




# Improving the Fire Department through Lean, not “Firefighting”

By Brad Brown

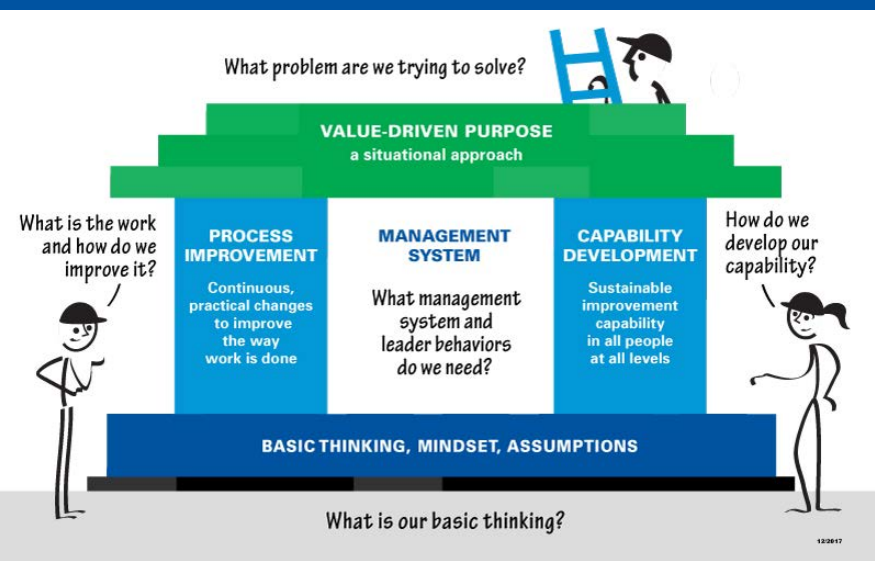
Want Better Employees?  
Be a Better Employer.

Lean Transformation Summit 2018  
Nashville | March 25-28, 2018

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# Lean Transformation Framework



What problem are we trying to solve?

**VALUE-DRIVEN PURPOSE**  
a situational approach

**PROCESS IMPROVEMENT**  
Continuous, practical changes to improve the way work is done

**MANAGEMENT SYSTEM**  
What management system and leader behaviors do we need?

**CAPABILITY DEVELOPMENT**  
Sustainable improvement capability in all people at all levels

What is the work and how do we improve it?

How do we develop our capability?

**BASIC THINKING, MINDSET, ASSUMPTIONS**

What is our basic thinking?

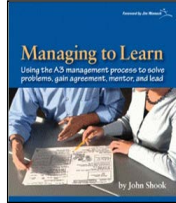
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## Main Topics

Why



A3's



Mutual Aid



Planning



Resistance



Tools



Management System



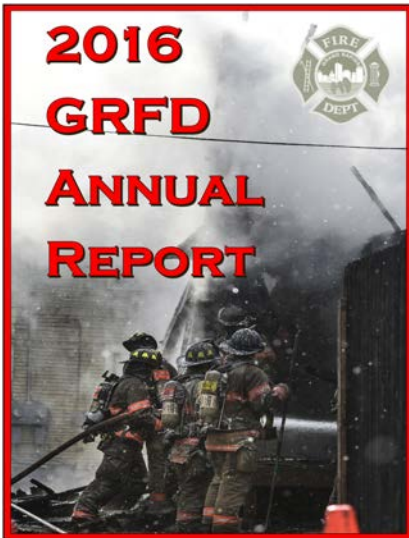
Daily Management



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## Grand Rapids Fire Department

**2016  
GRFD  
ANNUAL  
REPORT**

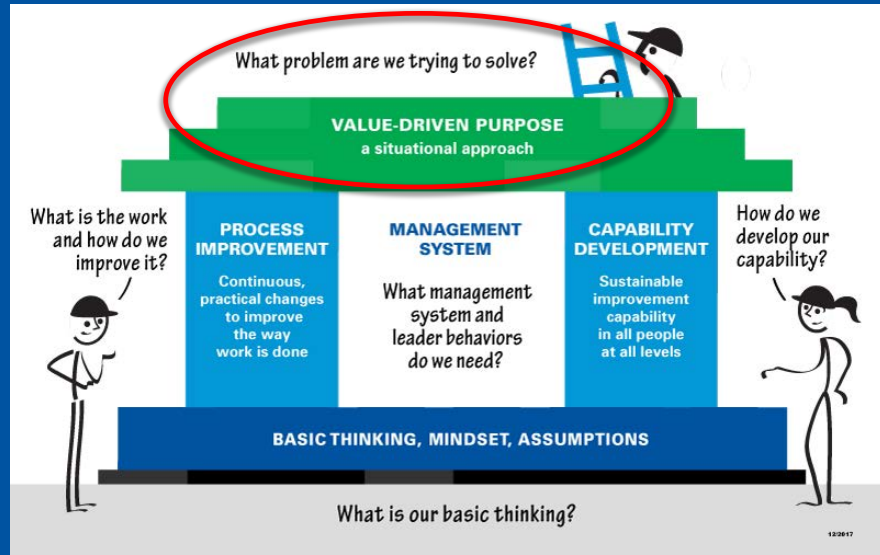


- 192,294 population
- 45.3 square miles
- \$31,042,496 budget
- 199 Personnel
- 11 Stations
- 74 Vehicles
- 23,166 incidents
- 31,908 responses



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# Lean Transformation Framework



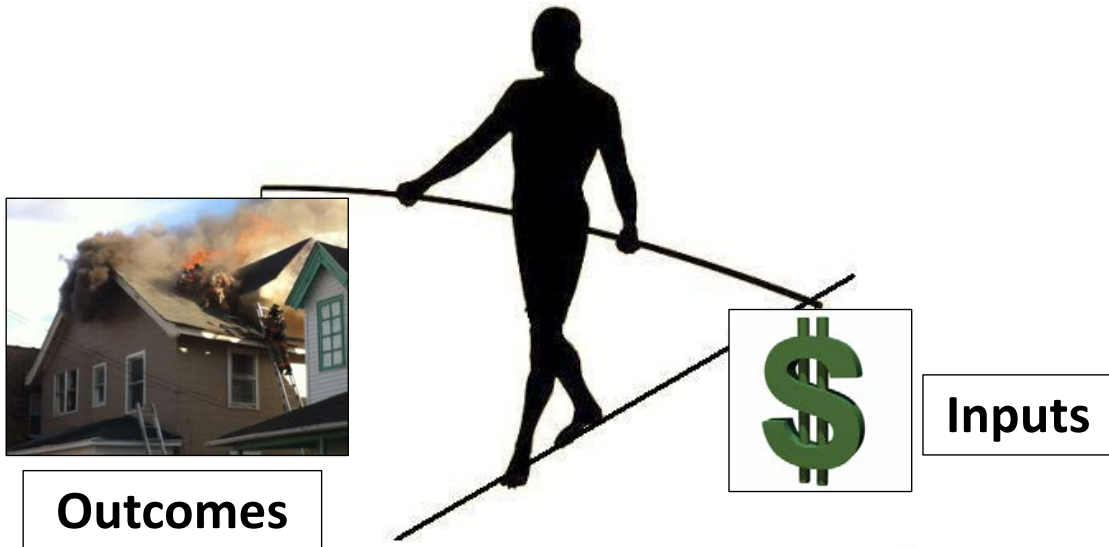
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# Why

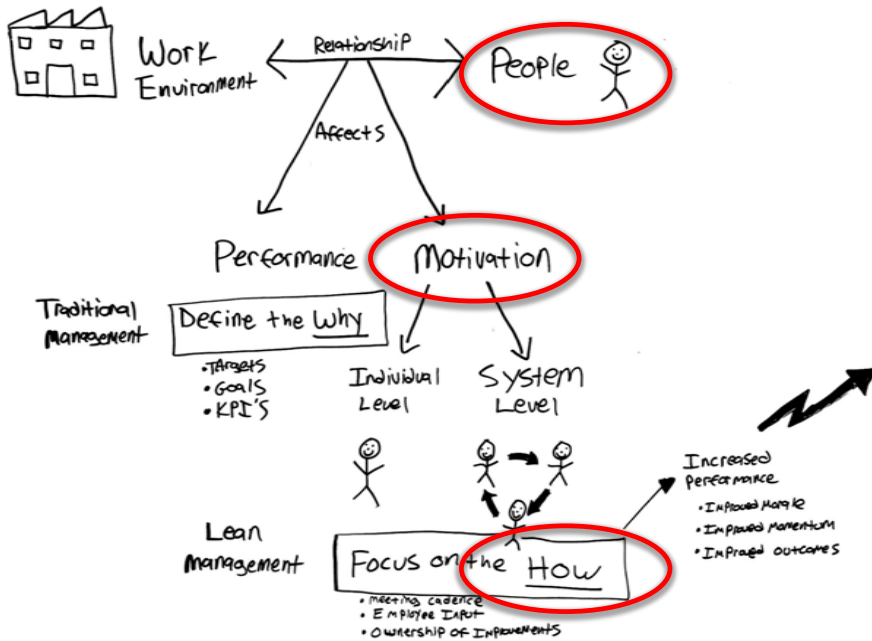


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# GRFD's Problem



# Why Lean?



Taylor, B. M. (2015). The integrated dynamics of motivation and performance in the workplace. *Performance Improvement*, 54(5), 28-37. 10.1002/pfi.21481

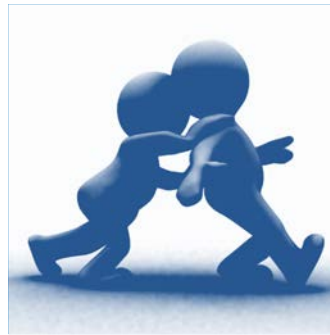


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# Resistance

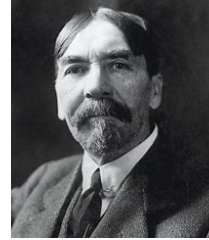


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## Our Basic Thinking-Resistance to Change

American Sociologist Thorstein Veblen (1899)

“An instinctive revulsion at any departure from the accepted way of doing ...only to be overcome by stress of circumstances”



Psychologist William McDougall (1908)

“People are prepared to maintain a custom often at great cost of effort or discomfort, long after it serves any useful end”



Jost, J. T. (2015). Resistance to change: A social psychological perspective. *Social Research*, 82(3), 607.



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## Our Basic Thinking- Resistance to Change

American Social Psychologist Kurt Lewin (1947)

Argued that social norms become “vested interests” that we become highly protective of. Individuals are invested in social groups, which are embedded in social systems. Changing is akin to leaving the group.

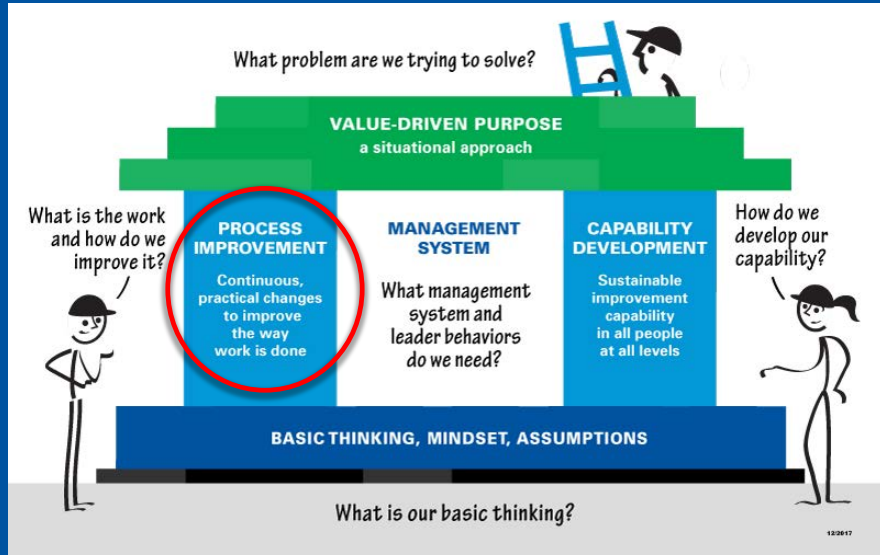


The only way to create change is to unfreeze the individual's attitude, ideally in a social setting in which one's friends are also unfrozen at the same time.



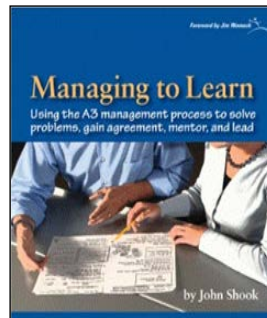
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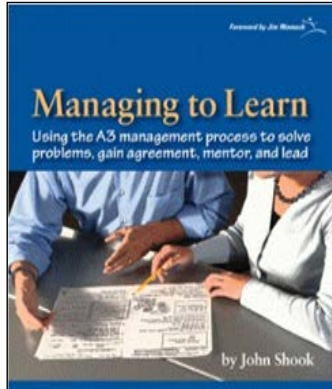
## A3's



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# A3 Problem Solving Tool

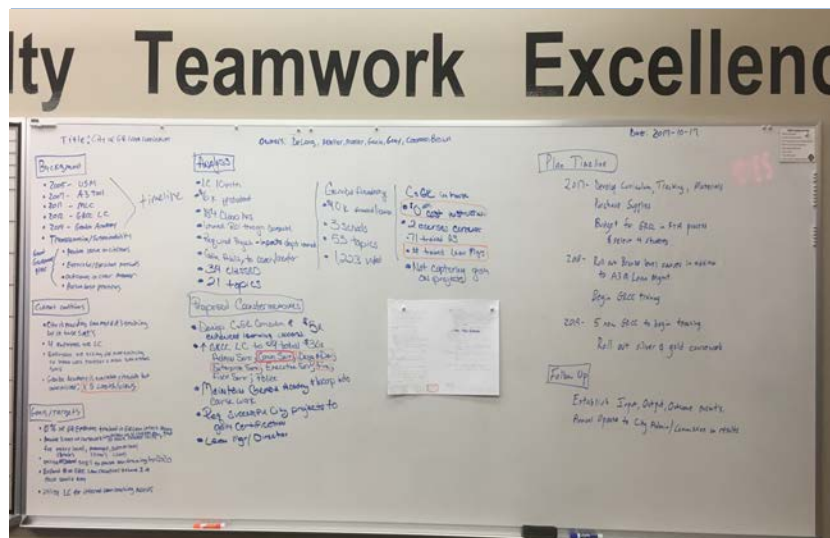
A3 refers to a European paper size that is roughly equivalent to an American 11 x 17 sheet of paper



- The template involves several well defined steps to “solving” a problem
- The power is not in the paper, but the thought process



# Asset Management A3





# Teaching A3's for the City



**A3 Thinking**

The graphic features a logo at the top consisting of a yellow circle with a red and blue wave-like shape inside. Below the logo, the text "A3 Thinking" is displayed. Underneath, there are three small images: a fire truck, a group of people sitting around a table looking at a document, and another fire truck.

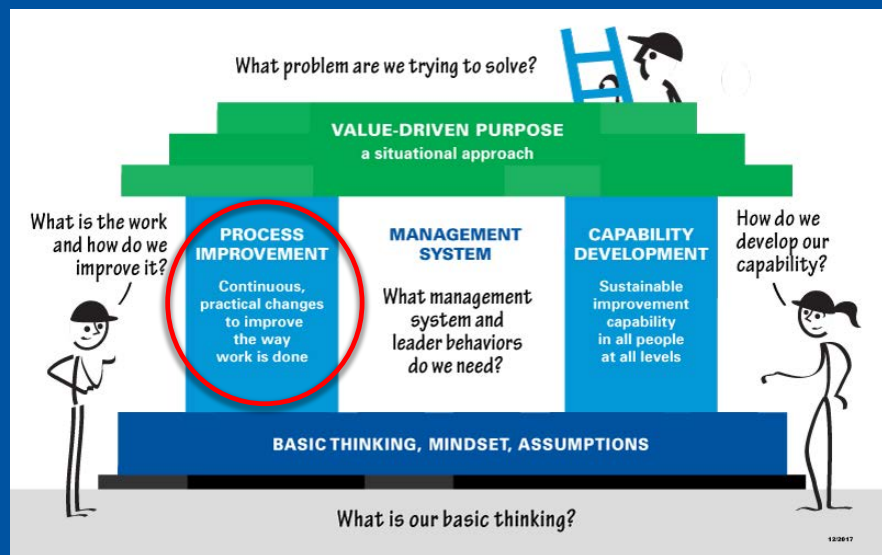


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# Tools



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## Our Tools

- 5S=Sort, Straighten, Shine, Standardize, Sustain
- Process Mapping
- Standard Work
- Rapid Improvement Events



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# EMS 5S

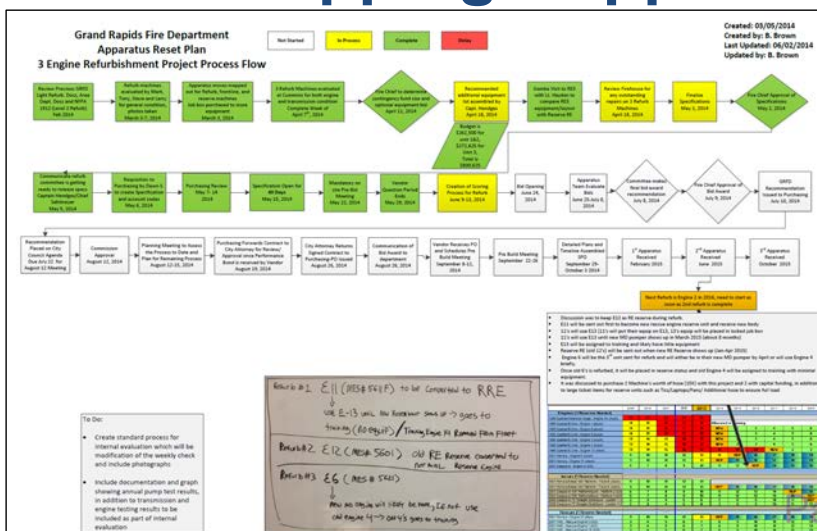
Before



After



# Process Mapping - Apparatus



# Standard Work – Meetings

**GRFD MEETING MINUTES**

**1) HOW DOES THIS MEETING FIT INTO THE BIG PICTURE**

Mission	The GRFD will provide the highest level of service to our community through a commitment to excellence.
Vision	The GRFD strives to be an accredited national fire service leader that aligns with community needs and provides a secure work environment for its members. This is accomplished by diverse partnerships, increased adaptability, fluid communication, complete transparency and a commitment to the benefit of all employees.
Values	Honesty Integrity Loyalty Teamwork Excellence
Pillars	Response Training Prevention Wellness
Meeting Scope	
Meeting Goals	

**2) WHO IS IN ATTENDANCE**

Name	Organization	Present (Y or N, indicate % if not 100%)

**3) MEETING ADMINISTRATION**

Date:	Location:	Scribe:
Scheduled Meeting Start Time:		Actual Meeting Start Time:
Scheduled Meeting End Time:		Actual Meeting End Time:
Reviewed Minutes and Action Items from Previous Meeting:	Yes No	
Next Meeting Date:	Location:	Time:

**4) REPORT OUT/DISCUSSION**

1

Rev. 2014-06-02

**GRFD MEETING MINUTES**

**5) DECISIONS MADE**

**6) MEETING ACTION ITEMS**

#	Action	Assigned To	Deadline	Complete
1				
2				
3				
4				
5				
6				

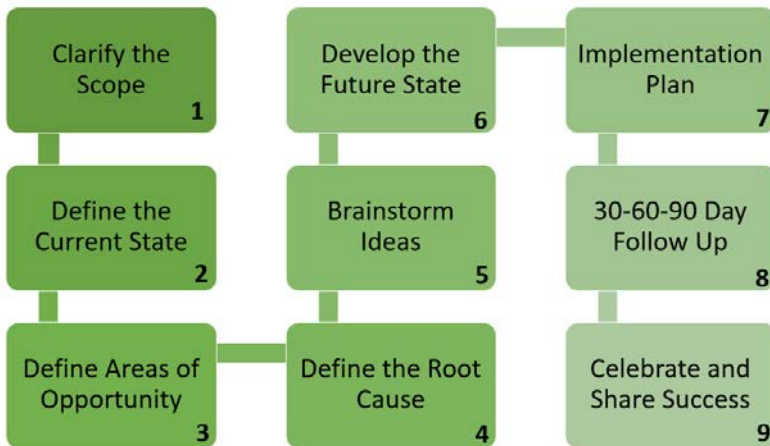
**7) ADDITIONAL INFORMATION**

3

Rev. 2014-06-02



# Rapid Improvement Events



# How's it Going?



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# Mutual Aid



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## Traditional Mutual Aid

**METRO AREA  
FIRE SERVICE INITIAL EMERGENCY AUTOMATIC AID AGREEMENT**  
 Updated July 2011

THIS AGREEMENT made and entered into by the metropolitan communities of Kent County identified below on or after August 1, 2011.


WHEREAS, the parties are located in geographic proximity to each other; and


WHEREAS, it is to their mutual advantage and benefit that each of the parties agree to provide supplemental fire protection for **structural fires, vehicle fires, and medical 1 emergencies** through Initial Emergency Automatic Aid response; and

WHEREAS, the parties are authorized to enter into this Agreement by virtue of the provisions of Act 35 of Michigan Public Acts of 1951, as amended, being MSA 5.4081 et seq., MCLA 124.1 et seq.; and Act 7 of Michigan Public Acts of 1967, Extra Session, as amended, being MSA 5.4088(1) et seq., MCLA 124.501 et seq.

NOW, THEREFORE, the parties agree:

1. To provide Initial Emergency Automatic Aid Response to and for **structural fires, vehicle fires, and medical 1 emergencies** in designated areas, in accordance with this Agreement and adopted protocols as provided for herein.
2. With the approval of this Agreement by the governing body of a participating jurisdiction, the Chief Administrative Officer and the fire chief are authorized to enter into individual response agreement(s) by signing the "Initial Emergency Automatic Aid Response Protocol Form" ("Protocol Form"). A copy of the approved Protocol Form to be used by the parties is attached as Exhibit A and incorporated by reference.





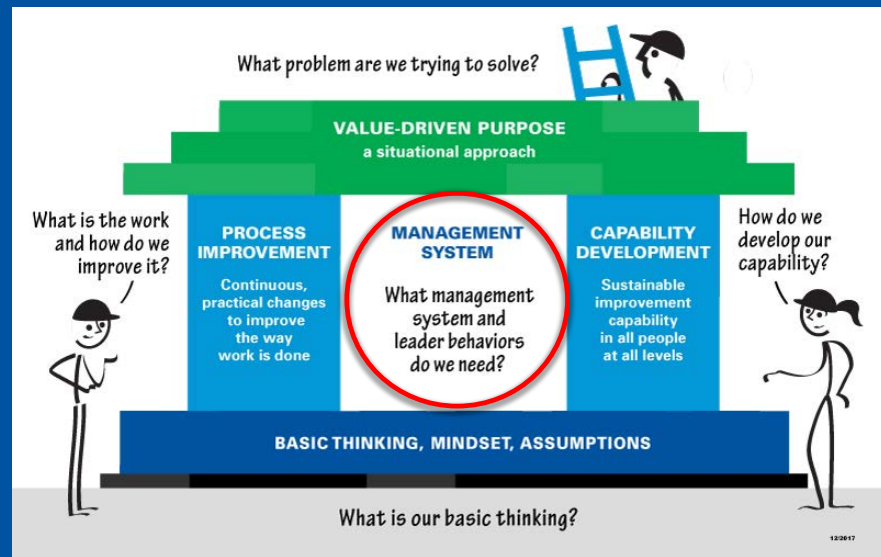
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# Lean Mutual Aid




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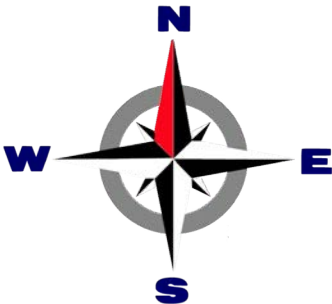
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# Planning



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# Planning



**Legend**

■ Master Planning

■ Strategic Planning

■ Operational Planning

■ Budgetary Planning

■ Command Staff

■ Accreditation Planning

⬠ Annual Off Site 4 Hour Meeting

⬠ Quarterly On Site 2 Hour Meeting

⬠ Monthly On Site 1 Hour Meeting

⬠ Bi-Weekly On Site 1/2 Hour Meeting

Created by: GRFD Planning Division  
Last Updated: 2016-11-14

## GRFD Integrated Planning Calendar

This calendar is dynamic in nature and subject to change!  
Meetings will Occur if three or more are present, start on time, end on time, and utilize the standard templates.


2016				2017				2018			
Jan 01	Jan 08	Jan 15	Jan 22	Jan 01	Jan 08	Jan 15	Jan 22	Jan 01	Jan 08	Jan 15	Jan 22
Feb 01	Feb 08	Feb 15	Feb 22	Feb 01	Feb 08	Feb 15	Feb 22	Feb 01	Feb 08	Feb 15	Feb 22
Mar 01	Mar 08	Mar 15	Mar 22	Mar 01	Mar 08	Mar 15	Mar 22	Mar 01	Mar 08	Mar 15	Mar 22
Apr 01	Apr 08	Apr 15	Apr 22	Apr 01	Apr 08	Apr 15	Apr 22	Apr 01	Apr 08	Apr 15	Apr 22
May 01	May 08	May 15	May 22	May 01	May 08	May 15	May 22	May 01	May 08	May 15	May 22
Jun 01	Jun 08	Jun 15	Jun 22	Jun 01	Jun 08	Jun 15	Jun 22	Jun 01	Jun 08	Jun 15	Jun 22
Jul 01	Jul 08	Jul 15	Jul 22	Jul 01	Jul 08	Jul 15	Jul 22	Jul 01	Jul 08	Jul 15	Jul 22
Aug 01	Aug 08	Aug 15	Aug 22	Aug 01	Aug 08	Aug 15	Aug 22	Aug 01	Aug 08	Aug 15	Aug 22
Sep 01	Sep 08	Sep 15	Sep 22	Sep 01	Sep 08	Sep 15	Sep 22	Sep 01	Sep 08	Sep 15	Sep 22
Oct 01	Oct 08	Oct 15	Oct 22	Oct 01	Oct 08	Oct 15	Oct 22	Oct 01	Oct 08	Oct 15	Oct 22
Nov 01	Nov 08	Nov 15	Nov 22	Nov 01	Nov 08	Nov 15	Nov 22	Nov 01	Nov 08	Nov 15	Nov 22
Dec 01	Dec 08	Dec 15	Dec 22	Dec 01	Dec 08	Dec 15	Dec 22	Dec 01	Dec 08	Dec 15	Dec 22

**Holidays:** ■ Weekend holidays are observed on the adjacent weekday.

January 1, July 4, December 24 & 25  
 MLK - 2016-01-18/2017-01-18/2018-01-15  
 President's Day - 2016-02-15/2017-02-20/2018-02-19  
 Good Friday - 2016-03-25/2017-04-14/2018-03-30

Memorial Day - 2016-05-30/2017-05-29/2018-05-28  
 Labor Day - 2016-09-05/2017-09-04/2018-09-03  
 Veteran's Day - 2016-11-11/2017-11-10/2018-11-12  
 Thanksgiving Day - 2016-11-24/2017-11-23/2018-11-22

**Master Planning** = Ties together all GRFD plans and measure their progress at the macro level. Resource alignment will be key.  
**Strategic Planning** = Will be to assess the adopted plan, track its performance, and to create a new strategic plan.  
**Operational Planning** = To evaluate and measure the 4-Pillars. Focus on each pillar's settings, objectives, initiatives, and targets.  
**Budgetary Planning** = Will evaluate the progress of each of the areas and programs. Forecasting and planning will also be involved.  
**Accreditation Planning** = Progress on Strategic and Specific Recommendations will be discussed and reviewed.



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# 6 Month Alignment Sessions



	Response
<b>Strategic and Operational Planning Review Team</b> <b>6 Month (July—December 2017)</b> <b>Priorities/Opportunities</b>	1. Replacement apparatus - E3 and E4 order has been placed with Rosenbauer 2. Support Vehicles - Conceptual discussions taking place
<b>Training</b>	<b>Prevention</b>
1. Host 1-3 NFA Classes 2. Strengthen the Recruit Mentoring Program 3. Update the Training Center replacement plan 4. Attend a Station Design Conference Use Monroe and Division as satellite Training Centers	1. Commercial Occupancy Public Education handouts 2. Update Fire Life Safety contractor information 3. Contribute to the State of Michigan Community Risk Reduction task force
<b>Wellness</b>	<b>Support Services</b>
1. Designate a 40 Hour point of contact 2. Long term plan for marketing and managing interns 3. Include an Employee Satisfaction Section in the next Internal Survey	1. Public Information Officer - Identify personnel and schedule training 2. Succession Training - Identify personnel and training courses for development



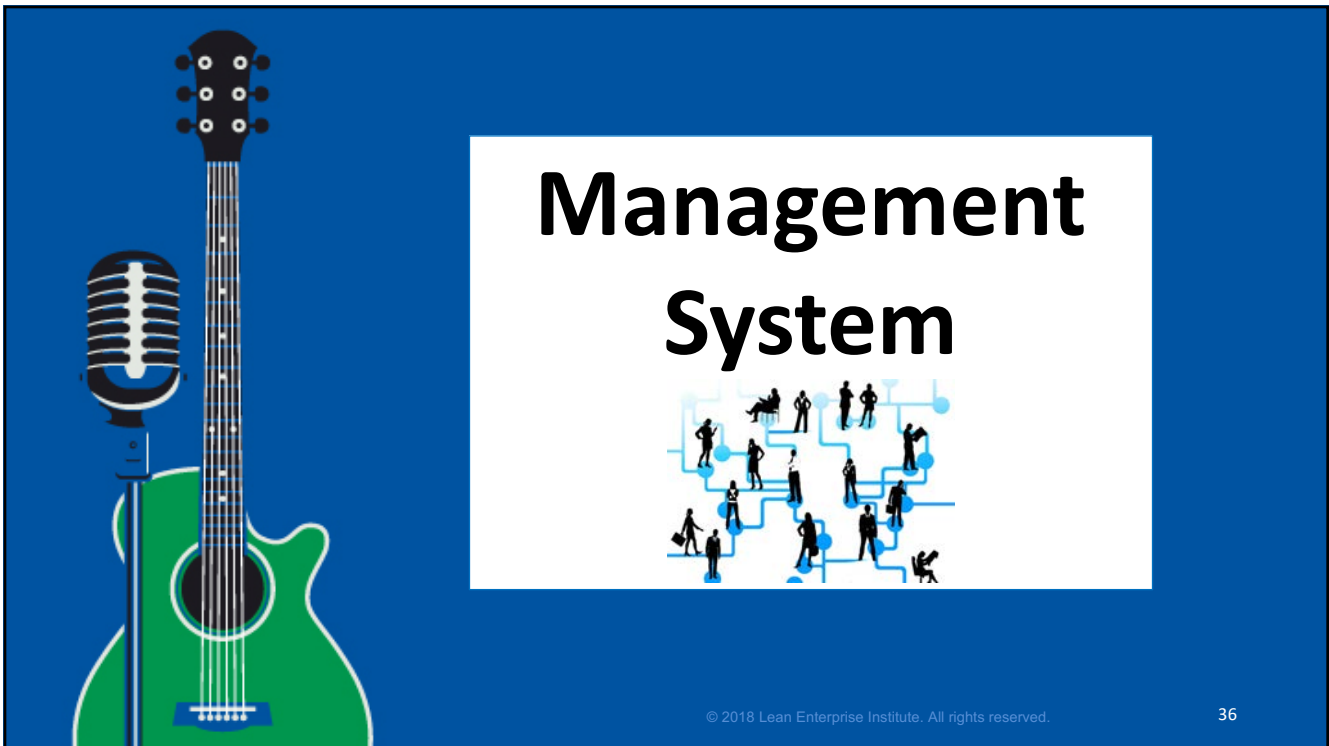
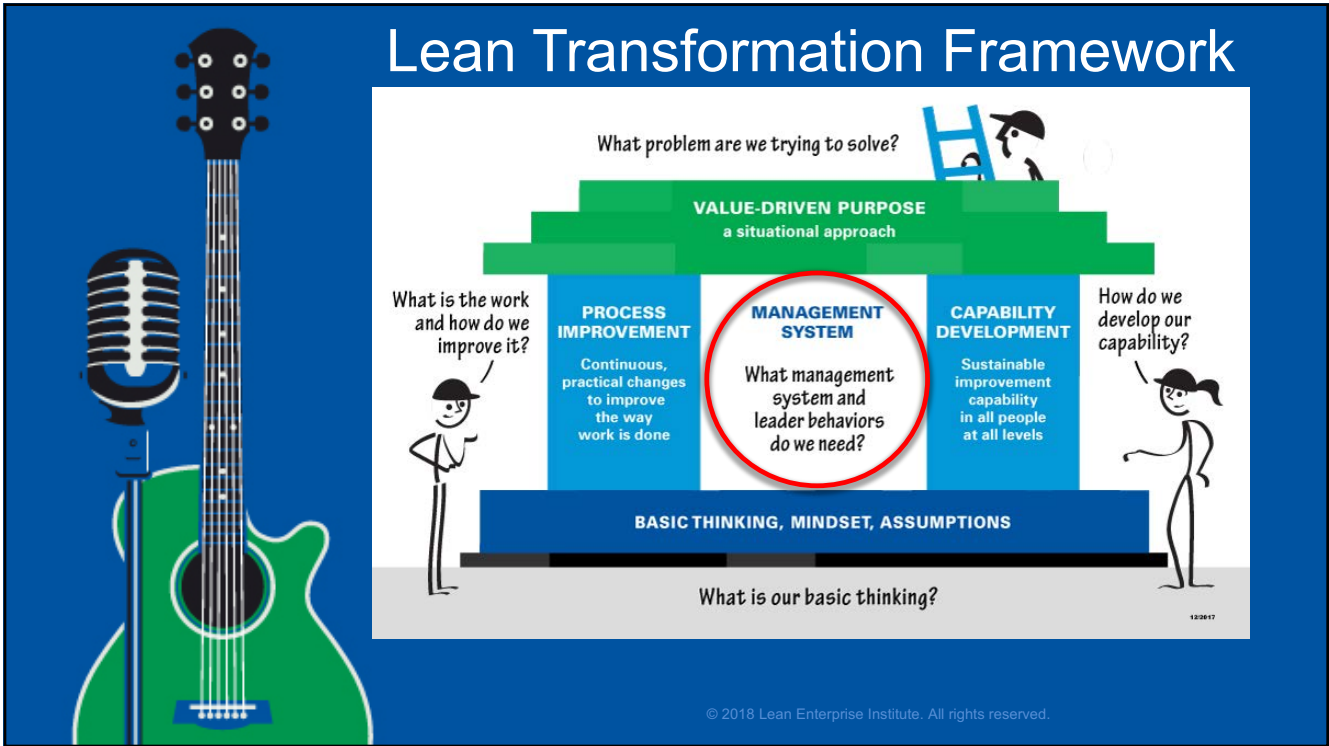
# Employee Participation with Planning



	MISSION	VISION	VALUES		
	The Grand Rapids Fire Department values people by serving first; protecting property and responding to the needs of our community.	Providing world class fire services for our community by employing a diverse workforce which respects, values, and develops our members.	Honest • Integrity • Loyalty • Teamwork • Excellence		
	<b>FY19-FY21 STRATEGIC PLAN</b>				
<b>DESIRED OUTCOME</b>	Effective all hazards deployment model with appropriate staff and apparatus	Provide the appropriate skills and education to ensure sustainability and growth at all ranks	Create a safer community by implementing an effective community risk reduction program	A healthier workforce through researching, designing, and implementing a structured wellness program	Provide continuous improvement of resources in a deliberate and planned manner
<b>FY19 STRATEGIES</b>	Increase community awareness of firefighting, EMS, and Special Operations	Comprehensive training curriculum development	Perform a community risk assessment to identify areas of concern	Research baseline insurance costs to ensure best value	Ensure continuity of operations through development of a promotion pathway and succession plan.
<b>FY20 STRATEGIES</b>	Ensure appropriate response to high-risk building and events	Implementation of training curriculum	Develop formal community risk reduction modules	Design and develop a structured wellness program	Development of a diverse hiring plan to ensure our workforce represents the community we serve
<b>FY21 STRATEGIES</b>	Increase staffing levels to meet community risks	Evaluate training curriculum and make adjustments	Implementation of the community risk reduction plan	Implement and evaluate programmatic changes to the wellness plan.	Provide comprehensive asset management in a fiscally responsible manner

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## Managing for Daily Improvement



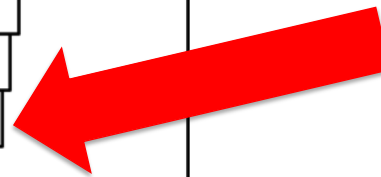
3C.1 Some form of organizational management process is identified and used to track progress and results of agency goals and objectives relating to general organizational and operational programs

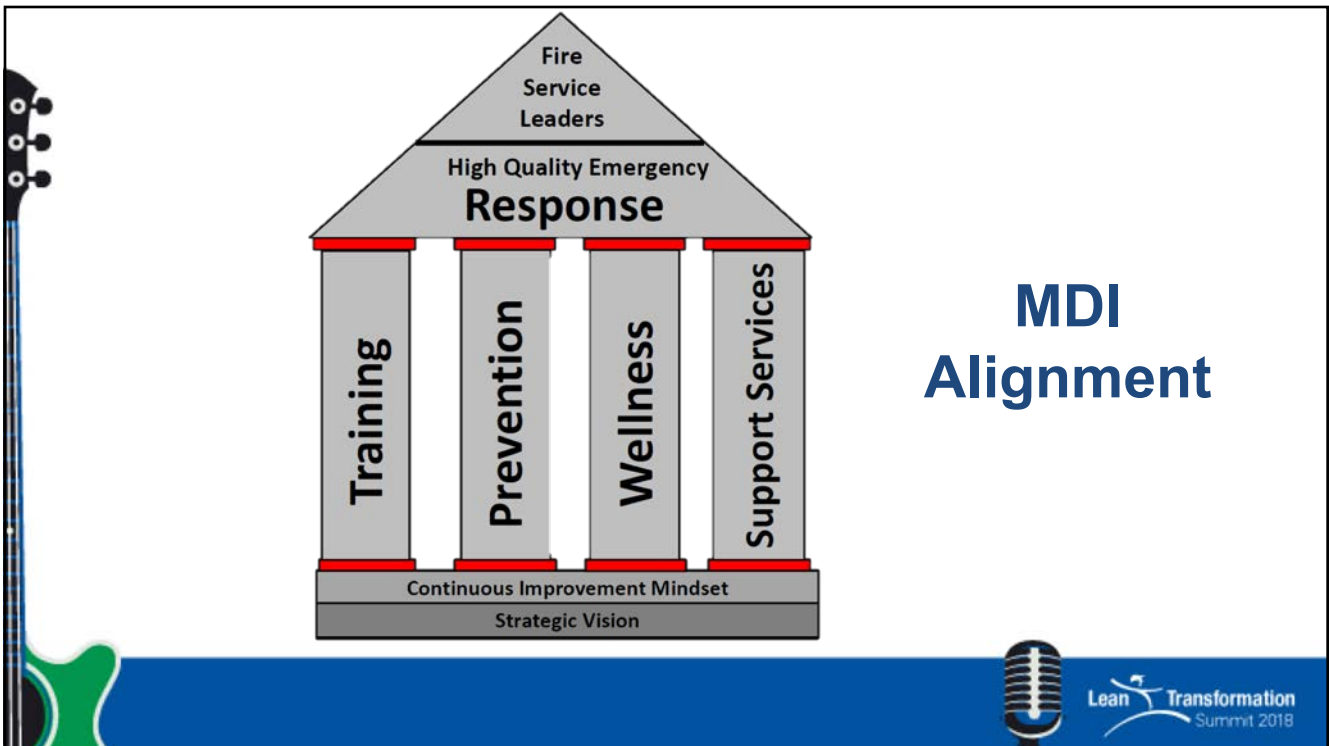
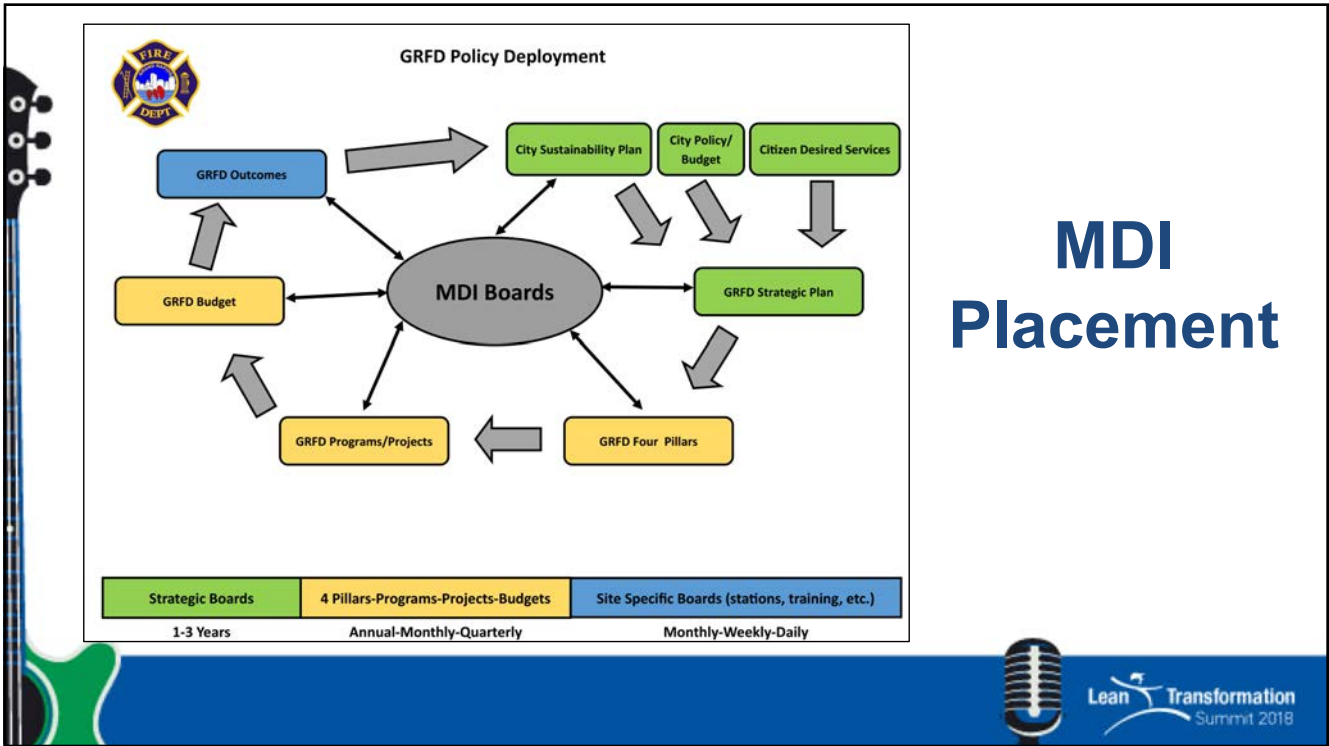


### GRFD MDI Cascade of Events



**MDI Timing**







# MDI Initial Try



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# MDI 2.0



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**Standard Work**  
**Monday MDI Huddle**

SW #:	1
Creation date:	2015-06-15
Revision date:	

Program Area: Strategic Planning  
Reviewed By: Chief Knapp  
Reviewed Date: 2015-06-15  
Owner: SPO Brown

**PURPOSE**  
Standardization of the Monday morning Managing for Daily Improvement (MDI) huddle to ensure maximum information transfer and decision making within the 45 minutes of time allotted.

**PROCEDURES**  
On Monday mornings at 08:30, the fire chief, deputy chiefs and strategic planning officers will assemble at the West end of the North hallway outside of the Planning Division office. Board owners will join in the work as their board is reviewed.

This meeting will take place on the first work day after Monday if it is rescheduled due to a holiday or other extenuating circumstances.

The boards will be updated by the program manager or designer prior to the huddle.

The colors on the MDI boards have specific meaning:  
**Black**- Normal information  
**Red**- Not hitting target or questions from Quality Assurance personnel  
**Green**- Achieving target

At 08:30 the meeting will commence, with each board owner having approximately 3 minutes to review their board with the following format:  
**1st Minute**- Review outstanding work from previous week as indicated in email sent by planning  
**2nd Minute**- Changes in performance (hitting/not hitting targets) indicated by Red/Green  
**3rd Minute**- Discussion to solve a problem, make a decision or schedule follow up meetings/work

The exception to this format will be the big budget boards (a general overview on goals/targets and how the budget is trending) and the separate "budget" board (each major project will receive a quick status update).

The order of the boards is as follows (with preferred times):  
 1. Accreditation (08:30-08:33)  
 2. ISO (08:33-08:36) 0833 - 0836  
 3. Strategic Planning (08:36-08:39) 0836 - 0839  
 4. Response (08:39-08:42) 0839 - 0842  
 5. Training (08:42-08:45) 0842 - 0845  
 6. Prevention (08:45-08:48) 0845 - 0848  
 7. Wellness (08:48-08:51) 0848 - 0851  
 8. Support Services (08:51-08:54) 0851 - 0854  
 9. IT (08:54-08:57) 0854 - 0857  
 10. IT (08:57-09:00) 0857 - 0900  
 11. Budget Boards (09:00-09:06) 0900 - 0906  
 12. Apparatus (Budget) (09:06-09:11) 0906 - 0911  
 Wrap up (09:11-09:13)

As each board is reviewed, the QA date will be updated and initial red/green indicator will be adjusted to reflect the accuracy of the board (Red= needs work, Green= updated).

Following the end of the meeting, the planning division will update the standard email that captures the high level overview for each area and what work needs to be accomplished.

*Handwritten notes:*  
 6/29 WRIK  
 FLIP  
 55 MINUTES

# MDI Standard Work

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# Station Level MDI

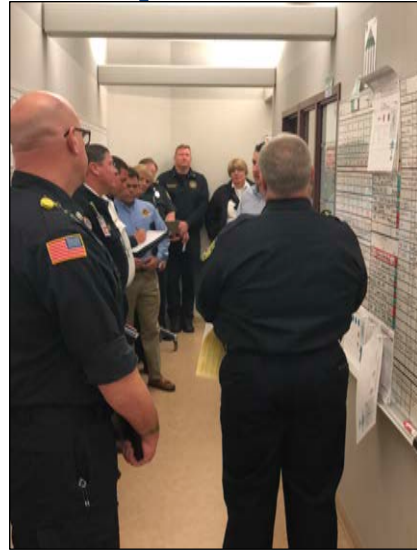
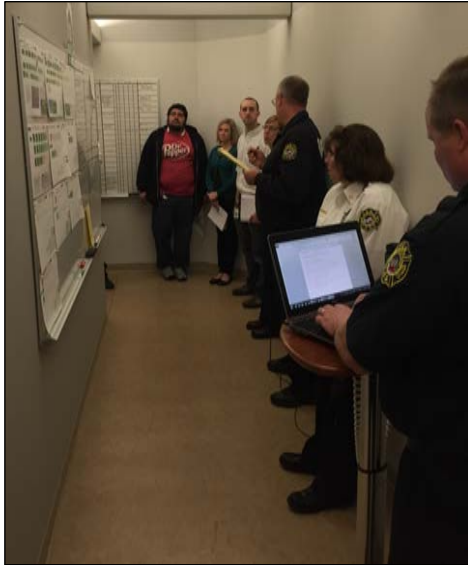
**Inventory Issues**  
 S-1 Backup Pressure  
 Ratio in FH  
 S-1 Inventory OK  
 S-1 Membrane in Government on site  
 S-1 New primer upstairs

**Excuses are the walls in the house of failure**  
 - LINCOLN

**Other notes:**  
 104 - Source Project  
 S-1 - TET in Burger box  
 S-1 - Pump tested  
 S-1 - changed out FF-B SCBA  
 Washer/ dryer  
 Exterior Pail  
 East Interior Wall  
 Laundry Room Walls  
 the Backup System  
 AC Unit Unit Above  
 replace BIA Inventory  
 Dish Drain Rack  
 Batts for bridge  
 1st & 2nd floor  
 Brackets Rec - see  
 Interconnect Batts  
 30 garden hose

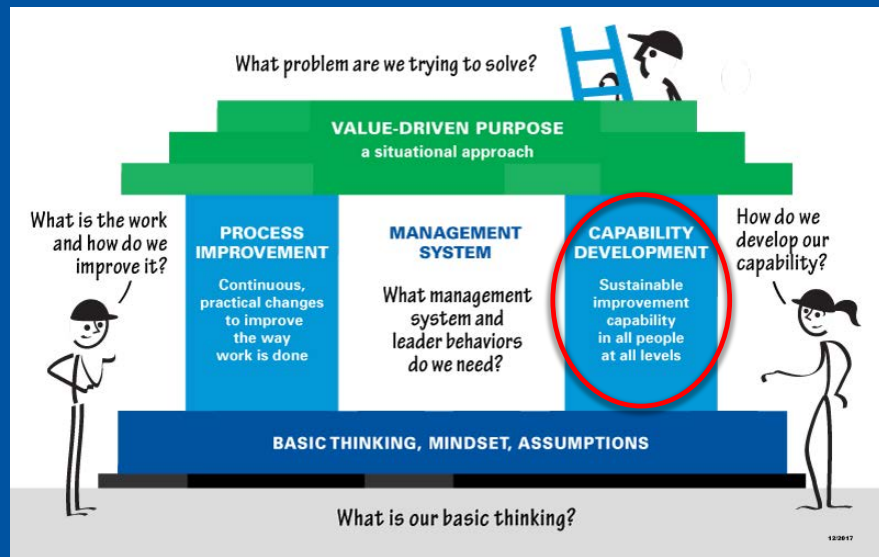
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# MDI – Continuous Improvement



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## Lean Transformation Framework



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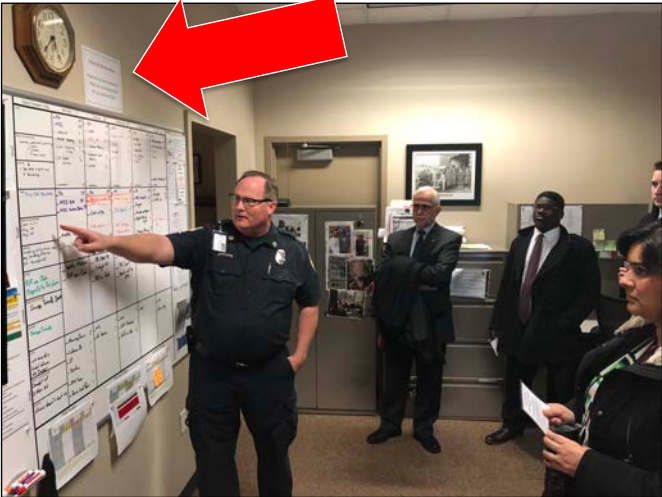


# Daily Management




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## Huddles-Daily Questions



- What did you learn yesterday?
- What are you doing today?
- Do you need any help?



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There is a continual process of checking to make sure that what is done each day reflects the intentions, the targets, the vision of what the organization has agreed to pursue.

Akao, Y. (1991). *Hoshin Kanrin Policy development for successful TQM*. Cambridge, MA. Productivity Press.

## Huddles -Why



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## Huddles-Weekly Questions

### Weekly Huddle Questions

1. What were your major accomplishments last week?
2. What did you learn last week?
3. How does your work this week align with the strategic goals of the department?  
(Turn Card Over) →
4. Do you need any help?

### Strategic Alignment Checklist

#### How does your work align with:

- City Sustainability Plan?
- GRFD Strategic Plan?
- GRFD Operational Plan?
- Monthly Work Planning?
- Personal Kanban?

(Return to Question 4) →





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## GRFD Strategic Plan Alignment



Support Services	Achieve 90th Percentile for Core Performance Metrics
Support Services	Improve Resource Allocation
Support Services	Increase Customer Satisfaction and Awareness
Support Services	Implement Customer Service Quality Assurance and Departmental Marketing Program
Training Services	Staff Preparedness Aligns with Industry Standards
Training Services	Clearly Defined, Scheduled and Monitored Training
Training Services	Seamless Personnel Transitions
Training Services	Innovative Leadership Programming
Prevention Programs	Reduce Commercial Fire Loss by 10%
Prevention Programs	Implement and Improve Programs to Enhance Commercial Inspections for Occupancies over which the GRFD has Jurisdiction
Prevention Programs	Reduce Residential Fire Loss and Injuries by 10%
Prevention Programs	Enhance RSA Effectiveness and Improve Public Education Efforts
Medical Services	Reduce Injury Rates by 10%
Medical Services	Develop Targeted Programs for Injury Reduction
Support Services	Provide the Best Value for Our Internal and External Customers
Support Services	Efficient and Effective Resource Management Through Comprehensive Planning and Implementation
Support Services	Well Informed and Educated Stakeholders
Support Services	Transparent and Timely Communications

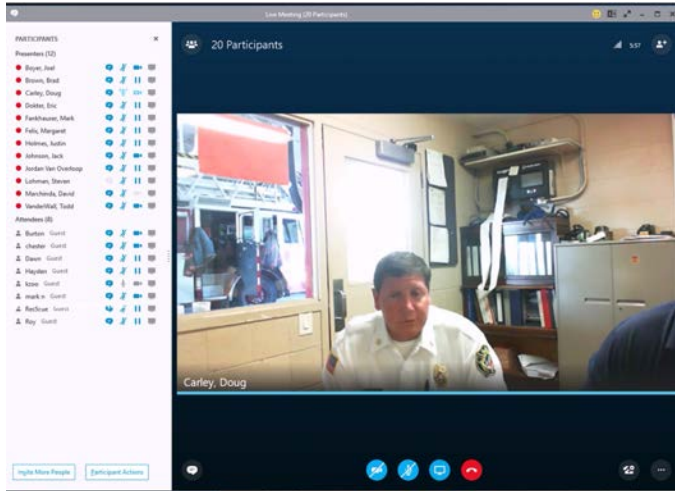
# Huddles-Alignment

## Daily Huddles

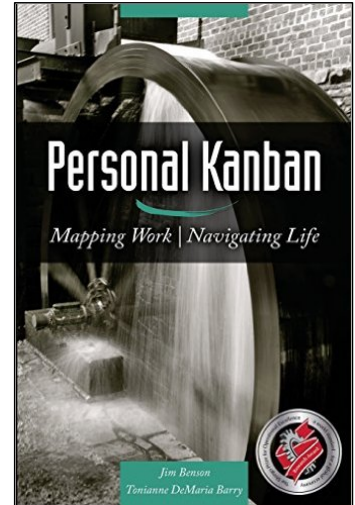
Skype used for geographically dispersed workforce



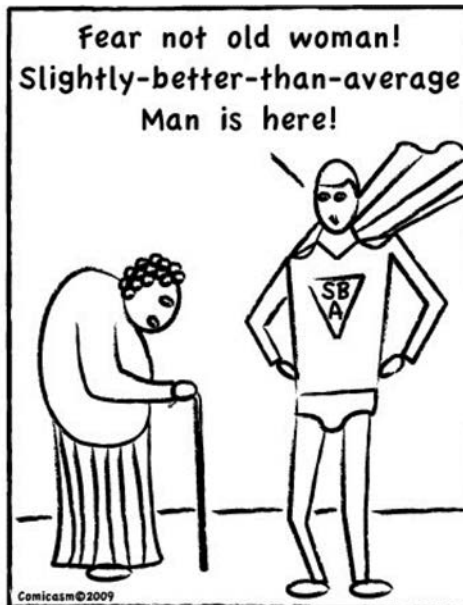
# Personal Kanban

A pull system to visualize workload and flow  
Easy to implement and maintain



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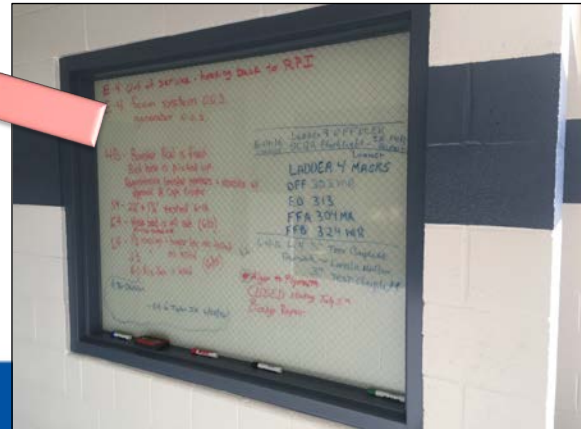
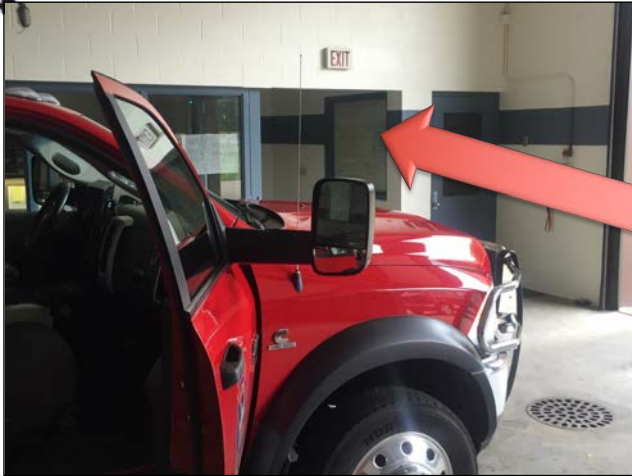
## How's it Going?



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# Internal Feedback

Transition from a “push” system to a “pull” system



# External Feedback



Thank You!



Brad & Team

4/20/16

Thanks so much for allowing us to visit and participate in your huddle on Monday morning. We are so impressed with the progress you guys have made on your lean journey. The positive engagement and contributions from each team member was orderly and valuable. In addition, the visual management tools across the department was a great sign of progress that we are striving to achieve soon. It was amazing to see the similarities even though our worlds are very different! 😊

# External Feedback

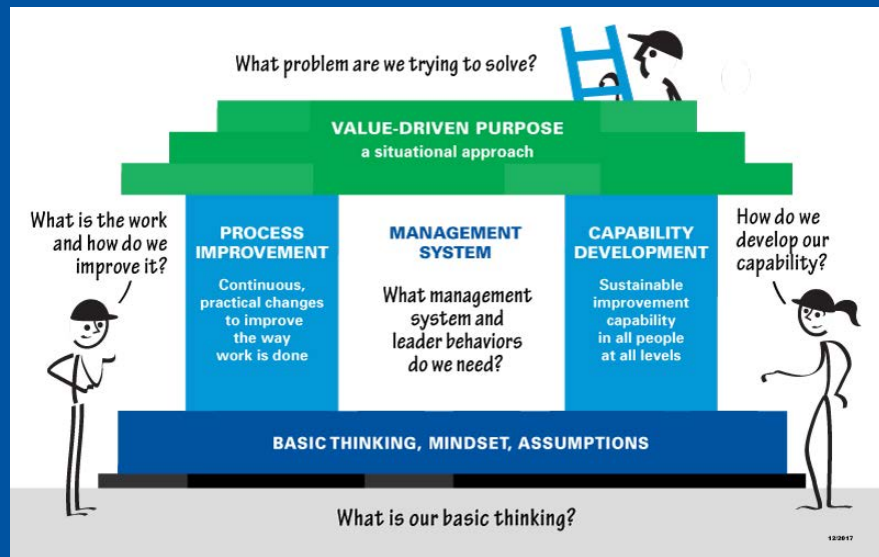


May 15, 2017

Brad ~

Many thanks for hosting our Mercy Health Process Excellence team yesterday! We greatly appreciate your time and investment in our learning. This is definitely a journey for all of us, and we must rely on our learning partners! You have tackled some of the most critical + difficult elements - congratulations! Please extend our appreciation to your amazing team of leaders - to me, the leadership and individual/team accountability is most impressive! Thank you! *Mandy Deffen*

## Lean Transformation Framework



## Take Away Nuggets



- 1 - Define your **why**
- 2 - Reflect on the need to **motivate your people**
- 3 - Remain humble enough to **ask for help**
- 4 - Institutionalize **your system**
- 5 - **Plan** your work then work your plan **daily**
- 6 - Shift from doing lean **TO** people to doing lean **FOR** people



Lean Transformation  
Summit 2018



Thank you!

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