Commercial Alterations Permit Improvement Project

Lean Six Sigma Project

Bill Soller/Hugo Trux

Anthony Jones

CITY OF GAHANNA

Project Summary: Commercial Alterations Permit Process

Define → Measure → Analyze → Improve → Control

Summary

Mission: Reduce the Turnaround Time for approving Commercial Alterations Permits
Project Type: Lean 6 Sigma Project
% Complete: 100%
Start Date: 10/27/14
Completion Date: 4/1/2015

Project Progress:

1. Initial team meeting to review the project and the scope
2. Created the SIPOC and charter
3. Interviewed the associates in the process
4. Validated the current state process map
5. Performed lean training
6. Created the fishbone- issues/causes of long turn around time
7. Created a future state map/action items
8. Created baseline metrics and implemented standard work

Concerns and Other Issues:

1. Existing software doesn't allow for permit review timeframe analysis.
2. External software required for permit review timeframe analysis.
3. Staff not trained on external software.

Next Steps:

1. Implement action items, review effects of improvements.
2. Investigate new plan review software

Project Schedule

Week Ending Friday

Phase	Estimated Completion Date	Completion Date	Oct-14					Nov-14				Dec-14				Jan-15					Feb-15				Mar-15			
			10/3/14	10/10/14	10/17/14	10/24/14	10/31/14	11/7/14	11/14/14	11/21/14	11/28/14	12/5/14	12/12/14	12/19/14	12/26/14	1/2/15	1/9/15	1/16/15	1/23/15	1/30/15	2/6/15	2/13/15	2/20/15	2/27/15	3/6/15	3/13/15	3/20/15	3/27/15
Define	11/13/2014	11/12/2014				▓	▓	▓	▓																			
Measure	12/8/2014	12/4/2014							▓	▓	▓	▓																
Analyze	1/12/2015	12/4/2014											▓	▓	▓	▓	▓											
Improve	4/1/2015	2/19/2015																▓	▓	▓	▓	▓	▓					
Control	4/1/2015																							▓	▓	▓	▓	▓

Detailed Schedule

DMAIC		Details	Count	Target Completion	Completion Date
Define	**Step 1**	Create charter, business case, problem statement, team- define the scope (type of permit)	1	10/27/2014	10/27/2014
	Step 2	Create SIPOC and Current State Process Map	1	11/13/2014	11/12/2014
Measure	**Step 3**	Create Baseline metrics on Turnaround time and error rates with permits	1	11/24/2014	1/6/2015
	Step 4	Brainstorm Non-Value Add and Non-Value Add Necessary (i.e. regulatory) in the current state process- Review 8 Wastes- Walk the process	1	12/8/2014	12/4/2014
Analyze	**Step 5**	Brainstorm future state map- short term (Process and current tools) and long term improvement (Technology- i.e. new tools/software)	1	12/22/2014	12/4/2014
	Step 6	Perform pilot studies	1	1/12/2015	12/4/2014
Improve	**Step 7**	Create future state map- review lean principles, Poke Yoke Mistake proofing,	1	1/26/2015	12/4/2014
	Step 8	Create action plan for improvement	1	1/26/2015	12/4/2014
	Step 9	Implement Improvements- Document process in standard work	1	2/19/2015	2/19/2015
Control	**Step 10**	Determine new average turn around time and error rates		4/1/2015	
	Step 11	Determine benefits, cost savings, customer satisfaction		4/1/2015	
	Step 12	Implement process control plan to sustain the improvement- verify improvement		4/1/2015	

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Team:

Role	Name
Master Black Belt- Supplier Six Sigma, LLC	Bill Soller
Project Black Belt- Supplier Six Sigma, LLC	Hugo Trux
Champion- Development Department Director	Anthony Jones
Team Leader- Development Department Deputy Director	Michael Blackford
Finance Director	Jennifer Teal
Parks and Recreation Director	Tony Collins
Chief Building Inspector	Ken Fultz
Building Inspector	Mike Frey
Specialist	Fredena Williams
Senior Project Manager- Strathmore Development Company	Ron Calhoun

Problem Statement:

The turnaround time for approving the Commercial Alterations Permits for the contractors is too long and could discourage private investment in the community.

Who are the customers?

General Contractors, Businesses for the contractors

Business Case:

Long turnaround times create cash flow difficulties and undue delay for the businesses to earn revenue.

Mission:

Reduce the turnaround time for issuing permits by 30%

Project Scope:

Commercial Alteration Permits- only those permits which require plan reviews.

Operational Definition for commercial Alteration Permits:

Any "building" alteration to a commercial building – which may include alterations to businesses, warehouses, manufacturing buildings, schools, restaurants, etc. as the master permit.

Excluded would be multi-family – such as apartments, hotels, and condos which we classify under residential. Also excluded would be any permits for other trades such as HVAC, electrical, plumbing, fire alarm and sprinkler systems.

Operational Definitions:

Permit turn around time- measured from the day that the application is submitted to the day that the permit is approved and the contractor notified.

Phase approvals- conditional approval of a permit which allows the project to go forward while waiting on further information.
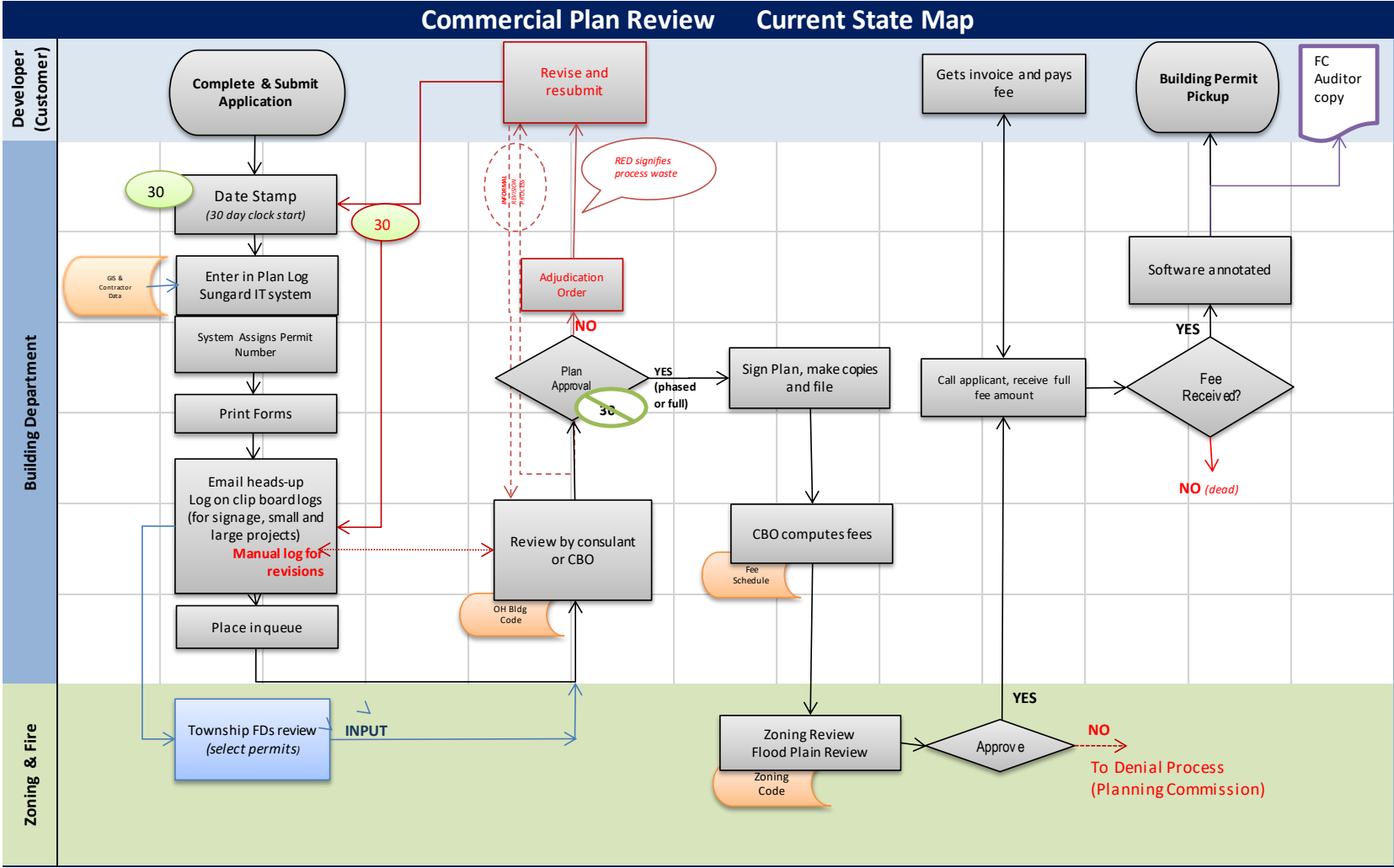
SIPOC

Commercial Plan Review   SIPOC

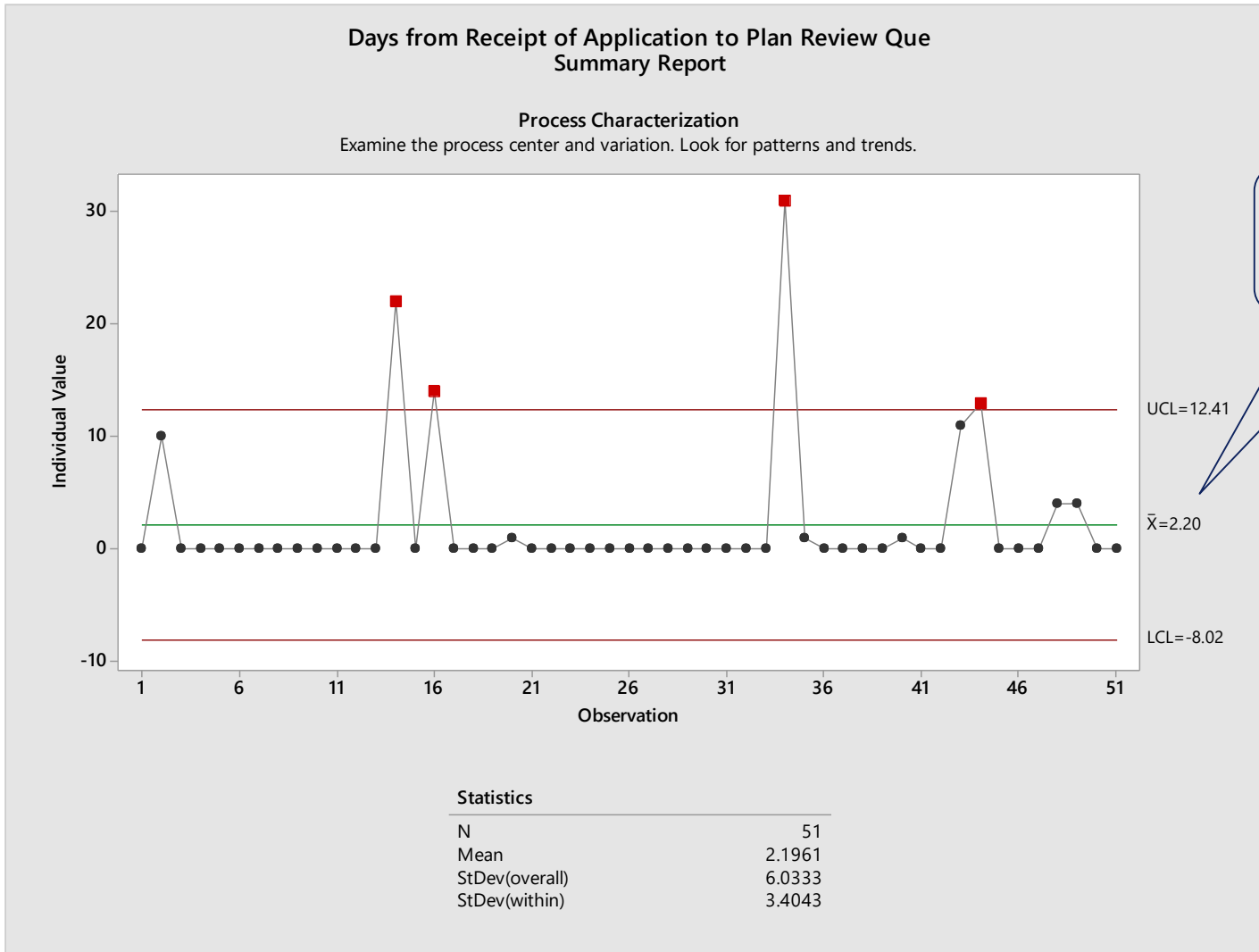| Supplier	Input	Process	Output	Customer
Developer (customer)	Application Form with Plans	**Complete application**	Completed Application with Plans	Building Dept Secty
Building Dept Secty	Completed Application with Plans	**Stamp, log, assign #**	Accepted Application in 1st queue	Chief Building Official
Chief Building Official	Ohio Building Code & Application	**Review in-house or assign to contractor**	Approved Plan (total, phased); or revision requested	Planning and Zoning Division staff
Planning and Zoning Division staff	Zoning Code, Copies of Stamped and Approved Plan	**Review and approve**	Approved Plan	Building Dept Secty
Building Dept Secty	Approved Plan	**Document, file, compute fee**	Copies of Stamped and Approved Plan	Planning and Zoning Division staff
Building Dept Secty	Approved Plan and Fee Invoice	**Call applicant to PU permit, and pay fee**	Invoice	Developer (customer)
Developer (customer)	Fee	**Pay fee**	Receive Permit	Developer (customer)

Current State Process Map 2/9/15

Days from Receipt of App to Plan Review Que

Days from Receipt of Application to Plan Review Que
Summary Report

Process Characterization
Examine the process center and variation. Look for patterns and trends.

UCL=12.41

X̄=2.20

LCL=-8.02

Avg is 2.2 days

Statistics

N	51
Mean	2.1961
StDev(overall)	6.0333
StDev(within)	3.4043

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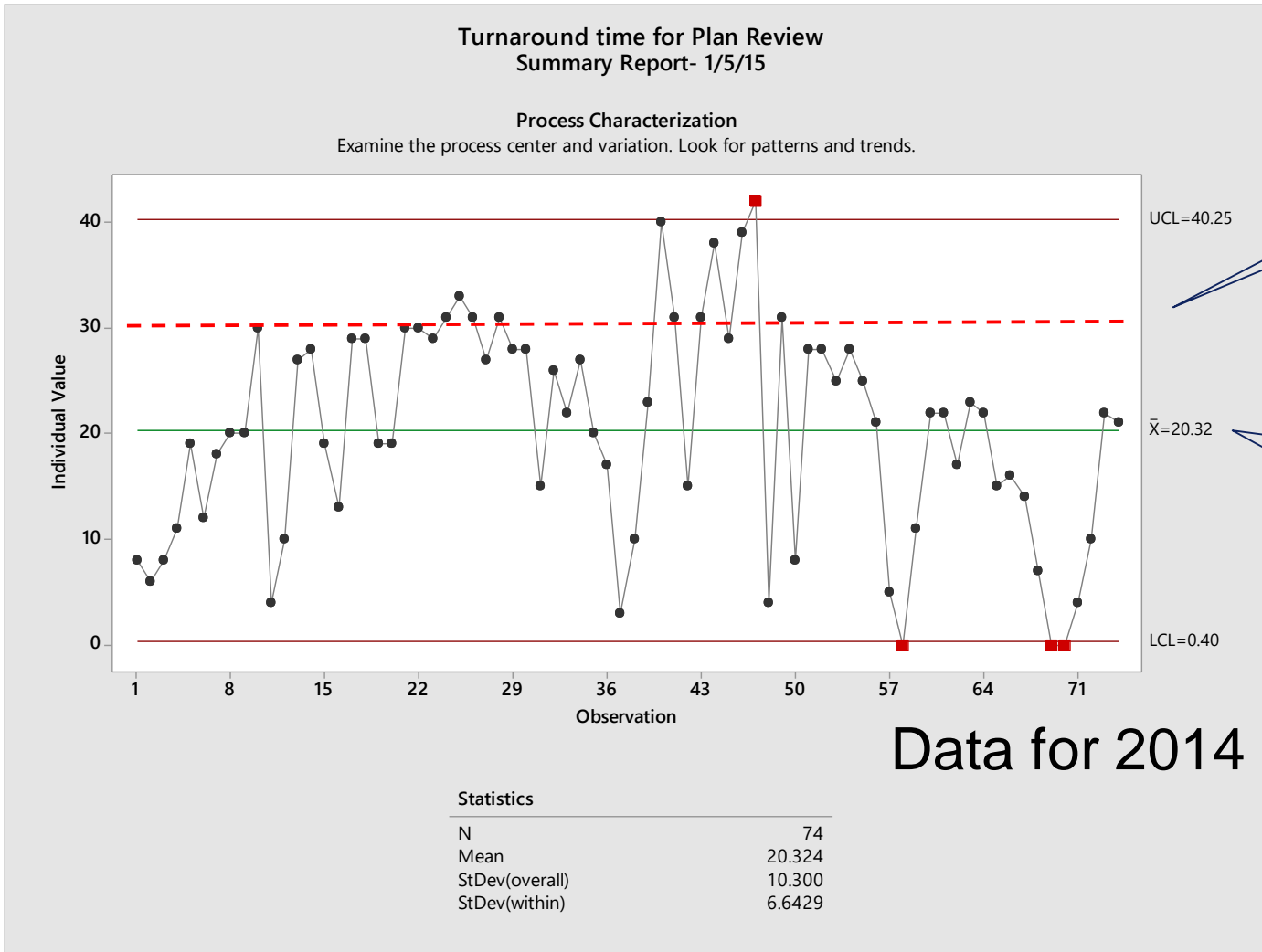
Baseline Measurement for Plan Review
Time from Receipt of Plan by CBO to Plan Disposition (Approved, Partial, Denied, etc)

Turnaround time for Plan Review
Summary Report- 1/5/15

Process Characterization
Examine the process center and variation. Look for patterns and trends.

State Requirement is 30 days

UCL=40.25

X̄=20.32

Avg is 20.32 days

LCL=0.40

Data for 2014

Statistics	
N	74
Mean	20.324
StDev(overall)	10.300
StDev(within)	6.6429

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Define | Measure | Analyze | Improve | Control

Baseline Measurement for Plan Review Turnaround time for First time Review

Plan Review Turn Around Time- First Time Review
2014 Data

Process Characterization
Examine the process center and variation. Look for patterns and trends.
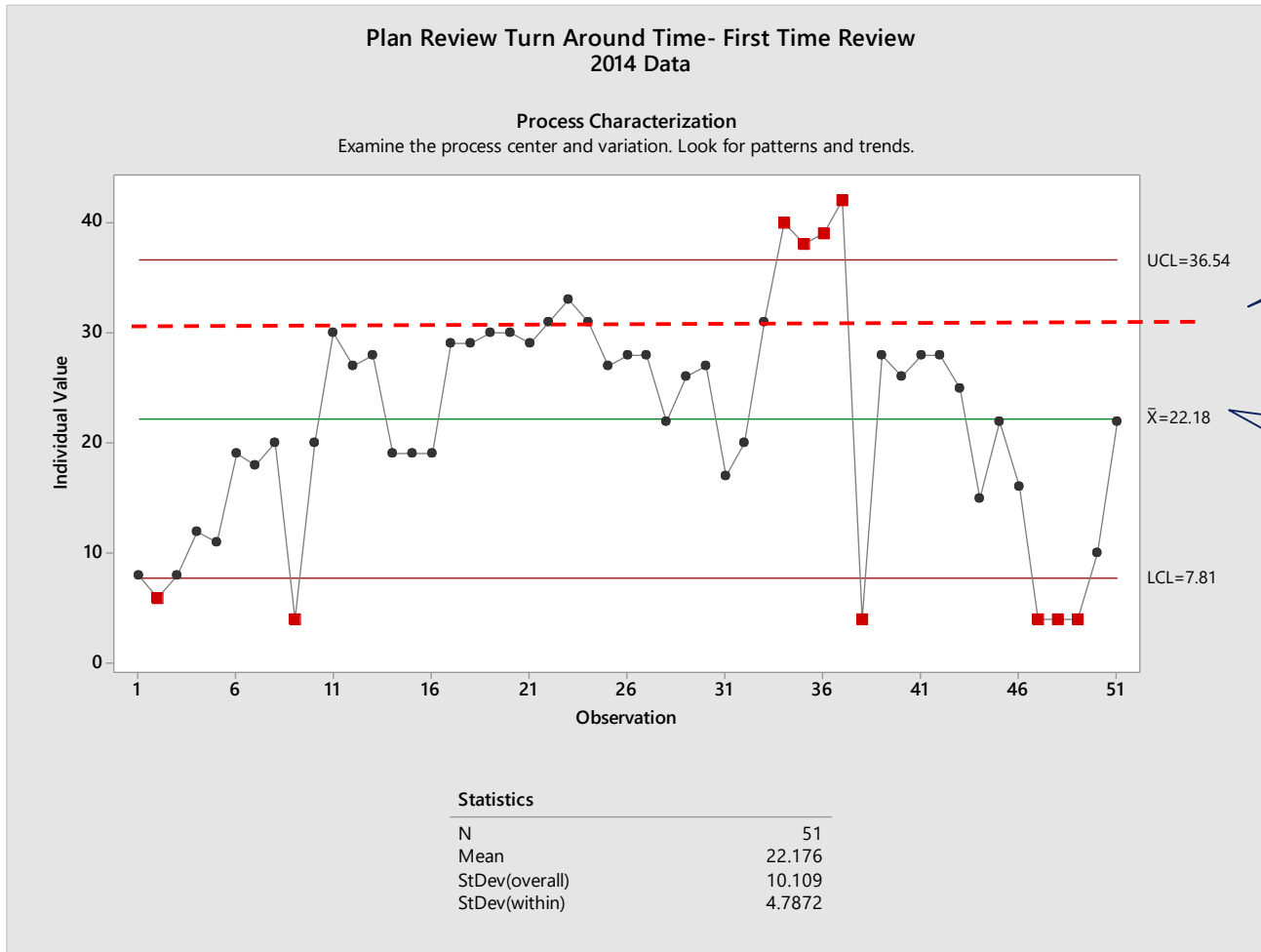
State Requirement is 30 days

Avg is 22.18 days

UCL=36.54
X̄=22.18
LCL=7.81

Statistics

N	51
Mean	22.176
StDev(overall)	10.109
StDev(within)	4.7872

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Completed Permit Reviews

Permits per Month Reviewed
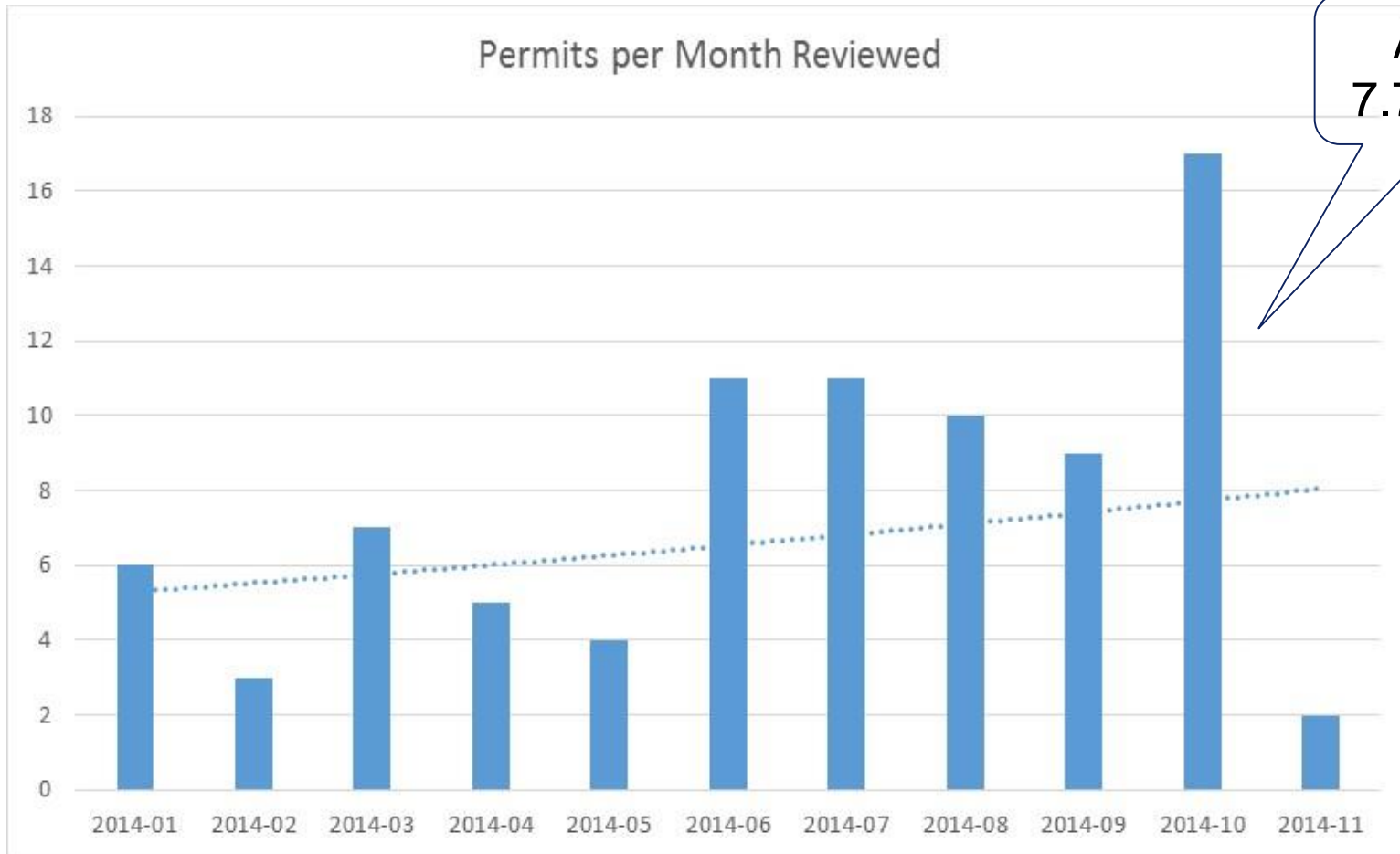
Avg is 7.7/Month

Number of Reviews per Permit

I Chart of Reviews pe
Summary Report

Process Characterization
Examine the process center and variation. Look for patterns and trends.

36% require more than one review

UCL=3.332

X̄=1.466

Avg is 1.46

LCL=-0.401

Statistics

N	58
Mean	1.4655
StDev(overall)	0.75430
StDev(within)	0.62212

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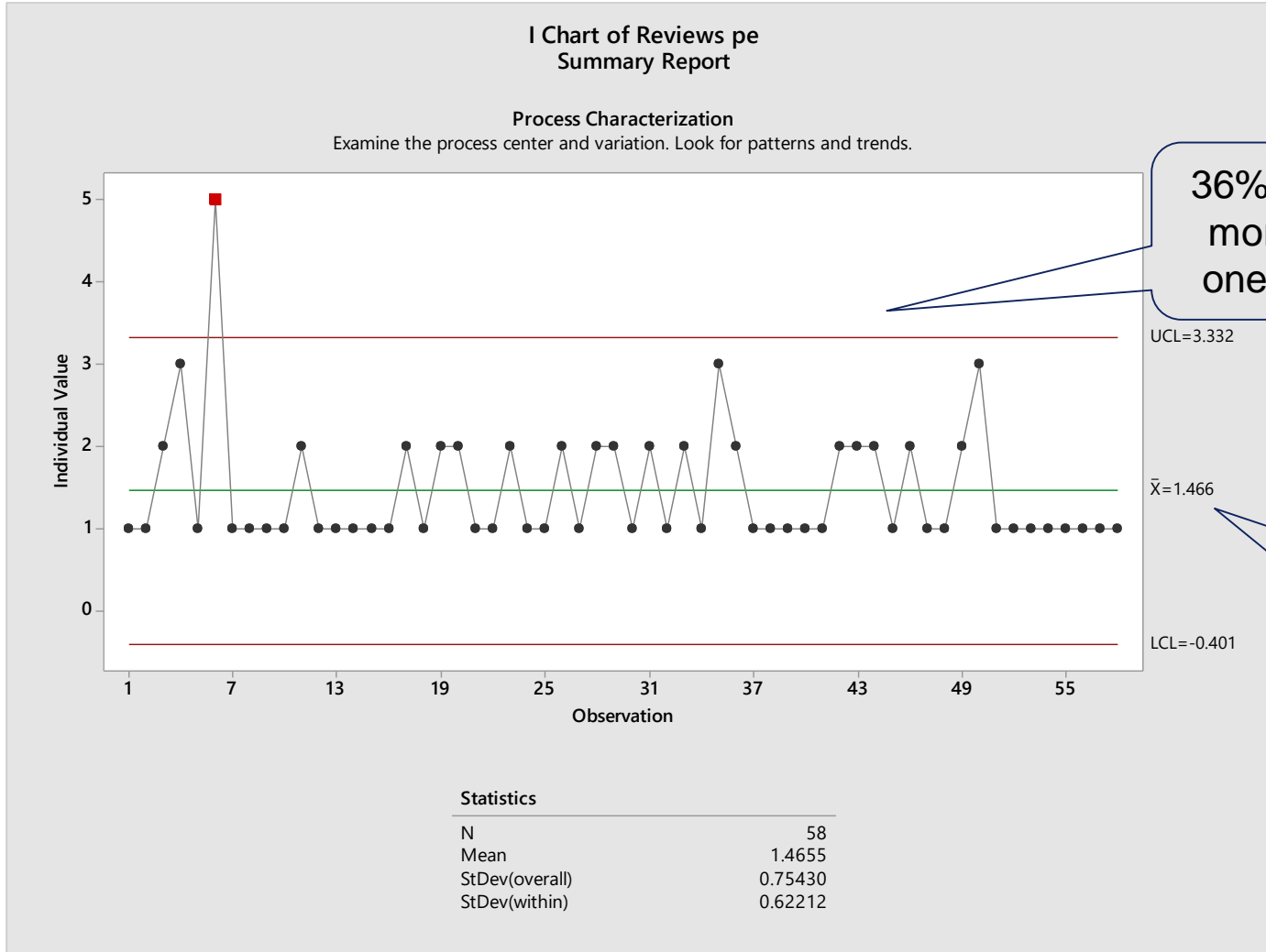
Days from Receipt of Application to Fees paid by Contractor

I Chart of Total TAT
Summary Report

Process Characterization
Examine the process center and variation. Look for patterns and trends.

Avg is 39.5 days

UCL=105.0

X̄=39.5

LCL=-25.9

Statistics

N	51
Mean	39.549
StDev(overall)	26.702
StDev(within)	21.826

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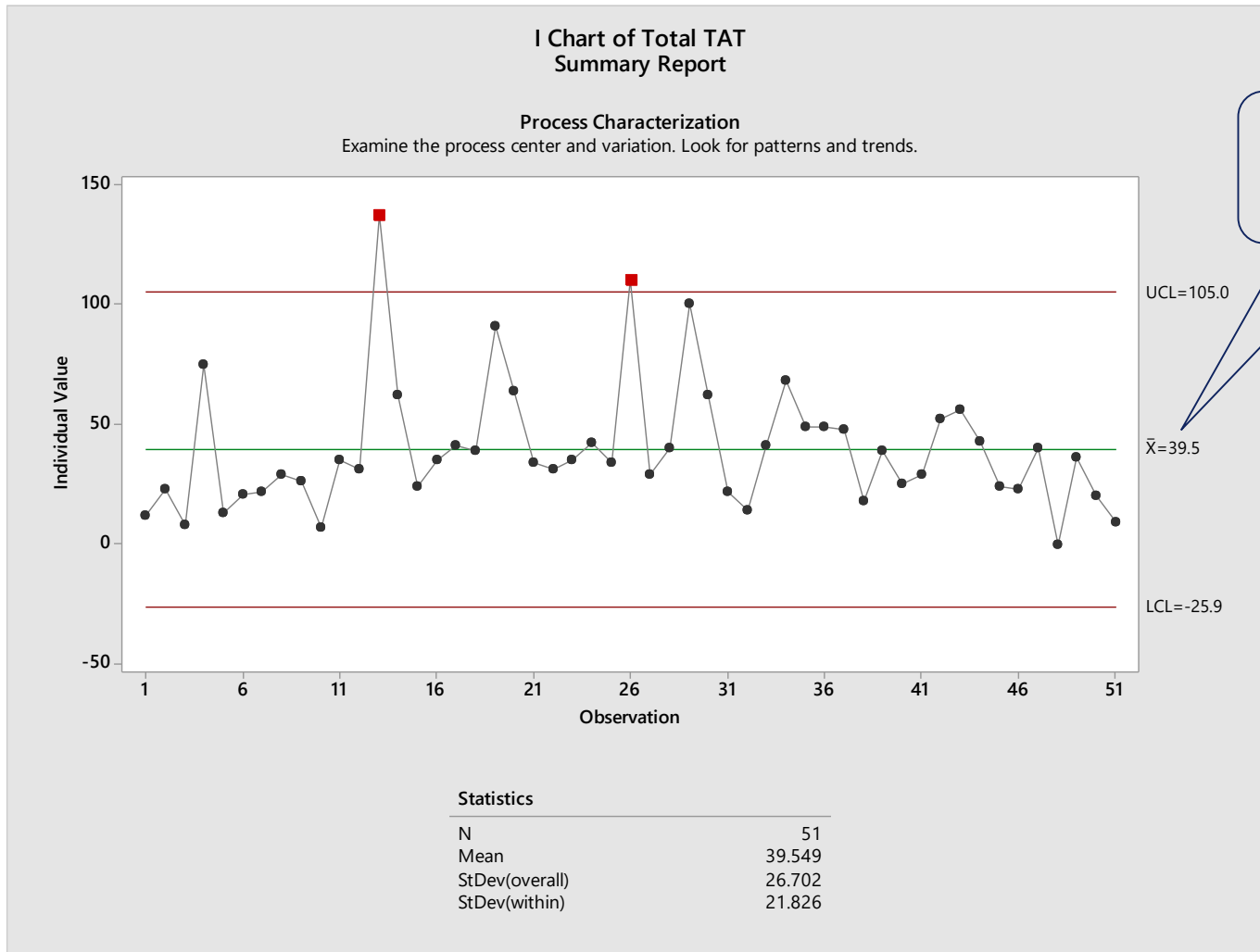
Fishbone:

Factors that affect Permit Cycle Time

Man

(H) Significant source of variation

- Outsourcing
- Availability of quality contractors to outsource
- Answering questions from contractors
- City manpower to fill in for vacation/sick leave
- Other Tasks need to be done

Machine

- Sunguard- hard to use, inefficient, no visual indicators, lack of training
- No Website

Environment

(H)
- Workspace constraints
- Lack of a computer in office

(H) • Fee structure- complexity
- Payment Process
- Computing fees by CBO
- Responding to emails

(H) • Zoning position in process
- Full Scope Description
- Finding information required on the Application
(H) • Errors on the app
- Completing fields on the app – Parcel ID
- All applications handled the same- small Apps not handled differently than large ones

Method

- Errors on App
- On line Form

Permit Cycle Time
Y-Response

(H) Significant source of variation

(Noise) Cannot control this source of variation

Materials

X- Factors

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Front Desk Time Study:

Determined that the time to address permit questions is about 1/3 of a full time person's time:

Calls RECEIVED AT THE FRONT DESK

DATES RECORED	WALK IN VISITS	STAFF PHONE CALLS	PHONE CALLS FOR KEN	MESSAGES RETRIEVED	FOLLOW UP CALLS	BUILDING QUESTIONS	ZONING QUESTIONS	WALK IN VISITS FOR KEN
1/12/2015	5	5	6	10	4	8	7	0
1/13/2015	7	8	3	15	7	8	5	0
1/14/2015	11	9	6	8	12	6	6	4
1/15/2015	6	9	5	9	7	12	6	0
1/16/2015	5	11	5	11	9	16	6	3
1/21/2015	6	14	6	8	7	7	6	0
6 day total	**40**	**56**	**31**	**61**	**46**	**57**	**36**	**7**
Average per day	**7**	**9**	**5**	**10**	**8**	**10**	**6**	**1**
Avg per year (51 weeks * 5)	**1700**	**2380**	**1318**	**2593**	**1955**	**2423**	**1530**	**298**
Estimated time in minutes	**2**	**2**	**1**	**1**	**3**	**3**	**3**	**15**
Avg min per year	**3400**	**4760**	**1317.5**	**2592.5**	**5865**	**7267.5**	**4590**	**4462.5**
Estimated Full Time Equivalent Time	**0.028**	**0.040**	**0.011**	**0.022**	**0.049**	**0.061**	**0.038**	**0.037**
(120K min=1 FTE)								
							TOTAL	**0.285**

Define → Measure → Analyze → Improve → Control

Improvement Actions:

Item	Priority	Cause	Responsible	Due Date	Action Plan	Status	Completion Date
5	1	Look at the front desk process- time to enter and process for the permits.	Fredena	1/22/2015	Most are transferred to the review que within one day. A few outliers.	Complete	1/8/2015
4	1	Zoning position in process	Fredena/Ken	2/5/2015	Reviewing to determine when zoning is required, performing parallel reviews, remove requirement.	May require the elevation/site plan copies for zoning parallel review, remove zoning from Alteration permits - Route site plans and elevation permits only	2/5/2015
6	1	Process issues	Anthony Jones	2/5/2015	Benchmark the Columbus process for the counter one day reviews	Meeting with Columbus scheduled for 1/26/15- meeting complete.	1/26/2015
7	1	Process issues	Mike/Ken/ Fredena	2/5/2015	Look at assigning a day/morning to review permits for contractors in person- generate a quick approval on these.	This process would not be feasible for Commercial Alterations. Columbus only does this for Residential permits	2/5/2015
8	1	Process issues	Mike/Ken/ Fredena	2/5/2015	Create a process to place Small/Large/Outsource/Revisions in different ques	Done	2/5/2015
2	1	Answering questions from contractors, Errors/Ommisions on the application, Completing fields on the app – Parcel ID	Fredena/Hugo	2/19/2015	Review feedback process- Identify tpes of questions and ways to minimize the calls through education, pro-active emails, website tutorials, videos, etc.	Determining Common questions, FAQ's, Training on the website, clean up contractor and owner names- make them unique and eliminate duplicates- use the sunguard contractor ID	2/19/2015
1	1	Outsourcing of plan review- When, How, Who	Ken	3/5/2015	Create criteria for outsourcing, collect data- metric, incentives- contract, review performance- Looking at other contractors, Mabye have external review done on site- need computer station	In Process- Looking at additional contractors- obtain the current certified list of contractors from the state- create checklist of requirements- add to procedure 10101	
3	1	Workspace constraints- Lack of a computer in office	Michael	3/5/2015	Obtained drafting table from Ron Calhoun and install computer in the room	Have table, need desk and IT to install Computer	
18	1	Confusion with contractors filling out the correct form.	Ken	2/19/2015	Create separate forms for Fire Alarm and Fire Suppression	Done, place on website	2/19/2015
19	1	Logs are used to track que	Fredena	2/19/2015	Look at using a log on the computer	Need to create the log in Excel	2/19/2015
9	1	Fee structure- complexity	Michael/Ken	4/1/2015	Update structure and obtain council approval	In process with Council- 1st round of approvals complete 2/1/15, 2nd round scheduled for Mid Year	

Control Plan: Standard Operating Procedures

1.0 Purpose

The purpose of this document is to describe the process of all commercial plan reviews submitted to the City of Gahanna, Department of Planning and Development, Building Division.

2.0 Scope

This procedure applies to all plans for any alterations or construction on commercial buildings, including office, industrial, retail and institutional buildings. This procedure does not apply to projects on residential properties or multi-family properties with less than four (4) units.

3.0 Reference Documents

(Applicable Ohio State laws and Gahanna City ordinances, and administrative policies.)

4.0 Quality Records required by this procedure

Record	Owner	Storage Location	Length of Storage	Index Method	Disposition
Application form	Building Specialist	In queue until finished, then permanent files	Life of structure	Permit Number	Records Disposal List, then Ohio State Historical Society
Adjudication order	Chief Building Official (CBO)	Permit file Copy in Sungard:	Life of structure	Permit Number	Records Disposal List, then Ohio State Historical Society
Certificate	CBO	Office file	Life of structure	Permit Number	Records Disposal List, then Ohio State Historical Society
Signed, approved plan	CBO	Office file	Life of structure	Permit Number	Records Disposal List, then Ohio State Historical Society
Copy of building permit	CBO	Office file	Life of structure	Permit Number	Records Disposal List, then Ohio State Historical Society
Sungard computer records	CBO	Cloud based	Per city Data policies and IT process	Permit Number	Records Disposal List, then Ohio State Historical Society

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Control Plan: Standard Operating Procedures

5.0 Process map
(Due to size, attached as appendix)

6.0 Procedure

Review Phase

6.1 Upon receipt of the permit application and building plans from applicant, date stamp the plans with "Received" and the 30 day review period begins.

6.2 Enter the plan and application data into the IT system (Sungard)
   6.2.1 Verify proper applicant name as per file record (use unique number)
   6.2.2 System assigns permit number

6.3 Print (unsigned) permit forms in appropriate copies, and annotate with a stamp, a coding dot or Sharpie for different types and destinations.

Communication-Forwarding Phase

6.4 Log into Excel status log and annotate proper queue
   6.4.1 Signage & accessory structures (*e.g.* sheds, awnings)
   6.4.2 Small projects (generally based on amount of paperwork submitted (8.5" x 11" versus blueprint rolls, and these generally relate to expected review workload time))
   6.4.3 Large projects (defined by receiving blueprint rolls in application)
   6.4.4 Revisions and resubmittals

6.5 Email heads-up notice

6.6 Physically place application with permit cover sheet into appropriate queues

6.7 Deliver or make available copies for appropriate township fire departments (as required)

6.8 Deliver or make available copy to Zoning and Flood Plain review as applicable (They have their own review criteria and process flow.)
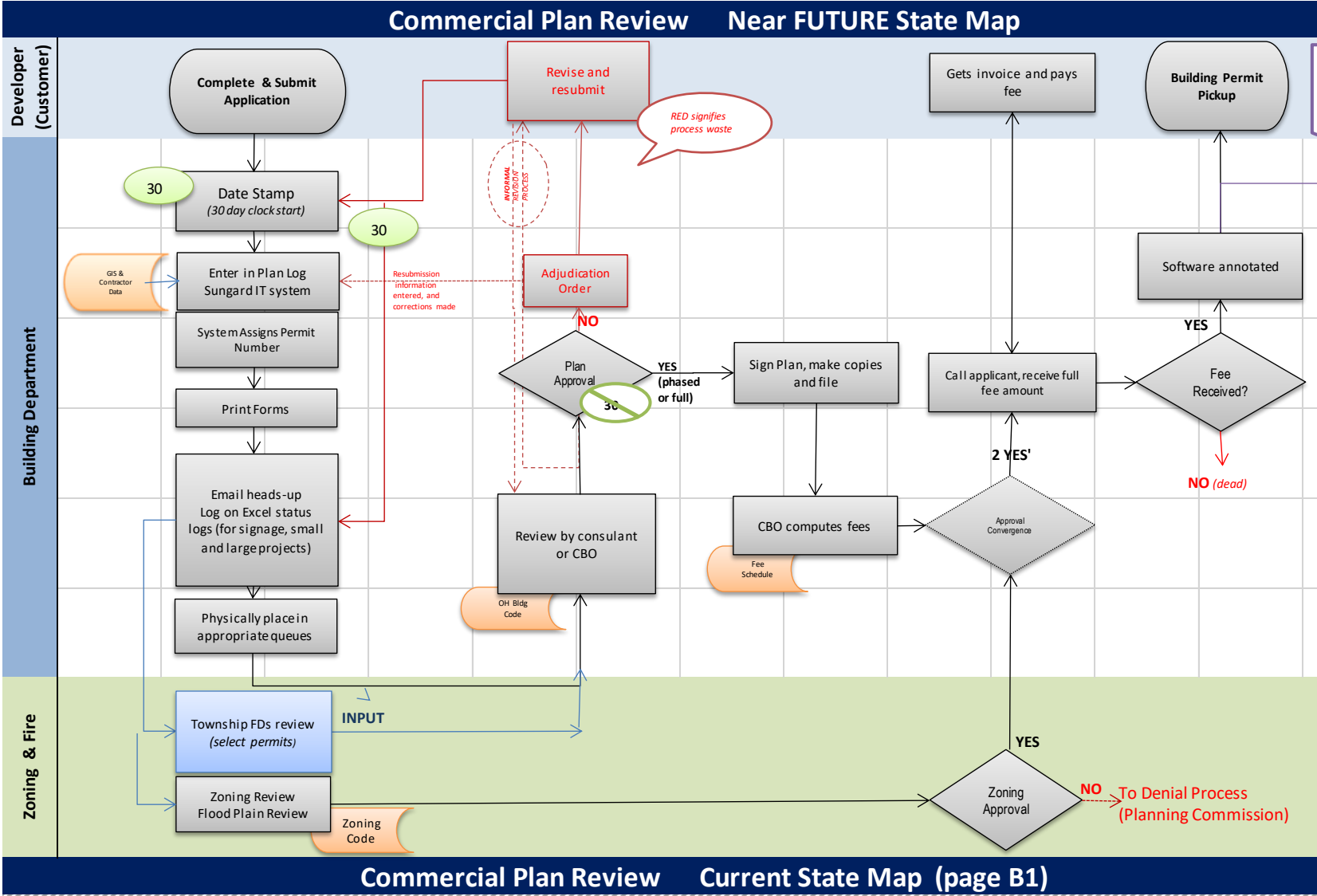
Review Phase

6.9 CBO looks at application and
   6.9.1 Checks for congruence with plan and application, then
   6.9.2 Assigns application to consultants or internal staff as per internal criteria
   (e.g. complexity/lack of complexity, overall assessment of workload)

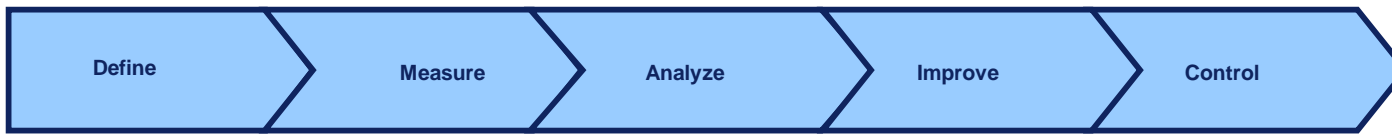6.10 Plans reviewed as per Ohio Building Code and Gahanna ordinances

Plans Approved

6.11 Sign plan approval and date

6.12 30 day clock stops

6.13 CBO creates 6 copies of signed approval
   6.13.1 Attach original + 1 copy of plan Approval to Job Site copy of plans
   6.13.2 Attach copies to file copy of plans, electrical inspector copy, and fire department copy
   6.13.3 Insert copy into Project file
   6.13.4 Send copy to customer (designer of plan or hold for pick-up of the plan)
   6.14 Update Sungard

6.15 Compute fees and print a copy of the fee and add to File (which file??)

6.16 Stamp plan "approved"

6.17 Verify Zoning decision is complete and is approved

6.18 Notify applicant by phone or mail of approved application, and fee amount, and next step (which is to bring payment)

6.19 Building Specialist receives fee

6.20 Update Sungard software with status

Control Plan: Process Map

Commercial Plan Review   Near FUTURE State Map

Commercial Plan Review   Current State Map (page B1)

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Define → Measure → Analyze → Improve → Control

Project Results:

1) Identified Existing Permit Approval Timeframe
   - 20.32 days per review

2) Updated Operating Procedures to improve efficiency of Commercial Plan Review
   - New Process Map and Control Measures

3) Established framework to update software

4) New Process Map and Updated Software has resulted in a 30% reduction in permit approval timeframe
   - 14 days per review