



Department of  
Agriculture

**Black Belt Project Report:  
Improving the Pesticide Check  
Deposit Process at ODA**

November 4, 2015

# Presenters

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Department of  
Agriculture

# Division of Plant Health – Pesticide Licensing Section

- The Ohio Department of Agriculture's Pesticide & Fertilizer Regulation Program regulates the use and distribution of pesticides as well as the manufacturing and distribution of fertilizer.
- The program issues licenses to pesticide applicators and serves as the State's registrar for pesticide and fertilizer companies.
- The program licensed 27,805 pesticide applicators, receiving approximately \$3.8 million in revenue during FY2015.

# PHASE: DEFINE

- Tools Used in this Phase:
  - Project Charter
  - SIPOC
  - Voice of the Customer
- What is the problem?
  - In accordance to the Ohio Administrative Code all checks must be deposited in a “timely manner.”
  - For three consecutive years, audits conducted by OBM and the Office of Internal Audit issued a noncompliance finding stating that the Pesticide Program is not adhering to Ohio Administrative Code.
- What is a “timely check deposit?”
  - Operational Definition: Timely – Three business days
  - What is a business day?
    - An 8 hour day, excluding weekends and holidays



# Project Charter



## LEANOhio Project Charter

<b>Project Title</b>	Pesticide Licensure Check Deposits
<b>Project Facilitator</b>	John Schlichter/George McNab
<b>Agency</b>	Ohio Department of Agriculture
<b>Project Mentor</b>	Anita Jennings, ODJFS Black Belt
<b>Charter Last Updated Date</b>	November 7, 2014

### Project Background:

The Ohio Department of Agriculture's Pesticide & Fertilizer Regulation Program regulates the use and distribution of pesticides as well as the manufacturing and distribution of fertilizer. The program issues licenses to pesticide applicators and serves as the State's registrar for pesticide and fertilizer companies. In 2013, the program licensed 28,690 pesticide applicators and received approximately \$3.9 million in revenue during State Fiscal Year 2013.

### Opportunity Statement:

For three consecutive years external auditors have reported internal controls for the Pesticide Program to ensure timely deposits in accordance with Ohio Administrative Code were not operating effectively. The State Auditor's audit finding for 2013, found 30% of the checks received by the Pesticide Program were not deposited timely. The Ohio Administrative Code requires all receipts by a state entity be deposited within three business days. The days late ranged from one day to 13 days late with an average of eight business days.

<b>SCOPE (DEFINE BOUNDARIES)</b>	<b>First step in the process:</b> Check received from farmer or company
	<b>Last step in the process:</b> Check deposited by ODA fiscal office to Ohio Treasurer Office

### Project Goals:

1. Map the check receipt and deposit process for pesticides licensure and ensure all involved in the process understand the work flow.
2. Improve the speed at which checks are received and deposited - meeting OEM's three day rule.
3. Understand customer preferences on payments and increase customer satisfaction concerning the process.

### Project Boundaries:

Once the process is redesigned no workers in the pesticide licensing section will be laid off. Only job duties may change.

Performance Metrics: What measures will tell you if you are successful	Performance Metrics			
	Current	Goal	Final	% Change
How many days it takes to deposit a check with the State Treasurer? (average)	10 days	3 days		
Improve customer experience when applying/renewing pesticide license	N/A			
Measure customer payment options for pesticide license	None			

### Projected Benefits:

Customers of ODA's Pesticide Applicator Program will have their checks deposited sooner. Current process averages about two weeks before the check is cleared. The faster processing time for check deposits will hopefully eliminate an audit finding by the Auditor of State. Lastly, the improved process will reduce the risk of fraud or lost checks with the checks getting deposited to the State Treasurer faster.

### Project Team:

<b>Team Lead:</b>	George McNab
<b>Team Champion/Sponsor:</b>	John Schlichter
<b>Process Owner:</b>	Matt Beal/Jim Belt - Division of Plant Health
<b>Team Members:</b>	Diana Roll, Stephanie Boyd, Genise, Tatum Wade Bushee, Elizabeth Patterson, Christine Watson, Laura Walters
<b>Subject Matter Experts (SME's):</b>	To be determined later

### Project Champion/Sponsor and Process Owner Sign-Off: I am committed to supporting this project and implementing the team's improvements.

Sponsor Signature: \_\_\_\_\_

John Schlichter

Process Owner: \_\_\_\_\_

Matt Beal

# Project Goals

- Reduce the time to deposit a check to **THREE** business days or less.
- Measure Pesticide customers' experience and interaction with the Division of Plant Health.
- Improve the check deposit process, making it more lean

**S**

Supplier

- Applicants
- ODA – Fiscal
- ODA – Plant Health
- ODA – Mail Room

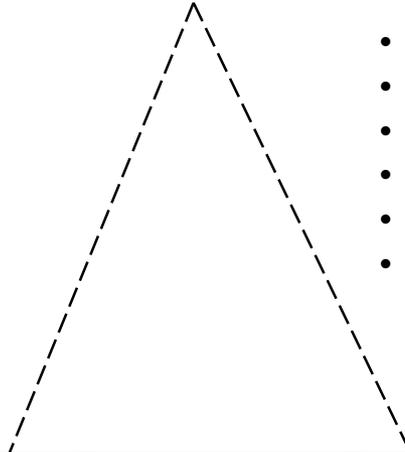
**I**

Input

- Checks
- Applications
- Equipment
- Data Systems
- Labor

**P**

Process



**O**

Outcome

- Deposited Check
- Copy of Deposit
- Spreadsheet
- Plant Confirmation
- Fiscal Confirmation
- Returned Check to Customer

**C**

Customer

- Licensee
- Processors
- Fiscal
- Treasurer
- OBM
- Auditor

Start

Finish

Process Mail

Receive  
Open  
Sort  
Date Stamp

Lock in safe  
upstairs

**Processors:**

Retrieve  
checks from  
safe  
–  
Process into  
database

Batch in to  
100 checks  
–  
Place in back  
in safe

**Supervisor:**

Approve  
batch deposit  
–  
Send to  
Fiscal

**Fiscal:**

Receives  
batch deposit  
–  
Enter in to  
OAKS  
–  
Place in  
outbox

Send to  
Treasurer via  
mail courier  
–  
Treasurer  
Receives  
Deposit



# Voice of the Customer:

## Pesticide & Fertilizer Licensure Process Survey Results

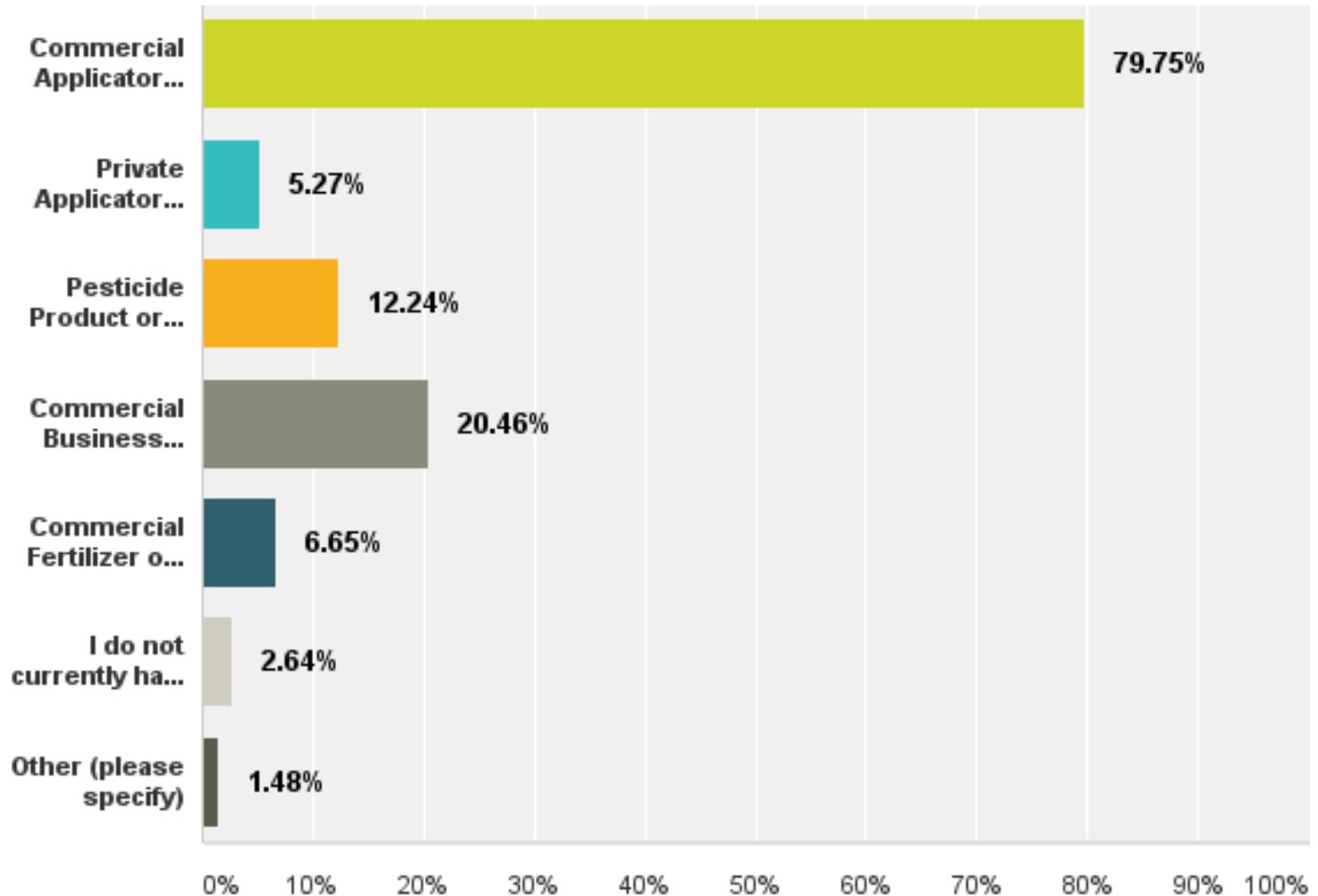
- Why Survey?
  - Voice of the Customer!
  - Collect information **DIRECTLY** from your customer on their **WANTS** and **NEEDS**
  - No need to assume... customers tell you directly what level of service they expect!
  - Project Goal

# Survey Data

- Survey conducted via SurveyMonkey web link from January 8 through January 25, 2015
- 7 Questions
- Sent to 6,919 recipients subscribed to GovDelivery updates on Pesticide and Fertilizer
- $n = 948$
- Response rate: 13.7%
- +/- 2.96 CI

# \*Q1: What type of license do you have?

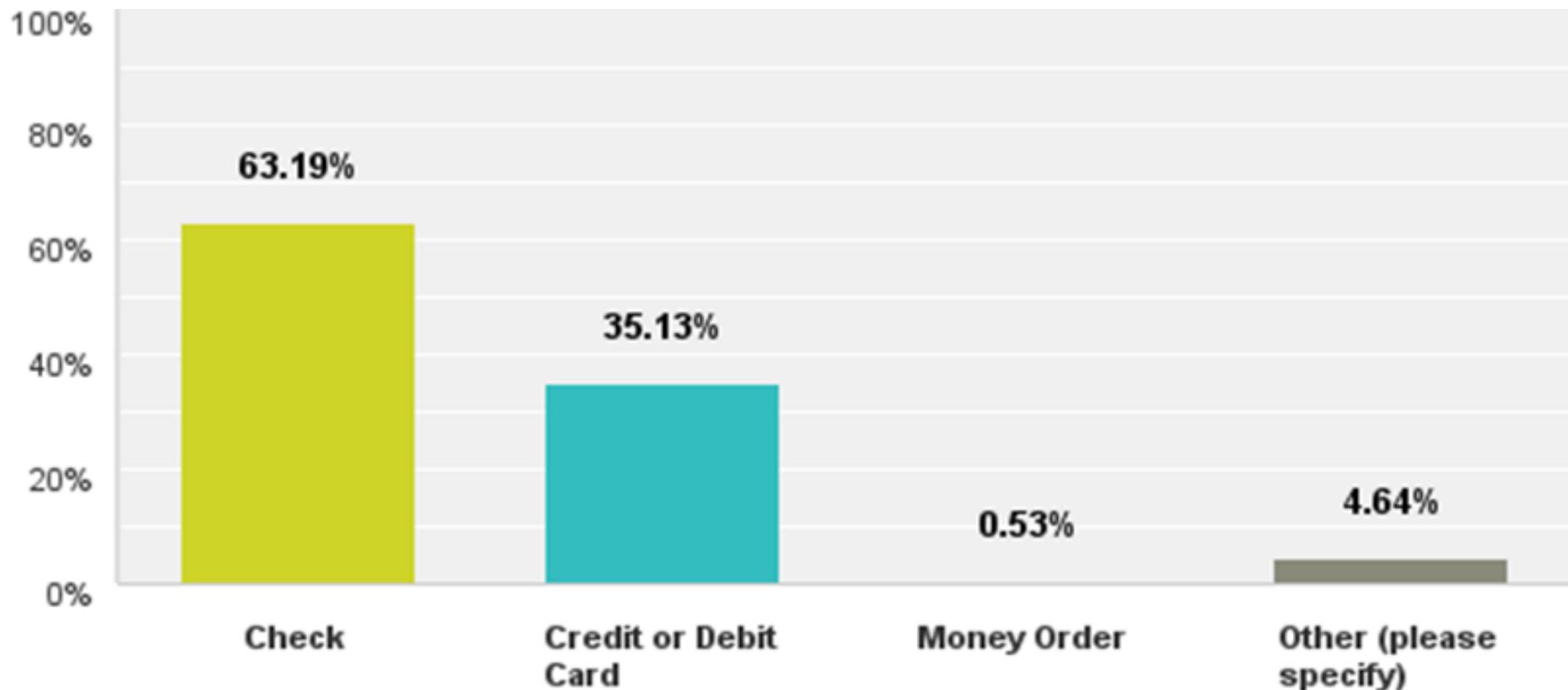
Answered: 948 Skipped: 0



\* Not the actual wording of the question on the survey

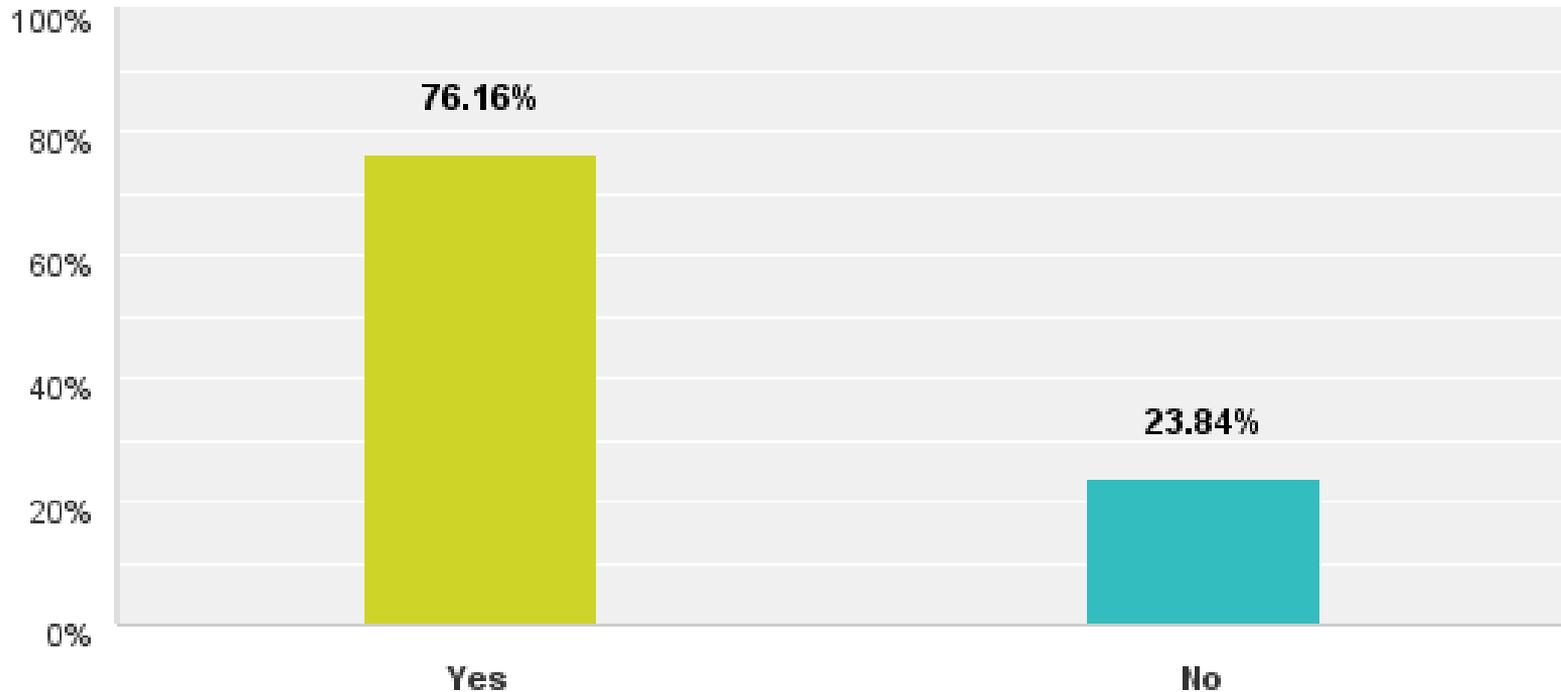
## Q2: What is your current payment method when renewing your Pesticide/Fertilizer license(s)?

Answered: 948 Skipped: 0



### Q3: If you could renew your Fertilizer/Pesticide license(s) and submit payment(s) on the Ohio Department of Agriculture's website, would you use this service?

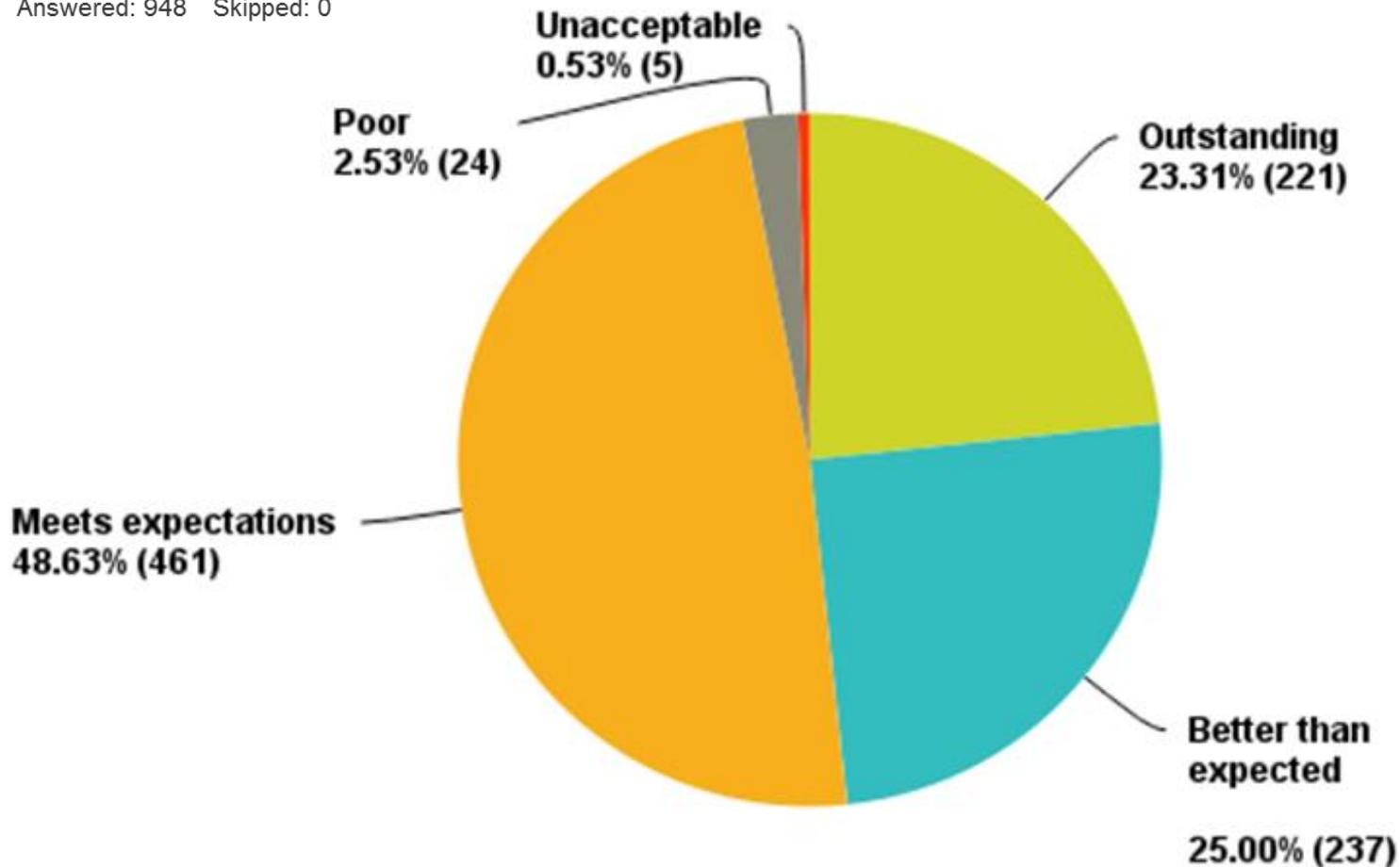
Answered: 948 Skipped: 0



Answer Choices	Responses	
Yes	76.16%	722
No	23.84%	226
<b>Total</b>		<b>948</b>

## Q5: How would you rate the level of customer service you receive regarding the Pesticide/Fertilizer licensure process?

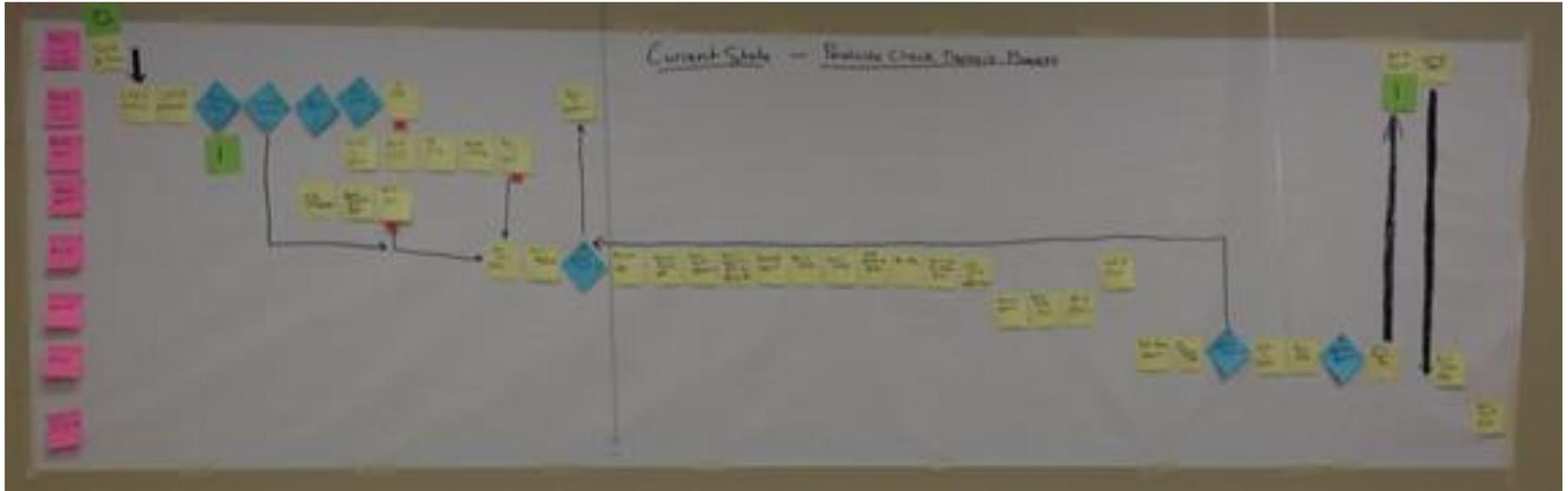
Answered: 948 Skipped: 0



# PHASE: MEASURE

- Tools Used:
  - Process Mapping
    - Built a section team to learn about SIPOCs, process mapping, data collection, and the 8 deadly wastes of Lean
  - Data Collection Plan
  - Process Data Collection

# Process Map – Current State



## Lessons Learned:

- Difficult to understand flow – most people don't know what happens two steps before or after they complete their part of the process
- We met more than one time to finalize the process
- More people were involved in the process than many realized
- This work can scare people as they feel they are being questioned as to how hard or fast they are able to work
- In documenting the process, people were already coming up with ways to improve

# Check Deposit Process Exercise – January 20th-22nd

Step 1: Build a data collection form

Step 2: Collect data

Step 3: Input data

Step 4: Start to build Value Stream Map

## Notes:

- We started this collection on January 20<sup>th</sup>, but it took many business days to get all of the checks processed received during that time period
- This form followed checks through the process and was touched by 7 groups or individuals

## Lessons Learned:

- Data collection (by hand) is extremely difficult!
- Build the form and get feedback prior to use
- Operational definitions are important as different people may interpret things differently
- Give as much direction as possible

1/3

**Pesticide Check Deposit Process Data Collection – Mail Room/Sorting**  
ONLY ONE PER DAY - Five Days ONLY!

**Date:**

Tuesday, January 20, 2015       Thursday, January 22, 2015       Monday, January 26, 2015

Wednesday, January 21, 2015       Friday, January 23, 2015       Tuesday, January 27, 2015

**Information:**

- Please use one documentation sheet per day and attach sheet to incoming mail. Please enter time in XX:XX AM/PM format, for example 09:10 AM.
- A notes section is provided if you have something you would like to share.
- Questions? Contact George McNab – (614)254.3619

**Process Steps:**

Mail received in mailroom	TIME: 8:30 AM PM	Processor: Sky Travis
Notes:		
Mail sorted into division boxes	START TIME: 8:35 AM PM	Processor: Sky Travis
	FINISH TIME: 9:35 AM PM	
Notes:		

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**PLANT HEALTH MAIL RETRIEVAL**

**Process Steps:**

Mail retrieved from Box (Bromfield)	DATE: 1/26/14	Processor: <i>Chris</i>
	TIME: 9:45 AM PM	
Notes:		

549 PH total Mailed Opened (Plant)	START TIME: 10:59 AM PM	Processor: <i>Chris</i>
	FINISH TIME: : AM / PM	
	How pieces of mail total were there?	213
	How many applications were received where the check was for incorrect amount or not signed?	TRAPS 0
	How many pieces of mail were pesticide applications?	70 Apps 1/20
	How many Products to Elizabeth?	23
Notes: 159 Pc left to open 12:00 - training upstairs. will open		

Mail put into safe (2 <sup>nd</sup> floor)	TIME: 12:00 AM PM	Processor: <i>Chris</i>
Notes:		



# PHASE: ANALYZE

- Tools Used:
  - Statistical Analysis of non-normal data
  - (Start of a) Value Stream Map
  - Waste Identification
  - Brainstorming

# Data for 2014 Licensing Period

5055300446 Ohio Department of Agriculture PERSON ID: 90098  
GOVERNOR: JOHN R. KASICH  
LT. GOVERNOR: MARY TAYLOR  
DIRECTOR: DAVID T. DANIELS  
RENEWAL APPLICATION FOR LICENSE PERIOD 10/01/2014 TO 9/30/2015  
PLANT HEALTH - PESTICIDE AND FERTILIZER  
8995 E. MAIN ST., REYNOLDSBURG, OHIO 43068  
PHONE (614) 728-6987 FAX (614) 728-4235  
EMAIL: PESTICIDES@AGRI.OHIO.GOV  
WEB: WWW.AGRI.OHIO.GOV

3660

**Pesticide Commercial Applicator License** DATE PRINTED: 7/18/2014  
DO NOT staple or paperclip your payment! ODA USE ONLY:   
RECIPROCIITY STATE:

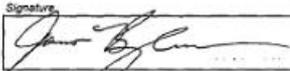
JAMES I  
MARION OH 43302

RECEIVED  
AUG 15 2014  
PEST/FERT SECTION

**PART A: INSTRUCTIONS**

- If above is not correct or has changed, place an "X" in the box to the right and correct Part E  on the back of this form.
- Review the employer information in PART F and make changes as needed.
- Mail this original signed application with payment, payable to the 'Ohio Department of Agriculture' to the address listed above:
  - IF SUBMITTED APPLICATION IS POSTMARKED BEFORE 10/01/2014, YOUR LICENSE FEE IS \$35.00.
  - IF SUBMITTED APPLICATION IS POSTMARKED BETWEEN 10/01/2014 AND 9/30/2015, YOUR LICENSE FEE IS \$62.50.
  - IF SUBMITTED APPLICATION IS POSTMARKED AFTER 9/30/2015, RETESTING IS REQUIRED.
  - THIS FEE ONCE SUBMITTED IS NON-REFUNDABLE.
- State Agencies may pay by ISTV. Send a letter of request with the original signed application(s).
- Licenses based upon reciprocity (see below) also need to submit a copy of their state's driver's license.

**PART B: SIGNATURE OF APPLICANT** Original signature is required to process this application.  
Since your last application have you been convicted of a felony or a misdemeanor involving moral turpitude other than a minor traffic offense?  
Yes  No

DATE SIGNED: 07/28/2014 Signature: 

**PART C: PAYMENT INFORMATION**  
FEE IS \$35.00 (\$32.50 IF AFTER 9/30/2014).  
\$ 35.00 Visa  MC  Check or MD  Check or MD #: 57993

NO PURCHASE ORDERS ACCEPTED

If paying with credit card, the following information is required before payment can be processed:

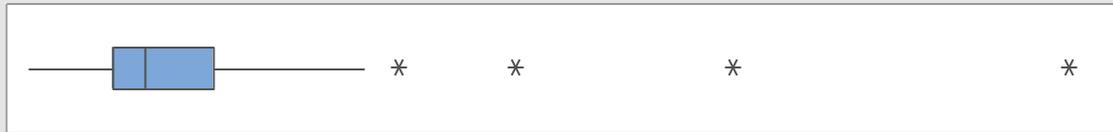
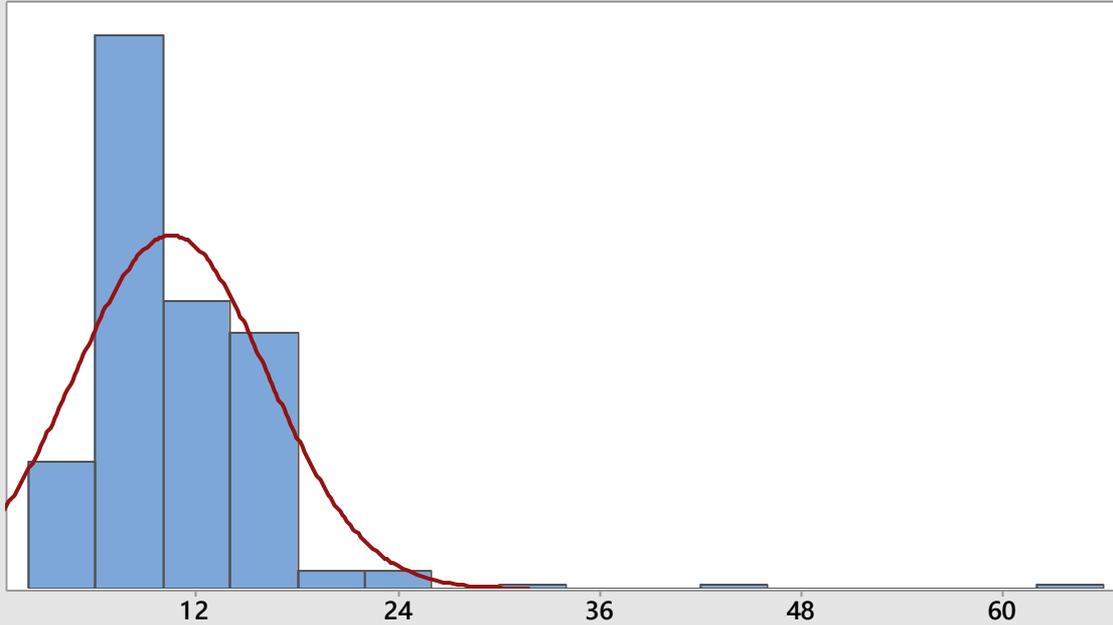
PLEASE SEE BACK OF FORM FOR PARTS E & F (TURN OVER)

- 19,046 Pesticide Licenses processed
- Examined 396 applications at random from 2014 (Sample calculator called for 377)
- Of 396 – 283 or 71% of customers paid by check
- 27 checks could be not tracked when received by plant but deposited otherwise
- 4 checks received by Plant but not deposited (missing)
- 1% of check deposits sampled were “timely”



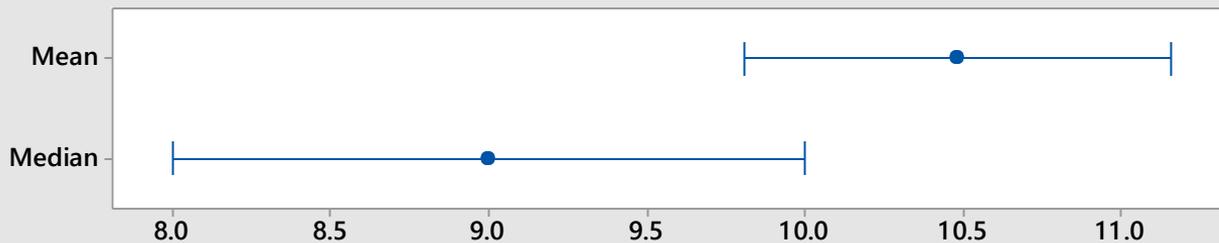
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# Summary Report for Business Days



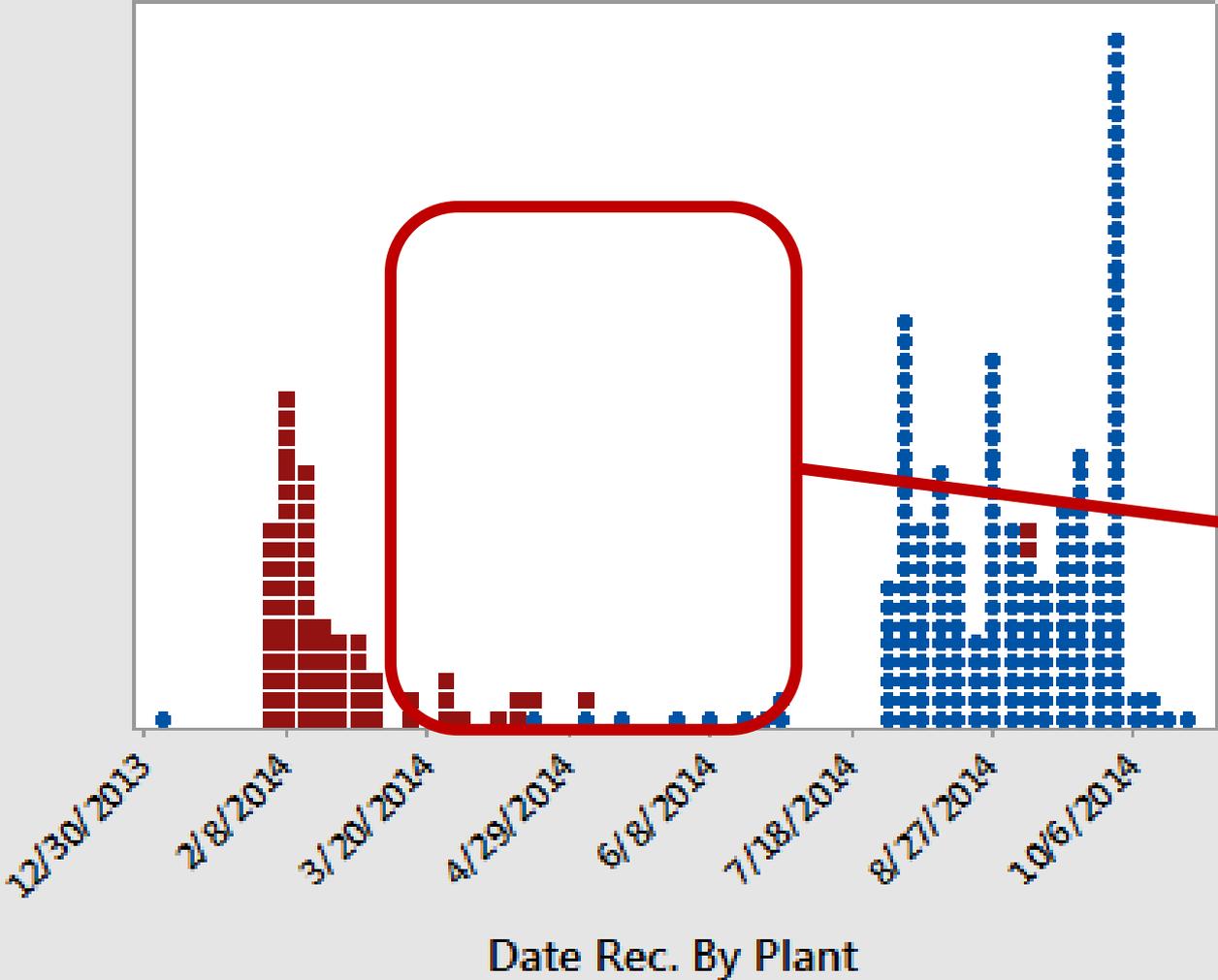
Anderson-Darling Normality Test	
A-Squared	10.07
P-Value	<0.005
<b>Mean</b>	<b>10.484</b>
StDev	5.758
Variance	33.158
Skewness	3.8779
Kurtosis	29.4630
N	283
→ Minimum	2.000
1st Quartile	7.000
Median	9.000
3rd Quartile	13.000
→ Maximum	64.000
95% Confidence Interval for Mean	
	9.810      11.158
95% Confidence Interval for Median	
	8.000      10.000
95% Confidence Interval for StDev	
	5.320      6.276

95% Confidence Intervals



**IMPORTANT NOTE:**  
 Range in days to deposit  
 is extremely wide – not  
 in compliance

# Dotplot of Date Rec. By Plant



License Type

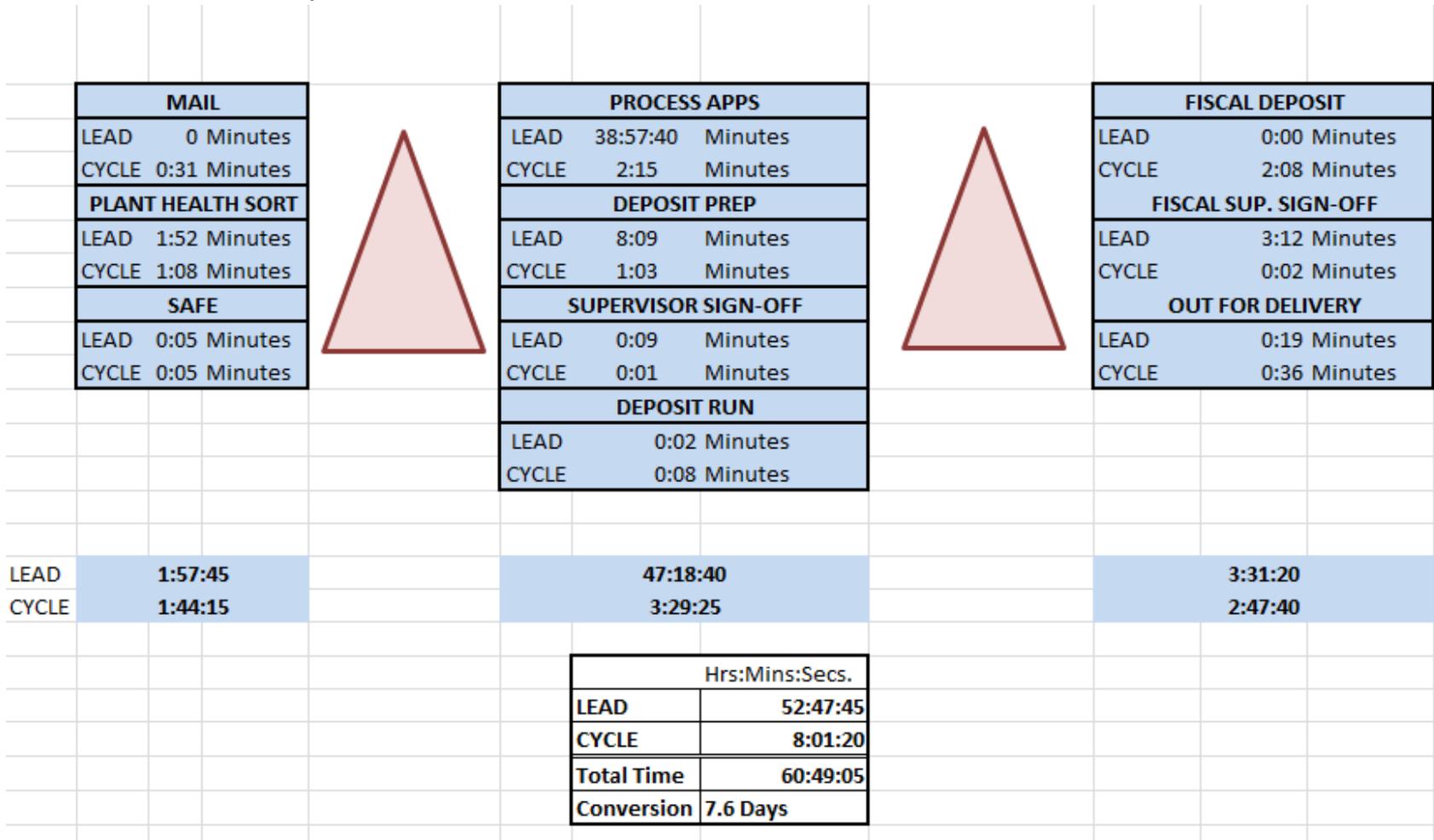
- PRIVATE APPLICATOR
- COMMERCIAL APPLICATOR

**IMPORTANT NOTE:**  
There are two types of licenses and the registration periods differ.

**IMPORTANT NOTE:**  
SB150 requires farmers to become certified for fertilizer application – adding to the current work load (increased demand) of this section – so our process needs fixed ASAP!

# (Start of a) Value Steam Map for the Check Deposit Process

Note: Began creating a map, but realized need additional learning to be able to do this effectively!  
 Below are the lead and cycle times I calculated.





# Examples of Waste in the Current Process

## Defects

- Checks written to ODA for the incorrect amount and/or not signed
- Incomplete paper forms

## Overproduction

- Having an additional separate step where the certificate of insurance is recorded

## Waiting

- On mail to come from admin building
- Checks waiting to be opened, processed, and deposited
- People waiting on a manger sign-off's

## Not Utilizing Peoples' Talents

- Mail person waiting on checks to be processed so he can drive 36 minutes downtown to hand deliver checks, we could be using his time in a more meaningful way

## Transportation

- Walking checks from downstairs (opener) to safe – then the safe to the licensure processing office
- Mail (in general) from customer to ODA, mail transported from admin building to plant health
- Hand delivering checks for deposit to Ohio Treasurer's Office from Reynoldsburg daily

## Inventory

- Letters opened with checks, waiting to be processed, sitting in the safe

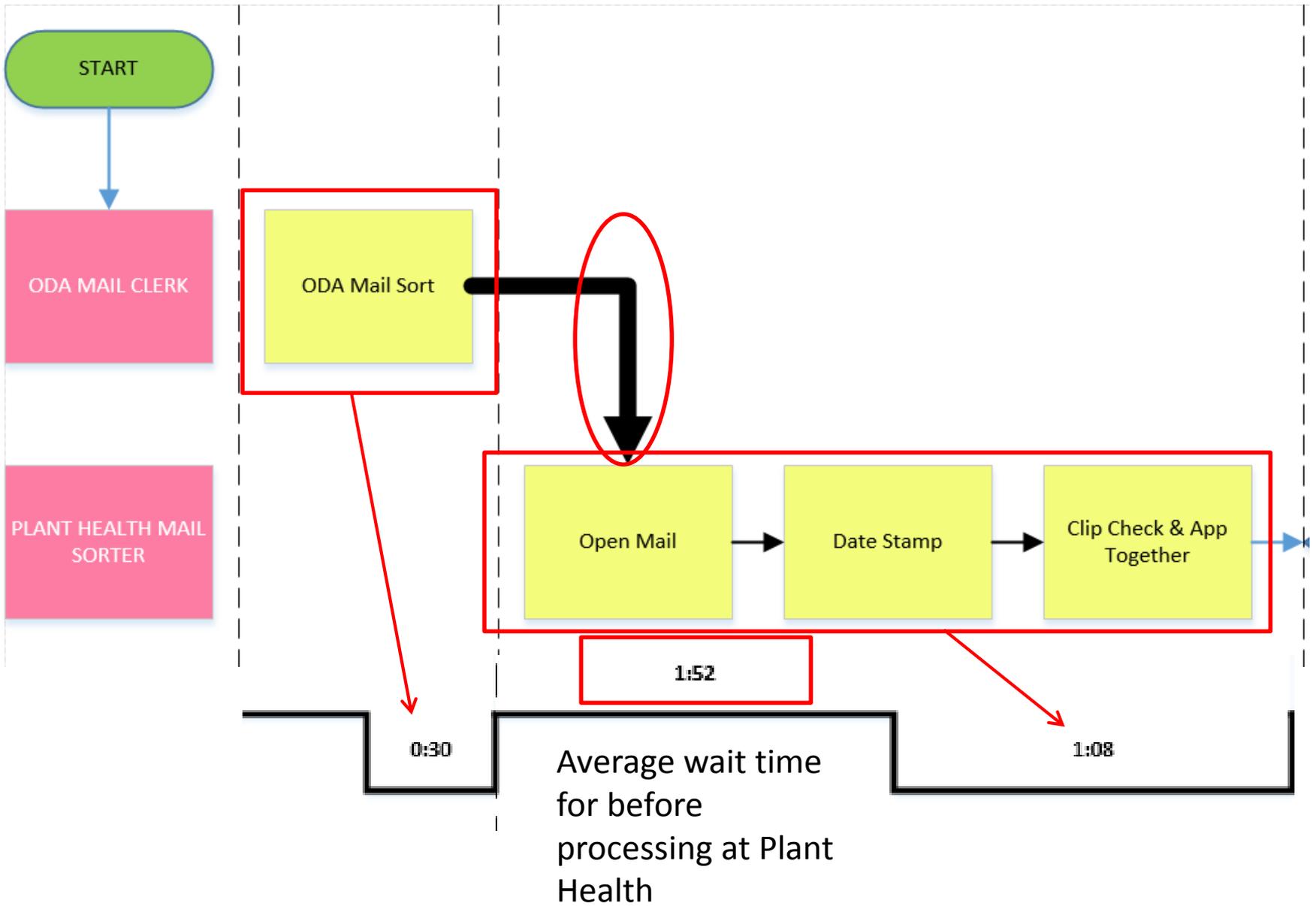
## Motion

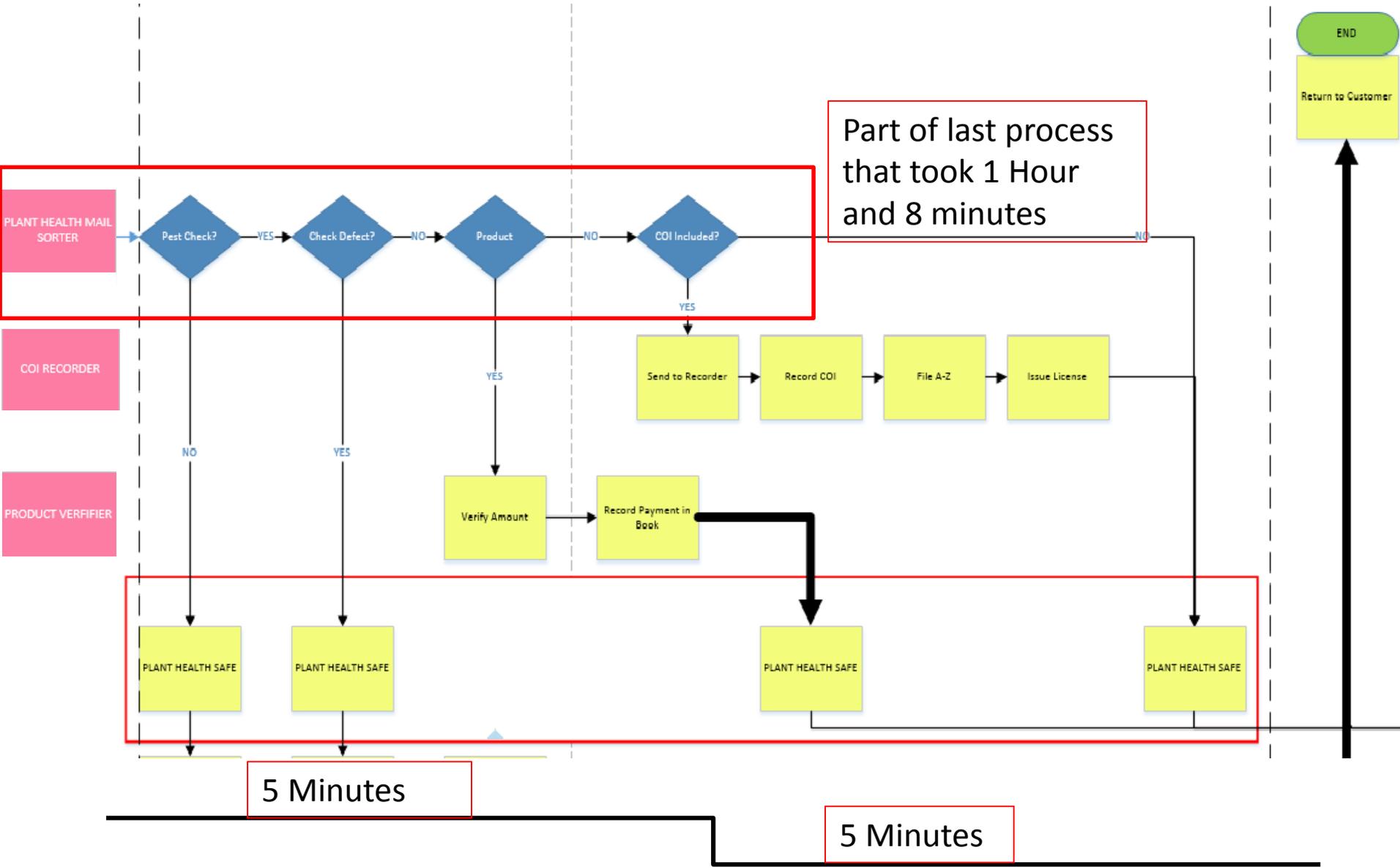
- Processors must walk to safe to get checks and walk back to their desk – they must then walk back to safe at the end of the day

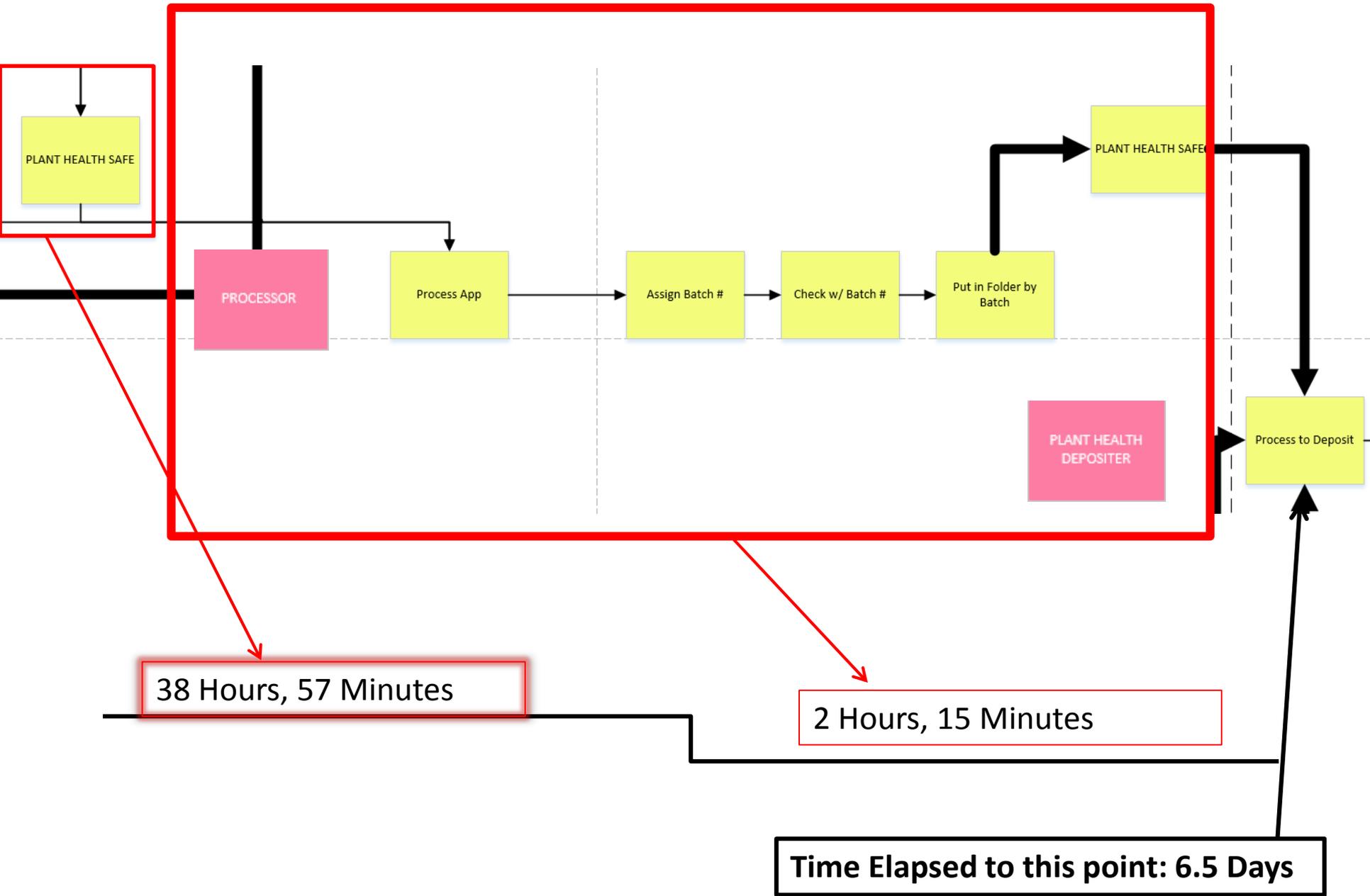
## Excess Processing

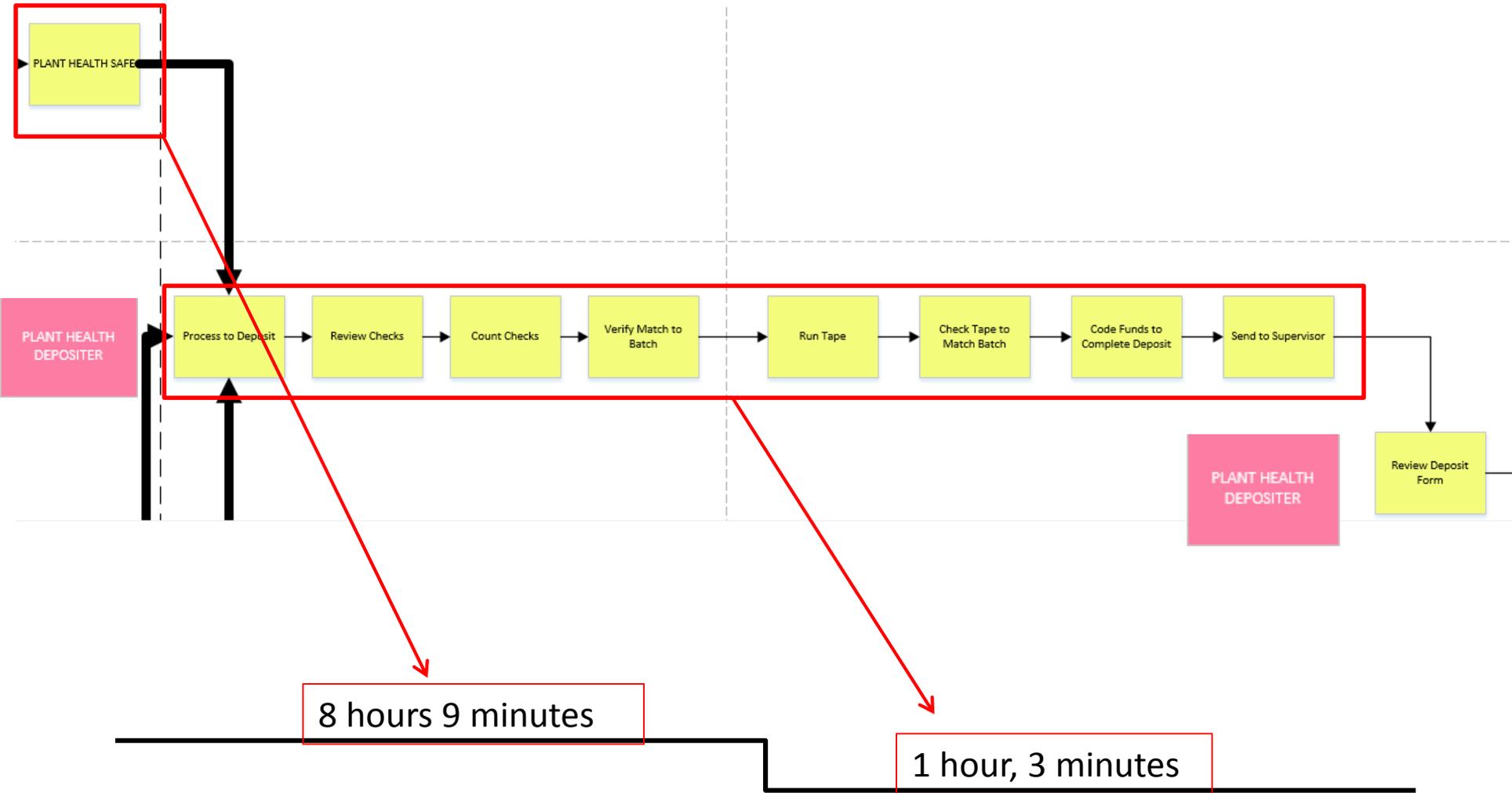
- Correcting scanned forms (only 80% of information picked up – must be corrected by hand)

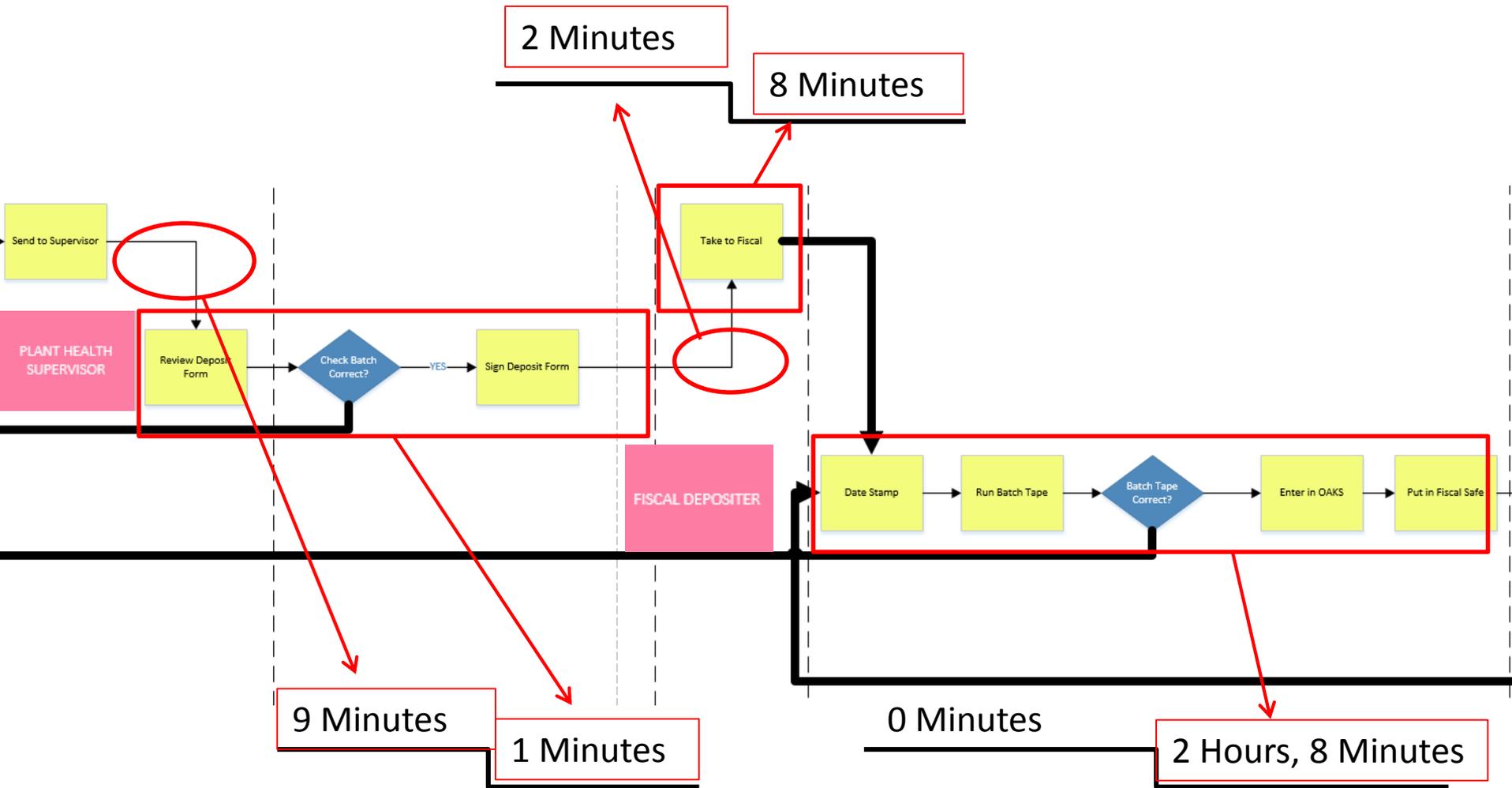


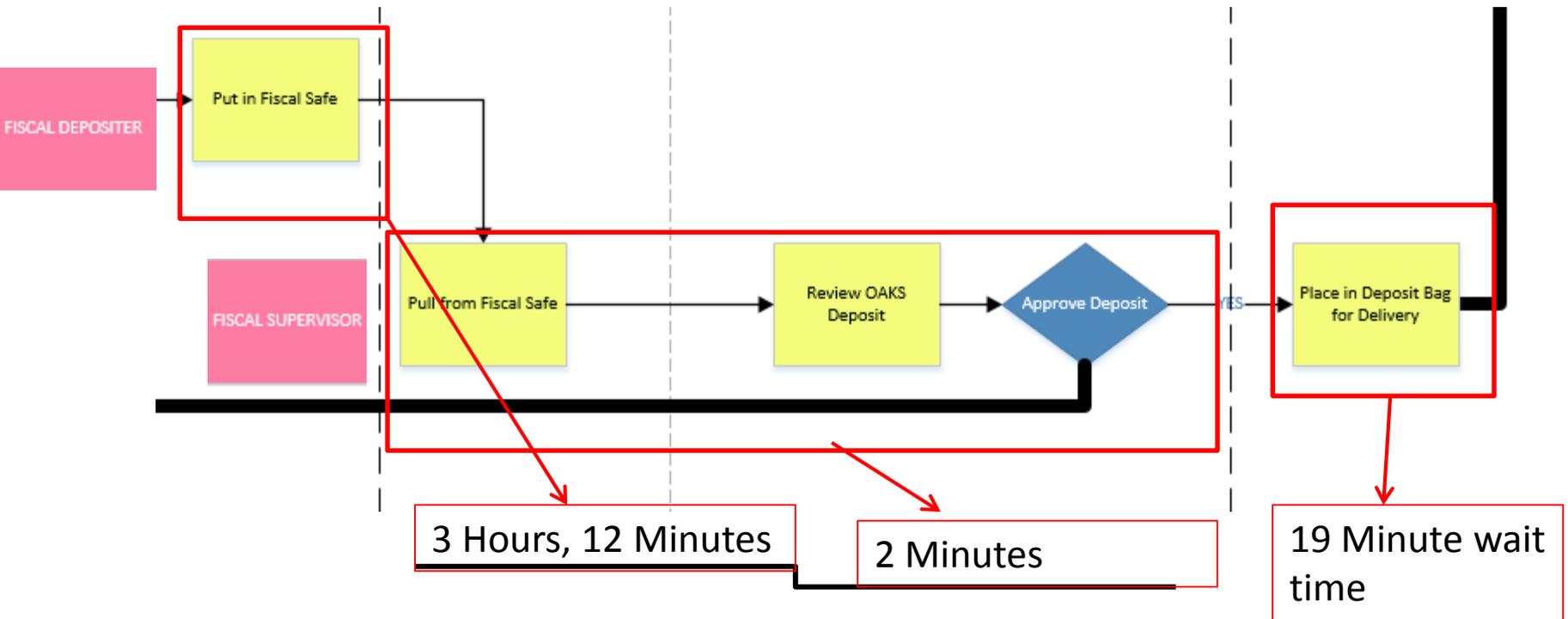


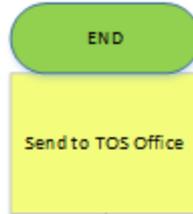












36 minutes delivery time  
from ODA to TOS

LEAD	52:47:45
CYCLE	08:01:20

**TOTAL TIME**  
Hours: Minutes: Seconds  
**7.59 Days**

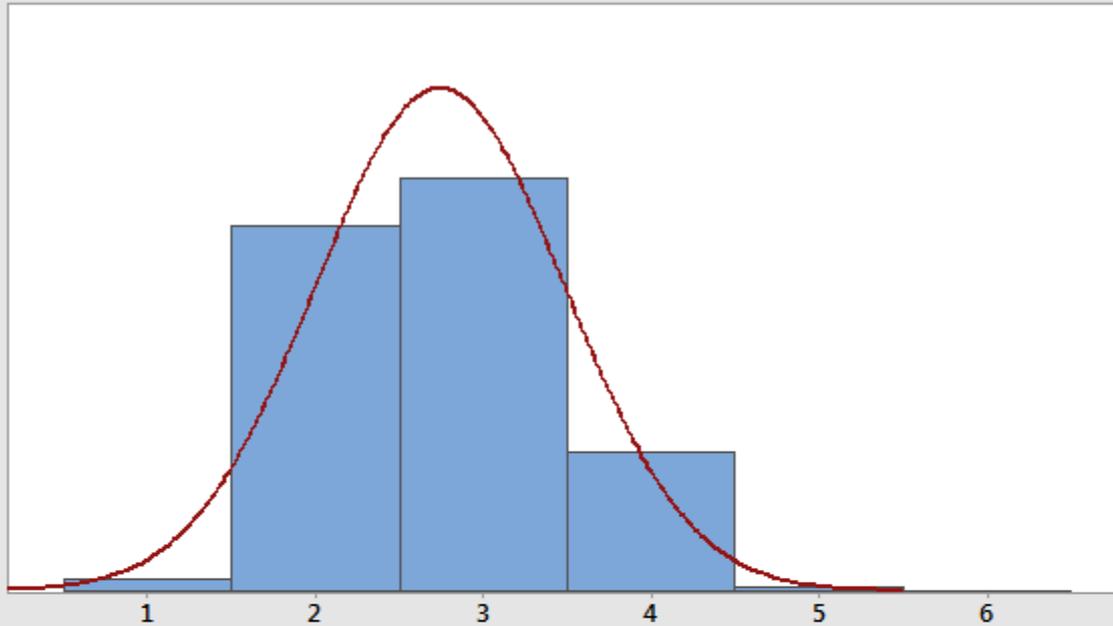
# Brainstormed Solutions

- Used brainstorming to come up with ideas to reduce waste, improve the process, and respond to voice of the customer. We realized this work must be phased:
  - Phase 1: Improve process – we need to be in compliance with Ohio Administrative Code
    - Ideas: Get a check scanner reducing transportation waste and batching, reduce waste by eliminating second and third reviews
  - Phase 2: Further improve process
    - Ideas: set goals and expectations with licensing staff, reduce motion and transportation waste, improve ‘flow’
  - Phase 3: Move to online registration and renewals

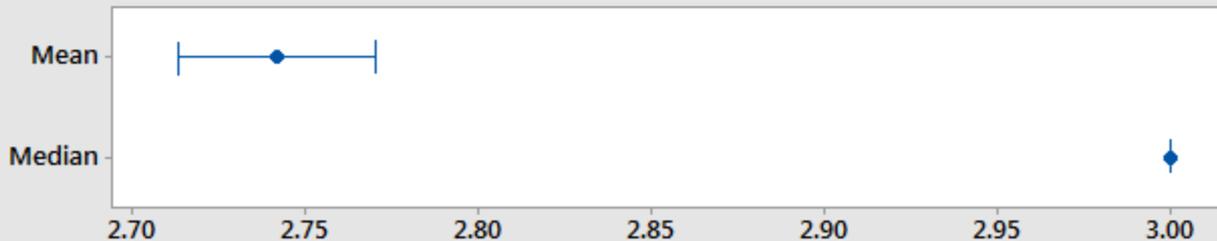




# Summary Report for Business Days (Post Improvement)



95% Confidence Intervals



## Anderson-Darling Normality Test

A-Squared 205.83  
P-Value <0.005

Mean 2.7418

StDev 0.7416

Variance 0.5499

Skewness 0.345704

Kurtosis -0.407405

N 2591

→ Minimum 1.0000

1st Quartile 2.0000

Median 3.0000

3rd Quartile 3.0000

→ Maximum 6.0000

95% Confidence Interval for Mean

2.7132 2.7704

95% Confidence Interval for Median

3.0000 3.0000

95% Confidence Interval for StDev

0.7219 0.7623

**IMPORTANT NOTE:**  
Range in days to deposit  
is much tighter – the  
standard deviation is  
now minimal

# Non-normal Data Comparison – Pre and Post Improvement

## Pre-Improvement

### Anderson-Darling Normality Test

A-Squared 10.07  
P-Value <0.005

Mean 10.484  
StDev 5.758  
Variance 33.158  
Skewness 3.8779  
Kurtosis 29.4630  
N 283

Minimum 2.000  
1st Quartile 7.000  
Median 9.000  
3rd Quartile 13.000  
Maximum 64.000

### 95% Confidence Interval for Mean

9.810 11.158

### 95% Confidence Interval for Median

8.000 10.000

### 95% Confidence Interval for StDev

5.320 6.276

## Post-Improvement

### Anderson-Darling Normality Test

A-Squared 205.83  
P-Value <0.005

Mean 2.7418  
StDev 0.7416  
Variance 0.5499  
Skewness 0.345704  
Kurtosis -0.407405  
N 2591

Minimum 1.0000  
1st Quartile 2.0000  
Median 3.0000  
3rd Quartile 3.0000  
Maximum 6.0000

### 95% Confidence Interval for Mean

2.7132 2.7704

### 95% Confidence Interval for Median

3.0000 3.0000

### 95% Confidence Interval for StDev

0.7219 0.7623

## MEASUREABLE RESULTS:

- Reduction in the mean days to deposit from 10.5 days to 2.75 days (**73.8% reduction**)
- Data spread is much tighter, with the minimum days as 1 and the maximum in the sample as 6. This is a 50% reduction in the minimum days to deposit (from 2 to 1) and a **90.6% reduction in the maximum days to deposit** (from 64 to 6).
- **Only 1% of checks were processed in a timely manner in 2014 – now, 84.56% of checks are processed within 3 business days (Process Sigma = 2.52)**



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## Phase: Control

- Our process is only 84% capable of meeting the “timely deposit” requirement. While better, this is not yet improved to the level we believe it could be. Thus, we have not yet started the control phase of this work as we plan to go through further lean (waste reduction) improvements.

# Lessons Learned

## Change Management

- People are comfortable with “they way they’ve always done things”
- Getting people to share (and not horde) information is difficult
- The people who operate and work in the process everyday are the people with the answers!

## Leadership

- Executive buy-in and understanding is very important when asking hard questions – they must support your work and have your back
- Process leaders/owner need to be onboard

## Technology

- With the changes in management through administrations, the people who built the systems aren’t there today – so people aren’t sure what or why decisions were made in the past which makes improvement hard
- Automation seems to be what people always think of as the answer – but that’s an expensive “fix” with many strings attached

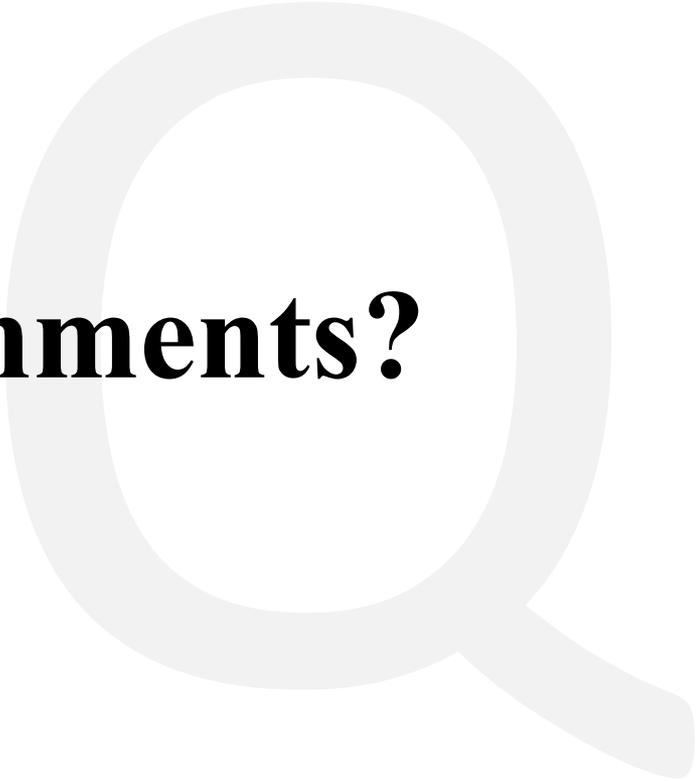
## Data Collection and Analysis

- Data collection is very difficult – make sure you’re comparing “apples to apples”
- Lack of operational definitions or data collection methods makes us question the validity of our data

## Learning

- Many people are able to understand and see waste in a process once educated – Six Sigma statistics is whole other situation
- We still have a great deal to learn when it comes to both Lean and Six Sigma

# Questions? Comments?



## Presenter Contact Information

- John Schlichter, Deputy Director
  - Email: [John.Schlichter@agri.ohio.gov](mailto:John.Schlichter@agri.ohio.gov)
- George McNab, Legislative & Lean Liaison
  - Email: [George.McNab@agri.ohio.gov](mailto:George.McNab@agri.ohio.gov)
  - Phone: 614.728.4213



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