

ROUTE OPTIMISATION UPDATE

1.0 INTRODUCTION

- 1.1 At its budget meeting of February 2020 the Council allocated £100,000 (funding realised through the one-off loans fund review) to explore options for a route optimisation – software which will improve the operational management of certain services which are operated via vehicles providing specific services.
- 1.2 An initial procurement exercise saw no returns due to companies effectively not operating through COVID. We have since successfully completed a tender exercise over the course of last year and have appointed Webaspx for this project.
- 1.3 At the time of writing we have had the contract start up meeting on Friday 17th February to agree key contacts, contract management meetings schedule and payment profile. The inception meeting is scheduled for Monday 27th February, a key output from which will be agreeing an outline implementation plan and agreeing timescales and key project milestones.

2.0 RECOMMENDATIONS

- 2.1 Members are asked to note and consider this update

3.0 DETAIL

Background

- 3.1 An initial request for information was sent to the market in 2020 in order to provide market intelligence to define the scope of future tender documents. Based on market feedback and the feedback from colleagues at other local authorities, the initial scope has been narrowed to, as a first phase, one particular service area – domestic refuse and recycling. It is envisaged that the route optimisation system will be used for numerous other areas including winter maintenance, gully cleansing and other services which work on a cyclic nature.

System requirements

3.2 A system is being sought which will consider all aspects of the waste collection service:

- waste streams,
- number of households,
- assisted pullouts,
- additional bins,
- restricted access streets and other road network restrictions/practicalities like service one side of street only; up/downhill servicing; turn restrictions; one-way streets,
- size and functionality of the overall fleet,
- vehicle sizes,
- road end collections,
- staffing,
- shift patterns,
- variance in asset types (bin sizes and composition),
- location and availability of onward processing/disposal/landfill sites (inc. travel off islands),
- the island and peninsular nature of the Council's geography.

The system also requires to be flexible with the ability to take into account new housing developments.

Taking into account all of the above the system will provide a range of efficient routing options enabling the Council to consider current and future alternative service provision, including development of "what if" scenarios to establish preferred future options.

In-cab technology

3.3 The system will also provide in-cab technology which seamlessly provides bin crews with up-to-date bin routes – integration with the Oracle CRM customer service system will be critical to allowing seamless updates to be provided in-cab for new tasks added to bin routes such as new assisted uplifts. This function is automated and does not require physical intervention by staff to take information from one system and manually input it into another. The system provides opportunities for rerouting vehicles to minimise service disruption and maximise the efficient use of the available fleet.

Live data from the system is then accessible to drivers/bin crews on the ground. Examples of the type of in-cab information for bin crews include:

- Drivers instructions showing turns, roads serviced by order and numbers of service locations by road and assisted pullouts / restricted access etc.

- Customer addresses, assets or roads to be serviced within a particular route on a particular day.
- Data related to each individual asset (e.g. types and sizes of bins)

Customer information

- 3.4 The system will interface with existing Council systems in order to provide customer service staff with real-time updates on the delivery of scheduled bin routes enabling them to deal with customer queries at first point of contact based on the data fed back via the system. Ultimately the system should provide a direct interface with existing systems to provide the option of dynamically managing customer queries/complaints etc. The solution will also be able to interface with the GIS system, the Oracle CRM system and the Council website in order to seamlessly provide customer calendars based on the approved routes. These calendars will be provided in a clear, easy to understand, readable format. The system will automatically provide new calendars when routes are updated/changed, and must interface with existing systems in order to email/mailmerge into template letters for the necessary customer updates.

Performance/management information

- 3.5 The system will also provide mechanisms for capturing the following:
- Financial report outlining the cost of each route based on associated costs including vehicle, crew, material usage and fuel costs.
 - Environmental cost based on CO₂ emissions.
 - Data on service performance/service delivery against agreed KPIs e.g. percentage of routes completed to schedule, and will provide performance management information; with regular automated reports for senior management. This will have the ability to compare actual performance against targets to allow service benchmarking.
 - Route summaries showing: travel time; servicing time; non-productive (dead running) time; distance travelled; and waste collected, or salt used etc.
 - Maps showing individual routes identified by colour legend with the ability to use different line types.

The need for such a system

- 3.6 There are a huge range of day-to-day benefits which could be realised from such a system. Given that resources are so closely matched to service specifications operational supervisors are having to manually re-route vehicles and re-define collection schedules in order to maintain service delivery when there are any changes to the norm. When the route optimisation system is in place, this would, in theory, make such a task easier, more efficient and, crucially, would provide dynamic customer updates which should reduce the volume of customer enquiries, complaints etc.
- 3.7 Given the likelihood of major structural changes to national policy regarding

waste in the next few years, particularly the upcoming BMW ban and the current food waste review, which could see a new requirement for local authorities to offer kerbside food specific services, having a system in place which allows us to model and cost new routes efficiently, and seamlessly generate customer calendars and updates etc., would be invaluable, and would support both the decision making process and the on-the-ground implementation of any new waste models. Currently new routes are modelled manually and this process has a number of steps and single points of failure which is an acknowledged risk and frailty. With reducing resources it would be difficult to model and implement any further significant changes to waste collections without the support of a route optimisation system.

Potential to utilise in other service areas

3.8 Over time we would expect to be able to use the system's additional functionality covering at least the following areas:

- Winter maintenance
- Commercial refuse and recycling
- Street cleansing
- Gully cleaning
- Asset inspections
- Home to school transport

Procurement and contract

3.9 Webaspx were the successful bidder through an open tender process which ran last year. The period of the contract will be 5 years, with an option of an additional 2 + 2 + 1 years, with early termination options in the event of poor performance.

Next steps

3.10 Initially Webaspx will use their software package to review all bin routes across Argyll and Bute, testing these for efficiency and modelling different options.

3.11 Going forward we will look to introduce the in-cab technology and trial this in one geographic area initially, with that area to be confirmed depending on what if any alterations come out of the route review.

3.12 Once the system is established and working efficiently for refuse collection, it is intended that the software is rolled out to a wider number of services as detailed above.

4.0 CONCLUSION

4.1 A route optimisation system as outlined above will have a huge range of benefits.

5.0 IMPLICATIONS

- 5.1 Policy – This system will support the delivery of the current policy while also enabling modelling to support any future policy decisions.
- 5.2 Financial – Purchase of route optimisation is covered by earmarking and recurring software costs from within existing budget.
- 5.3 Legal – Standard ICT contract T&Cs will apply.
- 5.4 HR – None known.
- 5.5 Fairer Scotland Duty: None known.
 - 5.5.1 Equalities - protected characteristics – None known.
 - 5.5.2 Socio-economic Duty – None known.
 - 5.5.3 Islands – None known.
- 5.6 Climate Change – Due regard will be given to climate change with a view to minimising any climate change impact and these will be considered as and when they arise. Opportunities will include but are not limited reducing vehicle miles and potentially reducing vehicle numbers.
- 5.7 Risk – Known risks are being managed through the process in the normal way.
- 5.8 Customer Service – Having a route optimisation system in place will provide significant benefits in terms of customer service.

**Executive Director with responsibility for Roads and Infrastructure Services,
Kirsty Flanagan**

Head of Roads and Infrastructure, Jim Smith

Policy Lead for Roads and Transport, Councillor Andrew Kain

**Policy Lead for Climate Change and Environment Services,
Councillor Ross Moreland**

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For further information contact: Mark Calder, Project Manager.