

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years:	2012	2013	2014	2015	2016
Capital Expenditures					
Operating Costs					
External Revenues					
Program Income (County)					
In-Kind Match (County)					
NET FISCAL IMPACT	0	0	0	0	0

ADDITIONAL FTE POSITIONS (Cumulative) _____

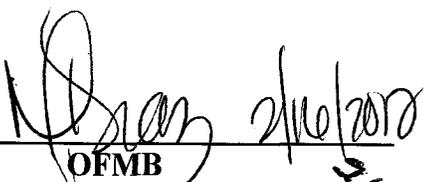
Is Item Included In Current Budget? Yes ___ No ___

Budget Account No: Fund ___ Agency ___ Org. ___ Object ___

B. Recommended Sources of Funds/Summary of Fiscal Impact:
N/A

III. REVIEW COMMENTS

A. OFMB Fiscal and/or Contract Dev. and Control Comments:

<p align="center">  _____ OFMB </p>	<p>N/A</p> <p>_____</p> <p>Contract Dev. and Control</p>
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2/16/12

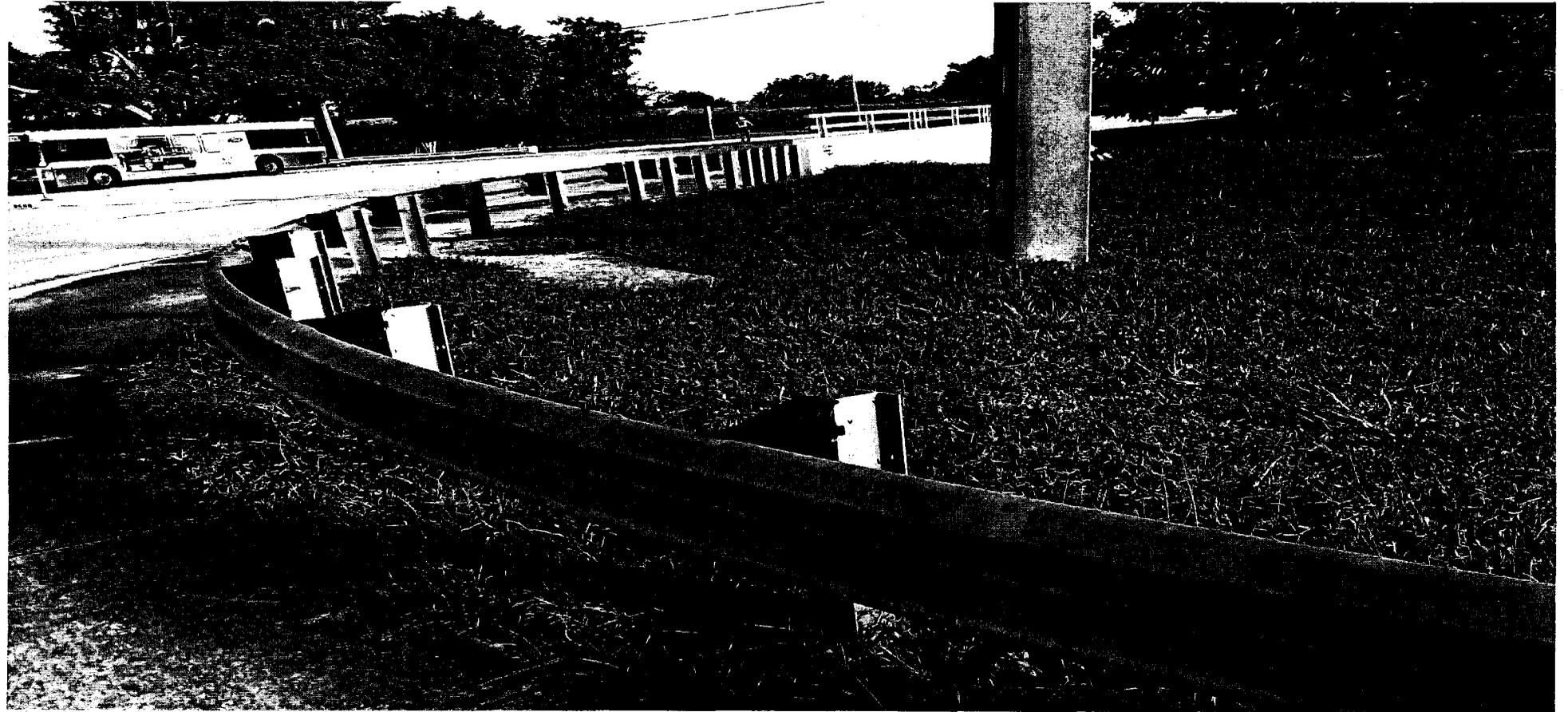
B. Legal Sufficiency:



 Assistant County Attorney

C. Other Department Review:

Department Director



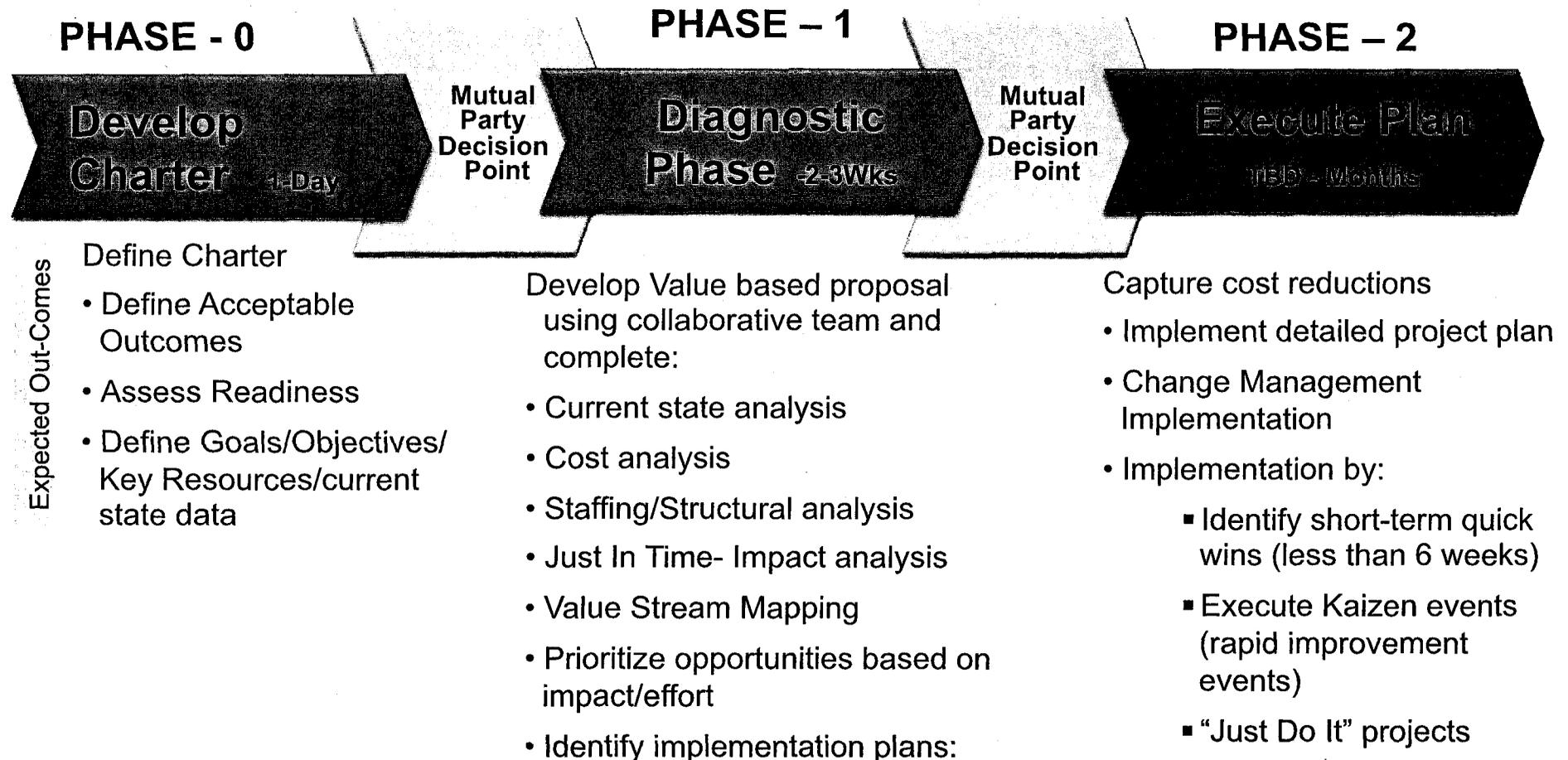
Palm Beach County Proposal

– Pilot Area Charter, Phase – 0-1 Report Out

County Government Services - Value Based Proposal Outline, this effort will be self funding, all savings to be shared between parties as per phase 2

Value Based Proposal Approach -10% of Savings

Collaborative Value Based Approach: Operational Transformation approach focused on identifying, aligning and capturing cost reduction targets and using savings to self fund. Savings will be shared between both parties.



Develop Charter Based On Observations

PHASE - 0



Expected Out-Comes

- Define Charter
- Define Acceptable Outcomes
- Assess Readiness
- Define Goals/ Objectives/Key Resources/current state data

Problem Statement

What problem is the team addressing?

Response

Poor economy has reduced the available budget for performing County Government Services.

What is the magnitude and trend of the problem?

Response

Poor economy has reduced the available budget for performing County Government Services.

What is the baseline performance?

County executives believe there is no room for improvement and that further budget cuts will only degrade service performance. Bases on 2010

Develop Charter Based On Observations

PHASE - 0



Expected Out-Comes

- Define Charter
- Define Acceptable Outcomes
- Assess Readiness
- Define Goals/ Objectives/Key Resources/current state data

Business Objective

Why do this project? Does this project relate to a business or customer requirement? What will be the business impact of improving this process?

Response

Prove that there is a tremendous opportunity for immediate financial and service performance improvement. Reduce the engineering budget by + \$4.5M

Value Proposition

Receive 10% of all budget savings

Please see attached appendix for detailed charter

Develop Charter Based On Observations

PHASE - 0



Expected Out-Comes

- Define Charter
- Define Acceptable Outcomes
- Assess Readiness
- Define Goals/ Objectives/Key Resources/current state data

Quantify Objective/Demonstrate Approach

It is clear that there are at least 20 executives in the Engineering department that could be freed-up today to do other tasks and the county would not be impacted at any performance level.

Response

- Free-up an executive team of 20 high level managers (\$3.2M) to focus on short term initiatives:
 - Including establishing daily performance systems without impacting service performance in any of the responsible areas.
 - Implement solutions to increase the number of county wide shovel ready opportunities.
 - Establish continuous improvement systems beginning in Engineering and continuing onto the rest of the county departments.
- After 6-months replace open positions within other departments with executive team.

Develop Charter Based On Observations

PHASE - 0



Expected Out-Comes

- Define Charter
- Define Acceptable Outcomes
- Assess Readiness
- Define Goals/ Objectives/Key Resources/current state data

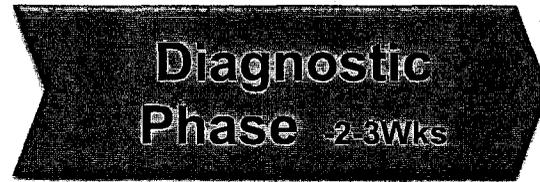
Quantify Objective/Demonstrate Approach

Use PBC Engineering Executives to
Response

- Identify and demonstrate an approach to eliminate the need for 15 vacant employee positions (\$760K)
- Free-up striping supervisor position (\$96K)
- Free up 4 employees (Crash Data group - \$200K) currently working on traffic ticketing and reassign to other vacant positions outside of Engineering
- Challenge alternatives to Construction Coordination Service (Reduce from \$1.2M to \$600K)

Assess Opportunity – Go & See

Phase-1



Develop Value based proposal using collaborative team and complete:

- Current state analysis
- Cost analysis-Issues Tree
- Staffing/Structural analysis
- Just In Time- Impact analysis
- Value Stream Mapping Not req
- Prioritize opportunities based on impact/effort
- Identify implementation plans:

ASSESS CURRENT STATE

Review Engineering Striping Crew Operations
Review Engineering Bridge Maintenance Operations

Response 1

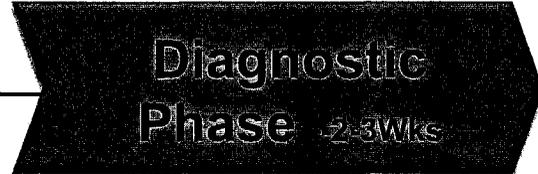
Current Striping Output can increase +100% output using 1-Less supervisor

Response 2

Current Engineering Bridge Maintenance can improve output by 40-50% using 1 less vehicle and was demonstrated.

Examples above are proof of the opportunity available just by observing

Assess Opportunity Phase-1



STAFFING ANALYSIS

Review Engineering Striping Crew Operations

These Staffing Members are not required to ensure daily functions are being addressed. No daily management system in-place.

Striping performance would not be impacted by eliminating or reassigning any of these functions, only missing the flow of work orders to the crew. There is no accountability at this level because the expectations are not defined.

• Dept. Leader
George Webb

Deputy Dept. Leader
Tanya Mc

Assist. Deputy Leader
Steve Carrier

Traffic Director
Dan Weisberg

Asst Director
Alan Ennis
Motasem Al-Turk

Super Intendant
YYYYY

Supervisor
Richard Connors

Crew Chiefs
Joe XXXX

Philipp XXXX

Striping Crew 3-members

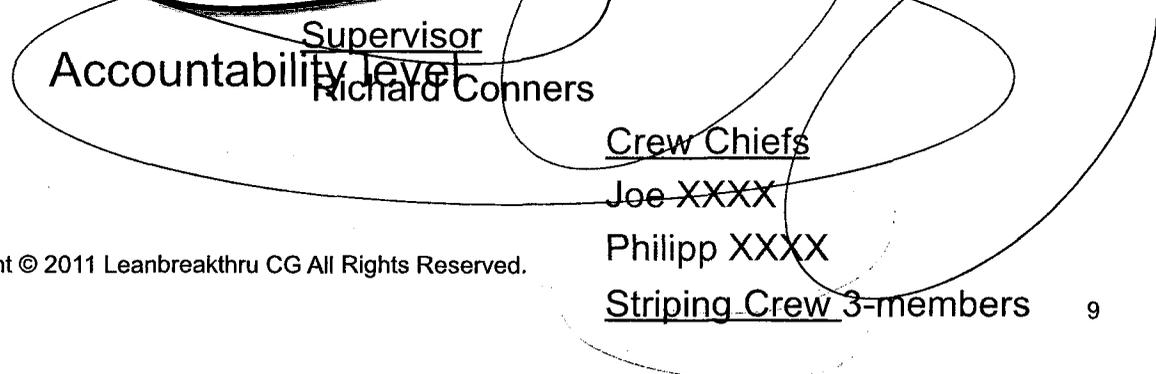
9 -Levels of Supervision

No Daily Management Expectations

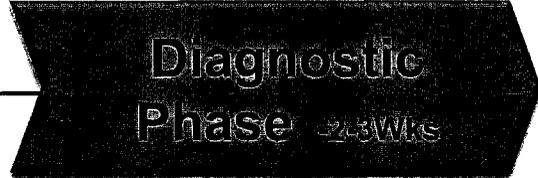
Actual 100% Workers

Partial Workers

Not enough work expected for this position only 5mins/day



Assess Opportunity Phase-1



STAFFING ANALYSIS

Review Engineering Bridge M.Crew Operations

• Dept. Leader
George Webb

Deputy Dept. Leader
Tanya Mc

Assist. Deputy Leader
Steve Carrier

Bridge Director
Mike Bowman

Asst Director
Tom Luffman

Super I.
Barry Meave

Asst. Super
Dan Doyle

Supervisor
Bill Powell

Crew Chiefs
Richard Conner

Crew
3-members

9 -Levels of Supervision

No Daily Management Expectations

Actual 100% Workers

Partial Workers

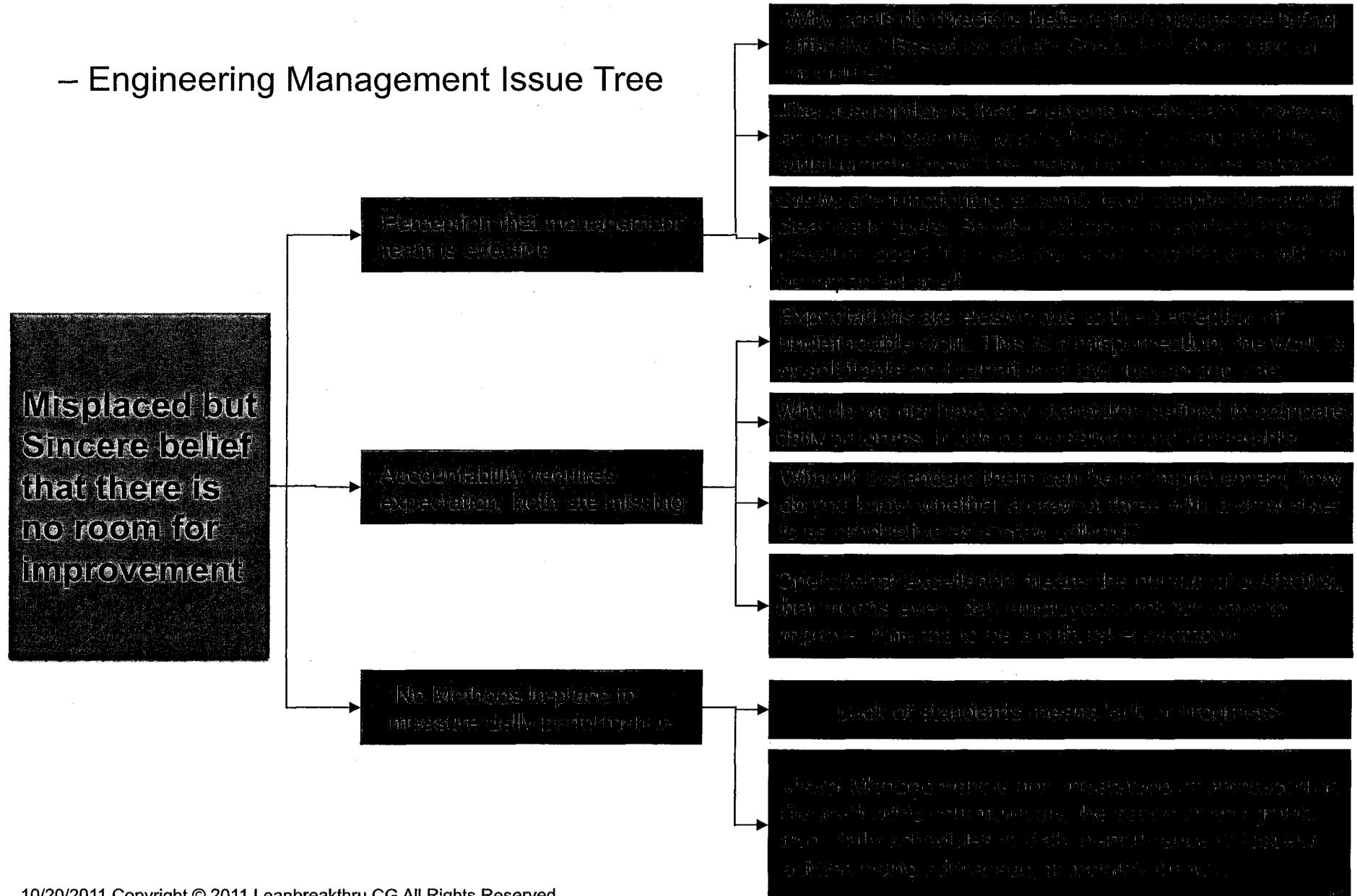
These Staffing Members are not required to ensure daily functions are being addressed. No daily management system in-place.

Bridge maintenance performance would not be impacted by eliminating or reassigning any of these functions, only missing the flow of information to the crew. There is no accountability at this any level because the expectations are not undefined.

Accountability level

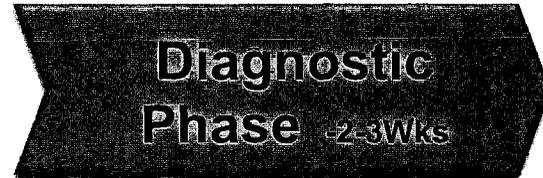
Palm Beach County Budget

- Engineering Management Issue Tree



Assess Opportunity

Phase-1



Develop Value based proposal using collaborative team and complete:

- Current state analysis
- Cost analysis
- Staffing/Structural analysis
- **Just In Time- Impact analysis**
- ~~Value Stream Mapping~~
- Prioritize opportunities based on impact/effort
- Identify implementation plans:

• JUST IN TIME IMPACT ANALYSIS

Review Engineering Striping Crew Operations

Response 1

Providing the crew with the materials needed when they need they would increase the amount of daily available operating time by 1.5 hrs per day each morning for two crews of three each requires:

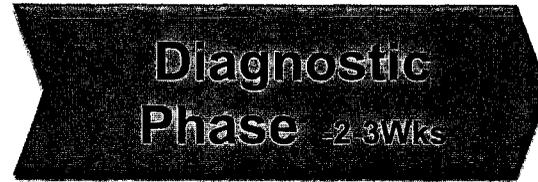
- Trucks loaded with material needed each morning ready for 6:05 departure
- Striping thermoplastic kettle has been heated to temperature

Response 2

Current crews stop during afternoon to drive and have propane equipment tanks recharged resulting in unnecessary downtime at least 60min per refill.

Assess Opportunity

Phase-1



Develop Value based proposal using collaborative team and complete:

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- Cost analysis
- Staffing/Structural analysis
- **Just In Time- Impact analysis**
- ~~Value Stream Mapping - Not Req~~
- Prioritize opportunities based on impact/effort
- Identify implementation plans:

• JUST IN TIME IMPACT ANALYSIS

Review Engineering Bridge Maintenance Crew Operations

Response 1

Use visual scheduling to inform the crew of the plans for the day and provide materials needed when they need they would increase the amount of daily available operating time by 1.0 hrs per day each morning for all crews, requires:

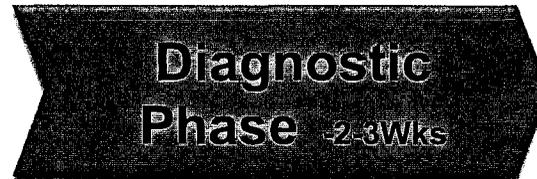
- Trucks loaded with material needed each morning ready for 6:05 departure
- Establish a water spider system to replenish every truck based on what is needed for each crew, this is usually a supervisor type position that know the jobs and equipment needed for the job

Response 2

Current crews use three vehicles to transport 4 employees and equipment, challenge them to quickly reduce to 2 and identify path to 1

Assess Opportunity

Phase-1



Develop Value based proposal using collaborative team and complete:

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- ~~Cost analysis~~
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- Just In Time- Impact analysis
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- **Prioritize opportunities based on impact/effort**
- Identify implementation plans:

PRIORITIZE OPPORTUNITIES BASED ON IMPACT/EFFORT

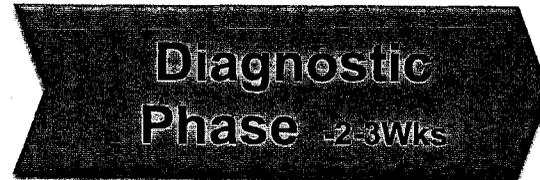
Review Engineering Striping Crew Operations

Response 1

1. Remove/reassign current supervisor and change role of Superintendent to flow work orders information to striping team using visual management
2. Reassign waterspider duties to ensure team is leaving at 6:05
3. Define visual management and quantify work content to meaningful daily goals
4. Work with the striping team to reduce the time the hand-liner (AKA paint machine) is down waiting for replenishment (trystorm alternatives – possibly using two machines – equipment is available)
5. Work with cross functional team to eliminate the need to use hand held leaf blower to remove debris (free-up an operator) – see details in appendix

Assess Opportunity

Phase-1



Develop Value based proposal using collaborative team and complete:

- Current state analysis
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- Staffing/Structural analysis
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- **Prioritize opportunities based on impact/effort**
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• PRIORITIZE OPPORTUNITIES BASED ON IMPACT/ EFFORT

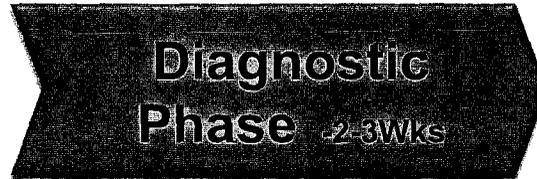
Review Engineering Bridge Maintenance Crew Operations

Response 1

1. Define what an Equivalent PB Bridge Unit is document standard work using all four team members sharing equal tasks.
2. Implement visual management and waterspider duties to ensure 6:05 departure (what is more beneficial having 20 crew members taking an hour to load vehicles or supervisors using their time to make sure their men are prepared? We have demonstrated the benefit is huge.)
3. Guarantee crews including chiefs are performing per standard work – meaning defined tasks in defined time allowed using standard equipment

Assess Opportunity

Phase-1



Develop Value based proposal using collaborative team and complete:

- Current state analysis
- Cost analysis
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- **Prioritize opportunities based on impact/effort**
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• PRIORITIZE OPPORTUNITIES BASED ON IMPACT/ EFFORT

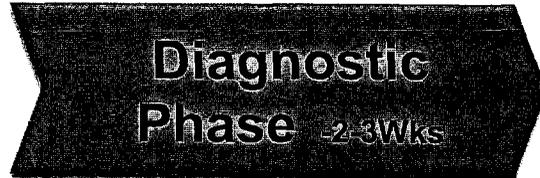
Free-up an executive team of 20 high level managers (min of \$3.2M) to focus on short term initiatives:

Response 1

- Establish a PBC Lean Government System (AKA Continuous Improvement System) by Freeing-up an executive Engineering team of 20 high level managers (\$3.2M) to focus on short term initiatives:
 - Including establishing daily performance systems without impacting service performance in any of the responsible areas.
 - Implement solutions to increase the number of county wide shovel ready opportunities.
 - Establish continuous improvement systems beginning in Engineering and continuing onto the rest of the county departments.
- After 6-months replace open positions within other departments with executive team. Use executive group to spread continuous improvement to the rest of the County departments

Assess Opportunity

Phase-1



Develop Value based proposal using collaborative team and complete:

- Current state analysis
- Cost analysis
- Staffing/Structural analysis
- Just In Time- Impact analysis
- ~~Value Stream Mapping - Not Req~~
- **Prioritize opportunities based on impact/effort**
- Identify implementation plans:

• PRIORITIZE OPPORTUNITIES BASED ON IMPACT/ EFFORT

Identify and demonstrate an approach to eliminate the need for 15 vacant employee positions (\$760K)
Free up 4 employees (Crash Data group - \$200K) currently working on traffic ticketing and reassign to other vacant positions outside of Engineering

Response 1

- Establish a PBC Lean Government System (AKA Continuous Improvement System) by Freeing-up an executive Engineering team of 20 high level managers to focus on systematic improvement based on Lean principles:

*GO to the Real Place – GO SEE
Observe the real thing – Challenge everything
Get the facts -*

Assess Opportunity

Phase-1



Develop Value based proposal using collaborative team and complete:

- Current state analysis
- Cost analysis
- Staffing/Structural analysis
- Just In Time- Impact analysis
- ~~Value Stream Mapping-Not Req~~
- Prioritize opportunities based on impact/effort
- **Identify implementation plans:**

• IDENTIFY IMPLEMENTATION PLANS

Use Lean Government System implementation using cross-functional teams to make dramatic improvements in 4days

Our approach is different than what PBC has always expected. Meaning you expect an outsider to identify solutions and create a list that you can pick and choose from. That is not Lean Government and I was not able to demonstrate immediate improvement with the Striping crew. However, I have identified issues that can be solved that would increase the output by +100%. The bridge team was able to demonstrate the impact of leaving at 6:15Am and using all four team members to perform equal tasks that is +50% more output.

Lean System Implementation means creating a system that does not allow you to live with waste. I propose that all of the issues I have observed need to be addressed using your own employee talents. The striping crew has a lot of great ideas that need to be acted on.

Our Approach using Lean/Kaizen

– Striping Pilot Area Issue List

The work KAIZEN is Japanese it means Take apart (Kai) and make better (Zen) or continuous improvement.

Our Approach in 4-5 days is to work with a PBC Cross Functional team consisting of 5-7 employees:

- 1/3 from the area of interest,
- 1/3 from management,
- 1/3 from outside the area that has no preconceived ideas to solve issues using their ideas.

We will work with the team to uncover the issues that prevent success. Then we challenge the team to identify and trystorm ideas immediately using crude methods to simulate alternatives. The teams own the solution. It's pretty cool to watch.

Why are we looking for this? Are you looking for a hand to hold or a hand to shake? If you're looking for a hand to hold, you're looking for a hand to hold.

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APPENDIX INCLUDES:

CHARTER

STRIPING REPORT

BRIDGE MAINTENANCE REPORT

PALM BEACH COUNTY GOV — Project Charter

Project Name	PBC GOV Pilot Area Charter – Value Based Proposal		
Business/Location	PBC Gov - Engineering		
Start Date	June 8 th , 2011	Target End Date	October 30, 2011

Project Resources			
Team Leader	Dan Weisberg	phone: (561) 684-4030	email: DWeisber@pbcgov.org
Sponsor	George Webb	phone:	email: GWebb@pbcgov.org
Consultant	Wayne Poerio	phone: (561) 301-6923	email: Wayne@Leanbreakthru.com

Project Details	
<p>Problem Statement</p> <ul style="list-style-type: none"> • What problem is the team addressing? • What is the magnitude and trend of the problem? • What is the baseline performance? 	<ul style="list-style-type: none"> • Poor economy has reduced the available budget for performing County Government Services. • County executives believe there is no room for improvement and that further budget cuts will degrade service performance. • Bases on 2010
<p>Business Objective</p> <ul style="list-style-type: none"> • Why do this project? • Does this project relate to a business or customer requirement? State which one. • What will be the business impact of improving this process? 	<ul style="list-style-type: none"> • Prove that there is a tremendous opportunity for immediate financial and service performance improvement. Reduce the engineering budget by \$4.5M • Establish the method to define the pace of work, the work content and determine basic expectations and visually communicate plans vs. actual daily outcomes • Identify and demonstrate an approach to eliminate the need for 15 vacant employee positions (\$760K) • Free-up striping supervisor position (\$96K) • Free up 4 employees (Crash Data group - \$200K) currently working on traffic ticketing and reassign to other vacant positions outside of Engineering • Challenge alternatives to Construction Coordination Service (Reduce from \$1.2M to \$600K) • Free-up an executive team of 20 high level managers (\$3.2M) to focus on short term initiatives: <ul style="list-style-type: none"> ○ Including establishing daily performance systems without impacting service performance in any of the responsible areas. ○ Implement solutions to increase the number of county wide shovel ready opportunities. ○ Establish continuous improvement systems beginning in Engineering and continuing onto the rest of the county departments. ○ After 6-months replace open positions within other departments with executive team.

Charter Continued

<p>Project Scope</p> <ul style="list-style-type: none"> • Is the project scope at an actionable level? • What is off-limits or out-of-bounds for the team? 	<p>Reduce the Engineering budget by \$4.5M by eliminating the need for open positions. Demonstrate the ability to improve productivity in any area including Road Striping and Bridge/Repair/Maintenance</p> <ul style="list-style-type: none"> • Reviewing Striping process to improve productivity by +100% and free-up a supervisor • Demonstrating productivity improvements of 50% in bridge repair/maintenance
<p>Support Required</p> <ul style="list-style-type: none"> • What action is needed by the Sponsor to ensure success? • What support is needed from outside the project? 	<ul style="list-style-type: none"> • PBC Government/Engineering participation • Provide history of key process indicators for 2010 • Provide demand requirements to identify pace • Provide access to observe processes and work with employees
<p>Risks/Constraints</p> <ul style="list-style-type: none"> • What are the foreseeable challenges to completing this project? • What is the risk of not completing it? 	<ul style="list-style-type: none"> • Potential financial impact of changing the methodology • Concern about availability of PBC resources to participate in session • Ability to define history of KPI's Key Process Indicators • PBC Government Executives willingness to change, it's not a question of losing your job it's about willing to perform a different job.

Goal	Metric	Baseline
<ul style="list-style-type: none"> • Reduce the need to fill vacant positions • Improve productivity by 100% & 50% • Free-up employees to be working on other high priority initiatives 	<ul style="list-style-type: none"> • Engineering open positions • #ft striped/person/8-hr day • #PB Equivalent bridges/maintained/person/ 10-hr day • Establish executive resource pool of 24 including 4 crash data employees 	<ul style="list-style-type: none"> • 15 open positions (\$760K) • (\$96K) Striping Supervisor • 24 positions (\$3.4M)

Expected Business Results	
<p>Direct Benefits</p> <ul style="list-style-type: none"> • What is the potential financial impact and what are the expected financial impacts? • What is the source of these numbers? • What assumptions are the teams using? 	<ul style="list-style-type: none"> • Budget reduction of \$4.5M • Reduce the need to fill 15 open engineering positions (\$760K budget decrease). • Focus on eliminating the need to scan traffic crash information (\$200K) using 4 employees and reassign outside of engineering. • Increase the frequency of bridge maintenance and eliminate the need for additional maintenance.
<p>Indirect Benefits</p>	<ul style="list-style-type: none"> • The need for an overall systematic approach to persistent daily improvement based on facts (Lean Government System Implementation)

Charter Continued

<p>Project Scope</p> <ul style="list-style-type: none"> • Is the project scope at an actionable level? • What is off-limits or out-of-bounds for the team? 	<p>Reduce the Engineering budget by \$4.5M by eliminating the need for open positions. Demonstrate the ability to improve productivity in any area including Road Striping and Bridge/Repair/Maintenance</p> <ul style="list-style-type: none"> • Reviewing Striping process to improve productivity by +100% and free-up a supervisor • Demonstrating productivity improvements of 50% in bridge repair/maintenance
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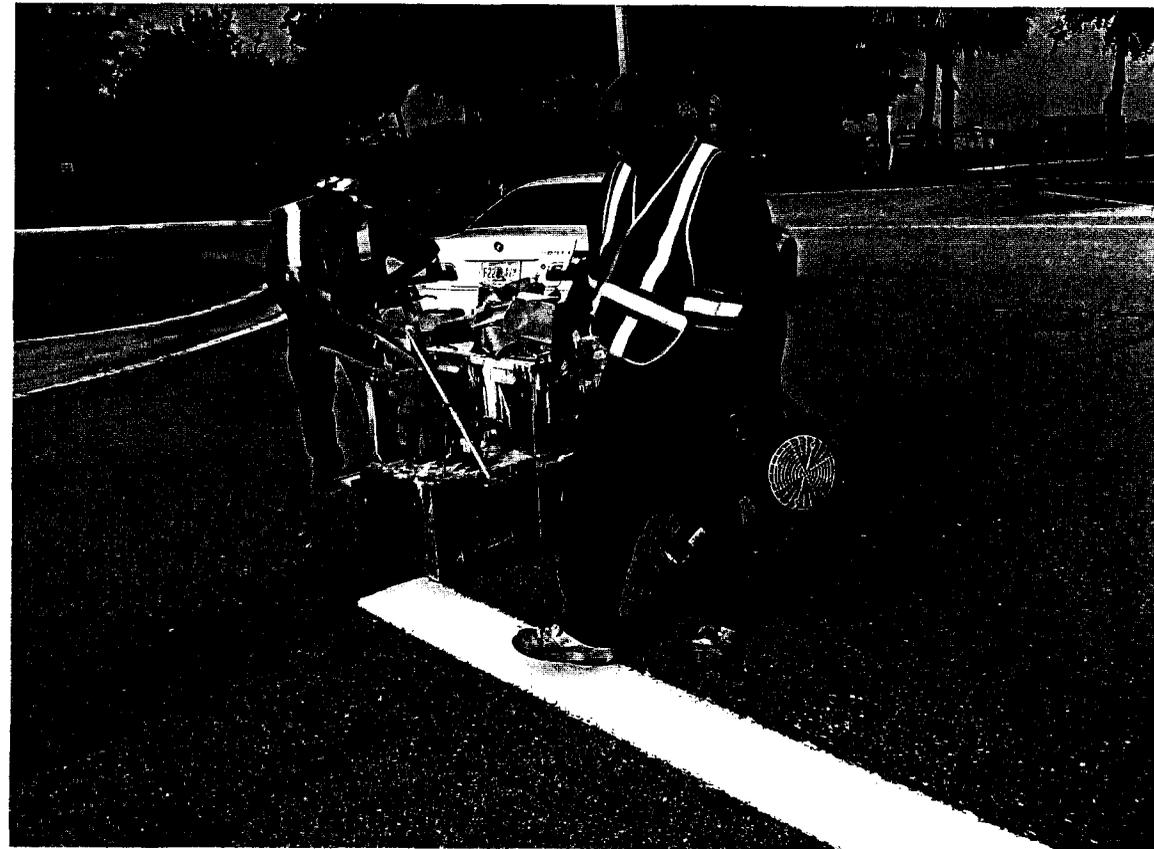
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<p>Indirect Benefits</p>	<ul style="list-style-type: none"> • The need for an overall systematic approach to persistent daily improvement based on facts (Lean Government System Implementation)

Charter Continued

Dan Weisberg	Resistant to managing by expectations	DWeisber@pbcgov.org
Bill Powell	Open Minded/Willing to change	351-9668
Striping Crew	Excellent, many members had great ideas	
Richard Perrigo	Open Minded/Willing to change does not have clear expectation for any given day	

Team Stripe Me?

Tuesday 7/05/2011 Striping Operations



Team Members:

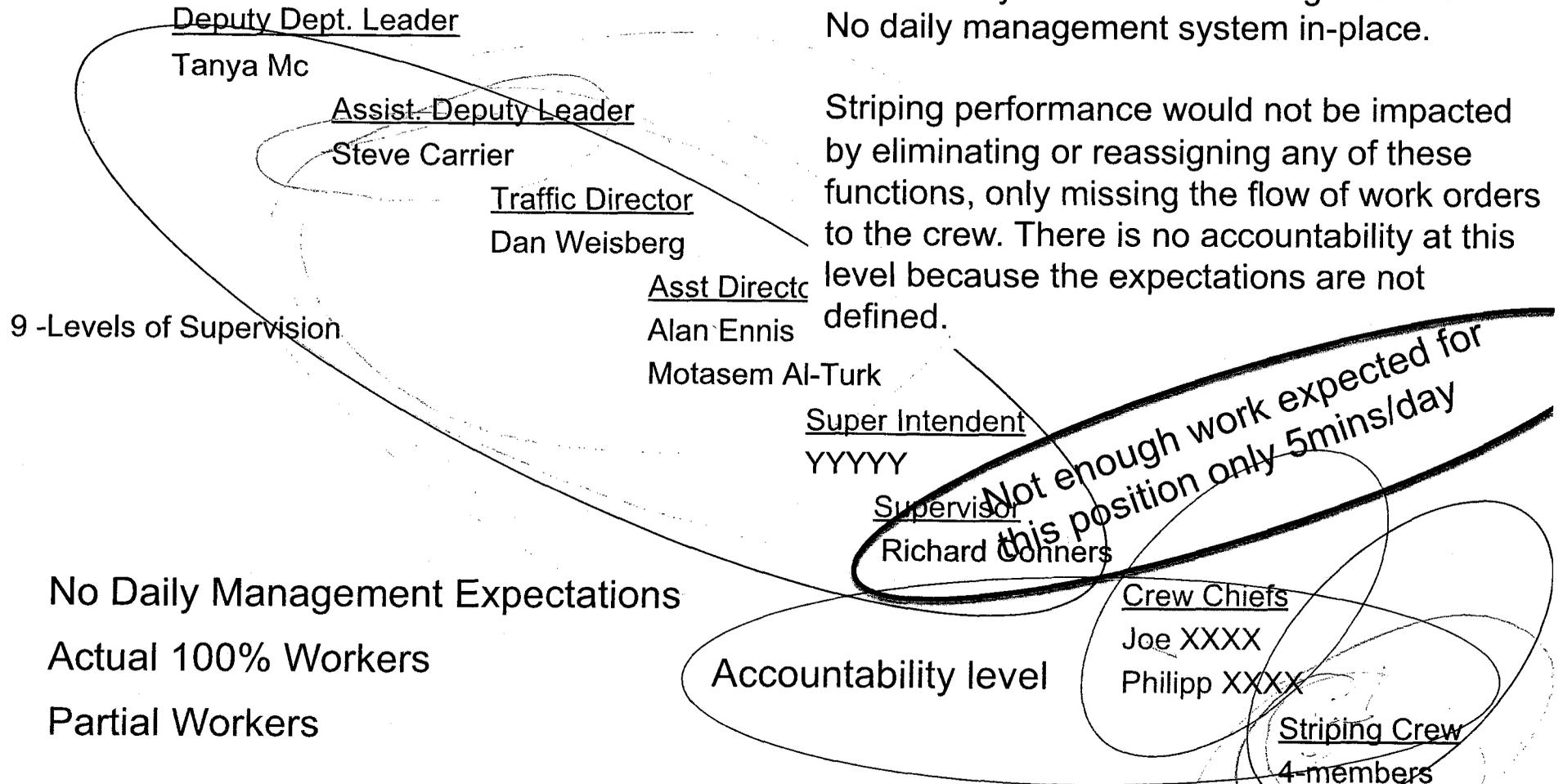
Joe

Bob

Mike

STAFFING STRUCTURAL ANALYSIS

- Dept. Leader
George Webb



These Staffing Members are not required to ensure daily functions are being addressed. No daily management system in-place.

Striping performance would not be impacted by eliminating or reassigning any of these functions, only missing the flow of work orders to the crew. There is no accountability at this level because the expectations are not defined.

9 -Levels of Supervision

No Daily Management Expectations

Actual 100% Workers

Partial Workers

PBC Striping Crew (7members)

Current State

	White	Yellow	Total	School Message	FDP	RPM
Bags/yr	1680	320	2000	80	675	11500
FT of Striping	169680	32320	202000			
Miles of Striping/yr	32.1	6.1	38			
Miles-Units/ Month	2.7	0.5	3	7	56	958
Miles-Units/ day	0.13	0.03	0	0.3	3	48
FT-Units/ day	707	135	842	0.3	3	48

GOALS/OBJECTIVES

STRIPING TEAM

Item	Improvement Metric	Before	Target		Actual	
			#	%	#	%
1	STRIPING OUTPUT/ DAY	842 ft	1700ft	Over 100%		
2	FDP/RPM's OUTPUT/ DAY	3/48	?	Over 100%		TBD
3	SCHOOL MESAAGES OUTPUT/WEEK	1.5	?	Over 100%	TBD	TBD
4	Productivity (based on 6hrs of striping)	20Ft/ Person/hr	46.7FT / Person /Hr	Over 100%		TBD

Takt Time (Pace = Time Avail/Demand)

Available Striping Time 450mins/Day – 120mins/Day
=330mins/Day

Demand Example 1Mile/Week = 5280ft

5280 Feet of Striping/week 1056ft of Striping/day

- Or 528ft from Crew1 and 528Ft from Crew2

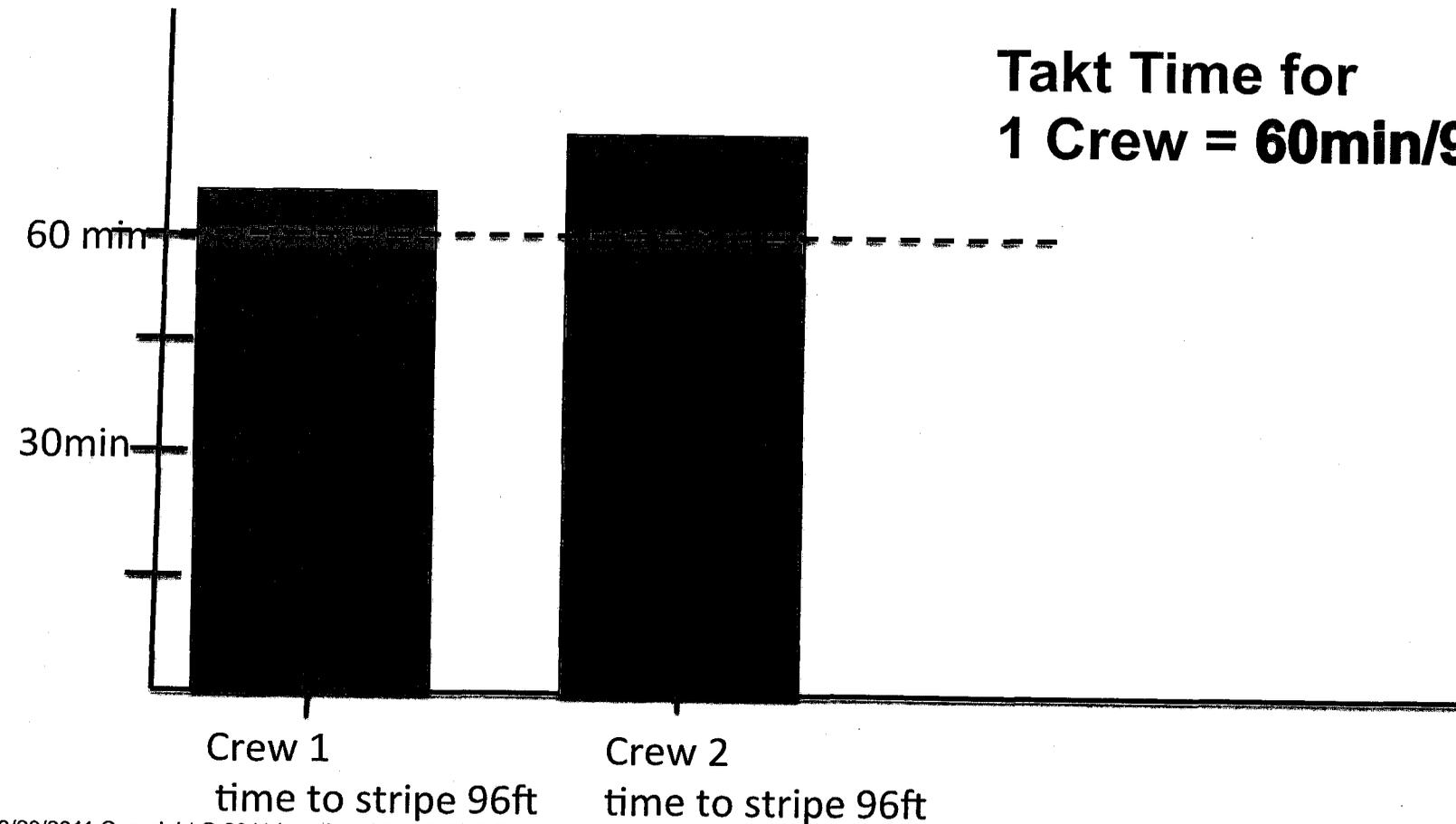
Takt Time for 1 Crew = 330min/528ft = 60min/96 feet

Takt Time for 2 Crew = 330min/528ft = 60 min/96 feet

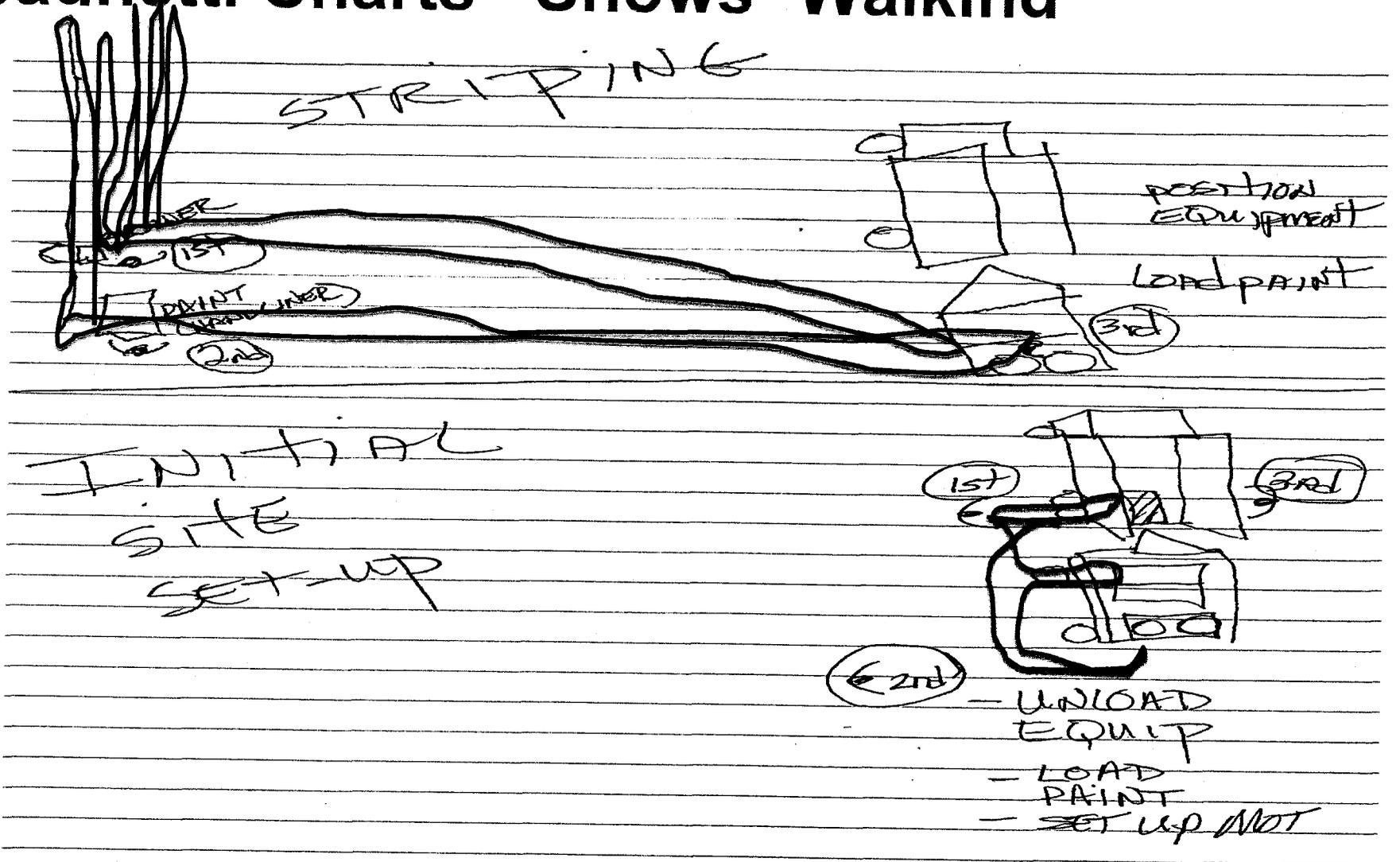
Takt Time VS. Work Content (OCT)

Operator Cycle Time

**Takt Time for
1 Crew = 60min/96ft**



Spaghetti Charts - Shows Walking



- 5 Min of Work for Supervisor
- Supervisor Position is underutilized by 7Hrs 55mins/day out of 8hrs

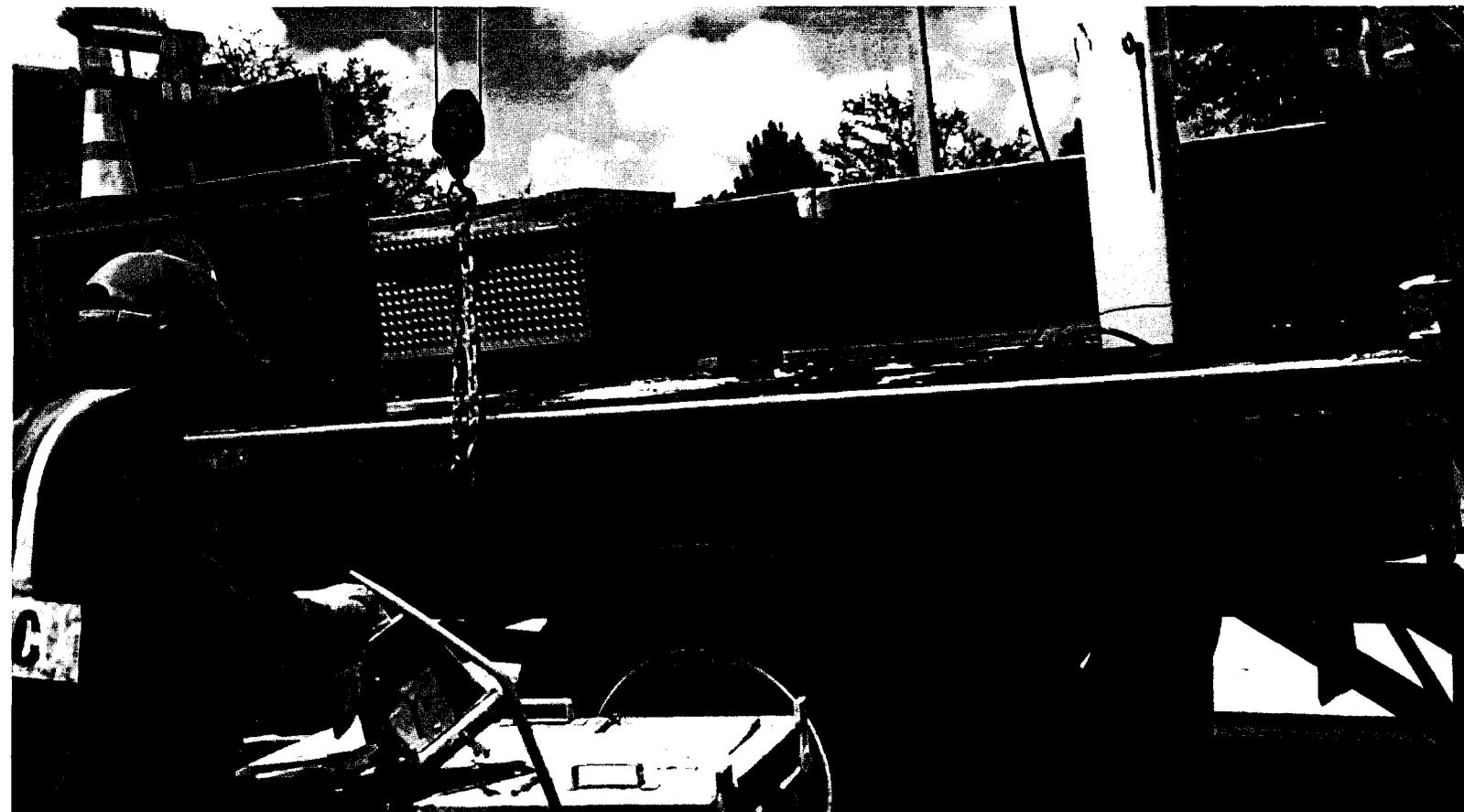
6:00AM Start Heat Kettle at Garage



- Crew of 6 waits

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6:30AM Supplies Available



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7:30AM Kettle Ready Depart to site



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8:00AM Arrive site – Unload



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8:20AM Fill Paint Machine



Remove Debris Prior to Applying Thermoplastic



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8:30AM Start Painting



8:40AM Fill Paint Machine



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Consulting Group

8:50AM Start Painting Again

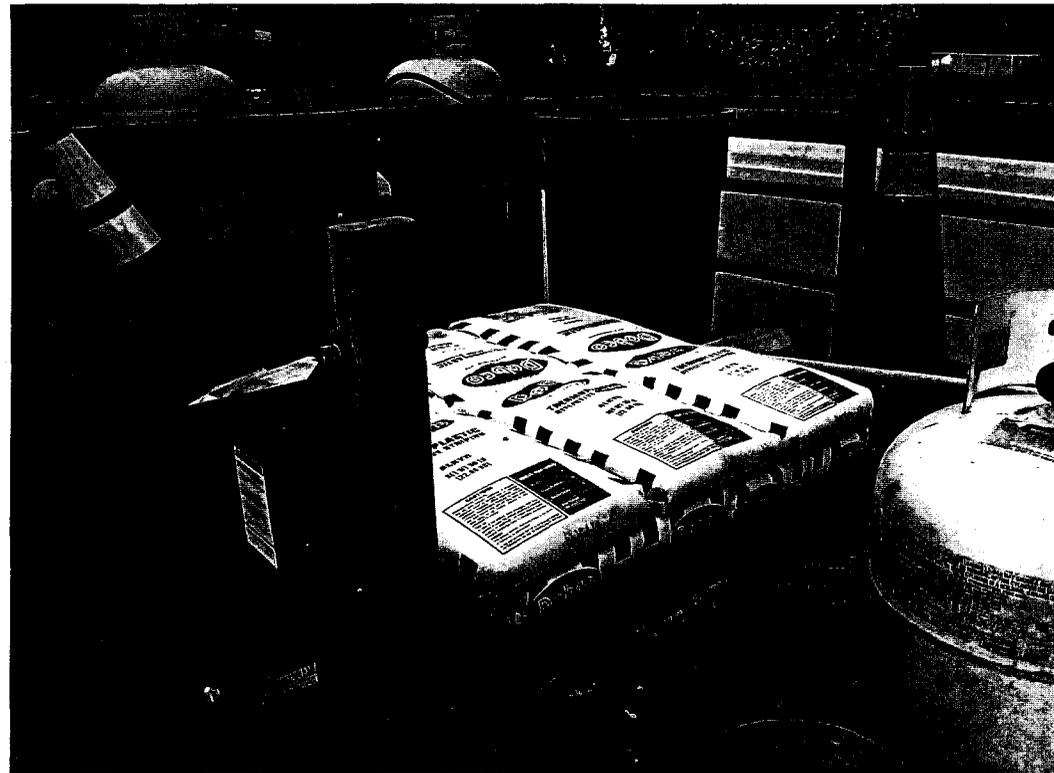


Fill Paint Machine

- Takes as long to fill as it does to empty handline



Operators Bend During loading of paint into Kettle



Note: Constant bending below feet to load kettle

Current State

Opportunities Observed

- Striping Supervisor reviews work orders 5mins/day, he needs much more to do? , no quantified goals, uses number of work orders completed/month as an indicator without any idea of work content drives wrong behavior (start and stop jobs) has another supervisor between himself and Traffic Division director.
- Management team does not set expectations for daily/weekly goals add daily 2min huddle to review progress
- No feedback on actual progress vs. goals
- Six member Crew waits at least 1.5 hrs a day and longer on Mondays for paint to heat in kettle
- Use two-men to unload single hand liner
- No room on truck for second paint liner
- Leaf Blower Operator walks twice as far as paint hand liner operator to blow off paint line with leaf blower

Current State

Opportunities Observed

- Time to refill hand liner with paint is as long as it takes to paint (9-10min), need to reduce time to refill paint in hand liner.
- Poor communication between paint kettle operator causes longer paint fill times
- Paint clogs in the valve when refilling
- Work stops to refill Liquid propane
- Paint pallet is too low to trailer causes bending during kettle loading
- Not having enough bags of thermoplastic on the trailer causes interruptions.

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Consulting Group

After

Identify Work Load - Pace

- Set Clear Daily Goals

Crew of 3 does:

- 1700ft of Striping/day

6:00AM Kettle Prepared- Truck Loaded

- Review Plan for Day
- Discuss lessons
learned
- Assign tasks

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Consulting Group

6:10AM Depart to site



6:40AM Arrive site

- Unload using quick unload with Single Operator**
- Truck sized to include all tools needed**

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Consulting Group

6:50AM

Fill Paint Machine

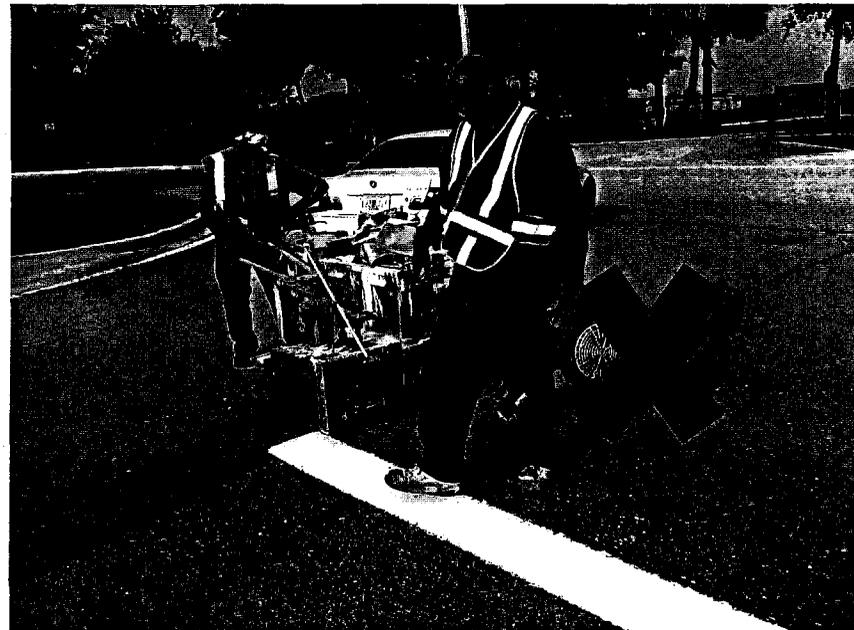


7:00AM

Start Painting



Eliminate the Need to Hold Leaf Blower to Remove Debris/Flag



Reduce Paint Replenishment Time

- There are a few solutions that can be pursued including using another hand liner that is currently available to be filled while one is used to paint. Challenge the team to try something.

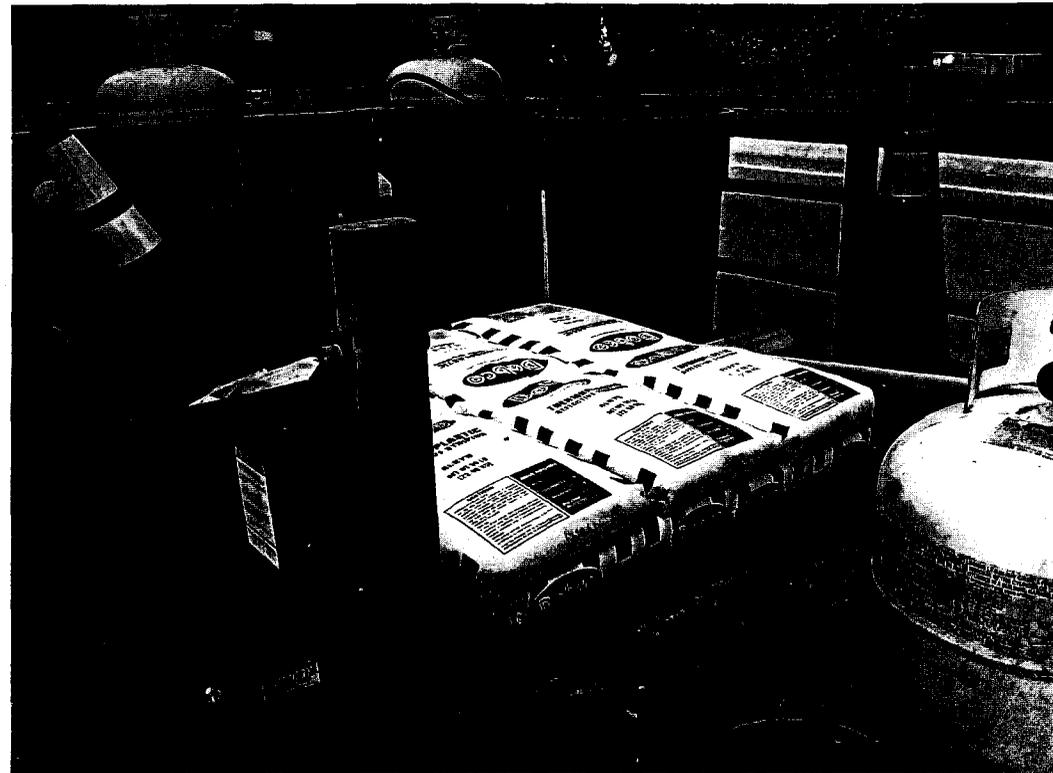
Eliminate Paint Sticks/Clogs Valve



Note: Constant fighting to allow paint to flow

Eliminate Bending During loading of paint into Kettle

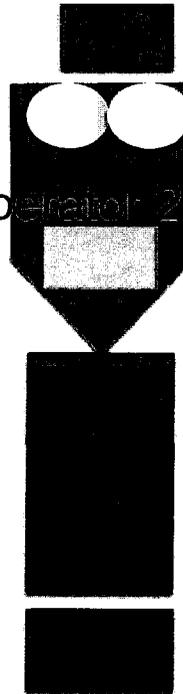
- Pallet Lift



Note: Constant bending below feet to load kettle

Develop Standard Work

Operator 1



Fill Paint Machine

Operator 2

Maintain Kettle and
Equipment location

Operator 3



Remove Debris
Apply Thermoplastic

**Add Times to perform functions

GOALS/OBJECTIVES

Item	Improvement Metric	Before	Target		Actual	
			#	%	#	%
1	STRIPING OUTPUT/ DAY	842 ft	1700ft	Over 100%		
2	FDP/RPM's OUTPUT/ DAY	3/48	?	Over 100%		TBD
3	SCHOOL MESAAGES OUTPUT/WEEK	1.5	?	Over 100%	TBD	TBD
4	Productivity	20Ft/ Person/hr	46FT/ Person /Hr	Over 100%		TBD

Striping Crew Progress Visual Management

- Trend of Month to Month
- Daily updates that roll into Monthly Progress
- Issues/Actions list – expose daily issues and assign resources to execute
- Use Key Process Indicators
– PLAN VS. ACTUAL

Action Register Detailed list of what, who, and by when, each recommendation will be carried out

SAMPLE OF ACTION REGISTER BELOW

ISSUE ACTION	ACTION	Plan/ DO/ CHECK /LEARN	WHO	WHEN	COMMENTS

Proposed Visual Management - Key Process Indicator Tracking – Provided to Dan Weisberg on Aug 2, 2011

Monthly - Delivery - OUTPUT (#Ft of Striping/Day)

#Feet of Striping/Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1500																									
1450																									
1400																									
1350																									
1300																									
1250																									
1200																									
1150																									
1100																									
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900																									
850																									
800																									
750																									
700																									
650																									
600																									
550																									
500																									
#Feet/Day																									

Month

2011:

Officer _____

Proposed Visual Management - Key Process Indicator Tracking – Provided to Dan Weisberg on Aug 2, 2011

Yearly - OUTPUT (#FT of Striping)

#FT/ Month	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July
33000												
32750												
32500												
32250												
32000												
31750												
31500												
31250												
31000												
30750												
30500												
30250												
30000												
29750												
29500												
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27500												
27250												
27000												
26750												
26500												
26250												
#Min/P/ Month												

2011

Officer: _____

Proposed Visual Management - Key Process Indicator Tracking – Provided to Dan Weisberg on Aug 2, 2011

Yearly – Productivity (#Ft of Striping/P/Month)

#Feet/P/M onth	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July
440												
428												
416												
404												
392												
380												
368												
356												
344												
332												
320												
308												
296												
284												
272												
260												
248												
236												
224												
212												
200												
188												
176												
164												
152												
140												
128												
118												
#Feet/P/M onth												

Equipment Plan

- Need ability to carry two hand-liners
- Need ability to easily unload hand-liners with one operator
- Need ability to remove debris prior to applying thermoplastic without using hand carried leaf blower
- Need ability to load paint kettle without bending
- Eliminate paint klogging of kettle
- Schedule all equipment to be ready at 6AM for 6:05 departure without having the crew end early everyday.

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Team PB or Not PB

Tuesday 10/04/2011

PBC Bridge - Repair/Maintenance



A **PB** bridge is designated as any bridge 20ft in length or less

- The majority of the total 400 bridges in PBC are designated as PB
- The work content of a bridge repair/maintenance crew is **Primarily Cosmetic in Nature**

- Remove Debris (walk) pick-up trash
- Trim Grass (walk) weed wacker
- Remove grass trimmings (walk) leaf blower
- Remove excess sand as needed (walk) shovel
- Prevent weed growth (walk) squirt weed killer

The key is these tasks above can be quantified/measured

REPAIR TASKS

These are minimal on a daily basis and can be quantified by the number of tasks per bridge equivalent

Repair Tasks – Do not occur daily, they are few and can be quantified

**Remove Grafitti
<5Mins**



**Repair Sidewalk
15mins max for 1P**



Repair Tasks – This is an abnormality that has low frequency per 6-months using PBC crew members



Replace Guardrail
most large jobs
done by outside
vendor at \$200K/
year

A **PB** bridge is designated as any bridge
20ft in length or less

- The majority of the total 400 bridges in PBC are designated as PB

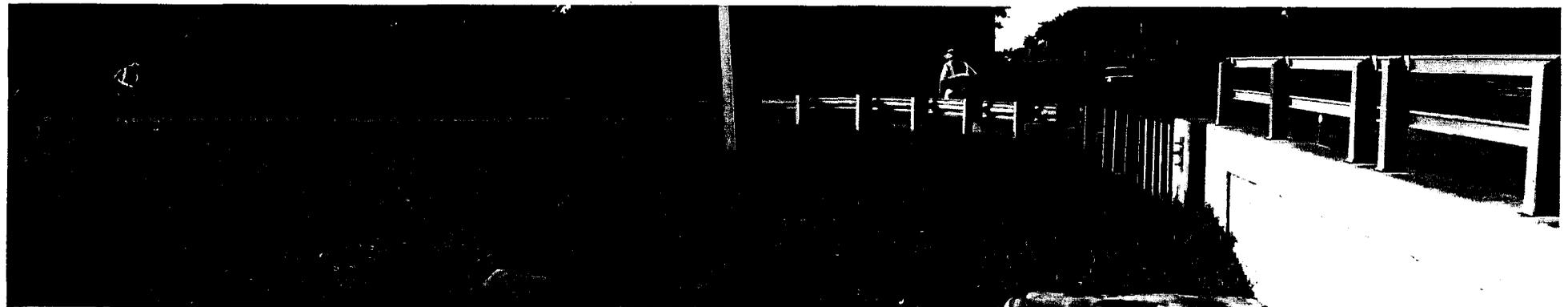
Demand for each crew is repetitive

- Crew Chief Richard Conners has 100 bridges to maintain in 7weeks so his pace is:
- $100 \text{ bridges} / 7 \text{ weeks} = 14.2 \text{ bridges per week}$,
during a 4day week that means 3-4 bridges/day

In order to understand the pace I suggest that the county define an Equivalent Bridge Unit in terms of measureable ft of grass cutting and combination of feet of trash/debris removal

Establishing Expectations Using Equivalent Unit of Measure

In order to understand the pace. I suggest that the county define an Equivalent Bridge Unit in terms of measureable work content or ft of grass cutting and combination of feet of trash/debris removal. For example if the basic PB Bridge equivalent was as below it would have been 200ft of grass mowing and 200 feet additional trash removal



WHY Establish an Equivalent PB Unit of Measure

For example if the basic PB Bridge equivalent was as below it would have been 200ft of grass mowing and 200 feet additional trash removal. So using 4 team members the expected time to complete the basic unit would be 45min without including transportation. If only 3 members were working the time would increase to 60mins.



Takt Time (Pace = Time Avail/Demand)

Available Maintenance Time 540mins/Day (10hr days)
– 40min round trip transportation = 500mins/day

Demand Example 100 bridges = 180 Equivalent PB Units
196 equiv PB units/7weeks 28 PB EQUIV Units/Week

- Work based on 4 ten hr days

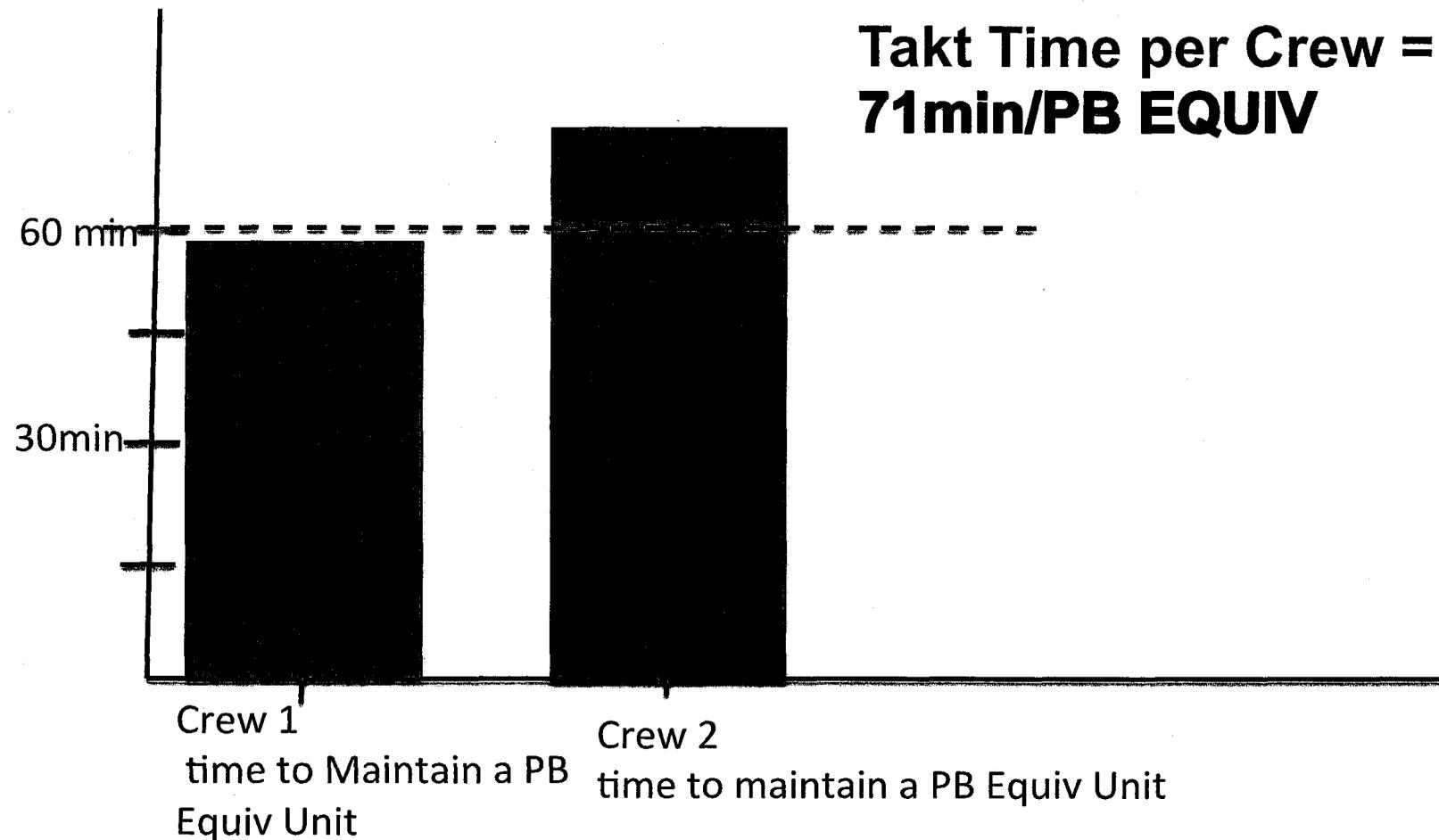
28 PB EQUIV Units/Week = 7PB EQUIV Units/day

**Takt Time for Crew = 500min/7PB Equiv Units
= 71 min/PB EQUIV Unit**

Comparing Plan VS Actual Takt Time VS. Work Content (OCT)

Operator Cycle Time

**Takt Time per Crew =
71min/PB EQUIV**



LEANBREAKTHRU Consulting Group

STAFFING STRUCTURAL ANALYSIS

- Dept. Leader
George Webb

Deputy Dept. Leader

Tanya Mc

Assist. Deputy Leader

Steve Carrier

Bridge Director

Mike Bowman

Asst Director

Tom Luffman

Super I

Barry Meave

Asst. Super

Dan Doyle

Supervisor

Bill Powell

Crew Chiefs

Richard Conner

Crew

3-members

9 -Levels of Supervision

No Daily Management Expectations

Actual 100% Workers

Partial Workers

Accountability level

These Staffing Members are not required to ensure daily functions are being addressed. No daily management system in-place.

Bridge maintenance performance would not be impacted by eliminating or reassigning any of these functions, only missing the flow of information to the crew. There is no accountability at this any level because the expectations are not undefined.

Current State

PBC Bridge Repair/Maintenance Performance Measures

– THESE DO NOT APPLY TO WHAT THE

CREW DOES	2010 Actual	2011 Target
Linear feet of new & replacement guardrail	Majority done by outside vendor 7048	80
% of Federally mandated annual bridge inspections	Performed by 2 people and supervisor 71%	100%
Square yards of concrete sidewalks to be installed	12,509	12,000

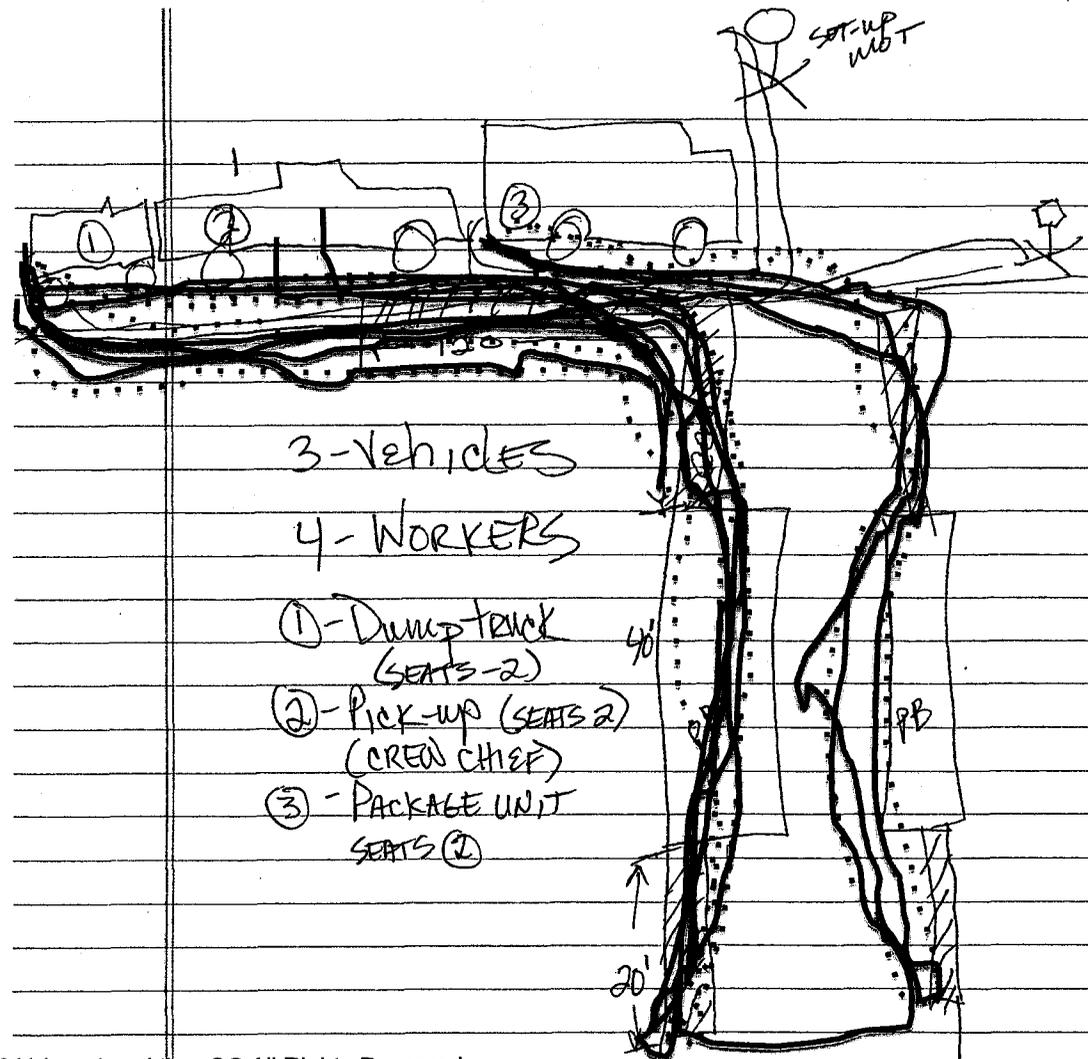
GOALS/OBJECTIVES

Observed and Demonstrated

Item #	Improvement Metric	Before	Target		Actual	
			#	%	#	%
1	# of PB EQUIVALENT Bridges Completed/DAY	6	9	50%	10	50%
2	Productivity (based on 10hrs/Day of Bridge Maintenance/Repair)	0.15 Equiv Bridge Units/ Person/hr	0.225 Equiv Bridge Units/ Person/hr	50%	0.225	50%
3	#Vehicles used at site	3	1	-66%	2	-33%

Observed roles for each worker

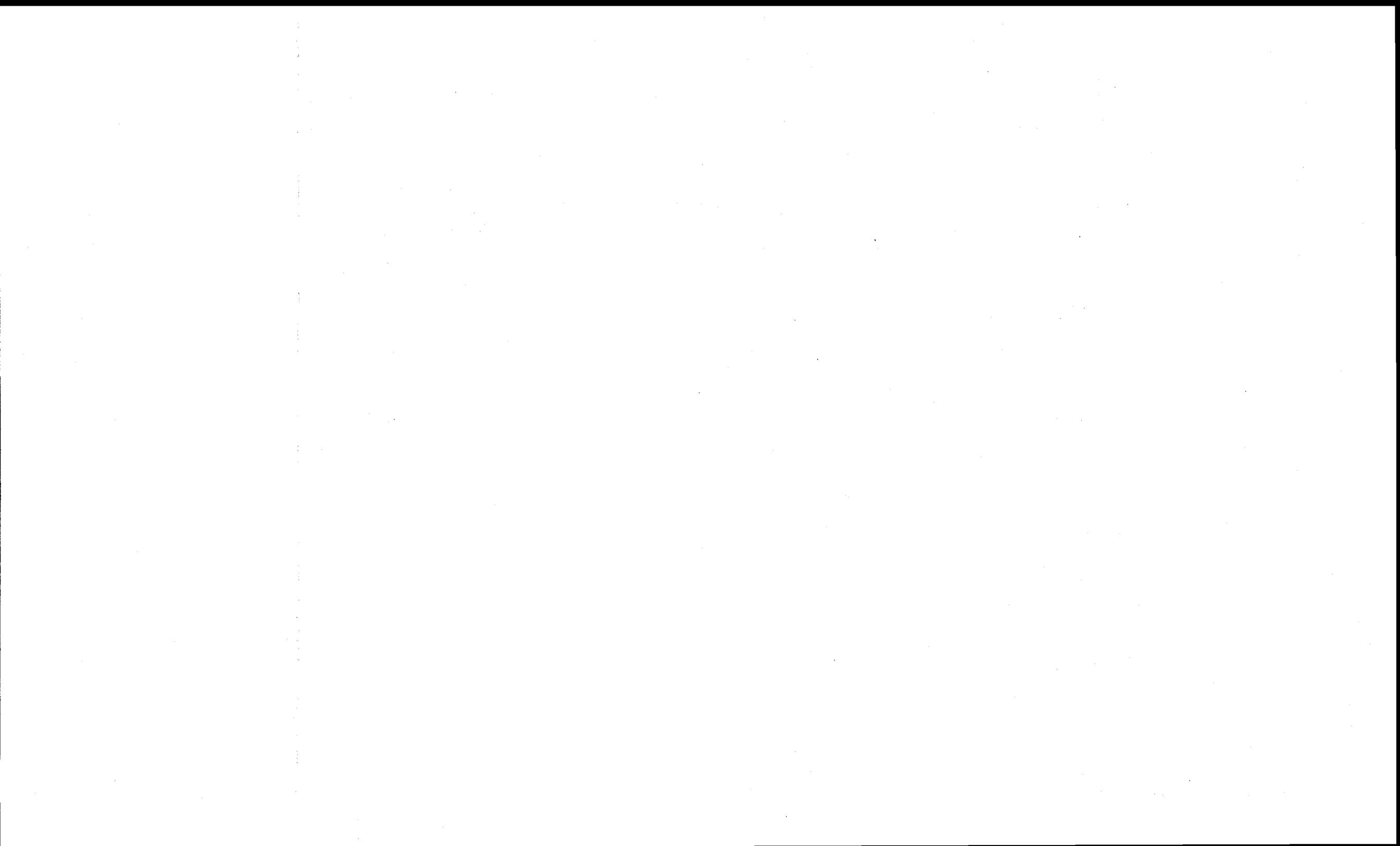
Crew Chief walks site, does not use equipment



- Crew Chief
- Operator 1
- Operator 2
- Operator 3

Review Work Site List

- 10 Min of Work for Supervisor in AM
- Supervisor Position is used to manually create and print out plans for day for multiple crews after Group Leader meeting at 6_05AM



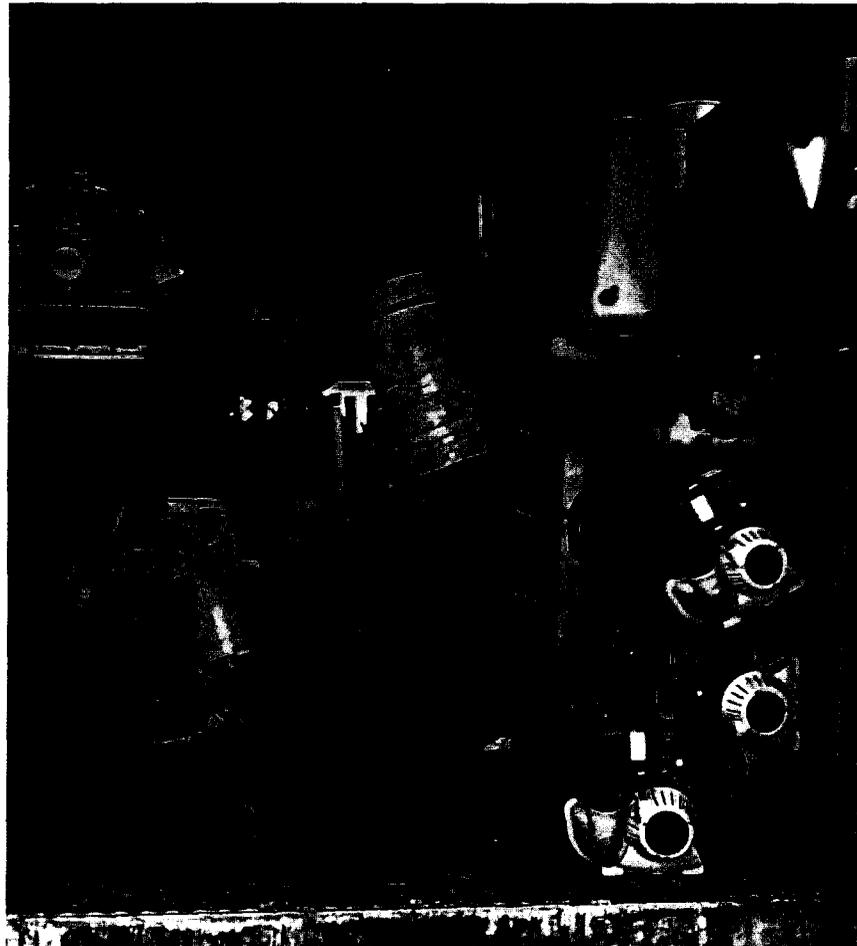
The Need For Visual Management

CREW 4 SCHEDULE		OCTOBER	
PLAN	Repair/ Maintenance	ACTUAL	Week 1
Miner & E4	M		Tuesday
Congress & L20	M		
Congress & L19	M		
Congress & L22	M		
Congress & L23	M		
Congress & L24	M		
Lantana & E5	M		
Lantana & E9	M		
Lantana & E5	M		Wednesday
Lantana & E9	M		
Lantana & L19	M		
Lantana & L20	M		
Lantana & L21	M		
Lantana & L22	M		
Lantana & L23	M		
Lawrence & L-22	R-100ft Guardrail		Thursday
Lawrence & L-23	R-Sidewalk		
Lawrence & L-24	M		
Lawrence & L-25	M		Friday
Hypoluxo & L19	M		
Hypoluxo & L23	M		
Hypoluxo & L24	M		
Hypoluxo & L25	M		
Hypoluxo & L26	M		
Hypoluxo & L27	M		
Hypoluxo & L28	M		
Boyton Beach & L20	M		
Boyton Beach & L21	M		
Boyton Beach & L22	M		

***“Understanding the expectation at a glance”,
For everyone to immediately know what is expected by whom, by when without asking for direction***

The Scheduling cycle repeats every 6-7weeks

6:00AM Start at Garage wait for instructions

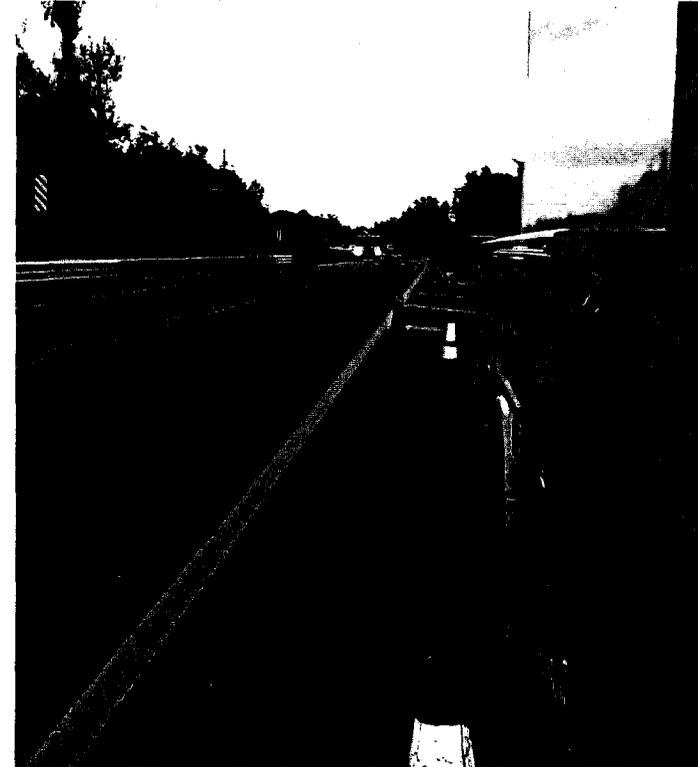


- Crew of 4 waits for instructions
- Based on instructions may need to load truck with supplies

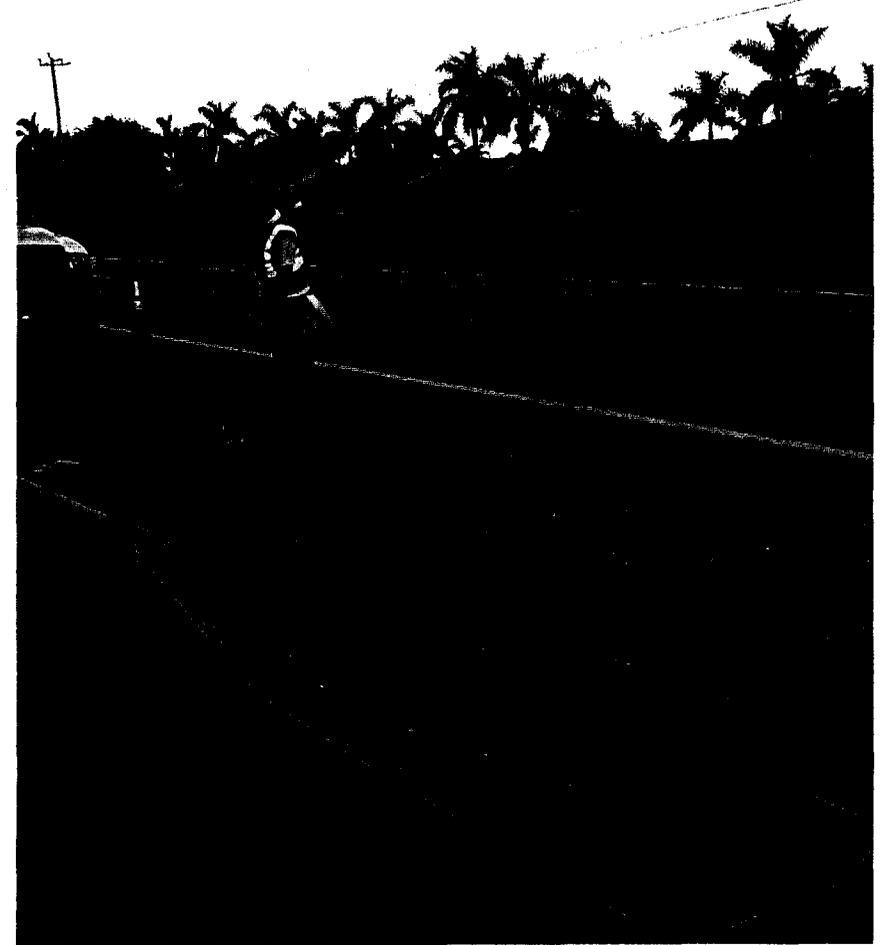
7:00AM -7:30
Ready Depart
to site



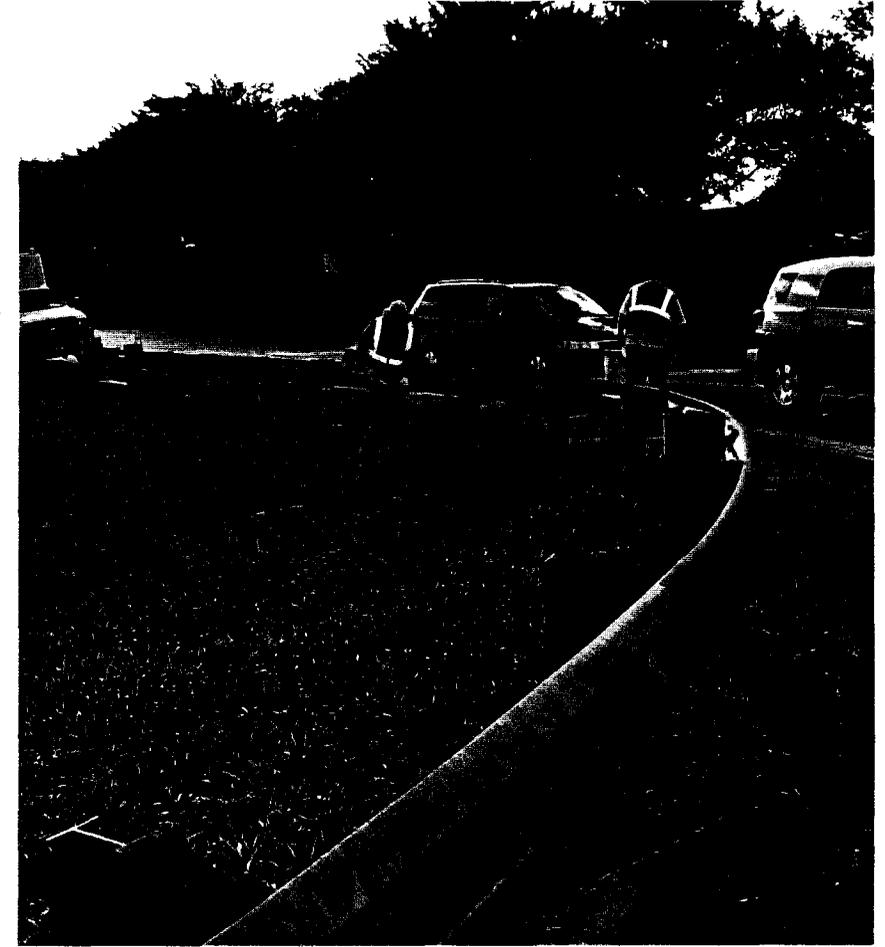
7:30 to 8:00AM
Arrive site – Unload
Set Up MOT



8:10AM Begin Trash removal, Trim Grass



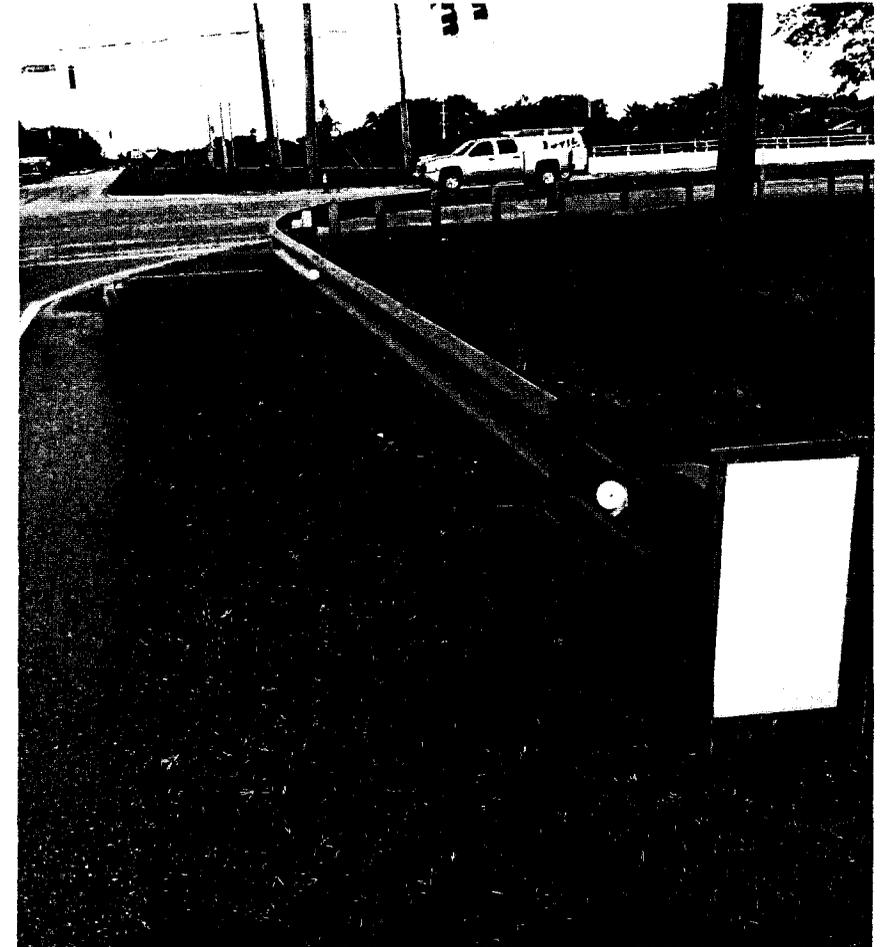
Remove Debris Trim Grass



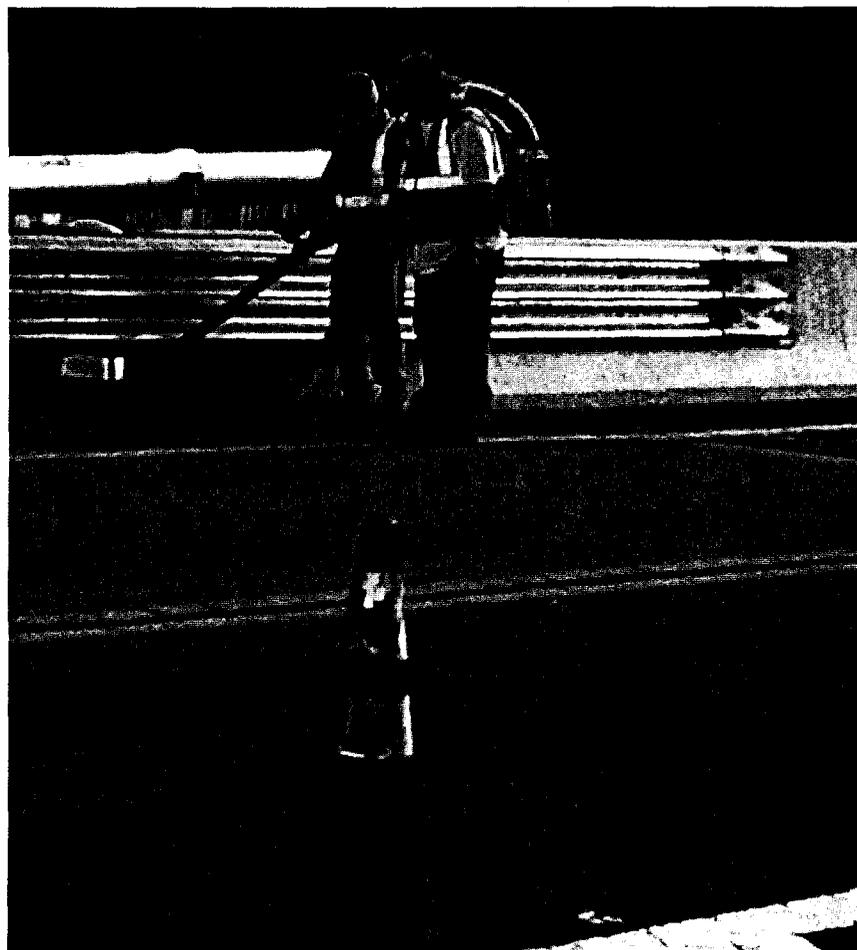
Before

&

After



Remove Debris



9:05AM

Transport to Next Site within

2-5mins

Repeat



Current State

Opportunities Observed

Bridge Maintenance is 99% COSMETIC

- Bridge Maintenance Supervisor needs to use visual management to establish more than one day vision of work that includes expectation for each day, “Need a Plan vs. Actual”, that means the work content for each site needs to be defined, it can be quantified.
 - ❑ Management team does not set expectations for daily/weekly goals
add daily 2min huddle to review progress
- Emphasis from management should include what are we going to do different at each site to eliminate the need for maintenance (See examples included).
- Emphasis on supervisor should be to ensure team is ready to depart to site by 6:05AM and not return early to load trucks for next morning. There is a need to provide the teams with what they need to keep them on site as long as possible.
 - ❑ Four member Crew waits at least 1-1.5 hrs a day and longer on for direction and loading trucks

Current State

Opportunities Observed

- **Currently use three PBC vehicles to transport 4 crew members, can reduce to two immediately and challenge to 1 by identifying right equipment**
- Current Crew chief roles are not used to perform trash removal, grass trimming and leaf blowing or weed killing. The management team assumes that the crew chiefs are performing the same tasks as the rest of the team. However, due to the lack of defining the work content there is no way for the management team to know without watching all day and comparing.
- Our team has demonstrated the impact of all four members leaving at 6:15 AM that added an additional PB Equivalent bridge unit. We have also demonstrated the benefit of all four members sharing equal tasks that increased the output by 50%.

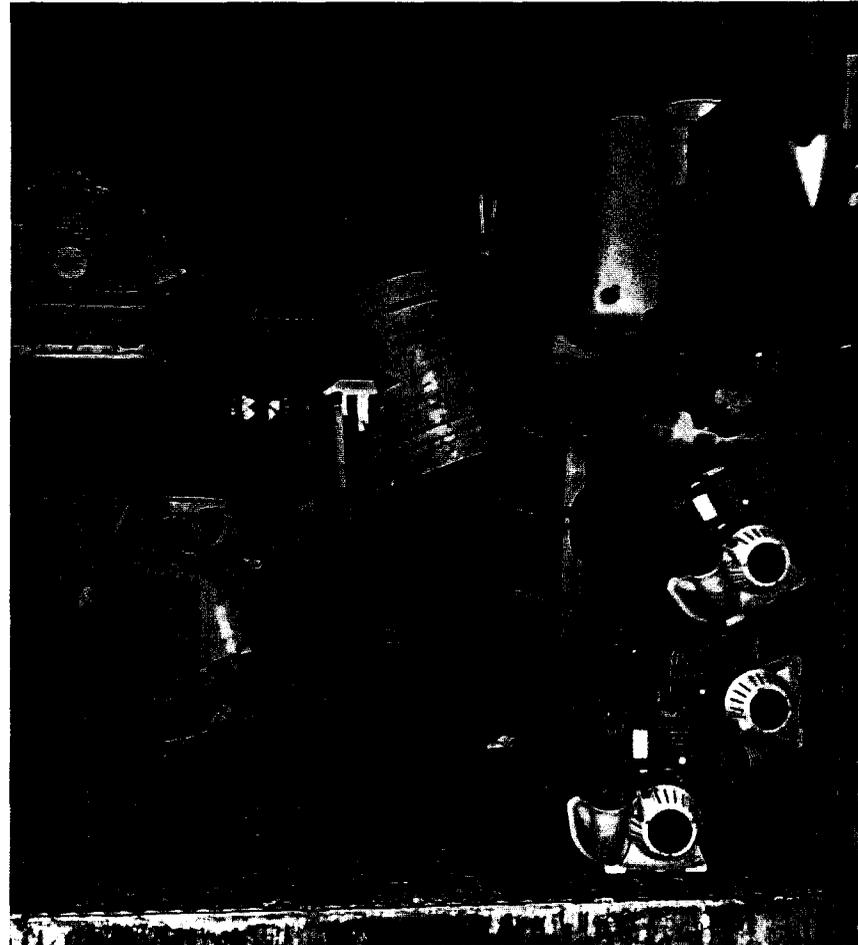
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Consulting Group

After

Identify Work Load - Pace

- Define the number of equivalent PB bridges planned for the day
- Trucks loaded and all vehicles plan to leave by 6:05AM

6:00AM Start at Garage wait for instructions



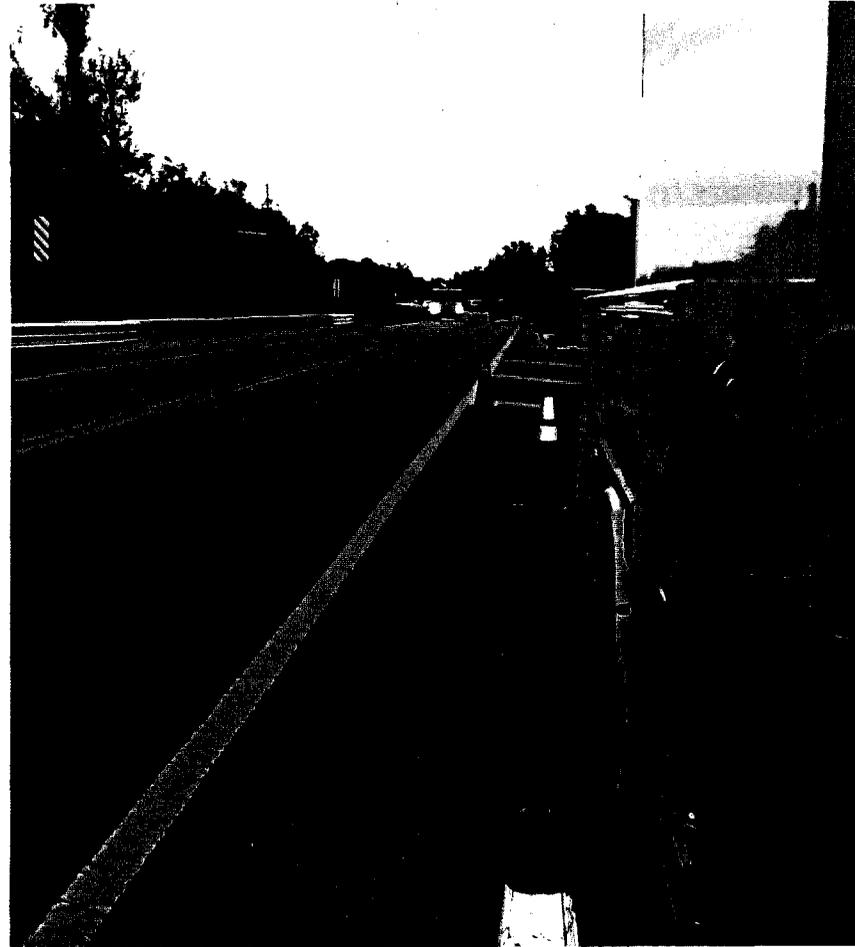
- Crew of 4 waits for instructions
- Truck loaded supplies ready

6:15AM Depart to site

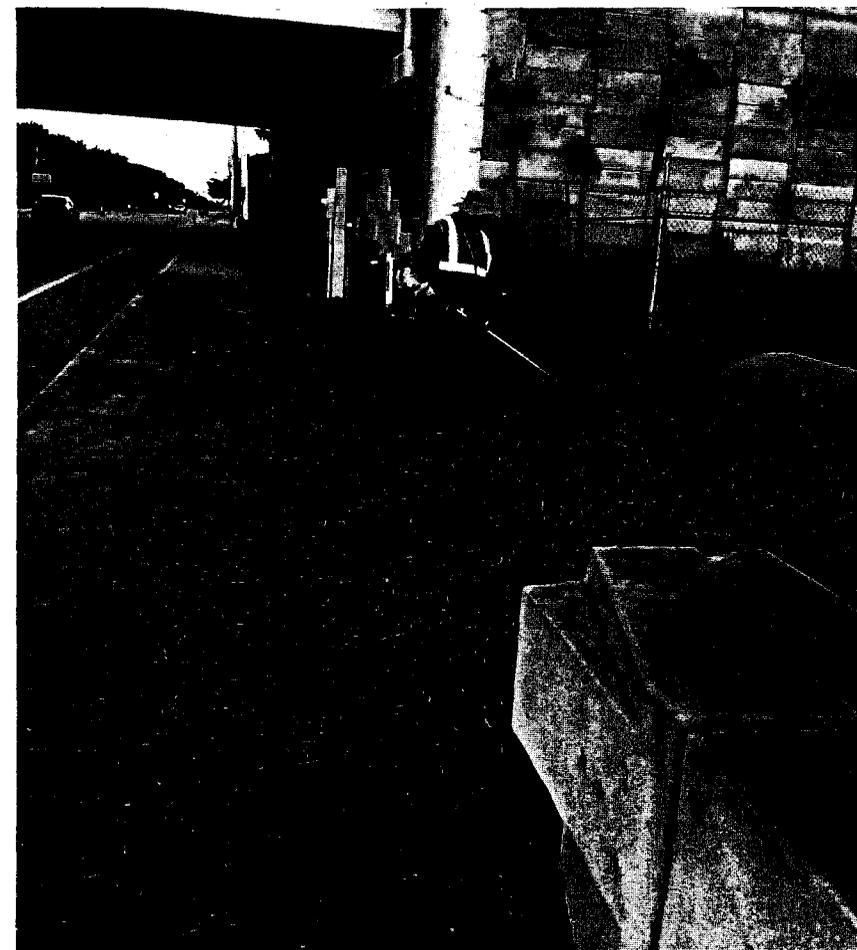


6:35

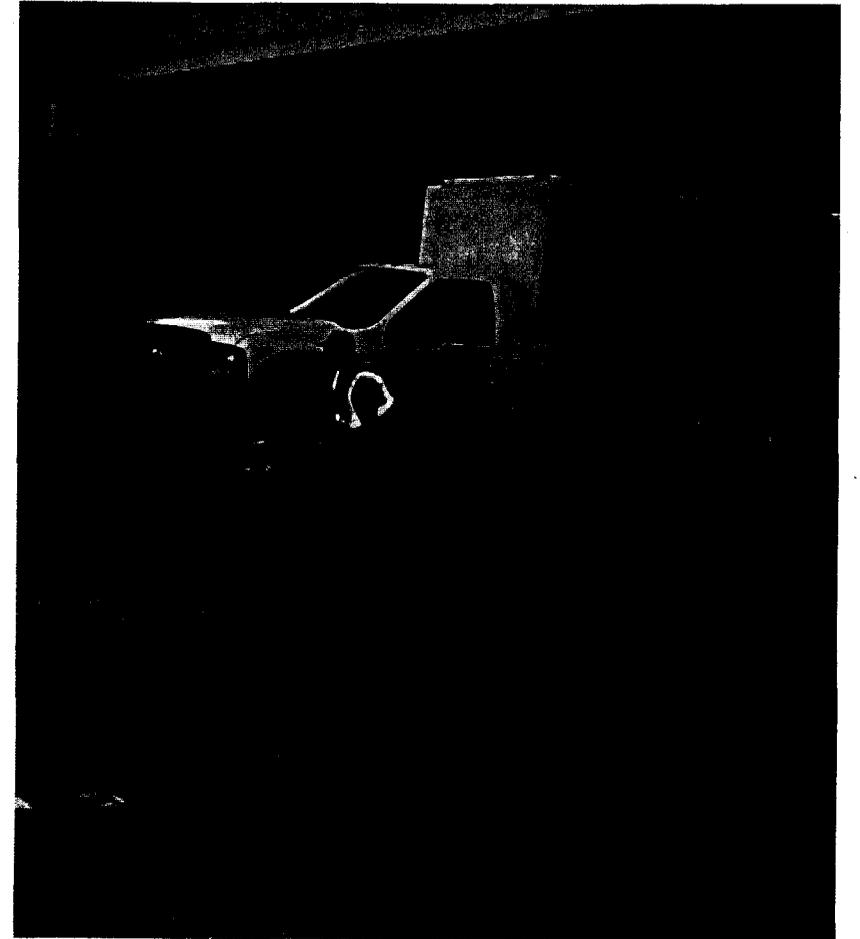
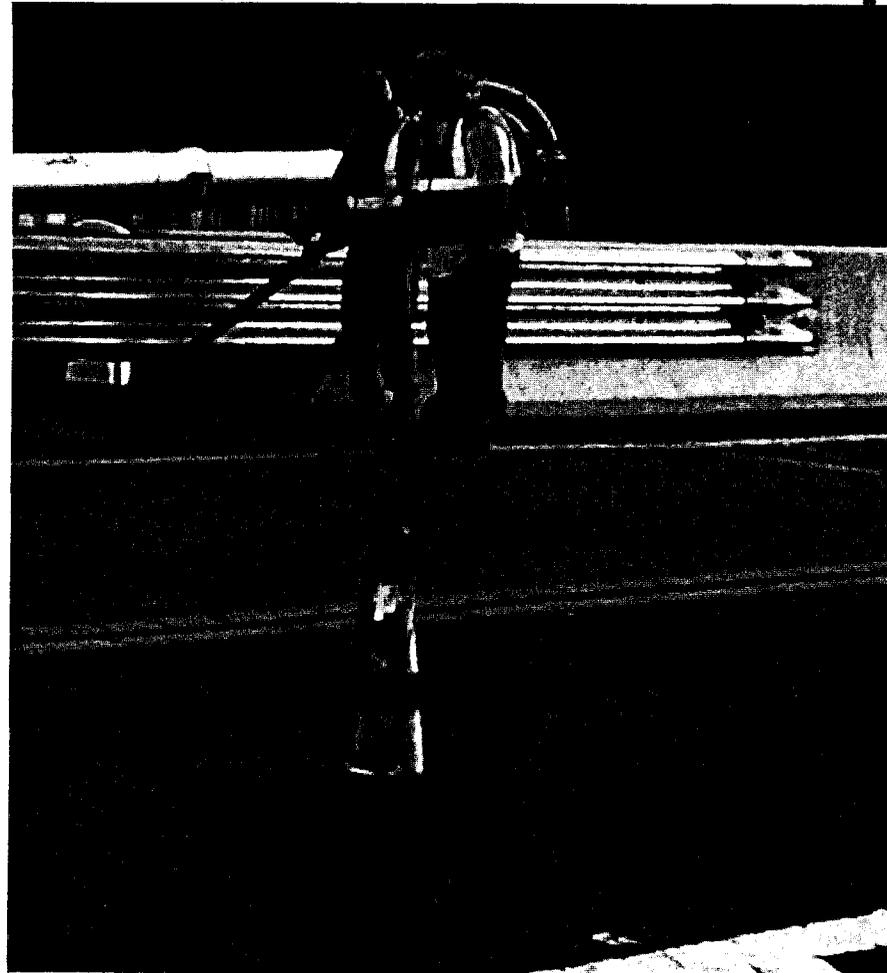
Arrive site – Unload Set Up MOT



6:45AM Begin Trash removal, Trim Grass



Remove Debris Spray Weed Killer





Demonstrate the
impact of all four
member sharing
tasks.

Transport to Next
Site within 2-5mins

Repeat

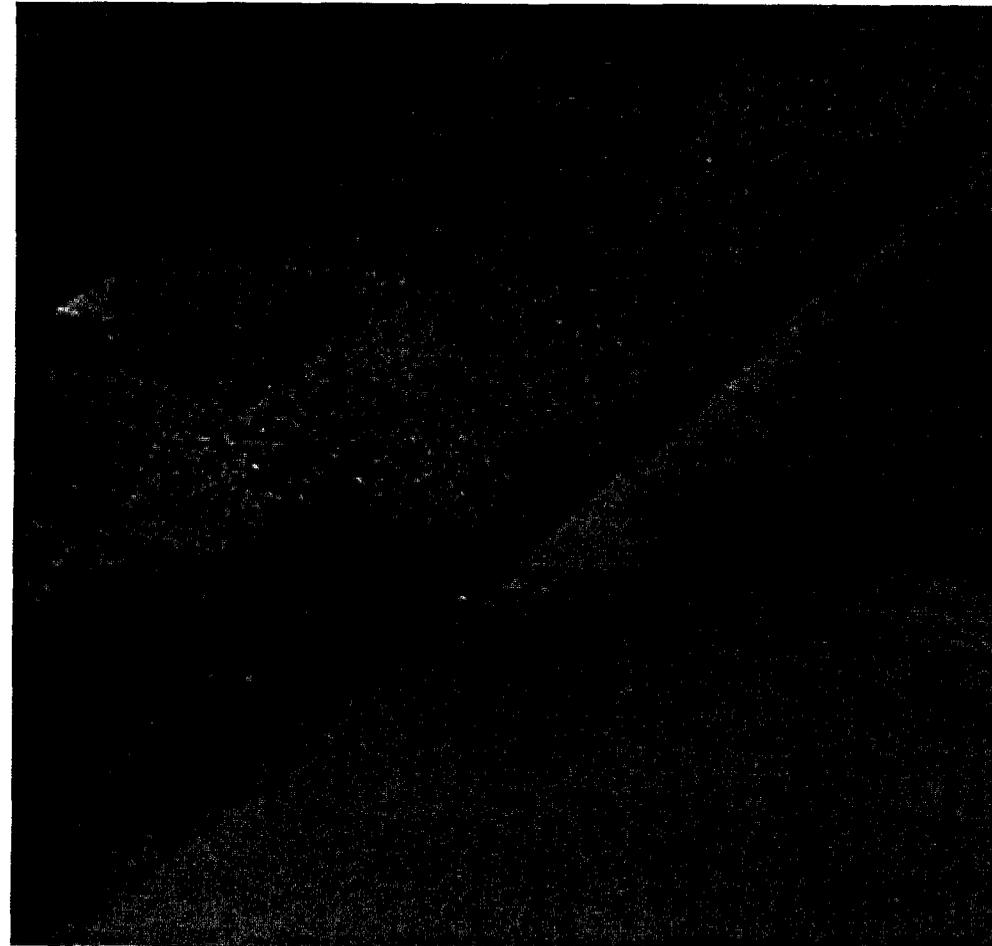
Eliminate Walking

Reduce the number of vehicles also reduces the distance walked relative to the bridge.

Reduce the operators walking to Truck multiple times by positioning Equipment the following:

- Trash removal
- Weed Wackers
- Leaf Blowers
- Weed Spray

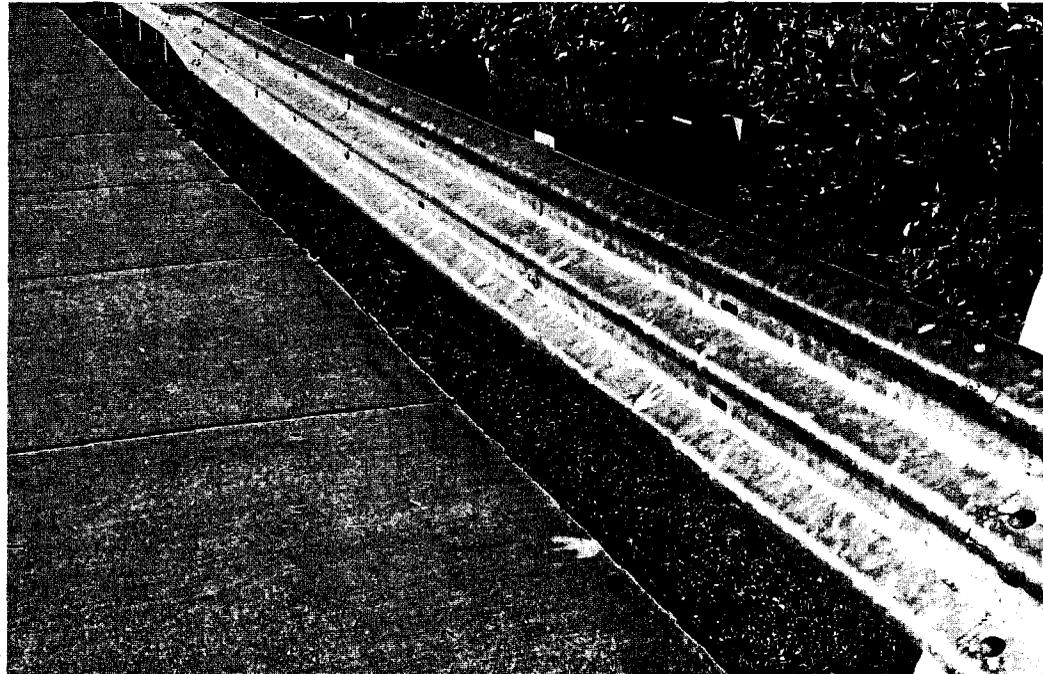
Reduce the Need for Future Maintenance



What effort is being focused on alternatives to eliminate the need for maintenance

Note: Example of Asphalt apron

Reduce the Need for Future Maintenance



Note: Example of Asphalt apron

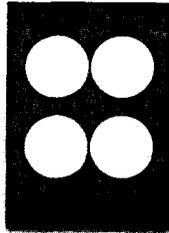


Develop Standard Work

Operator 1



Remove Trash
& Inspect, Trim
Grass, blow/
shovel debris,
spray weed killer



Cab seats 4

Operator 2
Trim grass

Operator 3

Blow debris

Operator 3
Trim grass

**Add Times to perform functions

Demonstrated

Item #	Improvement Metric	Before	Target		Actual	
			#	%	#	%
1	# of PB EQUIVALENT Bridges Completed/DAY	6	9	50%	10	50%
2	Productivity (based on 10hrs/Day of Bridge Maintenance/Repair)	0.15 Equiv Bridge Units/ Person/hr	0.225 Equiv Bridge Units/ Person/hr	50%	0.225	50%
3	#Vehicles used at site	3	1	-66%	2	-33%

**Did not demonstrate using two vehicles, however confirmed that the third vehicle was not transporting anything but the driver

Questions

THE BEGINNING.....

Bridge Maintenance Crew Progress Visual Management Actions Needed

1. Trend of Month to Month
2. Daily updates that roll into Monthly Progress
3. Issues/Actions list – expose daily issues and assign resources to execute
4. Actions taken to reduce the need for maintenance, use action register to expose issues and assign responsibility, display like newspaper for all to see.
5. Use Key Process Indicators
– PLAN VS. ACTUAL

Actions Needed

1. Define PB Bridge Equivalent
2. Document work content/time required for 4-member team to complete tasks – create standard work documentation for standard PB Bridge Equivalent unit
3. Assign work using visual management
4. Assign daily expectations based on #PB bridge equivalent units
5. Ensure operators leave at 6:05 to maximize time at sites without leaving early.
6. Divide work among all four operators equally to complete site work
7. Define strategy/approach to reduce the need for maintenance at each location
8. Establish action plan to implement strategy to reduce the need for maintenance
9. Establish ownership/accountability to ensure action plan success
10. Reduce the number of vehicles per crew from 3 to 2 and identify a solution to get to 1 and apply to all crews throughout PBC. Challenge, why?



Palm Beach County Interoffice Communication

TO: Shelley Vana, Chair and
Members of the Board of County Commissioners

FROM: Robert Weisman
County Administrator 

DATE: December 30, 2011

SUBJECT: LEANBREAKTHRU Final Report on Engineering

On October 24, 2011, Wayne Poerio of LEANBREAKTHRU Consulting Group, presented staff with the final report on his study of the Engineering & Public Works Department. Mr. Poerio studied two sections in Engineering: Striping and Bridge Maintenance. As mentioned in the September 21, 2011 update memo to the Board, Mr. Poerio's time for this project was very limited due to him being out of town on other jobs and it is doubtful that he dedicated sufficient time to adequately conduct this study.

The final report is lengthy, but a synopsis can be found on pages 21 and 22. Unfortunately, the conclusions in the report are substantially unfounded and the recommendations are not based on specific review or study of any particular area. The "Expected Business Results" listed include:

Budget reduction of \$4.5 million

Approximately \$3.2 million of the total \$4.5 million budget reduction is the result of "freeing-up" 20 unidentified executives in the Engineering Department to comprise a team to go Countywide and establish continuous improvement systems. These individuals would immediately stop doing any Engineering work and focus on this new countywide initiative. After six months the team would be disbanded and the 20 executives who makeup this team, would replace open positions within other departments. Staff strenuously objects to the notion that 20 executives could be removed from Engineering with "no impact at any performance level." This conclusion cannot be fairly reached by studying the striping and bridge maintenance crews for a limited time period. Further, Engineering executives likely will not have the skill sets to replace open positions in other departments, for example, a Debt Manager in OFMB, an Animal Control Office in Public Safety, or an Auditor in the Inspector General's Office. Another \$96,000 can be saved, according to the report, by freeing up the striping supervisor. Note, that no money can actually be saved by "freeing-up" an employee, unless that position is eliminated. Mr. Poerio was not able to identify any of the 20 executive positions he seemingly was proposing to eliminate, and when questioned by staff, he indicated that Engineering management could best make that decision.

Reduce the need to fill 15 open Engineering positions (\$760K budget reduction)

The report does not go into detail regarding the specific positions this recommendation relates to nor the impact of the reduction. These positions are located throughout the department, yet Mr. Poerio made this recommendation after studying only two sections of Engineering. Staff strongly disagrees with this sweeping generalization.

Focus on eliminating the need to scan traffic crash information (\$200K) using 4 employees and reassign outside of Engineering

The report does not go into detail regarding the specific positions this recommendation relates to nor the impact of the reduction. Again, Mr. Poerio assumes that employees from the Engineering Department have the qualifications/experience to fill positions outside of that department and that the function these four employees perform is not required. No discussion with staff was undertaken during the study period regarding this idea.

Increase the frequency of bridge maintenance and eliminate the need for additional maintenance

No specific information is provided as to how this is to be accomplished.

In conclusion, staff was disappointed that this review resulted in the consultant's observations rather than recommendations. As evidenced by his inability to provide details of his findings and the very limited time spent in the Engineering Department, staff does not feel his findings are valid. However, Mr. Poerio did make some recommendations to staff during the process that have merit, including several that were not included in the final report. The Engineering Department continues to work on those recommendations:

Recommendation: Crews would stop during the afternoon to drive to the propane company to have propane tanks recharged, resulting in unnecessary downtime at least 60 minutes per trip.

Implementation: Working with the propane vendor, a schedule has been established so that spare propane tanks are refilled at Traffic Operations instead of at the propane company's facility.

Comment: Poor communication between paint kettle operator handliner operator causes longer paint fill times.

Implementation: While Leanbreakthru made no specific recommendations, walkie-talkies were provided to the crews to improve communication.

Recommendation: Why do we not have any standards defined to compare daily progress? It can be measured and repeatable.

Implementation: Daily measures of material used are being tracked for possible future goal setting.

At this time, the firm of Gerstle, Rosen & Goldenberg, P.A. is performing an efficiency audit of the Countywide ad valorem-funded departments with a report due in early April. It is intended that this audit will result in recommendations that can be implemented as a part of the FY 2013 budget development process.

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