Improve Transit Overtime

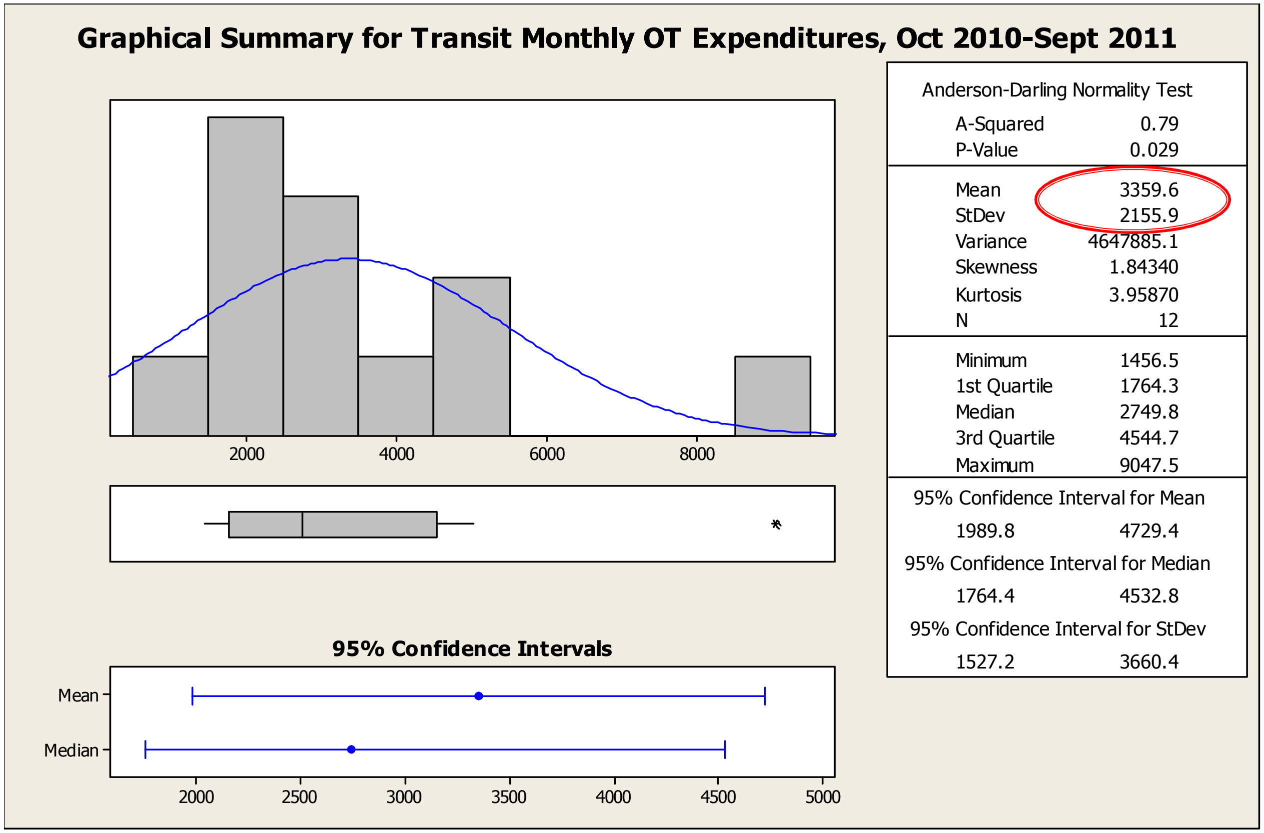
Project Start: 2-3-2012
Project Revision:1
Project Champion: Barbara Holly
Black/Green Belt: Sherry Pettit

Improve Transit Overtime

Project Team Members

Angie Brockway	Melissa Carpenter
Patricia Thompson	Tony Filippini
Jim Yanker	Barbara Holly
Guillermo Garcia	

Initial Graphical Summary for Transit Monthly OT Expenditures

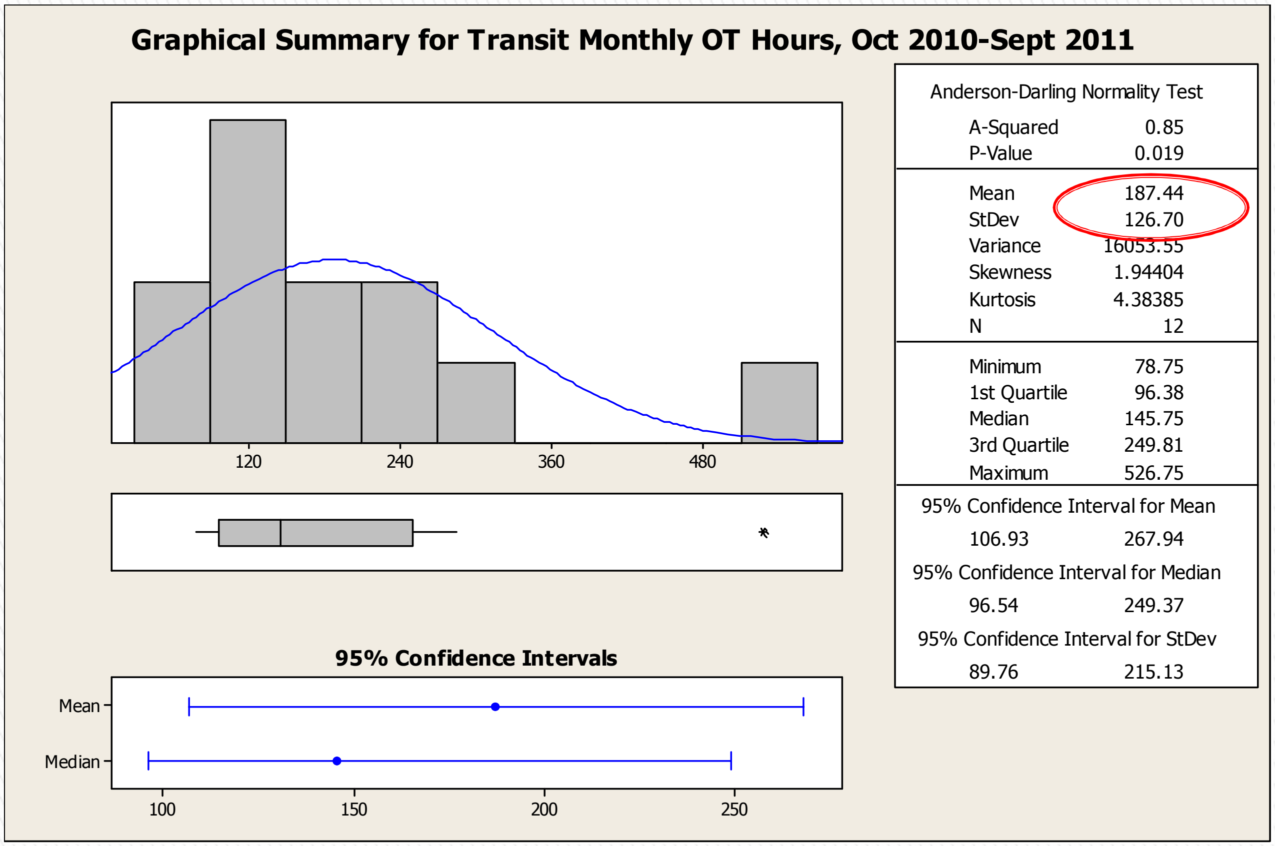


Based on the initial graphical summary, the average Transit monthly overtime expenditure is $3,360 with a StDev. of $2,156.

Define Phase

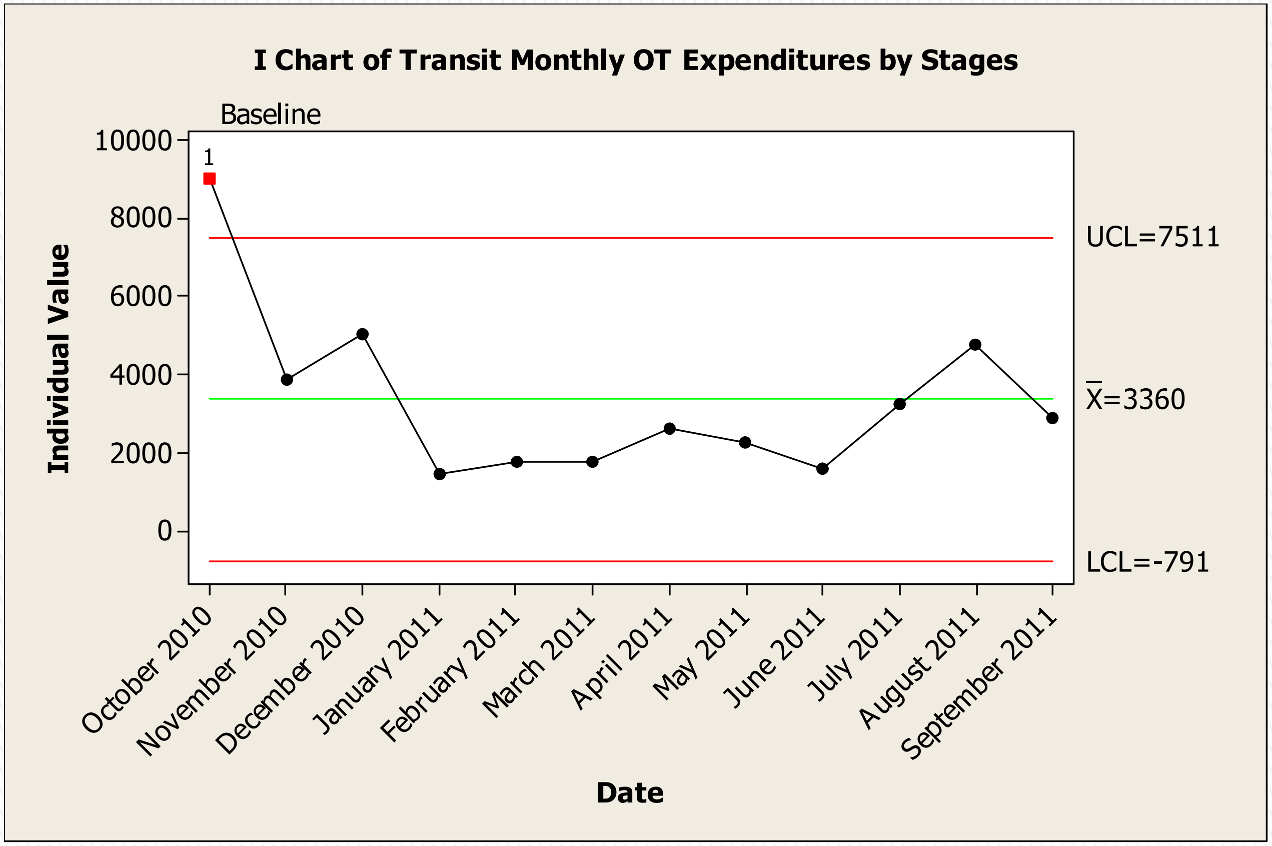
1.Select Output Objective

Initial Graphical Summary for Transit Monthly OT Hours

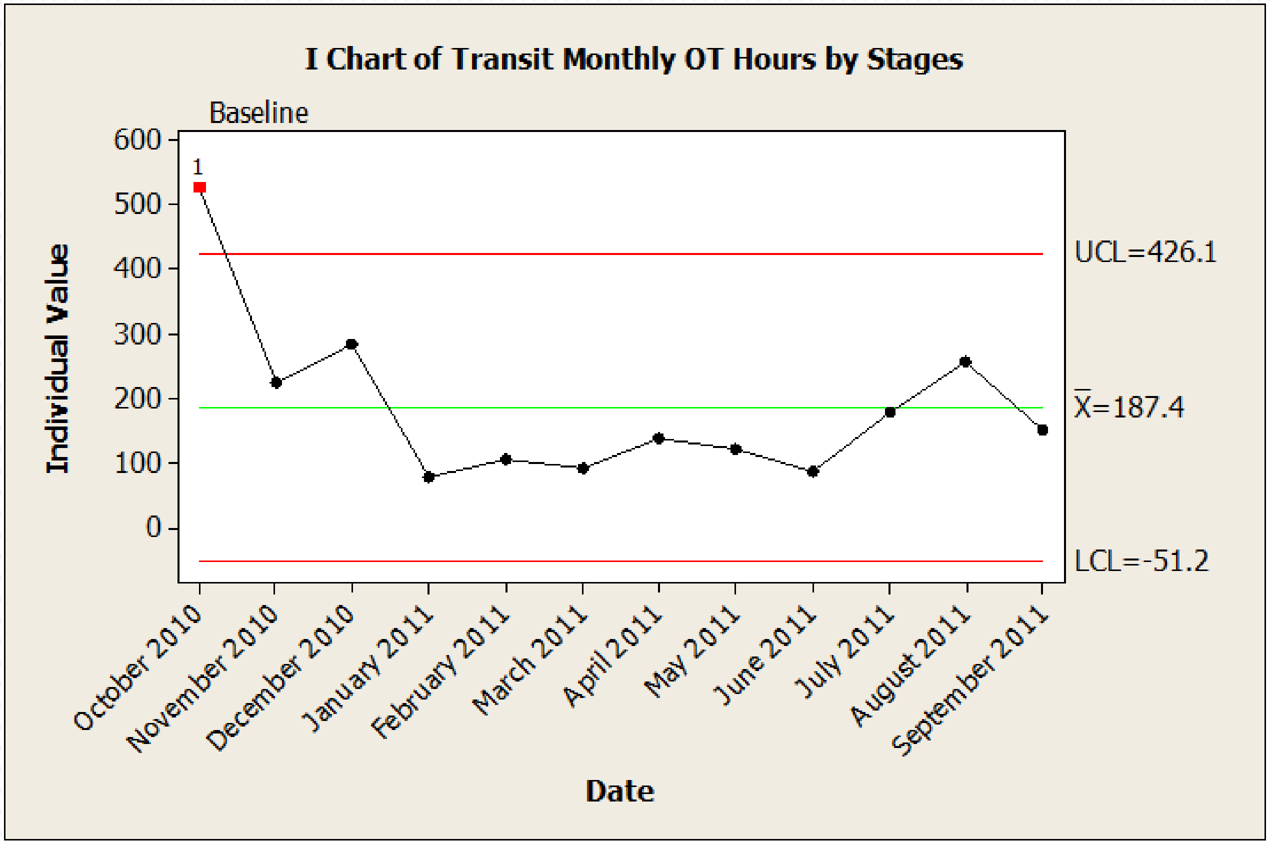


Based on the initial graphical summary, the average Transit monthly overtime hours is 187.44 with a StDev. of 126.70.

Initial I Chart of Transit Monthly OT Expenditures by Stages



Initial I Chart of Transit Monthly OT Hours by Stages



Lean Sigma Project Charter

Project Charter

Project Authorization

Organization:	Champion:	Process Owner:
City of Tyler	Barbara Holly	Angie Brockway

Project:	Project #:
Improve Transit Overtime	10

Problem Statement:

As an organization, the Transit Department is experiencing a problem with overtime expenditures. The problem has always existed. The average Transit monthly overtime expenditure for the 2010-11 Fiscal Year was $3,360 with a standard deviation of $2,156. The average Transit monthly overtime hours was 187.44 with a StDev. of 126.70. The budgeted expenditures is $2,500 per month. The DPMO is 563,005.

Project Objective:

Reduce overtime expenditures, Reduce DPMO

Estimated Defect Level:	Initial Goal:	Estimated Benefits:
DPMO 563,005	140751	
Approval Date:	Champion Signature:	Process Owner Signature:
3/2/2012	Barbara Holly	
Estimated Completion Date:	Project Leader:	Financial Analyst:
	Sherry Pettit	Jim Yanker

Problem Statement:

As an organization, the Transit Department is experiencing a problem with overtime expenditures. The problem has always existed. The average Transit monthly overtime expenditure for the 2010-11 Fiscal Year was $3,360 with a standard deviation of $2,156. The average Transit monthly overtime hours was 187.44 with a StDev. of 126.70. The budgeted expenditures is $2,500 per month. The DPMO is 563,005.

Project Objective:

Reduce the DPMO

Financial Information

Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11
$ 772.92	$ 279.79	$ 398.32	$ 469.44	$ 388.82	$ 379.35	$ 682.83	$ 569.02	$ 386.19	$ 598.02	$ 560.06	$ 750.42
$ 114.71	$ 135.95	$ 305.89	$ 254.90	$ 165.69	$ 93.46	$ 267.65	$ 165.69	$ 103.02	$ 313.54	$ 386.55	$ 167.52
$ 354.75	$ 247.50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 30.98	$ 189.76	$ 50.35
$ 642.64	$ 249.44	$ 80.33									
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -				
$ 44.91	$ 11.23	$ 16.84	$ -	$ -	$ 95.44	$ 67.38					
$ 297.40	$ 72.22	$ 276.14	$ 46.73	$ 46.73	$ 93.47	$ 93.47	$ 72.22	$ 47.25	$ 154.62	$ 296.36	$ 98.78
$ 24.66	$ -	$ 28.77	$ 45.26	$ 28.80	$ 24.69	$ 49.37	$ 20.57	$ 69.94	$ 37.03	$ 86.40	$ -
$ -	$ -	$ -	$ -								
$ 4.10	$ -	$ 28.71	$ -	$ -	$ 12.30	$ 139.42	$ 73.81	$ 82.02	$ 45.35	$ 202.97	$ 24.87
$ 213.26	$ 43.37	$ 256.63	$ -	$ 26.99	$ -	$ -					
$ 703.24	$ 424.87	$ 424.87	$ 24.42	$ 166.05	$ 112.33	$ 63.93	$ 102.56	$ 68.43	$ 217.22	$ 626.96	$ 227.09
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ 482.64	$ 280.50	$ 325.89									
$ 519.56	$ 299.74	$ 371.68	$ 67.94	$ 63.95	$ 163.86	$ 103.91	$ 71.94	$ 52.48	$ 96.88	$ 395.59	$ 96.98
											$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -										
$ -		$ -		$ -	$ -						$ -
$ 368.68	$ 57.83	$ 133.73									
$ 287.75	$ 383.67	$ 267.78	$ -	$ 43.96	$ 3.99	$ 63.93	$ 195.83	$ 24.24	$ 189.91	$ 141.43	$ 40.41
$ 259.88	$ 144.38	$ 173.25	$ 127.88	$ -	$ 136.13	$ 86.63	$ 123.76	$ 54.15	$ 329.39	$ 246.05	$ 45.87
$ 237.30	$ 133.88	$ 334.65	$ 18.25	$ -	$ 60.84	$ 292.07	$ 170.37	$ 133.96	$ 286.18	$ 456.68	$ 440.24
$ 898.27	$ 38.59	$ 271.48	$ 31.98	$ 63.94	$ 59.94	$ 95.92	$ 83.92	$ 79.93	$ -		
$ 993.31	$ 372.50	$ 340.45	$ -	$ 215.91	$ -	$ -	$ -	$ -	$ 296.87	$ 300.72	$ 392.76
$ 709.51	$ 350.63	$ 107.25	$ -	$ 169.14	$ 139.38	$ 226.88	$ 189.76	$ 162.06	$ 125.10	$ 266.90	$ 191.84
$ 484.09	$ 90.37	$ 438.91	$ 135.54	$ 225.91	$ 284.00	$ 193.64	$ 284.00	$ 109.79	$ 207.98	$ 502.28	$ 241.35
$ 380.92	$ 180.71	$ 244.18	$ 214.88	$ 166.04	$ 102.56	$ 190.46	$ 131.86	$ 227.10	$ 256.72	$ 113.54	$ 113.54
							$ -	$ -	$ 65.54	$ -	$ -
$ 253.02	$ 65.06	$ 195.19	$ 19.28	$ -	$ -	$ -	$ 15.42	$ -	$ -		
$9,047.52	$3,862.23	$5,020.94	$1,456.50	$1,771.93	$1,761.74	$2,617.49	$2,270.73	$1,600.56	$3,251.33	$4,772.25	$2,882.02

Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	TOTAL H
40.75	14.75	21	24.75	20.5	20	36	30	20.5	31.5	29.5	39.5	328.75
6.75	8	18	15	9.75	5.5	15.75	9.75	6	18.25	22.5	9.75	145
21.5	15	0	0	0	0	0	0	0	2	12.5	3.25	54.25
38	14.75	4.75										57.5
0	0	0	0	0	0	0	0					0
2	0.5	0.75	0	0	4.25	3						10.5
17.5	4.25	16.25	2.75	2.75	5.5	5.5	4.25	2.75	9	17.25	5.75	93.5
1.5	0	1.75	2.75	1.75	1.5	3	1.25	4.25	2.25	5.25	0	25.25
0	0	0	0									0
0.25	0	1.75	0	0	0.75	8.5	4.5	5	2.75	12.25	1.5	37.25
14.75	3	17.75	0	1.75	0	0						37.25
36	21.75	21.75	1.25	8.5	5.75	3.25	5.25	3.5	11	31.75	11.5	161.25
0	0	0	0	0	0	0	0	0	0	0	0	0
29.25	17	19.75										66
32.5	18.75	23.25	4.25	4	10.25	6.5	4.5	3.25	6	24.5	6	143.75
											0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0											0
0		0		0	0						0	0
25.5	4	9.25										38.75
18	24	16.75	0	2.75	0.25	4	12.25	1.5	11.75	8.75	2.5	102.5
15.75	8.75	10.5	7.75	0	8.25	5.25	7.5	3.25	19.75	14.75	2.75	104.25
9.75	5.5	13.75	0.75	0	2.5	12	7	5.5	11.75	18.75	18	105.25
56.25	2.75	17	2	4	3.75	6	5.25	5	0			102
62	23.25	21.25	0	14	0	0	0	0	19.25	19.5	24.75	184
43	21.25	6.5	0	10.25	8.75	13.75	11.5	9.75	7.5	16	11.5	159.75
18.75	3.5	17	5.25	8.75	11	7.5	11	4.25	8	19.25	9.25	123.5
19.5	9.25	12.5	11	8.5	5.25	9.75	6.75	11.5	13	5.75	5.75	118.5
							0	0	4.25	0	0	4.25
17.5	4.5	13.5	1.25	8.5	0	0	1	0	0			46.25
526.75	224.5	284.75	78.75	105.75	93.25	139.75	121.75	86	178	258.25	151.75	2249.3

The budgeted overtime for Transit is $2,500 per month. The potential yearly savings, based on previous monthly average expenditures, is estimated to be $12,401.

Measure Phase

3. Validate Measurement System

Transit Overtime Expenditures / Hours Spreadsheet

Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	TOTAL COST
$ 772.92	$ 279.79	$ 398.32	$ 469.44	$ 388.82	$ 379.35	$ 682.83	$ 569.02	$ 386.19	$ 598.02	$ 560.06	$ 750.42	$ 6,235.18
$ 114.71	$ 135.95	$ 305.89	$ 254.90	$ 165.69	$ 93.46	$ 267.65	$ 165.69	$ 103.02	$ 313.54	$ 386.55	$ 167.52	$ 2,474.57
$ 354.75	$ 247.50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 30.98	$ 189.76	$ 50.35	$ 873.34
$ 642.64	$ 249.44	$ 80.33	[redacted]									$ 972.41
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	[redacted]				$ -
$ 44.91	$ 11.23	$ 16.84	$ -	$ -	$ 95.44	$ 67.38	[redacted]					$ 235.80
[redacted]												$ -
$ 297.40	$ 72.22	$ 276.14	$ 46.73	$ 46.73	$ 93.47	$ 93.47	$ 72.22	$ 47.25	$ 154.62	$ 296.36	$ 98.78	$ 1,595.39
$ 24.66	$ -	$ 28.77	$ 45.26	$ 28.80	$ 24.69	$ 49.37	$ 20.57	$ 69.94	$ 37.03	$ 86.40	$ -	$ 415.49
$ -	$ -	$ -	$ -	[redacted]								$ -
				[redacted]								$ -
$ 4.10	$ -	$ 28.71	$ -	$ -	$ 12.30	$ 139.42	$ 73.81	$ 82.02	$ 45.35	$ 202.97	$ 24.87	$ 613.55
$ 213.26	$ 43.37	$ 256.63	$ -	$ 26.99	$ -	$ -	[redacted]					$ 540.25
$ 703.24	$ 424.87	$ 424.87	$ 24.42	$ 166.05	$ 112.33	$ 63.93	$ 102.56	$ 68.43	$ 217.22	$ 626.96	$ 227.09	$ 3,161.97
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
[redacted]												$ -
$ 482.64	$ 280.50	$ 325.89	[redacted]									$ 1,089.03
$ 519.56	$ 299.74	$ 371.68	$ 67.94	$ 63.95	$ 163.86	$ 103.91	$ 71.94	$ 52.48	$ 96.88	$ 395.59	$ 96.98	$ 2,304.51
[redacted]											$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ -	$ -	[redacted]										$ -
		[redacted]										$ -
		[redacted]										$ -
$ -	[redacted]	$ -	[redacted]	$ -	$ -	[redacted]					$ -	$ -
[redacted]												$ -
$ 368.68	$ 57.83	$ 133.73	[redacted]									$ 560.24
$ 287.75	$ 383.67	$ 267.78	$ -	$ 43.96	$ 3.99	$ 63.93	$ 195.83	$ 24.24	$ 189.91	$ 141.43	$ 40.41	$ 1,642.90
$ 259.88	$ 144.38	$ 173.25	$ 127.88	$ -	$ 136.13	$ 86.63	$ 123.76	$ 54.15	$ 329.39	$ 246.05	$ 45.87	$ 1,727.37
$ 237.30	$ 133.88	$ 334.65	$ 18.25	$ -	$ 60.84	$ 292.07	$ 170.37	$ 133.96	$ 286.18	$ 456.68	$ 440.24	$ 2,564.42
$ 898.27	$ 38.59	$ 271.48	$ 31.98	$ 63.94	$ 59.94	$ 95.92	$ 83.92	$ 79.93	$ -	[redacted]		$ 1,623.97
$ 993.31	$ 372.50	$ 340.45	$ -	$ 215.91	$ -	$ -	$ -	$ -	$ 296.87	$ 300.72	$ 392.76	$ 2,912.52
$ 709.51	$ 350.63	$ 107.25	$ -	$ 169.14	$ 139.38	$ 226.88	$ 189.76	$ 162.06	$ 125.10	$ 266.90	$ 191.84	$ 2,638.45
$ 484.09	$ 90.37	$ 438.91	$ 135.54	$ 225.91	$ 284.00	$ 193.64	$ 284.00	$ 109.79	$ 207.98	$ 502.28	$ 241.35	$ 3,197.86
[redacted]												$ -
												$ -
$ 380.92	$ 180.71	$ 244.18	$ 214.88	$ 166.04	$ 102.56	$ 190.46	$ 131.86	$ 227.10	$ 256.72	$ 113.54	$ 113.54	$ 2,322.51
[redacted]												$ -
							$ -	$ -	$ 65.54	$ -	$ -	$ 65.54
$ 253.02	$ 65.06	$ 195.19	$ 19.28	$ -	$ -	$ -	$ 15.42	$ -	$ -	[redacted]		$ 547.97
$9,047.52	$3,862.23	$5,020.94	$1,456.50	$1,771.93	$1,761.74	$2,617.49	$2,270.73	$1,600.56	$3,251.33	$4,772.25	$2,882.02	$ 40,315.24

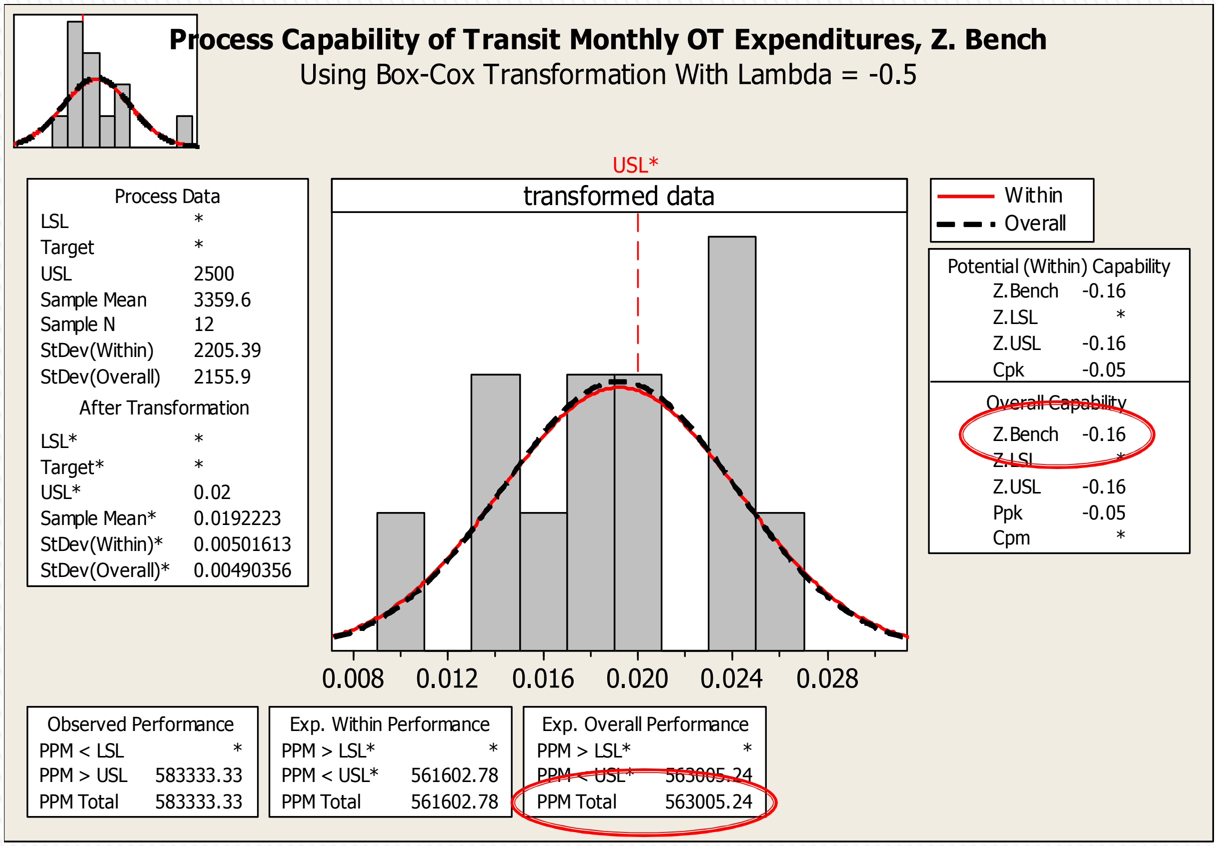
A spreadsheet was created to capture data. The monthly expenditures and hours for each employee, as well as additional information, are entered in the appropriate areas.

Lean Sigma TYLER

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: -0.16
DPMO: 563,005

Goals and Benefits

Defect Levels/Goals:

	Date	DPMO(LT)	Zbench (ST)	Cpk
Baseline	6/1/2012	563005	-0.16	-0.05
Goal		140751	0.00	0.00
Stretch Goal		56300	0.00	0.00

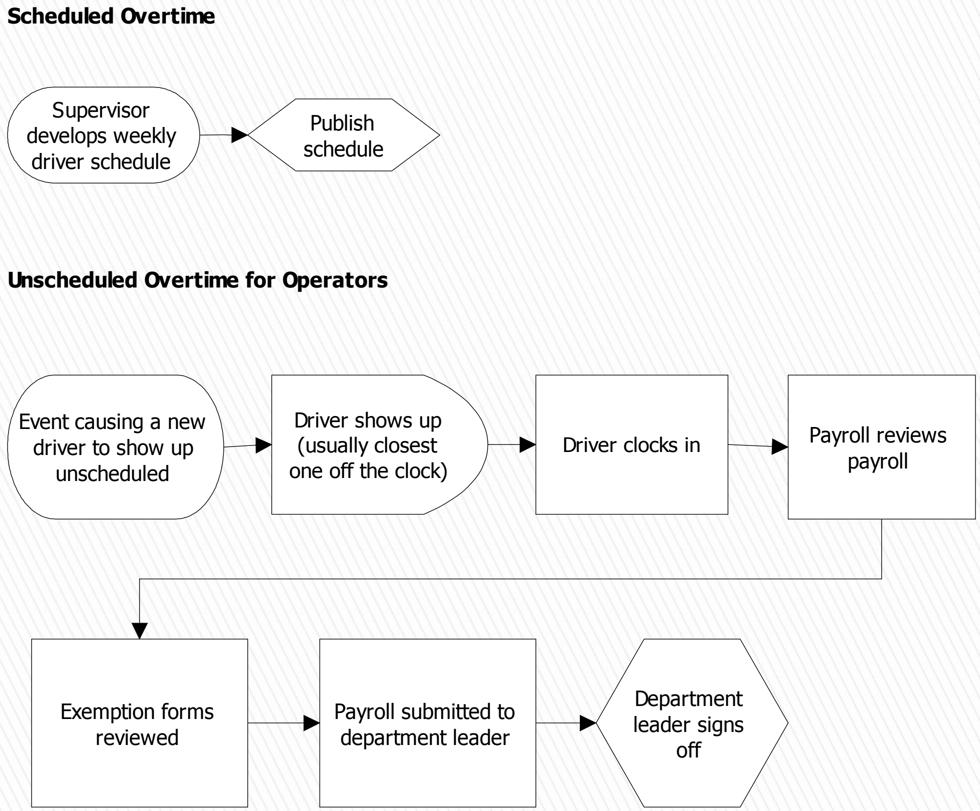
Estimated Financial Benefits:

When a Project Financial Analysis form is present in the project, the results calculated by the form update the fields below.

Hard Savings	$12,401
Soft Savings	$0
Implementation Costs	$0

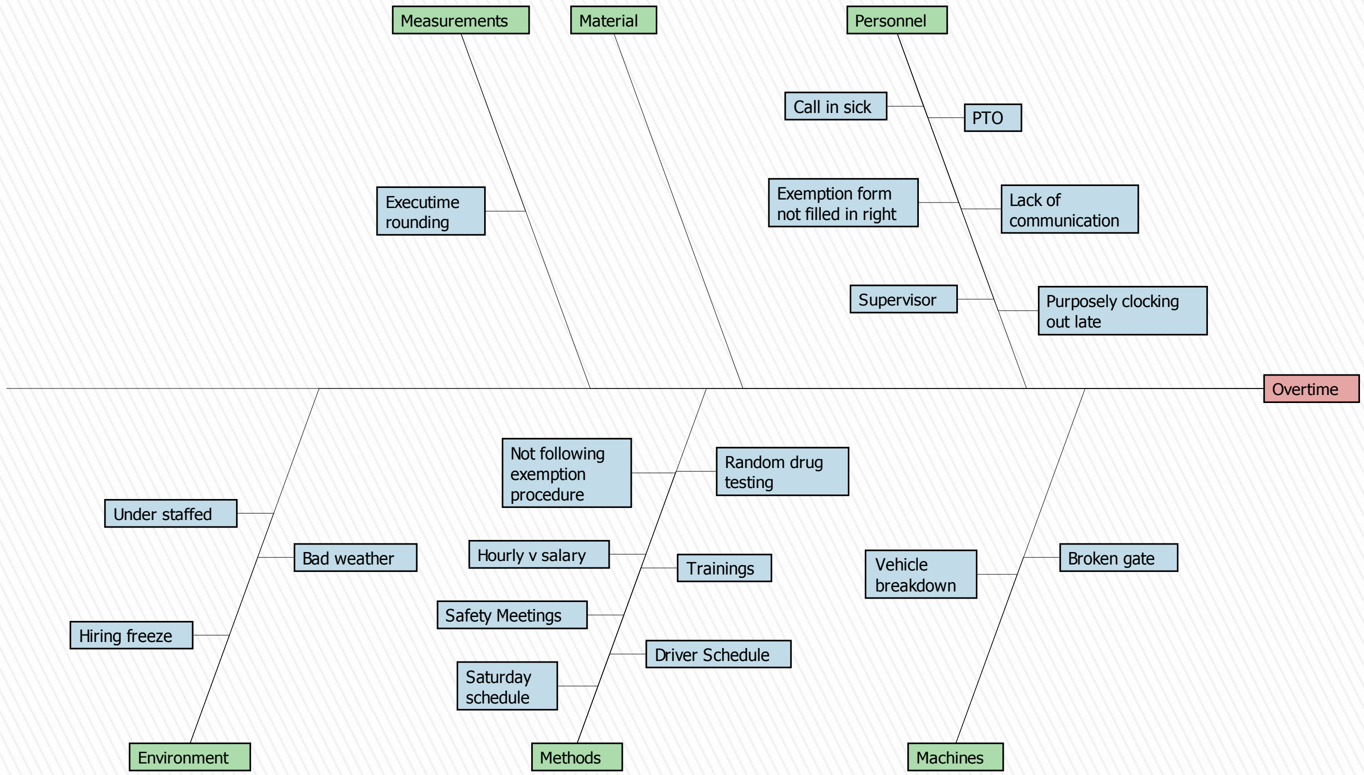
Based on how many months: 12

Process Map



Scheduled Overtime
Supervisor develops weekly driver schedule
Publish schedule
Unscheduled Overtime for Operators
Event causing a new driver to show up unscheduled
Driver shows up (usually closest one off the clock)
Driver clocks in
Payroll reviews payroll
Exemption forms reviewed
Payroll submitted to department leader
Department leader signs off

Cause & Effect Diagram for Improve Transit Overtime



The Cause and Effect Diagram/Fishbone Diagram was used to identify all the potential variables which may influence the overtime expenditures at Transit.

YX Diagram

YX Diagram

Demo

Delete

View Summary

Process:	Improve Transit Overtime
Date:	4/27/2012

Ranking

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

	Output Variables (Ys)	Description	1	2	3	4	5	6	7	8	9	10	
			Overtime										
		Weight	9										
	Input Variables (Xs)												Ranking
1	Under staffed		9										81
2	Trainings		9										81
3	Saturday schedule		9										81
4	Safety meetings		9										81
5	Hourly wage (not salary)		9										81
6	Driver schedule		9										81
7	Call in sick		9										81
8	Random drug testing		7										63
9	PTO		7										63
10	Not following exemption procedure		7										63
11	Purposely clocking out late		6										54
12	Vehicle breakdown		5										45
13	Lack of communication		5										45
14	Exemption form not filled in right		3										27
15	Executime rounding		3										27
16	Hiring freeze		1										9
17	Broken gate		1										9
18	Bad weather		1										9
19	Supervisor												0
20													

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

YX Diagram Summary

Process:	Improve Transit Overtime
Date:	4/27/2012

Output Variables	
Description	Weight
Overtime	9

Input Variables	
Description	Ranking
Under staffed	81
Trainings	81
Saturday schedule	81
Safety meetings	81
Hourly wage (not salary)	81
Driver schedule	81
Call in sick	81
Random drug testing	63
PTO	63
Not following exemption procedure	63
Purposely clocking out late	54
Vehicle breakdown	45
Lack of communication	45
Exemption form not filled in right	27
Executime rounding	27
Hiring freeze	9
Broken gate	9
Bad weather	9
Supervisor	

YX diagram provides initial variables which may impact the process.

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

Analyze Phase
7. Screen Potential Causes

X TRACKER

Project	Improve Transit Overtime
Y	Overtime Cost

X	Prioritized Potential Cause	Null Hypothesis	Alternative Hypothesis	Unit of Measure	Data Type	Verification Method	Results	Significant - Y/N
X1	Under staff	Department has sufficient staff	Department has insufficient staff	Persons				
X2	Trainings	Department is fully trained	Employees need training	Hours				
X3	Saturday Schedule	Saturday schedule do not require overtime	Saturday schedule requires overtime	Hours				
X4	Safety Meetings	Safety meetings do not require overtime	Safety meetings require overtime	Hours				
X5	Hourly (Not salary)	Hourly employees do not work over 40 hours a week	Hourly employees accrue overtime	Persons				
X6	Driver Schedule	Driver schedule ensures 40 hour weeks for full-time employees	The driver schedule requires overtime	Hours				
X7	Call-in sick	No one gets sick	Employees are routinely sick	Hours				
X8	Unauthorized Overtime	No one uses overtime	Everyone takes overtime	Hours / PTO				

The potential causes were inserted into the X Tracker.

Form Revisions

CITY OF TYLER – TYLER TRANSIT

Switch Out Agreement Form

EFFECTIVE 8/21/2012: Please complete this form at least four (4) business days prior to the date of request, sign, and leave with your Supervisor. It is up to the employee requesting the switch to make sure that the shift is covered prior to going to the supervisor. The final determination will be made by the Supervisor. The final shall then be given to payroll for processing. Switch Out agreements are not guaranteed. Employees seeking a switch out agreement must verify approval has been granted prior to the date of the switch. Shifts being switched should occur during the same week and cannot create additional overtime.

Today's Date: ______________

Date of Switch Out: ______________

Employee Requesting Switch Out: ______________
Print Name

Shift: AM PM Saturday

Route: RL R1A BL GL YL Super

Employee Covering Shift: ______________
Print Name

Employees agreeing to the switch out must sign and date. By signing agreement all parties acknowledge that they understand.

A Natural Beauty

TYLER TRANSIT SYSTEM
PAYROLL EXCEPTION FORM

Employee: ______________

	Date	Time In	Time Out	Lunch Break	Out	In	Early Clock In	Late Clock Out	Forgot to Clock In	Forgot to Clock Out	Safety Meeting	Other *Please complete comment section*
Monday				☐			☐	☐	☐	☐	☐	☐
Tuesday				☐			☐	☐	☐	☐	☐	☐
Wednesday				☐			☐	☐	☐	☐	☐	☐
Thursday				☐			☐	☐	☐	☐	☐	☐
Friday				☐			☐	☐	☐	☐	☐	☐
Saturday				☐			☐	☐	☐	☐	☐	☐

(Reason for Exception: Early Clock In through Other)

	Comments *All "other" exceptions must have reason provided for exception*	Supervisor Approval *Supervisor on duty must approve all exceptions*
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		

Form filled out by: ______________ Date: ______________

Corrections made in payroll: By ______________ Date ______________

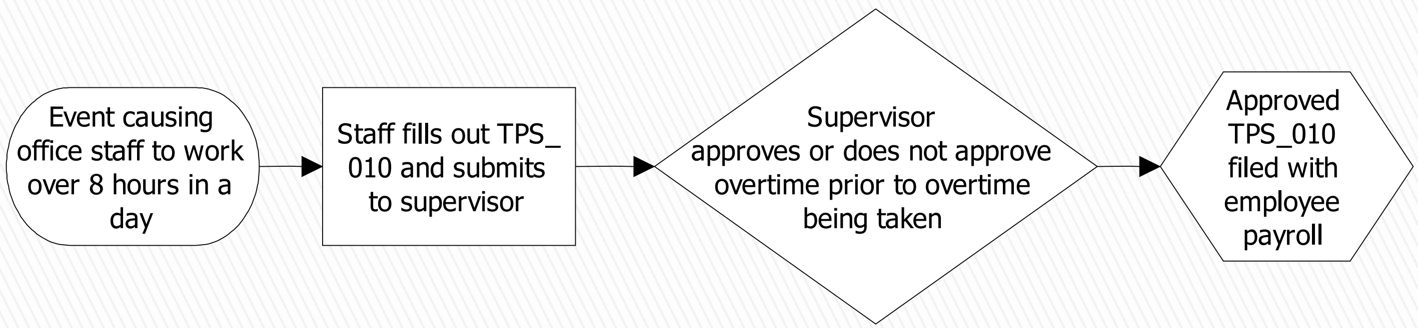
This form is to be used when an employee "accidentally" forgets to clock in or out, takes a break (lunch), is told to clock in early, stays after scheduled shift, or is called in to work other than what is on the schedule.

TPS_010 – Payroll Exception Form Revised 11/14/2011

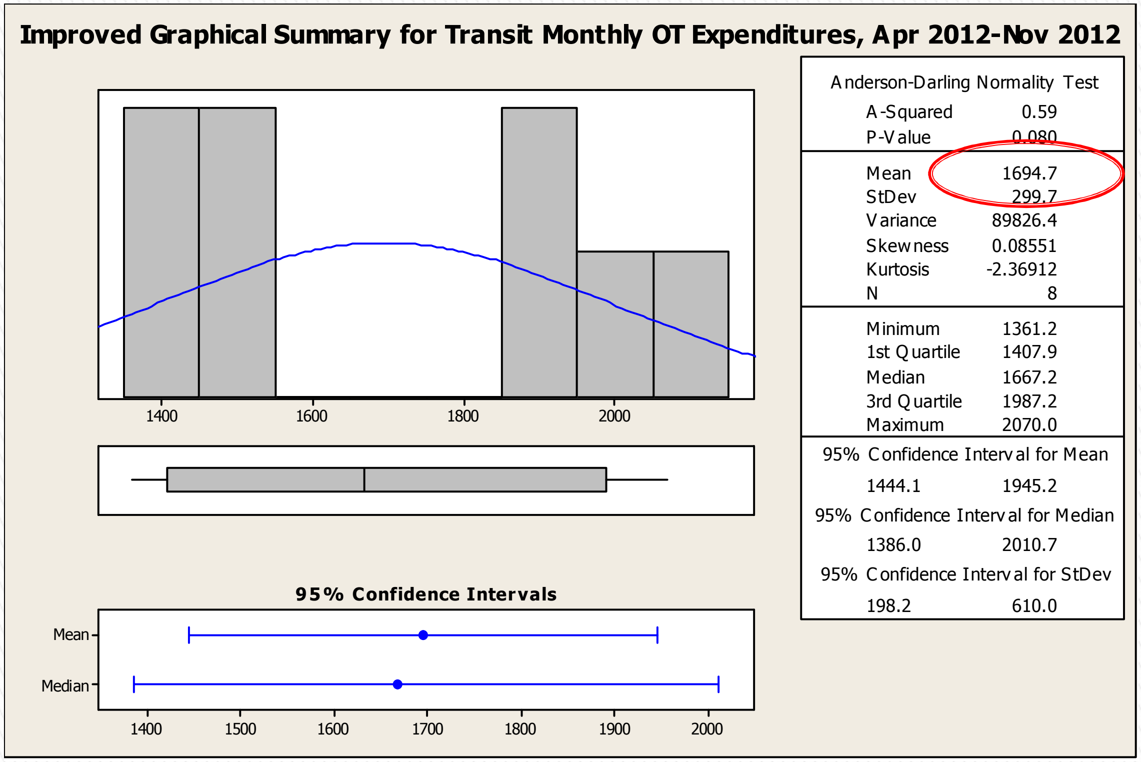
The original forms were reviewed and revisions were processed.

Process Map for Office Staff Overtime

Unscheduled Overtime for Office Staff



Improve Graphical Summary for Transit Monthly OT Expenditures, Apr-Nov 2012

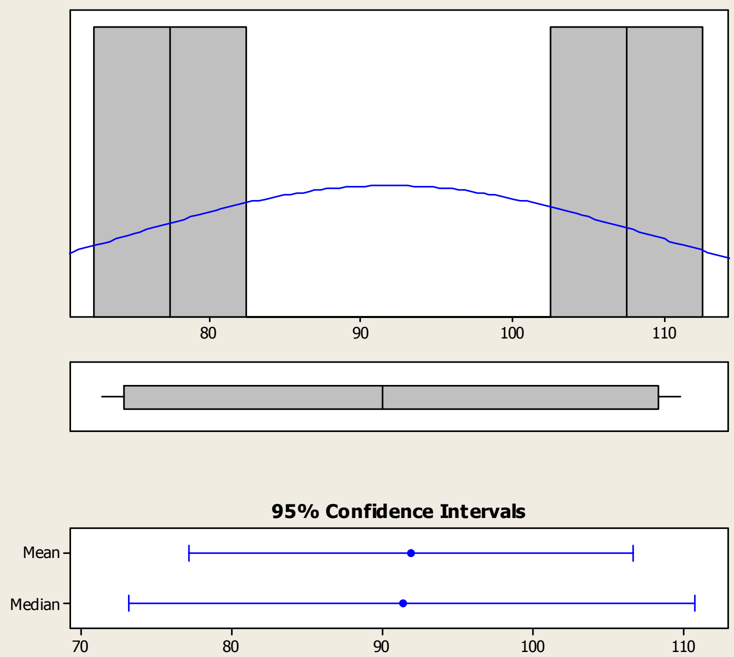


Based on the Improve Graphical Summary, the average Transit monthly overtime expenditures is $1,695 with a StDev. of $299.7.

Improve Phase

11. Improved State Process Performance

Improve Graphical Summary for Transit Monthly OT Hours, Apr-Nov 2012



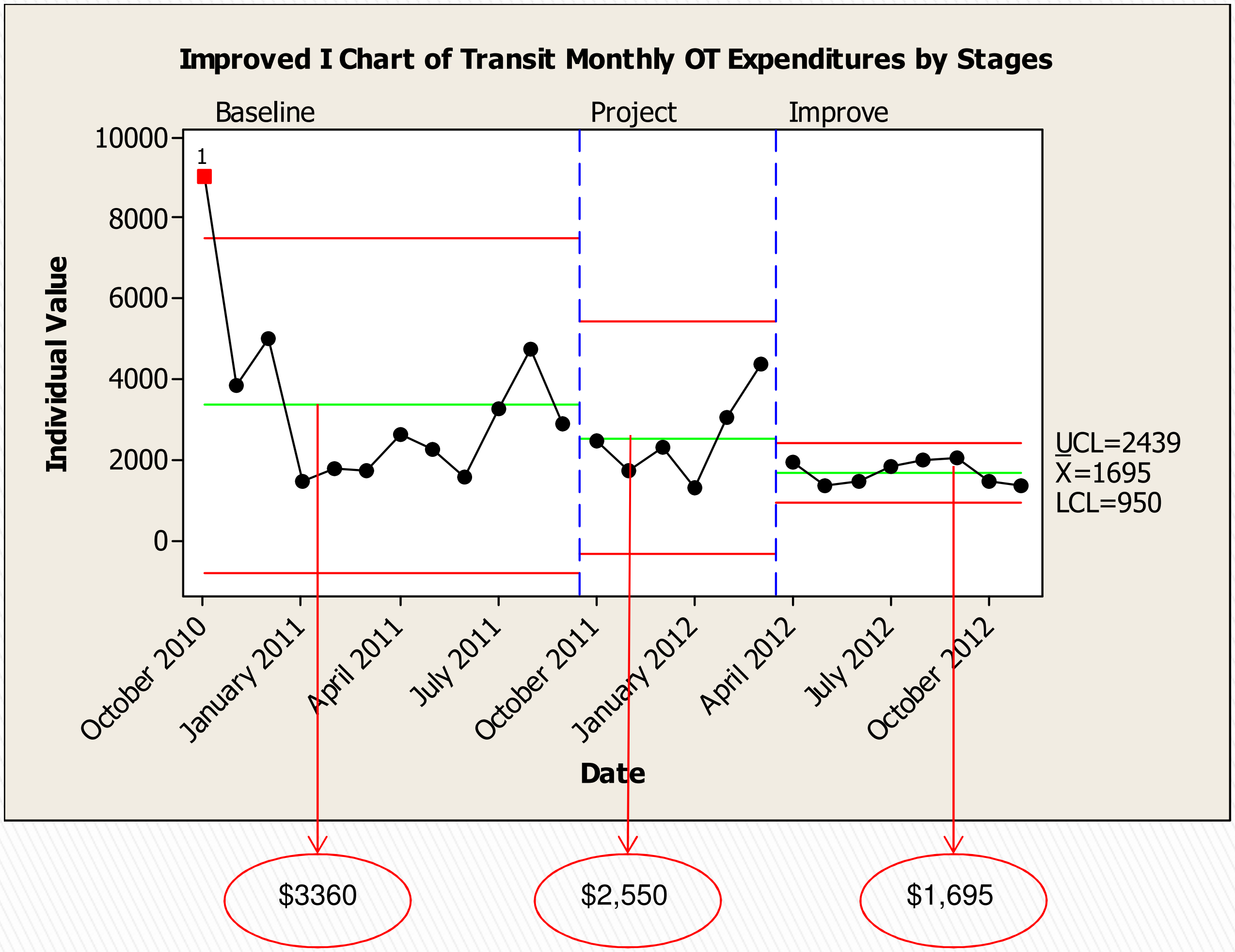
Anderson-Darling Normality Test	
A-Squared	0.79
P-Value	0.023
Mean	91.938
StDev	17.602
Variance	309.835
Skewness	0.00607
Kurtosis	-2.58931
N	8
Minimum	73.000
1st Quartile	74.500
Median	91.500
3rd Quartile	109.625
Maximum	111.000
95% Confidence Interval for Mean	
77.222	106.653
95% Confidence Interval for Median	
73.234	110.766
95% Confidence Interval for StDev	
11.638	35.825

Based on the Improve Graphical Summary, the average Transit monthly overtime hours is 91.94 with a StDev. of 17.60.

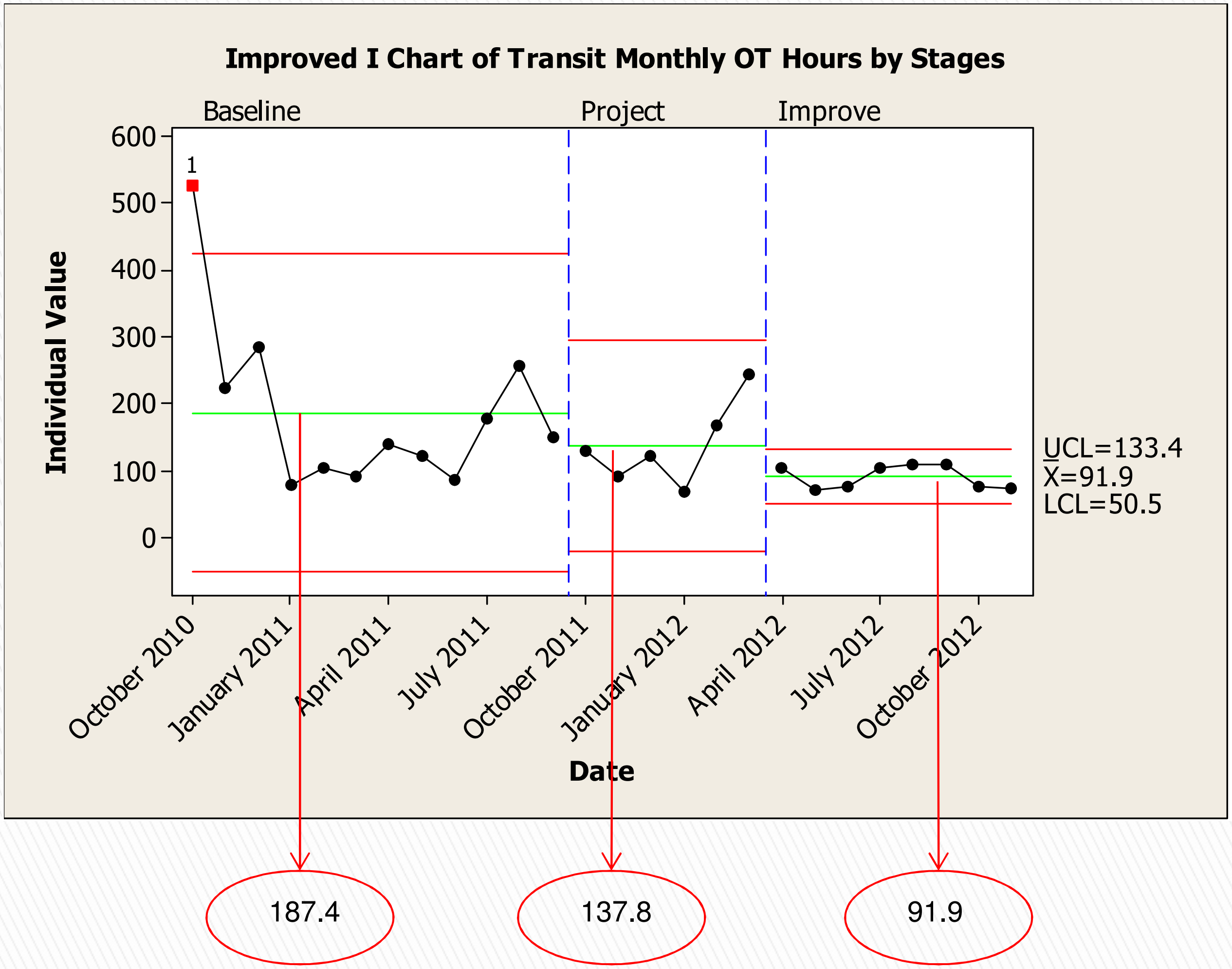
Improve Phase

11. Improved State Process Performance

Improved I Chart of Transit Monthly OT Expenditures by Stages



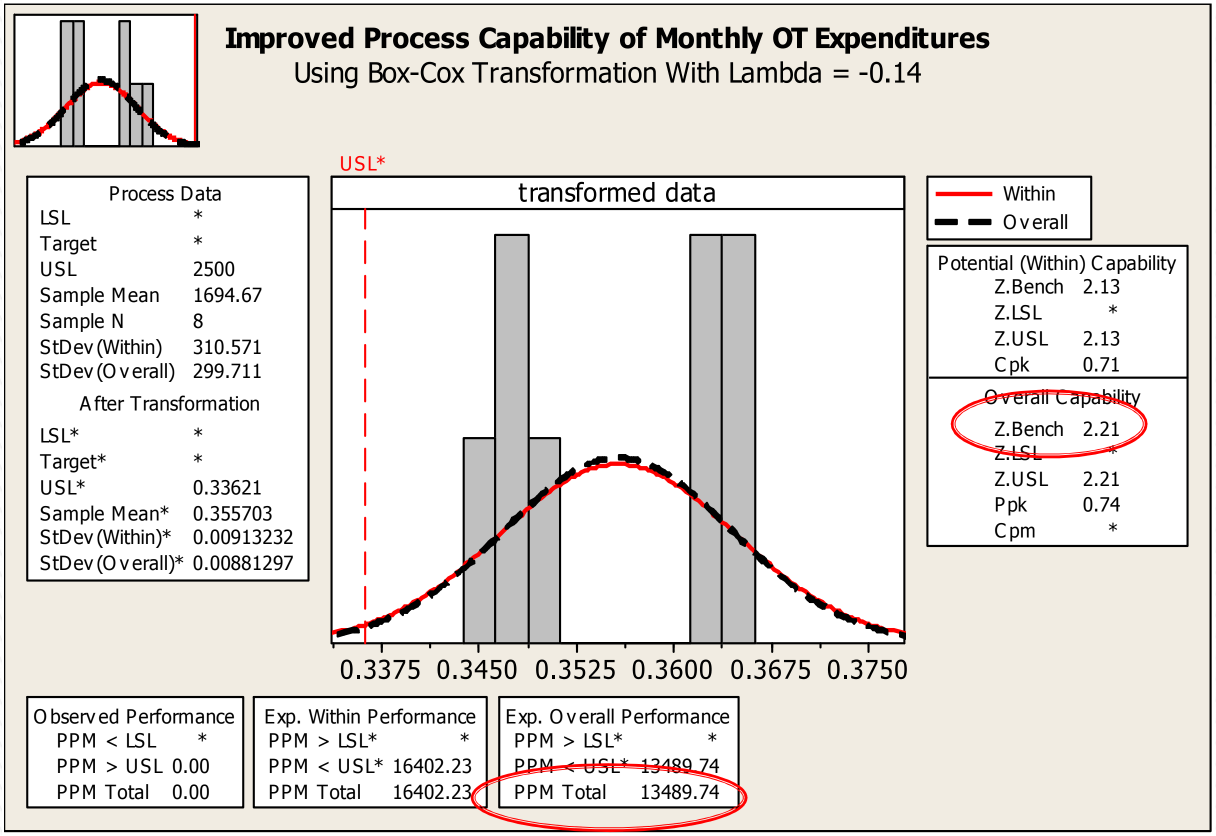
Improved I Chart of Transit Monthly OT Hours by Stages



Improve Phase

11. Improved State Process Performance

Improved Process Capability



The Improved Process Capability Analysis indicates that the process is performing at an increased Z. Bench level as well as a decreased DPMO.

Initial:
Z. Bench: -0.16
DPMO: 563,005

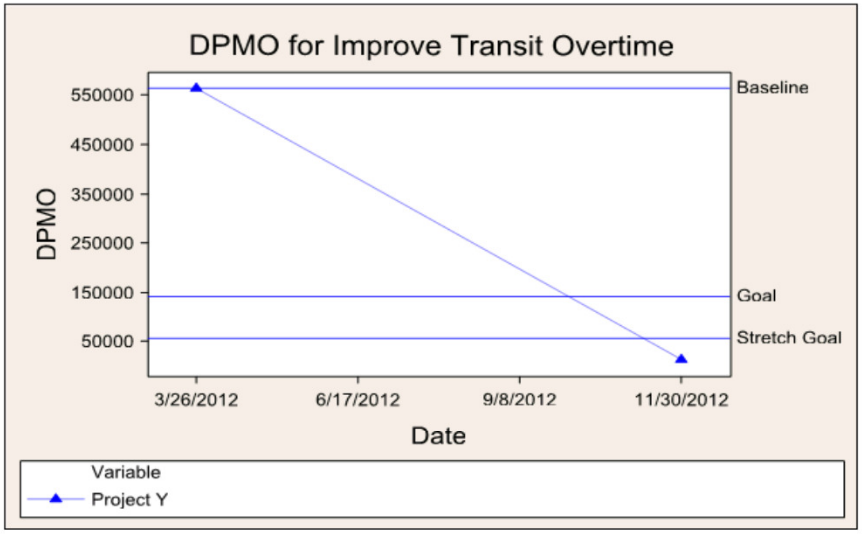
Improved:
Z. Bench: 2.21
DPMO: 13490

Improve Phase

11. Improved State Process Performance

Improve Y Metrics

Y Metrics



DPMO

	Date	Project Y
Baseline		563005
Goal		140751
Stretch Goal		56300
	3/26/2012	563005
	11/30/2012	13490

Procedural Controls

	Department	Transit
TYLER TRANSIT DEPARTMENT	Procedure	Overtime Approval

I. Purpose:
Provide a procedure for approving overtime for office staff.

II. Scope:
Process for approving overtime.

III. Definition:

IV. Procedure:

1. Employee identifies possible need to work over 40 hours during the week due to work load.
2. Employee fills out TPS_010 Payroll Exception Form prior to overtime.
   a. Employee includes day overtime will occur and notes why.
3. Supervisor must review and approve the overtime prior to the start of the overtime.
4. TPS_010 shall be filed with the employee's payroll information.

Author Name:	Authorization Name:	Authorization Date:
Tony Filippini	Tony Filippini	

Forms:
TPS_010 Payroll Exception Form

Item	Revision Reason	Date

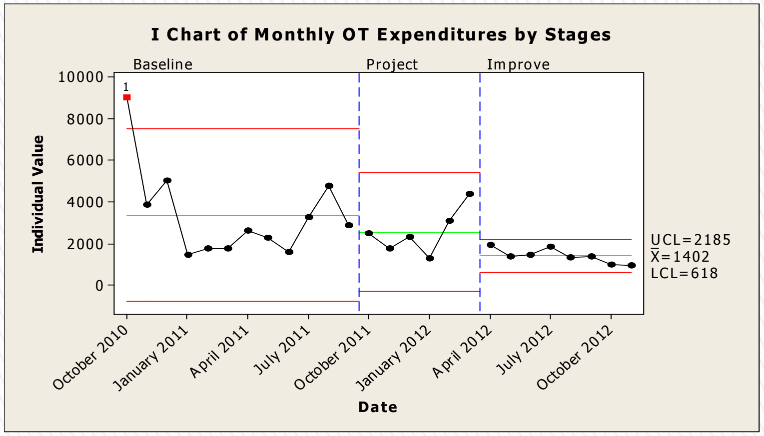
Procedures were established for the Transit Department overtime approval process. Employees will be trained on procedures and expectations.

Control Phase

12. Implement Process Controls

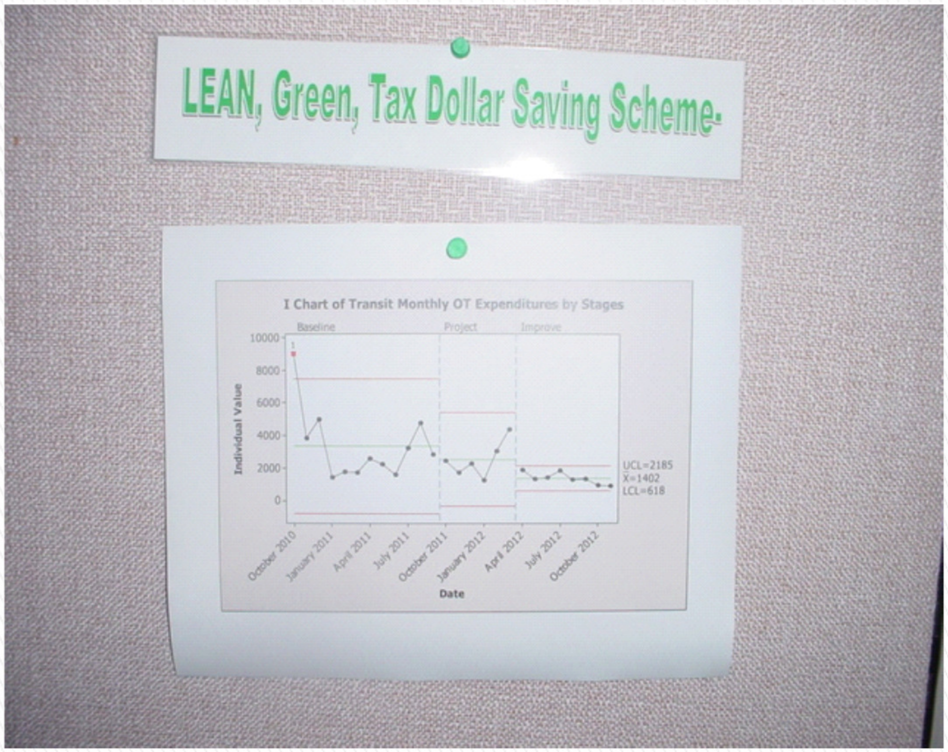
I Chart Instructions

I Chart Instruction Manual for Transit Productivity Board Monthly Graphs



Sherry Pettit
January 9, 2013

Visual Management Board



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

Control Phase

12. Implement Process Controls

Data and Cost Calculation Document

Initial OT Cost	$ 42,401	
Hard Dollar Savings	$ 15,012	Improve Transit Overtime
Total Savings	$ 15,012	Data and Cost Calculation
Time Saved (Hrs)	860	Jan 2013/Jan 2014

Data			Hard Dollar Calculations		Time Savings		
Month	Monthly OT Expenditures	Monthly OT Hours	Initial Monthly OT Average	Savings	Initial Monthly OT (Hrs)	New Time Monthly (Hrs)	Time Saved (Hrs)
April-12	$ 1,928.94	106.25	$ 3,359.60	$ 1,430.66	187.44	106.25	81.19
May-12	$ 1,361.19	73.00	$ 3,359.60	$ 1,998.41	187.44	73.00	114.44
Jun-12	$ 1,468.45	78.25	$ 3,359.60	$ 1,891.15	187.44	78.25	109.19
Jul-12	$ 1,864.13	104.75	$ 3,359.60	$ 1,495.47	187.44	104.75	82.69
Aug-12	$ 2,006.61	110.75	$ 3,359.60	$ 1,352.99	187.44	110.75	76.69
Sep-12	$ 2,070.04	111.00	$ 3,359.60	$ 1,289.56	187.44	111.00	76.44
Oct-12	$ 1,470.27	78.25	$ 3,359.60	$ 1,889.33	187.44	78.25	109.19
Nov-12	$ 1,387.69	73.25	$ 3,359.60	$ 1,971.91	187.44	73.25	114.19
Dec-12	$ 1,666.86	91.50	$ 3,359.60	$ 1,692.74	187.44	91.50	95.94
Jan-13			$ 3,359.60		187.44		
Feb-13			$ 3,359.60		187.44		
Mar-13			$ 3,359.60		187.44		
Apr-13			$ 3,359.60		187.44		
May-13			$ 3,359.60		187.44		
Jun-13			$ 3,359.60		187.44		
Jul-13			$ 3,359.60		187.44		
Aug-13			$ 3,359.60		187.44		
Sep-13			$ 3,359.60		187.44		
Oct-13			$ 3,359.60		187.44		
Nov-13			$ 3,359.60		187.44		
Dec-13			$ 3,359.60		187.44		
Jan-14			$ 3,359.60		187.44		

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

Improve Connecting Service for WBO

Project Summary:

The average monthly overtime expenditures for Transit for the 2010-11 fiscal year was $3,360 with a standard deviation of $2,156. This consequently resulted in a DPMO of 563,005. By going through the 12 step process, the average monthly overtime expenditures was reduced to $1,695 with a standard deviation of $299.7. The DPMO was reduced to 13,490. This is a 97.6% 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.