# State of Wisconsin: Metrics

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Lean Government Conference 2017

# Today's Presentation

About the Wisconsin Lean Government Program

Metric basics

Required metrics

- Definition
- Example
- DATCP projects

Group activity: Data dilemmas

Small group activity: Apply a metric

Discussion: Other metrics

Questions

# Lean Government Initiative

In 2012, Governor Walker signed Executive Order #66, implementing a Lean government initiative.

Change government culture by engaging leadership and staff in the improvement process

Apply methods to eliminate waste, save time, standardize workflow and decrease process complexity

Focus on processes that impact staff and customers

*Produce data that enables the agency to track improvement*

# Lean Government Initiative

A Lean Government Program office was established at the Department of Administration.

A 2016 charter established the key stakeholders, overview, guiding principles, goals and deliverables.

Create a continuous improvement culture

Create a network of experts and continuous improvement champions

*Use of continuous improvement tools to make fact-based decisions*

# Required metrics

The 2016 charter established four mandatory metrics to be utilized by agencies.

Metrics were developed based on historical annual reports.

Each project or activity should utilize at least one of the four mandatory metrics.

A metrics guide included definitions and examples for calculations.

Established metrics provided consistency for reporting impact annually.

# Back to the basics

Why are metrics important?

1. They help you better understand the problem
2. They provide a way to ‘keep score’ and show you made an improvement
3. They help you defend your work

# The big picture

Before – After = **Improvement**

**COLLECT**

**COLLECT**

**CALCULATE**

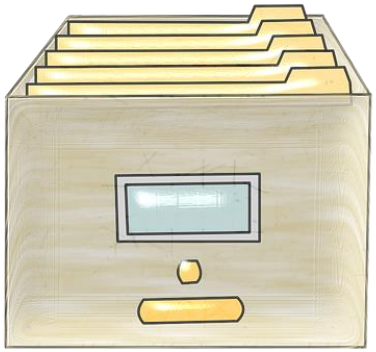
# Other names for “before data"

“Before data” is also known as:

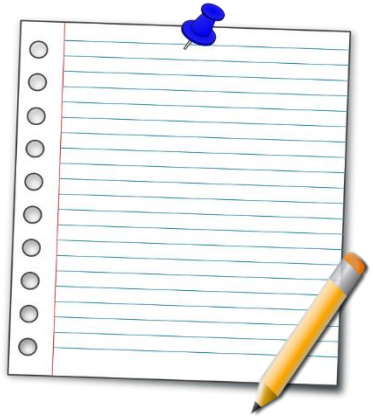
Current state data

Baseline data

# Collecting data



Look at historical data



Record data directly



Search for other resources

# Operational definitions

Before collecting data, make sure you're very specific about what your metric represents.

Example: "Be home by dark"

Operational definitions help ensure:

- You understand what data you're collecting
- It's clear where the process starts and stops
- Team members are collecting data consistently
- Project sponsors understand what is being measured

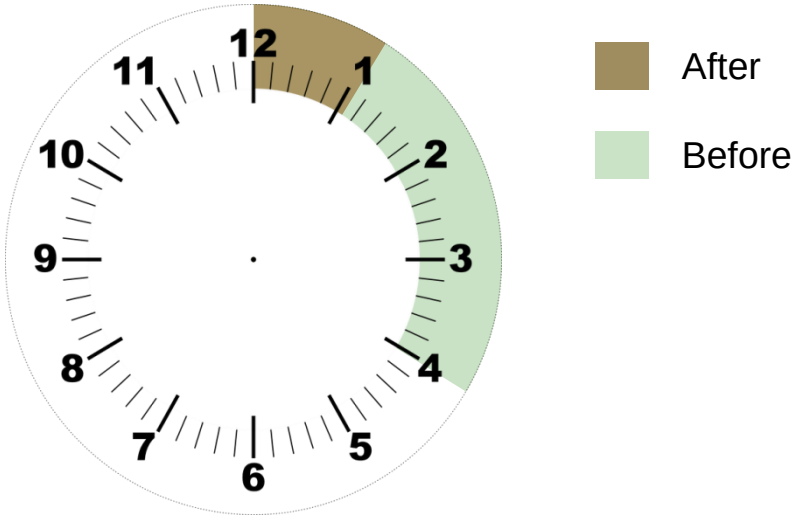
# Required metrics

Four options:

1. Hours repurposed
2. Lead time reduced
3. Cost avoidance
4. Process steps eliminated

# Hours repurposed: Definition

Hours repurposed is the difference between how long a task takes after an improvement is implemented and how long it took before



# Hours repurposed: When to use

Hours repurposed should be used when the problem you're trying to solve is consuming a large amount of you or your coworkers' time

# Hours repurposed: Example

## Scenario

A team in your division frequently complains that the monthly reports take too long to complete.

You organize a Lean team to reduce the amount of time these reports require each month.

# Hours repurposed: Recording before data

| Before improvement | | | |
|---|---|---|---|
| REPORT | TIME STARTED | TIME COMPLETED | HOURS REQUIRED |
| A | 7:45 a.m. | 9:20 a.m. | 1.58 |
| B | 9:30 a.m. | 11:50 a.m. | 2.33 |
| C | 12:30 a.m. | 1:22 p.m. | 0.87 |
| **TOTAL** | | | **4.78 hours** |

# Hours repurposed: Annual conversion

## Before improvement

4.78 hours per month X 12 months per year = 57.36 hours per year

# Hours repurposed: Improving the process

# Hours repurposed: Recording before data

| After improvement | | | |
|---|---|---|---|
| REPORT | TIME STARTED | TIME COMPLETED | HOURS REQUIRED |
| A | 8:00 a.m. | 8:32 a.m. | 0.53 |
| B | 8:40 a.m. | 9:55 a.m. | 1.25 |
| C | 10:10 a.m. | 10:43 a.m. | 0.55 |
| **TOTAL** | | | **2.33 hours** |

# Lead time: Cumulative conversion

## After improvement

| | | | | |
|---|---|---|---|---|
| 2.33 hours<br>per month | x | 12 months<br>per year | = | 27.96 hours<br>per year |

# Hours repurposed: Annual conversion

| Hours required (Before) | - | Hours required (After) | = | Hours repurposed (Improvement) |
|---|---|---|---|---|
| 57.36 hours per year | - | 27.96 hours per year | = | 29.4 hours per year |

# Hours repurposed: DATCP project

**Project name:** Certified Food Managers

**Background:** Most restaurants licensed by DATCP must have at least one manager or operator certified in food protection practices. Certification involves passing an approved exam through a certified course proctor; sending the exam results, $10, and a Certified Food Manager application to DATCP; and posting a certificate provided by DATCP at the restaurant or retail facility.

**Problem/Opportunity Statement:** The multiple step process of paying for and passing an exam and then applying and paying for a certificate from DATCP does not provide any additional assurance of food protection. The DATCP certificate is an extra step for the manager or operator, as well as extra work for DATCP staff to process the applications and mail the certificates.

# Hours repurposed: DATCP project

**Results:** It was determined through staff discussions and legal review that posting a passing certificate for a DATCP-approved exam, taken within the past 5-year period of validity, is adequate proof that the manager is certified in food protection practices. Removing the requirement to apply for a certificate from DATCP has freed up almost one full FTE to work on other duties related to food and recreational licensing. DATCP still must manage applications sent in error and process related refunds, but overall time spent on processing and issuing certificates has decreased greatly. The process was streamlined while still ensuring food safety.

# Hours repurposed: DATCP project

**Project name:** Collect tuberculosis data

**Problem/Opportunity Statement:** TB letter creation is currently a manual process and is not easily tracked or traceable with other programs. Measuring this process over the past four months, it takes 18 minutes on average to create each letter and 10 minutes per instance to search for noncompliance violations per Veterinarian.

**Project Goal:** Repurpose staff hours by saving time for letter creation and to pull noncompliance statistics across programs

# Hours repurposed: DATCP project

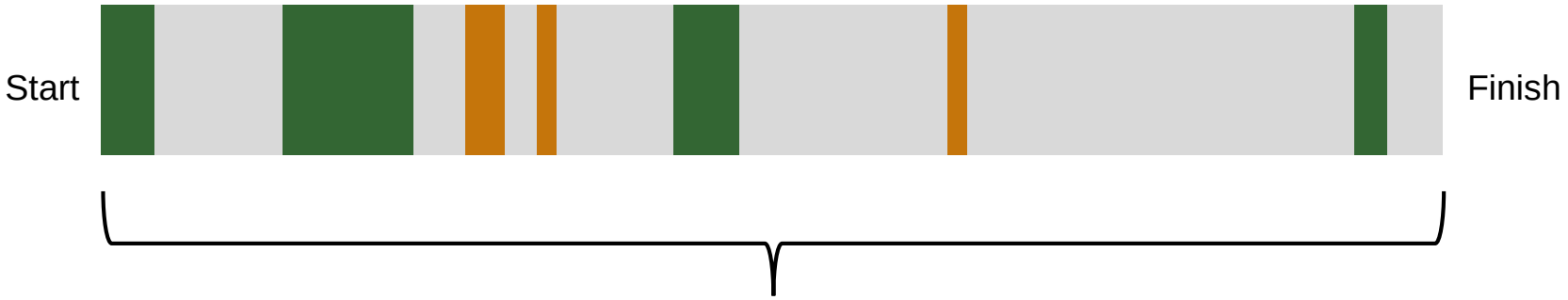
**Project Work:** A Microsoft Access database was created, allowing staff to enter violations and automate letter creation in the new process.

**Results:**

| Performance Metric | Former Process | New Process | Difference | Total Instances Annually |
|---|---|---|---|---|
| **Time to enter data and create letter** | 18 minutes | 8.4 minutes | 10 minutes per instance saved | About 53 letters each year |
| **Cross-check compliance** | 10 minutes | 2 minutes | 8 minutes per instance saved | About 3,525 vets in the state to check |

# Lead time: Definition

Lead time is how long it takes to complete a process from start to finish



# Lead time reduced: Definition

Lead time reduced is the difference between how long it takes to complete the process after the improvement is implemented and how long it took before

**Lead time (before): 26 days**

**Lead time (after): 20 days**

# Lead time reduced: When to use

Lead time reduced should be used when a process has many handoffs or long wait times between steps

# Lead time reduced: How to use

Can consider lead time by individual process or cumulative.

Cumulative shows the magnitude of the improvement's impact.

# Lead time: Example

## Scenario

New employees have said that they don't always have all the IT resources they need when they start on their first day.

You decide to work with hiring managers and IT personnel to address this problem.

# Lead time: Data collection challenges

New employees

Hiring managers

# Lead time: Using historical data

**From:** HR
**Sent:** Friday, June 09, 2017 4:49 PM
**To:** Schmitt, Samuel - DOA <Samuel.Schmitt@wisconsin.gov>
**Subject:** Appointment Letter

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**From:** DOA User Security
**Sent:** Thursday, March 16, 2017 2:01 PM
**To:** Schmitt, Samuel - DOA <Samuel.Schmitt@wisconsin.gov>
**Subject:** Network ACCOUNTS DOMAIN ID is Ready for New Employee

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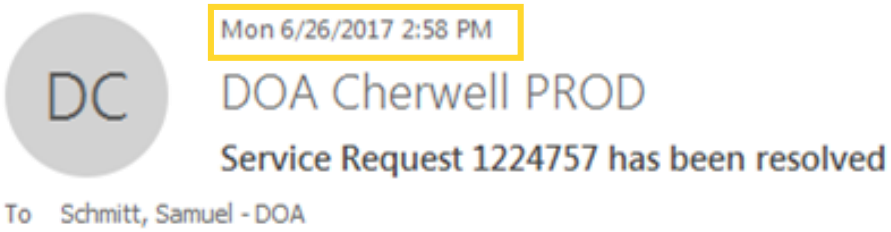


# Lead time: Creating an Excel template

| COLLECT | | | | CALCULATE | |
|---|---|---|---|---|---|
| Employee's name | Date appt. letter sent | Date last task completed | Appointment effective date | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

# Lead time: Entering hypothetical data

| COLLECT | | | | CALCULATE | |
|---|---|---|---|---|---|
| Employee's name | Date appt. letter sent | Date last task completed | Appointment effective date | Lead time | Ready for first day? |
| Ryan M. | 6/10/17 | 6/22/17 | 6/18/17 | 12 | No |
| Kelli K. | 6/22/17 | 7/2/17 | 7/5/17 | 10 | Yes |
| Samuel S. | 7/3/17 | 8/4/17 | 7/20/17 | 32 | No |
| | | | | | |

**Avg lead time: 18 days**
Percentage without resources on first day: 67%

# Lead time: Cumulative conversion

## Before improvement

| | | | | |
|---|---|---|---|---|
| 18 days<br>per employee | x | 100 employees<br>per year | = | 1800 cumulative days<br>of lead time per year |

# Pretend improvements have occurred

# Lead time: Entering hypothetical data

| COLLECT | | | | CALCULATE | |
|---|---|---|---|---|---|
| Employee's name | Date appt. letter sent | Date last task completed | Appointment effective date | Lead time | Ready for first day? |
| Jeff R. | 9/7/17 | 9/15/17 | 9/18/17 | 8 | Yes |
| Emily P. | 9/12/17 | 9/18/17 | 10/2/17 | 6 | Yes |
| Alex C. | 9/13/17 | 9/21/17 | 10/2/17 | 8 | Yes |
| | | | | | |

**Avg lead time: 7.3 days**
Percentage without resources on first day: 0%

# Lead time: Cumulative conversion

## After improvement

| | | | | |
|---|---|---|---|---|
| 7.3 days<br>per employee | x | 100 employees<br>per year | = | 730 cumulative days<br>of lead time per year |

# Lead time: Determining improvement

| Original process (Before) | - | Improved proces (After) | = | Lead time reduced (Improvement) |
|---|---|---|---|---|
| 1800 days of cumulative lead time | - | 730 days of cumulative lead time | = | 1070 days of cumulative lead time |

# Lead time: DATCP project

**Project name:** Use master contracts for grants

**Background:** DATCP's Soil and Water Resource Management (SWRM) Program has provided annual grant funding to counties to pay for conservation staff and landowner cost-sharing. Each year counties cannot access grant awards until they sign an annual grant contract with DATCP that formalizes county awards for that grant year, including cost-share funds carried over from the prior year.  Even though DATCP now signs contracts electronically, the annual process of signing 72 grant contracts takes nearly three weeks (21 days) to complete.

# Hours repurposed: DATCP project

**Scope:**

1. Develop a long-term contract that meets legal requirements and adequately protects DATCP interests
2. Secure management and legal approval for use of a master contract
3. Collect feedback from county users regarding their acceptance of a master contract
4. Develop streamlined system for processing contract renewals after counties sign master contract

**Results:** Staff redesigned grant process steps to incorporate the renewal procedures authorized by the master contract. Streamlining or eliminating steps will shorten the lead time by 10 days for DATCP to begin paying county reimbursement requests

# Lead time: DATCP project

**Project name:** Issue vet tech certificates

**Problem / Opportunity Statement:** 2016 DATCP Veterinary Examining Board data collected in October shows that there are currently 24 steps, including mailing printed certificates and hand grading the state law examination, for each vet tech certificate. From the time of application to mailing the certificate, it takes on average 82.67 days

# Lead time: DATCP project

## Solutions:

- Map the process
- Partner with American Association of Veterinary State Boards for state examination
- Develop ability for vet techs to view and print their own certificates with a PIN
- Improve website structure and content
- Add instructions to the application process

## Results:

| | Before Improvement | After Improvement | Gap | Reduction |
|---|---|---|---|---|
| **Lead time** | 82.67 days | 7 days | 75.67 days | 91.5% |

# Lead time: DATCP project

**Project name:** Evaluate the exit interview process

**Background:** Human Resources staff would print and mail (via USPS) exit interviews to employees. Many times, the employee would receive them after their employment ended. Only 17% completed and returned the survey, and the information that was gathered was not in a usable form to be analyzed for future improvements.

# Lead time: DATCP project

**Results:** After streamlining the process and creating an electronic survey, data shows that 67% of the exit interviews in the first quarter of 2017 were returned. Mail costs were eliminated, and the response turnaround time was reduced by 11 days.

**Future:** The increase in data returned from this process will help improvement our assessment of the work environment and improve employee retention.

# Hours repurposed vs. Lead time reduced

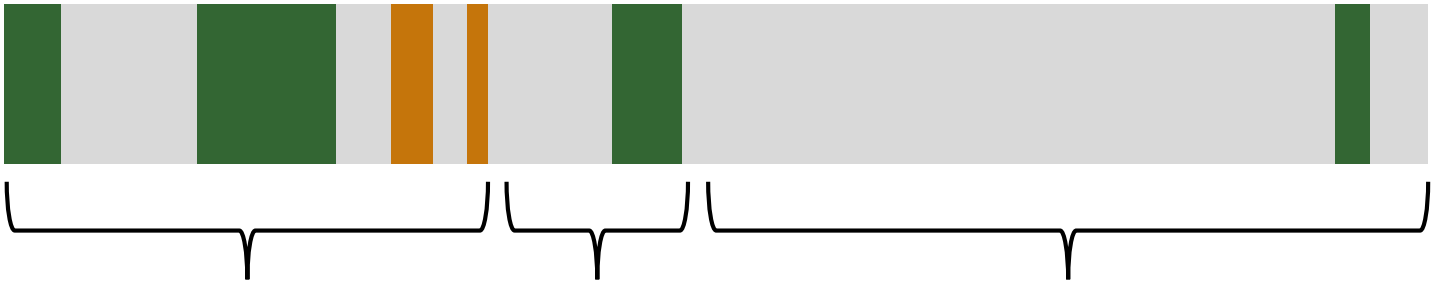
Repurposing hours will almost always decrease lead time, but reducing lead time may not repurpose any hours

## Lead time reduced but no hours repurposed

## Hours repurposed and lead time reduced

# Segmenting the process

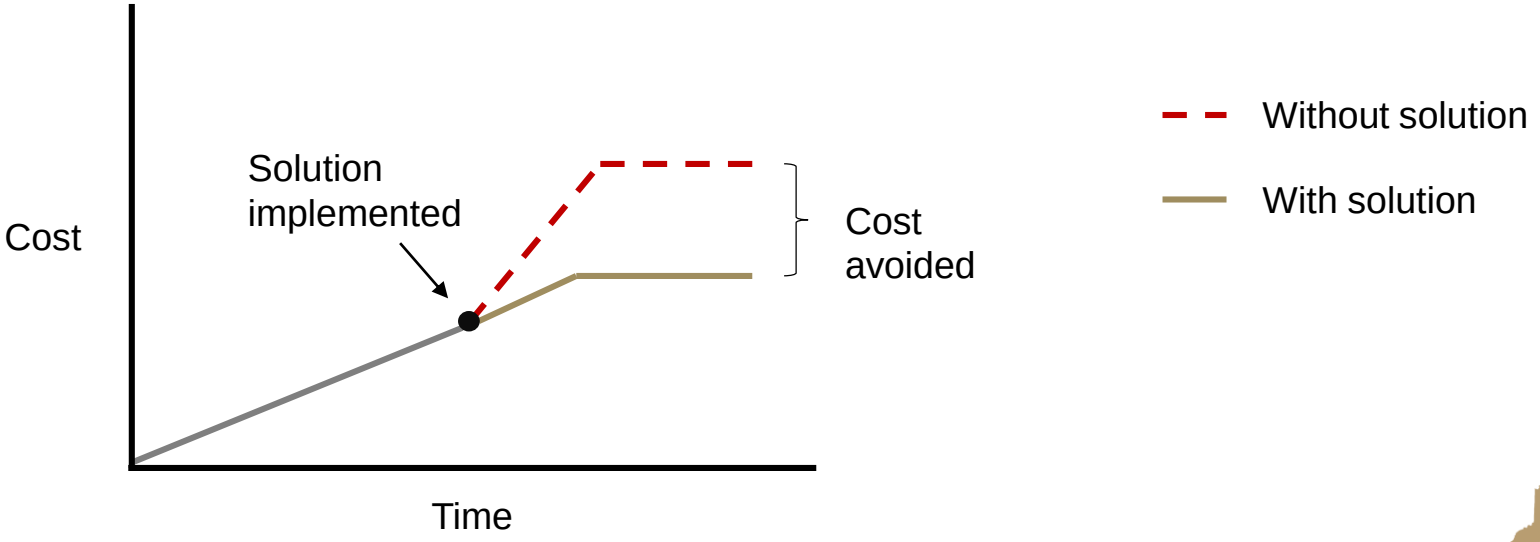
You don’t always need to measure lead time from the very beginning to the very end



**6 days** + **3 days** + **12 days** = **Lead time: 21 days**

# Cost avoidance: Definition

Cost avoidance is the difference between the dollar amount spent after the solution is implemented and what would have been spent if it weren't implemented

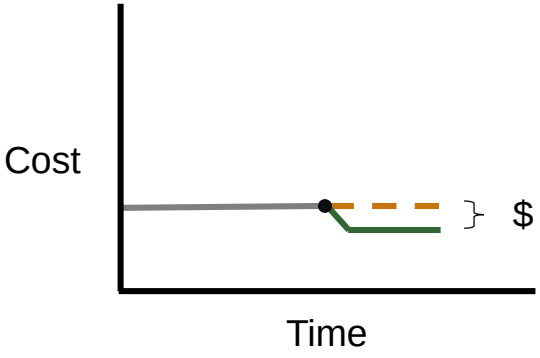


# Cost avoidance: When to use

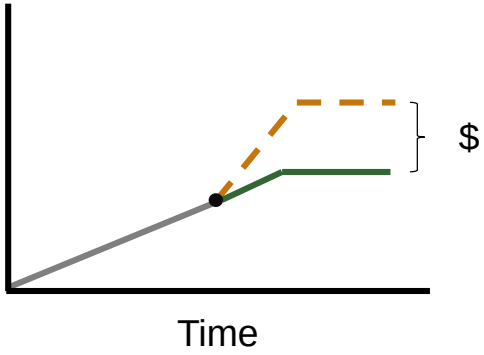
Cost avoidance should be used when the outcome of a project reduces a current cost or prevents a future cost

# Cost avoidance: Scenarios

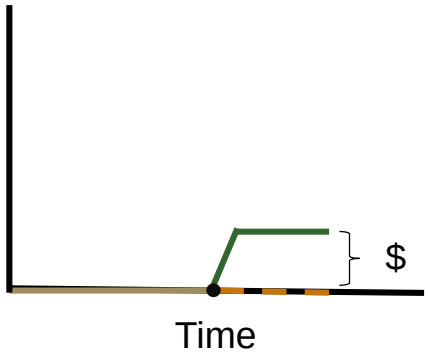
You can report cost avoidance when you:




**Reduce a current cost**




**Prevent a future cost**




**Sell assets that are not needed**

# Cost avoidance: Example

## Scenario

Your division is running out of space because of all the forms you are required to keep on hand.

You are tasked with leading a Lean team to determine how you can free up space and therefore avoid having to pay more in rent.

# Cost avoidance: Calculation

| Without solution (Before) | - | With solution (After) | = | Cost avoidance (Improvement) |
|---|---|---|---|---|
| Pay $23,150 in additional rent costs | - | Pay $0 in additional rent costs | = | $23,150 on-going cost avoided |

# What if my solution costs money?

Include this cost in the field labeled ‘one-time cost to implement solution’

**Cost to purchase new containers and shelving**

$850

# Cost avoidance: Example

# Cost avoidance: DATCP project

**Name:** Reduce Secretary's Office image storage folders

**Background:** DATCP's Chief Information Officer shared that the agency pays approximately $6,000 a month total for storage. There are other opportunities for storage including SharePoint and Office365.

Problem Statement: DATCP currently uses mapped drives for storage of documents, images and other folders. When graphics staff evaluated folders in December 2016, it was found that the Events Photo folder hold seven years of images, a total of 40.3 GB. DATCP pays $0.32 per month for primary storage and $0.20 per month for back-up storage per GB. For the Events Photo folder, DATCP pays $251.47 annually for this one folder. There is an opportunity to eliminate waste and avoid costs.

# Cost avoidance: DATCP project

**Results:** A process was established to save at least one photo from each event and to delete the other drafts. Photos that may be useful to agency staff or the public were put on the Flickr site for distribution. When completed, the image folder was 6.73 GB, an 83% reduction. The new storage cost for the image folder is $41.99. This project will save the agency $209.48 annually in storage costs. This project can be replicated by other agency staff by evaluating their folders, resulting in additional savings.

# Cost avoidance: DATCP project

**Project name:** Decreasing travel time and costs

**Background:** Currently the Bureau of Food & Recreational Business has 14 different teams that meet bi-monthly or monthly. These groups spend a large number of hours traveling, as well as a lot of money for meals and lodging. The goal of this project was to reduce the travel time and expenses associated with team meetings by utilizing Skype for Business.

# Costs avoidance: DATCP project

**Results:** By eliminating one face-to-face meeting for two teams (one field staff and one technical staff team) and replacing it with a Skype for Business meeting in 2017, DATCP was able to repurpose 40.5 hours of staff time that would have been spent traveling to and from meetings and avoid $1,213.47 in costs that would have been spent on mileage, meal and lodging.

**Going Forward:** The division plans to use Skype for Business for more meetings in 2018, which will increase communication and create additional savings. Other divisions have the potential to replicate this project with their own teams by utilizing Skype for Business for meetings.

# Cost avoidance: DATCP project

**Project name:** Sell unused division equipment

**Background:** The Division of Animal Health had equipment, including a truck and trailers, that the agency was paying storage and parking for, even though they were not being utilized.

# Cost avoidance: DATCP project

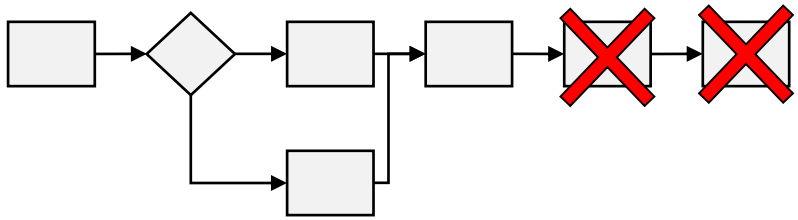
**Project work:** Staff needed to identify the original way the equipment was purchased to complete needed documentation and worked with Wisconsin Surplus Online Auction to make the sales.

**Results:** The division sold the equipment for $22,570, which was deposited in the department's general fund. They also save $145.24 in parking costs or $1,742.88 per year.

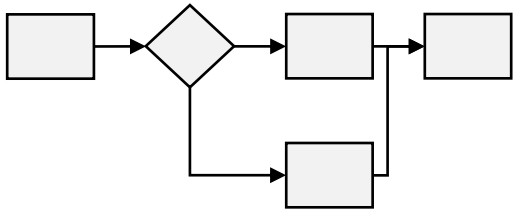
# Process steps eliminated: Definition

Process steps eliminated is the difference between how many steps exist in the process after an improvement is implemented and how many existed before

**Before**

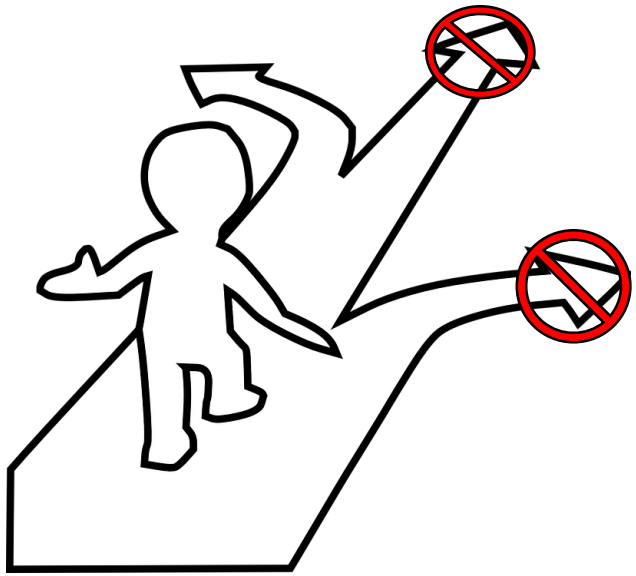


**After**



# Process steps eliminated: When to use

Process steps eliminated is best as a secondary metric and should only be used as your required metric when you have no other options



# Process steps eliminated: Example

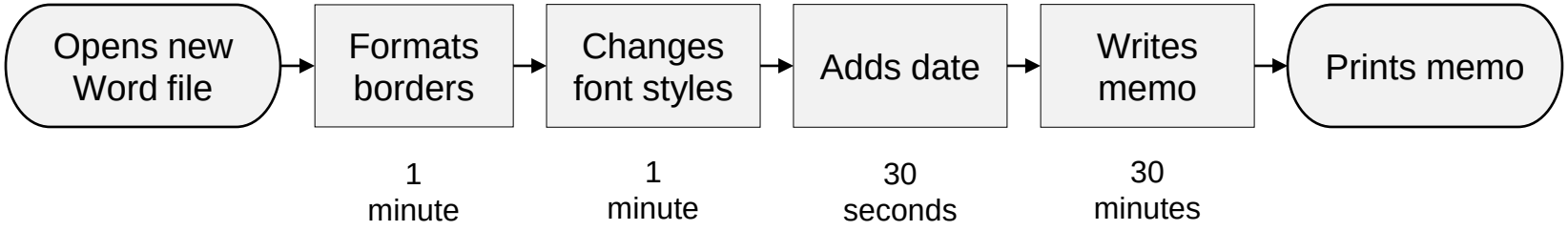
## Scenario

An employee is frustrated by how many steps are required to prepare a simple memo.

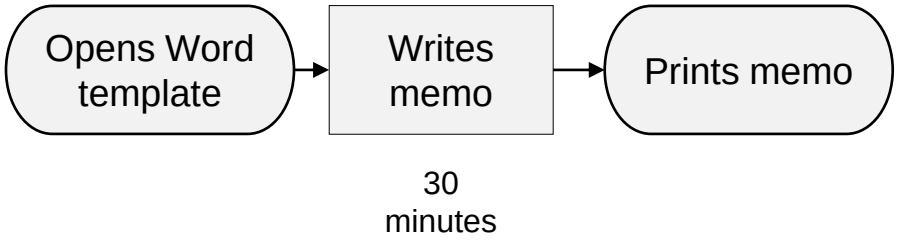
She decides to apply what she's learned in the Lean Government courses to improve this process.

# Process steps eliminated: Example

## Before




## After



# Process steps: DATCP project

**Name:** Case Submittal and Retention

**Problem Statement:** The former closed case document management process did not take advantage of capabilities for the digitization of case records and instead created non-searchable hard copies. An opportunity existed for a reduction in the time commitment from supervisors, program managers and the Office Program Associate (OPA) required to print, sign, and file physical copies.

# Process steps: DATCP project

**Results:** Case approvals were transitioned to a digital sign-off process using the division's case tracking database (Microsoft Access), which also supports the filing and retention process. Supervisors no longer print finished copies of cases, the OPA no longer scans them for digital filing, and the receptionist and license permit program associates no longer file hard copies.

| Metric | Initial Unit | Final Unit | Improvement |
|---|---|---|---|
| **Process Steps Eliminated** | 19 | 14 | 5 |

# Process steps: DATCP project

**Name:** Seed Sampling Modernization

**Background**: The seed labeler program licenses 700-750 seed labelers annually. Each year our goal is to sample and/or inspect 1/3 of all licensed labelers in the state.

**Goal:** To develop a more efficient method for the collection and recording of official seed samples by reducing the sample collection time, human error and data entry time.

**Method:** Create a database and utilize technology

# Process steps: DATCP project

**Results:** Originally there were 13 steps in the seed sampling procedures and the new process has eliminated four of them. Eliminated steps include:

1. Complete official sample bag.
2. Mail copy of seed sample collection record form.
3. Enter seed sample collection record form receive in office.
4. Sending reports to field staff.

# Group activity: Data dilemmas

For each scenario, answer the following questions:

1. What problem is the Lean team trying to solve?
2. Which required metric should they use?
3. How should they collect the data?

# Example 1: Constructing buildings

## Scenario

The Division of Facilities Development in DOA receives frequent complaints from agencies and legislators about how long buildings take to be completed.

They decide to start a process mapping initiative to look into this problem.

# Example 1: Constructing buildings

## Scenario

The Division of Facilities Development in DOA receives **frequent complaints** from agencies and legislators **about how long buildings take to be completed.**

They decide to start a process mapping initiative to look into this problem.

# Example 2: Multiple windows

## Scenario

An employee in your division often has multiple files open at one time and needs to constantly switch between them in order to complete her work.

Since she only has one monitor, it takes a few seconds for her to pull up the other document when it is required.

# Example 2: Multiple windows

## Scenario

An employee in your division often has multiple files open at one time and needs to **constantly switch between them** in order to complete her work.

Since she only has one monitor, it **takes a few seconds for her to pull up the other document** when it is required.

# Example 3: Software

## Scenario

Your bureau director notices the number of software subscriptions in one facility are much higher than all the others.

You are asked to form a Lean team to investigate.

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## Scenario

Your bureau director notices the **number of software subscriptions in one facility are much higher than all the others.**

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# Example 4: Writing justifications

## Scenario

An employee in your work area writes justifications each month for all purchases that were made. This task takes several hours each month even though the justifications are nearly identical each time.

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## Scenario

An employee in your work area writes justifications each month for all purchases that were made. This task **takes several hours each month** even though the justifications are nearly identical each time.

# Example 5: Complaint submissions

## Scenario

Complaints are sent to DSPS via mail, fax, email, or in-person and hand-delivered to an employee to be manually entered into the complaint tracking system. These paper forms are associated with human error and often lead to significant rework.

# Example 5: Complaint submissions

## Scenario

Complaints are sent to DSPS via mail, fax, email, or in-person and hand-delivered to an employee to be manually entered into the complaint tracking system. **These paper forms are associated with human error and often lead to significant rework.**

# Example 6: Training approvals

## Scenario

Employees feel that it takes too long for their training requests to be approved, which sometimes causes them to miss training sessions they wanted to attend.

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## Scenario

Employees feel that it takes **too long** for their training requests to be approved, which sometimes causes them to miss training sessions they wanted to attend.

# Small group activity: Apply a metric

Explain a current or potential project to the people in your group and decide which metric(s) would be best to collect.

Use this as an opportunity to get feedback on the scope of your project and discuss potential challenges in collecting the metric(s).

| Metrics |
| --- |
| 1. Hours repurposed |
| 2. Lead time reduced |
| 3. Cost avoided |
| 4. Process steps eliminated |

# Discussion: Other metrics

## Ideas to consider

- Customer satisfaction
- Error rate

| Metrics |
| --- |
| 1. Hours repurposed |
| 2. Lead time reduced |
| 3. Cost avoided |
| 4. Process steps eliminated |

# Main metric takeaways

Define your problem and decide if it's a good fit for a Lean project early on.

Choose a metric that best represents the problem you're trying to solve.

Be strategic about how you collect your data and plan it out ahead of time.

Keep tradeoffs in mind throughout your project.

Be able to defend your data.

# Questions

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