

MAINTENANCE PROCESS MAPPING

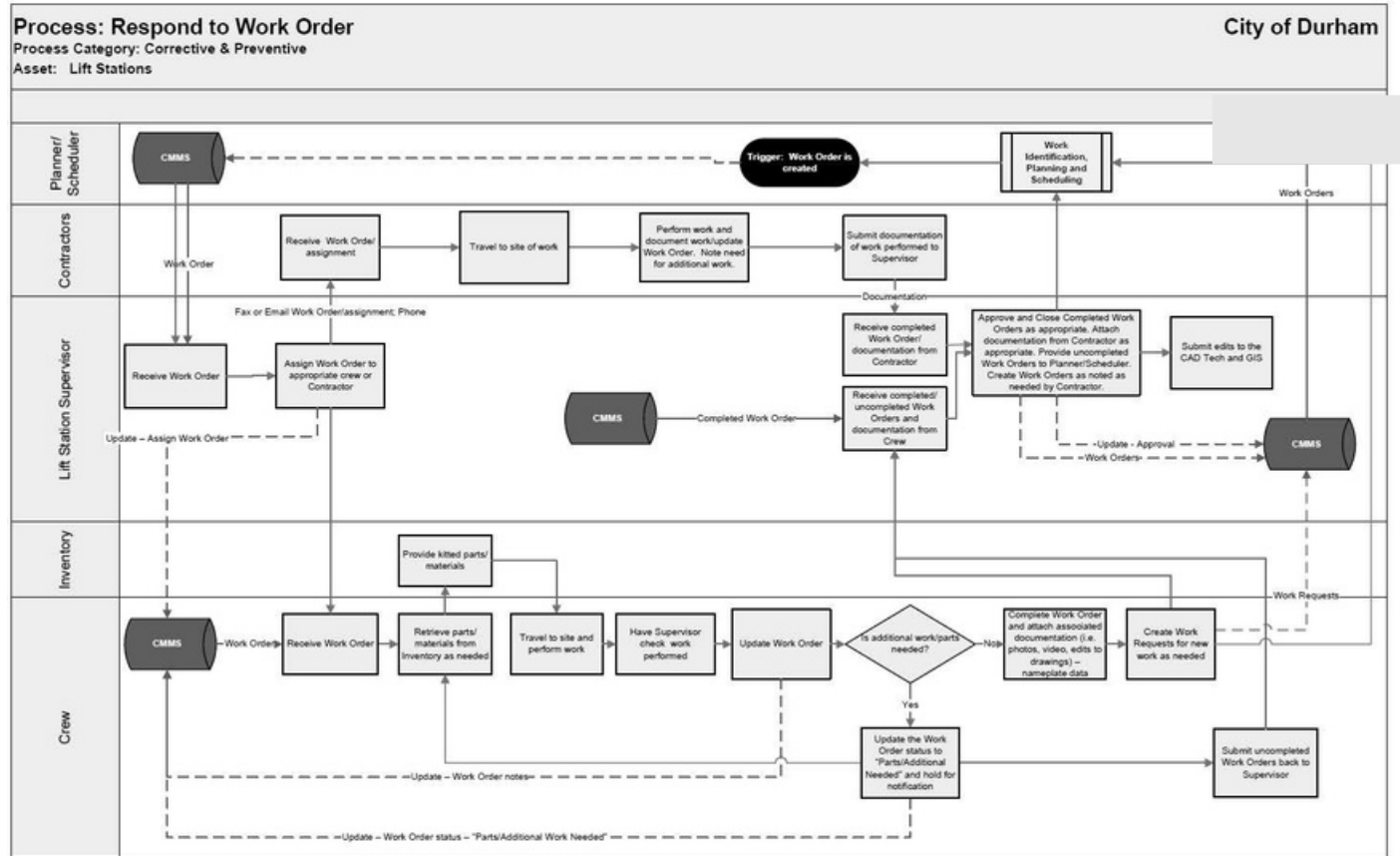
BY: **RICKY SMITH, CMRP,
CMRT, CRL**



Maintenance Process Mapping

“Alignment of Maintenance Processes”

By Ricky Smith CMRP



“Without Effective Maintenance Process Maps an Organization will never achieve stable maintenance processes and thus continuous improvement is not be achievable”

-Ricky Smith CMRP



Text in your answers to these questions...

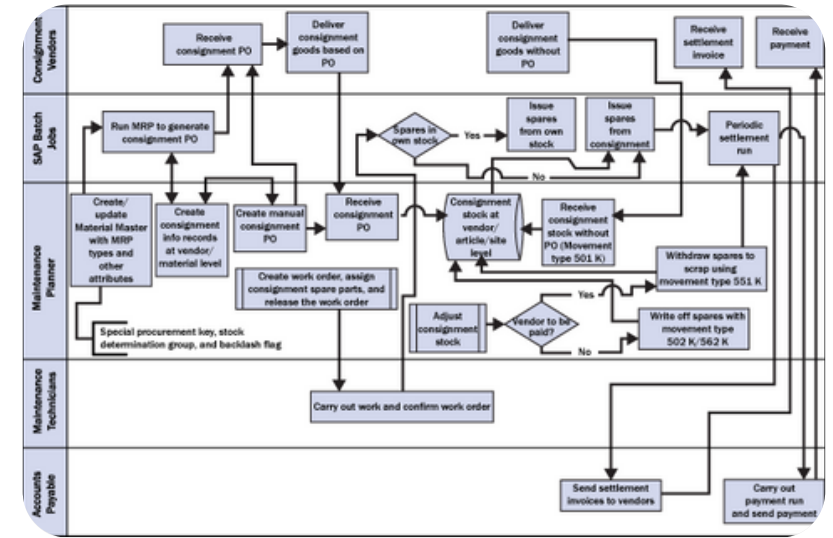
1. Does your organization have Maintenance Process Maps? Yes, No, Not Sure
2. If you have Maintenance Process Maps, are they followed? Yes or No
3. If you have Maintenance Process Maps, are they aligned with your Metrics/KPIs? Yes or No
4. Do you think Process Maps are critical to success of your Maintenance Function? Yes or No
5. Does your Organization use RACI Charts to ensure everyone know their roles and responsibilities your Maintenance Process? Yes/No



Initial Questions to Ask –Text in your answers

Before diving in, let's ask these questions concerning your Process Maps

1. The first question worth asking is whether your organization has maintenance process maps, if so dust them off and use them.
2. If you do, then here are a few more questions you might want to ask to assess the current state of your mapping process:
3. Does everyone in maintenance know Process Maps exist?
4. If you process maps are they followed?
5. Are your process maps linked to leading and lagging key performance indicators (KPIs)?
6. Do your process maps have responsibility assignment matrices (also known as RACI charts) to align everyone's actions
7. Keep your responses in mind as we go through the rest of the sections.
8. If you're not familiar with process maps or haven't heard about them before, then chances are your organization isn't using them.
9. While having a lack of process maps isn't ideal however it's not uncommon either.



Proactive Maintenance

"Roles and Responsibilities"

Task Position	Plant Mgr.	Prod Mgr.	Maint Mgr.	Stores Mgr.	Maint Tech	Maint Super	Maint Planner	CMMS Admin
CMMS Management	I	I	C	C	I	C	R	A
Lean Leading and Lagging KPI Management	I	I	A	C	I	C	R	R
Preventive Maintenance	I	I	A	I	R	C	C	C
PM Evaluation/Optimization	I	C	A	C	R	R	R	R
Maint. Planning/Scheduling	I	R	A	I	I	R	R	I
Work Execution	I	I	A	I	R	C		I
Maintenance Rework	I	I	A	C	R	C	C	C
Production Rework	I	A	I					
Failure Reporting, Analysis, Corrective Action Process	A	R	R	C	I	C	C	C

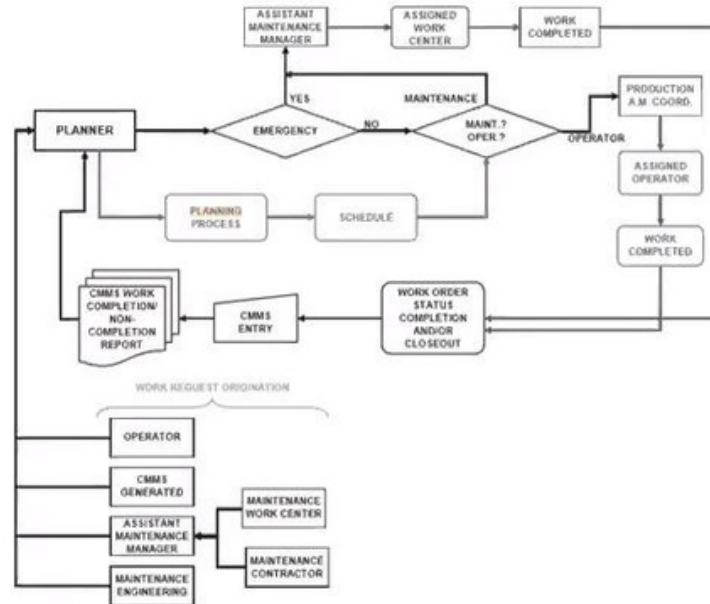
Responsibility
Accountable
Consulted
Informed

"the Deer" (could be more than one)
"the Buck stops here" (One person only)
"two-way communication" (in the Loop)
"one-way communication" (kept in the picture)



Process Mapping Definition

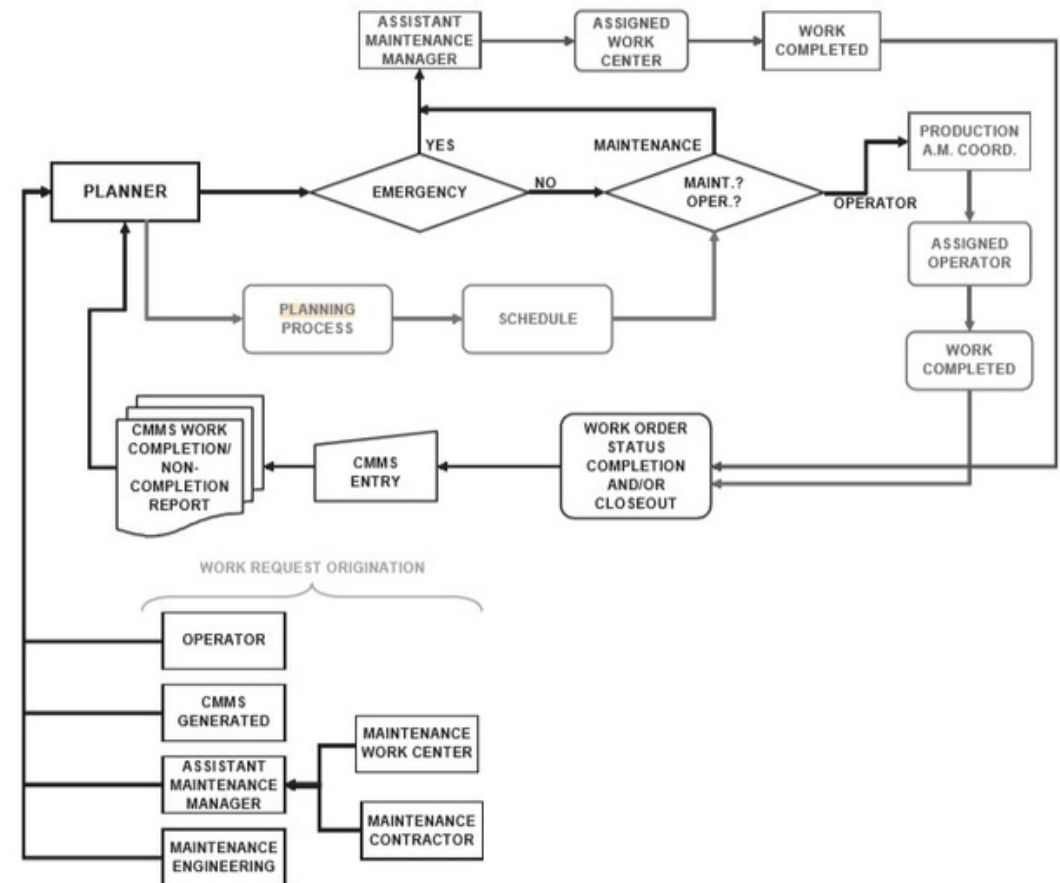
Process Mapping is the technique of using flowcharts to illustrate the flow of a process, proceeding from the most macro perspective to the level of detail required to identify opportunities for improvement.



What is Process Mapping?

Process Mapping is the technique of using flowcharts to illustrate the flow of a process, proceeding from the most macro perspective to the level of detail required to identify opportunities for improvement.

- Process mapping focuses on the work rather than on job titles or hierarchy.
- The purpose of process mapping is for organizations to improve efficiency.
- Process maps provide insight into a process, help teams brainstorm ideas for process improvement, increase communication and provide process documentation.
- Process mapping will identify bottlenecks, repetition and delays.

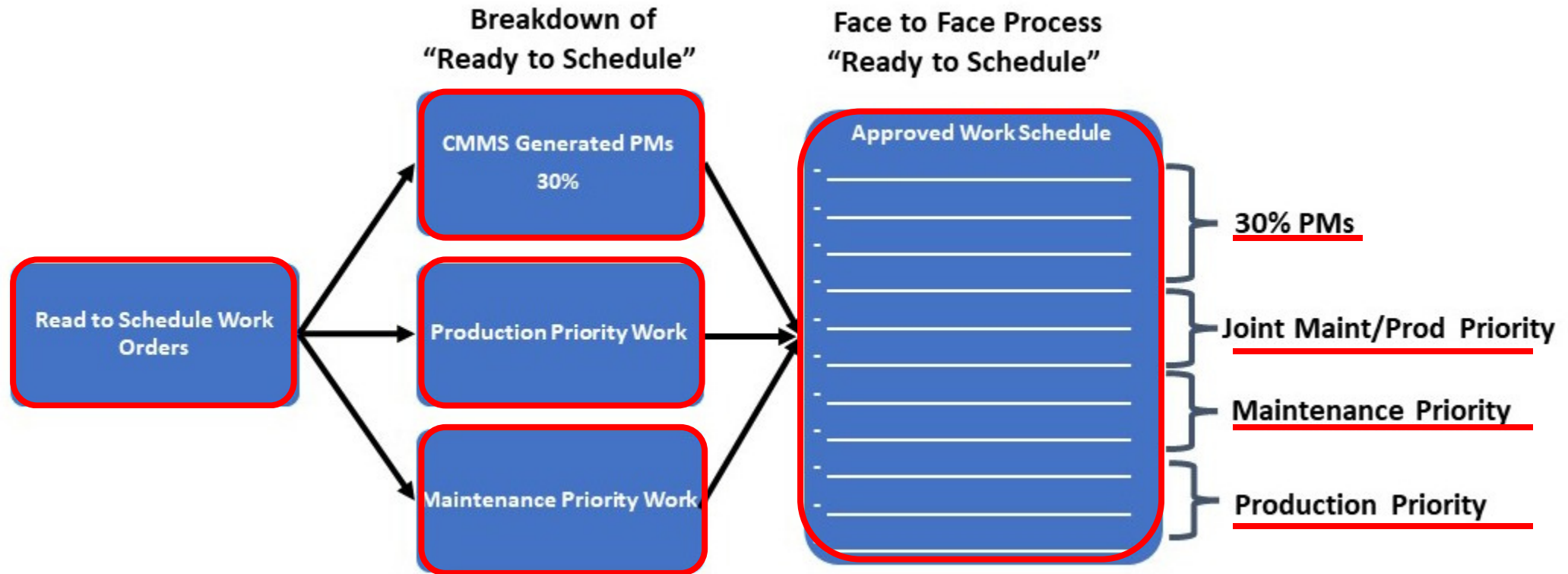


“If a step in a process is skipped or performed at a substandard level it creates defects known of failures”

**Ron Thomas
Engineering/Maintenance Manager
Dofasco Steel - 2004**



Process Maps Can be an Illustration of a Specific Function –Example “Scheduling Process”



Think about this Statement?

If you had 7 Days to drive from Washington, DC to San Francisco, CA how would you make this happen without a Map

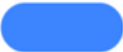









It takes about 45 hours to drive from Washington, DC to San Francisco, CA



Process Mapping Symbols

(Examples)

 Terminal	Terminal symbol Indicates the beginning (trigger) or end (result) of a flow.
 Flow line	Flow line Shows the direction and order of the flow.
 Process	Process symbol Designates specific action or work within the flow.
 Decision	Decision Diamond Indicates a choice that must be made or a question that needs to be answered. The result determines the next step in the flow.

 Document	Document symbol Creation or use of a document is required. Documents include files, emails, reports, orders, or forms.
 Multiple Documents	Multiple documents Same as above, although the multiple documents flowchart symbol signals that more than one document is required.
 Data	Data The input or output of information. For example, data that must be entered in a form, or a report is displayed.
 Database	Database Indicates a structured store of searchable data. Sometimes refers to a data file.

Maintenance Process Map Examples

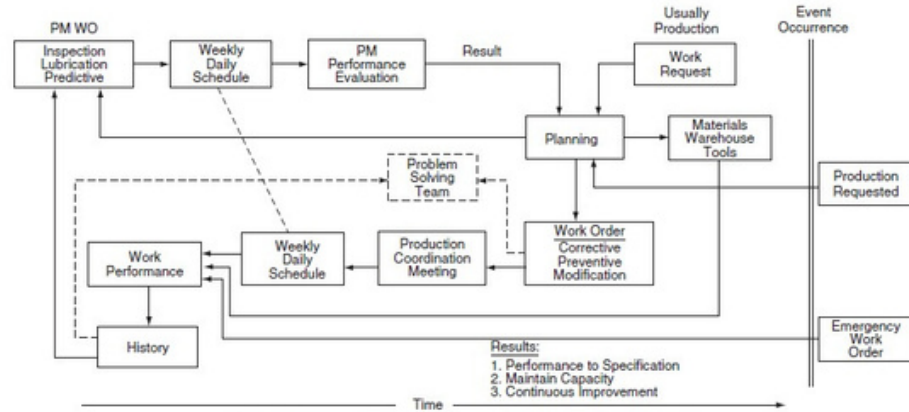
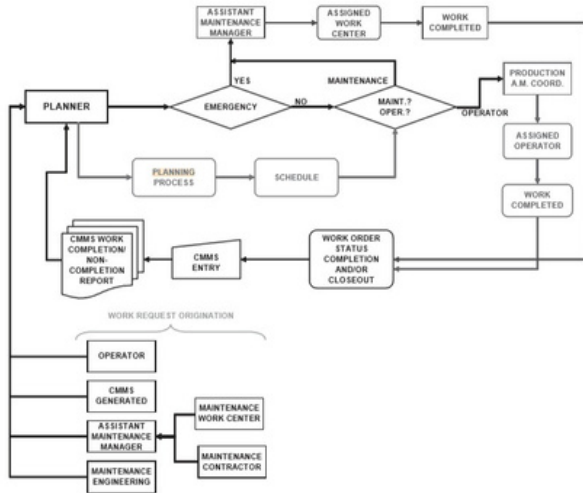


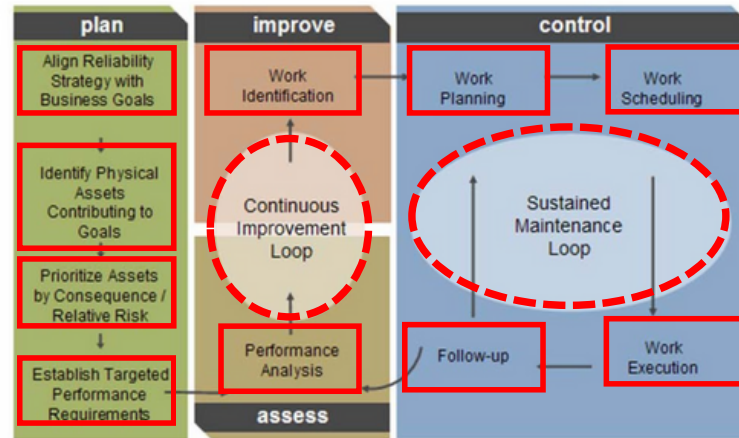
FIGURE 1.2. Mt. Holly's proactive maintenance model.

1978



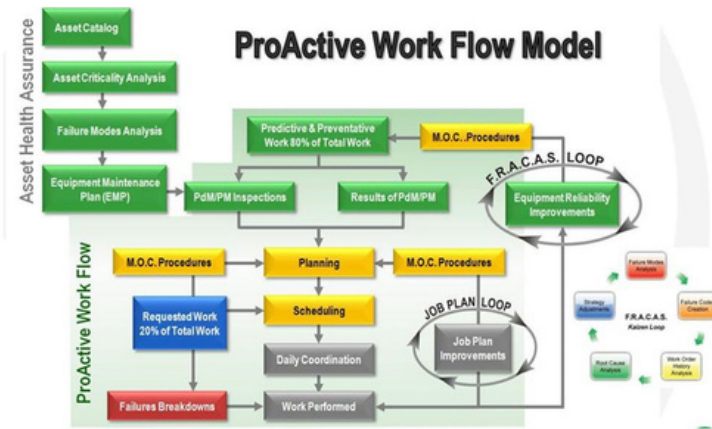
2005

Lean Maintenance



www.worldclassmaintenance.org

Rules of Thumb for Maintenance and Reliability Engineers



2005



Top 8 Reasons Organizations “do not” Use Process Maps

Here are the top 9 reasons why organizations do not use process maps:

- 1.No one sees the value of process maps
- 2.Tried using process maps, but no one seemed to follow the process
- 3.Employees did not know how to use a process map
- 4.Thinking that process mapping is only for production processes
- 5.Never heard of process mapping for maintenance
- 6."You don't know what you don't know"
- 7.These are the most common reasons you'll hear from organizations that do not have process maps in place.
- 8.Some haven't even heard about it, and to add to the last point, they have no idea what they're missing.

“Maintenance process mapping aligns everyone in an organization in terms of their thinking and following a specific process”



Benefits of Mapping the Maintenance Process

1. Aligns everyone's vision in the value of the Maintenance Process to include the following positions:

- Maintenance Manager
- Maintenance Supervisor
- Senior Maintenance Technician
- Maintenance Planner / Scheduler
- Stores Manager
- Production Manager

2. Ensures everyone follows the same steps in Maintenance process, from:

“Work Identification to Work Order Close Out”

3. If you have your Maintenance Process Mapped and become having issues with Maintenance Metrics not aligning with what is happening on the floor, then an RCA can be conducted, resulting in the problem being quickly resolved.



Recommended Steps when Mapping the Maintenance Process

Step 1: Determine your Maintenance Cost Trend (Labor, Materials, Parts) for the past 5 years and determine if everyone is satisfied with it. (no excuses –be positive)

Step 2: Create a Team of Key Stakeholders

- Facilitator (someone with no stake in the outcome, could be an outside resource)
- Maintenance Manager
- Maintenance Supervisor
- Senior Maintenance Technician
- Maintenance Planner / Scheduler
- Stores Manager
- Production Manager

Step 3: Educate the Key Stakeholders in Maintenance Best Practices or World Class Maintenance

Step 4: Educate the team about the value of Mapping the Maintenance Process

(use this presentation)

Step 5: Create a chart (RACI Chart) with Roles and Responsibilities defined

Step 6: Create a Plan using the crawl, walk, run methodology 

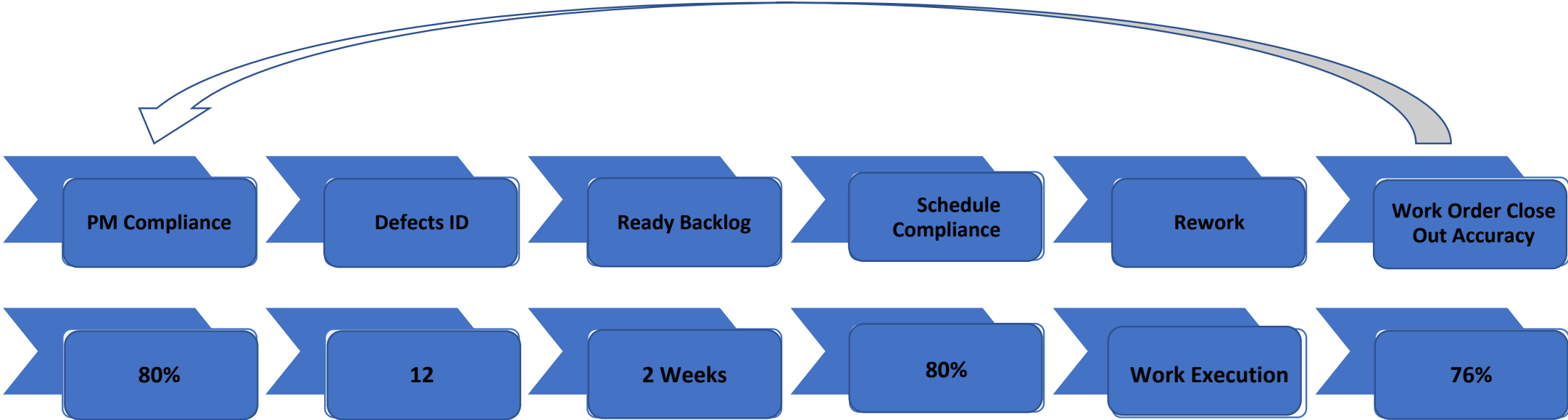
Step 7: Identify or Create High Level Maintenance Process Maps from Start to Finish

Step 8: Identify Leading and Lagging KPIs for all Maintenance Process Step from Work Identification

Step 9: Team Meets for 10 minutes weekly (review progress, constraints, etc.)



Process Maps Must be Aligned to Metrics



Maintenance Rework

This metric is used to identify and measure work that is the result of premature failures caused by errors in maintenance or operation (e.g. start-up) of the equipment or material quality issues. Measuring rework and its root causes enables plant management to develop and implement effective strategies designed to minimize or eliminate these errors. Typical strategies include: maintenance training, operations training, defective parts elimination, maintenance work procedures development or revision, operating procedures development or revision and improved purchasing and/or warehouse practices.



Remember this Saying

If you think this is achievable in your organization? You are Correct.

If you think this NOT achievable in your organization? You are correct.

What do you think?



Questions?

What One Thing You Learned Today?

Instructor: Ricky Smith CMRP, CMRT

METRIUS / **WORLD CLASS MAINTENANCE**

COST \$250.00 USD

1 Day Workshop Virtual Mini-Series
MAINTENANCE PLANNING AND SCHEDULING

February 18th, 2022 | 8:00am ET - 4:00PM ET

More info at rsmith@worldclassmaintenance.org

rsmith@worldclassmaintenance.org

www.worldclassmaintenance.org



#1 Software for Maintenance & Reliability Teams

UpKeep is a service-first company that builds software designed to make maintenance easier for technicians and managers everywhere. Reduce downtime up to 18% by switching over to a preventative maintenance solution!

www.upkeep.com

Our Products



Mobile-first maintenance management and collaboration across all location, assets, and teams

"With nearly 340 different machines in our work environment, it's an impossible task to manually assign and track PM's. *With UpKeep we can schedule regular maintenance without overlapping tasks with other critical jobs.*"

★★★★★ Paul D, Health and Safety Coordinator



An end-to-end solution for remote condition-based monitoring

Connected and secure IoT sensors for real-time remote condition asset monitoring



DATAHUB
UpKeep

Integrated & Centralized Data Ecosystem for World Class Asset Operations

The only purpose built Asset Data Platform. Asset Focused ELT Solution for advanced analytics and integrated, real-time asset data.



The Maintenance Community Coalition was founded on the belief that working together will benefit everyone within our community

Committed to helping each other thrive in our individual professional journeys by sharing resources and expertise, granting scholarships, hosting events, and unlocking knowledge – always at no cost.

