HMEP

Highways Maintenance Efficiency Programme

A LEAN Toolkit for Highway Services Annex 1: Case Studies

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CONTENTS

INTRODUCTION

The enclosed case studies represent where authorities have applied LEAN and achieved efficiency savings. The case studies are useful for those starting out on their own LEAN projects as they give background information as to how this has been achieved elsewhere. There is a point of contact at the end of each case study who would be willing to offer their own experiences to get you started on your project.

If after using the Toolkit you wish to offer a case study then please contact the programme via the email address highwaysefficiencies@dft.gst.gov.uk.

1. LEICESTER CITY COUNCIL – USING THE HMEP LEAN TOOLKIT TO REVIEW REACTIVE REPAIRS: POLICY AND PROCEDURE

Case Study Title

Using the HMEP LEAN Toolkit to review reactive repairs: Policy and Procedure.

Local Authority

Leicester City Council

Leicester City Council was a HMEP LEAN Toolkit Pilot.

Background and Scope of Work

Leicester City Council is responsible for the maintenance of 819km of road network. The annual highway maintenance budget (capital and revenue) is presently £4.65million. With the increasing, year on year, pressure of budget reductions it was recognised that investigations into all aspects of the way in which the Highway Maintenance section delivers its services was needed. The first area to be investigated was our Reactive Repair policy and procedures through a pilot of the LEAN Toolkit.

The scope of the study was quite broad. The project was charged with not only looking at the procedure of how identified defects were repaired, but also the inspection criteria of how these repairs were reported and selected.

Before: Traditional Repair Identification c/o Leicester City Council

You will see from the photo that the traditional approach would be to only repair defects that meet specific intervention levels. As you will also see from this, defects to the right of the marked patch and closer to the channel which do not meet intervention levels are not repaired. **It had long been a suspicion of many officers that 'doing the**

minimum' was not cost effective, as we were invariably revisiting sections of highway every few months to repair defects adjacent to a previous area.

Activities

Firstly, a LEAN team was established from the different sections of the Highway Maintenance Group. The members of this team were chosen due to their current role within the existing reactive repair process and also, importantly, their perceived willingness to change.

An existing *System Map* was created which the team used to refer to when the question was asked, "What does the customer want?" It was soon realized by the group that whilst individual processes and actions made sense to the Council officers involved, when seen through the eyes of the customer our public reaction to highway defects made no sense at all.

Whilst the team was always conscious of what the customer wanted, in this instance a defect repaired as quickly as possible, the purpose of the project was to design a system that could work within existing budgetary parameters. Therefore, the next task was to analyse past data of highway repairs and to calculate repair costs of road areas over a 3 year period.

During the *Design Day*, it became apparent that some areas of highway had seen multiple visits over a 12 month period to repair individual areas of defects, all of which were visible on the initial inspection. It was calculated that it would have been more cost effective to repair all of these areas in one site visit.

After: LEAN Repair Identification c/o Leicester City Council

The initial *Prototype* stage was conducted and trialed over a 2 ward area, for a 2 month period. A team of Inspector, Works Supervisor and Operative was established to have full control and ownership of the decisions on site within this area. We can see from the 'after' photo that the original method of defect identification (yellow marks) has given way to the LEAN method (blue marks).

Challenges

The challenges that the Operational Team faced can be seen as either Operational or Cultural.

Operational Challenges:

- Officers Time – Keeping the 'Operational Team' together and focused whilst each individual still had their substantive workload to manage proved difficult. Better understanding of the workload from line managers must be achieved to ensure that regular officers' time can be kept free for the project.
- Stakeholder Identification/Management – Although the Project Manager may think that 'buy-in' from management has been achieved, this is not always the case and can cause problems for the project at later stages. If you do not have 'buy-in' you should ensure that you have complete control of the projects resources.
- Operational Resource Allocation – At the Prototype stage, the perceived amount of operational resource was allocated to the project. It became apparent after 2 weeks that the assigned gang could not keep up with the defect repairs being generated. Being able to react to this with the provision of an additional gang was important to keep the prototype fulfilling its desired aims.

Cultural Challenges:

- Accepting Change – It is difficult to address resistance to change within the confines of a LEAN project if it is embedded within your organisation. It may be worth investing time and resources in an 'accepting change' programme, before attempting to tackle this within a LEAN review.
- It's not how we do it – One of the biggest challenges was changing peoples' mindset. Meeting after meeting, all the team would agree the best way of carrying out reactive repairs, for an individual at the next meeting to question whether or not we should be deviating away from what we do. Our advice is to keep going, eventually people accept that the traditional ways are not necessarily the best.
- We need training – We found that people were hesitant to take on tasks within the prototype that they had not traditionally performed or had not had training in. Encouraging people to take on these responsibilities, to seek advice from the team and to offer formal training was important for the acceptance of the new system design.

Outcomes and Benefits

More efficient:

- We are repairing more of the highway network for less money (see evaluation).
- The percentage of NRSWA Category C inspections has increased greatly. We are now capturing more defects which can be attributed directly to the relevant utility company, because the Inspectors have been able to add these into their inspection regime without additional resource.

Public perception improves:

- The public is seeing a more sensible approach to highway maintenance. No longer do they see a 40mm deep pothole repaired and a 30mm deep pothole just a metre away ignored. Both are now done at the same time, at a cheaper cost, and saving a repeat visit by an inspector.

Faster:

- Identified carriageway defect completion times have improved.
- Customer enquiries are sent straight to the inspectors' smart phones, cutting hours/days from response times. (Leicester had already introduced a smartphone as part of their toolkit for inspectors – the savings quoted in this case study are on top of this earlier innovation. If there are opportunities for eliminating paper based systems, then these can create additional savings as you go through your LEAN review).

Staff :

- Staff satisfaction has improved because we are now doing what the majority of officers have known for years.
- Inspectors feel empowered. They are now responsible for most highway inspections and as such feel that can make more of a difference and are not faced with issues/problems which are not in their control.

Evaluation

- There has been a 150% increase in the size of carriageway patch repair areas during the prototype stage, with only a 108% increase in money spent.
- NRSWA Category C inspection rate has risen from a less than 10% inspection rate to a 100% inspection rate. This means that the number of defects identified, at a conservative repair cost of £300 per defect, would have cost Leicester City Council £69,300 to fix. This will now be passed on to the relevant utility company to address.
- Highway condition surveys, which cost the Council £6,000 per annum to conduct through external support, are now being performed by the existing Highways Inspectors.

Plans for the Future

Our plans to keep building on what we have achieved are:

- The extension of reactive repairs to include other failing areas of the highway means that the streets which have been included in the prototype are now ready for inclusion in the surface dressing programme. A natural progression from this LEAN review is therefore to address surface dressing and the planned maintenance programme as a whole.

- NRSWA Inspections – The incorporation of NRSWA Category C inspections into the Highways Inspectors daily duties has brought great benefit to the authority. It is planned to investigate whether further inspection duties can be placed on the team.

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2. HIGHWAYS AGENCY – INTRODUCTION OF VISUAL MANAGEMENT AND COLLABORATIVE PLANNING TOOLS

Case Study Title

Highways Agency North and Humber Area Team – Introduction of Visual Management and Collaborative Planning Tools.

Local Authority

Highways Agency MAC (Managing Agent Contractor) Area 12 – Motorways and Trunk roads in Yorkshire and North Lincolnshire, from the Humber ports in the east to the top of the Pennines.

Background and Scope of Work

A-one+ manages the network on behalf of the Highways Agency under a MAC contract. Within this contract the Area 12 North/Humber team managed delivery of 205 schemes in 2012/13 with a combined value of £21m. This portfolio of schemes included road maintenance schemes, structures maintenance schemes, LNMS (Local Network Management Schemes) improvements, resilience schemes and depot schemes. Each scheme had a design and construction programme with key deliverable targets relating to cost and time. It was felt that schemes weren't being delivered reliably enough to time and there was a need to save money. We used LEAN to address this - to further improve certainty of scheme delivery to programme and reduce the cost of design across this portfolio.

The LEAN improvement project had the following objectives:

- Improve predictability of construction dates.
- Improve team morale through staff engagement.
- Reduce design cost by 20% over the portfolio.
- Reduce design time by 20% over the portfolio.

Activities

To assess the level of performance of the existing process, the project team used LEAN to review the current scheme performance in terms of delivery of schemes to time and budget. On average between April and October 2012, the team learned that schemes were delivered month to month with 56% reliability. The project team then reviewed the way that work was done to capture potential improvements to increase the level of reliability and to reduce cost. The team identified the following across the different stages

of the process.

Across all stages

- Opportunity to improve visibility of how we are performing on cost and time.
- Opportunity to improve transparency of where a scheme was in the process.
- Opportunity to improve certainty and accountability in moving a scheme on to the next stage.
- Opportunity to improve identification of blockers or bottlenecks.
- LEAN measurement and visual management, as well as using the LEAN principle of understanding then tackling root causes helped us to address these.

Design stage

- Designers were not accountable for the forthcoming week's tasks.
- There was limited ownership by the designers of cost and time.
- SMART (specific, measurable, attainable, realistic and timely) tasks were not being committed to for the week ahead.
- Reasons and root causes were not being captured for non-completed tasks.
- There was a weekly meeting held by one of the three design teams but it was focused on progress as opposed to production for the week ahead.
- Different programming tools were being used across the design teams.
- The LEAN approach of looking at the end-to-end system and using whole system measures supported this.

Construction Stage

- There was a lack of transparency when schemes were on site.
- There was a lack of transparency regarding outstanding health and safety information.
- The LEAN approach of understanding, clarity and measurement allowed us to address this.

Commercial Stage

- There was a lack of transparency on completion of final accounts.

The new LEAN work design created by the project team centred on the use of collaborative planning and visual management, which are described below.

Collaborative Planning

We introduced an individual weekly Production Meeting for each individual design team (45 minutes each) to carry out the LEAN **Plan-Do-Check-Act** cycle. The meeting was led initially by a facilitator and then by the IDT (Integrated Delivery Team) Manager and was attended by the Principal Engineer/Design Lead for each team and by all of the design team members.

Plan – ensured that the designers for each scheme had an up to date programme detailing key deliverables in the right sequence.

Do – ensured that tasks committed to at the weekly production meeting were SMART and that designers worked to the full capacity of their time. This provided the IDT Managers with an opportunity to share resources if more urgent deadlines needed to be met in different schemes.

Check – the status of tasks for a production plan from the previous week were checked and status recorded as either complete or non-complete. If non-complete, mandatory capture of a reason and root cause was required.

Act – analysis of non-completed tasks was made available in relation to reliability trends, reasons, specific root causes and actual hours at team, scheme and individual level. Dashboards were produced weekly and fed into the weekly management meeting where real blockers were discussed and mitigation actions identified and assigned.

The LEAN Plan-Do-Check-Act cycle was also introduced to the weekly management meeting.

Visual Management

To ensure transparency of the delivery process it was decided to introduce LEAN Visual Management in the form of magnetic whiteboards.

We defined and agreed with the IDT Managers the process steps to manage, including the responsibility of each stage e.g. IDT Manager, Highways Agency, Designer or Commercial. We reviewed and agreed with the IDT Managers the key information that we wanted to monitor for each scheme. With the aid of a red (not on target) or green (on target or better) magnet we can see visually at any stage how a scheme is performing.

The IDT Managers had overall accountability for the end-to-end process; however individual responsibilities were given to the relevant parties throughout the process, thus improving ownership. On a weekly basis we measure the management team and the three design teams in terms of reliability, reasons and root causes. All dashboards are published and made public to ensure we drive right behaviours to continually improve.

HA Visual Management of LEAN Projects

Challenges

All Change projects encounter some challenges, and ours was no different:

- There was some resistance amongst designers, however working with the teams closely and showing them the benefits of working in a more collaborative environment broke down the resistance to change.
- From the post intervention staff survey there has been feedback that some staff felt that the weekly collaborative planning sessions made their jobs harder. This requires further work to understand root cause and to refine the new design if appropriate.
- It was difficult to compare post intervention measures with historic measures, as it was difficult to obtain historic data without a significant volume of work.
- In hindsight we would seek to make the teams self-sufficient more quickly, with access to a LEAN practitioner to coach and guide.

Outcomes and Benefits

Following the implementation of the new work design the following has been delivered:

- LEAN visual management boards and weekly collaborative meetings are now in use.
- A series of team measures have been implemented that are used to manage and improve process performance.
- A system to catch concerns, identify root causes and deploy countermeasures has been implemented.
- Early schemes are showing that a 20% saving on time through the design phase will be achieved (measured against the baseline dates recorded with the HA).
- Early schemes are showing that a 20% saving on cost through the design phase will be achieved (measured against allocation).

Evaluation

Following the implementation of the new work design the following benefits have been achieved.

- Scheme delivery adherence improved from 56% to 89%.
- Planned design cost saving of £696,308.
- Weekly reliability of task completion increased from 63% to 74%.
- 75% of staff have reported that working practices have changed for the positive.
- 59% of staff reported an improvement in communication within the team.

The project has demonstrated that there is a link between delivering schemes with time and cost savings and the use of LEAN tools including visual management and collaborative planning on a weekly basis. Using the LEAN Plan-Do-Check-Act allowed us to learn about the root causes of issues, to eliminate any waste and to monitor and measure the system.

Plans for the Future

The LEAN tools deployed are simple and effective and can easily be replicated in other MAC contracts. We have already used this methodology to transfer the learning to A-one+ in MAC Area 7.

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3. LONDON BOROUGH OF ISLINGTON – HOW TO CREATE A CUSTOMER FOCUSED CULTURE

Case Study Title
How to create a customer focused culture.
Local Authority
London Borough of Islington.
Background and Scope of Work
We really decided to do this work because it was the right thing to do. We wanted to change the culture and at the same time get efficiencies so we focused on customers not processes – if you look after that then everything else happens. We don't believe that LEAN is something different to the day job – it's about the normal rules of common sense and doing the right thing for our customers.
Challenges
For us the biggest challenges were: · Becoming a service industry – for us this meant changing our culture with the rest of the world. We also had to change culture in order to attract budget – we started thinking differently – we fix our streets to improve health, to reduce crime and to make them easier to clean not just so that we have fixed streets. This links to customer priorities and so helps us to get member support. We are always thinking about how people use the street and the benefits for them – this delivers social benefits to the community – it's about people, not a technical exercise! This culture change changed the perception of the Council both internally and externally and we are now seen as helpful. · Corporate IT – we actually ended up buying our own server. · Middle managers - we found that the top managers thought this was common sense and the guys at the front line liked it because they had been telling us for years that they could do it better. However, some of the middle managers struggled with a culture of 'we have always done it this way' – some were prepared to change and have done really well and some have left the Council. Managers now work across silos, they get out and about rather than emailing, they encourage innovation and help their staff make change happen. · Making it fun not boring.

Activities

To learn, we looked at lessons from other industries. We went to Waitrose and to Forte Hotels to understand their customer mindset. We believe that Highways is just another service industry so it needs to be all about the customer – this meant that we needed to change what people thought, not just what they did.

Receiving live request for service using a personal digital assistant (PDA)

Taking this LEAN perspective means that we respond very differently to service requests from the public. When we get a call the information goes straight to the computer in the cab of one of our operatives and they go straight out and fix it. We don't do any pre-inspection and find that we can fix 70% first time working this way. If we get a call about a pothole that is 25mm deep (our intervention criteria is 40mm) we still do it because we have cut out all the waste and this prevents all of the follow up and complaints and gives a great service. We also use postcards to find out how satisfied our customers are and to get feedback that helps us to keep improving. The LEAN principles of customer perspective and eliminating waste are at the heart of what we do.

The service used to be 10 days for a customer to get a response to a service request, and that was if further visits weren't required! What would happen in any other service industry?

An example of another service industry where poor service is not tolerable

We use Google Enterprise to look at the data from all elements of the Highway Service together. We can also see other services such as bins, or levels of deprivation alongside the Highways' work and this allows to look at hotspots, trends and to really understand our area.

To make our customer culture we make sure that all our team understood the whole system. To do this new charge hands spend 4 weeks in the office seeing all areas including insurance, streetworks, planned maintenance and lighting. We run customer care training for all staff and we also ran a mock court case so that the whole team could see how real insurance cases work. This embeds our LEAN 'fence to fence' thinking – that we are all here to look after the whole place.

Staff know that they have manager backing and are encouraged to be innovative and bring ideas forward. We have created self-managing teams. As part of our drive for innovation we run a monthly dragons den which has generated over 400 ideas, each with a 'doer' to make sure that they turn into reality.

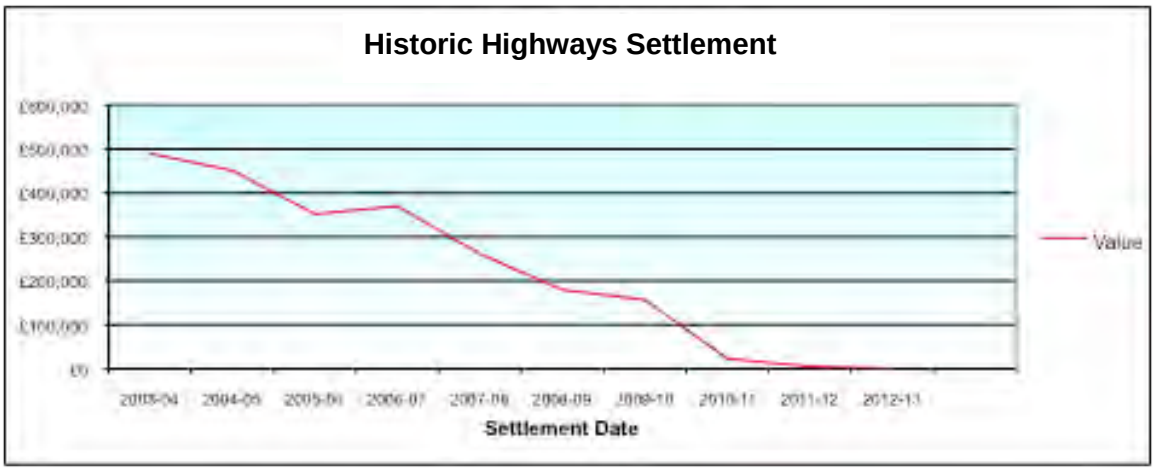
When we work in a particular road – we do all the street furniture whether we own it or not – we don't want to do the work and it not look any different at the end! We held a street party with a 'paint the gate' session - we bought some paint and the whole street got painting and saw their house values increase as a result. Where we reach out into communities, then they think for us and are our ambassadors. We are responsive to local needs with each ward having an improvement plan and a small budget to fund their wish lists or to link in to other schemes.

Outcomes and Benefits

- Roles have changed – for example inspectors don't spend their time chasing reactive repairs anymore, they focus on safety and we can see the impact of this in the reduction of our insurance costs.
- A staff member said that "I've been in this game for 30 years and it's only recently that I have enjoyed coming to work – now people thank me and it lifts your day".
- Operations staff are engaged with residents.
- The public is clear about what their council tax delivers for them and we make sure that we remember that we are here for the community and that it is them who are paying for the service. As part of this we produce an annual Highways VFM report that goes to all staff.

Evaluations

- Value for money delivered throughout the service - 30% savings have been made without impacting front-line service.
- Productivity increased over 4 fold.
- A collaborative culture to improve the service to residents.
- We are now generating income, providing £300,000 of services to third parties.
- Insurance settlements decimated.



Example of reduced insurance claims

Plans for the Future

We have embedded our change culture and our technology looks good now so we have been able to give a team to parking to help them change.

We are trying to do more with self-service e.g. licenses for outdoor pavement cafes Applying the same customer perspective we have set up the system so that if nothing has changed since your last renewal you don't have to fill everything in again, just give us your credit card number and we do it there and then.

We are also looking for more flexibility in how we work. For example we have taken on grounds maintenance and highways inspectors now inspect all parks' footways with same resources.

We are still trying to get slicker.

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4. LEICESTERSHIRE COUNTY COUNCIL – A REVIEW OF HIGHWAY MAINTENANCE USING THE HMEP LEAN TOOLKIT

Case Study Title
A Review of Highway Maintenance using the HMEP LEAN Toolkit
Local Authority
Leicestershire County Council - Highways (Environment & Transport Department)
Background and Scope of Work
Leicestershire Highways Operations (in-house) delivers most of our highway maintenance and improvement services, topped up by an alliance contract with Lafarge Tarmac. Our turnover of £30.2million in 2008/9 reduced to £22.2million in 2012/13 through budget reductions and efficiency savings. We are now using LEAN for an end-to-end review of the whole Highways Service to meet continually increasing expectations. In this case study we share how we have used the HMEP LEAN Toolkit to transform the programming of planned work, and also how the application of LEAN principles has improved other areas of the service including apportionment of budgets, responsiveness to customer enquiries and gully cleansing.
Activities
Programming of Planned Work: The **LEAN Set Up Stage** comprised appointing Strategic and Operational leads and establishing a 'Core Group', comprising representatives from all functions within the end-to-end planned maintenance process. This included Leicestershire Highways Operations and Lafarge Tarmac representatives. The **LEAN Discovery Stage** began with four workshops, each looking at a different stage in the planned maintenance system. Each workshop identified the planned maintenance system's customer, the purpose of that system and mapped out how planned maintenance is currently carried out, capturing any variations and system constraints. The workshop-generated 'flow' diagrams enabled the Core Group to clearly see the end-to-end process and therefore identify the biggest and/or priority issues.

'Works ordering for planned patching' was an area that staff were particularly dissatisfied with and this was chosen as the first intervention.

A 'design day' was held for the **LEAN Design Stage**, attended by the Core Group and key decision makers. Over the course of the day, a new process was developed that took account of the key factors it had to deliver but wasn't constrained by current processes, systems and approaches. The Core Group then identified who would be involved in the prototype, the skills required, what the timeframe would be and how the changes would be communicated to stakeholders.

For the **LEAN Prototype Stage**, two other pre-implementation meetings were held, led by those who would be involved in the pilot, to clarify the details of the process, roles and responsibilities etc with the patching subcontractors (Jordan Road Surfacing & Planing Ltd) providing invaluable input into the process development.

T

Design day at Leicestershire County Council

The **LEAN Implementation Stage** entails the new approach being piloted, county-wide for all planned patching, from October 2013 to March 2014.

For the **LEAN Operate and Continually Improve stage**, monthly meetings are in place to aid communication, check progress and ensure any blockages or issues can be addressed.

Responsiveness to Customer Enquiries:
Using LEAN principles of understanding the current system we set up a cross-functional observation team to watch and follow the flow of work from customers or from the client group into the operations team. The team discovered that emergency calls weren't getting to operations quickly enough, 10-15% of works tickets were inaccurate or incomplete and work was being categorised wrongly. The LEAN redesign included direct routing of emergency calls to the Operational Control Room, learning about ticket errors to prevent or immediately correct problems, correct categorisation of work and moved us further towards a cross-county, project-based approach to highways maintenance. LEAN Continual Improvement is now embedded through weekly reviews with the team.

Apportionment of Budgets:
'Salami-slicing' of budgets to effect significant efficiency savings had left us with budget allocations that didn't reflect the reality of services on the ground. We used LEAN principles to engage a team of senior managers to work together to address this. This team created a process and standard templates to understand each highway maintenance activity and the performance data around it. The team were then able to accurately re-assess and re-apportion budgets to reflect true needs.

Key Challenges

- Unifying different and time-consuming cross-county works ordering approaches.
- Improving long lead-in times and work packaging so as to avoid repeat site visits for re-marking and queries relating to road deterioration.
- Gaining acceptance that direct contact between the Customer Service Centre and the Operational Control Room was a better mechanism to effect certain works.
- Convincing HMG staff that the Operational Control Room should be used as a joint resource, rather than one solely used by LHO.
- Determining the most appropriate highway maintenance service levels and associated budgets.

Outcomes and Benefits

Programming of Planned Work:
- There are now standardised and improved processes across the county.
- The number of queries received/raised by the subcontractor is reducing through provision of a single point of contact for the subcontractor, with more accurate and comprehensive information is on one works order.
- Improved area-based forward planning will provide a consistent flow of work and co-ordination so work is more timely and all parties know when the work will be carried out. This means reduced numbers of ad hoc visits across a wide area, reduced subcontractor queries, a reduced need for re-marking and reduced risk of deterioration and subsequent extra work.
- The accelerated pricing of batches of patching work is allowing improved budget control whilst the time taken to prepare and approve works instructions is reduced.
- There is improved consistency of asset data recording.
- Reduced cost of the road closures/ works noticing process.
- Reduced incidence of repeat visits to sites.
- Greater adherence to works completion timescales.

Responsiveness to Customer Enquiries:
- Greater confidence of emergency works attendance within the 2-hour target time.
- Improved quality in works orders in general and delays in gaining clarification over inaccurate/incomplete works orders significantly reduced.
- Reduced costs from more appropriate prioritisation and avoiding 'make safe' repairs.

- Reports of blocked gullies not scheduled for a routine cleanse within the next two months are now being resolved by our reactive gully emptier/jetter within two weeks – this would often be more than three months beforehand.
- A backlog of around 100 gullies sitting in the system have now been cleared through the proactive approach described.

Apportionment of Budgets:

- The reapportionment of budgets is enabling us to more effectively maintain the overall highway infrastructure.
- The budget reapportionment process revealed vehicle restraint system maintenance had reduced to little more than repairing accident damage. A budget (£150k per annum) now exists for routine testing, repair damage and replacement – an ongoing replacement programme is being developed, significantly de-risking the Council. The funding this financial year has already been used to tackle the most critical/ under-maintained locations.
- The budget reapportionment process resulted in increased funding for gully maintenance. Advance work gangs have been deployed to dig out full gullies in advance of the routine jetting and jetter daily cleansing output has risen from 60 to over 120 gullies per day. Routine cleansing has improved from an 18-month to an annual cycle.

Planned Maintenance at Leicestershire County Council

Evaluations

On the planned maintenance side, there have been reduced subcontractor queries, aided by a single point of contact – as well as an increase in the percentage of pre-surface dressing patching completed before December 2013. The budget reapportionment work has given greater confidence in the identification of works as

budgets are now more aligned to need. Response times for customer-generated enquiries are reducing too so the all-round benefits of adopting a LEAN approach are being realised.

Our Experience of Using the Toolkit

In Leicestershire, the LEAN approach has meant a greater understanding being derived from a whole system approach to reviewing the system end-to-end, enabling the cause of issues to be identified and tackled rather than just addressing the symptoms. Areas of overlap and duplication have been eliminated with roles and responsibilities clarified, ensuring only those interactions that are necessary and add value are retained. The process detailed in the LEAN Toolkit also helps create and maintain momentum for change. Whilst the process is resource-intensive, it does result in a focused approach that progresses relatively quickly from issue identification to solution implementation.

The LEAN review process enables staff from different teams, service areas and organisations to jointly raise issues, “build dissatisfaction” and create solutions in an environment where they are empowered and supported to implement them. This has created high levels of staff engagement and ownership.

The prototype period is an excellent way to ‘try’ a new approach without the risk associated with full implementation. The trial period allows new processes to be refined by process users, again building ownership and increasing the likelihood of effective sustainability.

Plans for the Future

From the experience so far, the whole system approach appears to have much to offer. It is therefore intended to use the LEAN toolkit to develop a project-based approach for all elements of highway maintenance work. This will increase the likelihood that the use of office and site-based resources is optimised. Significant reductions in revenue budgets are required and it is expected that LEAN can help realise sizeable efficiency savings, the full scope of which will be determined over the next few months.

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5. SHROPSHIRE COUNTY COUNCIL – HEDGE TO HEDGE REVIEW

Case Study Title

Hedge to Hedge Review.

Local Authority

Shropshire Council.

Background and Scope of Work

Shropshire is one of the largest counties in England with a population of 306,000 spread across 16 key market towns and a large rural area. Shropshire Council maintains 5,100km of road network. Shropshire has an integrated term maintenance contract in place with Ringway which includes the following services: highways maintenance, street scene services, street lighting, winter, vehicle and structural maintenance.

Shropshire wished to integrate its reactive services as much as possible to achieve 'one pass' in a street or community. This was driven by two equal but competing pressures. The first pressure was to operate as efficiently and economically as possible in the current economic environment. The other pressure was to achieve greater service coherence in communities, to integrate and reduce the number of visits by different services into communities from our environmental maintenance depots.

Our scope of work was for community gangs to move to a 'hedge to hedge' approach, so, dealing with highways, street scene and all related public realm issues in a street, village or town. The scope of 'hedge to hedge' included reactive maintenance (pot holes, kerbs, footway defects), fly tipping, emptying litter bins, graffiti, small hedge and tree works and street furniture repairs. Therefore bringing these services into an integrated team, that could be resourced, tasked and delivers the necessary work in "one pass" rather than numerous contractor staff attending to issues over a period of time. This felt right for us as our feedback from communities had told us that there was some frustration as to why different parts of the Council and Ringway attended at different times, passing each other on route. This was perceived by local people and Members as an inefficient way of working.

Activities

LEAN Discovery Stage:
We began our LEAN project investigating from the first point of customer contact to the final payment, looking at back office as well as operational areas. We mapped all of our journeys through the system, and identified key processes, activities and costs. This enabled us to understand what was of value, what key data was, what we needed for governance and where we duplicated effort or incurred unnecessary costs.

When we created these end-to-end customer journey maps we saw a beast with many systems, and sub-systems. A manager said "We all sat round the table thinking it was fine initially and that we wouldn't have anything to change, but seeing it from everyone's point of view and seeing other people's worlds it became obvious what improvements could be made."

Our system - the 'beast' c/o Shropshire County Council

LEAN Design Stage:
Then we had to decide what to act on and what the system was telling us that we could improve. We redesigned using the 'one pass' approach - in our model the community gang goes first and clears all defects, then the highways inspector goes after and so less defects will be found, giving the inspector the capacity to undertake other works such as permit inspections, fixed penalty notices or other public realm work. The inspector has a whole view of the street and looks forward rather than chasing potholes and trips. If work is initiated by a customer, then the inspector can direct the gang from the information app reading on the inspector's iPad; this improves the efficiency and response time and reduces the cost as well as impacting upon customer satisfaction.

LEAN Prototype Stage:
We initially prototyped with 3 gangs then expanded to a Division.

LEAN 'Implement' & 'Operate & Continually Improve' Stages:
We then rolled out across the whole county. It took us 5-6 months to roll it out and reinforce new behaviours.

Challenges

Some of the challenges we faced in making this change happen were **operational**, **cultural, contractual** and **attitudinal.**

Operational Challenges:

- We knew that we needed to change the way we delivered services; we discussed and agreed with Ringway how we could reorganise the services and amend our contractual agreements. We knew that our staff and contractor needed time to understand the case for change to our established approach to work. We made the case for change based on analysis of data (end to end times, costs, processes, staff feedback) that made the need for improvement self-evident.
- The data drove everything for us. Having the key decision makers and key staff (at all levels regardless of Council or contractor) sourcing the data helped everyone to believe and be convinced of the need for change. Objective evidence made it easier for all to see that this had value. When people saw the evidence in end-to-end times, less repeat visits, customer journey mapping and whole system costs not only made the case, but also showed us the key areas for improvement that needed to be achieved.
- Integrating the inspector and gang as one team who have the same expectations of quality and priorities dealing with the issues in their patch. In essence the gang went in front of the inspector, on a find and fix basis, with the gang and inspector working as an integrated team, dealing with the issues in their "patch". This required trust, management and good governance in ensuring the quality of work and selection of work by the gangs was appropriate and affordable.

Cultural Challenges:

- We found that the cultural changes were the toughest to really embed. We were asking staff to take on new responsibilities, be more accountable and to work as one with the operational (contractors) gangs. We had to help them to start working as an integrated team and get the benefits from the new way of working.
- Communication was key; it took some time to embed the cultural change and to see that it created better results more efficiently over the whole system. Therefore we constantly involved all staff in understanding the data, why processes were being challenged and agreeing what the new systems would be.
- Initially we had managers who were unsure that their teams had the skills do this, so we needed to consider new training, tools and equipment. Now the gangs are saying that it is much better doing the variety of work. One of the team said “now I have freedom to do the right thing on the street rather doing what the computer tells me - it makes me feel better about coming to work”.

Contractual

- We worked with Ringway in agreeing changes to our existing term contract in respect of reactive maintenance.

Attitudinal

- We developed a clear management plan, with a project manager as one point of contact for Hedge to Hedge, to lead the initiative and embed it. Hedge to Hedge operated upon established project management principles (such as aim of plan, expected outcomes, performance measures, communication and governance). Part of the plan was to be clear on the data to be collected, what was the right

data, interpreting the data within context, and taking action on the causes. The plan was shared with all staff as the data became available. We made sure all staff understood what needed to be done and why.

Outcomes and Benefits

More efficient:

- Doing 'one pass' makes us as efficient as possible.
- We are spending more of our time on the value activity and less on handling, instructing and back office processes. Essentially the "LEAN" approach challenged every step of our whole system.
- Our work is now flexible & integrated. For example street scene teams can do footpath clearing and daytime gritting in the winter, or if we put a road closure notice on – we could be doing, kerbing, cutting and strimming verges and jet washing while we are there.

Public & elected member perception improvements:

- We are getting lots of positive comments from the public and Members, such as our speed of reaction, rectifying faults in one location and minimising the inconvenience caused. We are also getting positive feedback from Members who feel that now the contract is doing what we always hoped it would.
- Highways Inspectors have close contact with their gangs which allow them to be more reactive and to work more closely with Town and Parish Councils.

Opportunities:

- Evidence demonstrated that there was an increased capacity in technicians' working time, which could be reinvested into new areas of work for the Council.

Staff are happier:

- Staff felt more valued and have a sense of ownership rather than someone who repairs a defect.
- Inspectors are more satisfied because they know when their work will get done and are able to use their knowledge to prioritise.
- Staff satisfaction has improved across the system, mainly due to the fact they can react to local issues, concerns and requests within a very short time period.

Our advice if you are under pressure to make efficiencies is don't keep reducing the budget – go back to basics and look at the overall efficiency of the system. Understand your current system, in terms of processes, costs and activity that the system creates and consider its value and effectiveness and start from there.

Evaluation

- Cost per defect has decreased from £82.45 per defect to £30.10.
- Increased productivity by 212% this is due to the increased scope of work and reduction in travelling time between jobs.

- End to end times have reduced from 25 days to 3 days.
- Average number of defects fixed per gang in one day has increased from 6 defects to 23.
- Reduction in works orders (average of 40 per week) on the register due to the immediacy of their completion.
- Inspector capacity increased by 30%, providing more scope to undertake utility inspections etc.

Plans for the Future

Our plans to keep building on what we have achieved are:

- Widening out the process to other elements of our work e.g. street lighting, vehicle maintenance and larger scale grounds maintenance.
- LEAN is now spreading across the Council to other directorates. We are running a place-based prototype looking at and redesigning all services being provided into one town.

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6. BRADFORD METROPOLITAN DISTRICT COUNCIL – HIGHWAYS SURFACE DEFECT IMPROVEMENTS

Case Study Title
Highways Surface Defect Improvements.
Local Authority
City of Bradford Metropolitan District Council
Background and Scope of Work
We were looking to fix potholes quicker and more efficiently and we wanted to change the culture from reactive fix (chasing here, there and everywhere) to being proactive. We started this work as part of an overall Council efficiency programme and had the support of a consultant from the Council's central change team. We found that his previous LEAN experience and external perspective really helped us see the waste in our processes. For us this was about doing more with our money. We had been going around in circles for years fixing reactive defects and we wanted to do things differently and create a more resilient and robust network with the same money. Our biggest mistake in the past was trying to achieve lots of KPIs without stepping back and saying "are we actually improving the network?" Our scope was to speed up the transfer of a works order from first report to action by the gangs which took up to 20 days. Our aim was to reduce the number of potholes and to fix them quicker so that we could reduce the cost of insurance claims. The leadership team applied LEAN because they knew there were inherent inefficiencies in our system and wanted to engage staff in improvement. They wanted everyone across the service to see the inefficiencies for themselves and get involved in making it better.
Activities
We used a LEAN six-sigma approach and ran workshops looking at the end-to-end process to reduce the non-value added steps such as handoffs and passing between teams. We had strong facilitation and always had wins from each session with something positive to take away. The external facilitation worked because he was outside of our system, not part of the highways culture, and was able to look at it impartially. Looking at this from the outside we saw more inefficiency which was

alarming! We dealt with defensiveness by trialing, testing and agreeing to come back if it didn't work.

Our inspectors moved to a proactive approach, going to the worst areas and doing patches with proactive gangs. We found that this larger scale planing and patching work was more efficient. We introduced working in zones, initially for 6 weeks, and just carried on because it worked so well and we could demonstrate that we were delivering better quality with the same number of people. We also really understood our demand – for example we found that 63% of demand was in 3 out of the 7 zones.

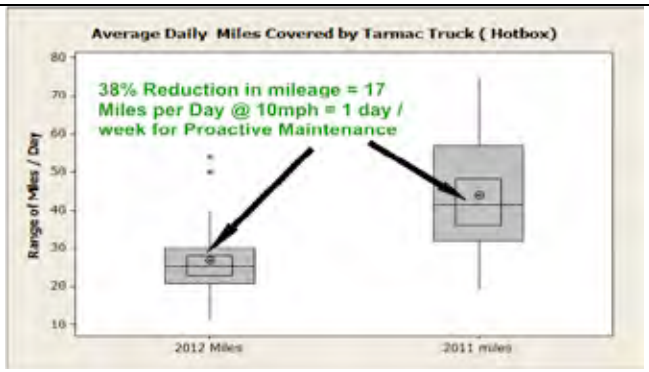
Challenges

There were significant challenges in changing culture:

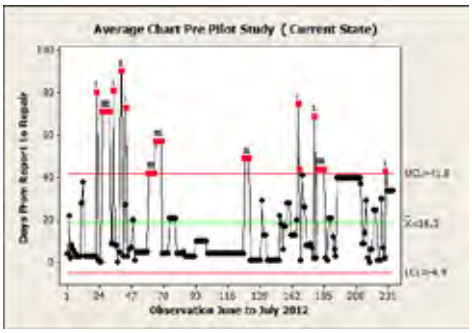
- We were changing practices and breaking down silos that had been in place for 50 years.
- Our culture was one of excessive monitoring, over and above the front-line value work with 1 'white collar' to 2 'blue collar' workers, so this was slow to change.
- We needed **trust** to make this work. In the past the client – contractor relationship had been damaged, and this project has been a key part of rebuilding it.
- Not everything was plain sailing as the workshops identified many contentious issues that challenged existing working methods and relationships.
- There was initial resistance around "this is different" and "this is particularly complex".
- We used to have too many people working separately in their own little silos and forgetting what they were there for – it feels different now but it has taken time (9 months) to embed. People didn't understand what 'proactive' really meant when starting out – for us, it means planing, patching and surface dressing; and then to avoid going back to the same area for a few years.
- What helped to change our culture was soliciting external support and using a process like LEAN that took us right back to the beginning and engaged people in creating the new way of working.
- We started with a prototype trial to get support and that worked so well that it was seamless to implement and make it normal.

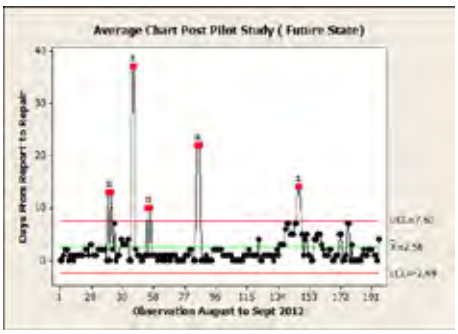
Outcomes and Benefits

- The biggest difference is that now we are organised in zones so we are more productive, use less fuel, and respond quicker because we are spending less time driving around.



- We used to take 18.5 days on average to repair a cat 2 defect that came in via our contact centre, now we can do it in 2 days.





- The most important person is the customer who gets an instant fix.
- We have been able to move resources from reactive into proactive work.
- The maintenance work we undertake is more permanent and lasts longer without having to revisit.
- We are delivering more square metres at a lower average cost - planing and patching costs us £22/m^2 whereas reactive potholes used to cost us £48/m^2.
- The overall quality of our roads has improved with 25% fewer potholes.
- Insurance claims/costs have reduced - the number of claims and value have gone down because the roads are of a better quality and we aren't leaving marked areas for long periods as adverts for 'make a claim here'.
- Customer satisfaction and the perception of the council improved because the public can see we are improving things.

Evaluation

We are doing more maintenance work for the same budget and the quality of our roads has improved. We have reduced the number of potholes by 25%.

Insurance costs have reduced as outlined below:

	2009-10	2012-13
Annual pavement maintenance spend	£140,000	£111,000
Number of claims re pavements	226	197
Value of claims re pavements	£87,345	£5,701

Plans for the Future

- We are implementing a phone application that the public can use themselves to report defects.
- Developing relationships and joint working e.g. inspectors are to be based in the depots.
- Combining safety and condition & NRSWA inspections together under one roof.
- Looking across other areas of the Council.

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7. HIGHWAYS AGENCY – WINTER MAINTENANCE ROUTE EFFICIENCY

Case Study Title
Highways Agency – Winter Maintenance Route Efficiency.
Local Government Authority
Highways Agency MAC Area 8 – Motorways and Trunk roads in Bedfordshire, Hertfordshire, Cambridgeshire and Milton Keynes.
Background and Scope of Work

Carillion-WSP has managed the network on behalf of the Highways Agency under a MAC contract since 1 September 2008.

Winter maintenance is a challenge for all Authorities, and the recent harsh winters have made this more and more pressing.

In MAC Area 8 there was:

- Colloquial evidence that suggested that the winter maintenance routes were not efficient.
- Historical data showed that many of the winter maintenance routes were significantly under the maximum 2 hour treatment time.
- A large number of treatments were running at less than 75% salt capacity.

A business case was developed and approved with the very simple objective of 'Increasing the efficiency of winter maintenance operations, so that more can be delivered for less'

Winter Maintenance Route Planning

Activities

A LEAN project team was formed to review the existing treatment routes.

The project team worked together to:

- Define the area network graphically.
- Create a tabular view of the network, in running order, by section.
- Add the key characteristics to the table (length, width etc.).
- Identify new winter maintenance routes and then to refine these to ensure that all areas are covered and that the routes were as efficient as possible.

Following the winter maintenance route redesign Carillion-WSP:

- Updated the Severe Weather Plan.
- Trained the drivers on the new routes.
- Created a new Winter Maintenance rota, which included precautionary and reactionary routes.
- Trained the decision makers in the use of the new routes.
- Commenced operation of the new routes from the start of the 2010/11 Winter Maintenance Season.

Challenges

Key to the success of the project was the involvement in the project team of people that worked in and understood the Winter Maintenance system.

Outcomes and Benefits

Following the implementation of the new Winter Maintenance routes the following benefits have been achieved.

- Six fold reduction in the number of precautionary treatment routes.
- 20% reduction in winter maintenance related standby payments.
- 29% reduction in winter maintenance treatment payments.
- Increased efficiency of winter maintenance.
- Reduction in the number of hours spent by operatives on-call.
- Reduced disruption to other works (routine and schemes etc) during precautionary treatments.
- Standard methodology for re-design of winter treatment routes.
- Improved accuracy / recording of salt usage.

The project and methodology could be used by any MAC contractor with a view to reducing the number of treatment routes used for precautionary treatments.

The benefits would vary from MAC to MAC dependent on the efficiency or otherwise of their current route designs and arrangements for carrying out treatments.

Evaluation

The objective of the project was very simply stated 'To increase the efficiency of winter maintenance operations'. Following the project this has certainly been achieved, with a saving of £150,000 per annum.

Plans for the Future

It is planned to next apply the methodology to reactionary treatment routes. This LEAN approach, looking at efficient routes, is also applicable to Highway Authorities e.g. in litter collection.

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8. SANDWELL METROPOLITAN BOROUGH COUNCIL – HEDGE TO HEDGE, RIGHT FIRST TIME APPROACH

Case Study Title

A Hedge to Hedge, Right First Time Approach.

Local Government Authority

Sandwell Metropolitan Borough Council.

Background and Scope of Work

Sandwell maintain 877km of roads in the Borough with an annual expenditure of £5m on highway maintenance (excluding major works and consultancy). There was a need to change how they worked to cope with a 30% reduction in staffing without impacting on the quality of services. They chose to look at all of their work from hedge to hedge, and found that there was waste in the system due to multiple handling and processing, specialist silos, long lead times, multiple visits to defects, inconsistent responses to customers and lack of trust.

Sandwell visited this site numerous times for separate interventions, but did not achieve the right outcome

Steve Handley, Area Director Street Scene said:

"The Highways team had been through a large scale redundancy programme and morale wasn't high and so I was initially nervous of diverting our very limited resources to a LEAN review. It quickly became clear however that there was enormous scope for improving the service to our customers and saving even more money. Over the course of the review we have continued to identify further areas for improvement which is why I am now focused on using the same approach across the whole of my directorate".

Activities

The LEAN review took 9 months with the following key activities:

- Set Up: Engaging stakeholders, being clear about the outcomes and the plan to get there.
- Discovery: Understanding the customer purpose "to provide a safe and available road network". Then understanding the current system, both what worked well and what got in the way. To do this we captured demand, went out and mapped our flow, and understood our customer measures.
- Design: We created a new design at our Decision Accelerator day, focusing on fixing defects right first time, creating one new route for customer calls and working hedge to hedge.
- Prototyping: Testing our new way of working in one area of Sandwell.
- Implementing the new way of working.

Challenges

Irfan Choudry's (Service Manager – Highways) advice to someone starting this journey is:

- You have to have senior leader and Member backing for it to be successful.
- Be open and honest with all stakeholders.
- Stakeholders can be skeptical at the beginning but it turns around as they get engaged and see the benefits as they use the LEAN approach to gather the evidence for themselves.
- You need lots of communication at the beginning.
- Get things scoped with clear outcomes at the beginning.
- You will naturally encounter people being protective and feeling threatened by the review; you have to be honest and assure them that this is about improving the customer experience.

Sandwell's toughest challenge was in engaging service partners & external agencies, e.g. utilities and the housing department, who have different priorities and different financial models. Sandwell are still working on their aspirations to expand the 'whole street approach' across partners. The LEAN approach will help deliver this, using the stakeholder methodology in the Set Up stage of the Toolkit, and using the evidence from the Discovery stage to get engagement and create momentum for change.

Outcomes and Benefits

- Moved away from temporary to permanent repairs.
- Moved away from a reactive maintenance approach to a planned maintenance approach.
- Working on a "Right First Time" principle, on average only one visit is required per pothole instead of 2 -3 visits that were made previously. Thus improvement in productivity per crew has at least doubled.
- Fuel charges reduced by £23,000 per annum now that teams aren't chasing 24hour reactive repairs.
- Greater consistency in response times, quality of repairs, almost 100% removal of repeat and abortive visits.
- Behaviour has changed – the operatives found LEAN to be useful because they saw that they were being listened to, that changes that they suggested were taken on board and they felt valued.
- The benefits of both a LEAN approach and engaging all staff in the transformation process can produce amazing results and hugely improved morale.

Evaluation

- Cost savings of £500,000 per annum through measures implemented through the LEAN process.
- Average cost to repair a pothole has reduced from £151 to £84, a saving of £67 per pothole.
- The call centre benefits have been a single known access point for customers and improved customer experience, which is demonstrated by a 93% customer satisfaction level.

Plans for the Future

Sandwell's new LEAN culture of continuous improvement has led to tackling further areas beyond the initial scope:

- As part of LEAN issues were identified with repeat visits to belisha beacons. Irfan said that " We had been doing this for many years and until LEAN hadn't really challenged ourselves and seen the true picture. As far as the Council were concerned they were buying the cheapest luminaires but not understanding the end to end cost of revisiting sites on an almost monthly basis to change them " Sandwell therefore launched a follow up project and invested £40,000 to change to LED luminaires in belisha beacons which will save £150,000 in released staff capacity.
- Sandwell have gone on to look at road lighting, extending the find and fix concept in the original work. They are now trialing night working.

- They are now using LEAN to look at alternative models for highways asset protection that can be impacted by utility operations to address current challenges.
- Sandwell Homes has gone from an arm's length organisation to coming back to be part of the Council so elements of their operations are now being integrated within Streetscene. This created an opportunity to improve partner working now that organisational barriers have been removed.

Derek Rowley, Cabinet Member for Highways said:

"It is vital that we use every penny in our budget to the best effect. The Highways Programme has helped us understand where savings can be made whilst also improving the road network for our residents".

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9. HEREFORDSHIRE COUNCIL – HEREFORDSHIRE HEALTH CHECK OF THE HIGHWAY SERVICE LEADING TO THE RE-PROCUREMENT OF SERVICES

Case Study Title
Herefordshire Health Check of the Highway Service Leading to the Re-Procurement of Services.
Local Government Authority
Herefordshire Council.
Background and Scope of Work
Herefordshire had previous experience of running a successful LEAN project looking at their parks and open spaces, from which they had identified that the methodology could be more widely applied. This directly led to Herefordshire developing a brief for the creation of a 'World Class Highways' health check model with Improvement and Efficiency West Midlands. The objective of the brief was to develop a re-useable model, based on LEAN, that would allow an Authority to: · Assess how close their service is to 'world class'. · Develop solutions to close the gaps. · Plan how to implement the solutions.
Activities
The project identified key stakeholders from across the Council and their service provider. The key stakeholders covered all service areas and all levels from Members, Directors, Operational Managers and front line teams. The first task was to identify a measure of 'world class' which was done through a series of structured interviews and workshops with members, managers and front line teams across the services. These sessions were based on LEAN principles which ensured that the perspective of customers was always considered, that the whole end-to-end system from client to service provider was in scope, that measurement was assessed for effectiveness and that people and relationships were explored.

While 'world class' is subjective the project agreed that to be 'world class' the service must:

- Deliver what matters to its customers.
- Deliver high quality service in a timely manner.
- Do things right first time.
- Achieve value for money.
- Be flexible and adaptive.
- Be capable of learning and improving.
- Contribute to the local economy.

The model developed contained more than 50 assessment criteria that were grouped into 5 major assessment areas: Meeting Customer Needs; Managing Performance; Relationships and Culture; Planning and Delivery and Achieving Value for Money.

The model developed was then further refined as it was applied to the service at Herefordshire. The service was assessed against the model by:

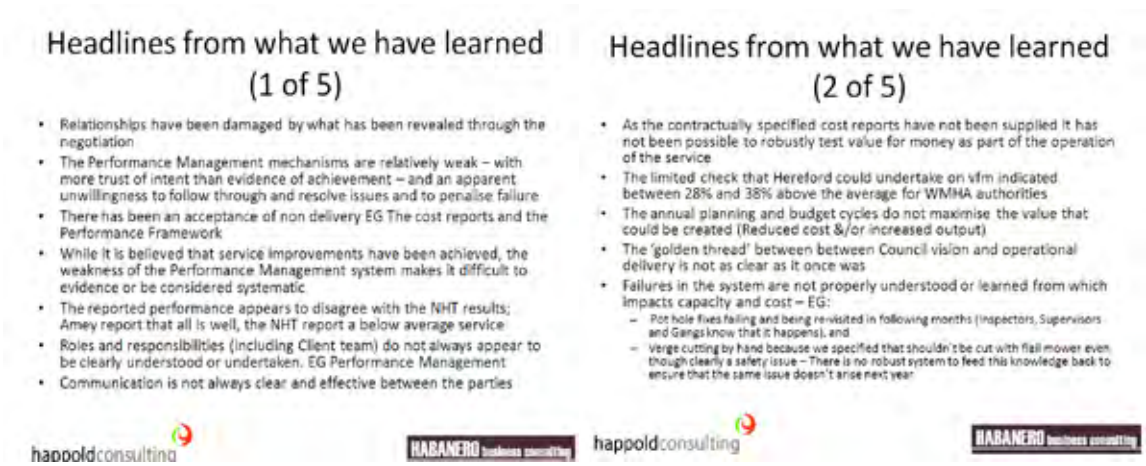
- Desk based analysis of available performance reports
- Follow up interviews with key stakeholders to further explore areas of interest
- Spent time in the work with the front line teams to see what really happened

The assessment findings were then fed back to the key stakeholders and they were facilitated to develop solutions for Herefordshire to close the gaps, and plan for the implementation of those solutions. A snapshot from the completed model is shown below:

OVERALL ASSESSMENT

	% score	Overall Status
Meeting Customer Needs	50	
Managing Performance	37.5	
Relationships and Cultur	42.86	
Planning and Delivery	53.85	
Achieving Value for Mon	15	

Overall Status: Green if 70% or above, Amber if between 50% and 70% and Red if below 50%



Headlines from what we have learned (3 of 5)

- The TRO process is not 'owned' end-to-end, it fails to consistently meet its performance targets and does not appear to be really addressing the root cause of issues
  - Average time to complete a TRO from starting work is 79 days – Longest reported is 541 days – Most are completed in less than average days
  - When process runs smoothly performance is relatively fast, when problems encountered the process is less owned and it seems to take as long as it takes
  - Significant backlog in the system – currently planning start dates out to 2018 – Using this data true customer e-2-e from requested to completed is average of 1708 days
  - From a customer perspective only 5% of elapsed time is spent actually working on the TRO
- The linkages between planned and reactive maintenance could be improved – EG:
  - Better links between the knowledge of the Reactive team and the creation of the programme of work
  - Providing visibility of the programme of work to the Reactive teams to mitigate the risk of them fixing a pot hole today that is subsequently re-fixed by a larger programme rectification

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Headlines from what we have learned (4 of 5)

- There are a significant number of defects in the Safety Inspector system (Drama) that are due to be completed but not recorded as closed (It is not possible to know if they are physically complete or not)
  - 52% of cat 2 defects reported in the period October 2011 to December 2011 had not been recorded as complete on 14/6/2012
  - 19% of cat 3 defects reported in the period October 2011 to December 2011 had not been reported as completed on 14/6/2012
- There is a significant amount of variation in the end-to-end times from date reported to completed for Safety Inspector reported defects (Extracted from 'Drama' on 14/6/12) – This may not be a complete picture because of the number of defects still shown as 'open'
  - Cat 2 defects reported in the period Oct to Dec varied from same day to 99 days
  - Cat 3 defects reported in the period Oct to Dec varied from same day to 192 days

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Headlines from what we have learned (5 of 5)

- There is a significant amount of variation in the end-to-end times for public reported cat 3 defects
  - Average from reported to fixed is 58 days, fastest is same day, longest took 180 days (In the data we analysed no defect failed to meet the performance target of fix within 6 months)
  - This degree of variation may result in the public thinking that it takes a long time to fix defects that they report
- The Consultancy service provided is not of sufficient quality to inspire confidence
  - The wrong (HC) people (planners) commissioning incorrect work
  - Acceptance of scope which is unnecessarily broad for the needs of HC
  - Costs not always clear
  - Additional cost relating to use of Parsons Brinkerhoff
  - Poor delivery (quality and final product)

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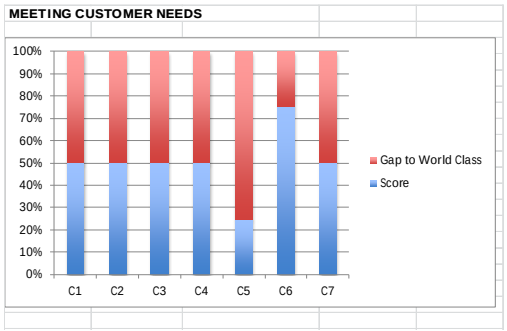

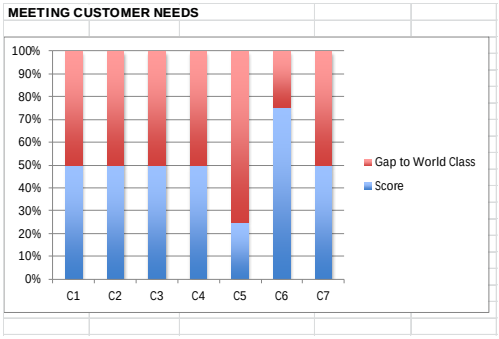

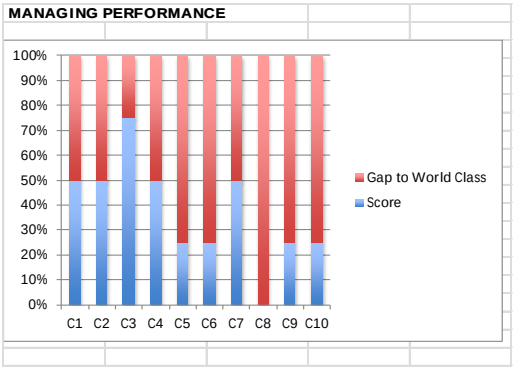

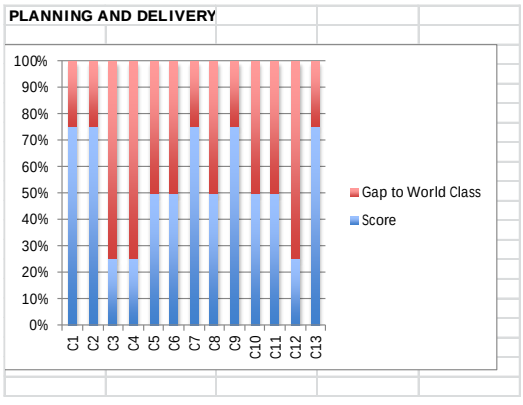

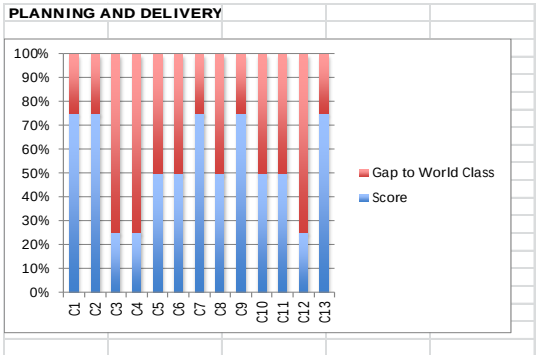

The final activity of the project was the delivery of the tested 'world class' health check model back to Improvement and Efficiency West Midlands.

Challenges

The key challenge encountered was helping all of the key stakeholders to remain focused on understanding how the whole service worked, from end-to-end and including both Client functions and those delivered by the service provider – In fact the assessment identified significant opportunities for improvement in all parts of the service, not just in the contractor parts of the service. It was our adherence to LEAN principles in the project that helped us to remain focused on the end-to-end system rather than simply blaming the service provider.

Outcomes and Benefits

The key headlines from the deployment of the 'World class' Highways model were:

- The client contractor relationship and use of performance management was characterised by a trust of intent rather than evidence, and this lack of challenge had become normal.
- While service improvement had been achieved the lack of evidence made it difficult to prove or be considered systematic.
- Roles and responsibilities (including the Client Team) did not always appear to be clearly understood or undertaken.
- Little focus was given to the contribution to the local economy.
- Lack of information on costs and benchmarking made it difficult to provide assurance on value for money.
- The annual planning and budget cycles did not maximise the value that could be created if more flexibility was available to the contractor with regard to where money was spent to best achieve purpose, and if the budgets could have been for longer than 12 months.
- Failures in the system that resulted in work being re-done (observed in reactive and planned maintenance) were not properly understood, learned from or fed back into the design of future work. This resulted in waste activity and cost being locked into the system.
- The TRO (traffic regulation orders) process was not owned end-to-end, it failed to consistently meet its performance targets, or to address the root cause of performance issues. Average time from work starting to completion was 79 days, but when the project team looked at the time from request to completion the actual range was 1708 days (nearly 5 years).
- The linkages between planned and reactive maintenance could be improved, as the reactive teams did not have details of the planned maintenance programme.
- There was significant variation in the time taken to fix potholes, with CAT 3 being fixed in the range from same day to 180 days. This resulted in the public often being dissatisfied with the performance.

- There was such a loss of confidence in the consultancy service being delivered that another external consultancy was employed to 'ride shotgun' on key schemes.

Evaluation

Based on the assessment of the current service described above Herefordshire elected to re-procure their highway service, with the evaluation criteria for the procurement informed by what had been learned.

- It is the whole end-to-end system that needs to be improved, including the client functions.
- Services should be joined up, not delivered in silos, with what matters to our customers defining what we do and what should be measured.
- Services can be designed to be part of each locality and to best suit each locality, with a balance of local and strategic needs met.

The procurement process has now been completed and Balfour Beatty selected. The new service design is expected to improve service quality and save circa £2m per annum for Herefordshire.

Plans for the Future

The 'world class' highways model allowed us to review our whole service using a LEAN approach to the assessment. We will re-apply the model once we have completed the implementation of our new service design with Balfour Beatty, and we would advise other authorities that a review of your whole service using the 'world class' Highways model can help you to identify opportunities and plan how best to realise them.

We are now in the process of implementing the new service design with Balfour Beatty, with the learning from the 'world class' assessment informing our plans.

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10. NORTH EAST LINCOLNSHIRE COUNCIL IN PARTNERSHIP WITH BALFOUR BEATTY WORKPLACE – IMPROVED COORDINATION OF HIGHWAYS AND UTILITY WORKS

Case Study Title
Improved Co-ordination of Highways and Utility Works.
Local Government Authority
North East Lincolnshire Council in partnership with Balfour Beatty Workplace, working with utility partners National Grid, Anglian Water and Balfour Beatty Utility Services.
Background and Scope of Work
We knew that we were missing opportunities for improving the coordination of works between utilities and the Highway Authority and wanted to explore opportunities to reduce disruption for road users. This resulted from our experiences undertaking major utility works on Boulevard Avenue in Grimsby, where although there was some co-ordination of works, further opportunities were missed. This meant that we needed to go back to the same street for further works soon after completion of the initial streetworks – causing additional disruption for customers and costing us more money. We wanted to develop closer working relationships between users of space on the highways i.e. utilities and the Highway Authority, to improve the service for our customers (road users, pedestrians, public transport and residents). We believed that we could maximise the use of booked road space and so reduce the days of disruption to a minimum, as well as providing better information for road users. Our scope was to work with utility companies who had a significant presence in North East Lincolnshire so we engaged with National Grid, Anglian Water and Balfour Beatty Utility Services. We chose to use LEAN to tackle this problem because, having had previous experience of successfully using LEAN, we knew that the LEAN approach would help us engage stakeholders, see the customer perspective and create strong measures.
Activities
How we used the LEAN Toolkit to make the change happen: **Set Up Stage** Our first step was to identify participating organisations and key representatives. We needed key players from the utilities who had good operational knowledge and who also

had the necessary influence to take the changes that were discussed and agreed back to their respective organisations and to make them happen. We did lots of background work to identify the right people and then to prepare and brief them in advance so that when we started everyone was aligned and we were able to move forward quickly. To help with the briefing we documented the detailed background to the LEAN project and its aims, including positive outcomes for all involved so that it could be seen as a 'win-win' project. We established a meeting structure and timetabled activities for what we needed to cover. We were working to a very tight timescale and had to accelerate the Set Up to Design stages into only a few weeks so we had to make sure that all the attendees were well briefed and had to attend to good planning and communication and co-ordination to keep the pace up.

Our structure was:

- An initial meeting where the leaders were briefed and agreed the scope.
- A detailed planning meeting including the launch to the operational team, developing a detailed plan, starting the data analysis and getting stakeholder understanding and engagement.

Discovery Stage:

This was our first meeting with all the utilities in place. We covered:

- A clear understanding of what was needed for a successful outcome.
- Agreed who is the customer and agreed what the customer needs from the utilities and from highways.
- Identified detailed outcomes e.g. collaborative working, and all signed up to these.
- Initial data analysis using recent case studies and then agreed a data set that all participants would go away and collect.

Design Stage

In our design day, representatives from the Highway Service and from the utilities worked together to:

- Review the outcomes .
- Review the data collected.
- Redesign the existing process and come up with a new way of working.
- Identify risks and planned how to mitigate them.
- Plan how to prototype the new way of working.

Design day at North East Lincolnshire

Our new model included 4 main outcomes:

1 - Sharing Roadspace/ Better Coordination of Works
Outcome - All parties to work together to maximise use of roadspace and to coordinate works in such a way that the number of days of occupation on the highway is minimised so disruption and congestion for customers will be reduced.
2 - Develop a “Coordination Charter”
Outcome - To be developed and to be signed up to by all active utility companies, Balfour Beatty Workplace and North East Lincolnshire Council. If adopted, the "Coordination Charter" would go part way to meeting some of the requirements of a more formal permit scheme.
3 - Develop a Coordinated 2-3 Year Forward Programme
Outcome – To change the current approach and look further forward to a three year horizon for works programmes through the existing coordination meetings chaired by Balfour Beatty Workplace and attended by all utility companies operating within North East Lincolnshire. Challenge the current success measure which is defined as planning a series of schemes so that they are able to run concurrently without impacting on each other. Instead, introduce a “way of thinking” which maximises the amount of work that various organisations can undertake by sharing roadspace and traffic management to enable multiple schemes/work to be completed at one go i.e. moving from “avoidance” to “collaboration”.
4 - Improve information to the public
Outcome – Improve the information that we provide to the public before and during works. This could be via site signage, variable message signs, advance notice, press engagement and involving key stakeholders e.g. Stagecoach for all “major” and “standard” works. Whatever we do with regard to improving information to the public, we must always consider what the public wants and what the public needs.

Challenges

Our biggest challenges were:

- Delivering attainable outcomes within a very limited timescale.
- Making the best use of the time available – we have seen previous projects & workshops turn into talking shops but everyone’s time is very valuable so we have needed to keep focused on the outcomes and kept moving through as fast as possible.
- Making sure that the right people were sat around the table – those with the knowledge and ability to deliver permanent change.
- Ensuring that there were win-wins for all participating organisations so that all saw benefits.
- Making sure that we sold the benefits to each so that all were clear and bought into

the process of how we were going to change through LEAN.
- Fitting it in when we are extremely busy.
- Support from senior management is critical or the changes will not be sustainable.

Outcomes and Benefits

- Reducing disruption to the road user on the highway network, ensuring more consistent journey times.
- Better informed customers and improved stakeholder relationships regarding disruption.
- More efficient working on site as a result of more effective forward planning e.g. saving costs by sharing traffic management.
- Promote positive customer feedback.
- Environmental benefits – less air and noise pollution.
- Improve road safety by reducing the number of days of traffic management and work on site.
- Self-regulation and less need for statutory enforcement.
- Improved working practices.

Evaluation

We are still in the very early stages of the project, but are confident of success with all participants signed up to a range of success measures and a strong commitment to see the LEAN project through.

Many other Highway Authorities such as the London Borough of Hounslow have been successfully collaborating with utilities for some time:

- Using collaborative working agreements, Hounslow Highways is partnering up with utility companies to share road space and carry out works at the same time. It means roads will be closed less often during the major works taking place as part of their £100 million five-year Core Investment Period, as well as during routine maintenance.
- Hounslow Highways has also agreed to replace ironworks, such as manhole covers, on behalf of Thames Water when carrying out road surfacing schemes to avoid repeat visits to the same locations and associated road closures.
- This collaborative approach was recently demonstrated when Thames Water contractor Cappagh Browne carried out footpath reinstatement works under a closure for street lighting installations in Hibernia Road in the borough.
- “Wherever we can reduce disruption while our huge programme of works is taking place is a positive move. Given that we are carrying out works on 85% of the borough’s roads, 75% of the footpaths and replacing 16,000 street lights with LED lamps in the next five years, it is important we work together”.

The mini case study that follows this, "Working in Partnership with Utilities – The Kinver Project" demonstrates the scale of what can be achieved through collaboration.

Our Experience of Using the Toolkit

- The Toolkit can be used flexibly.
  - We initially planned to have more Discovery sessions but found that the pre-work and alignment across the stakeholders meant that we could move really quickly through and so we went straight to the Design workshop.
  - We compressed the process and cherry picked what we needed. We followed the stage structure, using some areas in detail and others at quite a high level, as we had previous experience of running LEAN projects.
- We found that the Toolkit provided a readable and workable framework to hang our process on – we found it helpful because it was pragmatic and free from jargon.
- The Toolkit took our LEAN project through a logical sequence of events and highlighted the critical and relevant risks, for example the importance of senior management support.
- Our experience was that the consultant, who acted as our critical friend and asks the challenging questions, is fundamental as when you do the job day in and day out it is easy to reinforce existing practices and hard to step back and see the wood for the trees.

Plans for the Future

- First we will complete our LEAN project by delivering the prototype and getting the coordination charter in place.
- Our next stage will be to build on the goodwill and positive momentum that has been created to keep the group going to achieve what we have already agreed, and then to look at further more efficient ways of working beyond.
- We would also like to build on what the current group of stakeholders has achieved and engage with other utility companies who operate in North East Lincolnshire.
- We also want to use the HMEP LEAN Toolkit in other parts of the business e.g. to look at how we design and supervise highway improvement schemes, and also to review our technical support functions.

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11. WORKING IN PARTNERSHIP WITH UTILITIES – THE KINVER PROJECT

Case Study Title

Working in Partnership with Utilities – The Kinver Project.

The purpose of this mini case study is to demonstrate the scale of results that can be achieved through collaboration between Utilities & Highway Authorities – in support of the above case study from North East Lincolnshire on 'Improved Coordination of Highways and Utility works'. The Kinver Project is a 'one off' success for coordinated working which is essentially what is trying to be replicated in North East Lincolnshire but on a more sustainable basis.

Local Government Authority

Staffordshire County Council in partnership with Balfour Beatty, BT, E.ON, South Staffs Water, Enterprise & National Grid.

Background and Scope of Work

A major collaboration in the village of Kinver resulted in six individual sets of works taking place at the same time in order to reduce disruption to the local community. The reduction of time to complete the works caused residents and road users minimum disruption, saved money through shared traffic management, and offered maximum customer service rewards.

This scheme, overseen by Staffordshire County Council, was a direct result of forward planning and the desire by all involved to work in partnership in order to reduce disruption.

This case study illustrates the principle of 'Utilities working together and in partnership with local authorities to minimise disruption' championed by the National Joint Utilities Group (NJUG). NJUG is the UK industry association representing utilities on street works issues. The thirty-eight companies it represents work to deliver gas, electricity, water and telecommunications to both individual consumers and UK plc.

Outcomes and Benefits

If works were undertaken individually and not co-ordinated, the resulting disruption would have lasted over twenty weeks. However the duration of the joint programme resulted in only seven weeks of coordinated works under joint publicity and traffic management with the majority carried out under a one-way closure.

Types of works	Operators	Estimated duration time if work undertaken individually
Installation of HV electricity reinforcement	Central Networks (promoter) / Balfour Beatty Utility Solutions	7 weeks
Water main replacement	South Staffs Water (promoter) / May Gurney	4 weeks
Pedestrian access improvement scheme and 8 no. bus stop upgrades	Staffs Highways (promoter) /Enterprise	5 weeks
Localised gas main replacement	National Grid (promoter)/ Enterprise	3 weeks
Street lighting replacement	E.ON Energy Services (promoter)/Energy Services	½ week
Private sewer connection	CC Contracting	1 week
Tree felling, requiring signals	Adrian Hope Tree Services	1 day
Single supply of traffic management	Traffix	

Additional benefits resulting from this joint occupation scheme were as follows:

- Water and electricity works identified on the A449 (prior to Dunsley Road commencing) could not be carried out at the same time but traffic disruption on this incredibly sensitive road was a real concern. Discussions resulted in Balfour Beatty Utility Solutions laying both the electricity ducting AND the water main under single traffic management.
- Some minor works identified at short notice were incorporated into the works thanks to the contractors on site. These included tree felling and a private sewer connection on Dunsley Road, and Openreach works co-ordinated with water main replacement on the High Street.
- The HV cable installation was the last operation to be carried out, following the water main replacement south towards Kinver High Street. As a result, Balfour Beatty Utility Solutions carried out numerous reinstatements for both sets of works as well as the private sewer connection reinstatement incorporated at short notice. This led to a reduction in resource costs for both labour and materials.

- As well as the cost savings mentioned above, numerous promoters shared the cost of the traffic management.
- Some of the cost savings were directed into joint publicity which included attendance and involvement (South Staffs Water mobile media vehicle) at the annual Kinver Country Fayre, information added to the community website (Kinver

Online), press article in the Kinver newsletter, a banner displayed in the local Spar supermarket and the publication of leaflets that were delivered to frontages. All of the publicity contained both the Highway Authority and Utility logos to strengthen the awareness that promoters are working together.

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12. NOTTINGHAMSHIRE COUNTY COUNCIL – WHOLE HIGHWAY AND SERVICE REVIEW

Case Study Title
Whole Highway and Service Review.
Local Government Authority
Nottinghamshire County Council.
Background and Scope of Work
The background in Nottinghamshire was that our politicians felt we weren't customer responsive enough and took too long to get our programme of work on the ground. Savings were also needed across the organisation so a LEAN approach was taken across the whole of the Council, and the Highway Service was part of this. Nottinghamshire used external consultants to support us initially and to train our people to continue the LEAN work. We decided to focus on the customer interface part of the service first as this was our largest volume of demand and we wanted to create a new customer service attitude amongst our staff. We included highway management, the inspection service, district managers, our customer interface through the call centre, network management, co-ordination of roadworks, forestry and civil parking enforcement.
Activities
We started looking at a customer journey as it was the highest volume making up 74% of total Highways enquiries - patching, potholes, vegetation, blocked drains and street lighting. Then we added in self-generated demand from own inspections. For potholes and reactive maintenance we have used HMEP case studies from the Potholes Review about best practice patching so didn't have to start from scratch and we are running trials using this now. We ran LEAN workshops to look at the end-to-end process of how we design a scheme, first getting all the issues out and then moving into more detailed flow mapping. As we mapped the value streams we found that the time spent out on site was most useful to really understand what happened. When we sat in a room, looking at the service based on mapping what we were capable of doing, we looked world class. However, when we went out and saw what really happened we could see the real variation and what actually happens. We also did a detailed piece of work on failure demand, looking at what came in and how we could drive failure demand out across the system.

We created a new operating model with new structures and processes including:

- A separate, focused design function to speed up getting schemes on the ground. They are now responsible for delivering the annual programme and it includes a new programme management function which makes it happen.
- Revised design process from start to finish.
- Establishment of a contract management team .
- Project control process – the biggest difference is a more detailed project brief much earlier in the process with more financial detail. There is now real clarity about responsibility with one project manager all the way through. This has speeded up the process and prevented waste and rework.
- District manager role as key customer interface.

Our team board c/o Nottinghamshire County Council

Challenges

Political Issues:
Highways issues were being raised with Members on the doorsteps and they didn't feel we were responsive. We have changed our thinking from 'enforcement' to 'customer service' and have improved our relationship with Members and the perception of the service.

Customer attitude:
We needed to get the customer attitude embedded through the whole organisation - everyone needed to be part of it. To do this we ran a series of workshops for all staff including:

- Political awareness seminars.
- 'First Impressions' training for all the front line about what to do when dealing with customers e.g. put yourself in the customers shoes and don't hang around when there is nothing to do.
- 'The art of being brilliant' workshop to build a positive, 'can do' culture.

This has been a really successful approach and we have seen a significant difference in thinking although we are still working on small pockets of resistance.

Understanding based on data:
Prior to this work we hadn't done the analysis to understand our system. Now we have drilled down to really understand what is happening and what customers are saying and have used that data to change the service.

Change in demand:
While we were doing this work we also had to manage an increase in customer demand of 50% from 42,000 to 63,000 – partly due to higher use of the internet and ease of reporting. Also, in parallel, we have had a massive channel shift with customers reporting on-line rather than phoning. Customers want more self-service e.g. applying for licences or permits on-line. We have needed to shift demand so we can manage with the level of resources available in times of significant budget savings.

Engaging the whole service:
We needed to look at the end-to-end service so we got out and about, got operations managers engaged and broke down barriers. Lafarge Tarmac is our contractor for resurfacing schemes, gully cleaning and other areas. They were engaged with us and brought their experience with other authorities to help us learn as we looked at end-to-end processes together from both client and contractor perspective.

Outcomes and Benefits

Our programme now runs on time because of the new structures and responsibilities and processes. We used to have a massive spike in spend profile after Christmas – now we have a year's work that lasts a year that helps operations to plan effectively and resource more efficiently. We aren't rushing jobs out at the last minute and skipping over gateways so we have better compliance and quality. Our whole philosophy of planning and monitoring programmes of work has changed for the better.

We have freed up inspector times by reducing waste steps so they now have more capacity to focus on value inspections.
Our District Manager role works really well creating strong relationships. With the new customer attitude across the service, customers now feel that we are responsive and the public is engaged better.

Implementation in progress at Nottinghamshire County Council

Evaluation

"We have dramatically changed our philosophy, modernised the attitude of staff and changed our culture. The LEAN process has prepared us for the future in light of increased expectations and reduced budgets"

We have saved money and improved our service, for example in street lighting we went from an average 11.9 day turn around in January 2013 to 6.02 in July.

Plans for the Future

We want to do more to embed the change that we have begun including:

- Embedding new ways of working into the web site.
- Perfecting the interface between Lafarge Tarmac and the Authority so that the outputs from the client and hand offs work well across the boundary.
- Embedding new technology out on site to save time and speed up processes.
- Responding effectively to channel shift to try and reduce demand at the front end.

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13. NOTTINGHAMSHIRE COUNTY COUNCIL – STREAMLINING THE TRO PROCESS

Case Study Title
Streamlining the TRO Process.
Local Government Authority
Nottinghamshire County Council in Partnership with URS.
Background and Scope of Work
The problem that LEAN needed to address was that Traffic Regulation Orders (TROs) were taking a long time to deliver. TROs are a legal process behind any enforceable traffic management measure including parking schemes, restricted movements and lorry routing. Nottinghamshire have over 100 TROs a year to deliver and the perception of the public and Members was poor because the process could take anything from 8 months to 2 years. Nottinghamshire used LEAN to address the problem with TROs as part of their overall LEAN programme – LEAN worked for them to deliver the customer perspective that they were looking for and because of the focus on eliminating waste. URS have worked with Nottinghamshire County Council to review their processes, policies and to deliver complex TROs on behalf of the Council.
Activities
The public and Members wanted faster delivery so we changed 2 key areas: **1) Lengthy Consultation** There are 2 stages of consultation involved in a TRO – the first is statutory consultation with affected bodies, the second is inviting objections through public advert. Most authorities do these consultations in series but we moved to run them concurrently to considerably reduce end-to-end times. In LEAN terms this focuses on looking at the end-to-end system and improving the customer measures. **2) Hand Offs & Ownership** The process begins with officers designing the project but is then handed over to the legal section to draft the order, advertise the order and to receive and deal with any objections, before being passed back to the engineer to implement. We found that there was duplication between engineers and legal and that TROs could be sitting with legal for 6 months when the value work steps could be completed in only a few weeks. We

reviewed the work, as part of Nottinghamshire's LEAN programme, and found that it could be completed by an engineer who would therefore have end-to-end ownership of the project.

We prototyped the new way of working on several projects to demonstrate that it could deliver the outcomes more quickly.

We then took the decision to implement the new process with TROs being delivered by the engineers.

Challenges

- We had challenges with the legal team who believed that engineers wouldn't be able to deliver the same quality and that mistakes would be made. To get past this we used the LEAN approach of prototyping projects with engineers running them and the legal section closely scrutinising so that we could be sure that the work was of equally high quality before we took over the system.
- We found that the process worked for straightforward TROs but for a handful of exceptional cases, particularly if we envisaged extensive objections or legal challenge, we involved legal to ensure probity.
- Strong leadership with a clear vision helped get over some early objections from some of the engineers who wanted to stay focused on the design rather than managing the end-to-end customer process.
- A challenge for URS has been that they have lost business through their support of this review, as they have helped the Council team to become more confident in dealing with TROs themselves.

Outcomes and Benefits

Faster Delivery:

- Engineers could deal with the objections better and faster because they had a detailed understanding of what the project was about.
- Members were a lot more satisfied seeing projects delivered in a timely manner.
- Before the review the minimum end-to-end time was 8 months, and TROs could take up to 2 years where there were objections.
- Now all TROs take less than 8 months, with simple TROs turned around in 4 months. We have been able to deliver some TROs as quickly as 6 weeks where necessary e.g., if responding to a safety issue, without compromising on quality.

Delivering More:

- The year before the review, 75% of TROs were completed within the timeline, due to the delays in the process caused by the handoff of ownership between departments.
- The year after the review 120% were completed i.e. we delivered some reserve projects as well as the scheduled ones.
- We weren't underspent for the first time because we could actually deliver the

workload.

Public Perception:

- The public are much happier with the speed of delivery and there aren't gaps where they don't see anything happening.
- We now avoid repeat consultations.

Staff Satisfaction:

- We now have ownership all the way through by an engineer, rather than the TRO getting handed back and forth and put down and picked up again. The engineer makes the decisions from start to finish, creating more momentum and more enthusiasm from the engineers.

Evaluation

Financial savings

- no legal charge (previously a minimum of £1,000 per TRO on over 100 TROs per annum).
- no longer losing opportunities and funding because we couldn't deliver the programme within the year.
- no repeat consultations.

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14. HIGHWAYS AGENCY – EFFICIENCY SAVINGS IN SAFETY INSPECTIONS

Case Study Title

Efficiency Savings in Safety Inspections.

Local Government Authority

Highways Agency MAC (Managing Agent Contractor) Area 12 with A-one+.

Background and Scope of Work

We decided to review Safety Inspections as a result of work identifying efficiency savings. The inspections team was reduced by 25% with staff transferred to other areas of the business. As a result, it was essential for a LEAN project to be undertaken to ensure that contract requirements could still be delivered with the reduced team size.

Safety Inspections in Progress

Activities

A LEAN team was formed to understand the current process, comprising inspectors and responsible managers. The current process was mapped in detail and activities identified as adding value and waste. A number of LEAN tools were used as part of the process including:

- Communication plan.
- Stakeholder analysis.
- Process mapping.
- LEAN visual management.

Wasteful activities were eliminated whenever possible. For example, at the start of the Area 12 contract the inspectors completed Excel sheets due to issues with the IT system. Although the issues with the IT system had been resolved, the inspectors were still recording their inspections in Excel so this was stopped.

Current issues and complaints were collected to identify quick wins. Inspection routes were revisited to identify where inspectors could drive directly to the start of the inspection route on a morning rather than go to the office/depot first.

Challenges

- Communicating with the rest of the inspection team and other stakeholders to keep them informed of progress.
- Making changes when the staff numbers were reducing.

Outcomes and Benefits

- Fewer man-hours spent on safety inspections.
- LEAN inspection routes.
- Reduced mileage travelled.

Evaluation

Cashable savings of £60,000 per annum to the supplier, resulting in £210,000 savings to the end of the contract in September 2014.

Plans for the Future

The efficiency of safety inspections are being reviewed on an ongoing basis and the Highways Agency is also embedding LEAN through tools such as the Highways Agency Lean Maturity Assessment Toolkit (the HALMAT), which is available at:

http://assets.highways.gov.uk/specialist-information/lean-halmat/Highways%20Agency%20Lean%20Maturrity%20Toolkit%20(HALMAT)%20version%2021.pdf

The review of safety inspections and the HALMAT can equally be applied in a Local Authority environment.

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15. HEREFORDSHIRE COUNCIL – FROM SAFE AND ENJOYABLE LOCALITIES TO A WHOLE SYSTEM CHANGE

Case Study Title
From Safe and Enjoyable Localities to a Whole System Change.
Local Government Authority
Herefordshire Council.
Background and Scope of Work
Herefordshire Council has been commissioning the delivery of the end-to-end service for highways and other services under a Managing Agent Contract since September 2009. Whilst there had been significant improvements since then, both the Council and its provider were aware that residents' expectations weren't always being met. The maintenance of the soft estate, both highway and parks and open spaces, had been undertaken by a range of specialist teams - cutting grass, picking litter, planting bedding etc. - on a planned basis and within a tightly constrained budget
Mrs B (a local resident): *"Over the years we have noticed that various teams attend to this area - would it not be sensible and more economical and efficient to have a single team attending to grass cutting, litter picking etc."* *"I have on many occasions asked a member of some team or other to pick up litter which was virtually yards away from where they were working, only to be told that that patch was looked after by another department!"* *"I would also like to point out that whoever litter picks the different areas in this part of Hereford only picks up some of the litter and large areas are constantly neglected. At the moment Road A, which is part of a route to two schools, is badly littered with bottles and cans etc. The area bordering Road B is particularly dirty."* *"I also feel that an extra litter bin or two would help the situation, if only to allow me to dispose of litter which I feel unable to ignore whilst out walking my dogs!"*
The objective of the project was to use a LEAN approach to improve the service and reduce cost by delivering only what the customer valued.

Activities

At the project team's initial meeting we adopted the LEAN approach of Plan, Do, Check, Act and the following was agreed:

- The purpose of the service was to provide "safe and enjoyable open spaces"
- The principles they agreed to use would be:
    - Look at open spaces from a customer perspective.
    - Make decisions based on data.
    - Look at them end-to-end.
    - Only do activity that adds value for customers.
- They selected grounds maintenance as a focus and identified a part of Hereford for a prototype.
- They arranged a workshop to "check and plan".

Subsequent activities included:

- Data gathering (conversations with customers and other stakeholders).
- Data feedback to customers and other stakeholders
- Creating an integrated team (from different disciplines) with 3 multi-skilled members working solely in the locality, "doing":
    - Talking to people; Gathering and passing on information; Strimming; Mowing; Spraying; Litter picking; Empty bins; Playground inspections; Playground repairs; Asset repairs; Tree works – low level; Leaf clearing; Grass and leaf blowing; Salt bin maintenance; Shrub work; Mulching; Hedge cutting; Lifebelt inspection; Fly tipping clearance; Changing room inspections; Basic tree inspections; Edging; Watering; Weed control; Bedding; Manual sweeping; Graffiti removal.
    - The purpose was revised to "make Belmont safe and enjoyable".

The team collected evidence, in the form of photos and notes, capturing what mattered to residents and how they responded. There were regular review meetings between the locality team and the project team.

Challenges

There were significant organisational and cultural challenges faced by the team – people were used to working in the way that they always had, and particularly working to order and in their own silos. The front line teams were not used to being asked what they thought, or knew from their experience, was the best thing to do.

Perhaps the most significant challenge that the project experienced was that there often seemed to be competing priorities. While these were overcome during the project they did point to deeper issues in the relationship with problems and opportunities in both the provider and client parts of the system. We return to how this was resolved in 'Plans for the Future'.

Outcomes and Benefits

Although there was an absence of useful data, conversations with people in the locality quickly established what mattered and what didn't.

The team quickly became familiar with their locality, its rhythm and the nature of the work. This enabled them to adjust and plan the work to suit the locality. Changes/benefits included:

- Litter picking arrangements for a school route were changed to morning and after lunch (but only during term-time).
- A games area swept immediately prior to planned activities.
- Faster responses to requests from residents (small-scale tree thinning undertaken within days rather than months).
- Low tree limbs removed on a popular walking route.

They were able to share information and feedback from the locality with others (e.g. the Council's Community Protection Team). Anecdotal feedback from Community Support Officers indicated that anti-social behaviour had decreased.

Because they were only doing what mattered (rather than working to a rota) the team was able to establish a new and more flexible routine, bring forward their planned work and take on additional roles. Equally importantly, they were in the area every day.

Evaluation

The Herefordshire team had developed the prototype into a model for area working which was expected to show savings of £575,000 by 2016.

Final Message

The client team at Herefordshire recognised through this project that there were issues and opportunities throughout the whole of the highway system, which very much included the client team. It was not simply that all of the problems resided with the service provider.

Our advice to other authorities would be to resist the temptation to simply cut without knowledge, but to learn how your system really works to deliver value for your customers end-to-end, including the client functions not just those delivered by your provider.

Plans for the Future

Subsequent to the 'Safer Localities' project described above, Herefordshire undertook a LEAN health check of its entire service. This provided input to Herefordshire electing to procure a Public Realm contract, the procurement has just completed and we are in the process of transitioning to the new service design. What we have learned and taken

forward is:

- It is the whole end-to-end system that needs to be improved, including the client functions.
- Services should be joined up, not delivered in silos, with what matters to our customers defining what we do and what we measure to illustrate our success.
- Services can be designed to be part of each locality and to best suit each locality, with a balance of local and strategic needs met.

The new Public Realm arrangements are expected to save Herefordshire circa £2m per year.

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16. LINCOLNSHIRE HIGHWAYS ALLIANCE – DEPOT REVIEW

Case Study Title
Lincolnshire Highways Alliance.
Local Government Authority
Lincolnshire County Council in partnership with Kier.
Background and Scope of Work
Lincolnshire has over 9000km of roads and is set up in 4 geographical divisions to cover this large area. We wanted to respond to localism and create a local delivery mechanism but having several divisions can also lead to difficulties with consistency and efficiency. We needed to balance the tension from Members for localism and independence versus budget pressures and wanting standardised efficiencies through a new culture of process based working. To achieve this we embarked on two LEAN change processes – a rapid improvement event around depots, and a wider project looking at the processes and creating a plan for the future state across the whole system. **LEAN Rapid Improvement** There are 10 depots in Lincolnshire and we needed to make improvements from an environmental point of view. They faced issues around organisation, how materials were stored and health & safety. It became clear that it was difficult to come in to the depot, get the materials you needed and get out quickly so we looked at the flow in the depot to improve work on site. **LEAN Whole System Approach** We did current state mapping and saw how much processing of work and finances there was compared to value work on the ground. After understanding current performance and constraints we stepped back and decided what we wanted from the future state including some fundamental changes.
Activities
For the rapid improvement we pulled a LEAN team together including the local depot manager and operatives from across the Manby depot. The change was done within a 1 week LEAN exercise, facilitated by an improvement specialist from Kier. The LEAN process involved understanding, redesigning and then rapidly prototyping the way we

worked. The facilitator was key to our success and they had a great ability to engage with and challenge the crews. Initially there were some negative emotions but these were turned around during the week. The outcomes have been successfully sustained due to strong local leadership, and have now got even better 12 months after the initial work.

In the wider work we changed how work was planned and scheduled. Previously work was coming in many different ways across the County and so we implemented more central control to use subcontractors and our other resources more efficiently. We are now accelerating our central hub and driving efficiencies out of central programming.

Before **After**

Before **After**

Challenges

The key challenges that we faced were

- The scale of change that was already happening across Highways. We were moving from price to cost based contracts, introducing target costing and open book accounting, introducing a new overall asset management and works ordering system, as well as losing staff and budget. The LEAN improvements came on top

of all these other changes.

- We found that our embedded regional organisation structure created barriers to change.
- Our biggest challenge was resistance to further change coming so soon after other major change programs, so we weren't able to go the whole distance with the wider system change although some elements were implemented. We found that commitment to change is absolutely critical – it requires bold leadership and a good understanding of the stakeholders and it is easy to underestimate the barriers that can come up. We learned that it can be difficult to make change happen even when it seems fairly obvious. The leadership group must be enabled and fully empowered to make change happen. You can try and do too much in one go so we did what we needed to do first and chose to come back to other areas.

Outcomes and Benefits

- Improved flow.
- Improved working with sub-contractors.
- Managing our waste better leading to a better environmental audit score.
- Recycling more material.
- Getting crews in and out of the depot quicker .
- Central programming.
- More certainty for members of public due to better programming – when we say we are going to be somewhere we stick to it and we are there then.

Evaluation

- We have saved money. Our rapid improvement exercise led to work with an initial cost of £12,000 that saved £17,000 per annum in time savings in getting people in and out of the depot quicker.
- Improved efficiency of gangs has saved us £400,000 over 2 years as well as fuel savings.

Plans for the Future

There is continuing pressure to create more efficiencies and this will help us to get support for further action on our LEAN plan. We intend to go round the loop again with our overall design.

We are also continuing our drive for standardisation and centralised programming – the key is simplification and standardising our way of working. We will create simple, better processes that can do more at a lower cost.

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