.

Assuming average leakage of 109 litres per property each day would result in 11,663 litres being lost each day

It therefore infers the average number of residents in the village to be :-

540 ltr x 107 properties - 11,663 ÷ 145 ltr usage / person = 318 residents (avg 2.97 persons per property)
OR 860 ltr x 107 properties - 11,663 ÷ 145 ltr usage / person = 554 residents (avg 5.17 persons per property)

It can be reasonably argued the average occupancy per household is far less than the above figures which indicates leakage to be is far greater than the average, or local businesses are using an abnormal amount of treated water therefore distorting the figures.

This would suggest the 'high' usage be either as a result of leaks throughout the distribution network or high business use.

Should it be through the distribution network, it is not evident or known whether these are occurring along Melbeck or under the road throughout the village or the connections to individual properties.

Where leaks have previously been identified, it was noted that some, if not all of the existing pipework to be steel which over time has corroded resulting in both loss of pressure and / or leakage.

Distribution

Existing Distribution

Where leaks are occurring there is a risk of bacteria entering the distribution hence the need to maintain chlorination of the supply at the treatment plant as UV can only be efficient at the point of entry ie within each property.

The cost of replacing the entire distribution pipework would be astronomical and not feasible should the existing treatment plant be chosen to remain the supply source for the village, in this scenario leaks would require to be continually identified, monitored and rectified throughout the lifespan of the treatment plant.

A difficult decision is to be made by the Residents and Parish Council as to whether the treatment plant is to remain (upgraded) without resolving the distribution network. It may be found more water than is necessary is being treated only to be lost through leaks within the distribution.

The proposals currently being reviewed is based upon current consumption, the required plant and systems being sized accordingly. This could be over specified if it is found actual requirements are far lower if any leakage is located and repaired.

Distribution

New Public Distribution

The most cost effective solution to upgrade and install a new distribution network is to contract with Yorkshire Water to utilise the existing pump station on Cover Lane and install a new supply pipe to each individual property. Option 2 of their quotation.

The benefits in doing so removes any responsibility to the Parish Council or Water Committee members to deal with any issues eg leaks or lack of pressure.

In the long term a public water supply may actually increase the value of each property and would certainly resolve any concerns or issues associated with the sale or purchase of properties. There will however be an increase in water meter charges over the current precept paid to Richmondshire County Council. This could be managed by homeowners by controlling their own consumption of water.

Yorkshire Water have stated they are prepared to attend a meeting to discuss their proposal should the Parish Council wish to consider or pursue this option.

Conclusion

Private Supply - Pro's

- Replacement of plant etc is far cheaper than a public supply
- Annual charge for households is lower
- Amount of chlorine can be controlled and adjusted as necessary
- No increase in precept payments in respect of the amount of water used

Private Supply - Con's

- Lifetime of plant is circa 30 years and will constantly have to be updated / renewed indefinitely
- The Distribution network will likely require renewal at some point in the future
- A dedicated daily inspection of the plant to monitor the operation of equipment and dosage
- Responsibility to maintain source, treatment and distribution
- Assumption that the source will remain indefinitely
- Cost and responsibility to Parish for Insuring the quality and supply of water
- It cannot be guaranteed all discoloration will be totally removed irrespective of which solution is decided upon
- Amount of precept paid is based upon the properties council tax band and not upon actual consumption

Conclusion

Public Supply - Pro's

- Consistent quality of water which meets up to date legislation
- Consistent pressure in supply irrespective of seasons should option 2 be approved
- No discoloration of supply
- Responsibility for all leaks is the duty of Yorkshire Water under option 2
- Water meters are to be installed resulting in households only paying for their actual usage
- No daily visits or responsibilities required by members of the village Water Committee
- No annual service costs as with a Private Supply
- No requirement to insure / maintain private treatment plant building
- Issues with sale / purchase of properties is removed

Public Supply - Con's

- Cost of installation
- Metered water usage would be greater than the current precept charges paid to RCC depending upon the properties council tax band
- Higher Chlorine levels may be evident to those found within a private supply
- Disruption and access through village during installation
- Risk of damaging other services i.e. telecom, power, broadband etc during installations
- Reluctance in householders contributing to connection of their individual properties
- Yorkshire Water have only provided an estimate not a quotation which may result in actual costs being higher
- Responsibility to Parish remains for leaks in distribution network if option 1 is approved

Summary

▶ Remodelling Existing Plant

Removal of existing plant and replace with updated treatment installed by Culligans utilising the new spring currently located within an adjacent field. Installing a further storage tank to collect water from all sources prior to treatment to ensure a constant emergency supply of 2,000 litres (2m3)

This option would incur a capital outlay of

Upgrading source of supply (option 3)	£12,500
New plant by Culligans	£84,375
Removal of existing plant by villages	-£9,750
Total Cost	£87,125 (£814 per household) + Vat

▶ New Public Supply

Utilise existing pump station, installing new distribution and supply mains throughout the village with new connections to stop tap at each property boundary

This option would incur a capital outlay of £887,163 (£8,291.24 per household) + Vat