

LOCAL HIGHWAYS
MAINTENANCE CHALLENGE
FUND

NORTH SOMERSET COUNCIL

APPENDICES

List of Appendices:

Appendix 1 - Map of Weston Regeneration Areas

Appendix 2 - District Wide Map

Appendix 3 - The Economic Case – Value for Money Technical Note

Appendix 4 - Project Plan

Appendix 5 - Risk Register

Appendix 6 - Letters of Support

Appendix 7 - Footway Asset Data

Regeneration

 Weston Town Centre Regeneration Area

 J21 Enterprise Area

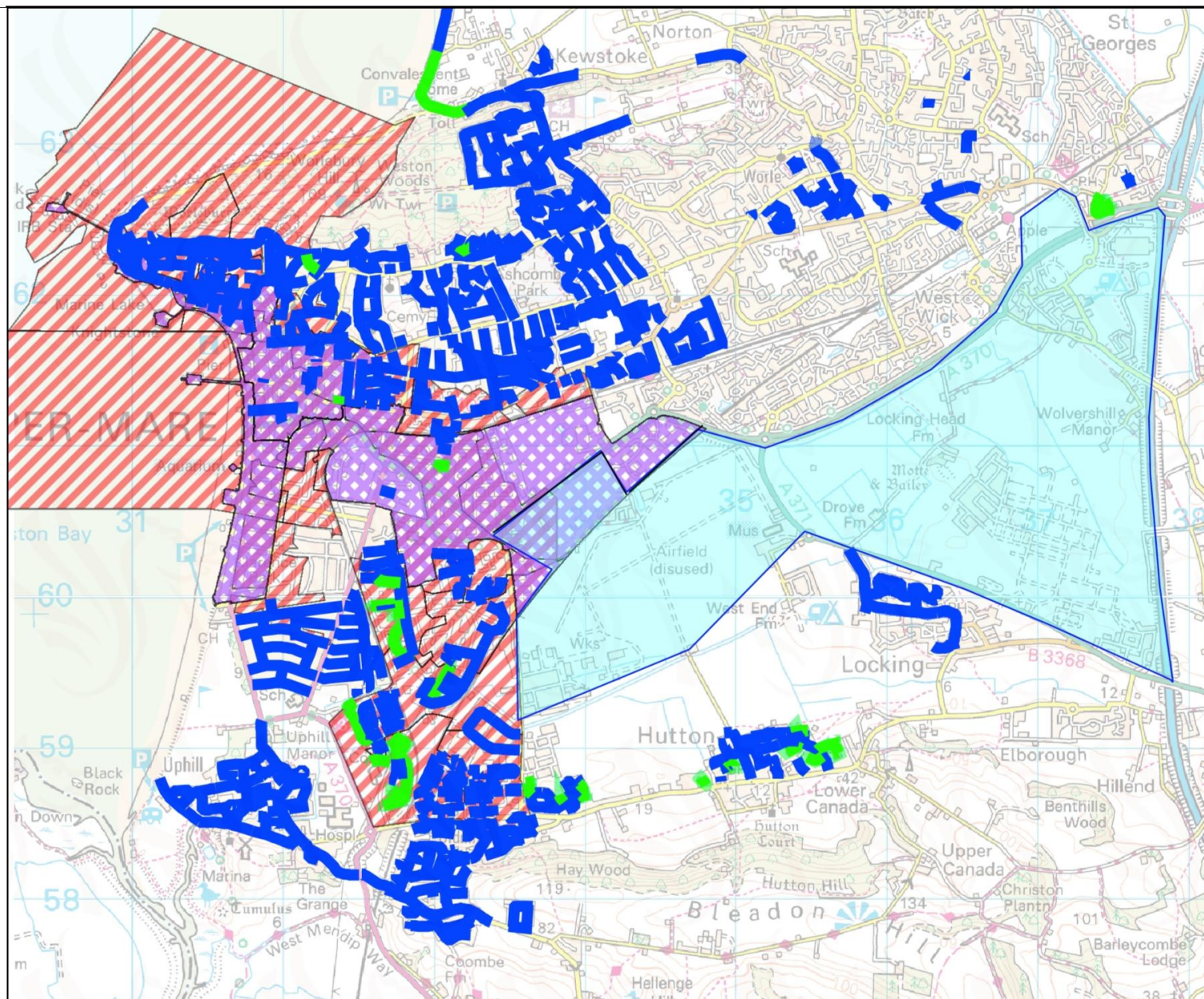
Urban Lighting and Footway Improvements

 Streetlighting

 Streetlighting and Footways

Indices of multiple deprivation 2010

 In the most deprived 25% of areas



Appendix 1

Weston-super-Mare Regeneration Areas

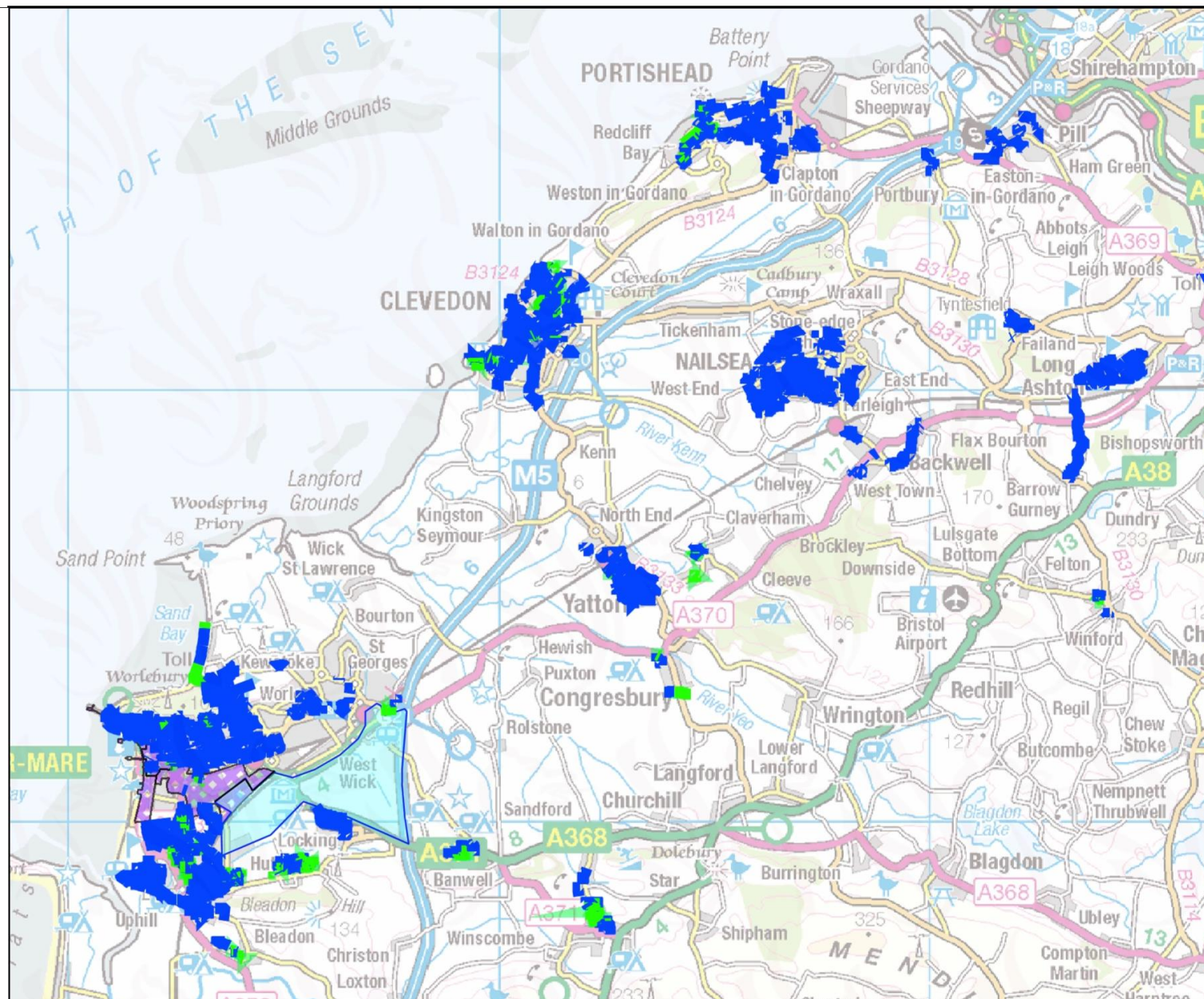


Scale: 1:40000
 Drawn by: Jackie Lower
 Date: 05 February 2015
 Time: 15:10:11



Urban Lighting and Footway Improvements

- Streetlighting
- Streetlighting and Footways



Appendix 2

District wide scheme

Scale: 1:140000
 Drawn by: Jackie Lower
 Date: 05 February 2015
 Time: 15:17:59



North Somerset Council DfT Bid

The Economic Case – Value for Money

PREPARED FOR: North Somerset Council

COPY TO: Jackie Lower

PREPARED BY: Stuart Morton

CHECKED BY: Ralph Rimmer

DOCUMENT No, 467470.ZZ.99.99/DfT Bid 01

DATE: 5th February 2015

Scheme Overview

The proposal is to receive funding for the replacement of 4328 end of life lighting columns and energy inefficient light sources, in conjunction with these works it is proposed that street lighting units which were previously part-night lit will remain lit all night but will be dimmed in operation.

North Somerset Council (NSC) adopted a part night off policy in 2011, the aim of the policy was to reduce energy consumption by switching off energy inefficient street lighting between midnight and 6am. There is an exception criteria in operation which at the time of adoption was felt was adequate to offset any future problems. However, the removal of street lighting has been identified by the police as a potential cause of the increased crime. NSC monitor all enquiries, complaints and positive feedback from residents regarding the existing policy; since May 2011 there have been 16 enquiries regarding turning lighting back on, with 140 complaints about the lighting and no recorded instances of positive feedback.

The lighting columns were installed between 1960 and the end of 1970, the columns have now exceeded their 40 year design life and are unmaintainable. A high proportion of the end of life columns are situated within the more socially deprived residential areas of North Somerset.

All columns identified are end of life and pose a significant health & safety risk to the public and council operatives or contractors. Instances of complete collapse have occurred within North Somerset during maintenance activities.

In brief the proposals include:

- To switch lighting back on in areas of social deprivation
- To meet appropriate lighting levels within BS5489-1:2013
- Removal and replacement of all end of life columns
- Columns to be re-sited to back of path
- Replacement of all energy inefficient light sources
- Associated DNO work
- Associated footpath work

Key Risks & Uncertainties

The key risk to the bid regarding the data and assumptions is the potential for column growth, the column quantities within the assessment are based upon a one for one replacement policy. As the existing lighting was designed to a previous version of the British Standard and also utilises outdated technology it is possible that a number of installations may require a full redesign with additional columns. This may impact on the ability to replace all of the columns identified for replacement.

Procurement of equipment and installation costs throughout the programme of works are based on an assumed rate of inflation, should the costs increase beyond these assumptions there may be a shortfall in funding which prevents completion of the programme. This uncertainty may also impact on energy costs and changes to CRC taxes, however this would impact more on NSC's on-going budget rather than the bid fund.

The proposed energy costs and maintenance costs are based upon data provided by luminaire manufacturers, this information is uncertain as the recommended equipment is new technology. The design life of a luminaire is assumed at 25 years based on manufacturer's extrapolated data, should this data be inaccurate and luminaires or their components begin to fail earlier there is a possible financial.

Electrical supply costs are based upon the use of two contractors, these contractors have significantly different rates to carry out the necessary works, should the anticipated usage of these contractors not be achieved costs will differ from the values given and may impact on the volume of column replacements possible.

Key Assumptions

Calculation is based over 25 years to tie in with the first major replacement of proposed luminaires.

All column and luminaire data used in the calculation is supplied by NSC.

Luminaire replacement policy is supplied by NSC however a risk value of 20% has been built into the final figure to allow for assumed column growth of stock as current British Standards are applied.

Lighting column replacement values have a risk value of 20% has been built into the final figure to allow for growth of stock as current British Standards are applied.

All maintenance, removal and installation rates are supplied by NSC.

Connection and disconnection rates are based on 50% work being undertaken by local DNO and 50% work being undertaken by term maintenance contractor.

Maintenance rates are not subject to any inflation and will remain the same for the duration of 25 years.

Maintenance is assumed to be a 6 year cycle of clean and electrical inspection.

No allowance for non-routine maintenance such as column knockdown is included.

It is assumed that an initial energy value supplied by NSC (13.96pkWh) will increase year by year by 5% inflation. This averages at 27pkWh over 25 years.

It is assumed that all costs for replacement parts will increase year by year by 2.3% RPI.

A base rate of £30 per carbon tonne is applied in line with government guidelines for CRC tax.

Modelling Approach

A total cost of ownership (TCO) model has been created to assess the full cost of an asset over a luminaire's life which in this case is 25 years. The model creates an estimated total based on key assumptions and data available, the outcome of this calculation gives cost values which can be compared:

Luminaire Purchase

Energy & Maintenance

CRC tax known in the model as CO2 costs

Column & Installation

Design Fees

Associated footpath work

Two calculations have been undertaken:

1. TCO Conventional

- To switch lighting back on in areas of social deprivation,
- To meet appropriate lighting levels within BS5489-1:2013
- Removal and replacement of all end of life columns,
- Columns to be re-sited to back of path,
- Replacement of all energy in-efficient light sources with conventional lighting,
- Associated DNO work,
- Associated footpath work.

2. TCO LED

- To switch lighting back on in areas of social deprivation,
- To meet appropriate lighting levels within BS5489-1:2013
- Removal and replacement of all end of life columns,
- Columns to be re-sited to back of path,
- Replacement of all energy in-efficient light sources with LED lighting,
- Associated DNO work,
- Associated footpath work.

The calculations are as follows:

TCO Conventional		
Luminaire Purchase Costs with 20% Risk	£	1,360,079.59
Energy & Maintenance Costs	£ 8,301,808.33	£8,799,356.73
CO2 Costs	£ 497,548.41	
Column & Installation Costs with 20% Risk	£	4,124,786.14
Design Fees	£	500,000.00
Associated Footpath Work	£	2,000,000.00
Total	£	16,784,222.46

TCO LED		
Luminaire Purchase Costs with 20% Risk	£	1,512,430.03
Energy & Maintenance Costs	£ 2,411,942.09	£2,562,015.21
CO2 Costs	£ 150,073.12	
Column & Installation Costs with 20% Risk	£	4,124,786.14
Design Fees	£	500,000.00
Associated Footpath Work	£	2,000,000.00
Total	£	10,699,231.38

The proposed LED scheme is calculated to save NSC over £6million within 25 years when compared with the conventional scheme given key assumptions.

Significant monetised and non-monetised costs

The main driver for this scheme is the replacement of end of life lighting columns, NSC have assessed their current and predicted financial budgets and cannot generate the capital required to carry out these replacement works without significant additional funding. Replacement of the columns cannot be quantified in monetary terms because affordability cannot be monetised (as per DFT guidance cost benefit analysis November 2014) and does not form part of the BCR presented.

Associated pavement works and design costs are directly reliant on the replacement and re-siting of faulty lighting column stock and are not monetised in the BCR.

Significant benefits such as increased safety, reduced fear of crime, compliance with current British Standards, improved aesthetic appearance and pride in the community cannot be monetised.

The overall BCR is based on the benefits as follows:

Vastly reduced energy costs
Vastly reduced CO2
Vastly reduced maintenance costs.

Divided by the cost of luminaire purchase and installation.

Benefit	£ 6,237,341.52
Cost	£ 1,512,430.03
Ratio	4.12

Appendix 4

North Somerset Council - Urban Lighting and Footway Improvement Scheme

[illegible]

Project Risk Log (Threats)

Project	Street Lighting
Programme	0
Project Manager	?
Creation Date	09/01/2015

Double Click Link to View 5.5 Risk Management
<http://intranet/the-source/corporate+info/project+management+method/Managing+Product+Delivery.htm>

Creation Date					09/01/2015						Risk Rating: 1 = Low, 2 = Medium, 3 = High, 4 = Very High				Risk Rating: 1 = Low, 2 = Medium, 3 = High, 4 = Very High									
Columns in bright blue are minimum required to complete on log by anyone. Project Manager will update grey fields.																								
Project Name	Risk No.	Risk Impact Type	Author/Source	Date Identified	Date Updated	Date Closed	Risk Description	Inherent				Counter-measure(s) (Reduction, Contingency, Prevention, Transference, Acceptance)	Counter-measures Steps	Residual				Owner	Status	Probability %	Cost implication (most likely scenario)	Assumptions (for basis of cost and time assessment)	MEV	
								Likelihood of occurrence	Severity of effect		RAG (Likelihood x severity)			Likelihood of occurrence	Severity of effect		RAG (Likelihood x severity)							
Street Lighting	R003	Operational-Delivery/ Non Compliance	Shaun Chilcott	09-Jan-15	09-Jan-15		Availability of contractor underground electricity cable jointing staff	2	3	6	AMBER	Prevention	Early notification of works to contractor will be essential. Consider use of Regional Electricity Company jointing staff. Increased budget risk by difference between contractor & DNO to allow for 50/50 work split.	1	3	3	GREEN	SC	Open	40%	£436,046	Based on 50/50 split between WPD and SEC doing service transfers and £40k additional cost for WPD	£174,418	
Street Lighting	R002	Strategic-Programme	Shaun Chilcott	09-Jan-15	09-Jan-15		Lack of staff resource to deliver scheme	2	3	6	AMBER	Prevention	Consider agency staff or use current framework contractor/consultant.	1	3	3	GREEN	SC	Open	40%	£398,537	Based on hourly rate for current agency supplier	£159,415	
Street Lighting	R012	Operational-Project Scope	Stuart Morton	30-Jan-15	30-Jan-15		Existing columns spacings may not allow for a compliant scheme to BS5489-1:2013, leading to column growth and associated DNO costs.	3	3	9	AMBER	Prevention	Increase budget expectationsto allow for extra work in case sites do no meet classification.	3	2	6	AMBER	SH	Open	70%	£900,000	20% increase in cost of column purchase and installation so 4500 columns * (20%*£1,000) per column	£630,000	
Street Lighting	R008	Operational-Delivery/ Non Compliance	Shaun Chilcott	09-Jan-15	09-Jan-15		Underground utility congestion. Re-positioning of lighting columns. Possible additional serving costs	2	2	4	GREEN	Reduction	Early engagement with utility companies	1	2	2	GREEN	SC	Open	40%	£615,060	Risk likely to occur where we move column from front to back of footways so allow movement of 3m at rate of £45.56 per metre for 4500 columns	£246,024	
Street Lighting	R001	Operational-Project Dependencies	Shaun Chilcott	09-Jan-15	30-Jan-15		Many other council's are carrying out similar projects which could have implications on LED lantern supply chain, manufacturer unable to keep up with demand.	2	4	8	AMBER	Reduction	Split contract between two succesful suppliers with emphasis on meeting delivery targets. Delivery targets to be set in liason with suppliers, failure to meet targets means split shifts in favour of performing supplier. On notification of succesful bid place material order with contractors/suppliers. Source additional lantern manufacturers as a backup to ensure supply.	1	4	4	GREEN	SC	Open	30%	£702,405	Lantern cost £312.18 per lamp over 4500 lamps. Cost based on 50% uplift in cost of lamps on the assumption that scarcity will lead to higher prices	£210,722	
P50 value																							£710,289.35	

APPENDIX 6

Letters of Support

WEST OF ENGLAND LOCAL ENTERPRISE PARTNERSHIP

Steve Berry
Head of Local Highways Maintenance
Department for Transport
Great Minster House
33 Horseferry Road
London
SW1P 4DR

Department for Transport Challenge Fund – Urban Lighting and Footway Improvements

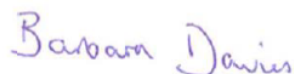
Dear Mr Berry

I am pleased to offer the support of the West of England Local Enterprise Partnership to this bid for funding for Urban Lighting and Footway Improvements.

A high proportion of the lighting improvements will take place in Weston-super-Mare which has areas which are amongst the most deprived 25% nationally, and are identified for regeneration. These works would provide improvements to the physical environment supporting the Weston Town Centre regeneration programme, which has seen complementary investment through the Local Growth Fund.

I therefore welcome this submission and hope for a positive outcome.

Yours sincerely



Barbara Davies
Chief Executive

We are a private/public
partnership that is growing
the economy of the Bristol
& Bath city region.

West of England Local
Enterprise Partnership
Engine Shed, Station
Approach, Temple Meads,
Bristol BS1 6QH

www.westofenglandlep.co.uk
Tel: 0117 903 6868
Email: administrator@westofenglandlep.co.uk

WSMTCP - 202

Jackie Lower

Principle Transport Planning Officer

4 February 2015

Dear Jackie

We support North Somerset Council's bid to the Department for Transport Local Highways Maintenance Challenge Fund for urban lighting and footway improvements. The street lighting will be upgraded on a number of key corridors in the town centre which will improve the physical environment supporting the Weston Town Centre regeneration programme and give the potential for dimming the street lighting as opposed to the part-night lighting currently in place in some areas. This will be an improvement to the public and the perception of safety.

Yours sincerely

Steve Townsend

Steve Townsend

BID Manager



Telephone & Fax: 01934 642404

Email: info@wsmtcp.co.uk

Web: www.wsmtcp.co.uk

Appendix 7

Footway Asset Data

Road Name	Length	Area	Cond. Index	Identified Treatment
Somerset Road, Clevedon	188m	360sqm	84%	structural
Marconi Road/Hillcrest, Portishead	1762m	3457sqm	67%	structural
Severnmeade, Portishead	118m	212sqm	73%	structural
Chesle Close, Portishead	91m	179sqm	69%	structural
Venus Street, Congresbury	280m	490sqm	82%	structural
Bridge Farm Square, Congresbury	165m	284sqm	83%	structural
Chestnut Drive, Claverham	458m	885sqm	57%	treatment
Hollowmead Close, Claverham	336m	651sqm	90%	structural
Shiners Elms, Yatton	216m	389sqm	70%	structural
Palmers Way, Hutton	154m	311sqm	81%	structural
Sutherland Drive, Hutton	104m	170sqm	78%	structural
Springwood Gardens, Hutton	64m	109sqm	73%	structural
The Croft, Hutton	94m	177sqm	77%	structural
Willow Drive, Hutton	261m	447sqm	75%	structural
Elmvale Drive, Hutton	423m	866sqm	93%	structural
Longleaze Gardens, Hutton	103m	222sqm	89%	structural
Weston Way, Hutton	261m	497sqm	94%	structural
Amesbury Drive, Bleadon	181m	346sqm	70%	resurfacing
Fernlea, Bleadon	106m	191sqm	58%	treatment
The Barton, Bleadon	203m	360sqm	100%	structural
Brent Close, WsM	181m	326sqm	73%	structural
Well Close, WsM	130m	292sqm	73%	resurfacing
Meadow Croft, WsM	163m	311sqm	81%	resurfacing
Porlock Close, WsM	185m	296sqm	69%	resurfacing
Wedmore Close, WsM	277m	554sqm	64%	resurfacing
Westbury Crescent, WsM	455m	819sqm	75%	structural
Williton Crescent, WsM	233m	419sqm	79%	structural
Colombo Crescent, WsM	382m	756sqm	56%	treatment
Camden Terrace, WsM	108m	172sqm	84%	structural
Woodview Terrace, WsM	96m	154sqm	75%	resurfacing
Argyle Avenue, WsM	410m	1217sqm	66%	resurfacing
Stradling Avenue (south), WsM	301m	542sqm	61%	treatment
Coniston Crescent, WsM	573m	1185sqm	72%	structural
Stonebridge Road, WsM	166m	249sqm	56%	treatment
Tennyson Road, WsM	538m	1348sqm	90%	resurfacing
Tichborne Road, WsM	311m	530sqm	63%	treatment
Lodge Drive, WsM	50m	100sqm	71%	resurfacing
Beach Road, Kewstoke	282m	372sqm	81%	structural
Chestnut Close, Banwell	129m	232sqm	86%	structural
Springfield Gardens, Banwell	311m	560sqm	85%	structural
West Garston, Banwell	160m	288sqm	97%	structural
Goosey Lane, St Georges	305m	549sqm	74%	structural
Macleod Close, Clevedon	196m	388sqm	75%	structural
St Andrews Drive, Clevedon	194m	368sqm	79%	structural
Tennyson Avenue, Clevedon	548m	1117sqm	66%	structural
Pill Way, Clevedon	148m	333sqm	67%	structural
Marson Road, Clevedon	338m	651sqm	65%	structural
Castlewood Close, Clevedon	740m	1260sqm	71%	structural
Wayside Drive, Clevedon	90m	180sqm	79%	structural
Woodside Road, Clevedon	217m	425sqm	86%	resurfacing
Chestnut Grove, Clevedon	328m	574sqm	54%	treatment
Woodland Glade, Clevedon	288m	586sqm	61%	structural

Appendix 7

Footway Asset Data

Linkside, Clevedon	197m	394sqm	66%	structural
Brae Rise, Winscombe	141m	284sqm	91%	structural
Woodborough Drive, Winscombe	766m	1379sqm	80%	structural
Ash Close, Winscombe	131m	236sqm	82%	structural
Homestead Way, Winscombe	144m	259sqm	76%	structural
Oak Road, Winscombe	208m	374sqm	86%	structural
Well Close, Winscombe	660m	1035sqm	76%	structural
The Oaks, Winford	257m	493sqm	73%	structural