



The CT DEP LEAN Experience

EPA New England States Annual Enforcement Planning Meeting

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[What is LEAN?]

- ❑ “A process improvement approach and set of methods that seek to eliminate non-value added activities or waste.”
(ECOS/EPA)
- ❑ Originally developed for manufacturing –
Adapted to improve office environments
- ❑ Customer-focused - Do what they value
- ❑ Applying “Constant Gentle Pressure” to improve – Plan-Do-Check-Act

LEAN Identifies and Eliminates Waste

TOM D WIPE

Transportation

Overproduction

Motion

Defects

Waiting Time

Inventory

Processing

Environmental waste

OFFICE EXAMPLES

Poor office layout

Printing drafts too soon

Re-entering data

Incomplete paperwork

Meetings start late

Inbox accumulates

Excessive approvals

Recyclable materials

[Value of LEAN to DEP]

- ❑ Become more efficient – no lowering of environmental requirements
- ❑ Staff identify and implement the improvements, not management alone
- ❑ Improved efficiency – More time to protect the environment, including addressing *new* environmental challenges

[LEAN Projects to Date]

- **13 LEAN Projects in 1 year**
 - 8 were either enforcement, inspection or permit related

Water Quality Enforcement Programs

- ❑ Eliminate Wastes and/or non-value added steps found in WPED's administrative enforcement activities
- ❑ Identify ways to improve WPED's administrative enforcement processes
- ❑ Charter Goals
 - Reduce NOV closure time by 30%
 - Reduce enforcement elevation decision time by 30%
 - Reduce the time for drafting formal enforcement document by 30%

[Current State 6/08]

- ❑ Division has 3 enforcement groups, each with a unique way of doing business
- ❑ Enforcement Response Policy (ERP) goal of 180 days to send draft consent orders is not being met.
- ❑ Notice of Violation (NOV)
 - Issued in 2007 – 170. Of these, 62 not closed.
 - Total Backlog (last 5 years) = 583
- ❑ Consent Orders (CO)
 - Completed in 2007 = 14
 - Total Backlog of draft COs = 30
 - Last 5 years = 24
 - Greater than 5 years = 6

[Future State]

- ❑ Standardize Work/Workflow
- ❑ Use of Visuals for File Management and Workflow Management
- ❑ New Approach to NOVs and COs

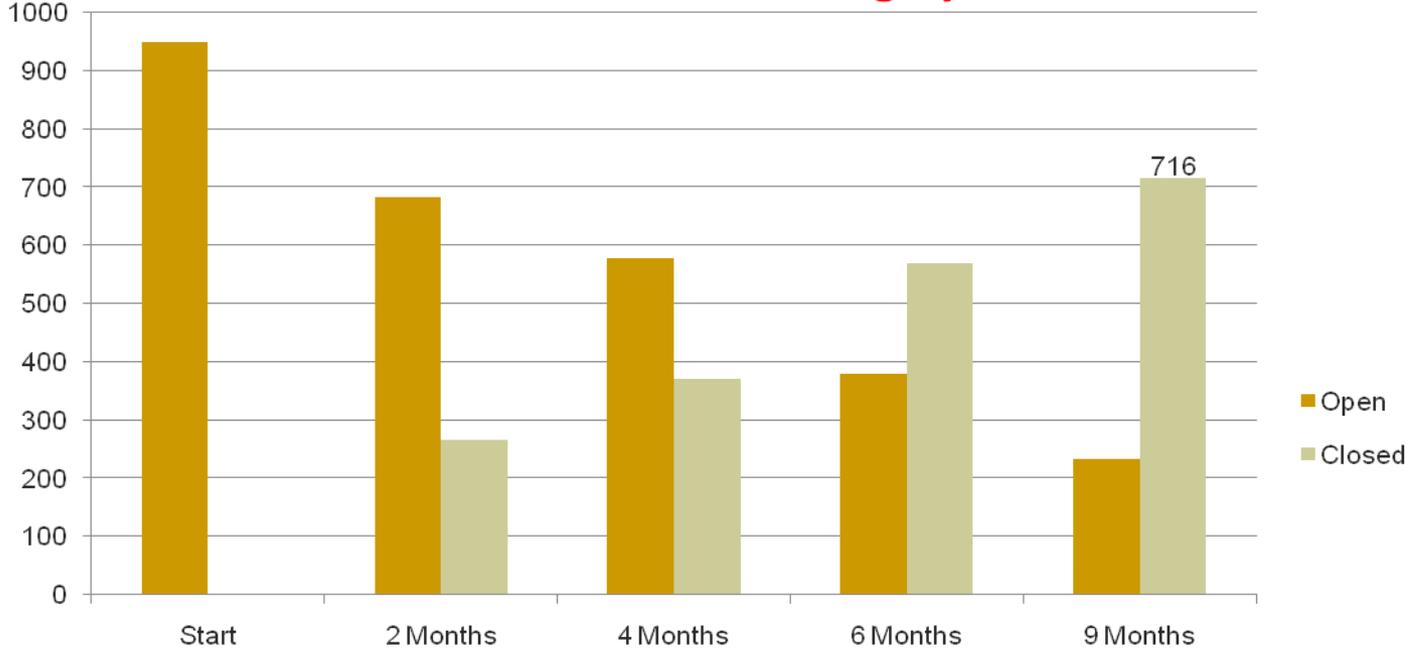


Type	New	Old
Value added	5	6
Non-Value Added	13	30
Waiting	6	25
Not Necessary	0	14
Transport	10	31
Total	34	106

[Success]

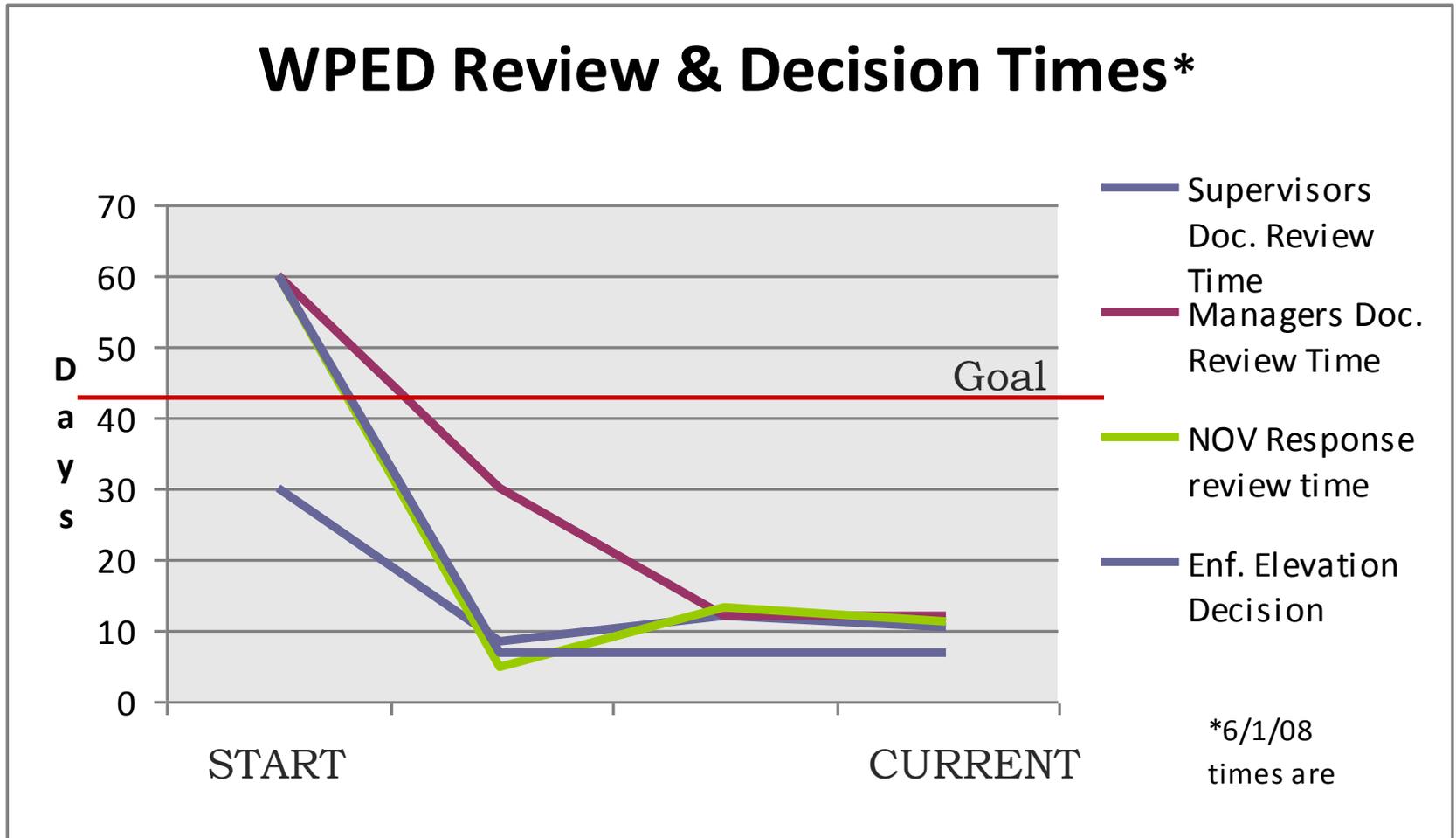
WPED Open/Closed Backlog NOVs

1 Year Goal Reduce Backlog by 711



Success

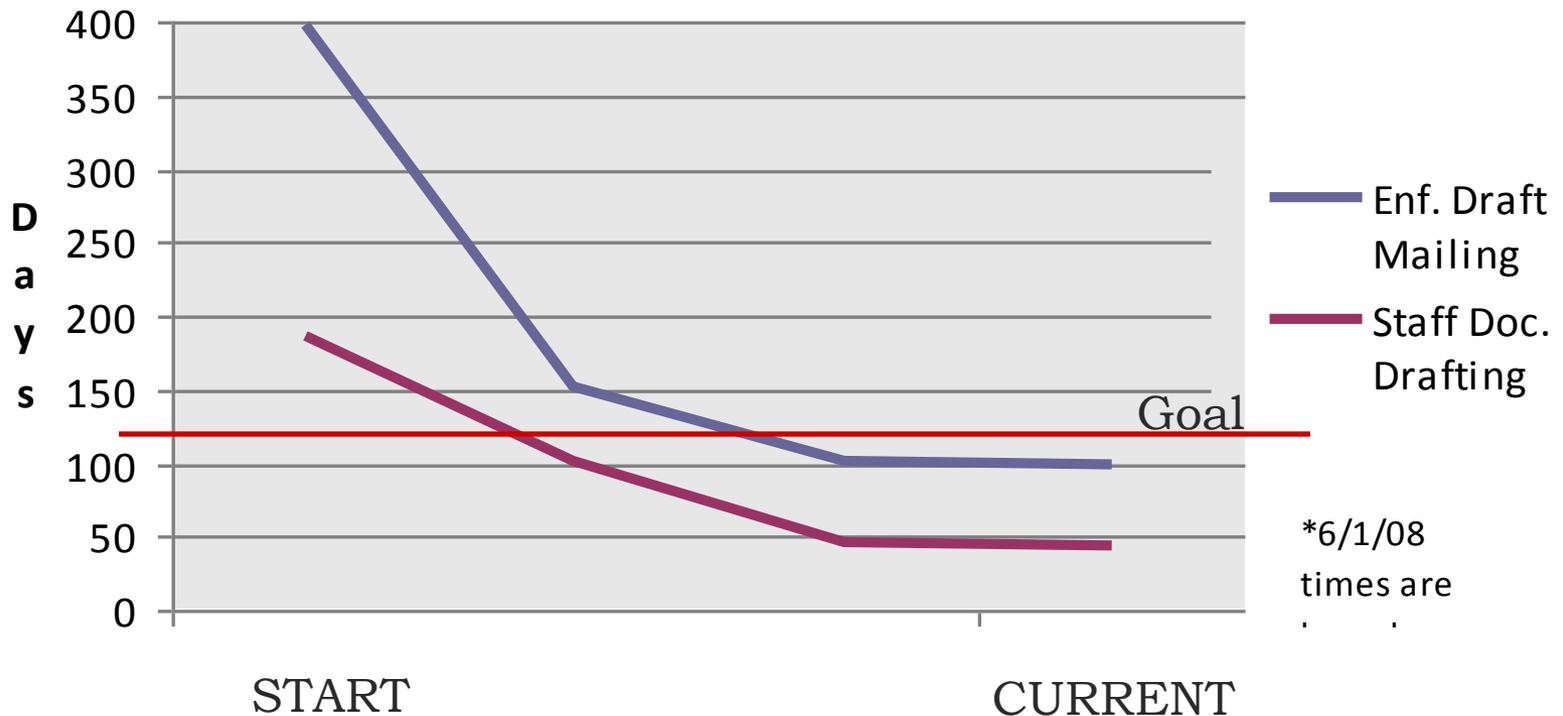
- Reduced decision time by 30% to 42 days



Success

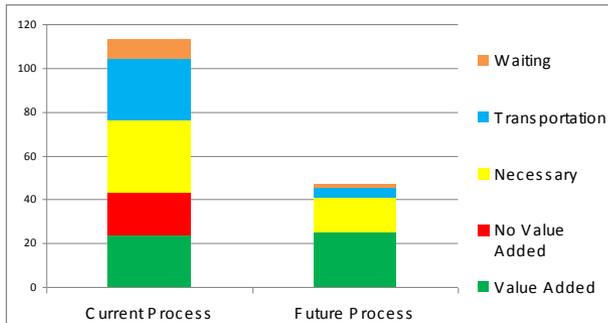
Goal Reduce Drafting Time by 30%

Enf. Document Drafting/Completion*



Evaluation of the Storage Tank Compliance Process

VSM – LEAN, MEAN, & GREEN 32% Increase Value-added



Enforcement State

- 1500 INSPECTIONS
- SITES WITH 100% COMPLIANCE = 10
- 1490 SITES WITH A COMPLIANCE ISSUE
- 34 ENFORCEMENT ACTIONS ISSUED (FORMAL & NOVS)

Enforcement Future State

- INCREASE FORMAL ACTIONS BY 40%
- 100+ SITES ISSUED FIELD NOVS

Pre-Inspection

- | | |
|------------------------|-----------------------|
| • <u>CURRENT STATE</u> | • <u>FUTURE STATE</u> |
| • 19 Steps | • 3 Steps |

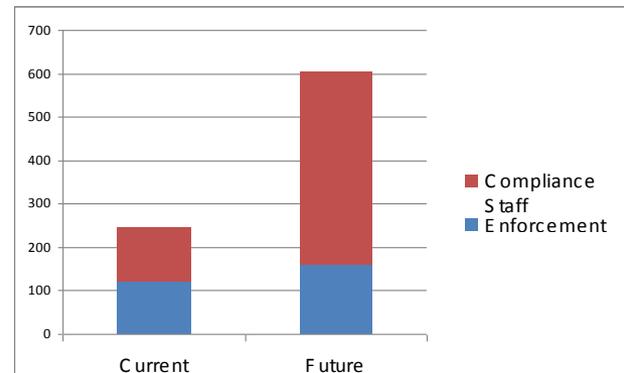
Inspection

- | | |
|------------------------|-----------------------|
| • <u>CURRENT STATE</u> | • <u>FUTURE STATE</u> |
| • 34 Steps | • 35 Steps |

Post - Inspection

- | | |
|------------------------|-----------------------|
| • <u>CURRENT STATE</u> | • <u>FUTURE STATE</u> |
| • 65 Steps | • 9 Steps |
| • Total = 118 | • Total = 47 |

Key Performance Indicator (KPI) 40% Increase Inspection Efficiency and Quality



[Air Title V Inspections Charter]

- ❑ Opportunities for Improvements:
 - Re-evaluation and direction for Title V full compliance inspections to fully document compliance with all applicable standards in the most efficient manner possible.
- ❑ Project Scope:
 - Enhance Title V compliance evaluation process by evaluating:
 - Staff training needs
 - Inspection methods
 - Tools and forms
 - Inspection report quality and format
 - Internal coordination
 - TV drafting and issuance

Goals and Metrics

- ❑ Develop Value Stream Map of Title V Compliance Evaluation Process
- ❑ Eliminate non-value added steps
- ❑ Develop a Standardized Comprehensive Inspection Report Format
- ❑ Develop tools necessary to ensure successful inspection
- ❑ Establish procedures for internal staff collaboration
- ❑ Develop clearer and more concise permit terms and conditions
- ❑ Establish baseline standards for the compliance evaluation process

[Key Performance Indicators]

❑ Committed to In Charter

- NOVs issued for federal violations/all NOVs, increase by 50%
- Cycle time for inspection from at 15 weeks, decrease by 40%
- Percent Returned 25-33%, decrease by 50%

❑ Suggested KPIs during process

- 100% of applicable federal standards identified in inspection report
- 100% of documentation will be provided prior to inspection
- 0% violations occurring prior to last inspection
- track time for subtasks:
 - request sent,
 - PIQ received,
 - communication complete,
 - PIQ inspection scheduled
 - Inspection complete
 - Report accepted and distributed

Solid Waste Enforcement Program

- ❑ Minimize number or complexity of steps in the process between inspection and issuance of draft formal action to reduce average total processing time to at least 30%
- ❑ Develop SOPs for updating or creating written documentation of process
- ❑ Increase inspection rates of permitted facilities including recycling facilities
- ❑ Recommend case management tracking system

Value Stream Mapping Current State



	Current State
Green (value)	47
Pink (non value)	17
Yellow (non value but necessary)	8
Blue (transport)	56
Purple (waiting)	33
Total	161

72% processes = WASTE!

[NOVs Stuck in Traffic Jam]

- ❑ **1/3** cases moving in the fast lane (<200 days)
- ❑ **2/3** cases stuck in traffic
 - Wear “two hats” as inspectors and enforcement
 - (Over 500 permitted facilities)
 - Limited Case Management Tracking System
 - Caseload priority changes
 - Overproduction in inspections
 - Changes in resource staffing
 - Change in respondent (elected officials, new ownership)

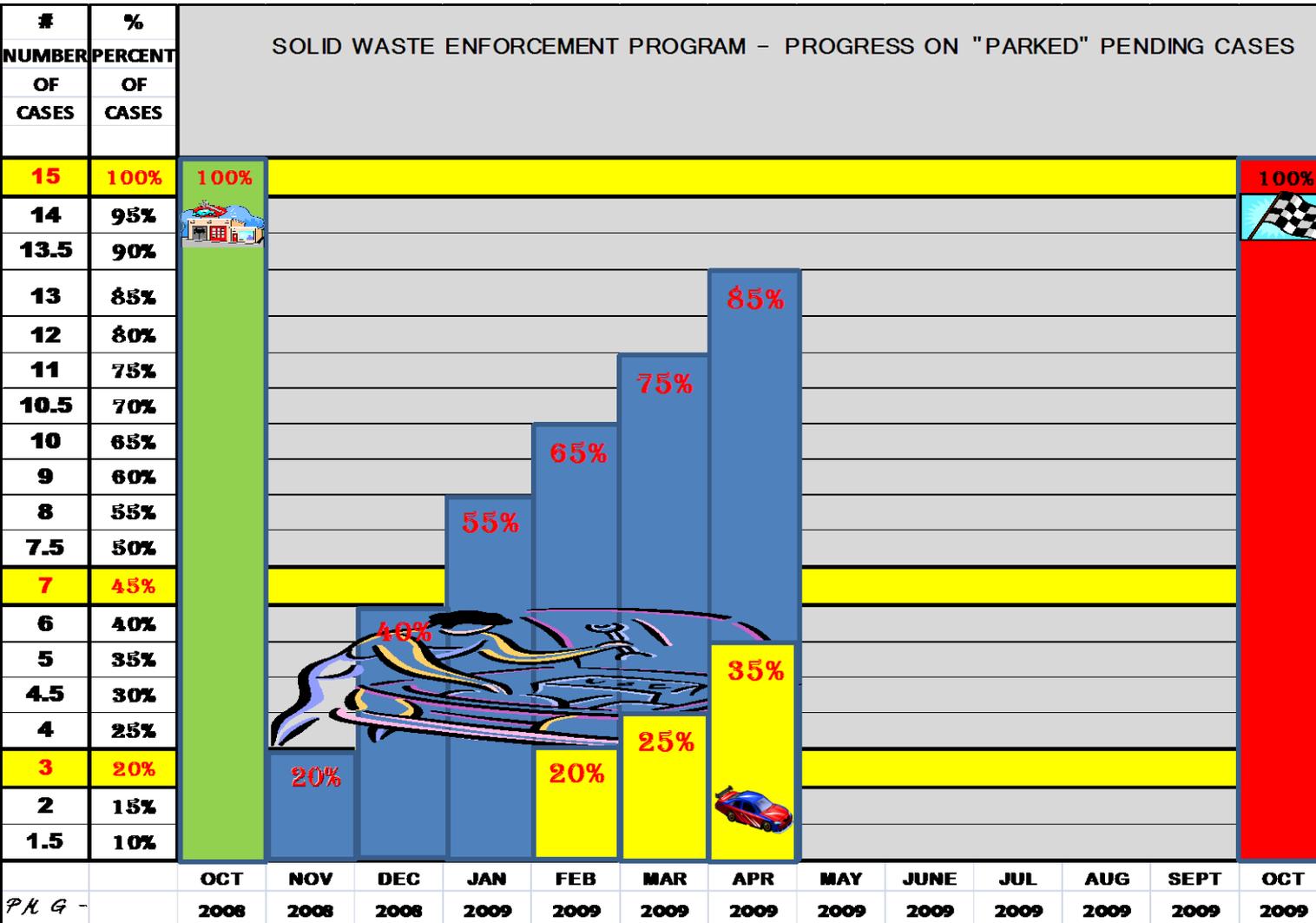
[Current State vs. Future State]

	Current State	Future State
Green (value)	47	44
Pink (non value)	17	0
Yellow (non value but necessary)	8	4
Blue (transport)	56	12
Purple (waiting)	33	4
Total	161	64

WOW! 60% Reduction in Steps

Solid Waste LEAN Results

UPDATED 04-21-09



COLOR KEY

PRE LEAN

PARKED

POST LEAN

EXITING

WORKING

GOAL

THE FOLLOWING COLOR KEY REPRESENTS THE

NUMBER OF "PARKED" PENDING CASES - THE

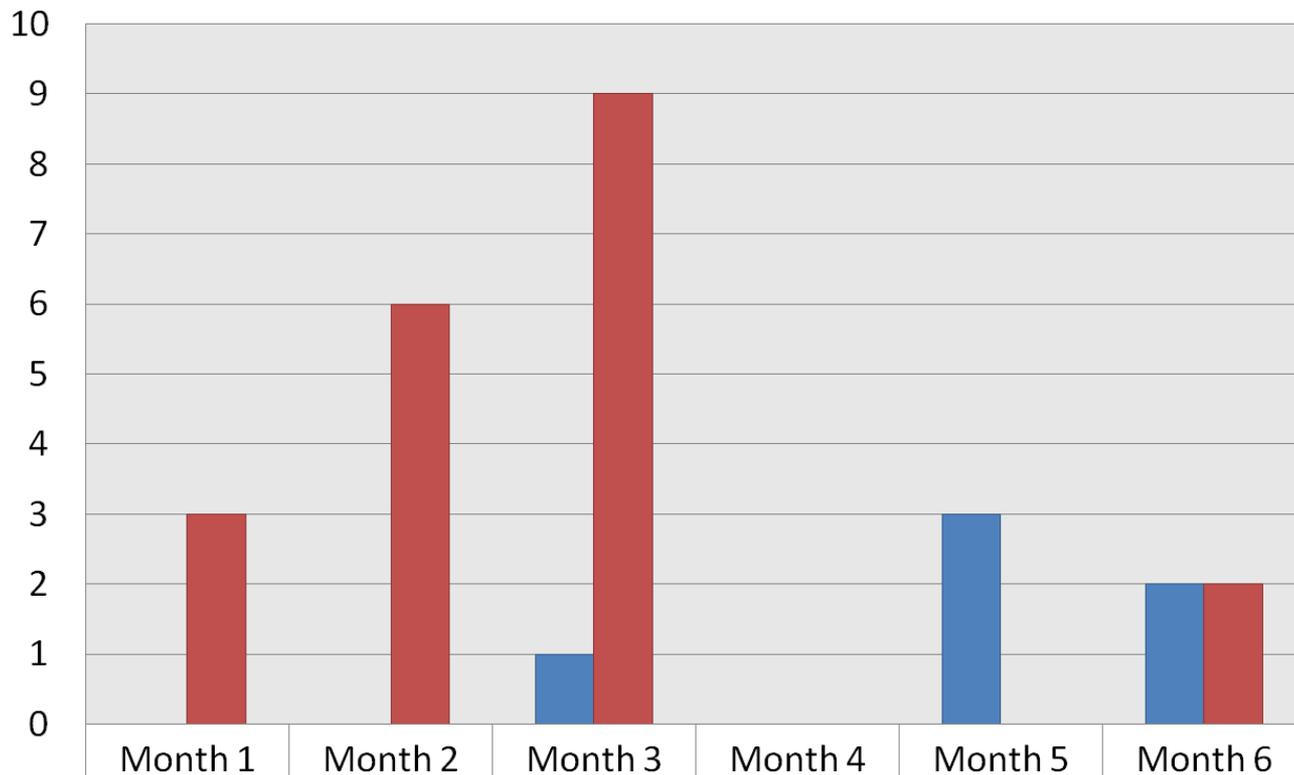
GOAL OF THIS TEAM IS TO HAVE **NO** PARKED

CASES BY OCT 2009

PH 9 -

Solid Waste LEAN Results

Inspections of Permitted Facilities
Pre-LEAN (4/08-9/08) VS Post-LEAN (10/08-3/09)



■ 4/08-9/08	0	0	1	0	3	2
■ 10/08-3/09	3	6	9	0	0	2

Comments/Observations from the LEAN Teams

- ❑ **Critical in the process is having management support in accepting recommendations for change and being fully engaged in implementation.**
- ❑ **Important to keep all Division staff informed as to the project's goals and implementation activities. Buy-in from staff critical to make the process work.**
- ❑ **As the project implementation moves forward, need to be mindful of including others within the programs to integrate efforts moving forward.**
- ❑ **Acknowledge the work of the Team and Team Leader.**