Lean in King County: Approach Supports Continuous Improvement, but Actions Are Needed to Improve Strategy and Measurement

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Executive Summary

While King County has been deploying Lean as its primary approach to continuous improvement, there is not a clear understanding of the purpose of Lean among stakeholders. King County started deploying Lean in 2011 by training and coaching employees, shaping management systems, and implementing more than 180 process improvements to help agencies engage employees and more efficiently deliver county services. We make a number of recommendations to improve strategy, measurement, and assessment to more fully realize the potential benefits of Lean.

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Lean in King County

Report Highlights

June 14, 2016

Why This Audit Is Important	"Lean" is a problem-solving approach that engages employees to identify and eliminate unproductive elements of their work. It is one of the primary ways the County Executive intends to continuously improve county services. In the future, the County Executive envisions Lean being the framework with which the County does its work, impacting every county agency. This audit focuses on whether the deployment of Lean to date is realizing benefits and is on track to fulfill its purposes.
What We Found	The County does not have enough information to assess the extent to which Lean is creating value that balances the investment of time and resources. While King County has been applying Lean for more than five years, the approach lacks many of the elements of a mature Lean deployment. Since 2011, the County has deployed Lean by conducting trainings, coaching employees, and implementing more than 180 process improvement projects in over a dozen departments.
	Two issues limit the ability of the County to ensure that Lean is successful. First, there is not a common understanding about the purpose of Lean in King County among decision-makers: some emphasize cost savings, while others emphasize employee engagement and process improvement. Second, the County lacks comprehensive mechanisms to track and assess the wide variety of Lean efforts and their efficacy.
What We Recommend	To more fully realize the potential benefits of Lean, we made recommendations aimed at making the purpose of deploying Lean more explicit and more closely aligning Lean deployment with strategic planning. Additionally, we recommend regular assessment against a maturity model and improving measurement to better assess the county's Lean progress.

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1. Why and how did King County choose to deploy Lean?

Section Summary

King County is among the early government adopters of Lean, but there is confusion among policy-makers about the purpose of Lean deployment. Additionally, while Lean efforts have increased over time, deployment has been concentrated mainly in three departments, leaving out a number of public safety agencies where capacity is most constrained by the general fund shortfall. Without a common understanding of the purpose of Lean, decision-makers and implementers cannot prioritize limited resources or assess whether Lean is producing intended benefits.

What is Lean?

Lean is a problem-solving approach that engages employees to identify and eliminate unproductive elements of their work. Lean is derived from the Toyota Production System and has been implemented primarily in the private sector. King County is among the early government adopters of Lean, although it has been integrated into public sector organizations like hospitals. This management method is based on two key elements: continuous improvement and respect for people. By engaging front-line workers, Lean intends to identify how to streamline work processes and add value for customers. Specifically, it focuses on improving work quality, cost, delivery, safety, and morale. For example, a Lean project might map out the steps to issue a permit and identify steps that could be eliminated to make the process more efficient. Lean also emphasizes experimentation, measurement, and adjustment. "Lean" refers to the efficient work structures that are the end goal of process improvements.

There is not a mutual understanding of the purpose of Lean by county policy-makers

The King County Executive chose to deploy Lean in 2011 as a response to declining revenues and increased demand for county services. King County, like many governments around the country, experienced reduced revenue as a result of the great recession. This funding challenge is exacerbated by the state of Washington's annual one percent limit on property tax revenue regardless of inflation or population growth. This has created a structural funding gap in the county's general fund. Given these challenges, King County created the Continuous Improvement Team (CIT) within the Office of Performance, Strategy and Budget. Since 2011, the County has spent a minimum of $8.5 million to deploy Lean. Lean is among a number of efforts by the County Executive to improve performance including line of business planning, strategic planning, and equity and social justice. The County Executive intends to align these efforts under the Best Run Government initiative.

While the need to do more with less and the challenges created by the general fund shortfall were apparent to policy-makers, the purpose of

1. Why and how did King County choose to deploy Lean?

deploying Lean was not clearly expressed. The absence of an explicit and documented purpose has created confusion among policy-makers: some believe that the primary purpose of Lean is to reduce costs, particularly in the resource-constrained general fund, while others prioritize process improvement and employee engagement, viewing cost savings as a potential outcome of successful projects, but not the focus. Without a common understanding for the purpose of Lean, decision-makers cannot prioritize limited resources or assess whether Lean is producing intended benefits.

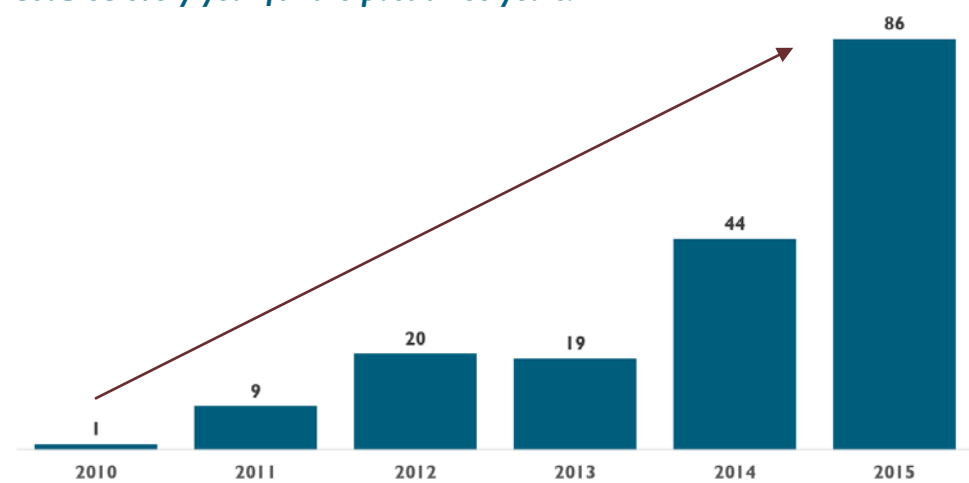|	
Recommendation 1	The County Executive should clearly document, and submit to the County Council for consideration, the purpose of Lean deployment in King County.

Lean efforts have increased over time

The number of Lean efforts, particularly process improvements, has increased over time. Lean efforts in King County have consisted mainly of three activities:

1. training and coaching employees
2. integrating Lean practices into operations and management
3. implementing process improvements.

The third type of activity, process improvements, can range from small processes such as reducing or eliminating forms to large processes like the determination of level of services for inmates in need of psychiatric care. As shown in Exhibit A, initiation of Lean efforts has increased, particularly in the past three years, during which initiations have roughly doubled each year. In total, King County has conducted over 180 Lean projects as of March 2016.

Exhibit A: The number of process improvement projects started has roughly doubled every year for the past three years.
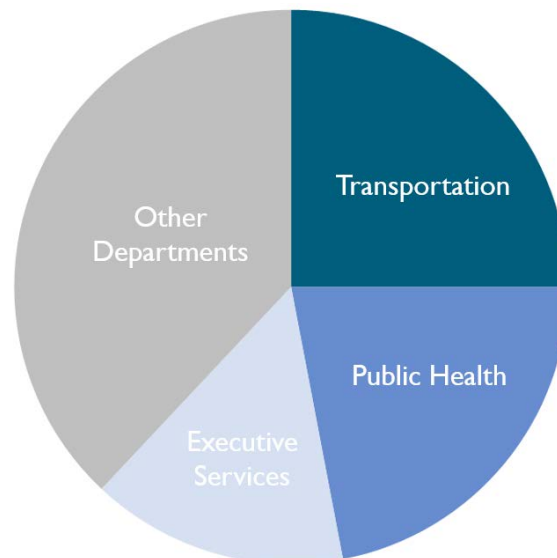

Source: KCAO analysis

1. Why and how did King County choose to deploy Lean?

Lean efforts have been concentrated in three departments

While agencies in at least 14 departments have deployed Lean, the majority of effort has been concentrated in three departments: Transportation, Public Health, and Executive Services. Jail Health Services (JHS) and the Finance and Business Operations (FBOD) divisions work with the CIT, but leadership in these divisions have committed independent resources and seek to adopt Lean as the way these agencies do their work. The efforts by these agencies account for significant portions of the Lean deployment in the departments of Public Health and Executive Services.[1] The blue portions of Exhibit B show the breakdown of Lean process improvement projects by department.

Exhibit B: Three departments account for over 60 percent of process improvement efforts.

Source: KCAO analysis

This concentration of Lean efforts is partially due to the CIT's deep-dive approach to working with agencies that express interest. Early in its work, the CIT made a decision that the most effective means to determine where to focus Lean resources was through a model they termed "work with the willing." This approach was based on the concept that one of the most significant factors determining the effectiveness of a Lean project is management willingness. If management is not committed to the project, the CIT states there is a very low likelihood of success.

The CIT also identified a number of factors in addition to management willingness that promote successful Lean deployment such as culture

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[1] The Community Health and the Records and Licensing Services also have large numbers of projects in Public Health and Executive Services, respectively.

1. Why and how did King County choose to deploy Lean?

(morale levels, teamwork practices, union relationships, etc.). This led the CIT to take a deep-dive approach within target agencies by providing a suite of training, leadership coaching, and project facilitation. For example, in Exhibit C, the Transit Division has the largest number of process improvement efforts in the Department of Transportation and is also receiving a high level of training and coaching.

Exhibit C: Transit and the CIT are taking a deep-dive approach to Lean deployment.

Case Study: Lean deployment in Transit

Transit and the CIT launched Lean by attempting to reduce the amount of inventory in Vehicle Maintenance. While the process improvement was ultimately able to reduce inventory by $3 million, the CIT and Transit encountered pushback from front-line employees who felt their voices had not been heard in the decision to launch Lean. To build off of lessons learned in this process improvement, the CIT and Transit have taken a deep-dive approach to deploying Lean: Transit now receives leadership coaching, is one of the largest recipients of the CIT Lean trainings, has two dedicated CIT members, and two staff members serve as internal Lean resources. This has likely led to Transit having one of the largest numbers of process improvement projects among agencies deploying Lean, but it has also tied up CIT resources from being able to work in other interested agencies.

Source: KCAO analysis

Lean has not been deployed to impact the General fund shortfall

Public safety agencies, which are the largest users of general fund money, have deployed Lean less than non-general fund agencies, which means the County has not been able to create capacity in areas most impacted by the general fund shortfall.[2] As noted above, one of the primary challenges facing King County government is the gap between general fund revenues and costs while the demand for services is increasing. Lean deployment has had little impact on this issue, because the CIT has prioritized and concentrated Lean resources in agencies with the most receptive management rather than areas where the shortfall is creating problems with agency capacity to provide services, such as public safety agencies.[3] Public safety agencies cited challenges in deploying Lean, including difficulty finding examples of successful Lean deployment relevant to their work, motivating employees, accessing Lean resources, and having many cross-departmental processes and separately elected leaders. Additionally, two public safety agencies reported ambivalence about Lean after past projects were not successful and no further follow-up within the agency or by the CIT has occurred.

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[2] Public safety agencies include Superior Court, District Court, Prosecuting Attorney's Office, Public Defense, King County Sheriff's Office, Judicial Administration, and Adult and Juvenile Detention.

[3] One exception to this is the Department of Adult and Juvenile Detention, which has been more active than other public safety agencies in initiating and participating in Lean activities.

1. Why and how did King County choose to deploy Lean?

While the "work with the willing" model and focus on cultural enablers through training and coaching are logical and supported by Lean literature and best practices, this approach has led to the lack of Lean deployment by public safety agencies.

Recommendation 2	The County Executive should demonstrate how the purpose of Lean deployment noted in Recommendation 1 is used to prioritize Lean resources.

2. How do we know if Lean is achieving its goals?

Section Summary

King County's deployment of Lean lacked a means to track efforts and guide activities, both at the project and county level, which hindered the CIT's ability to assess impact. While several individual process improvement projects can demonstrate benefits, there are opportunities to better measure and report impacts. Creating systems and strategies to track projects, improve the measurement of benefits, assess employee engagement, and evaluate Lean deployment as a whole would help demonstrate results and guide Lean efforts to achieve county goals.

There was not a comprehensive way to track Lean efforts

While Jail Health Services and the CIT track respective projects, there was no comprehensive list of Lean projects in the county prior to this audit. The tracking that was occurring was missing many previous and current process improvement efforts. As a part of our evaluation, we compiled a list of Lean efforts, and the CIT has adopted and expanded it for internal use.

Without a process for tracking efforts, it is difficult to demonstrate the value of Lean. Professional literature suggests a key best practice for deploying Lean is tracking efforts. This allows implementers to identify and replicate successes while learning from mistakes. Replication can create economies of scale by lowering the cost associated with process improvements, allowing implementers to do more with the same amount of resources. Tracking projects also allows implementers to see patterns or trends in where Lean is being deployed, adjust efforts, and communicate information about Lean efforts to stakeholders.

Recommendation 3

The County Executive should develop and implement a comprehensive system to track Lean deployment that can inform planning and reporting.

Lean implementers are missing opportunities to understand impacts

While several individual process improvement projects can demonstrate benefits, the CIT can do more to help Lean implementers measure and report impacts. Several individual projects can demonstrate benefits, including monetary impacts and other improvements in the quality and delivery of services and improved employee morale. Impacts, including some savings, on hundreds of thousands of dollars have been reported on process improvements in Jail Health Services, the Department of Natural Resources and Parks, Transit, and the County Assessor. Exhibit D cites an example in Jail Health Services. Non-monetary benefits, such as reduced processing times and reducing frustration for employees, have been reported at a number of county departments.

2. How do we know if Lean is achieving its goals?

Agency officials provided some examples where Lean efforts resulted in monetary impact. While cost savings have not been well documented, the CIT and participating agencies attributed Lean efforts to $7.5 million of other types of financial benefits such as prevented overtime, deferred purchases, or collecting on delinquent customer accounts. The amount of these financial benefits may not correspond to the same amount in cost savings.

Exhibit D: Jail Health Services (JHS) and Department of Adult and Juvenile Detention (DAJD) project reported monetary impacts and improved patient care.

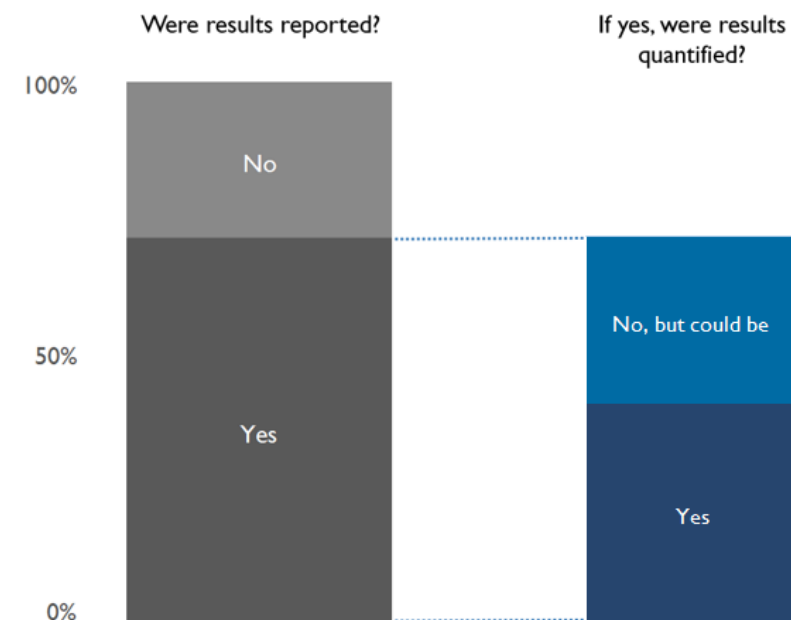---

Case Study: Psych Array Services

A shared problem for JHS and DAJD was a large number inmate-patients on behavioral observation (also known as 15-minute checks). Inmate-patients were automatically placed on checks when referred to Psychiatric Receiving, regardless of suicide risk or the severity of their mental health issues. This practice was based on a number of decisions and actors rather than specific standards, which meant that JHS and DAJD had less assurance that patients were receiving the correct type and level of care needed to meet clinical and security needs. These practices also required staff time that could otherwise be used providing care and led to high overtime costs. A cross-departmental Lean project helped JHS and DAJD come up with a new way to determine which inmate-patients needed frequent checks based on patient need. They went from an average of 70 people per day getting 15 minute checks to 5 people – a 93 percent reduction. JHS reported that this effort had multiple benefits, including: higher quality care for inmate-patients by providing the appropriate treatment based on condition, staff seeing more patients and offering more services, and impacts to about $2.9 million of JHS and DAJD's budgets, such as prevented officer overtime and reassigned workloads.

Source: KCAO analysis

Based on our analysis of the activity database created during the audit, the data collected on the impacts of process improvement efforts lacked quality measurement. Over a quarter of completed process improvement projects did not identify results achieved. As shown in Exhibit E, of projects that did report results, there were a number of projects that asserted cost, time, and resource savings that could have been quantified, but were not.

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Exhibit E: Of projects reported results, only about half of those results were quantified.

Source: KCAO analysis

The CIT has acknowledged the need to help agencies deploying Lean to improve measurement and is now required by code to report to County Council annually on Lean efforts, including the impacts of these efforts, with the first report due in 2016. Measurement makes it possible to demonstrate whether Lean is having impact, which helps decision-makers assess whether and how to use resources on the program. Additionally, Lean implementers are hoping that early results will encourage more county agencies to choose to adopt Lean. Without quality data on how agencies are benefiting from Lean deployment, the County Council has less assurance in the accuracy of impacts reported and the County Executive has less assurance that its strategy for expansion will be successful.

| Recommendation 4 | The Continuous Improvement Team should help agencies deploying Lean improve the measurement of results from process improvement efforts. |

Has Lean improved employee engagement?

The County currently lacks an effective means to measure the impact of Lean on employee engagement. Respect for people and improving culture are considered important components of King County's Lean deployment and are widely recognized outcomes from successful Lean deployments. Higher engagement is intended to motivate employees to solve problems, reduce inefficiencies, and improve customer service. However, internal Lean

2. How do we know if Lean is achieving its goals?

implementers and external experts state that culture and engagement can be difficult to measure.

The CIT has cited that the county's Employee Engagement Survey could be an effective vehicle for determining an engagement baseline and measuring progress. The CIT was involved in shaping the most recent survey, but it has not yet developed a way to strategically use the survey results and its internal activity assessments to understand whether Lean deployment is contributing to people feeling respected. Moving forward, the CIT has an opportunity to align questions in the survey and internal activity assessments with its intended improvements in employee engagement that would allow it to measure impact.

Recommendation 5	The Continuous Improvement Team should develop and implement a strategy to assess the impact of Lean on employee engagement.

A maturity model could help determine where to focus effort and resources

We used a maturity model to measure progress in King County in areas identified by Lean literature as important to successful Lean deployment, and we found that the County was more mature in areas in which they had focused more resources and attention. Our results were consistent with the county's approach to deploying Lean. For example, as is demonstrated in Exhibit F, Lean culture was the category in which King County achieved the highest maturity level. This is consistent with the county's focus on cultural enablers such as employee engagement. Conversely, some of the areas in which the county scored lower have been less of a focus of Lean deployment, such as metrics. This means, for example, that while the county has focused on cultural enablers, there is not a strategy to measure impact in this area.

Deploying Lean across an organization as large and multifaceted as King County government is a complex endeavor and could benefit from a maturity model to measure progress. Maturity models measure an organization's performance across a number of areas against defined performance levels, allowing the organization to measure its level of capacity in a particular process. Maturity models are one tool that could be used to measure Lean progress; however, King County currently lacks such a model.

We created a Lean maturity model by combining two existing private sector models and assessing the current level of Lean maturity. This model
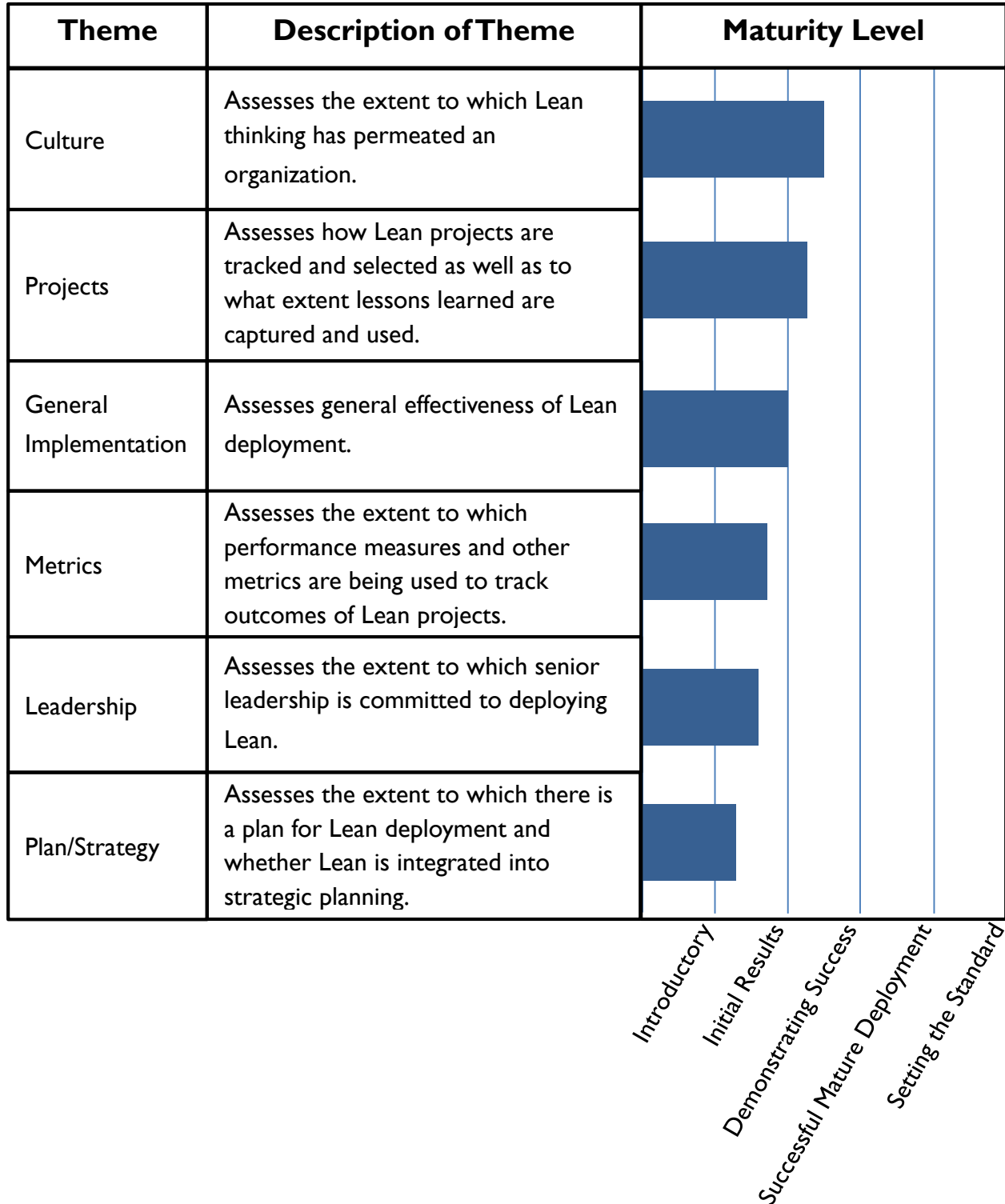
2. How do we know if Lean is achieving its goals?

included 30 items organized into six themes.[4] Based on information we learned over the course of the audit, we scored each of the 30 items and averaged these scores for each of the corresponding theme. Exhibit F below shows the average score for each theme.

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[4] See Appendix 1 for the full results.

2. How do we know if Lean is achieving its goals?

Exhibit F: King County's Lean deployment has opportunities to become more mature.

Theme	Description of Theme	Maturity Level
Culture	Assesses the extent to which Lean thinking has permeated an organization.	
Projects	Assesses how Lean projects are tracked and selected as well as to what extent lessons learned are captured and used.	
General Implementation	Assesses general effectiveness of Lean deployment.	
Metrics	Assesses the extent to which performance measures and other metrics are being used to track outcomes of Lean projects.	
Leadership	Assesses the extent to which senior leadership is committed to deploying Lean.	
Plan/Strategy	Assesses the extent to which there is a plan for Lean deployment and whether Lean is integrated into strategic planning.	

Maturity Level scale (left to right): Introductory, Initial Results, Demonstrating Success, Successful Mature Deployment, Setting the Standard

Source: KCAO analysis

2. How do we know if Lean is achieving its goals?

The CIT and others in the executive branch have said that the ultimate vision of Lean deployment is to make King County a Lean organization, which entails expectations for how all employees and leadership do and improve their work. This is a long-term vision, and the County lacks intermediate steps and metrics, which would allow policy-makers to determine to what extent the county is making progress toward this end. For example, it is unclear whether the current level of effort is sufficient to achieve this vision or when, if ever, the county can expect to achieve it.

Additionally, successful Lean deployment will rely on a number of factors identified in the maturity model outside of the CIT's control including the development of strategic plans and the deployment of Lean by separately elected officials. Using a maturity model would allow the CIT to assess to what extent the vision of King County as a Lean government is impacted by these factors and whether it needs to reallocate existing resources, request additional resources, or develop different approaches to achieve its goals.

Recommendation 6

The County Executive, working with the Continuous Improvement Team, should use the auditor's maturity model or another comprehensive maturity model to determine how to prioritize Lean resources and assess progress toward mature Lean deployment.

To what extent has Lean been structured to help achieve county goals?

Lean is not consistently deployed to help county agencies more efficiently reach county or agency goals. According to Lean literature and experts we interviewed, it is not unusual to deploy Lean at first by simply trying it, but these sources also state that Lean deployment should eventually be tied to organizational strategy in order to maximize the benefits of Lean. For the County, this would mean intentionally deploying Lean in ways that benefit county and agency strategic goals. Some agencies, such as Jail Health Services and Finance and Business Operations, have experimented with aligning Lean with strategic goals and have found it beneficial (see Exhibit G).

2. How do we know if Lean is achieving its goals?

Exhibit G: The Finance and Business Operations Division's (FBOD) deployment of Lean benefited from connections to strategic goals.

Case Study: FBOD's Lean deployment

FBOD began deploying Lean in 2012 by training some managers within the department with the hope that these managers would then work with their teams to Lean their processes. The division found that this approach was less effective than it hoped, which it attributed to a lack of engagement among employees who were not trained and felt Lean was being implemented around them rather than with them. FBOD's Lean consultant produced a report that encouraged further alignment with goals: ***"To achieve Lean Culture, there must be clarity around the vision, mission, and values of the organization. Moreover, goals and metrics must be transparent, aligned and interconnected, from the organization's strategic plan down to departmental, team and individual levels."*** FBOD subsequently adopted a Lean approach that includes enterprise alignment (alignment with county and agency goals) and cultural enablers (including a focus on broader training and division-wide events). Since then, FBOD has reported improved deployment and seen an increase in the number and complexity of process improvement events.

Source: KCAO analysis

The County Executive recently created a Best Run Government Initiative intended to better align the county's strategic work, which includes strategic planning, line of business planning, equity and social justice, employee engagement, and continuous improvement. This presents an opportunity for the CIT to ensure that its work is aligned with and prioritizes county goals.

Recommendation 7

The County Executive should document the alignment of Lean activities with the strategic goals of the County and/or agencies.

Conclusion

Lean has been used successfully to improve operations in a number of entities across the private sector and health care fields. In this context, King County's decision to deploy Lean as a means to address reductions in revenue while faced with expanding demand for its services makes sense. However, without consensus around the goals of Lean and clear metrics to determine how well it is working, the County will not realize the full potential of Lean. Similarly, unless Lean deployment is tied to strategic goals, Lean might help the County do some work better, but it might not help the County do the most important work better.

Appendix 1

King County Lean Maturity Model

In order to determine the feasibility of using a maturity model to assess King County's deployment of Lean, we created the maturity model below using two existing Lean models.[5] We found that King County has made more progress in some areas over others. For example, the County is more mature in the culture area compared to the plan/strategy area. This is consistent with the way in which the County has deployed Lean and the areas it has emphasized. Moving forward, county decision-makers could use this or another maturity model to assess progress and identify areas of focus. The individual maturity items are grouped below by theme. The maturity level for each item is indicated by shading and the average maturity level for each theme is shown after the theme name.

GENERAL IMPLEMENTATION MATURITY: 2

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Institutionalize Continuous Improvement	Improvement initiatives are *ad hoc* and not data driven.	An improvement process for the enterprise is broadly defined and being selectively applied.	A systematic, structured methodology for continuous improvement and value creation is developed and deployed across many areas.	A structured continuous improvement process is deployed at all levels across the enterprise and uses value analysis to target improvements.	A structured continuous improvement process is fully ingrained throughout the extended enterprise.
Overall Results	Nothing significant	Some good results at the project level.	Most projects have significant, measurable impact.	The projects in aggregate make a significant impact on key business metrics.	Significant driver of value for the business, worthy of mention in the annual report.

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[5] The two models we used were the Lean Advancement Institute's Enterprise Self-Assessment Tool from the Massachusetts Institute of Technology and a model presented in the American Society for Quality's Quality Management Forum in the fall of 2012.

Appendix 1 (continued)

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Establish Executive Coordination and Oversight	Leaders recognize that strategic coordination and oversight is needed to support enterprise transformation.	The enterprise leadership team formally defines coordination and oversight roles and responsibilities.	Coordination and oversight functions are staffed and engaged with the enterprise leadership team.	The structure and processes for coordination and oversight of the transformation are operating effectively and being continually refined.	Coordination and oversight become intrinsic to the day-to-day actions and decisions of the enterprise leadership team.
Commit Resources for Transformation Efforts	Few or no resources are provided for process improvement or waste elimination.	Limited enterprise-level resources are committed and often applied to the symptom rather than the root cause.	Resources are allocated as required for execution of the transformation plan and prioritized across the value stream.	A pool of earmarked resources is provided for transformation initiatives with minimal justification required.	A pool of earmarked resources is provided for transformation initiatives across the extended enterprise.
Provide Education and Training	Education and training programs are not coordinated with the transformation plan and needs.	Education and training focuses on just-in-time delivery of skills required for specific transformation projects.	Education and training program is comprised of a balanced and sequenced set of elements to support the coordinated transformation plan.	An evolving education and training program is used across the enterprise in support of transformation efforts. A common vocabulary results from a standardized approach.	Education and training, as a part of human capital development program, focuses on skills and capabilities that support the upcoming needs of the extended enterprise transformation plan.
Establish Open and Timely Communications	Communication is largely top-down, limited, and lagging.	Basic communication mechanisms are employed but are not uniform; communication strategy is under development.	Enterprise leaders are accessible and visible, developing two-way communications in open, concise, and timely manner.	Communication processes are undergoing continuous refinement and information is exchanged or can be pulled as required.	Comprehensive system of two-way communication is employed throughout the extended enterprise.

Appendix 1 (continued)

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Standardize Processes	Processes vary by program or product line.	Processes in the organization have been identified that could benefit from standardization, and initial efforts are under way to increase process consistency.	Selected processes are standardized across the enterprise.	Process standardization and reuse is consistently employed across the enterprise. Process standards are continually reviewed to ensure highest performance.	Extended enterprise interface processes have been standardized while allowing for flexibility in innovation in support of local needs.

METRICS MATURITY: 1.3

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Align Performance Measurement System	Performance measures are ad hoc, inconsistent, and focused on functional areas rather than the enterprise.	Many performance measures are being collected, but they do not allow adequate assessment of strategic goals.	Key measures have been selected to align with enterprise strategic goals. Performance measurement guidelines encourage reviewing metric selection regularly.	Performance measurement system uses a critical few measures tied to strategic objectives. Measures are available throughout the enterprise in a timely manner.	Measurement systems and target setting pulls performance improvement throughout the extended enterprise. Metrics evolve as the enterprise matures.
Total Return On Investment (Long-Term Deployment)	None identified	Break even	5X	10X	20X
Metrics	Project level metrics exist	Project level metrics exist, with some tracking of the overall program.	Deployment-wide metrics exist.	Deployment-wide metrics exist, including financial impact on both the income statement and balance sheet impact, along with project cycle times.	Lean Six Sigma metrics are integrated with corporate dashboards.

PROJECTS MATURITY: 1.75

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Project Tracking	None	Initial spreadsheet	Tracking information is rolled up across the deployment.	Internally developed tracking database.	Central database with tracking and approval workflows.
Capture and Diffuse Lessons Learned	Lessons learned from transformation activities are not documented and reside only in the memory of participants.	Lessons learned in some areas are documented and maintained, but are not readily accessible throughout the enterprise.	A formal process for readily capturing and communicating lessons learned is being applied. Employee contributions are actively sought.	Lessons learned are consistently captured, communicated, and regularly used in a structured manner. An enterprise knowledge base exists.	A formal knowledge management process is adopted. Lessons learned are routinely and explicitly incorporated into the formulation of new initiatives.
Encourage Innovation	Innovation initiatives are sporadic and *ad hoc*; security, stability, and risk aversion drive most decision-making.	Initial efforts are under way to develop systems, processes, and procedures for fostering innovation.	Innovation initiatives are under way in selected areas; measures for assessing impact are in use.	Innovation initiatives are flourishing across the enterprise; prudent risk taking is encouraged and rewarded.	A comprehensive innovation program is implemented and positive results recognized across the extended enterprise.
Project Selection and Prioritization Methodology	None	Projects are selected and prioritized based on a discussion with the manager. No official processes.	Official project selection methodology is implemented in some parts of the business. Projects are prioritized and actively managed.	Robust project selection methodology is broadly implemented, clearly linked to business strategy.	Robust assessment-based project selection methodology clearly linked to business strategy. Projects are prioritized across the business.

CULTURE MATURITY: 2.4

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Continuous Improvement Mindset	Mindset is that continuous improvement is not needed.	Continuous improvement program is in place, but perceived as extra-work, with key pockets of resistance.	Solid continuous improvement program is in place.	Successful continuous improvement program is in place, with strong favorable opinion	Strong continuous improvement culture. People across the business are looking at all key processes for ongoing improvement opportunities.
Empower Employees	Centralized decision-making occurs in a hierarchical structure with limited delegation of authority.	Appropriate structure and training is being put in place to enable empowerment.	Organizational environment and management system supports limited decision- making at point of use.	Decision processes are continually refined to promote increased accountability and ownership at point of use.	Decision-making across the extended enterprise is delegated to the point of use.
Data Centric	Data is not available for key business decisions.	Key business decisions are based mostly on intuition and experience.	Some areas heavily data-driven in their decision-making. Other areas primarily use intuition	Key business decisions are based on data. Some processes are managed with process control	Key business decisions are based on statistically-driven data. Most core processes are managed with process control.
LSS Engagement	Primary engagement is at the individual level.	Primary engagement is at the project-team level.	In addition to engagement of the project teams, there is a broad awareness across the business.	In addition to engagement of the project teams, there is a broad awareness across the business, and significant pull for project teams.	Lean Six Sigma is integral to the culture of the business. There is nearly 100% awareness and strong, favorable opinion of the program.

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Embed Enterprise Thinking Throughout the Organization	Actions are informed only by local considerations.	An enterprise culture has been established that enables people to think beyond local considerations. This is reflected in action to some degree.	Enterprise leadership is actively engaged in promoting, mentoring, and incentivizing cross-boundary action throughout the enterprise.	An enterprise perspective is visible in decisions and actions at all levels of the enterprise.	An enterprise perspective is ingrained in the day-to-day decisions and actions of enterprise stakeholders.

LEADERSHIP MATURITY: 1.5

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Nurture the Transformation	There is minimal support for the transformation effort from enterprise leadership.	Some members of enterprise leadership and management are providing encouragement, support, and recognition of the transformation.	Enterprise leaders and managers actively seek to identify and remove barriers to transformation. Teams and individuals who successfully implement improvements are recognized and rewarded.	There is enthusiastic encouragement of the transformation by enterprise leaders, managers, and other members of the organization.	Enterprise leaders are continuously in tune with the pulse of transformation and proactively inspire transformation ownership throughout the extended enterprise.
Obtain Senior Leadership Commitment	Level of commitment among senior leaders and management is variable – some endorse while others may actively resist.	Senior management buys into group commitment and engages in the transformation process.	Senior managers personally and visibly lead enterprise transformation.	Senior leaders are championing the transformation within the enterprise.	Senior leaders and management mentor and foster transformation champions internally and throughout the extended enterprise.

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Envision the Enterprise Future State	Senior leaders have varying points of view regarding the future state of the enterprise.	Senior leaders have a common vision of the future state of the enterprise.	The enterprise vision has been communicated and is understood by most employees.	A common vision of the future state of the enterprise is understood by key stakeholders (e.g., customers, suppliers, etc.).	Stakeholders have internalized the enterprise vision and are an active part of achieving it.
Articulate the Case for Transformation	Inconsistent communication of and lack of consensus on the case for transformation.	The executive team has a shared understanding of the case for transformation.	A well-defined and motivating case for transformation has been communicated throughout the enterprise.	Enterprise stakeholders speak with one voice regarding the case for transformation.	Enterprise internal and external stakeholders have internalized and support the case for transformation.

PLAN/STRATEGY MATURITY: 1.3

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Breadth of Deployment	Single functional area, single geography	More than one functional area or geography.	Deployment across all manufacturing and service areas, some transactional, multiple geographies	Deployment expands to transactional processes and supporting functions across multiple geographies	All functional areas, including R&D, sales, and shared services. All geographies
Create Enterprise-Level Transformation Plan	Individual planning efforts are mostly bottom-up initiatives with little priority or coordination established at enterprise level.	Enterprise level planning identifies transformation projects, which are prioritized to meet short- and long-term strategic objectives.	Enterprise improvement plans are coordinated and prioritized across enterprise value stream(s) with a timeline for expected measurable results.	Transformation plan is continuously refined through learning from implementation results and changing strategic requirements.	Transformation plan balances mutual benefits of stakeholders across the extended enterprise.

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Communicate Plan	Details (e.g., vision, objectives, and projects) of the transformation plan are not known at all levels of the enterprise.	Senior enterprise leadership presents the transformation plan, but some or all of the following emerges: only few stakeholders understand the plan, behavior of some enterprise leaders does not support the plan, stakeholders doubt successful outcome of transformation.	Enterprise leaders clearly and regularly explain the transformation plan to enterprise stakeholders and demonstrate its implementation through behavior and examples.	All communication channels existing in the enterprise (e.g., company newsletters, management meetings, training courses, etc.) are used to discuss the transformation plan and progress of its implementation.	All enterprise stakeholders understand the transformation plan, actively participate in its implementation and promote the plan within and outside the enterprise.
Integrate Enterprise Transformation into Strategic Planning Process	Enterprise transformation efforts are ad hoc.	Enterprise transformation is relegated to lower levels of the enterprise and application is fragmented.	Enterprise transformation plans are formulated, but not integrated into the strategic plan.	Coordination and synergistic relationship exists between transformation and strategic planning.	Strategic plans leverage the results of transformation improvements to achieve enterprise objectives.
Impact Enterprise Strategic Planning	Results of transformation efforts are not fed back to strategic planning process.	Benefits of transformation efforts are beginning to influence the strategic planning process.	Enterprise leadership actively considers impact of transformation efforts on the strategic plan.	Current and forecasted improvements from transformation efforts are incorporated into enterprise planning and budgeting decisions.	Enterprise leadership leverages current and forecasted results of transformation efforts for the creation of new strategic opportunities.

Item	Level 1 Introductory	Level 2 Initial Results	Level 3 Demonstrating Success	Level 4 Successful, Mature Deployment	Level 5 Setting the Standard
Monitor Transformation Progress	Enterprise leaders are not actively involved in the review of overall transformation plan progress.	Transformation implementation plan progress is reviewed against enterprise level milestones and success criteria, for some projects.	Enterprise leaders use a formal methodology to analyze the overall progress of all transformation projects. Projects are adjusted based on learning.	Aggregated review across transformation projects permits reallocation of resources and adjustment of plans to ensure ongoing alignment with strategic objectives.	Transformation progress is collaboratively monitored throughout the extended enterprise. The transformation plan is proactively adjusted to achieve outcomes for extended enterprise.
Develop Detailed Plans Based on the Enterprise Plan	Improvements are generally optimized for individual areas and employees cannot clearly see the links between localized and enterprise goals.	Most employees understand key goals of the enterprise transformation plan. Process owners are involved in developing detailed plans linked to the goals/strategic objectives of the enterprise plan.	Detailed transformation plans supporting the enterprise level plan are developed and coordinated across processes.	Detailed transformation plans accounting for any interdependencies are refined and integrated across the enterprise. Best practices are shared.	Implementation plans from extended enterprise are coordinated with and support the transformation plan.

Executive Response

King County

Dow Constantine
King County Executive
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June 6, 2016

Kymber Waltmunson
King County Auditor
Room 1033
C O U R T H O U S E

Dear Ms. Waltmunson:

Thank you for the opportunity to review and comment on the proposed final report on Lean in King County.

This audit evaluated the implementation of Lean in King County since its inception. We appreciated the audit team's collaborative approach and their efforts to understand both the core of Lean thinking and tools as well as the on-the-ground realities of implementing Lean in a large, complex organization.

We concur in the audit recommendations and have provided a few comments.

We thank the audit team for their hard work and insights. We particularly appreciate that the audit team pursued this audit in a spirit of constructive criticism aimed at helping us improve. That is very much in the spirit of Lean. We look forward to sharing our progress as we implement these recommendations.
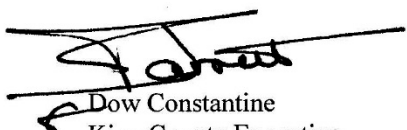
King County is an Equal Opportunity/Affirmative Action Employer
and complies with the Americans with Disabilitites Act

Kymber Waltmunson
June 6, 2016
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Thank you for collaborating on this important work. If you have any questions regarding our audit response, please contact Jim Chrisinger, Improvement Specialist, Office of Performance, Strategy and Budget, at 206-263-9682.

Sincerely,

Dow Constantine
King County Executive

Enclosure

cc: Fred Jarrett, Deputy County Executive, King County Executive Office (KCEO)
        Rhonda Berry, Deputy Executive for Operations (KCEO)
        Dwight Dively, Director, Office of Performance, Strategy and Budget (PSB)
        Gary Kurihara, Lean Transformation Director, PSB
        Jim Chrisinger, Improvement Specialist, PSB

Recommendation No. 1

The County Executive should clearly document, and submit to the County Council for consideration, the purpose of Lean deployment in King County.

Select concurrence below	Implementation date or N/A	Responsible agency
Concur (explanation optional)	**08/15/16**	**Office of Performance, Strategy and Budget**
Agency concurrence comment, or reason for partial or non-concurrence for Recommendation 1		

Recommendation No. 2

The County Executive should demonstrate how the purpose of Lean deployment noted in recommendation 1 is used to prioritize Lean resources.

Select concurrence below	Implementation date or N/A	Responsible agency
Concur (explanation optional)	**08/15/16**	**Office of Performance, Strategy and Budget**
Agency concurrence comment, or reason for partial or non-concurrence for Recommendation 2		
We have not purposefully avoid working with public safety agencies. Substantial work was undertaken with the Department of Adult and Juvenile Detention and the Jail Health Services Division of Public Health. Other public safety agencies and branches have been engaged in more limited ways. Among these agencies, some appeared to have limited readiness to productively engage in Lean. Particularly where there are separately elected officials leading agencies, the extent to which Lean can effectively be used is largely beyond Executive control. And, even with encouragement, Lean will only be truly effective to the extent there is leadership committed to Lean success in the agencies themselves.		

Recommendation No. 3

The County Executive should develop and implement a comprehensive system to track Lean deployment that can inform planning and reporting.

Select concurrence below	Implementation date or N/A	Responsible agency
Concur (explanation optional)	**08/15/16**	**Office of Performance, Strategy and Budget**
Agency concurrence comment, or reason for partial or non-concurrence for Recommendation 3		

Recommendation No. 4

The Continuous Improvement Team should help agencies deploying Lean improve the measurement of results from process improvement efforts.

Select concurrence below	Implementation date or N/A	Responsible agency
Concur (explanation optional)	**08/15/16**	**Office of Performance, Strategy and Budget**
Agency concurrence comment, or reason for partial or non-concurrence for Recommendation 4		
The weakness in measurement and data cited in the audit report, with which we agree, is more an overall King County problem than a Lean implementation problem, though we should fully expect Lean practitioners to be part of the solution. Significant progress will also require the contributions of others across the County. Also, King County does not have systems to measure productivity. Tools like BI analytics and methodologies like Activity-Based Costing/Management will give us more of that ability in the future.		

Recommendation No. 5

The Continuous Improvement Team should develop and implement a strategy to assess the impact of Lean on employee engagement.

Select concurrence below	Implementation date or N/A	Responsible agency
Concur (explanation optional)	**08/15/16**	**Office of Performance, Strategy and Budget**
Agency concurrence comment, or reason for partial or non-concurrence for Recommendation 5		

Recommendation No. 6

The County Executive, working with the Continuous Improvement Team, should use the auditor's maturity model or another comprehensive maturity model, to determine how to prioritize Lean resources and assess progress toward mature Lean deployment.

Select concurrence below	Implementation date or N/A	Responsible agency
Concur (explanation optional)	**08/15/16**	**Office of Performance, Strategy and Budget**
Agency concurrence comment, or reason for partial or non-concurrence for Recommendation 6		

Recommendation No. 7

The County Executive should document the alignment of Lean activities with the strategic goals of the County and/or agencies.

Select concurrence below	Implementation date or N/A	Responsible agency
Concur (explanation optional)	**08/15/16**	**Office of Performance, Strategy and Budget**
Agency concurrence comment, or reason for partial or non-concurrence for Recommendation 7		

Statement of Compliance, Scope, Objective & Methodology

Statement of Compliance with Government Auditing Standards

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Scope of Work on Internal Controls

We assessed internal controls relevant to the audit objectives. This included review of selected policies, plans, processes, and reports, as well as interviews with knowledgeable continuous improvement and executive staff and Lean subject matter experts. In performing our work, we identified concerns related to operational efficiency and effectiveness of the deployment of Lean in King County.

Scope

This audit examined key elements of how the county has used Lean as a continuous improvement approach. We primarily concentrated on Lean, but examined how Lean fits into other county initiatives such as line-of-business planning and strategic planning.

Objectives

1. To what extent has Lean achieved the goals and objectives set out for it by both the County Executive and County Council?
2. To what extent are Lean resources being used efficiently?

Methodology

To achieve the objectives listed above, we conducted a literature review and interviewed external public and private sector experts on Lean deployment. We toured Jail Health Services and the Finance and Business Operations divisions to observe their deployment of Lean and attended report outs for process improvement efforts during the time of the audit. Additionally, we built a database of Lean efforts based on internal and external reports and articles on Lean deployment in King County, which was then shared with and expanded upon by the Continuous Improvement Team and executive agencies deploying Lean. We also reviewed several Lean maturity models and used two to evaluate the maturity of Lean deployment in King County.

List of Recommendations & Implementation Schedule

Recommendation 1: The County Executive should clearly document, and submit to the County Council for consideration, the purpose of Lean deployment in King County.

> **Implementation Date:** August 15, 2016
> **Estimate of Impact:** Documenting a purpose for Lean will allow the County Executive to focus resources in areas necessary to fulfill this purpose, and submitting this purpose to the County Council will give councilmembers a means to inform budgeting decisions related to Lean.

Recommendation 2: The County Executive should demonstrate how the purpose of Lean deployment noted in Recommendation 1 is used to prioritize Lean resources.

> **Implementation Date:** August 15, 2016
> **Estimate of Impact:** By using an explicit purpose to prioritize Lean resources, the County Executive and County Council have greater assurance that Lean resources are being used to maximize intended benefits.

Recommendation 3: The County Executive should develop and implement a comprehensive system to track Lean deployment that can inform planning and reporting.

> **Implementation Date:** August 15, 2016
> **Estimate of Impact:** By implementing a tracking system, the County Executive will have more accurate information about Lean deployment, which will provide a basis for analyzing progress and planning for future efforts.

Recommendation 4: The Continuous Improvement Team should help agencies deploying Lean improve the measurement of results from process improvement efforts.

> **Implementation Date:** August 15, 2016
> **Estimate of Impact:** By helping agencies improve the measurement of results, agencies will better understand whether Lean is helping create efficiencies in their work potentially leading to more impactful projects and the Continuous Improvement Team will be able to provide more accurate and reliable reporting to decision-makers.

Recommendation 5: The Continuous Improvement Team should develop and implement a strategy to assess the impact of Lean on employee engagement.

> **Implementation Date:** August 15, 2016
> **Estimate of Impact:** Implementing a strategy to assess impact on employee engagement will provide a clearer means to measure a key intended outcome of Lean deployment.

Recommendation 6: The County Executive, working with the Continuous Improvement Team, should use the auditor's maturity model or another comprehensive maturity model to determine how to prioritize Lean resources and assess progress toward mature Lean deployment.

> **Implementation Date:** August 15, 2016
> **Estimate of Impact:** Using a maturity model will allow King County to determine progress toward becoming a Lean government and will allow the County to identify those areas that need emphasis or resources in order to more fully mature and maximize the potential for improvement.

Recommendation 7: The County Executive should document the alignment of Lean activities with the strategic goals of the County and/or agencies.

> **Implementation Date:** August 15, 2016
> **Estimate of Impact:** Linking Lean deployment to strategic planning will allow the County to engage its chosen process improvement method with the areas that it has identified as the most pressing maximizing the likelihood that the County makes progress towards its goals.