

# Improve Connecting Service for WBO



Project Proposed: July 6, 2012  
Project Revision:1  
Project Champion: Jim Yanker  
Black/Green Belt: Sherry Pettit

# Define Phase

## 1. Select Output Objective



### Project Team Members

Amy Munoz

Elsa Garcia

Jim Yanker

Joan Roberson

Laurie Shelleen

Rachel Tiger

Robin Shubert

Sharon Williams

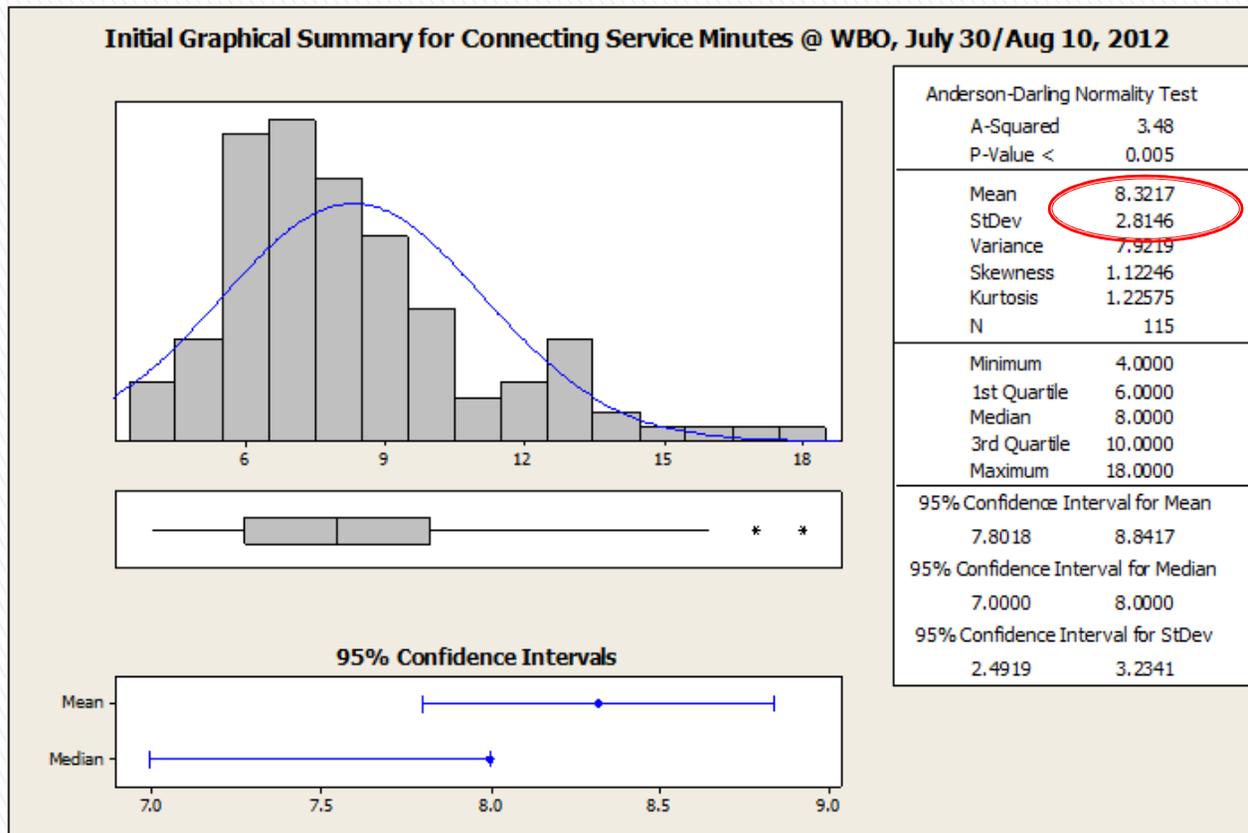
Tiffany Dunkley

# Define Phase

## 1. Select Output Objective



### Initial Graphical Summary for Time



Based on the initial graphical summary, the average time to process a connecting service request is 8.32 minutes with a StDev. of 2.81.



# Define Phase

## 2. Define Performance Standards



### Champion Project Worksheet

Champion Project Worksheet		Champion: Jim Yanker		Key Leader: Greg Morgan	
Step	Action	Information Elements for Defining Project	Definition/Explanation	Actual Project Information	
1. Identify the specific problem that needs to be solved per the business case or other source.	1A	WHAT is the actual problem?	A business condition or impediment to success stated as the high level effect the problem is having on the business. This is usually in terms of cost, revenue, quality or delivery.	Need Process Map and times. There is no consistency or procedures for this process. Process is "Old School" The average time to process new connect services is 8.32 minutes/stddev of 2.81. Expected time- 10 minutes. The DPMO is 229,969. WBO processed 4834 new connect services from August 2011 thru July 2012.	
	1B	WHERE is the problem occurring?	Define where the problem is occurring. Include a geographic name such as city or facility and the name of the business area; i.e., Accounts Receivable, Purchasing, Manufacturing...	City of Tyler Water Business Office	
	1C	THE TIMEFRAME over which this problem has existed?	Define when the problem first began or the timeframe over which it has existed. Example: Began Feb 2005, for the past 15 mos., or has always existed.	Always existed	
	1D	WHO is the customer(s) most affected by this problem?	Identify who the customer is that is most impacted by this business problem. This could be an internal or an external customer.	Customer- Citizens, Service account requestor	
2. Determine the Y's (CTQ's), what specifically needs to be improved in the baseline performance level.	2A	Determine the characteristic or process output (Y's) that will be improved to solve this problem.	Name the Y which you intend to improve in order to solve the problem; i.e., Product Test Yields, Customer Complaints, Invoice Errors, Response Time....	Connecting service time Impediments to connecting service DPMO Cost	
	2B	Identify the PRIMARY METRIC for each Y that numerically describes the problem and will be used to measure and track	This is a combination of the name for the Y and the unit of measure associated with it. Example: motor torque % defective, defects per invoice, call back response time in minutes....	Connecting service time / Impediments to connecting service time in minutes DPMO Cost	
	2C	Estimate the magnitude, BASELINE PERFORMANCE, of the problem in terms of the primary metric.	Data should be gathered to determine the performance or behavior of the primary metric, assure the data is long term and not short term data. An Excel macro can be used to plot the data as a function of time and then be used to monitor the improvement as a function of time. This data establishes the base from which to calculate the potential financial benefits of the project, as a function its improvements.	Est hrs per yr - 670 DPMO - 229,969 Cost - \$10,859	
	2D	Identify a CONSEQUENTIAL METRIC.	This is any other characteristic or process output you want to monitor to assure there is no negative impact to another area from solving the problem.	Red flag compliance Revenue capture - "Loss"	
3. Identify the associated process and generate a macro process map	3A	Indicate the major high level process(es) by name that are associated with the process.	High level process steps generally contain sub processes. At this point we are interested in identifying the process steps in order to demonstrate the overall scope of the project and to later identify Process Owners. Think of where the problem starts and ends as a guide, then name the major steps.	TBD	
	3B	Develop a high level PROCESS MAP to indicate the scope of the process.	Hand draw the high level process using the information from Step 4A and included as much other pertinent information as possible; i.e., the flow of the work, data of process performance, names, etc.	Process Map to be created	
4. Identify the cost and impact of the problem	4A	Identify the most likely COST CENTERS that will experience a benefit from this project.	Who, today, is experiencing additional cost because of this problem. These same areas will experience improved operating costs as a result of the improvement. Generally this means some action will be taken in these areas.	City of Tyler Water Business Office	
	4B	Estimate the annual FINANCIAL IMPACT of the project at an 80% confidence level.	With the support of the Financial Rep develop a reasonable estimate or targeted savings for this project. You may need to do refer to the Objective Statement to identify the targeted improvement. These costs may be expressed as cost of labor,	Cost of labor and time Goal: 168 hours, DPMO of 57,492 & Cost of \$2,715	

The Champion Project Worksheet assists in defining the project in detail.

1. Determine the specific problem that needs to be improved
2. Determine the Y's (CTQ's), What specifically needs to be improved
3. Identify the associated process and generate a macro process map
4. Identify the cost and impact of the problem
5. Write the Problem Statement
6. Write the Objective Statement
7. Identify the people associated with the project
8. Project Charter is ready to be written

# Define Phase

## 2. Define Performance Standards



### Lean Sigma Project Charter

Lean Sigma Project Charter					
<b>Project Title:</b>	Improve Connecting Service for WBO Project			<b>Project No.:</b>	8
	Team Members		Authorization Date: <b>September 20, 2012</b>		
<b>Process Owner:</b>	Sharon Williams / Amy Munoz		Team Members: (5-7 Core team + customer contact)		
<b>Process Champion:</b>	Jim Yanker	Name		Name	
<b>Controller:</b>	Jim Yanker	Amy Munoz	Sharon Williams		
<b>Process Expert:</b>	Jim Yanker	Elsa Garcia	Tiffany Dunkley		
<b>Black/Green Belt:</b>	Sherry Pettit	Jim Yanker	Guillermo Garcia		
<b>Black Belt Mentor:</b>	Guillermo Garcia	Joan Roberson	Sherry Pettit		
<b>Master Black Belt:</b>	Guillermo Garcia	Laurie Shelton			
<b>Project Champion:</b>	Jim Yanker	Rachel Tiger			
<b>Key Leader:</b>	Greg Morgan	Robin Shubert			
Project Description					
<b>Project Scope and Boundaries:</b>	The extent of the project (e.g. CBU, Plants, Production Lines, Products, etc.) and the boundaries that limit the project: <b>Improve the connect service time @ the Water Business Office</b>				
<b>Measurable</b>	The Customer focused measurable to be improved:				
	Business Metric	Minutes			
	Project Metric/Primary Metric	DPMO			
	Secondary Metric	Cost			
<b>Problem Statement:</b>	"What is wrong with where and I know this because." What is the spec, actual performance and gap in performance (problem) as evidenced by the results of the BIC/Project Metric: <b>The Tyler Water Utilities Business Office (WBO) is experiencing a problem with new connect services. The problem has always existed. The average time for the WBO personnel to process individual new connection services is 8.32 minutes with a standard deviation of 2.81. The expected performance is 10 minutes. The DPMO is 229,969. As of August 2011 through July 2012, the WBO has processed 4,834 new service connections.</b>				
<b>Goal Statement:</b>	The Objective Statement should directly address the information in the Problem Statement. Indicate the level of improvement is expected. Should be specific and quantifiable: <b>Improve customer service by maintaining the current average and reducing the DPMO.</b>				
<b>Project Objective:</b>	Increase / Decrease The Business/Customer Ys by what amount / percent% Defect Reduction				
	Project Metrics	Baseline	Current	% Improve	Goal
	Estimated Unacceptable Hours per Year	106	106	75%	27
	DPMO	229,969	229,969	75%	57,492
	Cost	\$3,449	\$3,449	75%	\$862
<b>Rationale for Hard Dollars:</b>	What are the line items that provide the foundation behind the projected savings. Where does the money come from? time saved				

### Problem Statement:

The Tyler Water Utilities Business Office (WBO) is experiencing a problem with new connect services. The problem has always existed. The average time for the WBO personnel to process individual new connection services is 8.32 minutes with a standard deviation of 2.81. The expected performance is 10 minutes. The DPMO is 229,969. As of August 2011 through July 2012, the WBO has processed 4,834 new service connections.

### Project Objective:

Reduce the DPMO

# Define Phase

## 2. Define Performance Standards



### Financial Information

Financial Information for Improve Connecting Service for WBO Project	
<b>Soft Savings</b>	
<b>Estimated Annual Cost</b>	
Average minutes per connection	8.32
Average wage per employee per minute (Loaded Cost)	\$0.27
Connect Service Count from Aug 2011/July 2012	4834
Estimated minutes per year	40219
Estimated hours per year	670
Possible cost of total minutes for connect services per year	\$10,859.10
<b>Estimated Annual Savings by reducing DPMO</b>	
Current DPMO	229,969
Estimated goal, 75% reduction in DPMO	57,492
Total connect services, July 30/Aug 10, 2012	115
Total minutes for connect services, July 30/Aug 10, 2012	1083
Defects - connect services > 10 minutes	20
Acceptable Minutes	911
Unacceptable minutes	172
Percentage acceptable	84%
Percentage unacceptable	16%
Estimated minutes per year	40219
Estimated acceptable minutes per year	33831
Estimated acceptable hours per year	564
Estimated unacceptable minutes per year	6387
Estimated unacceptable hours per year	106
Estimated goal, 75% reduction in unacceptable hours	27
Possible cost of minutes for connect services =< 10 minutes per year per employee	\$9,134
Possible cost of minutes for connect services > 10 minutes per year per employee	\$1,725
Possible cost of minutes for connect services > 10 minutes (2 employees)	\$3,449.24
Estimated goal, 75% improve	\$862
Potential yearly savings based on 75% reduction in variation per employee	\$1,293
Potential yearly savings based on 75% reduction in variation per 2 employees	\$2,587

The average wage per employee was identified to the minute. Due to the limited amount of data, the potential cost was estimated. The potential yearly savings, based on 75% reduction in variation, is estimated to be \$2,587.

# Measure Phase

## 3. Validate Measurement System



### New Connecting Service WBO Log

New Connecting Service WBO Log								
Date	Customer Name	Start	Finish	Total Minutes	Processor	Cost per Min. (.27)	Comments	
7/30/2012	Vazquez-Aviles, Yuliana	9:58	10:16	18	Amy Munoz	4.86	Remove Meter	
7/30/2012	Henry, Steven W.	10:49	10:54	5	Amy Munoz	1.35		
7/30/2012	Sepulva, Joseph R.	11:18	11:27	9	Amy Munoz	2.43	Signed up for Bank Dr	
7/30/2012	Justiss, Annette K.	11:34	11:41	8	Amy Munoz	2.16		
7/30/2012	Payne, Cassie N.	11:42	11:48	6	Amy Munoz	1.62		
7/30/2012	Lagbas, Orin	11:53	12:00	8	Amy Munoz	2.16		
7/30/2012	Lopez, Alberto	12:00	12:17	17	Amy Munoz	4.59	Figured out charges h	
7/30/2012	Ramirez, Reyna	12:35	12:45	10	Amy Munoz	2.70	Reconnect "C"	
7/30/2012	Britton, Vicki R.	12:47	12:55	8	Amy Munoz	2.16		
7/30/2012	Krieg, Walter H.	12:55	1:03	8	Amy Munoz	2.16		
7/30/2012	Williams, Pamela A.	2:36	2:42	6	Amy Munoz	1.62		
7/30/2012	Mills, Jack & Janice	4:00	4:13	13	Amy Munoz	3.51	Signed up for Bank Dr	
7/30/2012	Rangel, George D.	4:20	4:28	9	Amy Munoz	2.43	Signed up for Bank Dr	
7/31/2012	Roberts, Ernest	8:55	9:09	14	Amy Munoz	3.78	Set up on Auto Re-Co	
7/31/2012	Stuth, Kenneth E.	9:09	9:17	8	Amy Munoz	2.16		
7/31/2012	Jenkins, Shunna P.	11:27	12:49	82	Amy Munoz	22.14	Figured out charges h	
7/31/2012	Beccera, Aracely	12:05	12:15	10	Amy Munoz	2.70		
7/31/2012	Jackson, Candi L.	2:44	2:53	9	Amy Munoz	2.43	Figured out charges m	
7/31/2012	Shears, shakitrice L.	2:55	3:02	7	Amy Munoz	1.89		
7/31/2012	Main, Lesia S.	3:37	3:44	7	Amy Munoz	1.89		
7/31/2012	Johnson, Terri Y.	3:54	4:00	6	Amy Munoz	1.62	New customer due to	
7/31/2012	Vann, Jesse D.	4:02	4:13	11	Amy Munoz	2.97	E-billing	
7/31/2012	Parlor Salon & Spa LLC	4:14	4:22	8	Amy Munoz	2.16		
8/1/2012	Wilbur, Cass L.	8:29	8:38	9	Amy Munoz	2.43		
8/1/2012	Ragsdale, Candress L.	8:46	8:53	8	Amy Munoz	2.16		
8/1/2012	Arterberry, Shedrick	9:04	9:19	15	Amy Munoz	4.05	Reconnect "N"	
8/1/2012	Orr, Teresa M.	9:48	9:55	7	Amy Munoz	1.89		
8/1/2012	Taylor, Tameka L.	9:55	10:07	12	Amy Munoz	3.24	???	
8/1/2012	Sprunger, Adam L.	10:50	11:01	11	Amy Munoz	2.97	Signed up for Bank Dr	
8/1/2012	Mills, Ryan J.	11:04	11:09	5	Amy Munoz	1.35		
8/1/2012	Dugat, Donna & Candice	11:24	11:37	12	Amy Munoz	3.24	???	
8/1/2012	Attaway, Morgan R.	12:12	12:21	9	Amy Munoz	2.43	Signed up for Bank Dr	
8/1/2012	Barton, Lisa M.	2:35	2:42	7	Amy Munoz	1.89		
8/1/2012	Hicks, Kailey R.	2:50	2:57	7	Amy Munoz	1.89		
8/1/2012	Square, Debbie K.	4:12	4:18	6	Amy Munoz	1.62		
8/2/2012	Broussard, James E.	10:06	10:15	9	Amy Munoz	2.43	Signed up for Bank Dr	
8/2/2012	Rockwell, Kimberly D.	10:29	10:35	6	Amy Munoz	1.62		
8/2/2012	Schreur, Bryan L.	10:42	10:52	13	Amy Munoz	3.51	Signed up for Bank Dr	

Log sheets were created to capture data. The date, customer name, start/finish times, total minutes, processor, cost per minute and additional comments, if applicable, are entered in the appropriate areas.

# Measure Phase

## 3. Validate Measurement System



### Forms for Connecting Service @ WBO

**City of Tyler Water Utilities**  
511 W. Locust St  
(903) 531-1230

Date: \_\_\_\_\_

Customer Name: \_\_\_\_\_

Service Address: \_\_\_\_\_

Account Number: \_\_\_\_\_

Enroll in Electronic Billing: Yes \_\_\_ / No \_\_\_

Email Address: \_\_\_\_\_

Customer Signature: \_\_\_\_\_

Staff Signature: \_\_\_\_\_

Note: It is the responsibility of the customer to let the Water Business Office know of any changes i.e. change of email address. Failure to not receive your electronic bill will not exempt you from being turned off if the account becomes past due.

Please attach to the connect card  
[www.tylerwa.com](http://www.tylerwa.com)

**CITY OF TYLER**  
WATER UTILITIES DIVISION

I, \_\_\_\_\_ do indicate that \_\_\_\_\_ is unable to establish service in person due to \_\_\_\_\_ and that the following information is true and correct.

Name of Customer: \_\_\_\_\_  
Social Security: \_\_\_\_\_  
Driver's License: \_\_\_\_\_

Signature: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_

**City of Tyler Water Business Office**  
Address Verification

I, \_\_\_\_\_ (Print first and last name) agree that \_\_\_\_\_ (Service Address) is the correct address to connect water service. In the event that this is not the correct address, I understand that there will be an additional charge of \$50.00 added to my account.

Customer and/or Authorized Representative: \_\_\_\_\_ Date: \_\_\_\_\_  
WBO Representative: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

There were 6 forms being utilized in the WBO for customers requesting connecting service.

**City of Tyler Water Business Office**  
Draft Authorization Form

The City of Tyler Water Business Office will draft your bank account monthly upon completion of this form. Please attach a **signed check** and return this form to Tyler Water Utilities by mail, fax or in person.

I hereby authorize the City of Tyler Water Business Office to withdraw a draft from my bank account on a monthly basis for services rendered.

I understand that the **draft date will begin with my first billing**. Or if possible I would like the first bank draft to begin in the month of \_\_\_\_\_.

**My information is as follows:**

Name on Account: \_\_\_\_\_  
Service Address: \_\_\_\_\_  
Account # \_\_\_\_\_ Phone# \_\_\_\_\_  
Mailing Address: \_\_\_\_\_

**Bank Information:**

Name on Account: \_\_\_\_\_  
Bank Name: \_\_\_\_\_  
Bank Routing # \_\_\_\_\_  
Acct# \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**CITY OF TYLER**  
BANK DRAFTING POLICY

Dear New Customer:

You have just agreed to sign up for our free Bank Drafting Service. In doing so, the current \$30.00 connection fee will be waived unless:

**If your first payment on bank draft is returned:** Your account will immediately be billed the current connection fee of \$30.00 and you will be required to pay for the returned draft and any additional fees associated with the return in cash/ money order, debit/credit card. Our current rates for is \$35.00.

You may remain on Bank Draft unless you have two (2) consecutive returns or three (3) returns in a 12 month period or if a return is due to **account closed** or **expired license**. If this happens, your account will be reclassified as "Cash Only" for a period to be determined by our management team.

Additionally, **You must stay on bank draft for at least one (1) year** or the connection fee will be added to your account.

Waiving the connection fee is for **new customers only** and is available only one time. Once you have established service with us and you receive services from one address to another, you will be billed the connection fee at that time.

I have read the Bank Drafting Policy for the City of Tyler Water Business Office and agree to all terms and conditions of this policy. Date: \_\_\_\_\_

Account Specialist: \_\_\_\_\_ Date: \_\_\_\_\_

Thank you

**CITY OF TYLER**  
APPLICATION FOR WATER-SEWER SERVICE OUTSIDE CITY LIMITS

Date: \_\_\_\_\_

Service Address: \_\_\_\_\_ Owner/Applicant: \_\_\_\_\_

The undersigned hereby makes application for Water-Sewer Service Connections on premises, which said property is situated outside the corporate limits of the City of Tyler, Texas, and is to be used as a single family residence.

It is specifically understood by the applicant that such services may be discontinued by the City of Tyler for any reason it may deem sufficient. It is further understood that the water/sewer service furnished for the above referred premises under this application and agreement will be discontinued and such premises disconnected from the wastewater system upon the failure of the owner or occupant of the above referred property to pay promptly the rates for such service and that such service will be resumed only after the payment of a reasonable reconconnection fee, cost of the labor and materials, expended in the discontinuance and reconnection of such service, and if it is further specifically understood that the rates and charges to be paid for such service are the same as outside the city limits of the City of Tyler, and that the City of Tyler shall be liable and shall never be liable for any damages or expenses sustained in connection with, or thereon. The applicant is advised and understands that sewer charges billed by the City shall be based on water usage of 10,000 gallons per month and the rate effective October 1, 2010 shall be \$15.51 for the first 2,000 gallons and \$2.99 per 1,000 gallons for the next 8,000 gallons to sewer monthly charges will be made when system wide rate changes occur. Furthermore, the undersigned acknowledges that wastewater services are valuable services provided by a public utility to its citizens. The applicant promises that he/she will request voluntary annexation of city to its citizens. The applicant promises that he/she will request voluntary annexation of city to its citizens. The applicant promises that he/she will request voluntary annexation of city to its citizens. The applicant promises that he/she will request voluntary annexation of city to its citizens. The applicant promises that he/she will request voluntary annexation of city to its citizens.

I accept the above requirements for service for a Total Construction fee of \$ \_\_\_\_\_

Owner/Applicant Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Approved: \_\_\_\_\_ Date: \_\_\_\_\_

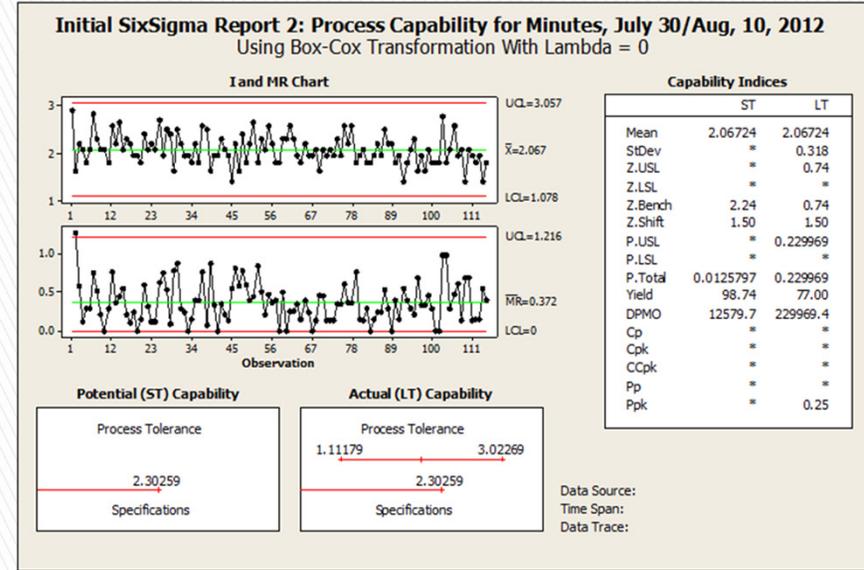
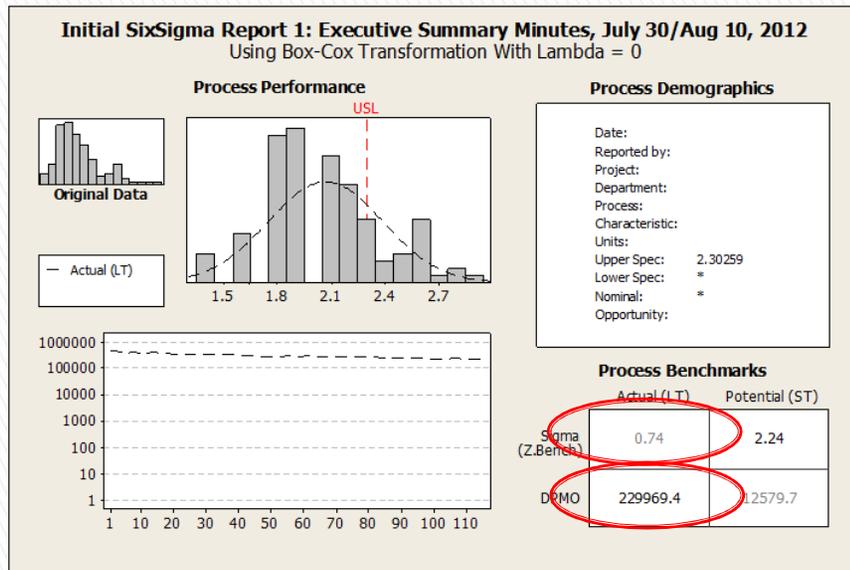


# Measure Phase

## 4. Baseline Process Performance



### Process Capability



The currently Capability Analysis indicates that the process is not performing at a satisfactory level.

Z. Bench: .74  
DPMO: 229,969

# Measure Phase

## 5. Establish Goals



### Capability Metrics

#### Capability Metrics

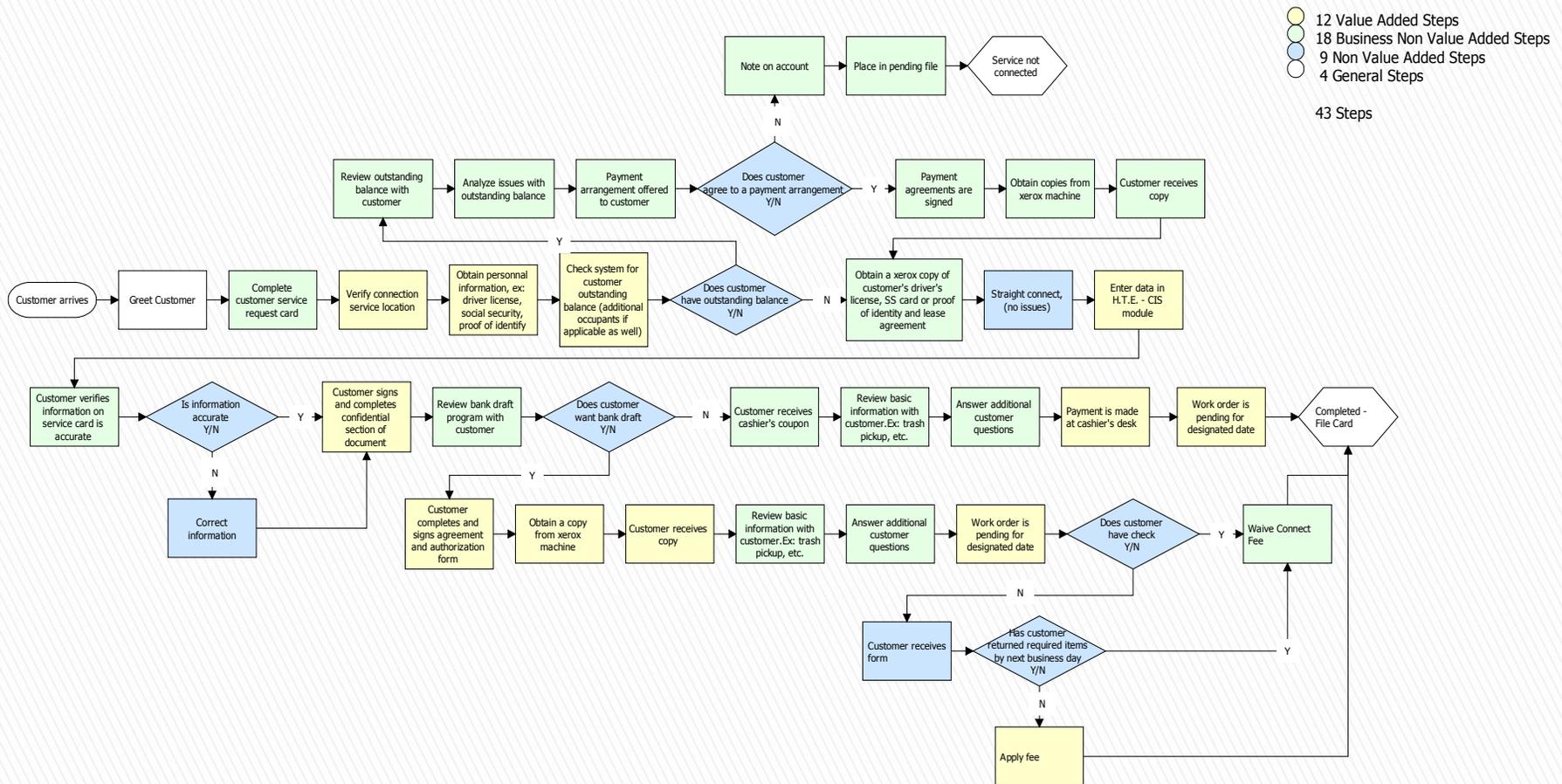
	Baseline:	Goal:	Stretch Goal:	Final:
Date:	7/9/2012			
Cp:	0	0	0	0
Cpk:	0	0	0	0
DPMO(LT):	229969	57492	22997	0
Ppk:	0.25	0	0	0
YRT:	0	0	0	0
Zbench(ST):	0.74	0	0	0

# Measure Phase

## 6. Identify Sources of Variation



### Initial Improve Connecting Service for WBO Process Map ("Walk In")

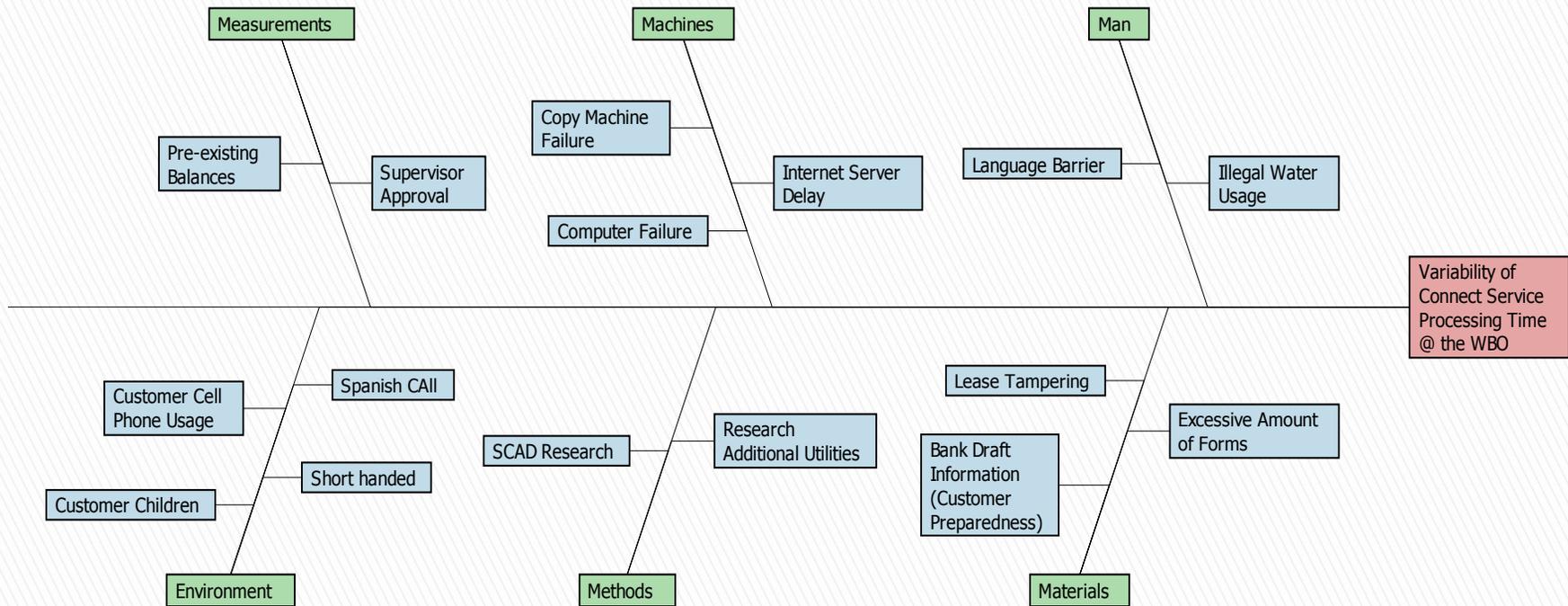


# Measure Phase

## 6. Identify Sources of Variation



**Cause & Effect Diagram for Improve Connecting Service for WBO**



The Cause and Effect Diagram/Fishbone Diagram was used to identify all the potential variables which may influence the variability of connecting service processing time @ the WBO.

# Measure Phase

## 6. Identify Variation Sources



### YX Diagram

**YX Diagram for Improve Connect Service @ WBO**

**Demo**

---

**Delete**

---

**View Summary**

Process:	Improve Connecting Service for WBO
Date:	10/12/2012

Ranking				
1	3	5	7	9
Unlikely	Some what unlikely	Some what	Some what likely	Most Likely

Output Variables (Ys)	Description	Ranking											
		1	2	3	4	5	6	7	8	9	10		
Variability of Connecting Service Processing Time for the WBO													
Weight													
Input Variables (Xs)												Ranking	
1 Pre-existing Balances			9										81
2 Supervisor Approval			3										27
3 Copy Machine Failure			3										27
4 Computer Failure			1										9
5 Internet Server Delay			1										9
6 Language Barrier			7										63
7 Illegal Water Usage			5										45
8 Customer Cell Phone Usage			7										63
9 Customer Children			9										81
10 Spanish Call			7										63
11 Shorthanded			7										63
12 SCAD Research			3										27
13 Research Additional Utilities			3										27
14 Lease Tampering			7										63
15 Bank Draft-Customer Preparedness			3										27
16 Multiple Forms			9										81
17													
18													
19													
20													

The YX Diagram contains the list of Input Variables and output Variables. They are ranked by the team members.

# Measure Phase

## 6. Identify Sources of Variation



### YX Diagram Summary for Improve Connecting Service for WBO

Process:	Improve Connecting Service for WBO
Date:	10/12/2012

Output Variables	
Description	Weight
Variability of Connecting Service Processing Time for the WBO	9

Input Variables	
Description	Ranking
Pre-existing Balances	81
Customer Children	81
Multiple Forms	81
Customer Cell Phone Usage	63
Spanish Call	63
Language Barrier	63
Shorthanded	63
Lease Tampering	63
Illegal Water Usage	45
Supervisor Approval	27
Copy Machine Failure	27
Bank Draft-Customer Preparedness	27
Research Additional Utilities	27
SCAD Research	27
Computer Failure	9
Internet Server Delay	9

YX diagram provides initial variables which may impact the process.

The YX Diagram Summary displays the input variables according to their ranking.

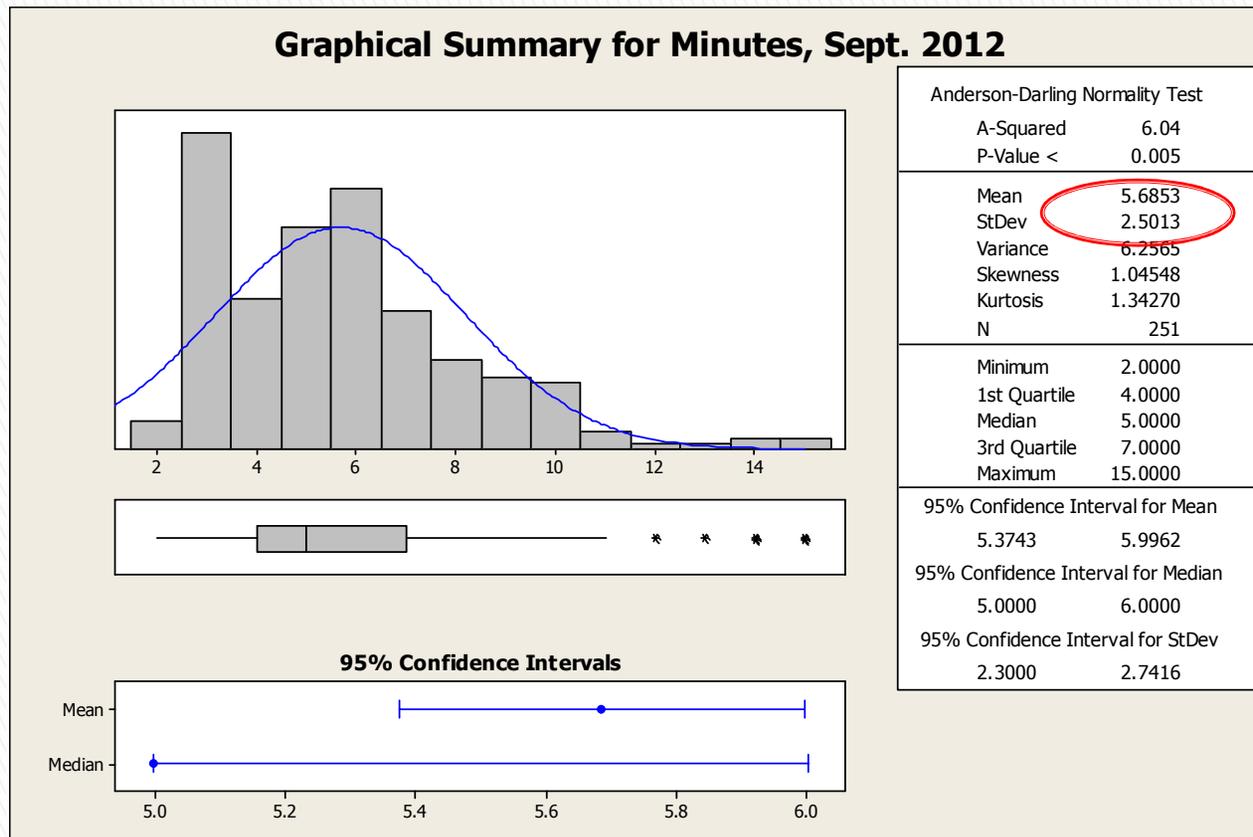


# Improve Phase

## 10. Reassess



### Graphical Summary for Minutes, Sept. 2012



The Graphical Summary for Minutes in September 2012 reflects a average of 5.68 with a StDev. of 2.50.

Initial:

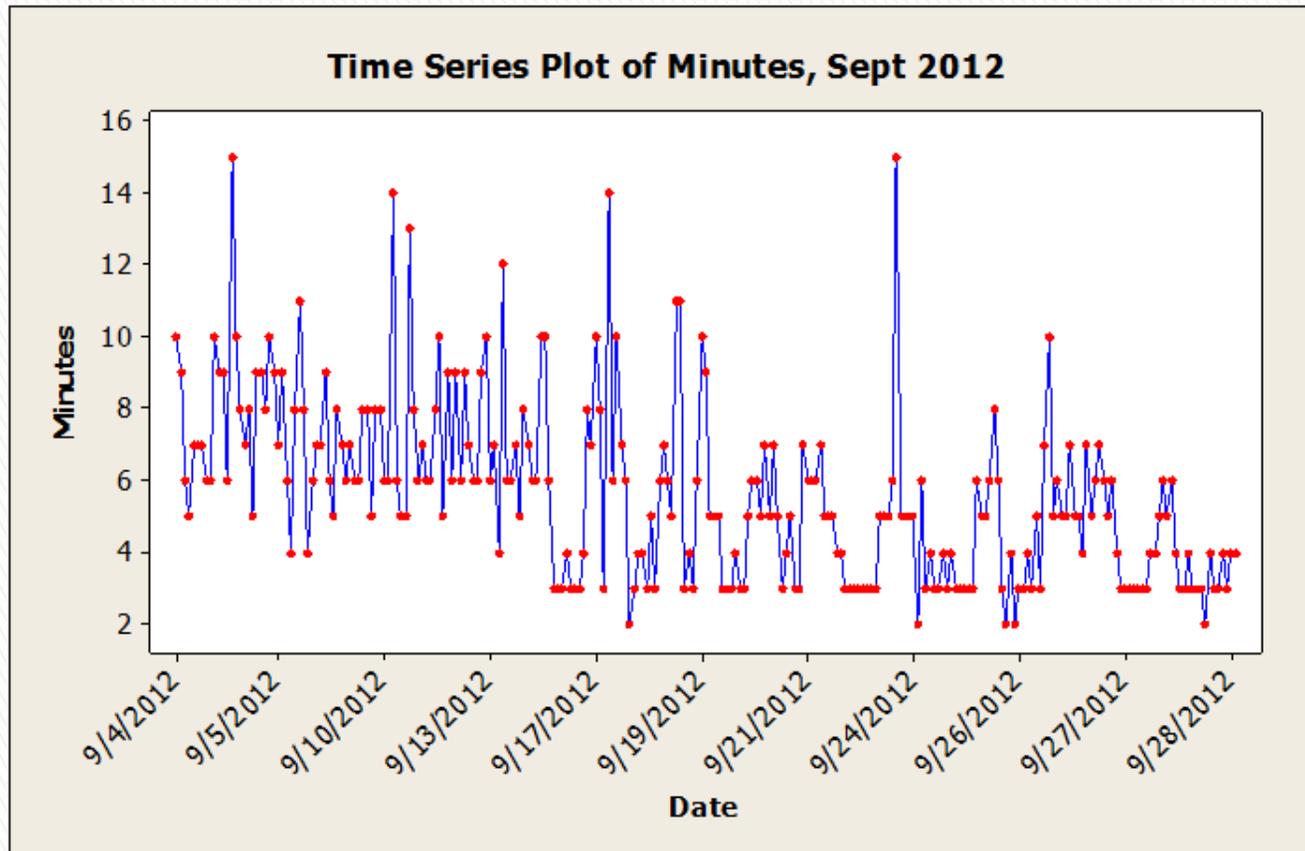
Mean 8.32  
StDev. 2.81

# Improve Phase

## 10. Reassess



### Time Series Plot for Sept 2012

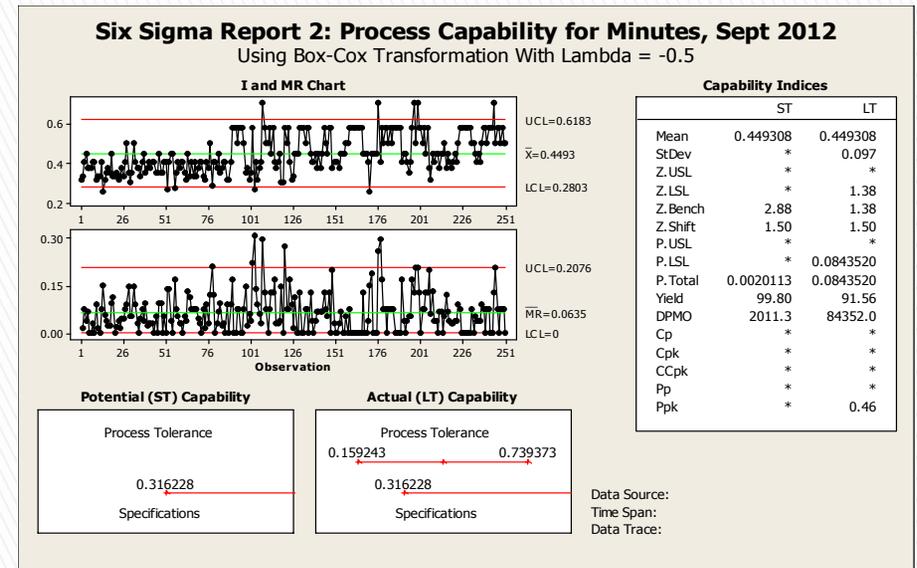
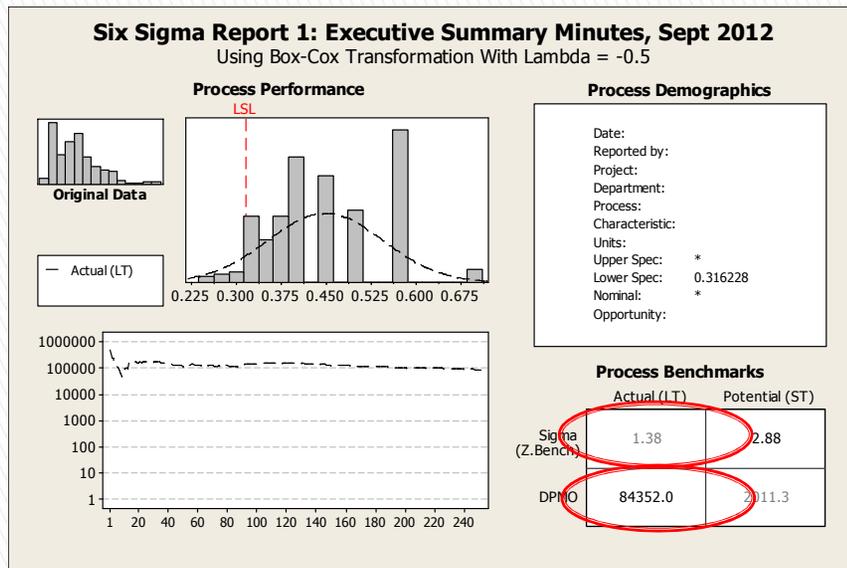


# Improve Phase

## 10. Reassess



### Process Capability



The Capability Analysis processed for September 2012 data indicates the process performance is increasing.

Initial:  
Z. Bench .74  
DPMO 229,969

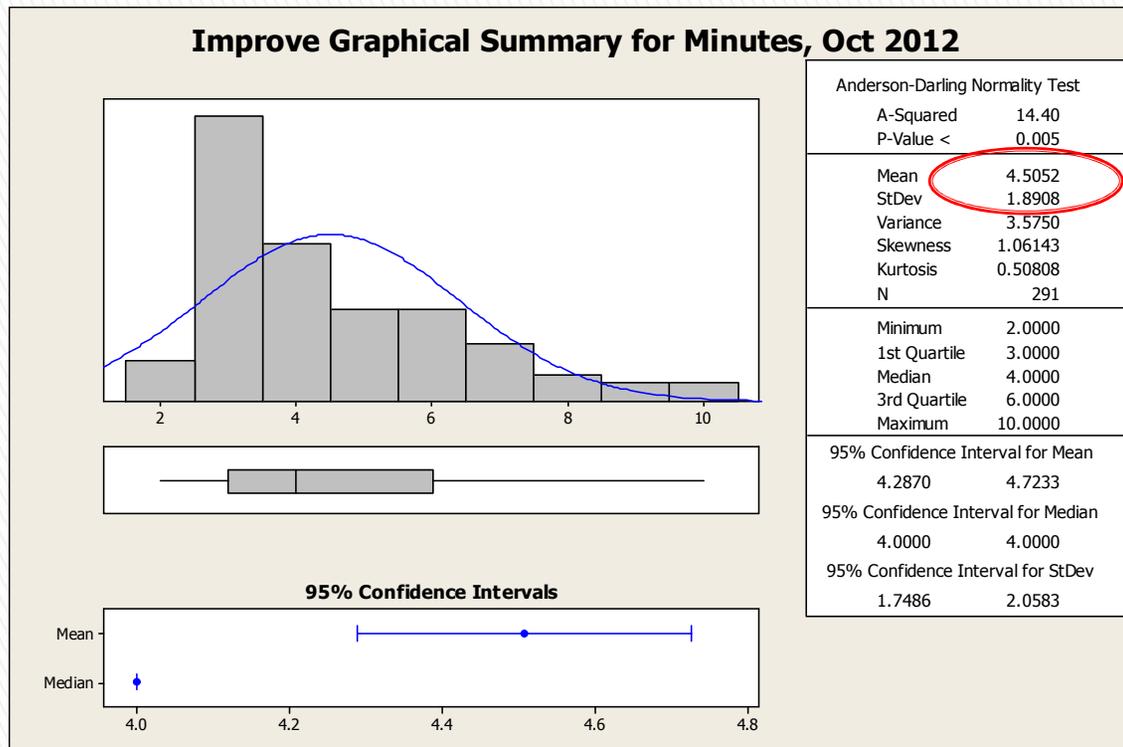
September 2012:  
Z. Bench 1.38  
DPMO 84,352

# Improve Phase

## 11. Improved State Process Performance



### Improve Graphical Summary for Minutes, Oct 2012



Based on the Improve Graphical Summary, the average time to process a connecting service request is 4.50 minutes with a StDev. Of 1.89

Initial:

Mean 8.32  
StDev. 2.81.

Sept 2012:

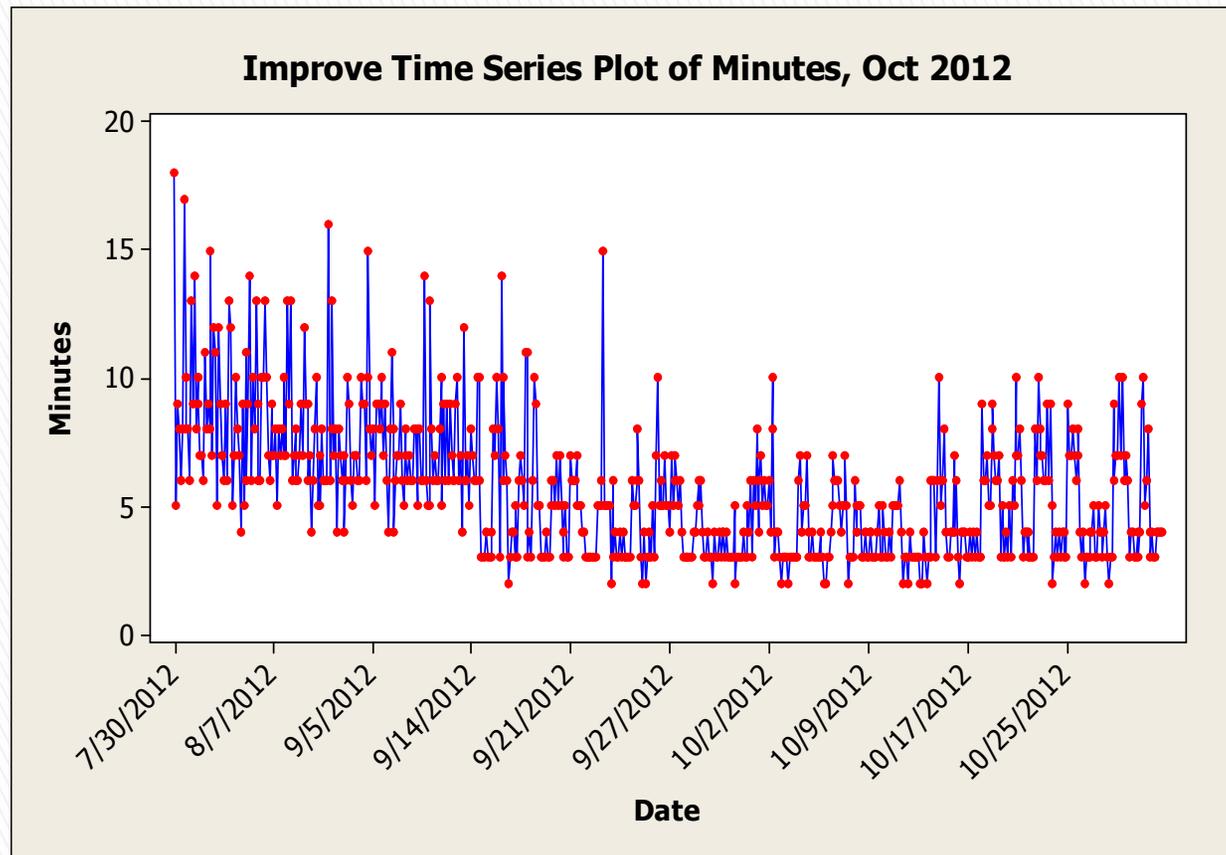
Mean 5.68  
StDev. 2.50

# Improve Phase

## 11. Improved State Process Performance



### Improve Time Series Plot for Oct 2012

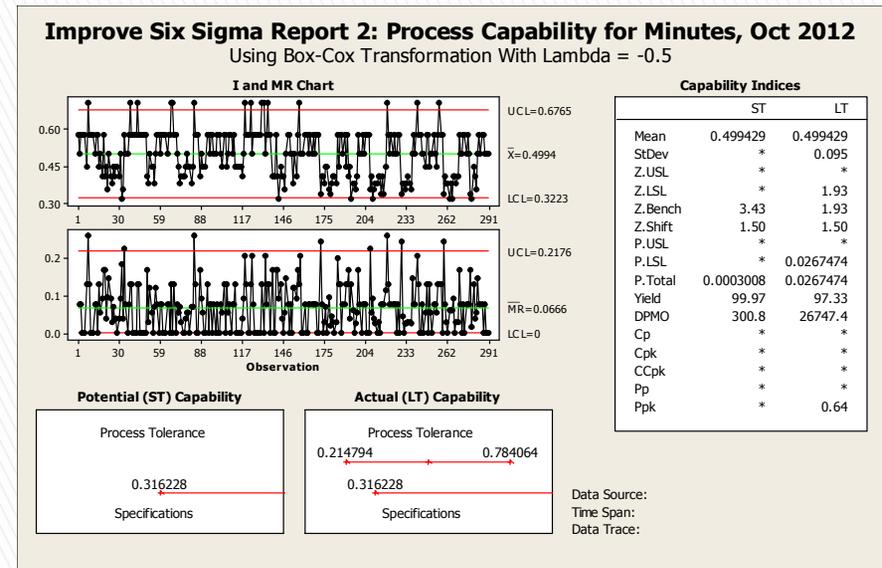
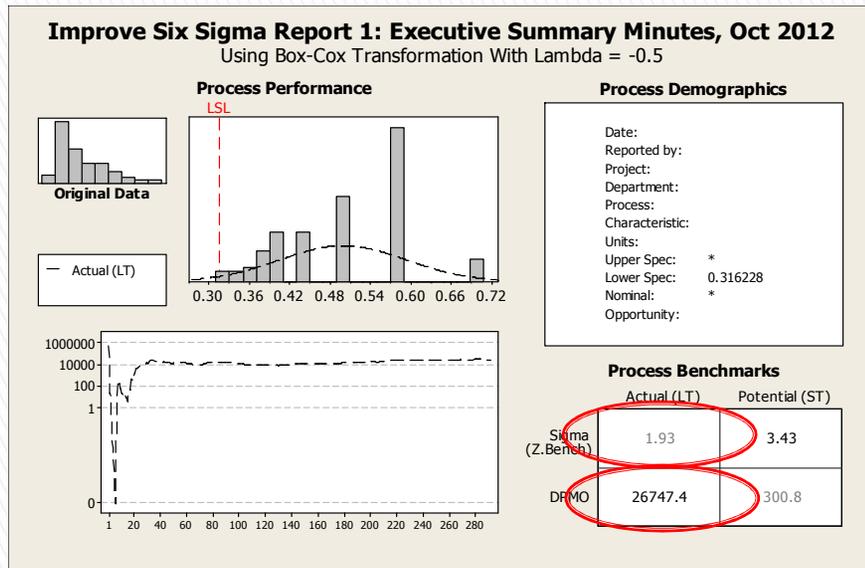


# Improve Phase

## 11. Improved State Process Performance



### Improve Process Capability



The Capability Analysis processed for October 2012 data indicates the process performance continues to increase.

Initial:

Z. Bench .74  
DPMO 229,969

Sept 2012:

Z. Bench 1.38  
DPMO 84,352

Oct. 2012

Z. Bench 1.93  
DPMO 26,747

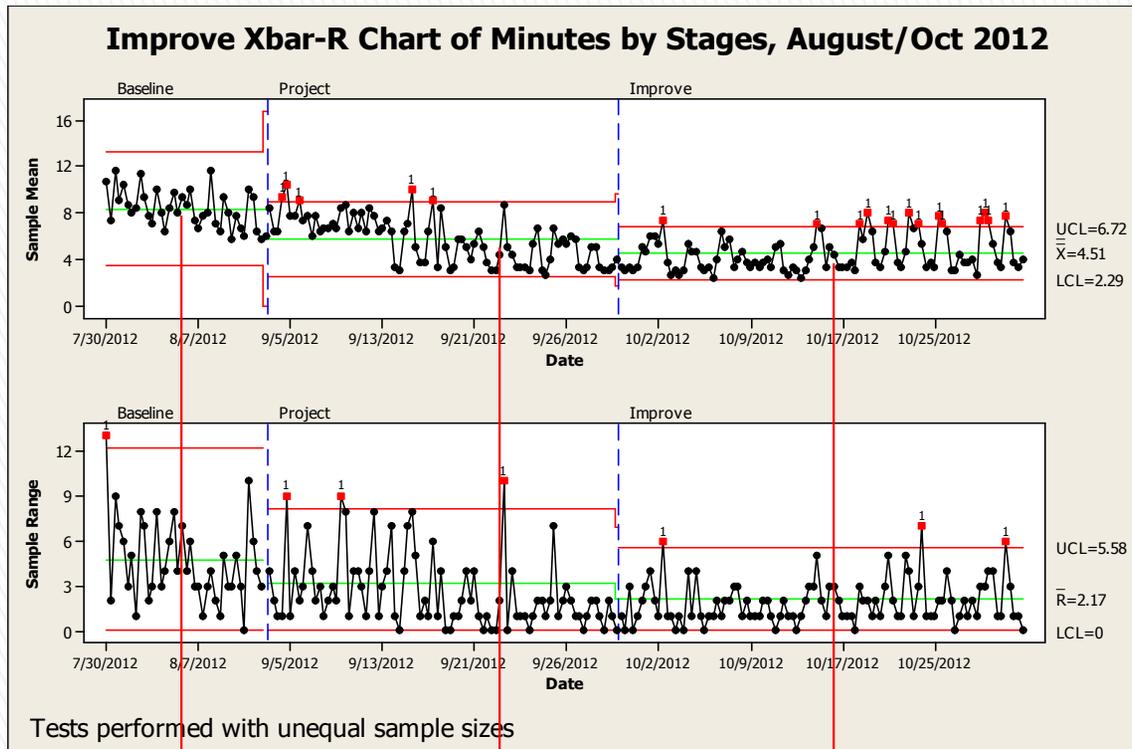


# Improve Phase

## 11. Improved State Process Performance



### Improve Xbar-R Chart



8.32

5.68

4.50

The chart illustrates the improvement of the overall process during the course of the project.

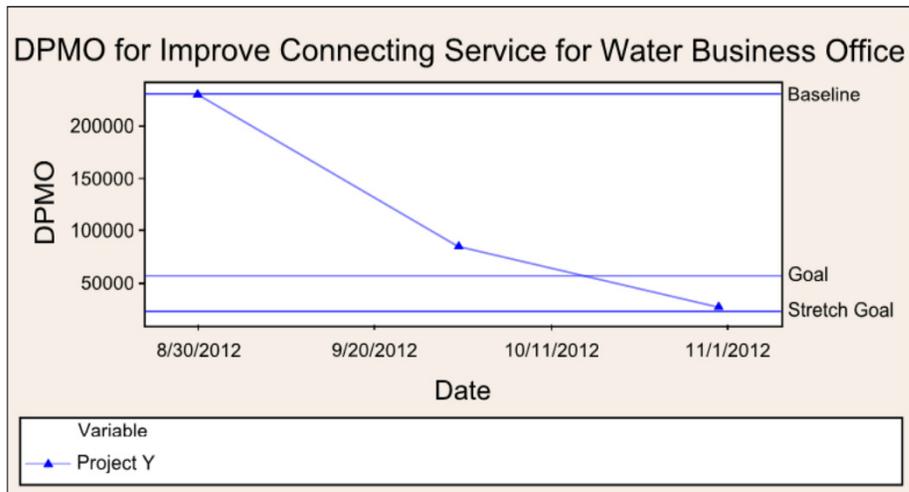
# Improve Phase

## 11. Improved State Process Performance



### Improve Y Metrics

#### Y Metrics



#### DPMO

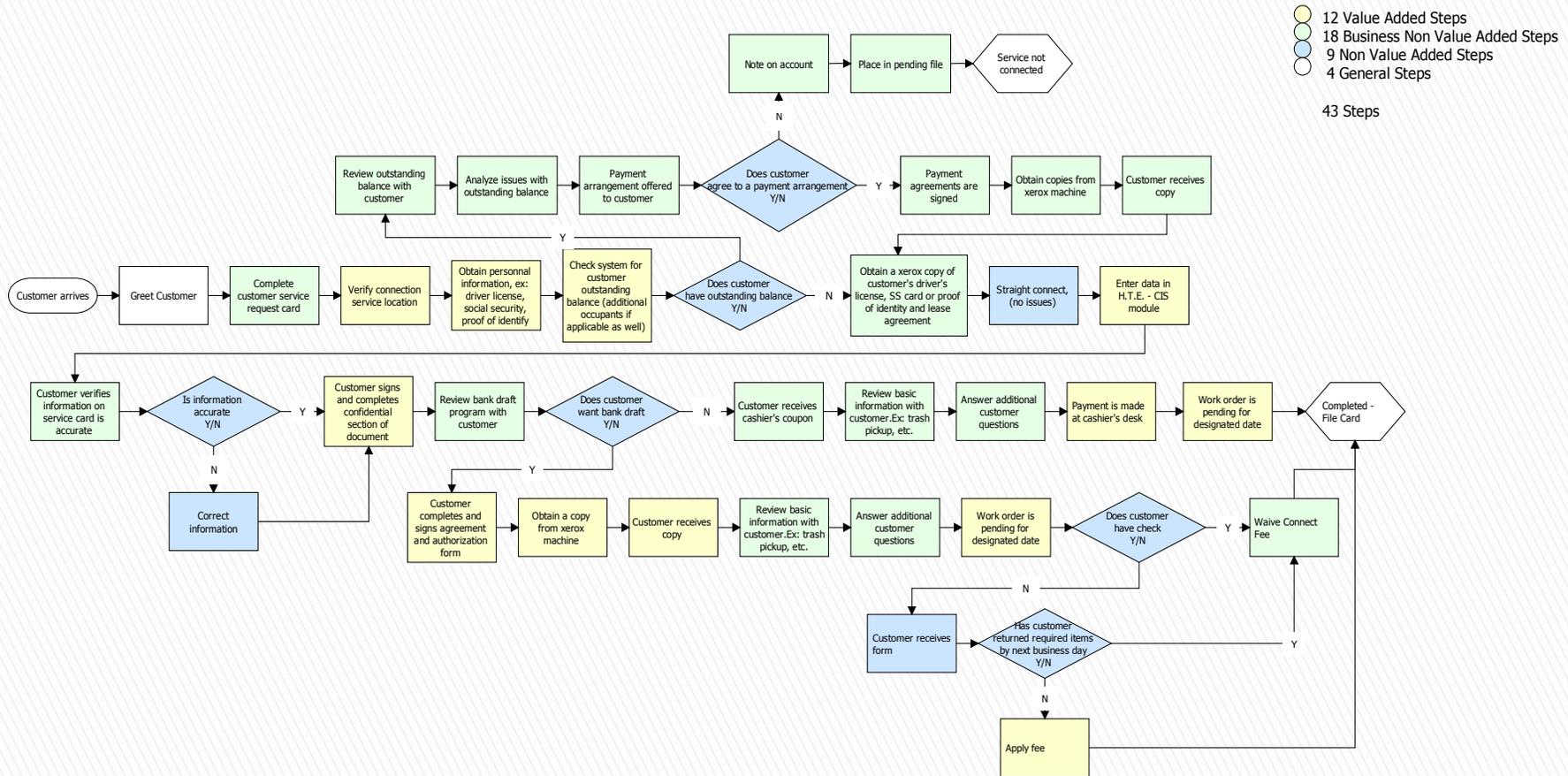
	Date	Project Y
<b>Baseline</b>		229969
<b>Goal</b>		57492
<b>Stretch Goal</b>		22997
	8/30/2012	229969
	9/30/2012	84352
	10/31/2012	26747

# Improve Phase

## 11. Improved State Process Performance



### Future Connecting Service for WBO Process Map ("Walk In")



# Control Phase

## 12. Implement Process Controls



### Procedural Controls

	<b>Department</b> Water Business Office
	<b>Procedure</b> Connecting Service

I. Purpose: Improve connecting service

II. Scope: Customer Services

III. Definition: Providing great customer service thru the connection process for our customer's

IV. Procedure:

**Greet Customer**

**Complete Top Portion Customer Service Request Form**

	<b>CUSTOMER SERVICE REQUEST FORM</b>			
<input type="checkbox"/> CONNECT	<input type="checkbox"/> DISCONNECT	<input type="checkbox"/> TRANSFER	<input type="checkbox"/> NEW CUSTOMER	<input type="checkbox"/> OLD CUSTOMER
TELEPHONE # _____	SOCIAL SECURITY # _____			
DRIVERS LICENSE # _____	DATE OF BIRTH _____			
NAME: _____				
(LAST NAME)		(FIRST NAME)		(MI)
ADDRESS: _____		ACCOUNT # _____		
CONNECT DATE: _____		CYCLE/ROUTE _____		
DISCONNECT DATE: _____				
MAILING ADDRESS: _____				
CITY: _____		STATE: _____	ZIP: _____	
MOVING TO: _____		ACCOUNT # _____		
CONNECT DATE: _____		CYCLE/ROUTE _____		
MAIL FINAL BILL TO: _____				
CITY: _____		STATE: _____	ZIP: _____	
*ENROLL IN E-BILL: <input type="checkbox"/> YES <input type="checkbox"/> NO **EMAIL ADDRESS: _____				
<small>*Failure to receive your electronic bill will not exempt you from being turned off if the account becomes past due.</small>				
<small>**It is the responsibility of the customer to notify the Water Business Office of any changes i.e. change of e-mail address.</small>				
<b>ADDRESS VERIFICATION</b>				
I understand that if the above address is not the correct address and because I don't have proof of the correct address my account will be billed an additional \$50.00.				
Comprendo que si la dirección antes mencionada no es la dirección correcta y porque yo no tengo prueba de la dirección correcta que mi cuenta será facturada un adicional \$50.00.				

**Have Customer Verify all Information and Sign Form.**

**Obtain Personal Information: Driver's License, Lease, S.S. Card etc.**

**Verify Additional Residents / Occupants**

**Check system for Outstanding Balances for all Occupants**

**If there are Outstanding Balances make arrangements for payment**

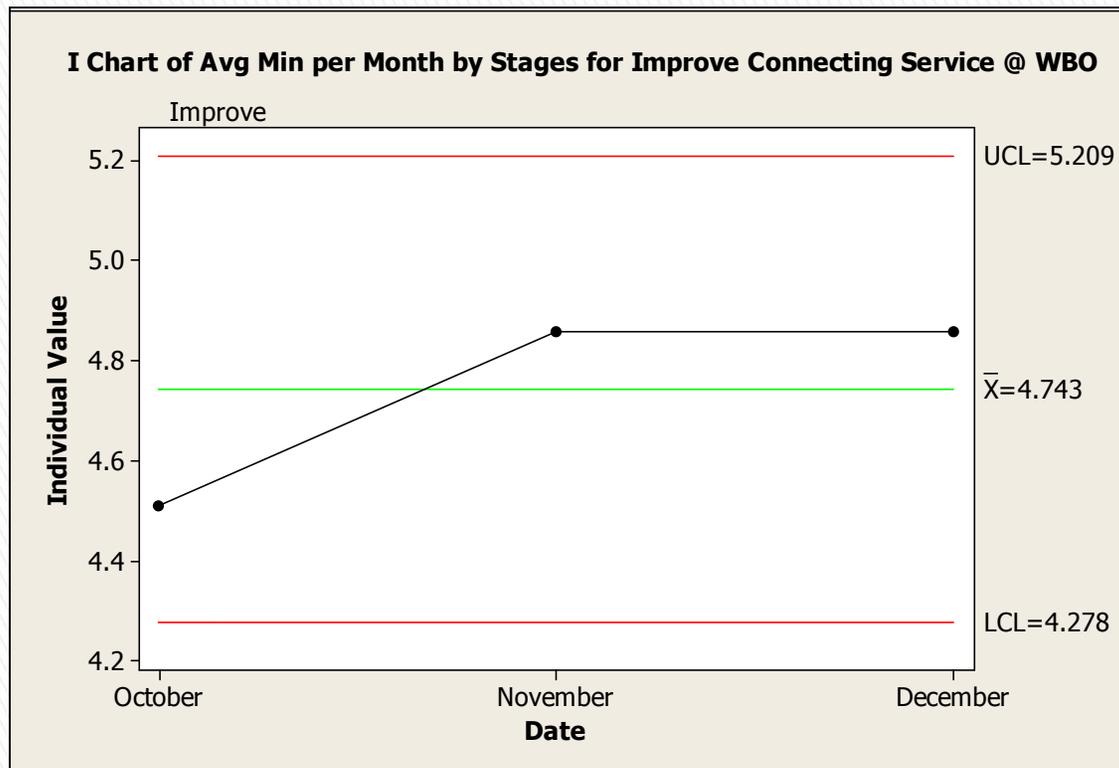
Department Procedures were established for connecting services for the Water Business Office.

# Control Phase

## 12. Implement Process Controls



### I Chart



An I Chart has been created ensure the results are sustained and that changes in the process can easily be detected.

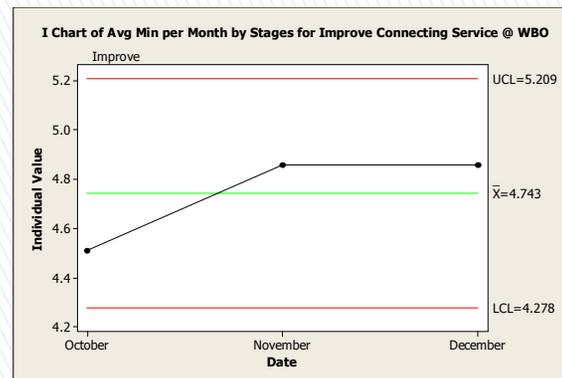
# Control Phase

## 12. Implement Process Controls



### I Chart Instructions

#### I Chart Instruction Manual for Improve Connecting Service for WBO Productivity Board Monthly Graphs



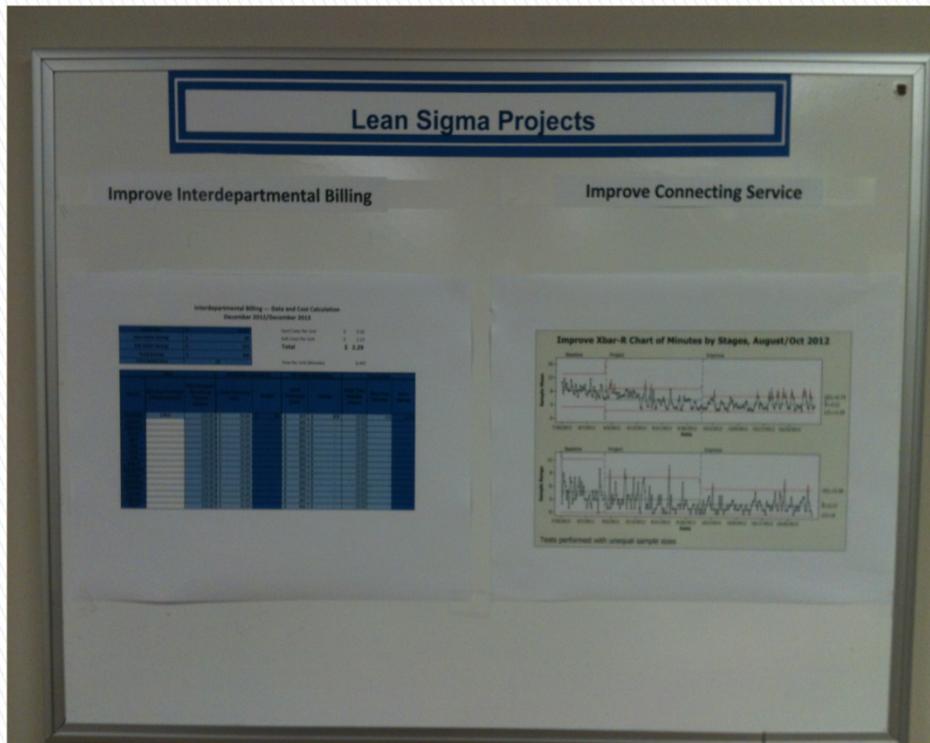
Sherry Pettit  
December 19, 2012

# Control Phase

## 12. Implement Process Controls



### Visual Management Board



A Visual Management Board has been created. The Improve Connecting Service for WBO project progress as well as general information will be displayed for viewing.

# Control Phase

## 12. Implement Process Controls



### Data and Cost Calculation Document

Data		Soft Dollar Calculations					Hard Dollar Calculations				Time Savings								
Month	Total Minutes Exceeding 10 Min	Total Connecting Services	Connecting Services Exceeding 10 Min	% Defective	Old % Defective	Connecting Services Exceeding at Old % Defect	Cost	Cost at old % Defect Rate	Cost at New % Defect Rate	Soft Savings	Labor Cost per Hour	Cost of Time at Previous	Cost Time at Current	Hard Savings for Time Saved	Connecting Services Exceeding at Old % Defect	Time Spent (Hrs)	Avg per Connecting Service (Hrs)	Time Spent (Hrs)	Time Saved (Hrs)
Nov-12	10	272	4	1.47%	17.98%	49	\$0.54	\$26	\$ 2	\$ 24	\$ 16.20	\$ 136	\$ 3	\$ 133	49	8.41	0.04	0	8
Dec-12					17.98%		\$0.54				\$ 16.20								
Jan-13					17.98%		\$0.54				\$ 16.20								
Feb-13					17.98%		\$0.54				\$ 16.20								
Mar-13					17.98%		\$0.54				\$ 16.20								
Apr-13					17.98%		\$0.54				\$ 16.20								
May-13					17.98%		\$0.54				\$ 16.20								
Jun-13					17.98%		\$0.54				\$ 16.20								
Jul-13					17.98%		\$0.54				\$ 16.20								
Aug-13					17.98%		\$0.54				\$ 16.20								
Sep-13					17.98%		\$0.54				\$ 16.20								
Oct-13					17.98%		\$0.54				\$ 16.20								
Nov-13					17.98%		\$0.54				\$ 16.20								

Improve Connecting Service for WBO  
 Data and Cost Calculation  
 November 2012/November 2013

Initial Cost	\$	10,859
Hard Dollar Savings	\$	133
Soft Dollar Savings	\$	24
Total Savings	\$	158
Time Saved (Hrs)		8

The Data and Cost Calculation captures the hard dollar savings as a result of the completed project.

# Improve Connecting Service for WBO



## Project Summary:

The average connecting service processing time for the WBO was 8.32 minutes with a standard deviation of 2.81. This consequently resulted in a DPMO of 229,969. By going through the 12 step process, the average time for the WBO to process connecting service applications was reduced to an average of 4.51 minutes with a standard deviation of 1.89. The DPMO was reduced to 26,747. This is a 46% reduction in time and 88% reduction in DPMO.

## Conclusion:

The team illustrated that the new process has been standardized and is in control.

A monitoring system is in place that will ensure the results are sustained and that changes in the process can easily be detected, therefore, holding the gains.