



SAN DIEGO COMMUNITY COLLEGE DISTRICT

FACILITIES SERVICES LEAN ENTERPRISE JOURNEY



SDCCD Facilities Services is committed to providing the best learning environment through teamwork and continuous improvement in all that we do.



San Diego Community College District (SDCCD)

About the District



- **Second Largest Community College District in California**
- **Sixth Largest Community College District in the Nation**
- **Four Regions**
 - Consisting of 3 Main Campuses (San Diego City College, Mesa College, and Miramar College), and Six Continuing Education Campuses
- **Centralized Maintenance & Operations**



San Diego Community College District (SDCCD)

About the District



Current Square Footage

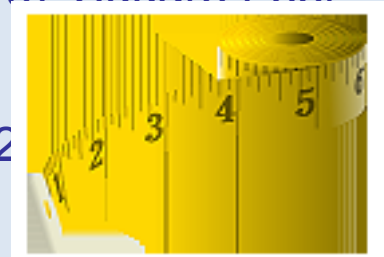
(as of 5/1/13)

Buildings = 2,534,493 Gross Square Feet (GSF)

Parking Structures = 1,093,357 GSF

Cleanable Square = 2,253,157 Square Feet

Acres of Landscape = 130.2



Projected Building GSF = 3,679,451



Four Core Values



SAFETY

Our employees are too important for injuries to be acceptable. We believe all accidents are preventable.

INTEGRITY

Through honesty and consistency of character, we will constantly deliver quality performance in a timely and cost effective manner.

TEAMWORK

By working together each person contributes different skills and opinions to achieve our common goals in the most cost effective manner.

TRAINING

Our employees will be continuously trained to ensure that they have the skills and tools they need to be successful in all that they do.

Benchmarking and Goals

Custodial

- Beginning cleanable Square Feet (SF) - 13,900 per custodian
- Increase to 25,000 SF by FY 2013
- Currently (as of 1/16/13) - 27,302 SF per, “All In Head Count,”
Custodial (All in Head Count includes Custodial Supervisors I & II, Custodial Crew Leads, Day Porters, and those performing Stock Clerk duties)

Maintenance

- Beginning cost per SF - \$3.93
- Reduce to \$2.25 per SF by FY 2013
- Currently (APPA FPI Survey Dec 2012)-\$1.73

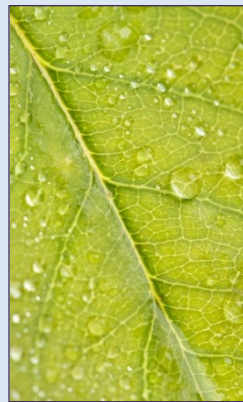
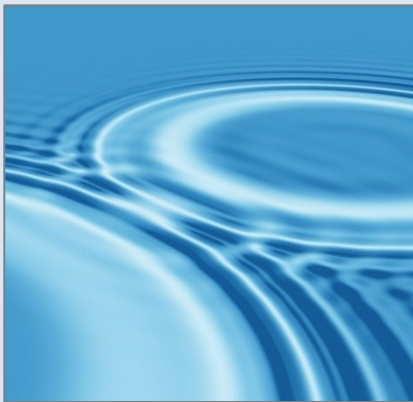




Facilities Lean Enterprise Processes

Our Challenge

- Current economic conditions continue to impact SDCCD
- SDCCD Facilities Services must reduce forecasted expenditures for fiscal years 2009-2016
- While current State revenue is down, SDCCD Facilities Services must plan for doubling the service base without doubling the budget





Potential Cumulative Savings

	FY								FY 09/10	
	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Ave Salary	
Custodial										
Custodial Forecast H/C	104	113	132	149	162	173	189	191	\$ 58,643	
Cust Forecast Salary	\$ 6,098,855	\$ 6,650,098	\$ 7,769,004	\$ 8,731,333	\$ 9,504,832	\$ 10,169,255	\$ 11,098,158	\$ 11,227,172		
Custodial Adj HC	77	82	88	100	122	130	140	147	45	
Custodial Adj Budget	\$ 4,497,197	\$ 4,782,522	\$ 5,187,077	\$ 5,878,320	\$ 7,150,669	\$ 7,622,296	\$ 8,208,826	\$ 8,597,611		
Delta	\$ 1,601,658	\$ 1,867,576	\$ 2,581,927	\$ 2,853,013	\$ 2,354,162	\$ 2,546,959	\$ 2,889,331	\$ 2,629,561	\$ 19,324,187	
				Hold HC Flat until projection exceeds current HC						\$ 13,273,027
Maintenance										
Maint Forecast H/C	45	50	57	64	69	73	79	80	\$ 76,457	
Maint Forecast Salary	\$ 3,440,546	\$ 3,793,010	\$ 4,344,262	\$ 4,857,286	\$ 5,245,685	\$ 5,579,036	\$ 6,044,656	\$ 6,108,880		
Maintenance Adj H/C	29	32	37	41	45	47	51	52	28	
Maint Adj Salary	\$ 2,236,355	\$ 2,465,457	\$ 2,823,770	\$ 3,157,236	\$ 3,409,695	\$ 3,626,373	\$ 3,929,027	\$ 3,970,772		
Delta	\$ 1,204,191	\$ 1,327,554	\$ 1,520,492	\$ 1,700,050	\$ 1,835,990	\$ 1,952,663	\$ 2,115,630	\$ 2,138,108	\$ 13,794,676	
				Hold HC Flat until projection exceeds current HC						\$ 12,590,485

\$25,863,512 Opportunity

Lean Processes

Agenda



- **Lean Custodial Practices**

- Cleaning Standards
- Identify services/ how we are spending our time
- Custodial Practices/Team Cleaning
- Management By Walking Around (MBWA)

- **Lean Work Order Processes**

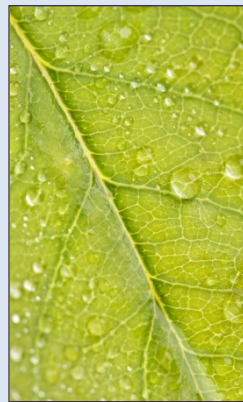
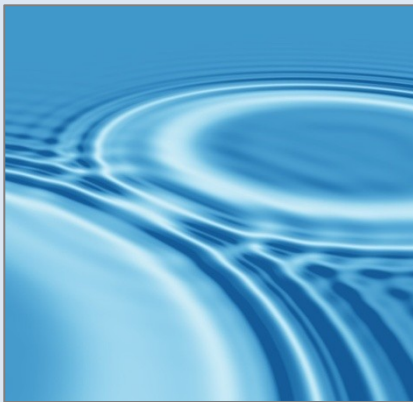
- Centralized Work Order Center (Call Center)
- Computerized Maintenance Management System (CMMS)
- Service Level Agreement (SLA)
- Work Flow Process Mapping
- Material/Supply
- Planner/Schedulers

- **Electronic Work Order Delivery**





Lean Custodial Practices



Lean Custodial Practices

SDCCD Cleaning Standards



The objective was to determine the current cleaning level and to determine an acceptable level of cleaning given the resources available.





SDCCD Cleaning Standards

SDCCD defined the acceptable level of cleaning as a Level 2 by APPA standards. At the start of the project they were consistently at a level 3 – 4. This underlined the need to improve the level of service.

Levels of Cleanliness

Level 1 - Orderly Spotlessness

Level 1 establishes cleaning at the highest level. It was developed for the corporate suite, the donated building, or the historical focal point. This is show-quality cleaning for that prime facility.

Level 2 - Ordinary Tidiness

Level 2 is the expected standard of cleaning for all SDCCD facilities. This is the level at which cleaning should be maintained.

Level 3 - Casual Inattention

This level is below Facilities Services expectations. It is not at an acceptable level of cleanliness.

Level 4 - Moderate Dinginess

Areas are unacceptable. People beginning to accept an environment lacking normal cleanliness. In fact, the facility begins to constantly look like it requires a good "spring cleaning".

Level 5 - Unkempt Neglect

The facility is always dirty, with cleaning accomplished at an unacceptable level.



Based on APPA Published Standards

Level 2 - Ordinary Tidiness

Level 2 is the expected standard of cleaning for all SDCCD facilities. This is the level at which cleaning should be maintained.

- Floors shine and/or are bright and clean. Carpets are clean and vacuumed. Base moldings are clean. There is no buildup in corners or along walls, but there can be up to two days of stains or streaks.
- External walk ways will clean; free of trash, spills and dirt.
- All vertical and horizontal surfaces are clean, but marks, dust, smudges, and fingerprints could be noticeable with close observation.
- Vents will be clean and dust free.
- Washroom and shower tile and fixtures are bright / clean and are odor-free. Supplies are well stocked.
- Chalk boards / white boards and erasers are cleaned. Chalk is stocked for rooms with chalk boards.
- Lamps all work and all fixtures are clean.
- Trash containers and pencil sharpeners are empty, clean, and odor-free.

Lean Custodial Enterprises Custodial Practices



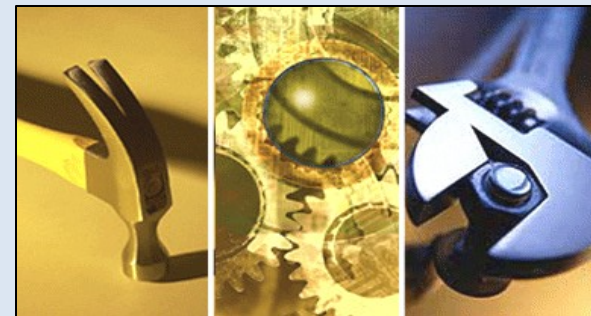
- Identify our core mission
- Identify how we were spending time
- Load Leveling Throughout the District
- Increase cleaning square footage
- Cleaning Standards
- MBWA
- Pride Program





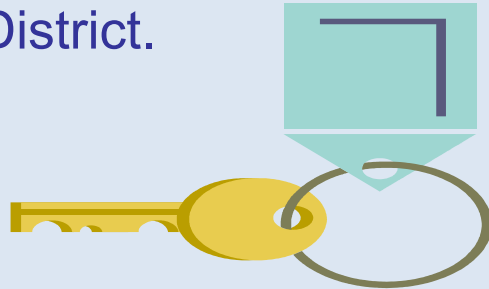
• Findings

- Opening doors
- Stock room duties
- Personal assistants
- Event set ups
- Temperature checks
- Movers
- Cleaning



Opening Doors/Acting as Stock Clerks

- In the beginning SDCCD Facilities Services spent 17 custodial man days per month on average opening doors for faculty and staff members who forgot their keys or alarm codes. As a result, we drafted a door opening policy, it was accepted by the District.



- Currently just 4.1 hours per month on average are spent opening doors

- Shifting duties not related to the core mission of the custodial staff (cleaning), in some cases, required reviewing of classification descriptions, reviewing SDCCD procedures, or rewriting of SDCCD procedures

Load Leveling



Distribution of custodial staff based on square footage:

The space is summed from room up to building and then up to campus.

- This leads to a qualitative method to determine the proper HC requirements
- Enables the supervisor to develop project teams to tackle larger projects that require more man power and are outside the daily cleaning requirements

Campus	Building	Sum of ASF	Sum of Required Daily		Total HC
			HC	Sum of Project HC	
San Diego Mesa College	ADMINISTRATION (A100)	10,206	0.46	0.08	0.54
	HOME ECON/NURSE PROG (B1)	8,219	0.43	0.05	0.49
	MUSIC-DRAMA (C100)	22,383	1.07	0.08	1.15
	MUSIC ANNEX (C200)	7,686	0.29	0.04	0.32
	DRAMA STORAGE (C300)	1,166	0.00	0.00	0.00
	FINE ARTS (D100)	8,619	0.44	0.05	0.49
	FINE ART ANNEX (D200)	7,577	0.32	0.03	0.35
	ART KILN ANNEX (D300)	815	0.00	0.00	0.00
	LRC (E1000)	76,189	2.57	0.31	2.88
	BUS EDUC MEDICAL DEN (F1)	16,558	0.83	0.10	0.93
	BEHAV SCIENCE (F200)	24,512	1.04	0.14	1.19
	Humanities (G100)	50,270	1.92	0.29	2.22
	Grand Total		569,978	22.81	3.09

- With all buildings added, the total required HC for Level 2 Cleaning at San Diego Mesa College is 26.

Lean Custodial Practices

Team Cleaning



THE PERFORMANCE PARABLE



Lean Custodial Practices

Team Cleaning



“The most skilled of employees fail in a confused, disorderly organization relying on individual performance. Yet, even the mediocre employees can excel in an orderly, focused, systemized culture.”

Jim Harris

Lean Custodial Practices

Team Cleaning



Myths:

- Everyone works together
- There must be four to a team
- Team cleaning is using the back pack vacuum
- Absenteeism easier in zone cleaning
- Too confusing
- Requires too much training
- Team cleaning is a cleaning system



Lean Custodial Practices

Team Cleaning



Definition of Team Cleaning:

Within a building, a team of specialists are deployed in a systematic method performing specific tasks. Although there are four types of specialist, a team can be comprised of any number of people and any configuration depending on the cleaning specifications of the building.

Lean Custodial Practices

Team Cleaning



The objective is to meet cleaning expectations and requirements utilizing the most efficient process in practice.



Lean Custodial Practices

Team Cleaning



Cleaning Expectations & Requirements

National Center for Education Statistics- Cleaning Standards

Level 1: cleaning, such as found in a hospital. One custodian cleaning 10,000 SQ FT per 8 HR shift.

Level 2: INTENSIVE cleaning, reserved for areas such as restrooms, special education, kindergarten areas, or food service areas. One custodian cleaning 11,000-18,000 SQ FT per 8 HR shift.

Level 3: Cleaning required to ensure health and comfort of building. One custodian cleaning 19,000-25,000 SQ FT per 8 HR shift.

Level 4: Not generally acceptable for a school environment. One custodian cleaning 26,000-46,000 SQ FT per 8 HR shift.

Level 5: UNHEALTHY

APPA-Cleaning Standards

Level 1: Orderly Spotlessness

Level 2: Orderly Tidiness

Level 3: Casual Inattention

Level 4: Moderate Dinginess

Level 5: Unkempt Neglect



Lean Custodial Practices

Team Cleaning



Where We are Today at One of Our Main Campuses

Miramar College:

- There are 373,639 cleanable square feet at Miramar College.
- Using the figure of 25,000 SQ FT per custodian cleaning interior, Miramar should have 14 custodians cleaning interior.
- Currently Miramar has 12 contract custodians cleaning interior spaces.
- *Using Team Cleaning, Miramar is maintained to the second highest APPA cleaning standard (Level 2).

* According to SDCCD Voice of the Customer Survey (April 2012)

Lean Custodial Practices

Team Cleaning



The Four Types of Specialists

As Suggested by Concepts IV

- Light Duty Specialists (Starter)
- Vacuum/Floor Specialists (Closer)
- Restroom Specialists (Floater)
- Utility Specialists (Utility)



Lean Custodial Practices

Team Cleaning



Starter's Daily Assignment

- Open the classroom
- Empty the pencil sharpener
- Empty trash
- Clean sink
- Spot clean as needed
- Communicate with floor specialist as needed

Lean Custodial Practices

Team Cleaning



Closer's Daily Assignment

- Vacuum/sweep floors
- Reposition all furniture
- Check quality
- Clean entry mats
- Turn off lights
- Secure room

Lean Custodial Practices

Team Cleaning



Floater's Daily Assignment

- Fill dispensers
- Remove trash
- Does job of Opener & Closer
- Fill in for team members as assigned
- Can work with Leads as directed
- Wash entry glass
- Detail office and other rooms
- Sweep/vacuum & mop tile floors
- Turn off lights

Lean Custodial Practices

Team Cleaning



Utility/Lead's Daily Assignment

- Fill dispensers
- Team leader
- Vacuum/sweeps floors
- Cleans office areas
- Cleans glass, blinds, and sinks
- Any other periodic specialty services
- Deals with site issues
- Highly flexible position, spec driven
- Pull trash
- Check work of team
- Does final security check
- May open other sites as needed

Lean Custodial Practices

Team Cleaning



The SDCCCD Method of Team Cleaning



City



Mesa



Miramar



Continuing Ed

Lean Custodial Practices

Team Cleaning



Crew Leader

- Team leader
- Any other periodic specialty services
- Deals with site issues
- Highly flexible position, spec driven
- Check work of team
- Does final security check
- May open other sites as needed

Lean Custodial Practices

Team Cleaning



1st Crew Member

Initial Push (4 Hours)

- Opens/unlock room
- Disarm alarm system
- Empty trash
- Empty pencil sharpener



Lean Custodial Practices

Team Cleaning



2nd Crew Member

Initial Push (4 Hours)

- Table tops
- Set furniture
- White boards



Lean Custodial Practices

Team Cleaning



3rd Crew Member

Initial Push (4 Hours)

- Vacuum/clean floors
- Set alarm
- Secure/lock room



Lean Custodial Practices

Team Cleaning



After the Initial Push of Classroom Cleaning

Team members go to their respective buildings and perform the following:

- Clean restrooms
- Dust mop halls
- Clean stairwells
- Clean entry glass
- Detail classrooms according to availability
- Respond to special needs of building

Lean Custodial Practices

Team Cleaning



Off Days

Much of our classroom space, offices, etc. is not utilized on Fridays. This affords the opportunity to perform specific tasks.

Fridays:

Office detail

Mondays:

- High speed buffing of hallways
- Carpet cleaning

Lean Custodial Practices

Team Cleaning



Hours of Operation

The model displayed in the presentation is the modified First Shift (4:00 AM-12:30 PM)

This is the chosen remedy to solve daytime coverage for site needs.



Lean Custodial Practices

Team Cleaning



Hours of Operation

Modified First Shift/First

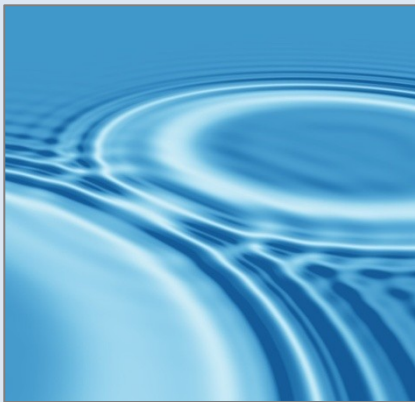
- The model displayed in the presentation is the Modified First Shift
- (4:00 AM-12:30 PM)
- Additionally, 3 day porters are scheduled from 6:00 AM-2:30 PM

Modified Second Shift

- Second Shift
 - (2:30 PM-11:00 PM)
- Supervisor and Crew Lead work on Second Shift
- The model displayed in the presentation is used in the Modified Second Shift
 - (5:00 PM-1:30 AM)
- Crew Lead working on Modified Second Shift



Lean Custodial Practices





Management by Walking Around (MBWA)

- MBWA is the SDCCD quality control tool for custodial services at SDCCD.
- Custodial Leads are tasked with walking through every room in the District to inspect the room conditions.
- They place a tick mark in the discrepancies column for each 1,000 square feet the building suffering that type of deficiency.
- These sheets are given to the clerical staff of each campus to enter into an Excel spreadsheet; thereafter, they are stored in an Access database to track deficiencies by type and building.





Transitioning from MBWA to Pride Program

- Once the team was been trained on doing inspections, and they were occurring regularly, it was time to move to the Pride Program
 - Designed to build a sense of Pride with those who have ownership for the space or function
- Begin tracking the actual data vs. simply whether the inspection has occurred.
- Track and trend the types of discrepancies and the total overall score.
- This ensures the custodial staff can concentrate on the buildings, rooms, and types of deficiencies that need the most attention.



Tracking and Trending Discrepancies

MBWA Scoring Sheet

MBWA Building Scoring Sheet					
Building					
Date					
Performed By					
Discrepancy					
General					Totals
Doors (including glass) and handles					
Walk-off Mat / threshold (dirty)					
Lamps (replace)					
Ceiling (dirty, includes diffusers/returns/Vents)					
White & Chalk boards (erasers clean, chalk replaced)					
Walls					
Light switches, thermostats, misc electrical plates (clean)					
Glass windows and channels					
Dusting (all horizontal and vertical surfaces)					
Recycle & trash cans(empty and clean)					
Pencil sharpeners (clean and empty)					
Furniture (Stains / Writing)					
Carpet (stains, vacuum, frayed)					
Hard Surface Flooring					
Grout (dirty)					
Counters (stains)					
Sinks / Drinking Fountain (cleaned and no stains or buildup Restrooms)					
Dispensers filled and stocked					
Graffiti (clean or report)					
Mirrors (clean)					
Toilets/urinals (flushometers, under rim, around base)					
Custodial Closets orderly, stocked at correct levels					



Tracking and Trending Discrepancies

MBWA Building Scoring Sheet								
	Building							
	Gross SQFT							
ADMINISTRATION (A100)								
Functional Area	Discrepancy	32	33	34	35	36	37	38
Custodial	General	MN	MN	MN	MN	MN	MN	MN
Custodial	Doors (including glass) and handles (clean)		1	1	2	4	2	
Custodial	Walk-off Mat / threshold (dirty)	1				4	1	
Custodial	Lamps (replace)							
Custodial	Ceiling (dirty, includes diffusers/returns/Vents)	1				3	2	4
Custodial	White & Chalk boards (rails clean, erasers clean, chalk replaced)							
Custodial	Walls (dusty, stained)	1		1		1		
Custodial	Light switches, thermostats, misc electrical plates (clean)							
Custodial	Glass windows and channels			2	2	3	1	1
Custodial	Dusting (all horizontal and vertical surfaces)	4	2			1	2	
Custodial	Recycle & trash cans(empty and clean)							
Custodial	Pencil sharpeners (clean and empty)							
Custodial	Furniture (Stains / Writing)					5		
Custodial	Carpet (stains, vacuum, frayed)	1			3	2	2	3
Custodial	Hard Surface Flooring (sheen, wall to wall)							
Custodial	Grout (dirty)							
Custodial	Counters (stains)							
Custodial	Sinks / drinking fountain / Showers (cleaned no stains / buildup)				3			3
Custodial	Dispensers filled and stocked							
Custodial	Graffiti (clean or report)							
Custodial	Mirrors (clean)						1	
Custodial	Toilets/urinals (flushometers, under rim, around base)	1						
Custodial	Custodial Closets orderly, stocked at correct levels and clean	1						
Custodial	Custodial Carts orderly, stocked at correct levels and maintained							
Custodial	Cart (cleaned weekly and inspected)							
Total Custodial		10	3	4	10	23	11	11
Custodial discrepancies per 20000 square feet		20	6	8	20	45	22	22
Custodial Score		80	94	92	80	55	78	78

Buildings are inspected and discrepancies are tracked by work week/

Converting the Data to Building Scores

- Since the tick marks are given for discrepancies per 1,000 square feet, larger buildings have more area for discrepancies.
- To ensure larger buildings do not look far worse than smaller buildings, the score must be normalized.
- The score is normalized based on a building sized with 20,000 ASF assumed as normal. This ensures large and small building alike get equal treatment.





Trend by Discrepancy: Campus Example

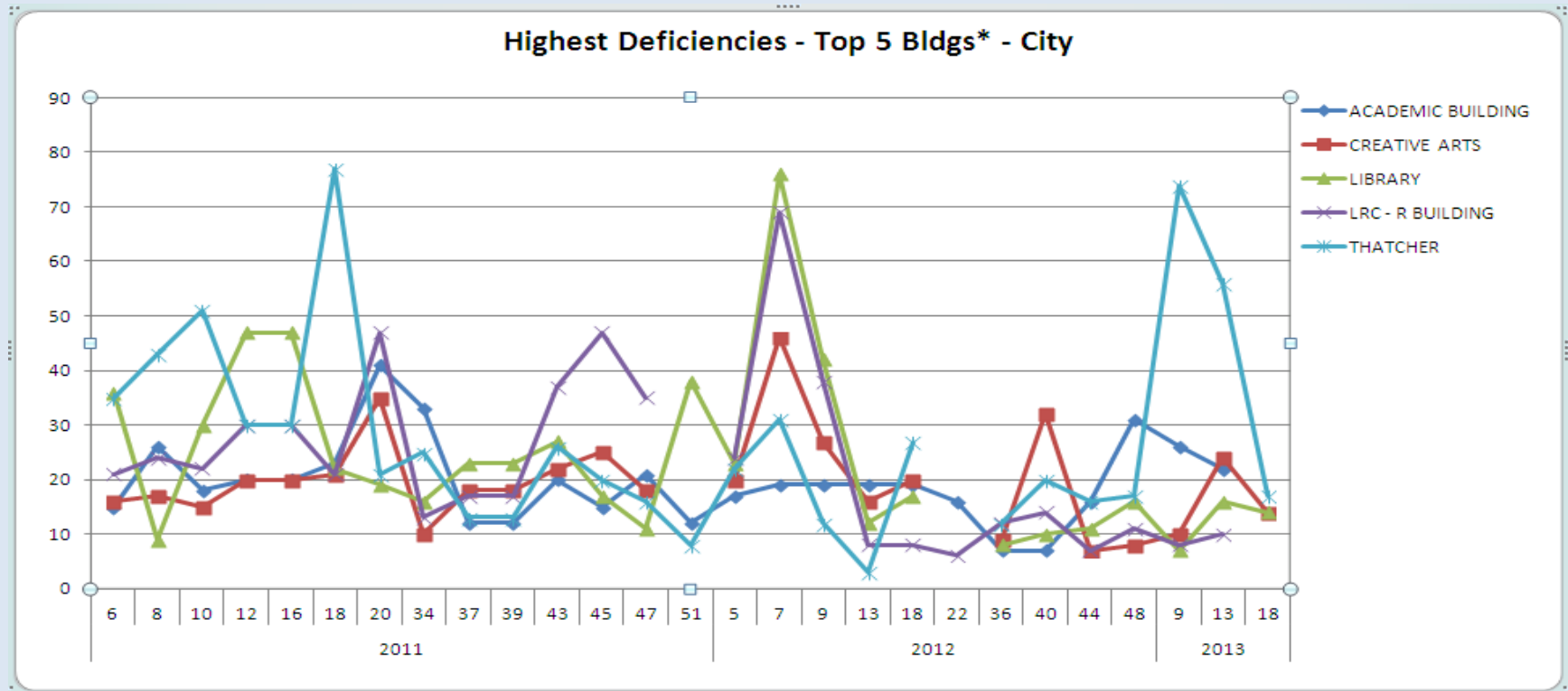
Functional Area	Discrepancy	Work Week	32	33	34	35	36	37	38
Custodial	General	Perfomed By	MN	MN	MN	MN	MN	MN	MN
Custodial	Doors (including glass) and handles (clean)		316	211	110	285	111	140	90
Custodial	Walk-off Mat / threshold (dirty)		87	60	25	71	54	29	39
Custodial	Lamps (replace)		126	118	73	99	115	125	158
Custodial	Ceiling (dirty, includes diffusers/returns/Vents)		258	185	80	183	112	100	172
Custodial	White & Chalk boards (rails clean, erasers clean, chalk replaced)		47	36	3	33	51	34	48
Custodial	Walls (dusty, stained)		304	207	118	285	181	184	187
Custodial	Light switches, thermostats, misc electrical plates (clean)		118	95	37	81	52	61	59
Custodial	Glass windows and channels		165	118	63	166	106	111	89
Custodial	Dusting (all horizontal and vertical surfaces)		249	153	72	194	142	130	169
Custodial	Recycle & trash cans(empty and clean)		11	17	3	11	5	6	11
Custodial	Pencil sharpeners (clean and empty)		6	13	2	7	8	5	
Custodial	Furniture (Stains / Writing)		100	72	22	90	65	64	80
Custodial	Carpet (stains, vacuum, frayed)		114	103	72	108	82	112	122
Custodial	Hard Surface Flooring (sheen, wall to wall)		64	56	15	39	32	30	23
Custodial	Grout (dirty)		25	6	1	23	10	8	6
Custodial	Counters (stains)		34	29	11	19	16	17	15
Custodial	Sinks / drinking fountain / Showers (cleaned no stains / buildup)		75	48	20	72	36	35	21
Custodial	Dispensers filled and stocked		5	2				1	10
Custodial	Graffiti (clean or report)		9	4	1	6	13	15	15
Custodial	Mirrors (clean)		29	22	14	12	20	13	23
Custodial	Toilets/urinals (flushometers, under rim, around base)		24	25	7	31	23	21	18
Custodial	Custodial Closets orderly, stocked at correct levels and clean		25	25	8	25	15	12	12
Custodial	Custodial Carts orderly, stocked at correct levels and maintained		1	7	2	5	2	3	5
Custodial	Cart (cleaned weekly and inspected)			2		1			
Total Custodial			2192	1614	759	1846	1251	1256	1372
Grounds									

Each week, the top discrepancies are identified.

MBWA Charts



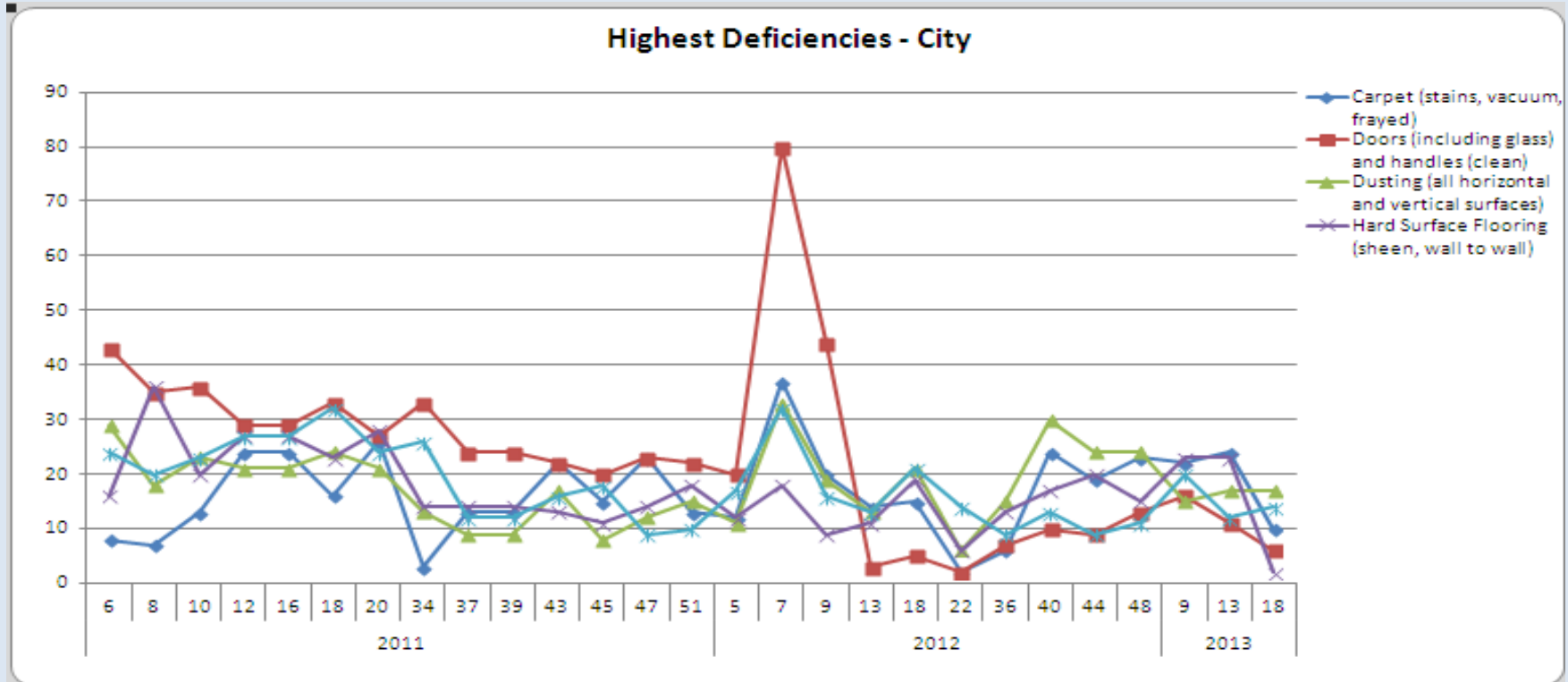
At a glance a custodial supervisor can determine the buildings in need of the most attention. This chart shows the top 5 buildings needing attention at City College through week 18 of 2013.





MBWA Charts

At a glance a custodial supervisor can determine what the work force should consider the top priority. This chart show the top 5 tasks the workforce at City College should concentrate on as determined by the MBWA process.





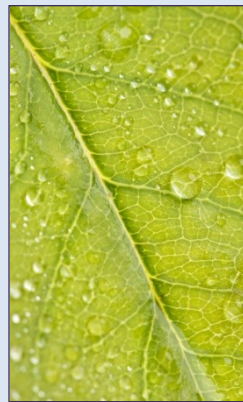
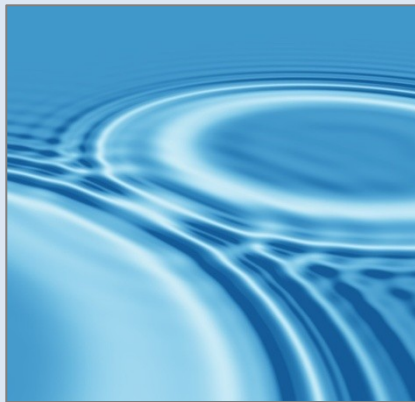
Use of Data to Improve Performance

The data collected from this tool/process is used to:

- Drive for Continuous Improvement
- Chart performance goals for a campus, department or individual
 - Campus Trend
 - Trend by Discrepancy (i.e., burned out lights)
 - Trend by Custodial Team or custodian
- Implement a recognition program
 - “Pride Award” based on best scoring building
 - Most Improved
- Performance Management
 - Improve area by 10%
 - Lowest performing area owner



Lean Work Order Processes



Lean Work Order Processes

SDCCCD Work Order Processes



The objective was to determine the current deficiencies in our work order processes, and come up with a systematic method of improvement.

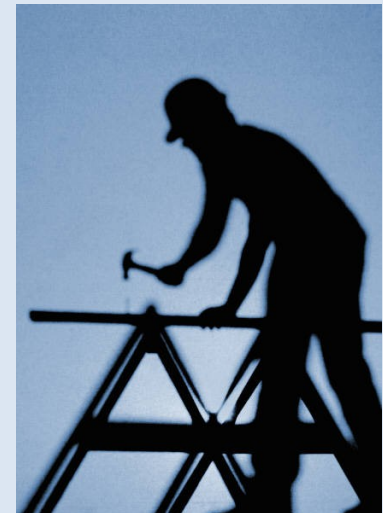
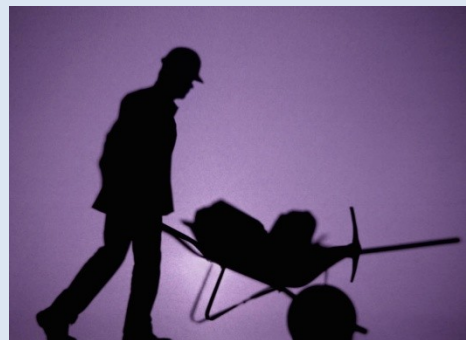


Lean Work Order Processes

Maintenance Findings



- Centralized Work Order Center (Call Center)
- Computerized Maintenance Management System (CMMS)
- Service Level Agreement (SLA)
- Work Flow Process Mapping
- Planner/Schedulers
- Electronic Work Order Delivery
- Material/Supply
- Lean Enterprise Tools



Call Center / Work Distribution Center



- Centralized
- Standardized
- Customer Service
- Comments



Lean Work Order Processes

Call Center / Work Distribution Center

The Facilities Services Call Center (FSCC) is the communications center of the Facilities Services Department and was created to provide a single point of contact for all work order requests. The status of any work order can be determined by calling The Facilities Services Call Center at 388-6422 or by e-mail to the Facilities Services Call Center.

On **October 5, 2009**, the Facilities Services Call Center began accepting calls from 7:00 a.m. to 4:00 p.m. weekdays. Calls for facilities emergencies **after hours** should be directed to College Police Dispatch 388-6405. The FSCC is able to communicate directly with Facilities Supervisors to effect an immediate response to most emergency situations.

Address

1544 Frazee Road
San Diego, CA 92108

General Phone Numbers

(619) 388-6422 - Phone (Monday -Friday 7 a.m. – 4 p.m.)

(619) 388-6439 - Fax

General E-mail – Facilities Services Call Center

SDCCD web site at Maintenance Work Order login link



Lean Work Order Processes

Megamation (CMMS)




- Web based
- Work request entry by customers and Facilities
- Useful dashboard/work order console
- Auto generated due date for priorities 1-4
- Auto generated emails when work is planned, delayed, and completed
- Key performance indicator reports
- Time keeping
- Unlimited training

Lean Work Order Processes

Megamation (CMMS)





New Work Order Requests

Exit



Work Request Entry

Fields marked with * must be filled before the work order can be submitted.

WO# :

* Contact Name:

* Contact Phone #:

*Contact Email :

Would you like to be emailed on WO completion?

* Problem Description:

* Property:

* Building:

*Floor:

*Room:

*Repeat Call? :

*Is this equipment? :

**** All fields below are required if answered 'Yes'!**

** Portable or Fixed in Place :

** Equipment Identifier :

** Eq Identifier Number:

** Eq Manufacturer:

** Eq Model:

Lean Work Order Processes Megamation (CMMS)



San Diego Community College District - Citrix Presentation Server Client

Maintenance

File Module Edit Tools QBF Window Help

Work Order Console

Work Planning - DL

Work Order#: 119447 Type: [] Date Time: [] Status: [] Priority: []

Submitted By: [] Phone: [] Project: []

Contact Name: [] Phone: [] Project Step: []

Contact Email: [] E-mail on WO completion: Job Type: []

Building: [] Repeat Call?:

Equipment Additional Info

Portable or Fixed Equip: [] Eqp Identifier: [] Manufacturer: []

Eq Identifier #: [] Model: []

Bldg/Asset

Bldg/Asset #	Description	Location	Account #	Parent #	Parent Description	Location
1						

Work Description

Department: []

Issue To	Name	Status
1		

Planned By: []

Assign To: []

P.M.#: []

SI Charge Account: []

Description: []

Add SI Charge Account to the Account Master:

Planned Date: []

Date Due/Required: []

Budgeting Account#: []

Budget\$: []

Approval

Desk: [] Approval Date: []

Final Approval: []

Approved By: [] Date: []

Generated from Help-Desk:

Issued To: []

Crew: []

<None>

Options: []

Ignore if unassigned:

Page 1 Page 2 Page 3 Page 4

New Work Order

Export

Close

Lean Work Order Processes Megamation (CMMS)



File Module Edit Tools QBF Window Help

Work Order Console

Work Orders | Equipment History | Labor and Material | Purchase Requisitions | Purchase Orders | Preventive Maintenance | Summary | Dashboard

W/O#	Type	Prop...	Priority	Status	Issue To	Assigned To	Building	Work Description	Date Due/R...	Date	Subn
1	118071	REP	4	IP	CSARMIE...	Plumbing		Mid-City, Miramar and District Office....	11-10-...	10-11-2010	JHA
2	118664	CAP	4	IP	JHAWN	Plumbing		Supervision- s and n projects	11-20-...	10-21-2010	KEN
3	118465	REP	5	IP	CSARMIE...	Plumbing		DSC SOUTH---truck inventory---stock...	11-18-...	10-19-2010	JHA
4	118817	REP	CLR	4	IP	CSARMIE...	CLAIREMONT ADMIN BLD	Automatic Faucet is not turning off, s...	11-24-...	10-25-2010	FABL
5	119105	REP	CTY	4	I	AVELAZQ...	THATCHER	Kurt we have an access panel in the ...	11-27-...	10-28-2010	DCH
6	118521	REP	CTY	4	IP	BJOHNSON	CREATIVE ARTS	C-209 dogged sink 1 of 2 sinks in room...	11-18-...	10-19-2010	KSTI
7	117902	REP	CTY	4	IP	CSARMIE...	MATH SCIENCE BLDG	In M202 I have 2 gas valves and 1 al...	11-12-...	10-07-2010	MBAI
8	118197	REP	CTY	4	IP	JHAWN	CHILD DEV. ANNEX	CDC sink follow-up---plan and finish i...	11-11-...	10-12-2010	JHA
9	118519	REP	CTY	4	IP	JPURNELL	CREATIVE ARTS	Mens staff restroom across from C-2...	11-18-...	10-19-2010	KSTI
10	118570	REP	CTY	4	IP	JPURNELL	THATCHER	[Followup Work Order to 118321]OB...	11-19-...	10-20-2010	SMIC
11	118698	REP	CTY	4	IP	JPURNELL	CHILD DEVLPMT CENTER	Main sewer repair as needed	11-20-...	10-21-2010	JHA
12	118828	REP	CTY	4	IP	JPURNELL	CREATIVE ARTS	[Followup Work Order to 118680]O...	11-24-...	10-25-2010	SWIL
13	118921	REP	CTY	4	IP	JPURNELL	CREATIVE ARTS	[Followup Work Order to 118669]OC...	11-25-...	10-26-2010	SMIC
14	118970	REP	CTY	4	IP	JPURNELL	CHILD DEVLPMT CENTER	Touchless faucet installation---comple...	11-26-...	10-27-2010	JHA
15	119259	REP	DFS	4	IP	CSARMIE...	DISTRICT SERVICE CTR	Clean shop	12-02-...	11-02-2010	JHA
16	118195	REP	DFS	4	IP	JHAWN	Plumbing	Plumbing shop---process work orders...	11-11-...	10-12-2010	JHA
17	118240	REP	DFS	4	IP	JHAWN	DISTRICT SERVICE CTR N	DSC need to meet with Plumbers reg...	11-12-...	10-13-2010	MBAI
18	119162	REP	DFS	4	IP	JHAWN	Plumbing	Supervisory Time---Regular	12-01-...	11-01-2010	JHA
19	118628	REP	DOA	4	IP	JHAWN	DISTRICT HQ BLDG	[Followup Work Order to 117037]OD...	11-19-...	10-20-2010	MBAI
20	119348	CAP	MES	3	IP	JHAWN	BEHAV SCIENCE (F200)		11-04-...	11-03-2010	KEN
21	118694	REP	MES	4	IP	CSARMIE...	ADMINISTRATION (A100)	[Followup Work Order to 118457]OSi...	11-20-...	10-21-2010	EDJF
22	118705	REP	MES	4	IP	CSARMIE...	SCIENCES (1100)	[Followup Work Order to 118700]OI...	11-20-...	10-21-2010	FABL
23	119442	CAP	MES	4	IP	CSARMIE...	BEHAV SCIENCE (F200)	Mesa demo---F&J buildings	12-04-...	11-04-2010	JHA
24	118073	CAP	MES	4	IP	JHAWN	BUILDING TRADES (K200)	Investigate storm water clarifier vault...	11-10-...	10-11-2010	DBE1
25	119094	REP	MES	4	IP	JHAWN	ADMINISTRATION (A100)	Install grease trap for kitchen in child...	11-27-...	10-28-2010	MBAI
26	119213	CAP	MES	4	IP	JHAWN	Plumbing	Wed---Nov. 3---10:00 a.m.---gas wal...	12-01-...	11-01-2010	JHA
27	119258	REP	MES	4	IP	JPURNELL	STUD PERS/LIFE SCI (I300)	I-300 leak---locate and repair	12-02-...	11-02-2010	JHA
28	118629	REP	MIR	4	IP	JHAWN	Plumbing	[Followup Work Order to 117036]ON...	11-19-...	10-20-2010	MBAI
29	118630	REP	MIR	4	IP	JHAWN	BUILDING A2	[Followup Work Order to 117033]OA...	11-19-...	10-20-2010	MBAI
30	118975	ST	MIR	4	IP	JPURNELL	BUILDING A2	RS00330446 - Install water line to ref...	11-26-...	10-27-2010	SWIL

Planning Mode Criteria
 Trade
 Assigned To
 Issued To
 Crew
 <None>

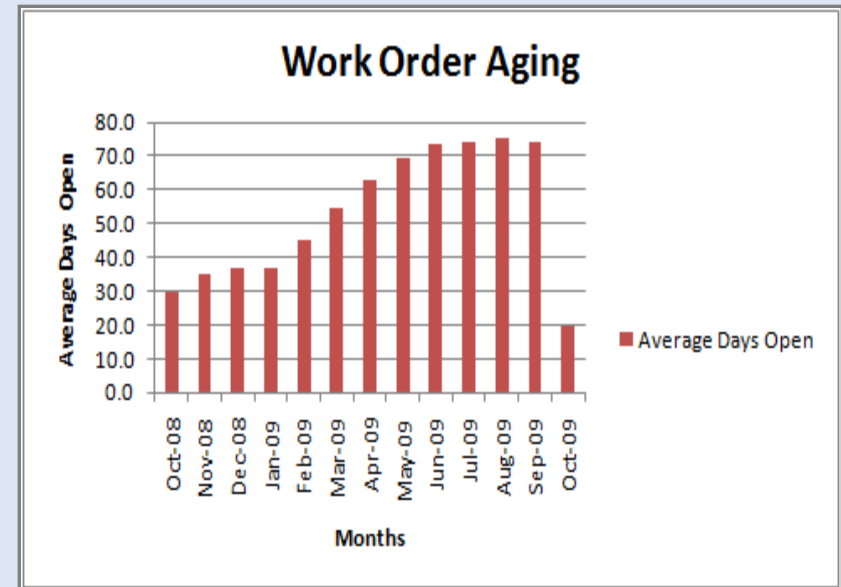
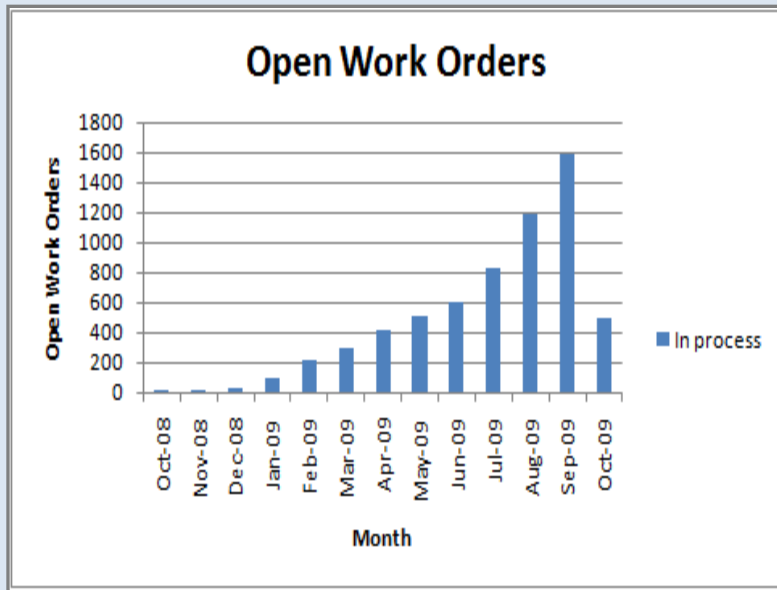
Date Criteria
 Range: Today
 Ending Date: 10-08-2010
 Options

Planning Mode Filter
 Ignore if unassigned

View Work Order | Sort Criteria | Refresh
 Work Order Completion | Selection Criteria | Columns to Display
 New Work Order | Export | Close

Lean Work Order Processes

Work Order Metrics



Process implemented in conjunction with a new CMMS system

–Open WO and Work Order Aging dropped dramatically

- Open WO from 1,600+ to ~500
- WO Aging 70+ days to just under 20

Work Prioritization



- SDCCD - in its quest to be “service oriented” -had no formal work prioritization processes
 - This led to 85%+ of work being reactive
 - Open WO grew to in excess of 1,600
- A prioritization matrix was developed to establish a service level agreement within the District
 - Approved by Chancellor's Cabinet and Management Services Council



Priority Matrix: Service Level Agreement



SDCCD FACILITIES SERVICES Service Level Agreement

Priority Matrix for Reaction Time



SDCCD FACILITIES SERVICES

Priority Matrix for Completion Time

Level 1 - Emergency Work Service Level Agreement (SLA)–Immediate Response
Priority 1: Response is Immediate Emergency work is defined as work that requires immediate dispatch. This level is for things that are imminent safety, security risks, could lead to significant property loss or are an immediate impact to the District fulfilling it's mission.

Level 1 - Emergency Work Service Level Agreement (SLA)– Immediate Response
Barring extenuating circumstances Priority 1 work orders should be completed within 1 business day

Level 2 – Urgent Work Same Business Day SLA 4 Hour Response
Priority 2: Equipment down that significantly impacts the ability to complete the districts mission but is not an imminent threat to health, safety or cause significant loss of / to property.

Level 2 – Urgent Work Same Business Day SLA 4 Hour Response
Barring extenuating circumstances Priority 2 work orders should be completed within 1.5 business days

Level 3 – One Business Day SLA 24 Hour Response (Business Day)
Priority 3

Level 3 – One Business Day SLA 24 Hour Response (Business Day)
Barring extenuating circumstances Priority 3 work orders should be completed within 2 business days

Level 4 – Routine Request SLA 1 Week Response with schedule for completion
Priority 4: Customer will be contacted with a schedule within the response time. Work in this category may be put in the normal work planning and scheduling cycle. The SLA for completion will be 30 days from receiving work request.

Level 4 – Routine Request SLA 1 Week Response with schedule for completion
Customer will be contacted with a schedule within the response time. Work in this category may be put in the normal work planning and scheduling cycle. The SLA for completion will be 30 days from receiving work request.

Level 5 – Special Projects SLA 2 Week Response with Schedule for Completion
Priority 5: Customer will be contacted with a schedule within the response time. Work in this category will be put in the project work planning and scheduling cycle (ie painting a door on a campus when the painting crew is scheduled on another campus for long term assignment)

Level 5 – Special Projects SLA 2 Week Response with Schedule for Completion
Customer will be contacted with a schedule within the response time. Work in this category will be put in the project work planning and scheduling cycle (ie painting a door on a campus when the painting crew is scheduled on another campus for long term assignment)



Level 1 - Emergency Work Service Level Agreement (SLA)–

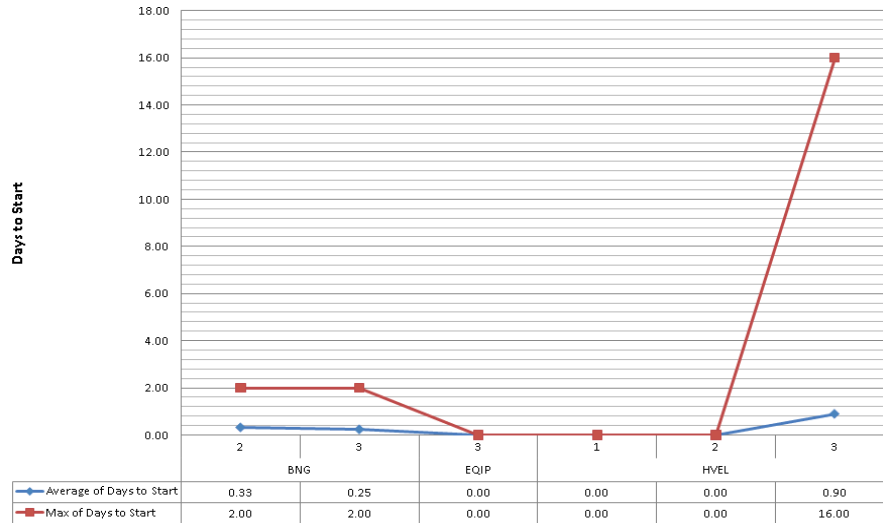
Response is Immediate Emergency work is defined as work that requires immediate dispatch. This level is for things that are imminent safety, security risks, could lead to significant property loss or are an immediate impact to the District fulfilling it's mission.

Section	Work Request Type	Priority
Equip Repair	Vehicle immediate safety risk (stuck in traffic) or vehicle is needed immediately	1
Equip Repair	Field Equipment stuck on field that will be used for an event or is ready for field maintenance	1
HVAC	Temp $64 > T > 82$	1
Electrical	No power to building / classroom / critical circuit	1
Electrical	Burning / sparking / electrical smell	1
Plumbing	Water leak that has the potential to cause a safety risk or imminent property loss	1

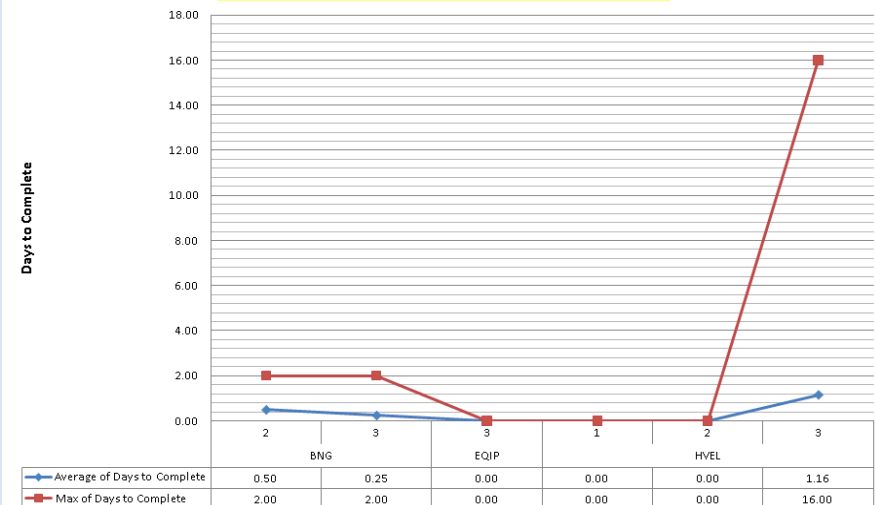
Priority 1/2/3 Work Order Metrics



**Average & Maximum Days to Start
By Department, DSC
Measured from Date Received to Date Started**

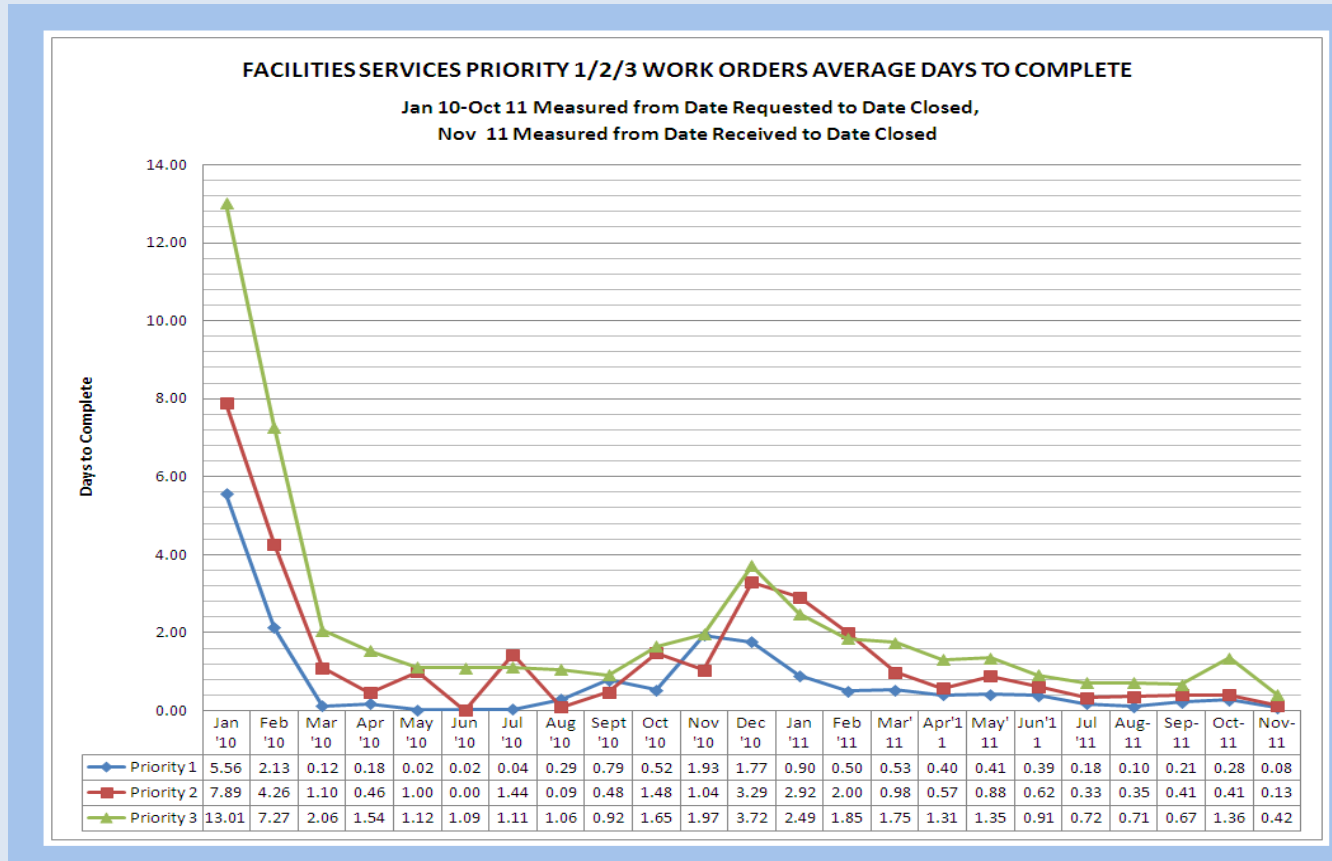


**Average & Maximum Days to Complete
By Department, DSC
Measured from Date Received to Date Closed**



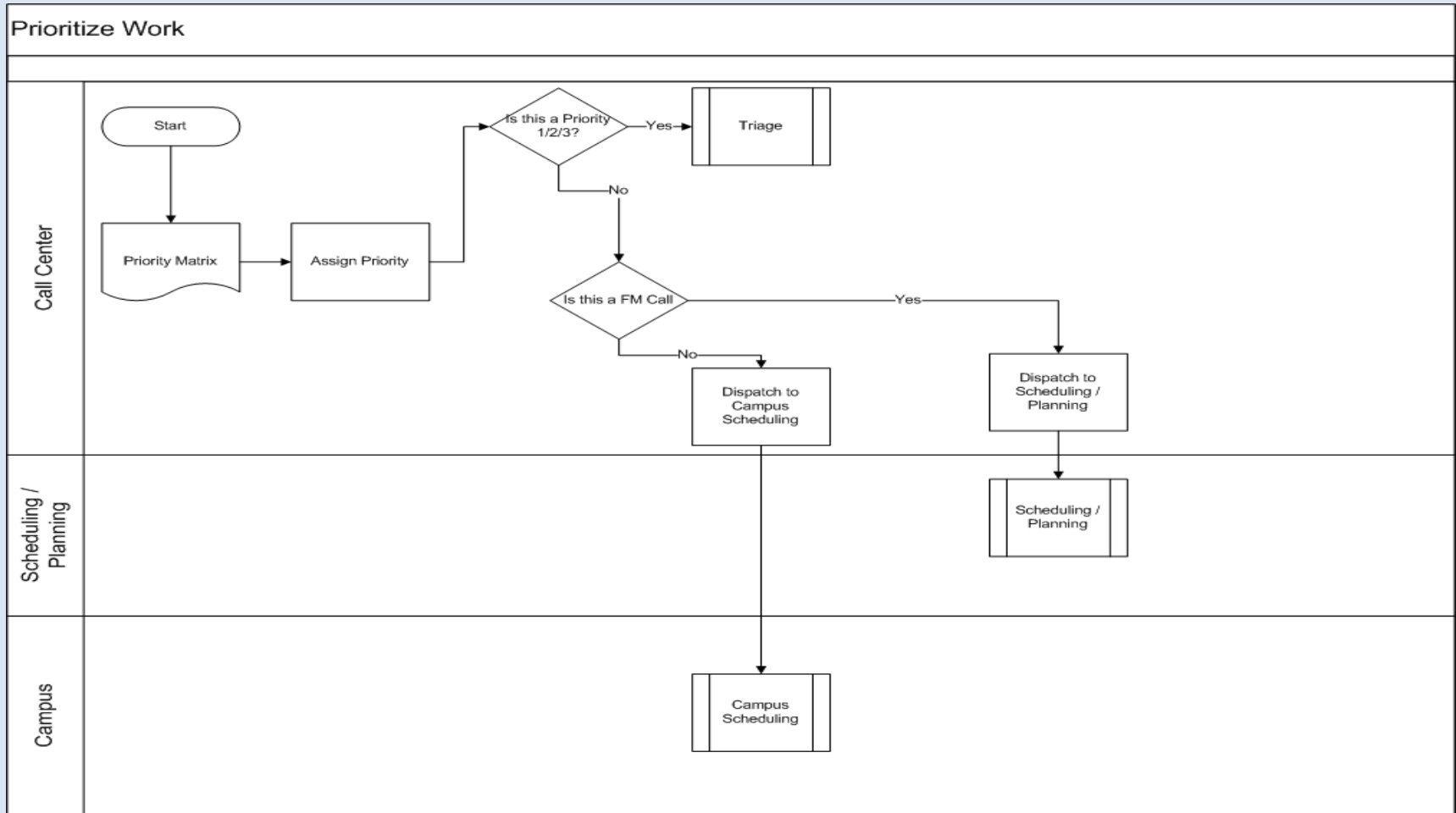
The new Service Level Agreement implemented in conjunction with a new CMMS system affords us the ability to measure our reaction time and completion time, thus, ensuring the highest priority work is completed in a timely fashion.

Priority 1/2/3 Work Order Metrics

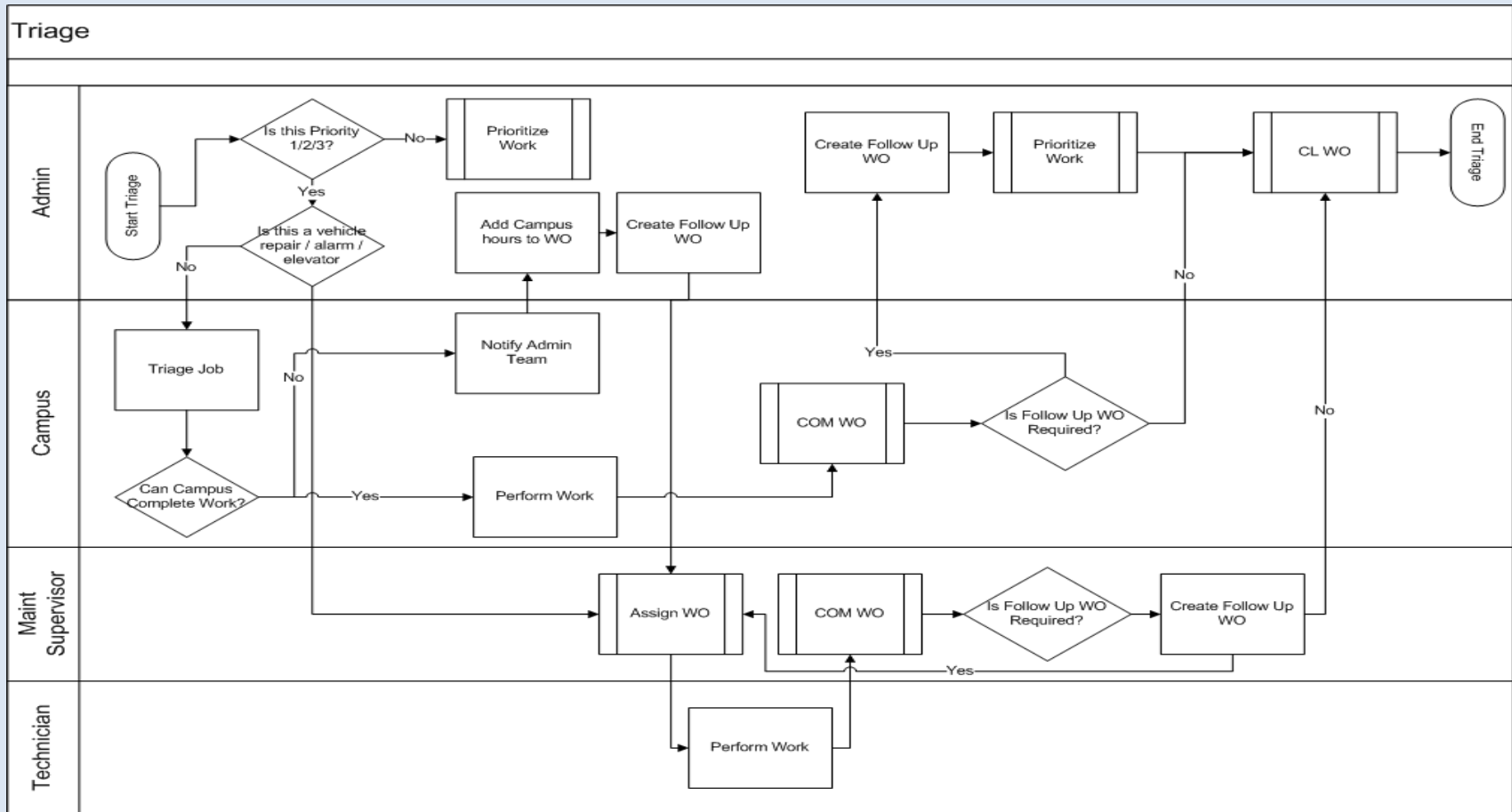


Collecting the metrics allows us to observe trends.

Lean Process Flows: Prioritize Work



Lean Process Flows: Triage



Lean Work Order Processes

Work Flow



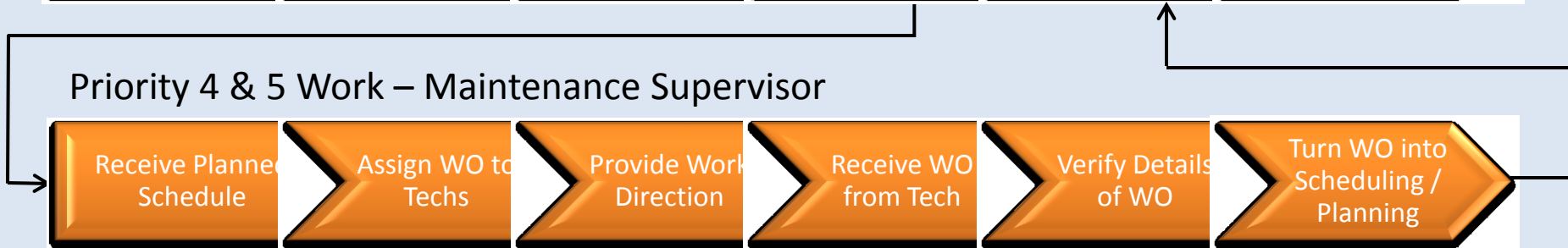
Priority 1-3 Work – Maintenance Supervisor



Priority 4 & 5 Work – Maintenance Planner / Scheduler



Priority 4 & 5 Work – Maintenance Supervisor



- Planning / Scheduling is focused on future work
- All ongoing work is under the direct control of the maintenance supervisor

Maintenance Assessment



- Identify how we were spending time
- Examine priorities
- Scrutinize processes
- Should we redesign or improve this process
- What tools do we need to do this



Maintenance Process Findings

- We were a reactive organization
- No formal method of job/project planning
- Inefficient, unpredictable processes
- Too much windshield time for technicians



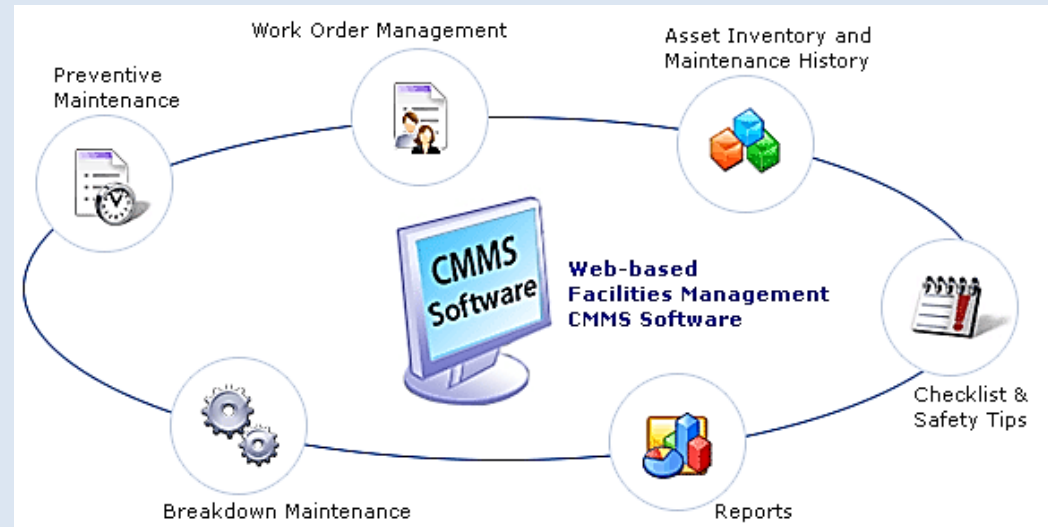
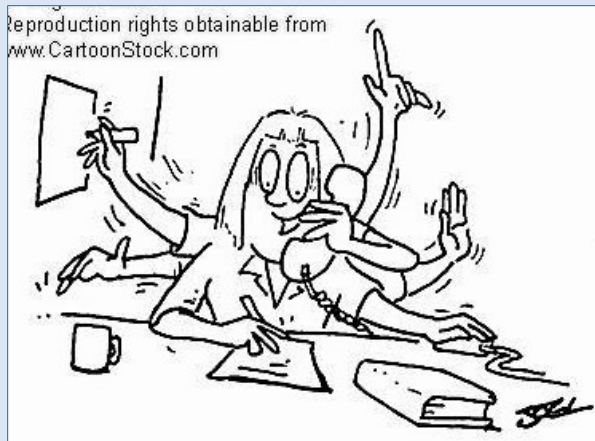


Maintenance Process Improvement

- Adhere to the new Service Level agreement (SLA)
- Create a Planning and Scheduling Department
- Design new work flow processes
- Reduce windshield time for technicians

Productive Maintenance Time

Average reactive organizations have a wrench time of only 20% while proactive organizations approach maintain 60% or higher.





Without Planning / Scheduling

Activity	%
Cleanup and putting away tools	5
Idle Time	9
Material delays	5
Passdown meetings (start / end of shift, feeding work to technicians)	5
Starting late / quitting early	4
Too many technicians per job / task	7
Traveling and Transportation	16
Unclear work direction	16
Sub Total of non-productive time	67

Productive time = $100 - 67$ or 33%

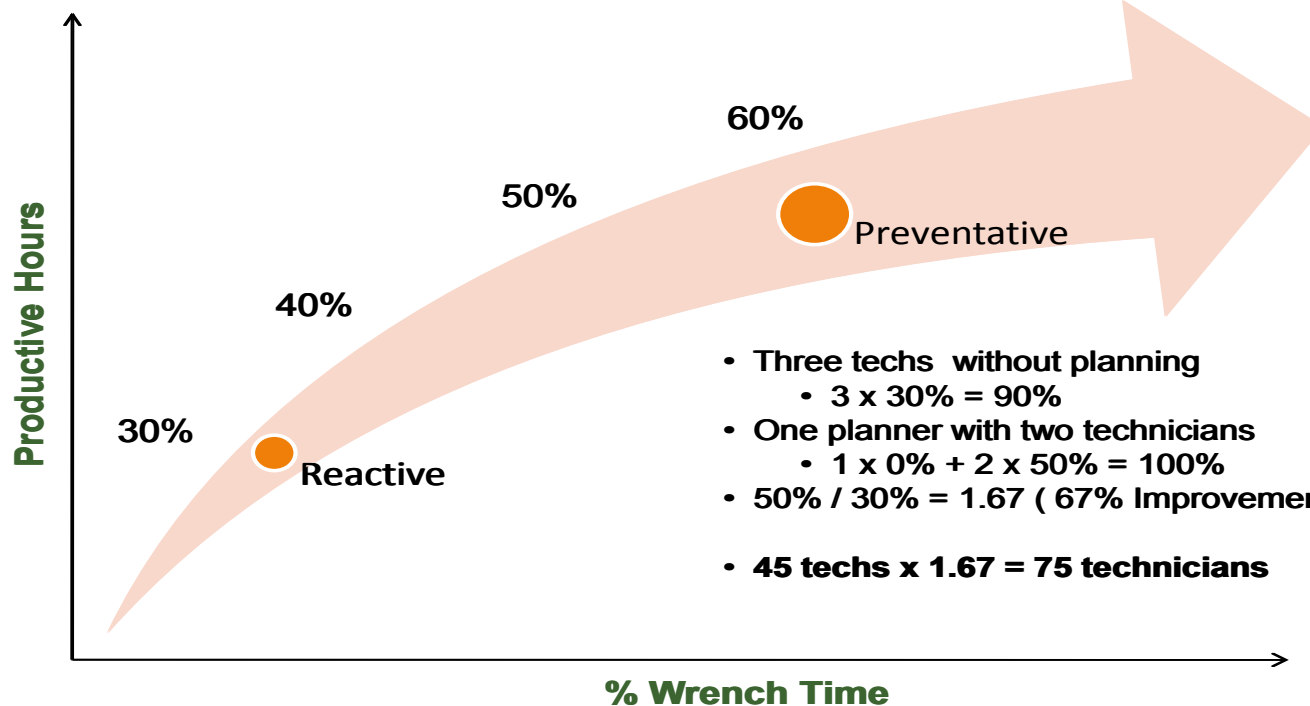
This translates to 2.7 hrs in an 8 hr shift



The Case for Planner / Schedulers



San Diego
Community College
District



- Three techs without planning
 - $3 \times 30\% = 90\%$
- One planner with two technicians
 - $1 \times 0\% + 2 \times 50\% = 100\%$
- $50\% / 30\% = 1.67$ (67% Improvement)
- **45 techs x 1.67 = 75 technicians**

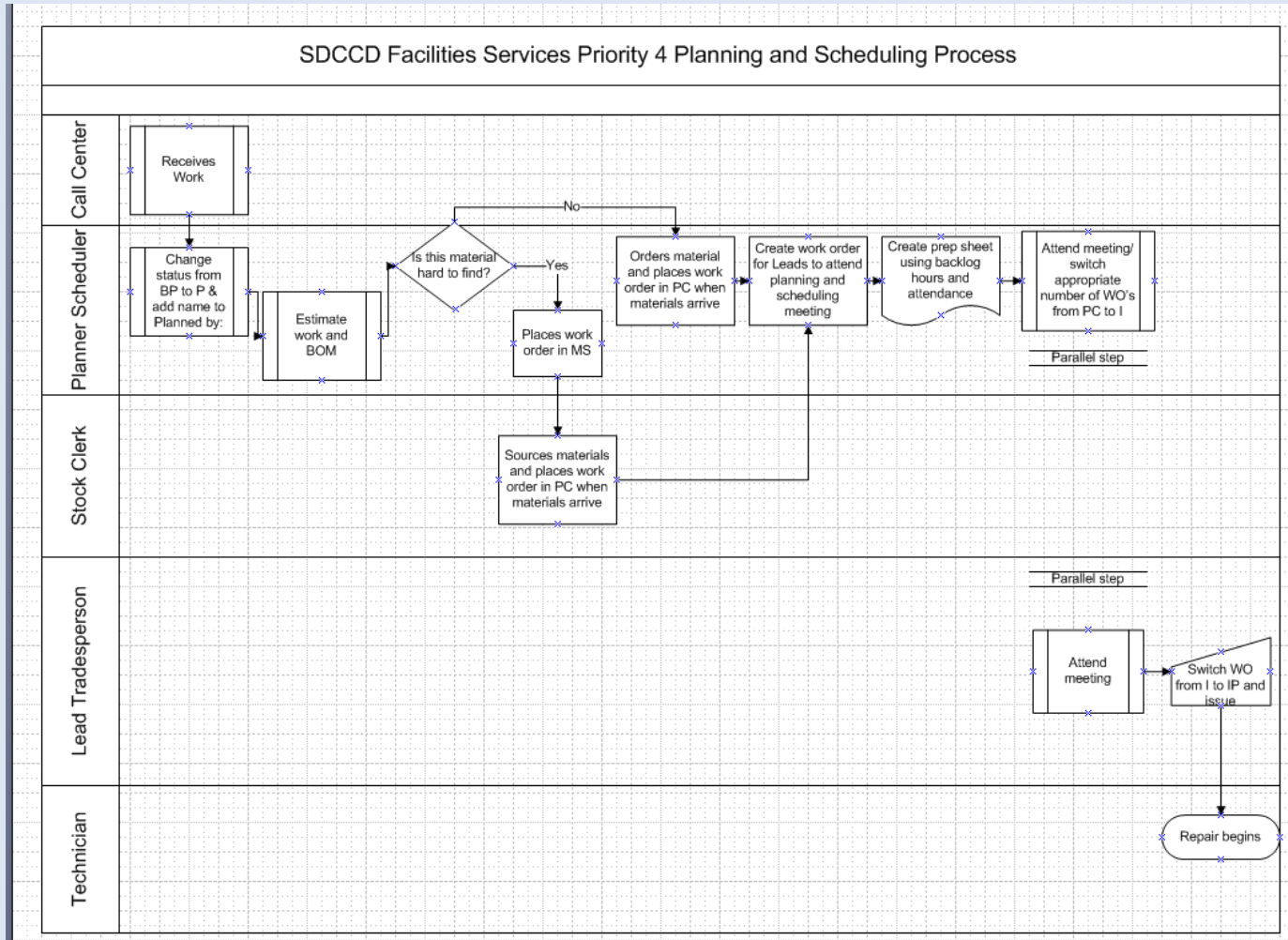
- **In today's economy, how are you going to get 67% more resources for maintenance?**



11/3/2010

Copyright © 2009, Step Function – FMC, L.L.C.

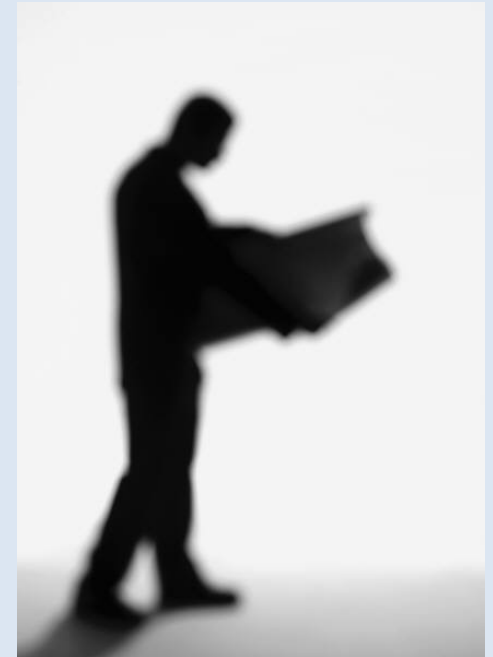
Lean Process Flows: Planning/Scheduling





Planning and Scheduling

We have increased our wrench time by planning and scheduling most of our standard priority 4 and 5 work orders, and all of our preventative maintenance work orders for 45 technicians using just 3 planner schedulers.



Reduce Windshield Time



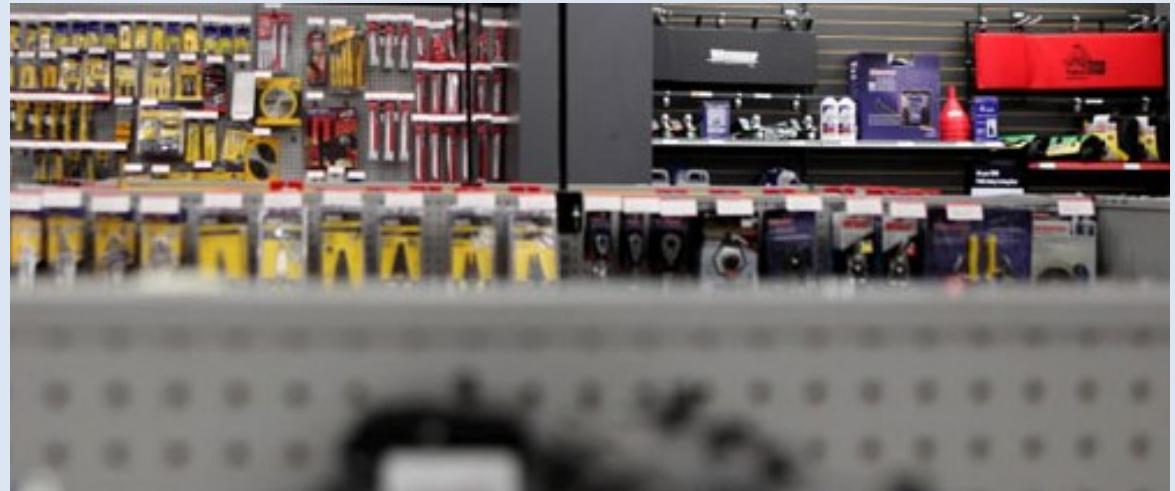
45 technicians x 1 hour windshield time daily x 45 weeks = a savings of 2,045 hours per year



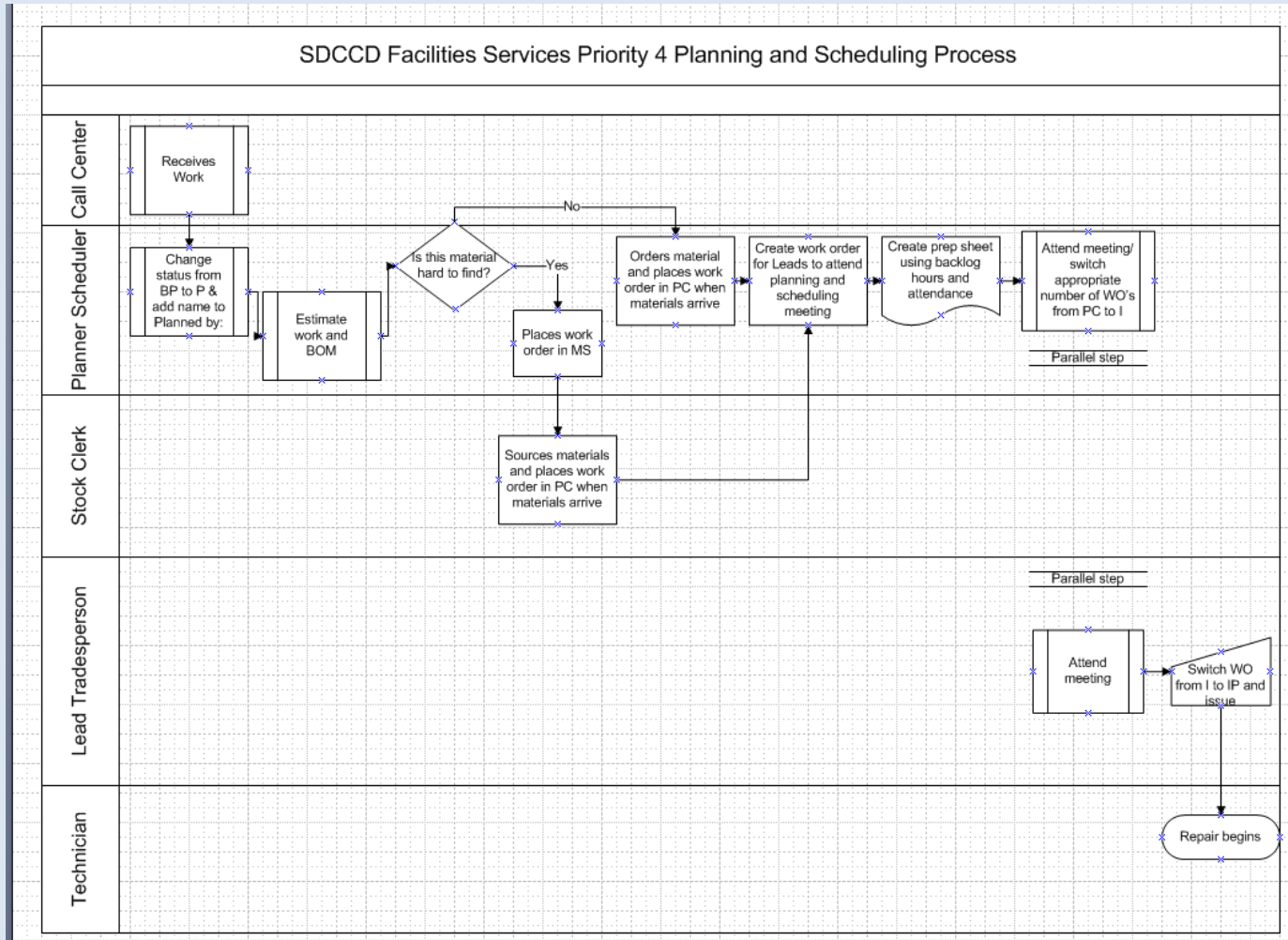


MRO Store/Rolling Truck stock

- Build of materials (BOM)
- Kit materials
- Critical spares
- Truck stock
- Drop ship
- P/O



Lean Process Flows: Planning/Scheduling



Lean Work Order Processes

Rolling Truck Stock



In a joint effort with Grainger, our technicians trucks are stocked with consumables weekly using the Grainger workforce, further reducing windshield time.



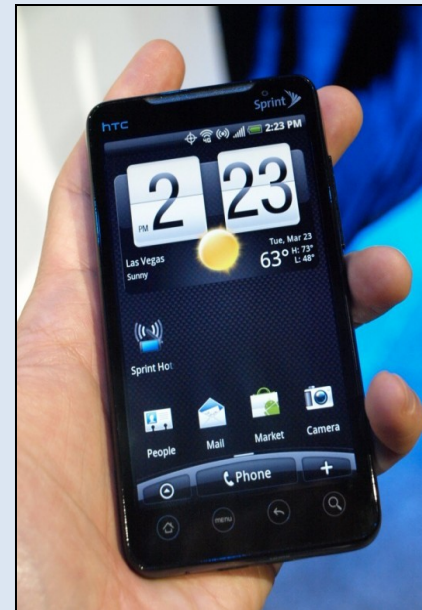


Objective

To enable maintenance employees to receive work orders, and log time on task, by use of held cellular device.

Common Types of Operating Platforms

- Smart phone
- Tablet/Pad



Electronic Work Order Delivery



Integration To Maintenance Management Software

- Browser
- Designing a form that would interface with our maintenance software

Testing and Implementation

- Pilot test group
- Champions
- Roll out to all users



Lean Processes

Hand Held With Screen



- Log on

Welcome to the DirectLine PocketPC

Select User ID:

Enter User Password:

- Work Count

**Megamation Systems Inc. DirectLine
 PocketPC Maintenance Management**
 You currently have **17** backlogged Request(s).
 You have no urgent Requests.

WO#	Type	Pri	St	Building	Description
113671	REP	4	IP	EDUCATION	Buffer will spi
113608	REP	4	IP	POOL BUILD	Microwave oven is no
113584	REP	4	IP	DISTRICT S	Please repair clock
113500	REP	4	IP	PHYS ED ST	Tru-Cut Front Reel M
113480	REP	4	IP	SOFTBALL F	Tennis machines are



Hand Held With Screen

Open Work Order

Request# 113608
Date 2010-07-21
Type REP
Bldg/Asset MIR_P_100_1_103
Status IP
Priority 4
Contact ANNA LIZA
Cont.Ph 6193887712

Description

Microwave oven is not heating food anymore. It turns on and sounds fine, but there is no heat coming out.

Time

Close

Main

Lean Processes

Hand Held With Screen



Time Start

Request#: **113608**
Bldg/Asset MIR_P_100_1_103 ▾
Trade (Eqpr) Equipment Re ▾
Start Date 2010-07-27 ▾
Start Time 09 ▾ 58 ▾ PM ▾

Time Stop

Request#: **113608**
Bldg/Asset MIR_P_100_1_103 ▾
Trade (Eqpr) Equipment Re ▾
Start Date 2010-07-27
Start Time 10:09:PM
Stop Date 2010-07-27 ▾
Stop Time 10 ▾ 09 ▾ PM ▾
Hr/Min worked -24 ▾ 00 ▾
 Work Completed

Electronic Work Order Delivery



Benefits

- Less paper and printing
- “Real time” logging of time on task
- Can be assigned to multiple employees
- Less driving time
- Less data entry from paper to computer for clerical staff, allowing more time for other tasks
- Fewer lost or misplaced work orders
- Employee hours metrics

Electronic Work Order Delivery



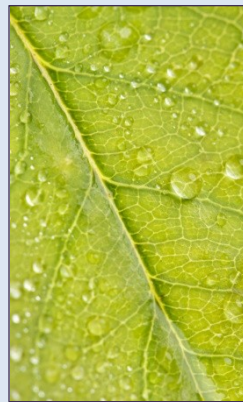
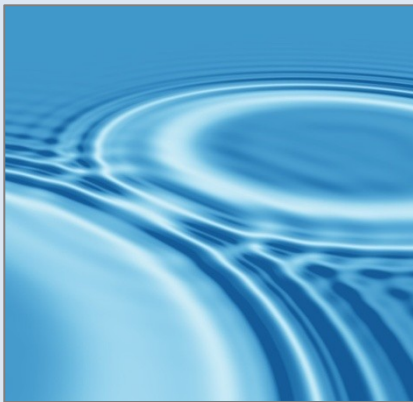
Employee Hours Reports

- Pivot table
- Hours logged into work orders
- Leave time

Emp Department		Saturday						
Sum of Regular Hour		Date						
Emp Trade	Employee #	1/2/2013	1/3/2013	1/4/2013	1/5/2013	1/7/2013	1/8/2013	1/9/2013
ALTCH	AQUINTANILLA	11.25	8.25	12.07		9.27	8.8	9.48
	JWILLIAMS	8.25	8.5	10.05		7.75	8.87	8.5
	LWALTERS	8	7	7			7.43	7.14
BGMNT	AVELAZQUEZ	8	8	8		8.08	7.81	8.07
	FHEYER	7.12	7.41	7.45		7.5	7.47	8.2
	JANDERSON	8	8	8		7.32	7.54	8
	KKNUDTSON	8	8	8		9.3	7.45	6.43
ELEC	APELLEGRINI	4.89	6.28	6.21	6.75	7.53	7.27	13.36
	GVOELTZEL	7.67	7.6	6.27		7.68	7.81	7.72
	MWALKER	7.54	8	8		7.45	7.75	7.03
	RRENFRO	7.36	7.11	7.19		7.57	7.29	7.28
EQRPR	DSTEELE	7.08	2	8		8.74	5.2	8.2
	GBOTTICELLI	5.6	8.45	8.43		8.44	8.43	8.45
	JBOTTICELLI	8	8	8		7.85	8.03	7.38
HVAC	AARBALLO	7.92	8.03	9.77		7.04	8.04	8.07
	ALORTEGA	8.35	11.3	8.65		8	7.66	7
	JCORP	7.6	11.81	4.72		3.46	6	8.55
	JMITCHELL	8	8	8		11.33	7.42	8.66
	MARELLANO	8	8	8		7.74	8.23	7.79
	MCCHESHIRE	8.09	7.05	6.85	0.1		11.36	8
LOCK	CRAUCH	2.42		3.62		6.29	1.98	7.82
MACH	EGUERERRO	8	8	8		8.16	7.55	8.33
	EJRGUERERRO			7.78		7.02	7.43	7.54
PAINT	ANORTEGA	8	8	8		7.65	6.65	6.44
	ASALAZAR	8	8	8		7.85	8.22	6.52
	JTOSCANO	8					6.48	7.05
PLUMB	BJOHNSON					5.48	8.28	7.77
	JHAWN	8	8	8		7.55	9.43	10.01
	JPURNELL	8	8	8		6.76	4.48	6.84
UTIL	FALVAREZ	8	8	8		12.74	7.99	7.92
	GDARDEN	6.21	8	7.36		7.68	6.43	8
	TFRANKLIN	8	8	8		5.62	5.52	6.07
VEMNT	BCAO	7.58	8.02	7.63		7.88	8	8.07
	PTRAN	8	8	8		8	8	8
	SGLOVER	8.03	7.6	7.5		7.73	8.33	8
	TNGUYEN	7.48	7.37			7.43	7.52	8.87



The Lean Enterprise





Lean Processes in Maintenance & Operations

APPA Award for Effective and Innovative Practices
July 2011

By applying lean principles to custodial and maintenance functions, SDCCD eliminated the need to add 20 positions, shaving off \$813,000 in the first of a seven-year process. Additional efficiencies implemented over the next six years will increase savings to \$20 million.





QUESTIONS?

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