

THE BUSINESS OF RISK AND SAFETY

THE METRICS USED TO MEASURE RISK AND
HOW TO USE TO YOUR BENEFIT

OCTOBER 17, 2023



OBJECTIVES

A contractor's safety and loss prevention activities adds a diverse set of value to business.

What are the financial metrics used in business to evaluate the value of safety.

- What tools Do Insurance Carriers Use to Analyze Loss Potential
- How Workers Compensation Experience Mod Factors used to compare employers
- Making the Case for Safety and Risk Control Tools
 - Framing Savings
 - Framing ROI

REDUCING INSURANCE COSTS THROUGH SAFETY AND LOSS PREVENTION



HOW A PREMIUM DOLLAR IS USED BY A P&C INSURANCE CARRIER



**HOW INSURANCE COMPANIES
ANALYZE LOSS COSTS . . .**

AND YOU SHOULD TOO



INSURANCE CARRIER TERMINOLOGY

Paid Loss: The amount of money an insurer had an obligation and paid to claimants (including direct claim handling costs) during a particular reporting period.

Reserve Loss: The insurance carrier's best estimate of the potential remaining amount of a loss that could be owed based on the information available at the time.

Incurred Losses = Paid Loss + Reserve Loss

Ultimate Losses: The loss amount when all claims are known within certainty and resolved. Could be years or decades in the future.

LOSS RATIOS

$$\text{Loss Ratio} = \frac{\text{Claims}^* + \text{Claims Handling Expense}}{\text{Premium}}$$

* *Claims = The amount of dollars incurred as a result of losses*

Example: Claims and claims handling expenses for a policy period equals \$50,000. The premium for the insurance policy was \$100,000. The loss ratio would be:

$$50\% = \frac{\$50,000}{\$100,000}$$

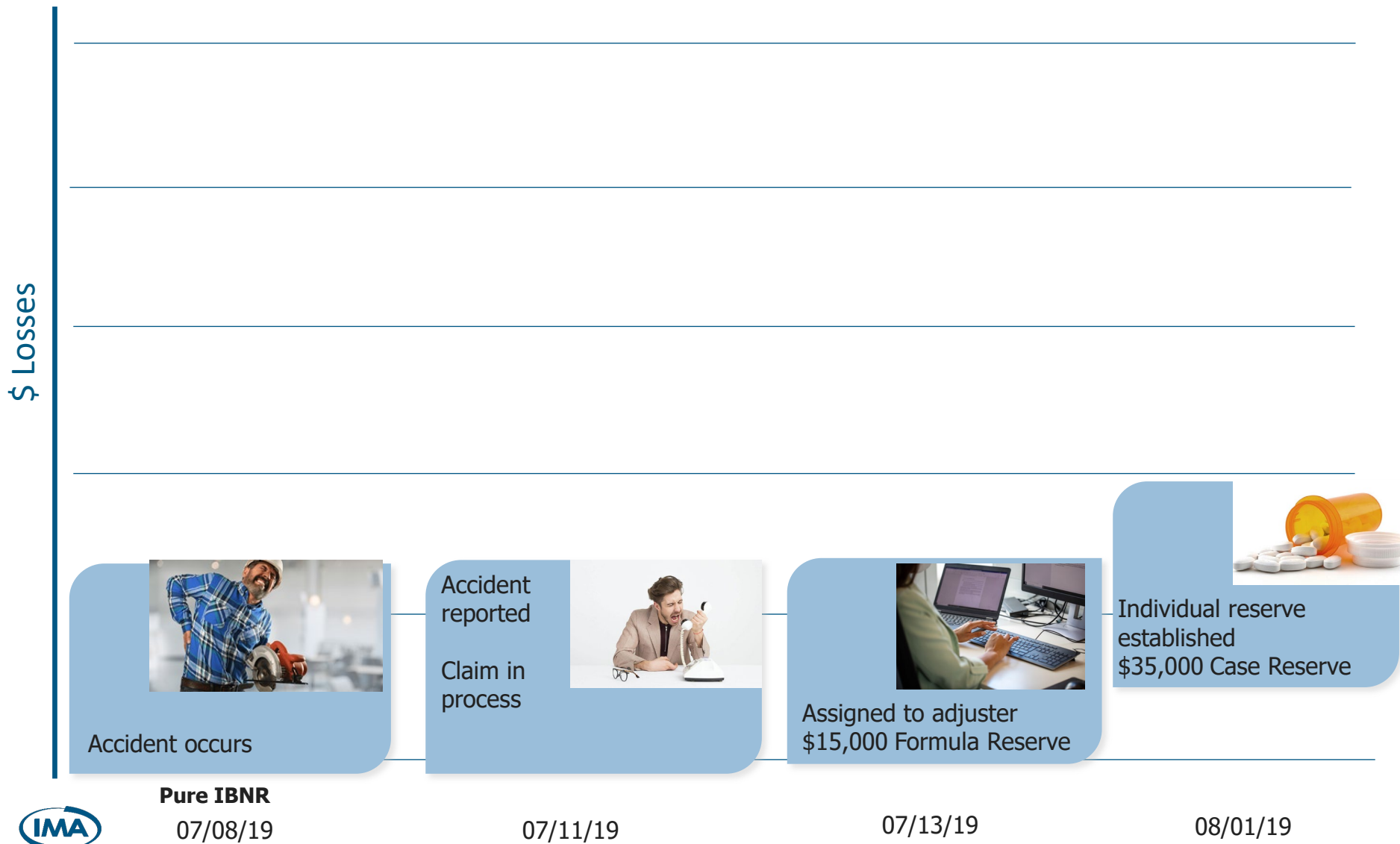
Translated: For every \$1 the insurance company collects in premium; the insurance company pays out 50% in losses.

PREMIUM / LOSS SUMMARY

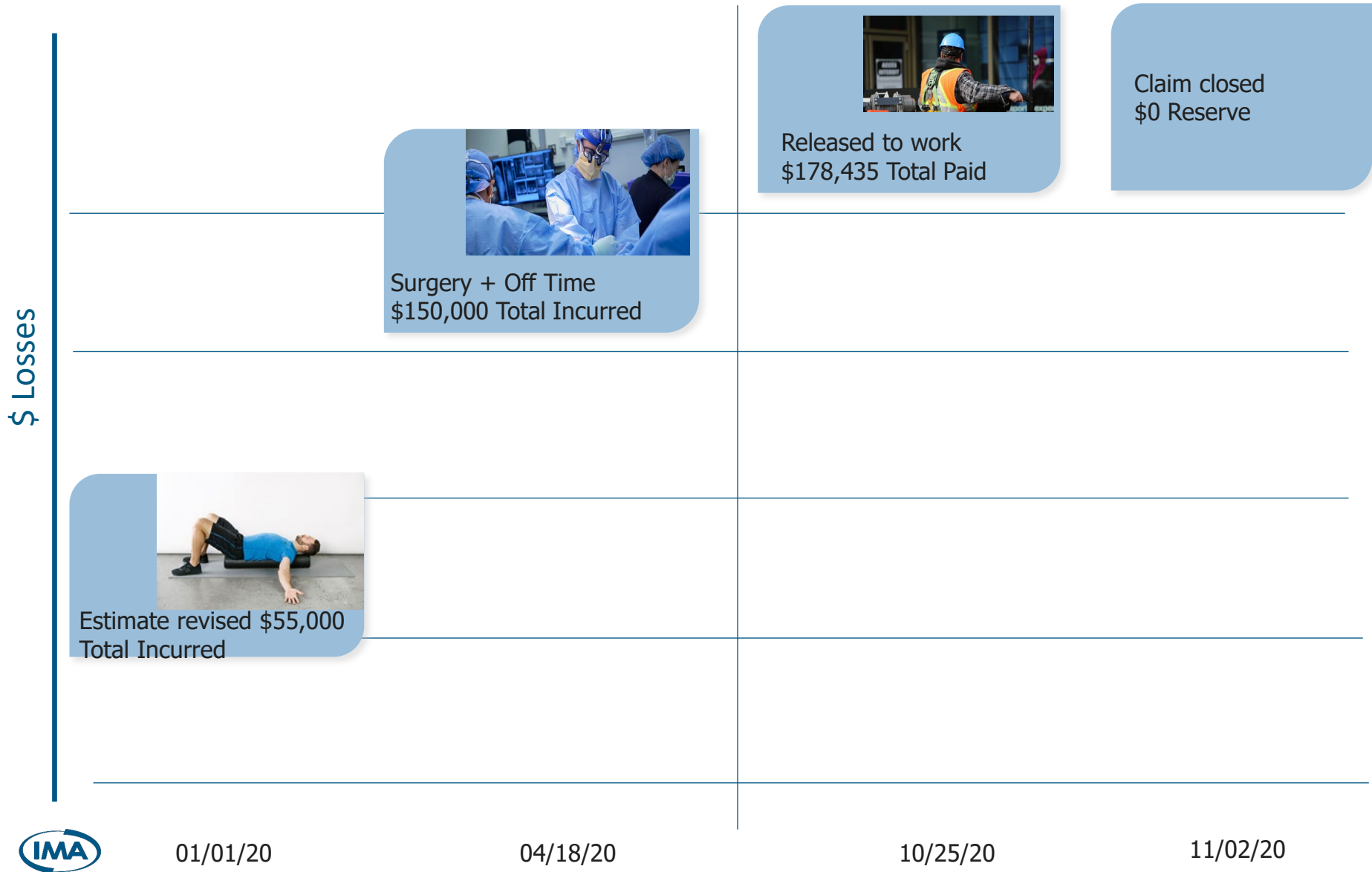
12/31/2022
Valuation Date

Line	Carrier	Policy Term	Annual Premium	Paid Loss	Reserve Loss	Incurred Claims	Loss Ratio
WC	Liberty	6/1/2017	1,903,261	1,655,053	191,271	1,846,324	97%
	Liberty	6/1/2018	2,125,840	986,648	133,803	1,120,451	53%
	Travelers	6/1/2019	2,515,172	559,307	217,770	777,077	31%
	Travelers	6/1/2020	2,361,053	270,623	313,848	584,481	25%
	C N A	6/1/2021	2,641,468	9,568	38,312	47,880	2%
		TOTAL		11,546,794	3,481,199	895,014	4,376,213

AN EXAMPLE OF DEVELOPMENT



LIFE CYCLE OF A CLAIM RESERVE EXAMPLE



ADJUSTING FOR TIME AND DEVELOPMENT

TREND

To bring up to today's dollars using inflationary factors

Medical Cost Inflation: the percentage increase in costs to treat patients from one year to the next, assuming benefits stay the same

Benefit Inflation: The change in benefits for the same type of injuries from prior year

Wage Inflation: Increase in people's pay

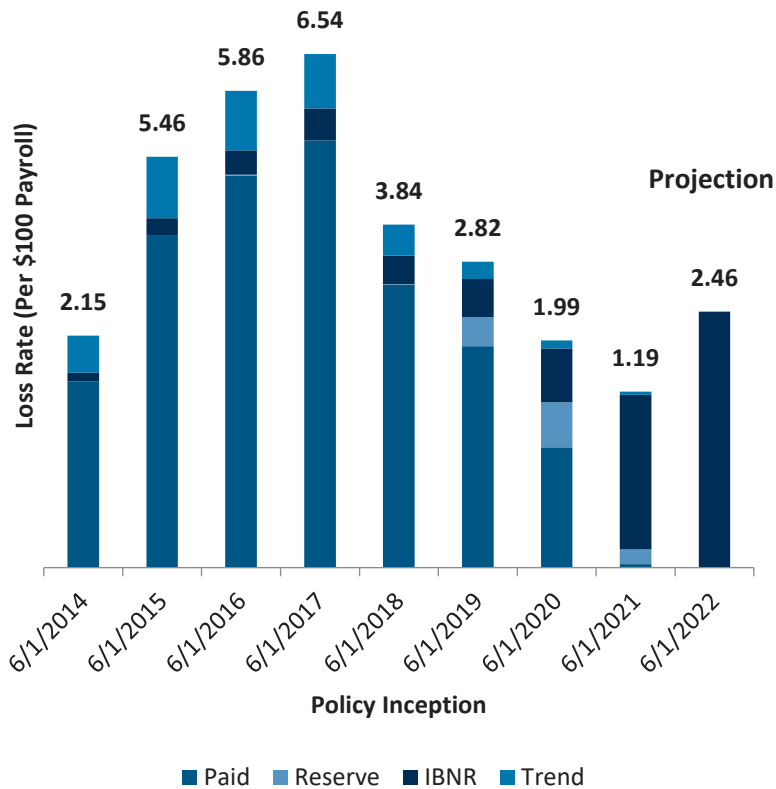
DEVELOP

To apply actuarial estimates to loss information to account for probable unknown future loss liabilities

IBNR: Incurred But Not Reported. An estimate of the amounts potentially owed for claims that have transpired, but not yet been reported

Development of Known Claims: Actuarial factors based on behavior of law of large numbers to account for increases from the time of loss reserve to final claim closeout

PROJECT LOSSES



Payroll: \$60,000,000

Loss projections (Expected Losses) are predicated on the theorem that “past behavior is indicated of future performance”

If all environmental factors stay the same

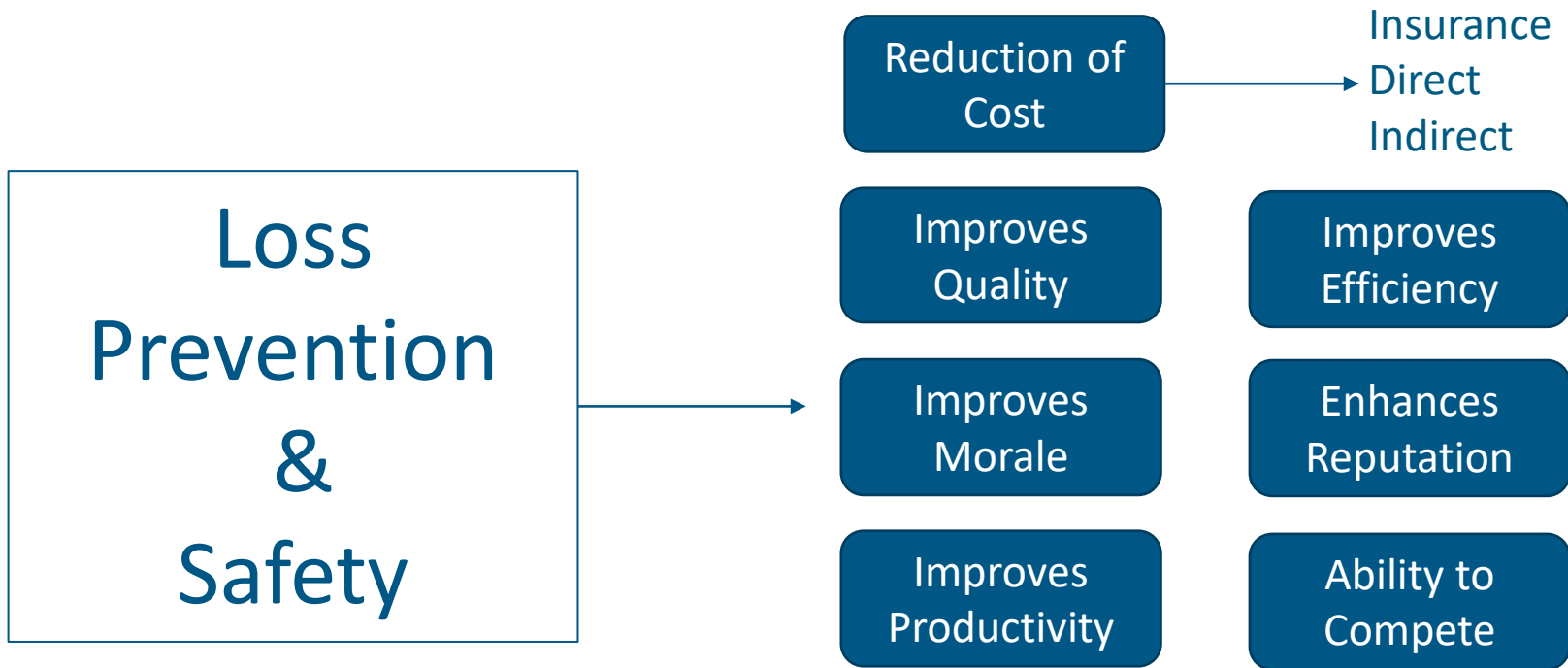
Point out environmental factor **changes** that improve risk profile:

- Hired an additional loss prevention
- Implemented video in trucks
- Deployed wearable technology
- Stopped doing work in an unfavorable state
- Ceased doing a particular scope of work

INVESTING IN SAFETY



SAFETY ADDS BUSINESS VALUE

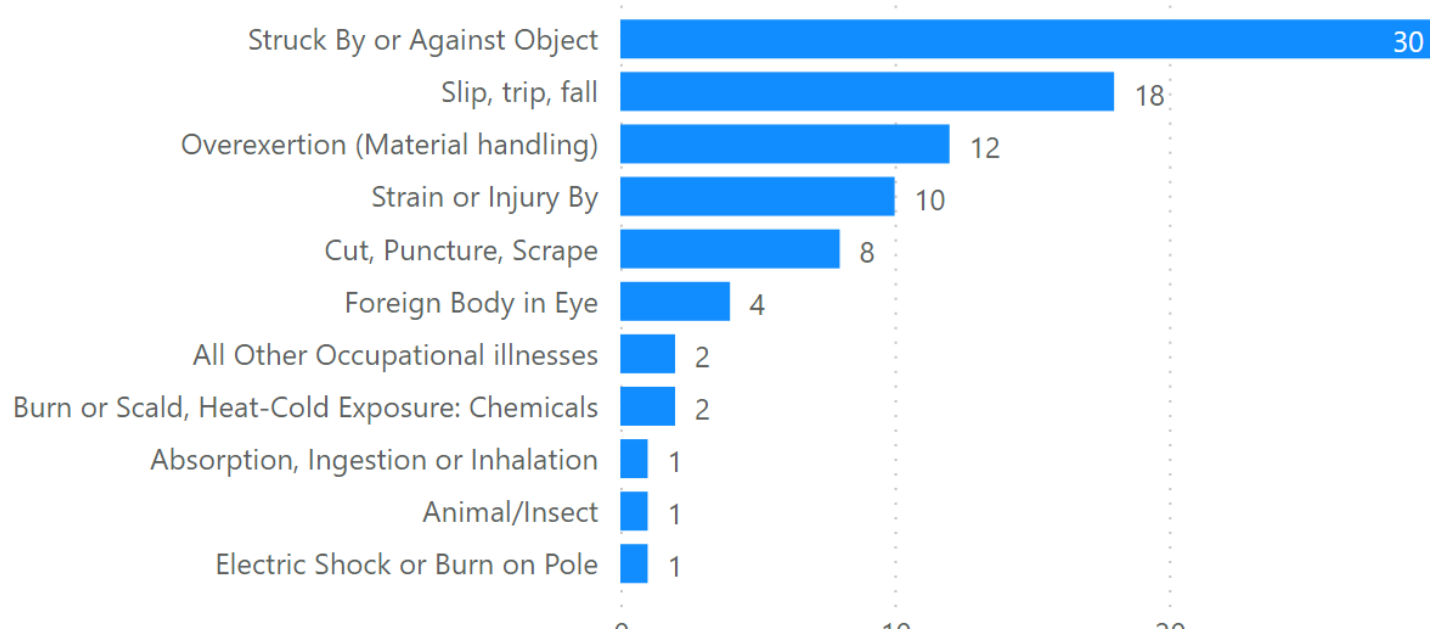


TYPE OF INVESTMENTS

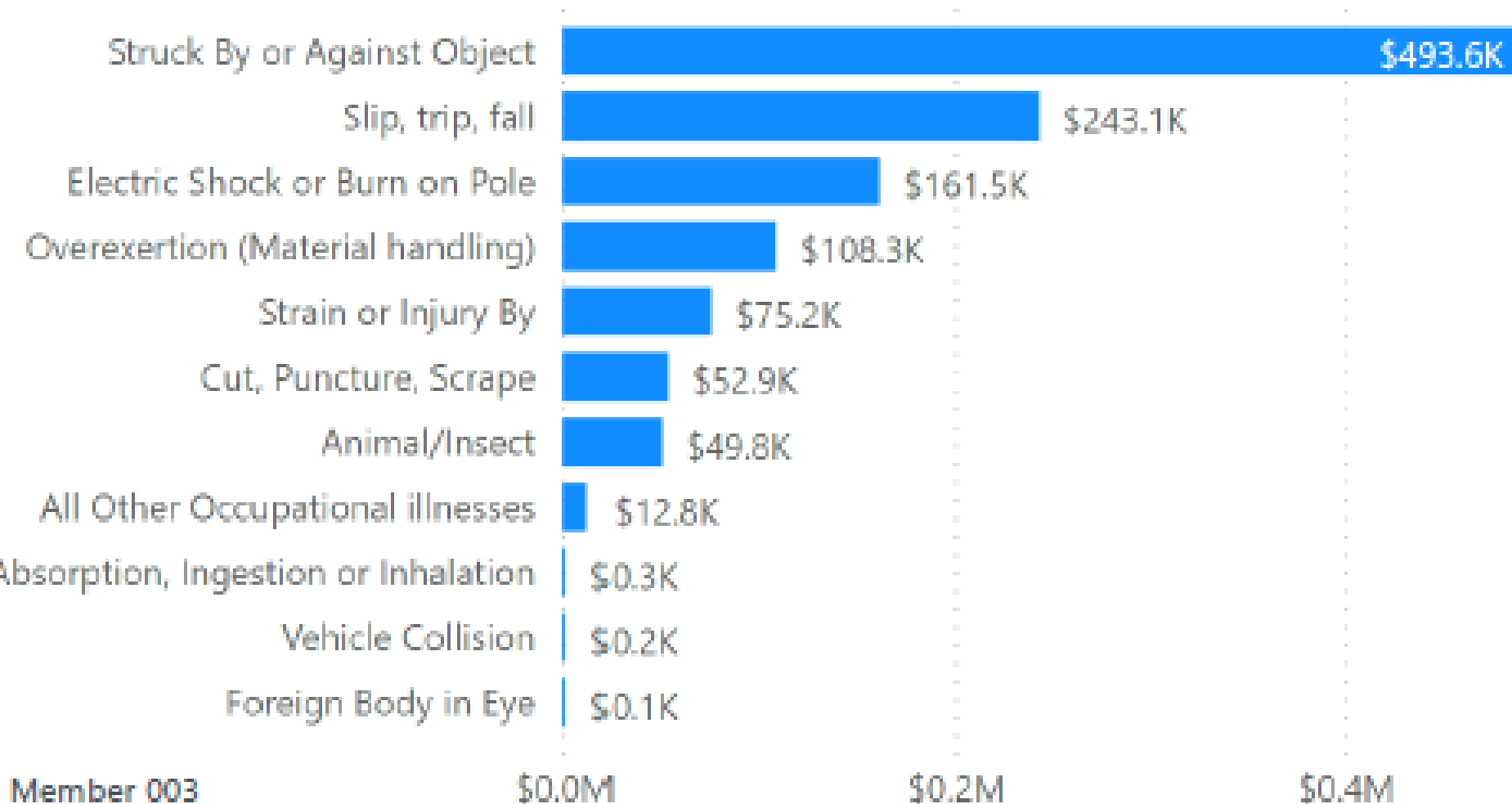
- People, equipment, Technology
- What investment is right for you?
- How to ensure your targeting the correct safety investment?

WHAT DOES THE DATA SAY?

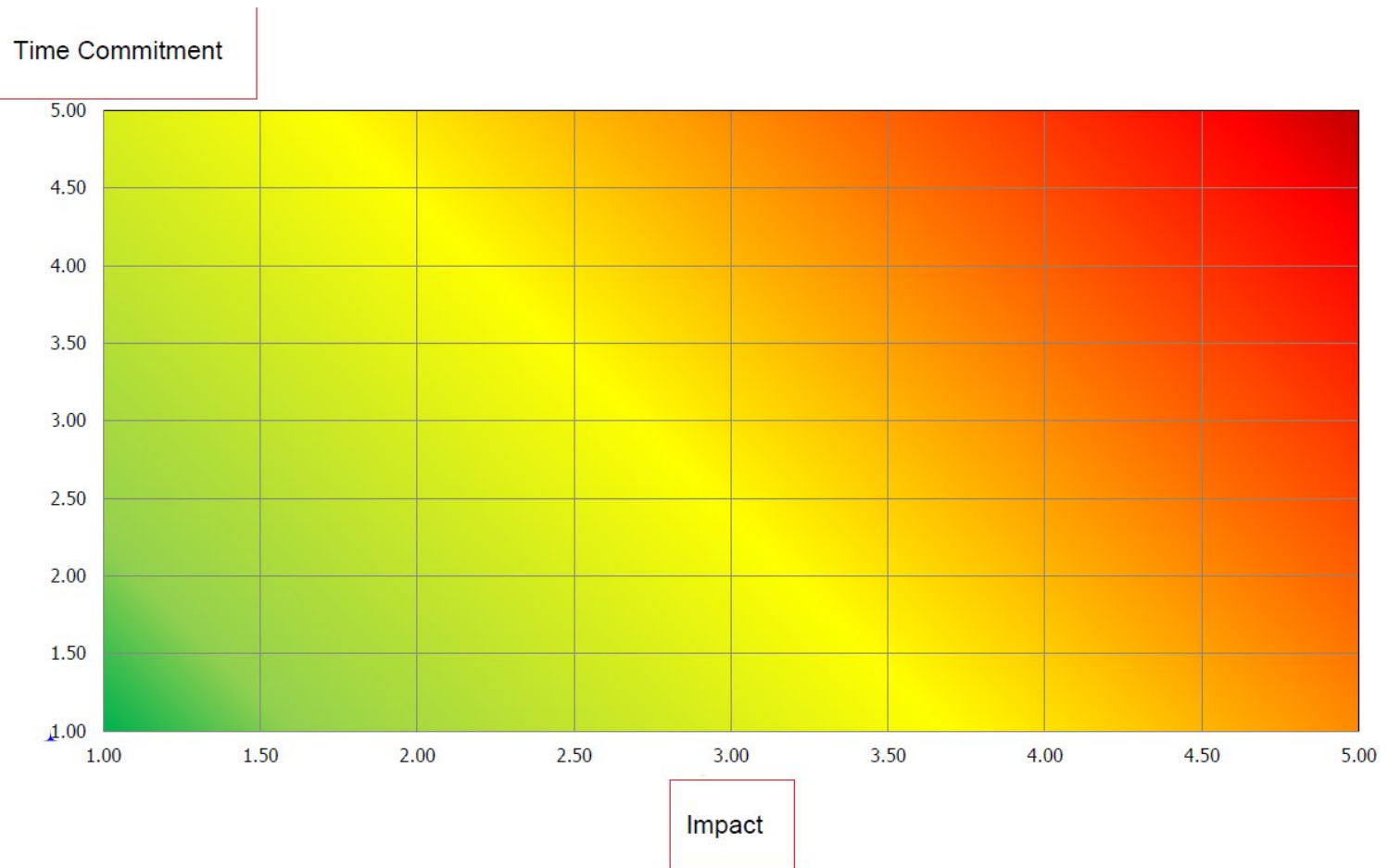
WC Frequency by Cause Type



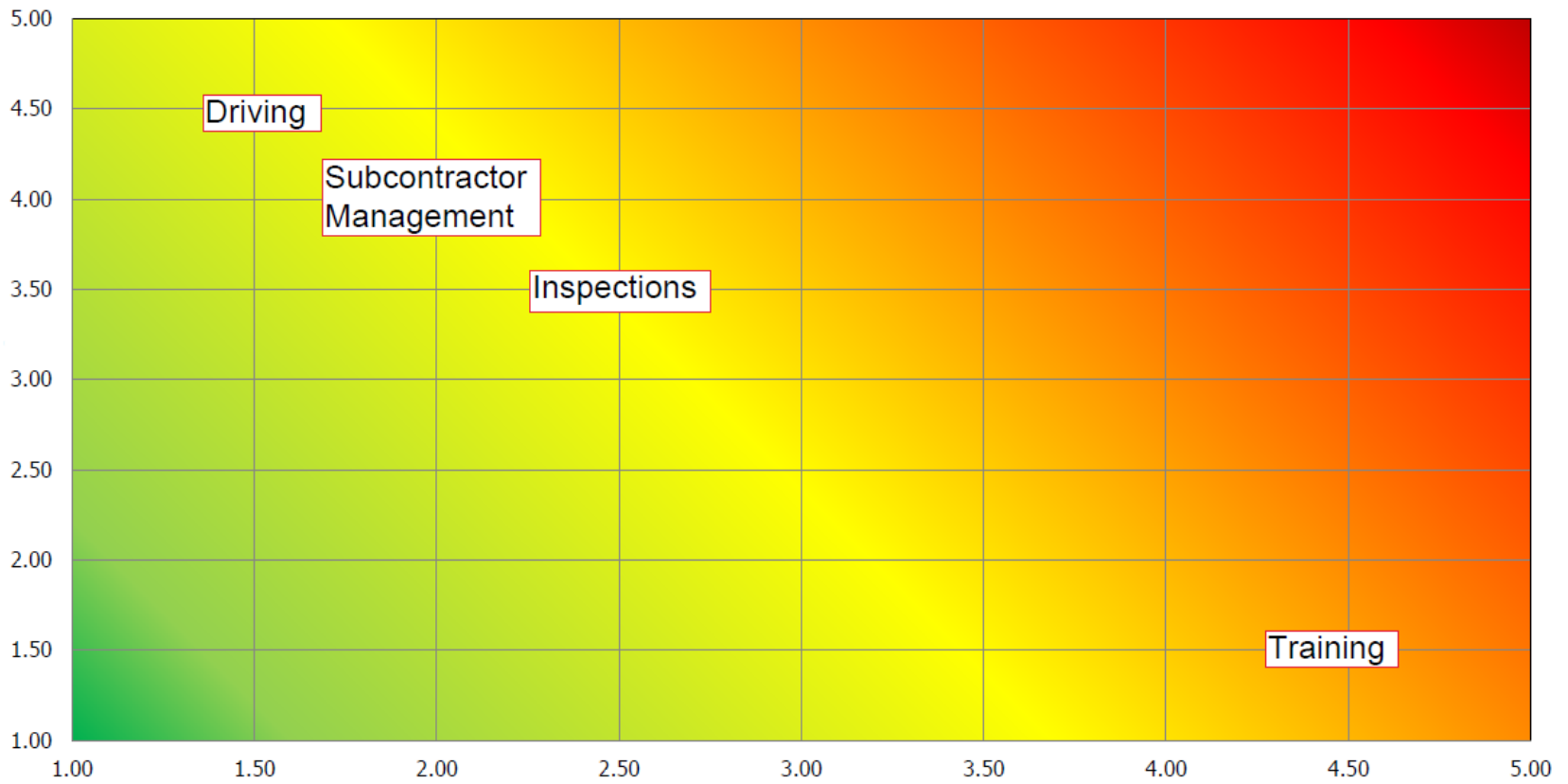
WC Severity by Cause Type



HEAT MAP



Time Commitment



Impact



MAKING A BUSINESS CASE

Identify direct and indirect costs:

- Any wages paid to injured workers for absences not covered by workers' compensation
- The wage costs related to time lost through work stoppage associated with the worker injury
- The overtime costs necessitated by the injury
- Administrative time spent by supervisors, safety personnel, and clerical workers after an injury
- Training costs for a replacement worker
- Lost productivity related to work rescheduling, new employee learning curves, and accommodation of injured employees
- Clean-up, repair, and replacement costs of damaged material, machinery, and property.

Not including OSHA fines, third-party legal costs, pain & suffering, loss of good will from bad publicity.

QUANTIFYING INDIRECT COSTS

The magnitude of indirect costs is inversely related to the seriousness of the injury. The less serious the injury the higher the ratio of indirect costs to direct costs.

OSHA's "\$afety Pays" uses the sliding scale table below to calculate the indirect costs of the injuries and illness.

<u>Direct Costs</u>	<u>Indirect Cost Ratio</u>
\$0 - \$2,999	4.5
\$3,000 - \$4,999	1.6
\$5,000 - \$9,999	1.2
\$10,000 or more	1.1

The indirect cost estimates provided in this program are taken from the Business Roundtable publication, Improving Construction Safety Performance, and are based on a study conducted by the Stanford University Department of Civil Engineering.

QUANTIFYING TRUE COSTS



Direct Costs	\$178,435	\$0	Insurance
Indirect Costs		\$196,278	
Revenues to Cover Indirect Costs		\$6,542,616	

@ 3% percent profit margin
Assumes the Indirect Costs were not already in the budget

Analyzing direct and indirect costs attempts to demonstrate the benefits of the investment in safety to show the value of avoiding accidents. But what about the costs deployed to administer safety?

SAVINGS VS. ROI

SAVINGS

The portion of income not spent on current expenditures

ROI

Return on Investment compares how much you paid for an investment to how much you earned to evaluate its efficiency.

SAVINGS = Lower Than Expected Expenditures

$$ROI = \frac{(Benefit\ Gained - Money\ Spent)}{Money\ Spent} \times 100$$

PROVING SAVINGS WHEN NOTHING HAPPENS

- How to prove a negative or savings for something that didn't happen
- By saying something is "proved," is to establish beyond all possible doubt.

Ways to prove savings when there are no incidents, or nothing is paid out:

1. Compare the reduction in frequency and severity from prior years
2. Do better than the expected outcome (i.e., beat the loss projection)
3. Quantify the loss that didn't happen with outside Stats and Facts.

NOON ON FRIDAY AND YOU GET A CALL

One of your drivers driving an Extra-Heavy Mixer Truck is involved in an auto accident in which the truck struck on oncoming car and that driver suffered a fatality.

What if you later learned:

- The deceased was an off-duty Sargent of the Police Department
- Witness said that the truck came across the middle line and struck the oncoming car
- He was an instructing Sargent meaning he taught other law enforcement officers in his jurisdiction and for surrounding counties/cities. (He knew everyone)
- The deceased driver's wife is a nurse at an affluent Children's Hospital
- That deceased driver leaves behind 4 children
- That deceased driver and his wife were in the process of adopting their 5th child
- As a result of being one of their own, the forensics crew took triple the time to inspect your truck in an effort to find cause on your part.

CAMERAS CASE STUDY



MEDIAN COST OF FATALITY AUTO LOSSES

Exhibit 2: Median cost of vehicular losses with fatalities over \$1 million



RETURN ON INVESTMENT – TRUCK ACCIDENT

If Benefit Gained was not having to pay the median cost of a fatality

$$1,414\% = \frac{(\$5,300,000 - \$350,000)}{\$350,000} \times 100$$

We have insurance so the \$5.3M is not direct cost and avoiding it is not a savings or benefit gained. But had we paid, our insurance due to this loss alone would go up 20% for auto and umbrella

$$168\% = \frac{(\$940,000 - \$350,000)}{\$350,000} \times 100$$

Improves
Morale

The ability to exonerate their driver for a single catastrophic non-preventable, no-fault accident produced enough cost avoidance savings to justify the expense for in-vehicle video immediately.

EXPERIENCE MOD FACTORS (EMR'S) IMPACT ON INSURANCE COST



EMR'S IMPACT ON BUSINESS

- An EMR can increase, not affect, or lower an employers workers compensation cost.

Classification	Payroll	Divided by 100	Rate per \$100 of Payroll	Premium
Clerical	\$ 70,000	700	\$0.75	\$ 525
Roofer	\$200,000	2,000	\$63.17	\$126,340

Total Premium = \$126,865
Mod Factor = 1.25
Modified Premium = \$158,581

Premium		Mod Factor		Modified Premium
\$100,000	x	0.75	=	\$ 75,000
\$100,000	x	1.00	=	\$100,000
\$100,000	x	1.25	=	\$125,000

- Some insurance carriers will not entertain employers with a debit (over 1.00 mod) which reduces the ability to obtain insurance at good terms
- Owners/General Contractors may use the EMR as a way of quickly accessing an employer's safety performance.

HOW TO CALCULATE YOUR LOWEST ACHIEVABLE EMR

	Primary Losses	Stabilizing Value		Ratable Excess	Totals
Actual	(I) 46,647	C * (1 - A) + G 137,138		(A) * (F) 18,539	(J) 202,324
Expected	(E) 36,829	C * (1 - A) + G 137,138		(A) * (C) 14,424	(K) 188,391
	ARAP	FLARAP	SARAP	MAARAP	Exp Mod
Factors	1.06	1.08			(J) / (K) 1.07

Plug in zero losses for Actual Primary and Actual Ratable Excess losses. This assumes there were no losses for the last three years (not including the most recent).

	Primary Losses	Stabilizing Value		Ratable Excess	Totals
Actual	(I) 0	C * (1 - A) + G 137,138		(A) * (F) 0	(J) 137,138
Expected	(E) 36,829	C * (1 - A) + G 137,138		(A) * (C) 14,424	(K) 188,391
	ARAP	FLARAP	SARAP	MAARAP	Exp Mod
Factors	1.06	1.08			(J) / (K) .73

TAKE AWAYS



KEY TAKE AWAYS

- Understand that losses develop overtime. The longer a claim is open the propensity for it to settle for more money. There are losses out there that may not be known about when the policy expires.
 - Encourage early reporting and an environment of near misses or potential problems
 - Stay on top of claims through day-to-day and claim reviews
 - Find ways to help the adjuster get information
 - Help find ways to make sure the injured employee gets healthy quick
 - At time of pre-renewal, if you have very little open claims, make a point there should be very little development from open claims
- Loss projections are predicated on the theorem that says, “Past performance is indicative of future behavior . . . If all environmental factors stay the same.”
 - Keep insurance carrier aware of all new or improved safety techniques employed and when implemented

KEY TAKE AWAYS

Just know that all you do in Safety and Loss Prevention has a positive impact on the business . . . no matter how you measure it.

Braden Beal

Braden.beal@imacorp.com

Marcus Reiter

Marcus.Reiter@imacorp.com

“

PROTECTING ASSETS IS WHAT WE DO,
**MAKING A DIFFERENCE
IS WHO WE ARE.**

– **ROB COHEN**, Chairman & CEO, The IMA Financial Group



imacorp.com