

Business Planning: Business Case proposal

Project Title: Removal of obsolete Vehicle Activated Signs (VAS)

Committee: Highways and Transport

2021-22 savings: -£4,660 (per year)

Brief Description of proposal: This proposal is requesting Transformation Funding to remove any obsolete electronic signs and associated power supplies from the Public Highway to reduce future liabilities. Investment in this project will lead to future savings from reduced revenue costs as well as reducing health & safety risks and improving the environment due to reduced street clutter.

Date of version: 6 Nov 2020 **BP Reference:** B/R.6.202

Business Leads / Sponsors: Richard Ling, Team Leader,
Signals and Systems

1. Please describe what the proposed outcomes are:

Cambridgeshire County Council manages and maintains the local Public Highway, including the numerous road signs. Over the past 25 years a large number of electrically powered signs have been installed on the highway, the majority of these being to flash up a red/white speed limit roundel sign to approaching drivers, these are known as Vehicle Activated Signs (VAS). There are currently around 300 of these units remaining on our roads in various states of repair. As time has gone on this asset has increasingly been failing as the ageing technology fails and repair is no longer possible due to obsolescence of components. This project aims to remove this now obsolete asset from the highway, unlocking a number of financial and non-financial benefits.

The County Council's Highway Operational Standards (HOS) document does not support the direct replacement of the permanent VAS on our network. Replacement is required following either the failure of the unit or due to vehicle damage. Instead the authority promotes the replacement of the asset with either a temporary Moveable Vehicle Activated Sign (MVAS) or a Speed Indicator Device (SID) unit. These new units are sponsored, moved and maintained by the communities in which they are installed. Temporarily located MVAS are shown to provide a larger

reduction in speed than the traditional fixed VAS installations. Giving the community the potential to have a MVAS in their area may reduce the need for other more expensive and intrusive highway features in the future.

The issue of obsolete non-working VAS started around 15 years ago and has been increasing year on year as more of the increasingly ageing asset fails. Currently we have around 16 signs requiring removal from the highway, with another 20 awaiting to be confirmed, and a further 13 sites still working but unable to be repaired. The County's Traffic Signals Team have identified that a separately funded project is required to in part resolve this issue, with the current limited maintenance funding not able to meet the requirements.

Removal of the obsolete asset will reduce future revenue maintenance costs, improve health & safety and improve the general environment. Having a non-working asset on the highway still requires annual site visits by the maintenance contractor, leading to increases in CO2 emissions from the required travel. Removing the asset will in turn reduce CO2 emissions.

In addition to our own internal demand for this proposal, some communities have asked for the non-working VAS to be removed in order to reduce street clutter in their parishes. Removing the power supply also allows communities the possibility to install their own MVAS under the Local Highway Improvement Scheme.

The proposal also links to the following Cambridgeshire County Council outcomes:

- Reducing street clutter improves the environment and improves road safety helping to provide 'A good quality of life for everyone'.
- Giving the parish the opportunity to run their own MVAS project helps community engagement, supporting 'Thriving places for people to live in'
- In removing the obsolete VAS the need to travel in maintaining them is eliminated. This contributes towards 'Net zero carbon emissions for Cambridgeshire by 2050'.

In addition to a revenue cost saving over the future there are a number of safety and environmental outcomes - more details follow below. Removing the assets in a controlled manner will remove the future need to remove the asset at short notice due to an emergency need, undoubtedly this would cost more than within a planned programme.

The proposal provides a collective improvement to all using the Public Highway. There would be a marginal benefit to those with sight and mobility related disabilities, in that the footway would be clearer if any sign posts were removed.

Health and Safety

Keeping a mains supply in the bottom of the sign poles retains the risk of electrical shock to the public. Although the site is inspected annually to control this risk the best way to control it is to eliminate it completely by removing the electricity supply.

As the signs continue to age there is a risk of the signposts rusting through which could leave them unstable. At this point, they would need to be removed at short

notice to prevent the sign falling, potentially onto a member of the public or from causing electric shock from any subsequently exposed equipment. Removing the signs early on would eliminate this risk as well as reducing the need for emergency action of removal at short notice.

To continue to inspect the signs will retain the current level of risk associated with both driving and inspection. Removing the signs will eliminate those risks for this particular inspection task that would no longer be required.

Keeping a non-working speed sign on the highway could lead to an increase in general speed due to the issue of it never flashing to those who are speeding.

Reducing street clutter improves the environment and allows drivers to be less distracted. Where the signposts are also removed, footways will be clearer and grass verges easier to maintain. (As is standard, any damage or holes left in the ground from removing the signs and poles would be corrected).

2. What evidence has been used to support this work, how does this link to any existing strategies/policies?

National guidance from the Department for Transport (DfT) directs us to reduce sign clutter if possible (Traffic Advisory Leaflet 01/13, Reducing Sign Clutter).

The County Council's Highway Operational Standards (HOS) document directs us not to replace the obsolete asset, but rather to promote its replacement with a community sponsored moveable MVAS sign.

The proposal moves forward to support a sustainable public highway, removing assets no longer providing a benefit, eliminating the pressure on resources to support them.

It also matches a number of the Corporate Strategy themes. These include the removal of the signs being requested by the community and improving the environment through CO2 reduction.

The CCC team have already removed some equipment within the highway, this has reduced revenue costs in a limited way.

Communities and local members are asking us to remove broken signs in their areas as they no longer provide any useful purpose. Removing equipment would allow them to re-use the pole, if still stable, to locate their own community based MVAS or SID speed sign on. They then take on responsibility of maintaining the pole along with their MVAS or SID.

Where signs have been removed, communities have already then installed their own MVAS or SID projects under the Local Highway Improvement Scheme. This project will continue this work with the required resources.

3. Has an options and feasibility study been undertaken? Please explain what options have been considered.

The County's Traffic Signals Team manage the existing asset and have technical knowledge on the systems. We have great experience of working with electrical systems on the public highway, with a supply chain already in place.

The focus of the proposal is to deliver a project to physically remove the obsolete equipment from the public highway, removing all future risks and with the option of allowing the sign pole to be used by the community.

The alternative option would be to do nothing and continue to manage and maintain the obsolete equipment with the associated risks and costs.

Advantages and disadvantages of each option:

- Remain as we are / do nothing - If we do nothing the current backlog of non-working signs will remain on the network, requiring revenue funding each year to maintain them, with no path to ever finish this cycle. The signals team will continue to use staff resources to field enquiries about the problem, reducing the resource to spend on more worthwhile tasks. There will be a continual risk of the sign posts rusting through and requiring emergency funding to remove them together with the mains voltage power supplies at very short notice, this funding is not annually budgeted for. In this situation the sign would be at risk of falling onto a member of the public or electric shock from any exposed live equipment. There is no benefit in leaving the obsolete equipment on the highway. Having a non-working speed activated sign on site may in some part encourage higher speeds as the sign is not currently triggering for speeding vehicles, providing negative feedback.
- Removing the obsolete signs – this takes away the need to maintain the installation in the future. The electrical risk would no longer exist and the street scene environment would improve from the reduction of street clutter. Sign removal would also improve our reputation of properly maintaining the highway. If the sign post is assessed to be sound then this would be offered to the Parish council to mount a self-funded battery powered speed warning sign onto, with the potential to reduce speed and improve safety. Where sign posts are removed, footways will be clearer and grass verges easier to maintain.

A project to remove the obsolete signs and power supplies is preferred, managed by the Traffic Signals team and delivered through the existing supply chain in place.

Project delivery and capacity

The project would be relatively small with the asset having little connection to other services. The team has already been working with our delivery partner to look at how the project would be delivered. There have been discussions with Parish councils about removing signs in their area, this has generally been accepted well.

The Traffic Signals team already have experience in this work. Some of the required work has already been costed. The team have put a system in place to manage the asset, knowing at this time which of the current 300 signs require removal and those at risk. The existing Traffic Signal Team Maintenance contractor is contracted to

carry out this work, and power supplies can be removed by the local power company, UKPN, or our street lighting contractor.

Transformation Funding

This proposal would require upfront funding in order to go ahead and so we are in the process of submitting a bid to GPC to request that Transformation Funds be considered for this project. Transformation investment would provide the financial resources to allow a positive outcome to the current problem as well as savings over the longer term. It would enable us to reduce future revenue costs, eliminate health & safety risks and allow future community based projects.

4. What are the next steps/ actions the Council should take to pursue it?

- Agree internally the current outstanding list of obsolete equipment.
- Confirm the resources provided to the project, checking that they match the requirements.
- Programme the removal of individual sites.
- Inform stakeholders on programme, assisting Projects team on future community sign projects.
- Order mains power removals with power company (UKPN).
- Apply for required permits with County's Street works team.
- Order removal of remaining sign faces.
- Remove power supplies to make the site electrical safe.
- Remove existing sign faces and rusted poles, using any spare parts to maintain remaining asset.
- Inform stakeholders that work is complete and any community projects can proceed.
- Review project.

Additionally, regular feedback would be provided throughout to the Transformation team as agreed and required.

There has been discussion with the Traffic Signals team maintenance contractor about the issues and how best to efficiently deal with the situation. The energy supply company has been contacted to receive some estimated costs to provide disconnections.

There are already term maintenance contracts in place so no commercial /procurement contract work is needed. We will ensure the Highway Projects team, local members and parish councils are aware of the individual site projects. We will let communities know about the possibility of them changing the site to use their own funded MVAS or SIDs.

The current traffic signal contract operates between five local authorities, passing on general collective savings. Although some of the project would be procured through this contract the work is relatively small and doesn't link with that in other areas.

Regular email and/or phone updates will be provided by the Signals Team to local members and Parish councils. This will include letting them know why and when the removal will take place. We will work with our colleagues to let them know when the locations are safe as described above in the outline plan.

High Level Timetable

Task	Start Date	End Date	Overall Responsibility
Following possible Full Council approval in Feb '21, prepare project team for start in April 2021. Finalise proposed site scope list, inform stakeholders.	March 2021	March 2021	CCC Signals Team
Request quotations from UKPN for electrical disconnections, order other disconnections from CCC Street lighting. Request estimates from Traffic Signal contractor for sign/post removals.	April 2021	April 2021	CCC Signals Team
Review received costs, adjusting programme to suit budget. Order works with suppliers, book road space permits. Inform stakeholders.	May 2021	May 2021	CCC Signals Team
Carry out required site work, keeping Stakeholders informed.	Summer 2021	Autumn 2021	CCC Signals Team
Project debrief.	Winter 2021	Winter 2021	CCC Signals Team

5. Could this have any effects on people with protected characteristics?

The proposal provides a collective improvement to all using the Public Highway. There would be a marginal benefit to those with sight and mobility related disabilities, as well as those using a wheelchair or with a pram / pushchair, in that the footway would be clearer if any sign posts were removed.

Mitigating actions:

No negative effects have been identified following the removal of the signs.

During any removal works, the usual mitigations around access (such as temporary paths) would be put in place.

6. What financial and non-financial benefits are there and how will you measure the performance of these? Are there any dis-benefits? These MUST include how this will benefit the wider internal and external system.

Financial Benefits

Each year every sign needs an engineer visit to carry out a safety inspection and other maintenance tasks. The cost increases each year however the 2020/21 cost was £76. The number of faulty signs increase monthly but we would estimate there are currently around 35 requiring removal. Until they are removed the authority will pay each year **£2,660** ($35 \times £76$) to maintain this obsolete asset. This is a relatively small amount but will be payable each and every year (in increasing amounts) until the asset is removed, so doing this now would be an investment to reduce future revenue costs.

In addition to the contractor costs the current situation needs to be managed by a member of the County's Traffic Signals Team. Additional time is needed to monitor and discuss the condition of the asset with the contractor together with communicating with local members and the community. An estimate of time taken each year would be around 50 hours per year, costing **£2000** per year ($50\text{hrs} \times £40$). Although the cost is not directly recoverable, as the resource is a full time employee, this resource would then have time to support more worthwhile functions.

In summary if all signs are removed the County would benefit by £4,660 per year, or **£93,200** over 20 years. However, realistically the saving would be significantly higher than this as the figure does not allow for inflation of inspection costs each year, or the costs of needing to remove signs at short notice due to safety.

To gain the above benefit requires a capital investment to remove the obsolete assets. The cost will change depending on if the power supply is simply connected into an existing highway street light or if the supply is connected directly onto the UKPN main. In addition, there can be expensive traffic management costs to install temporary traffic lights to allow the work to be completed safely. The traffic signal company will need to remove the sign from the pole and dig out the pole itself if not safe to leave for use by the community.

The figures below list the estimated individual costs based on previous similar schemes.

Remove power connection from UKPN main, £1,200-£2,500, depending on traffic management.

Remove power connection from CCC streetlight, £200-£500, depending on traffic management.

Remove sign and dig out sign posts (2 sites per day), £900.

Remove sign only, leaving posts in situ, (2 sites per day) £400.

The blend of site situations is not fully clear but an estimate for each site would be £2,200. Over the estimated 35 sites to remove, the required funding would be **£77,000**.

The proposal estimate is an investment of £77,000 to recover £93,200 over 20 years. With these figures the financial case for the change runs over an extended period, much longer than would normally be the case. This situation is slightly different however in that at some time in the next 20 years the authority would need to remove the asset anyway due to the post rusting through and becoming too dangerous to allow to remain on the highway. At this time the cost of removal would be much more than above due to it being completed under emergency conditions. It would also be a higher risk approach with potential risk of accidents.

A further financial benefit, although hard to determine, is the possibility of future insurance claims from the public. As a highway authority we have a duty of care to maintain the highway. There is a possibility, if only small, of claims due to collision with this ageing asset or electrocution with the supply. An insurance company may see the unused and obsolete asset as an obstruction of the highway. The claim may not necessarily be payable but we would still have costs in dealing with any claim.

Non-Financial Benefits

Key Benefit	Measure	Baseline	Target & Timescale
Reduction in number of obsolete signs on highway	Number of obsolete pieces of equipment on the Public Highway	35, increasing as more equipment becomes faulty	No obsolete equipment by the end of March 2022
Reduction in number of complaints and general enquiries from the community about street clutter from non-working equipment	Number of previous communications		No complaints generated from sites removed at end of project
Parish council able to use site for community scheme	Number of sites re-used	0	5 sites identified to develop community MVAS scheme, in next round of Local Highway Improvement scheme

7. Are there any identified risks which may impact on the potential delivery of this? What is the risk if we do not act?

Risk	Mitigation	RAG (should the risk occur)	Overall Responsibility
Costs for removal are higher than estimated	Send out quotation enquires to contractors early in programme. Reduce number of sites to suit resources if required, requiring additional revenue in future years to maintain remaining assets	AMBER	Traffic Signals Team
Electricity company (UKPN) do not remove connection to programme	Keep in regular contact to manage the disconnections jointly	RED	Traffic Signals Team
Traffic signal company do not remove signs to programme	Keep in regular contact with local depot to manage the programme	AMBER	Traffic Signals Team

8. Scope: What is within scope? What is outside of scope?

In scope is the existing obsolete electronic signs on the public highway.

Those on private land or managed by third parties under license are out of scope for the project. All other electrical items on the highway including street lights and traffic signals systems fall out of project scope, being maintained from other resources.

Business Planning: Business Case proposal

Project Title: Review winter operations

Committee:	Highways and Transport
2021-22 Savings:	-£13,500 (per year)
Brief Description of proposal:	The proposal is to increase the winter gritting domains from three domains to five domains.
Date of version: 23 Nov 2020	BP Reference: B/R.6.201
Business Leads / Sponsors:	Jonathan Clarke, Richard Lumley

1. Please describe what the proposed outcomes are:

Cambridgeshire County Council manages and maintains the local Public Highway and an essential part of this management is the winter service. The County Council receives a daily winter weather forecast from the 1 November to the 14 April and makes a decision whether to grit the network based on this forecast. The forecast is split into three current areas known as domains. These are North and East, South and West and Cambridge City. This project aims to increase the number of domains to five thereby unlocking a number of financial and non-financial benefits.

The County Council currently has a good spread of weather forecast stations across the county. Each of the proposed new domains has at least one. This enables the forecast to be accurate and any differences in forecast between domains can then trigger different gritting actions or no action. It is not anticipated that we require any further forecast stations.

By gritting only domains that require gritting gives an immediate financial benefit as well as saving resources such as fuel and salt. The latter having an environmental benefit with the reduction of fuel usage leading to a reduction in CO2 emissions.

There is an internal demand for this initiative in order to maintain the level of service and also to improve the efficiency of resources to do so.

The proposal also links to the following Cambridgeshire County Council priorities:

- Only deploying gritting vehicles in domains when the forecast of the domain dictates will contribute towards ‘Net zero carbon emissions for Cambridgeshire by 2050’.
- Keeping the highway network open during the winter period helps provide ‘A good quality of life for everyone’.
- Enabling businesses to operate during the winter period on a safe highway network helps ensure ‘Thriving places for people to live in’.

In addition to a revenue cost saving over the future, there are a number of improved environmental outcomes - more details follow below.

The proposal provides no change to people with protected characteristics.

The proposal provides no change to Health and Safety.

2. What evidence has been used to support this work, how does this link to any existing strategies/policies?

National guidance from the Institute of Highway Engineers and NRSWG Promotes only carrying out winter gritting when necessary.

The proposal moves forward to support a sustainable public highway reducing the pressure on resources required to support it.

The proposal matches a number of the Corporate Strategy themes such as improving the environment through CO2 reduction.

Cambridgeshire County Council is part of the Eastern Region Winter Maintenance Consortium. This enables us to share in best practice and learn from our neighbouring authorities. Some of these authorities have already increased their weather domains. The authority also increased its own domains from one to three and has been able to identify savings by gritting only the domains that require treatment.

3. Has an options and feasibility study been undertaken?

Please explain what options have been considered.

The County's Highway Maintenance Team manage the existing winter service. The team has many years of experience of delivering winter service with a supply chain already in place.

The focus of this proposal is to purchase forecasts based on five weather domains. We have looked at the advantages and disadvantages of continuing with three or increasing to five. If we do nothing and continue with just three then we are wasting resources by gritting parts of the highway network when it is not required and the risk of ice is not there. Increasing the domains has the potential to maintain the service as required in the domains needed and save revenue.

The team has already been working with our delivery partner to look at how the project would be delivered. The project could be managed by the Highway Maintenance team as they already have experience in this work and then delivered through the existing supply chain in place. Some of the required work has already been costed. The supply chain is aware of the project proposals and has confirmed that they are able to deliver.

4. What are the next steps/ actions the Council should take to pursue it?

- Agree the geographical boundary of the domains.
- Confirm the resources provided to the project, checking that they match the requirements.
- Programme the start of forecasts for the five domains. Inform Highway Service provider regarding increase of domains.
- Training on decision making upon receiving forecasts for five domains. Inform stakeholders on programme, assisting Projects team on future community sign projects.

There has been discussion within the Highway Maintenance Team, and with the current forecast provider around the co-design of this project.

There are already winter forecast contracts in place with the Eastern Region Winter Maintenance Consortium through ESPO so no commercial/procurement contract work is needed.

Engagement would be with the communications team and regular updates as the project progresses. It would be adopted into the Winter Service Plan - this is presented every year to the Highway Committee for approval.

High Level Timetable

Task	Start Date	End Date	Overall Responsibility
Agree domains and receive test forecasts from provider.	Jan 2021	April 2021	CCC Highway Maintenance Team
Evaluate action taken between current and proposed domains	Jan 2021	April 2021	CCC Highway Maintenance Team
Project communications to stakeholders	April 2021	October 2021	CCC Highway Maintenance Team

5. Could this have any effects on people with protected characteristics?

The proposal provides no changes to the service that we provide, although there could be a minor potential impact on staff (including any staff with protected characteristics) if less journeys are completed.

Gritting is carried out by a mixture of Skanska and CCC (Cambridgeshire County Council) staff. Staff get paid a winter allowance on top of their normal salary and the

number of journeys varies annually due to weather conditions. By having more targeted gritting means we do not lose staff unnecessarily from their day jobs and the new system will not affect their base salary.

6. What financial and non-financial benefits are there and how will you measure the performance of these? Are there any dis-benefits? These MUST include how this will benefit the wider internal and external system.

Financial Benefits

Cost of the two new forecast domains: £4,000 pa.

Anticipated financial savings through reduction in gritting runs - We have good coverage of weather stations across the county. These are used by the forecaster to drive the forecasts for the domain. We know that there are variances of weather over the current domains and therefore by making them smaller we will only be treating the areas that require it. The number of times that this may happen over the year will depend on the forecasts, there is not a large variance across the domains but a small one on marginal nights. There is an economic saving. For example, to treat north and east week day is approx. £3000 payable to the Highway service provider. Splitting this into two domains will half the cost if we only send out the North domain. On top of this, of course, are the costs of salt and fuel.

Savings across the season are difficult to quantify because we are dealing with the varying weather during the winter season. However, if we can base predicted savings on an average of the previous five years of weather then in a typical season there may be five opportunities to send out some but not all domains This could give savings of up to £17,500 (less the £4,000 costs would be £13,500 per year).

Economic, commercial and financial case for doing this:

The proposal estimate is an investment of £4,000 with the opportunity to save up to, but not guaranteed, (due to the variance of the weather as stated before) £17,500 per year.

A further financial benefit, although yet to determine, is fuel and salt cost saving.

Non-Financial Benefits

Key Benefit	Measure	Baseline	Target & Timescale
Reduction in number of unnecessary gritting runs in	Number of gritting runs against forecast		Introduction of new domains November 2021

domains where it is not required			
Reduction in CO2 emissions through less vehicle movements	Calculation of CO2 emission per vehicle per run saved		Introduction of new domains November 2021

7. Are there any identified risks which may impact on the potential delivery of this? What is the risk if we do not act?

Risk	Mitigation	RAG (should the risk occur)	Overall Responsibility
Costs for forecast domains are higher than estimated	Conform geographic location of domains and ensure weather forecast stations coverage is adequate early in programme	AMBER	CCC Highway Maintenance Team
Forecast provider does not establish the new domains in time for start date of project	Keep in regular contact with supply chain to manage the project	RED	CCC Highway Maintenance Team

8. Scope- What is within scope? What is outside of scope?

In scope is increasing the existing three winter forecast domains, North and East, South and West and Cambridge City to five new domains North, East, South, West and Cambridge City.