



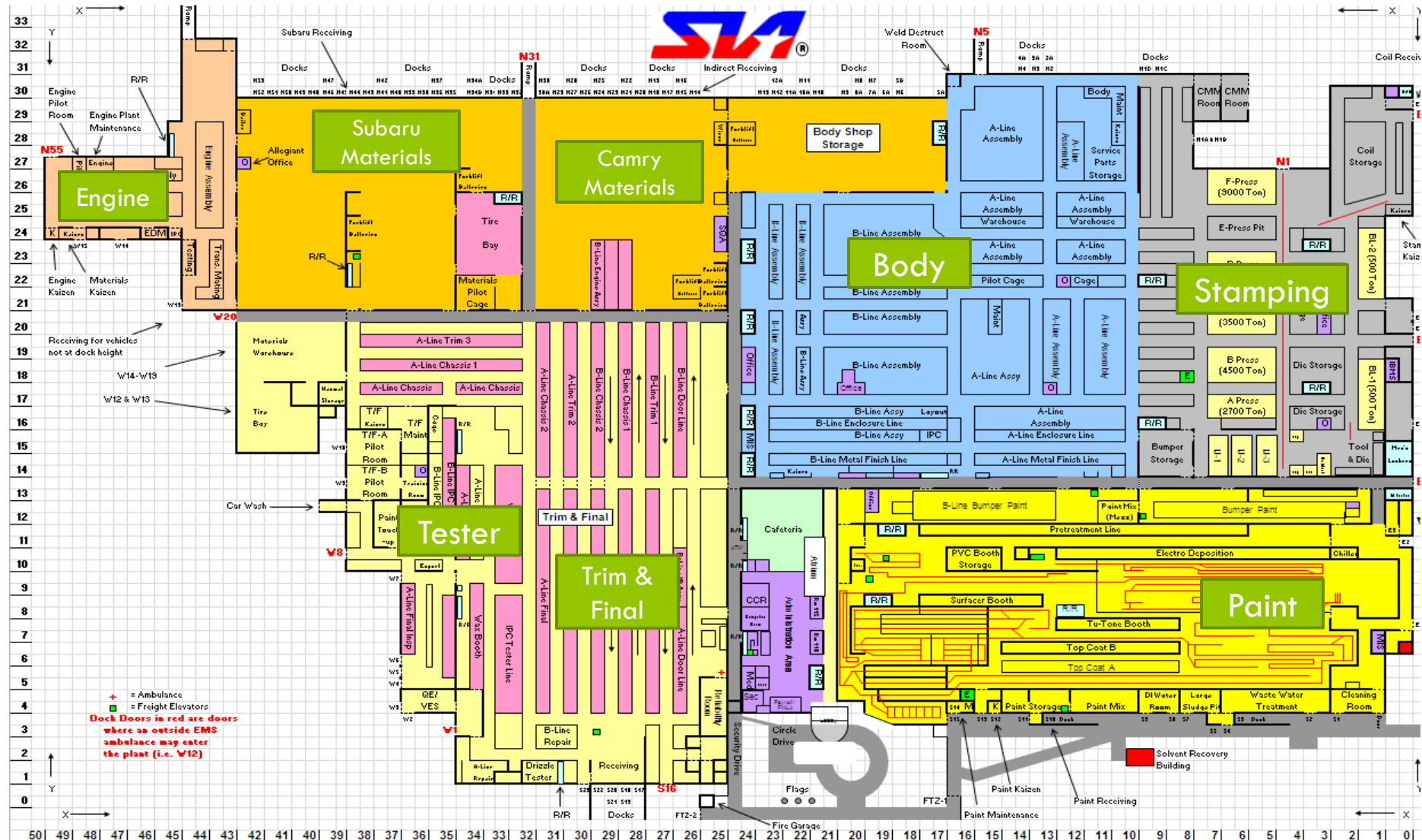
MEASURING FOR THE FUTURE

From Zero Landfill to Sustainability

Subaru of Indiana Automotive, Inc.



Plant Layout—5-stage process



The Zero Landfill Journey

Where do we start?

With a good
inventory

AKA the
dumpster dive

The List:

- What types of waste are being generated
- Order it by volume or weight



Have to know what you're dealing with, in order to deal with it

The Zero Landfill Journey

Motivate Management through Measurement

- Develop a system to measure the waste being generated

- Make it ACCURATE

- Level the playing field

- pounds of waste per unit, per capita

- Make managers accountable

- ECOC

- Provide further motivational tools

HERITAGE INTERAC

Material	Location				Gondola #	Weight	Gondola #
CB	X	29.5	Y	15.5			
CB	X	29.5	Y	21.5			
CB	X	30	Y	3			
CB	X	30	Y	9.8	131	109	
CB	X	30	Y	12.8			
CB	X	30	Y	21.5	023	40	
CB	X	30.5	Y	4.5			
CB	X	30.5	Y	6.5			
CB	X	30.5	Y	7	037	56	
CB	X	30.5	Y	7.5			

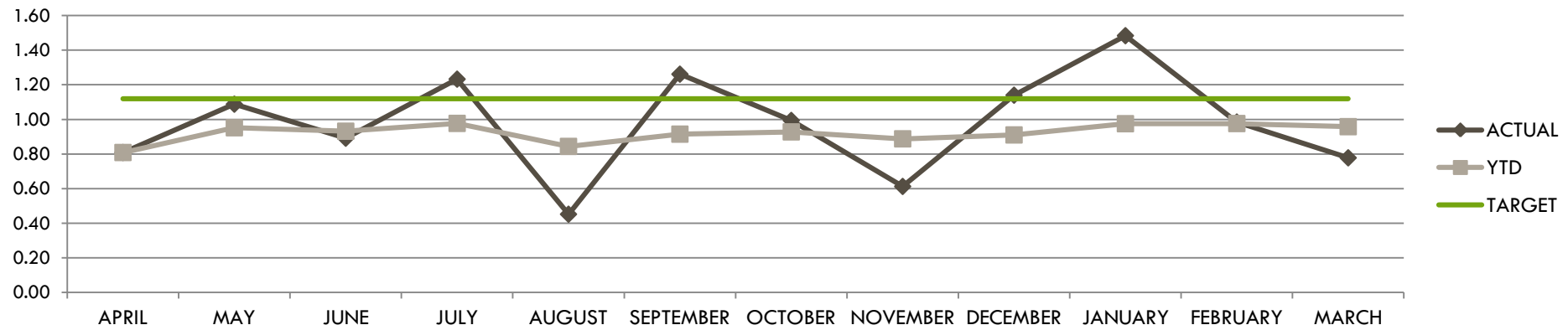


The Zero Landfill Journey

Shop Environmental Data--Body

FY2013		AY	JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		YTD	
WS	DESCRIPTION	LBS/UNIT	TOTAL	LBS/UN	TOTAL	LBS/UN	TOTAL	LBS/UN	TOTAL	LBS/UN	TOTAL	LBS/UN	TOTAL	LBS/UN	TOTAL	LBS/UN	TOTAL	LBS/UN	TOTAL	LBS/UN	TOTAL	LBS/UNIT	TOTAL	LBS/UNIT
	TRASH	0.34	6492	0.28	5237	0.43	5615	0.20	8480	0.38	10119	0.39	3678	0.16	5076	0.29	4981	0.20	6006	0.25	5285	0.21	77130	0.28
	POLYSTYRENE	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	POLYPROPYLENE	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	CARDBOARD/MIXED PAPER	0.14	3729	0.16	1513	0.12	1230	0.04	1890	0.08	2125	0.08	1904	0.08	2365	0.13	2792	0.11	2652	0.11	2330	0.09	28843	0.11
	PLASTIC	0.01	310	0.01	86	0.01	111	0.00	31	0.00	0	0.00	80	0.00	328	0.02	543	0.02	451	0.02	373	0.02	3433	0.01
10182-11	USED OIL	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	714	0.04	0	0.00	0	0.00	0	0.00	714	0.00
10182-80	USED GREASE	0.00	0	0.00	0	0.00	0	0.00	0	0.00	841	0.03	0	0.00	0	0.00	2542	0.10	0	0.00	0	0.00	3383	0.01
10182-94	BODY SEALER W/NO DEBRIS	0.06	0	0.00	0	0.00	1487	0.05	0	0.00	3160	0.12	0	0.00	0	0.00	2252	0.09	0	0.00	0	0.00	8374	0.03
55182-123	NON-PCB CAPACITORS	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
10182-227	WASTE SURFACTANT	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
5500-3	BODY SEALER W/DEBRIS	0.31	9925	0.43	4528	0.37	4047	0.15	6532	0.29	9387	0.36	4886	0.21	10917	0.62	6412	0.25	14031	0.59	4730	0.19	89017	0.33
5500-11	GREASE W/DEBRIS	0.00	0	0.00	279	0.02	0	0.00	0	0.00	0	0.00	0	0.00	373	0.02	268	0.01	200	0.01	105	0.00	1224	0.00
5500-17	WASTE ABSORBENT, OIL, & ANTIFREEZE	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	414	0.02	0	0.00	0	0.00	0	0.00	414	0.00
60	WELD SLAG/COPPER	0.22	0	0.00	3448	0.28	0	0.00	11240	0.50	0	0.00	3494	0.15	0	0.00	17678	0.70	0	0.00	6422	0.26	47609	0.18
	TOTAL	1.09	20456	0.89	15090	1.23	12490	0.45	28173	1.26	25632	0.99	14042	0.61	20187	1.14	37469	1.48	23341	0.98	19245	0.78	260140.1	0.96
	UNITS		22,957		12,242		27,656		22,334		25,790		22,936		17,709		25,247		23,711		24,747		271,583	

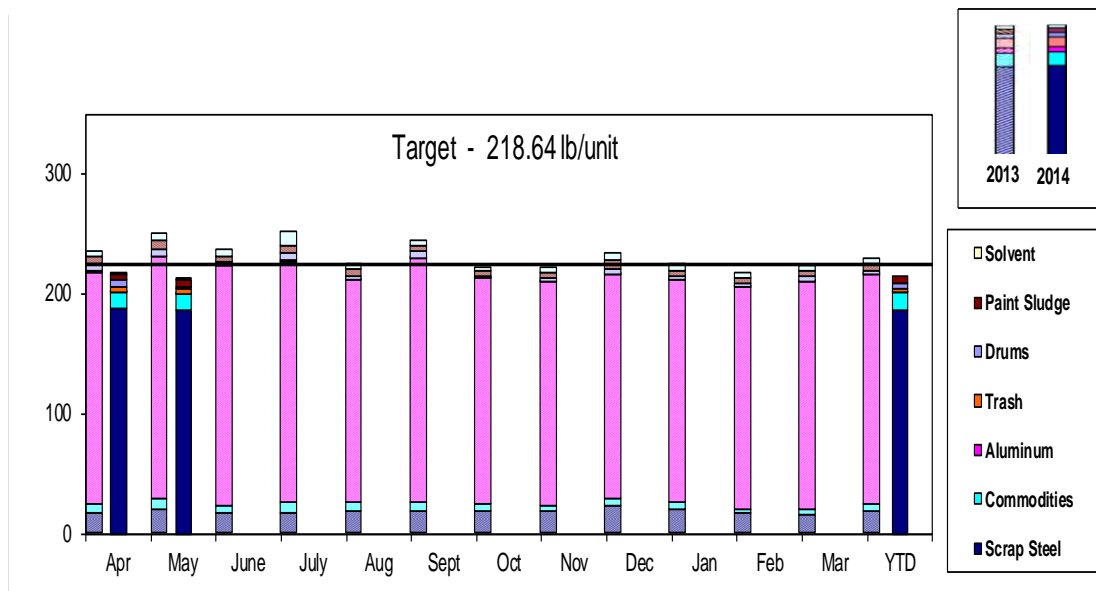
FY2013 WASTE GENERATED--BODY



The Zero Landfill Journey



Environmental Compliance Oversight Committee

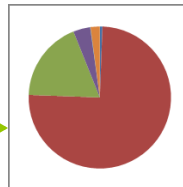


2014 FY	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	YTD	FY 2013
Drums	5.95	2.40											4.20	3.13
Paint Sludge	5.66	5.20											5.43	5.49
Solvent	0.38	0.54											0.46	0.40
Trash	3.86	3.86											3.86	5.33
Commodities	13.94	13.71											13.83	16.61
Scrap Steel	187.39	186.15											186.78	187.54
Aluminum	0.07	0.20											0.13	0.08

Commodities Breakdown



Scrap Steel Breakdown



- Meets every month
- Senior Officers and Shop Managers
- Report Shop and Plant Environmental Data
- Report improvement activities



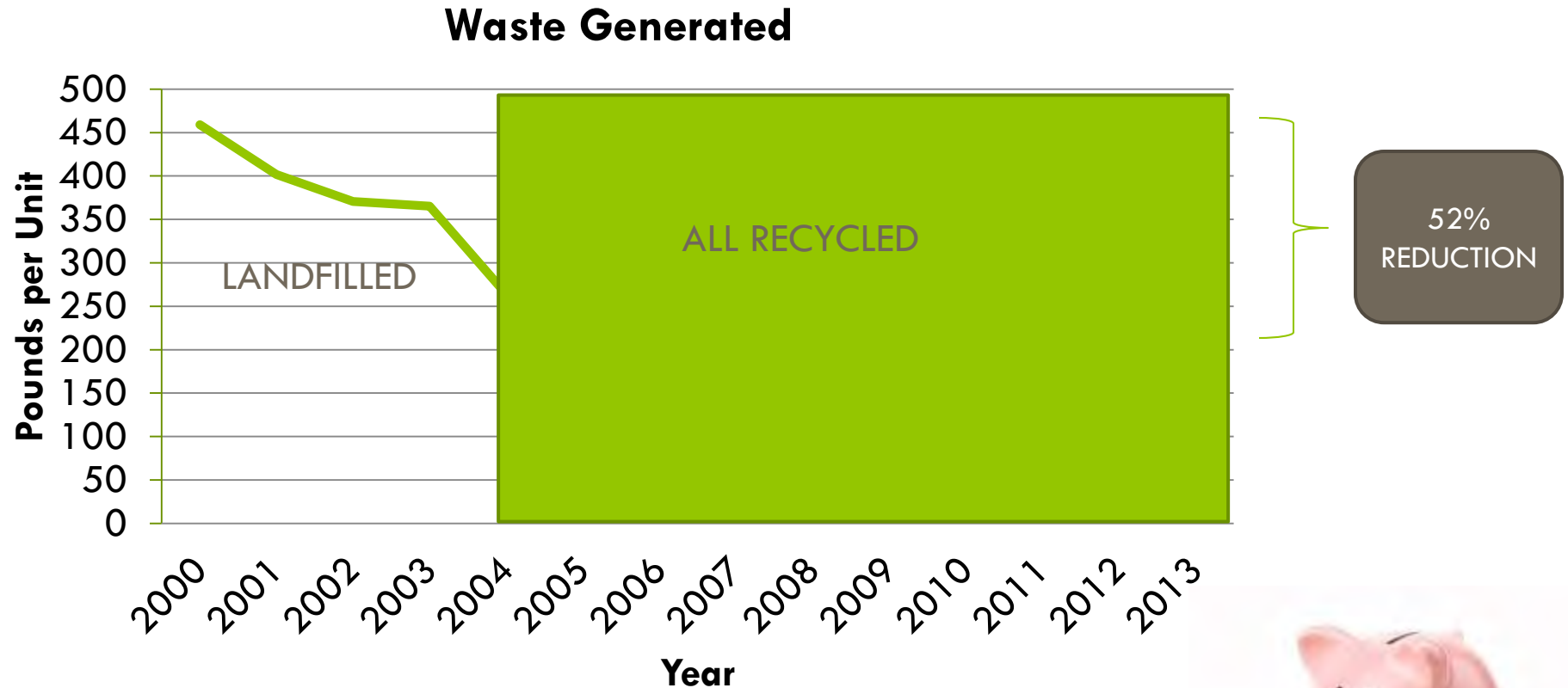
The Zero Landfill Journey

Collaboration

- Management
- Associate Involvement
- Suppliers
- Waste Experts
 - HES/HIS/Tradebe/Covanta/DGS

SIA worked to create a company culture valuing environmental improvements; complete collaboration was needed to make it happen.

Results



SIA has also recognized a **\$13 million benefit** over the cost of its environmental program since going Zero Landfill



SLA's Challenges

- Converting the “non-believers”

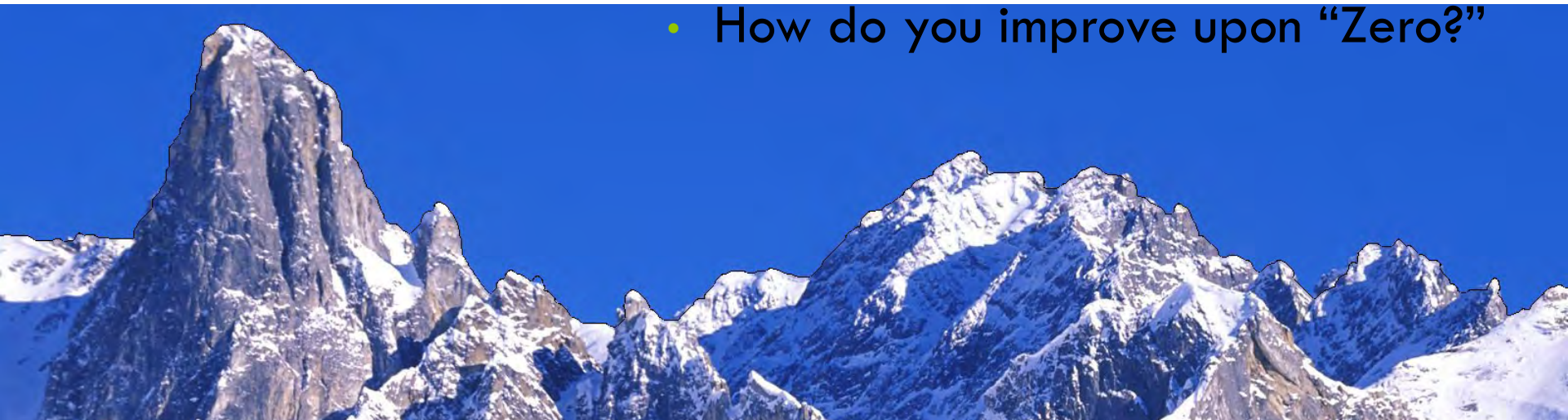
- Communicate and educate
 - External and internal benefits
- Peer pressure

External	Internal
Helping the environment	Pride in workplace—marketing eco
Lower costs of operations	Rec, Daycare, Wellness Centers
Lower-priced vehicles	Bonuses
Better quality products	



- Maintaining the momentum

- How do you improve upon “Zero?”



The View Today

- SIA achieved Zero Landfill over nine years ago.
- Very close to maximizing efficiencies/reductions for waste generated and discharged.
 - Leaves little room for employee participation, motivating targets, or manager engagement
- We have recently achieved ISO 50001(2012)
 - But it is not fully integrated with Environmental Program



The Future—Sustainability

- Enact a comprehensive approach to resource evaluation by tracking and synthesizing information from **all** aspects of SIA operations.
- Employ a thorough assessment of plant impacts and develop meaningful and reliable metrics.
 - Encompass current inter-department system; expand internally to other departments and externally to Tier 1, 2 suppliers.
- Use metrics and data to set public environmental commitments by creating an SIA-specific sustainability report.



Sustainability Plan Description



To assess SIA's overall impact on the environment effectively, accurately, and with integrity. To use this assessment to create targets and commitments visible to the public in a sustainability report. To use this report to inspire continuous improvement allowing SIA to achieve significant environmental reductions.

Plant Environmental Impact



DRAFT

Authorized by: *President/CEO*

DRAFT

										SCHEDULE											
INDICATORS/FOCUS ITEMS	PREVIOUS FY ACHIEVED	TARGET	ACTUAL STATUS QTR1	ACTUAL STATUS QTR 2	ACTUAL STATUS QTR 3	ACTUAL STATUS QTR 4	SCORE	OBJECTIVE	ACTIVITIES	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
I. PARTICIPATION																					
Plantwide Participation	100%	100%						Obtain 100% participation, which will lead to environmental impact reductions	Sustainability awareness campaigns Ensure positive Environmental Systems Review results Promote Sustainability Concerns List participation Sustainability liaison meetings Associate and liaison training												
	91.3% EMS/90% EnMS	95% EMS/95%EnMS						Obtain a 95% awareness result in the Associate Survey on both the EMS and EnMS Policies	Policy promotion during training and in campaigns												
II. ENVIRONMENTAL MANAGEMENT																					
Waste Generated	220.5 lbs/unit	218.64 lbs/unit						Lower waste generated	Conduct waste generated awareness campaign Ensure/Assist shops implement waste reduction activities Research reuse options for Paint Sludge Assess environmental efficiency of packaging for new model parts during approval process		→										
Waste Discharged	0.064 lbs/unit	0.07 lbs/unit						Lower waste discharged	Work with Paint to find alternative disposal of phosphate sludge Conduct targeted waste discharged campaign Ensure/Assist shops implement waste reduction activities		→										
Waste Reduction Score	260.3	234.3						Improve disposal methods of waste; decrease Waste Reduction Score	Educate shops on waste disposal options Conduct waste disposal hierarchy campaign Ensure/Assist shops implement waste reduction activities					→							
Biodiversity	11277.562	9433.967						Reduce plantwide biodiversity factor for chemical usage	Educate shops on eco friendly chemical usage/sourcing Conduct green chemical campaign Host Household Hazardous Waste Drop event					→							
	One new project	One new project						Enhance land use of property	Seek opportunities to increase biodiversity of property Hold Prairie Grass education/walk event		→										
Green Supply Chain	80% completion	80% completion						Obtain supplier sustainability baseline data	Implement Supplier Sustainability Scorecard initiative with Purchasing Provide sustainability and audit training to Purchasing						→						
Travel Efficiency	100%	100%						Increase Purchasing's sustainability awareness	Conduct targeted green supply chain campaign												
	119.185 miles/vehicle/day	118.92 miles/vehicle/day						Reduce exhaust from operations by reducing miles traveled to deliver Camry parts	Work with Purchasing to understand procurement decisions Assist D. Bol in working with route structuring with TEMA as needed								→				
Water Usage	n/a	no idling						Implement no idling policies for parts and waste transporters	Research current policies Implement no idling policy and inspection procedures									→			
	547.26 gal/unit	530.84 gal/unit						Reduce water usage	Conduct water use reduction campaign Assist shops in implementing water usage kaizens						→						
Air Emissions	n/a	10 kaizens						Reduce VOC and PM emissions by implementing 10 air emissions kaizens	Work with Paint to research solvent reductions Conduct targeting VOC reduction campaign Educate shops on VOCs, their VOC emissions Work with Logistics/Venture/Materials to reduce truck idling Conduct targeting PM reduction campaign Educate shops on PM, their PMemissions								→				
Compliance	Full compliance	Full compliance						Zero compliance deviations	Conduct quarterly compliance audits Provide training materials to shops regarding compliance												
III. ENERGY MANAGEMENT																					
CO2e Emissions	0.5 metric ton/unit	0.49 metric ton/unit						Reduce plant CO2e emissions	Work with TPM, Engineering to reduce electricity and natural gas usage Educate shops on electricity and natural gas CO2e conversions				→							→	
Electrical Usage	7.3% 2yr. Combined total = 8.5% -----	3% reduction from FY2013 actual usage -----						Meet or exceed plant energy performance target	Assist Energy Liaison meetings, training Conduct energy usage campaigns Develop energy usage materials (posters, labels, handouts, emails) Assist in non-production energy usage weekend audits Assist in production energy audits		→		→				→				
Natural Gas Usage	n/a	Kaizen Target: 37							Assist Energy Liaison meetings, training Conduct natural gas usage campaigns Develop natural gas usage materials (posters, labels, handouts, emails) Assist in non-production natural gas (energy) usage weekend audits Assist in production natural gas (energy)audits Implement dock door insulation assessment/improvement		→		→					→			

ENVIRONMENTAL & ENERGY MANAGEMENT SYSTEMS
FY2014 OBJECTIVES & TARGETS IMPROVEMENT PLAN
SECTION/AREA: ENGINE

Authorized by: Section Manager

Date _____

[illegible]

Shop Environmental Score

1. Establish each shop's sustainability performance indicators.

BODY KEY PERFORMANCE INDICATORS:

- Waste Generated
- Waste Reduction Score
- Hazardous Chemical Usage
- Water Usage
- Air Emissions
- Participation
- Compliance
- Energy Usage



Different areas could potentially have different KPI's.

Shop Environmental Score

2. Give targets to each shop for their KPI's.
 - Based on historical usage and percentage of total plant usage.

BODY'S TARGETS:

KPI	Target
Waste Generated	1.12 pounds/unit
Waste Reduction Score	7
Hazardous Chemical Usage	4
Water Usage	400,000 gallons/unit
Air Emissions (PM)	19.17 pounds/unit
Participation	100%
Compliance	100%
Energy Usage	810,000 kWh/month

Shop Environmental Score

3. Translate actual v. target performance into a 0-10 scale.
 - Certain % away from target gives you “X” score.

BODY ACTUAL V. TARGET

KPI	Target	Actual	% Discrepancy	Score
Waste Generated	1.12 lbs/unit	0.98 lbs/unit	+ 69.64%	10
Waste Red	7	8	+ 14.29%	8
Energy Usage	810,000 kWh/month	1,476,954 kWh/month	+ 82.34%	2
Haz. Chem.	4	5	+ 25.00%	7
Air Emissions	19.17 lbs/unit	19.56 lbs/unit	+ 2.03%	9
Participation	100%	60%	+ 40.00%	6
Compliance	100%	100%	0%	10

SCALE	
Discrepancy	Score
100% +	0
89-99%	1
77-88%	2
65-76%	3
53-64%	4
41-52%	5
29-40%	6
17-28%	7
5-16%	8
0-4%	9
- 0%	10

Bad

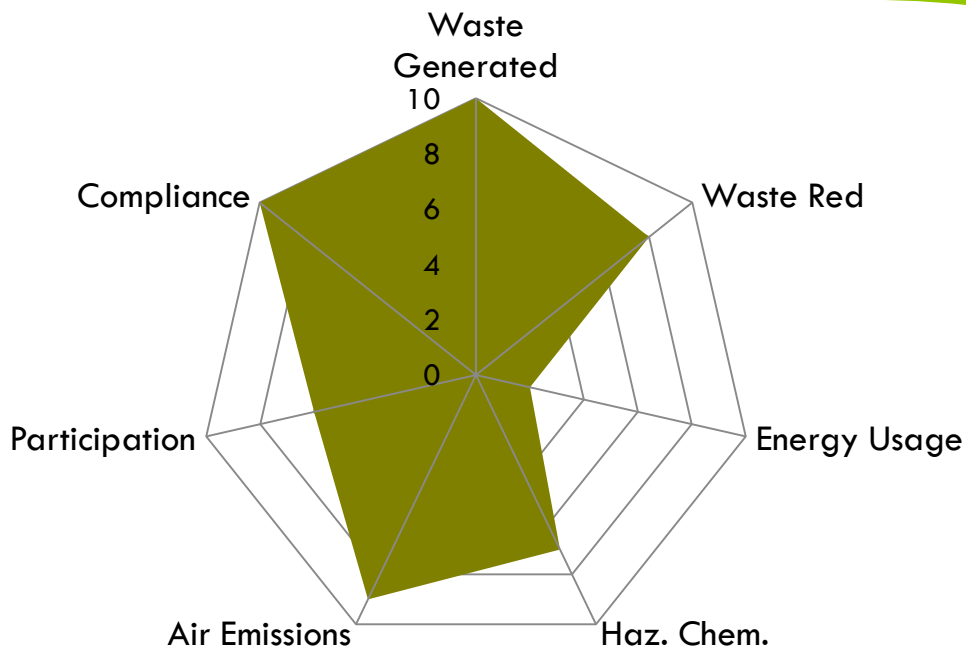


Good

Shop Environmental Score

4. Combine performance metrics to give each shop a comprehensive environmental score.

BODY ENVIRONMENTAL SCORE



BODY's total
environmental
score would be
52/70, or
74%

Sustainability Participation-Campaigns

Training to the Sustainability Liaisons



Associate training



Educational posters



Monthly Focus Item

CCTV Educational spots



Update Challenges



Update kaizen competitions



Plant Sustainability

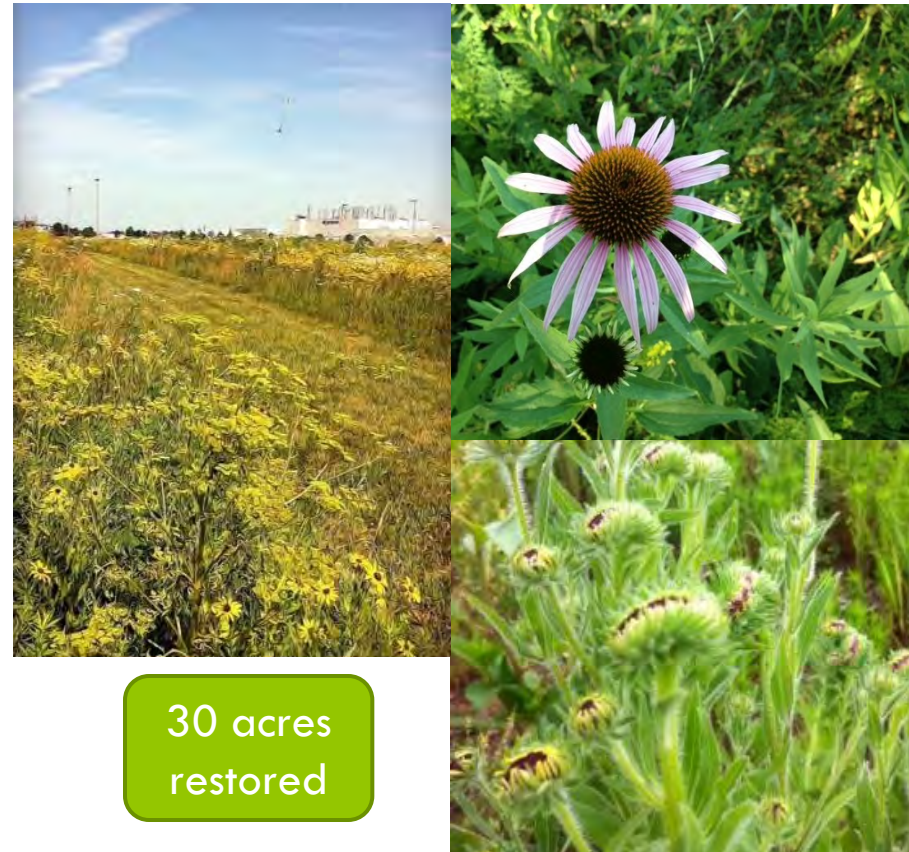
Expanded activities, justified by sustainability program

Compost Initiative



Diverted 6,930
lbs of waste
from landfill in
2012

Prairie Restoration



30 acres
restored

Sustainability Plan Summary



- Takes **everything** into account; holistic.
- Aspects that combine to create environmental score are **individualized** for each shop.
 - Requires leadership involvement.
 - Allows each shop to participate and contribute to elements they truly interact with, have influence over.
- **Balanced** combination of qualitative and quantitative metrics.
- Will inspire continuous **improvement**.
- **Cross-functional** teams will be required to achieve improvement.

Thank you

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