

# Promoting Saskatchewan solutions for the global resource industry

October 3, 2019

**SIMSA presentation**



# Global Footprint



**Global:** ~250 offices

**60,000** people

**50** countries

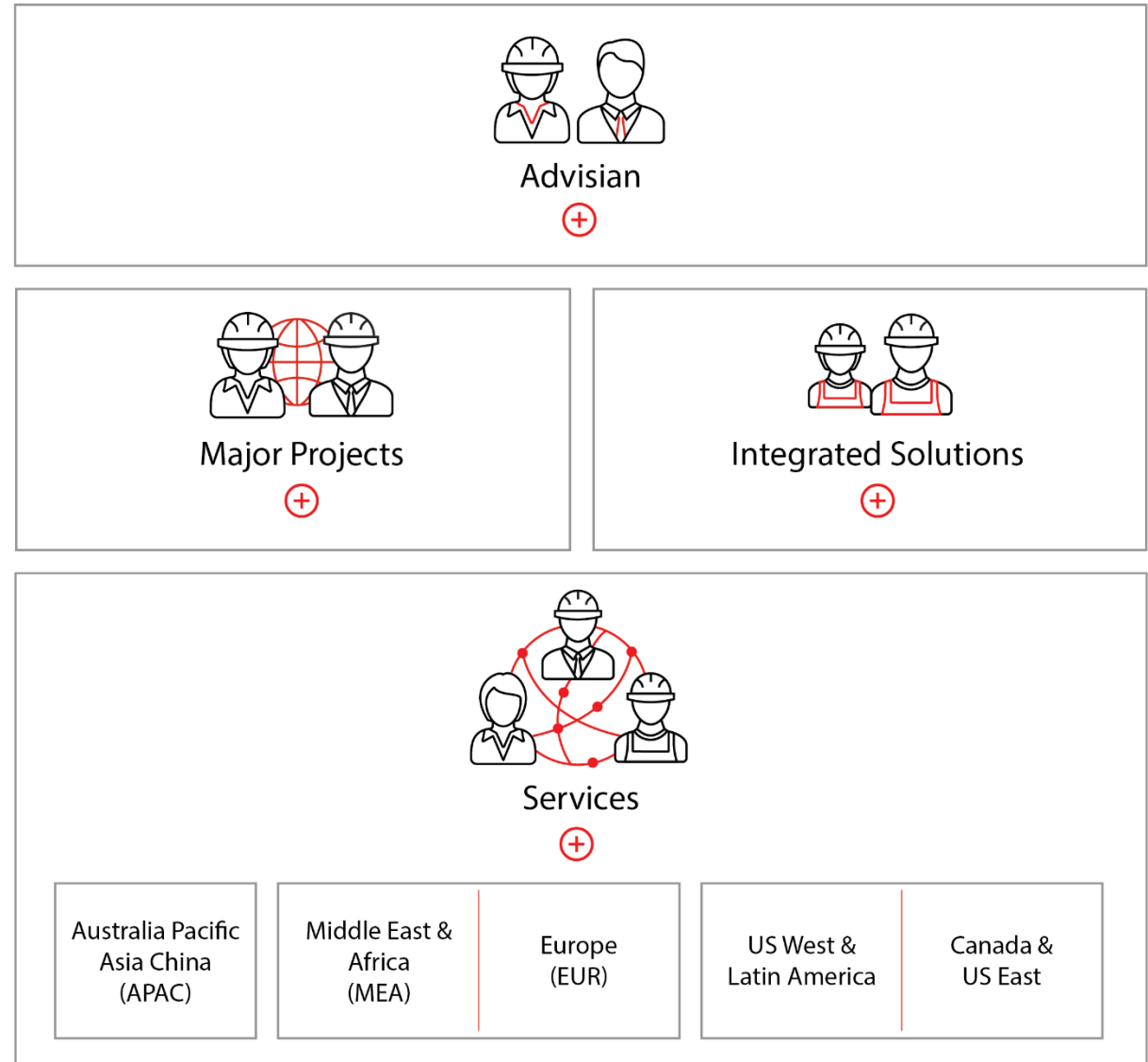
# We are now Worley

## Business Lines

- Advisian
- MPIS
- E&C Services
- MM&M

## Five Regions

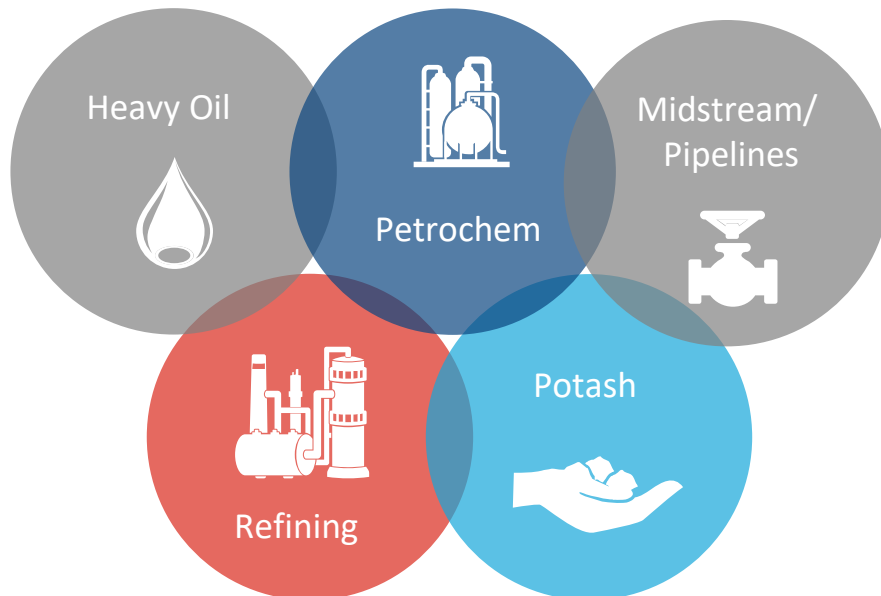
- APAC
- MEA
- EUR
- US West & LAM
- Canada & US East



# Canada West Overview

**6** offices | **3,500+** people

**5** key sectors



Operating in Western Canada for 50+ years:

- Extensive local knowledge
- Full lifecycle delivery
- Four business lines

# Integrated Solutions

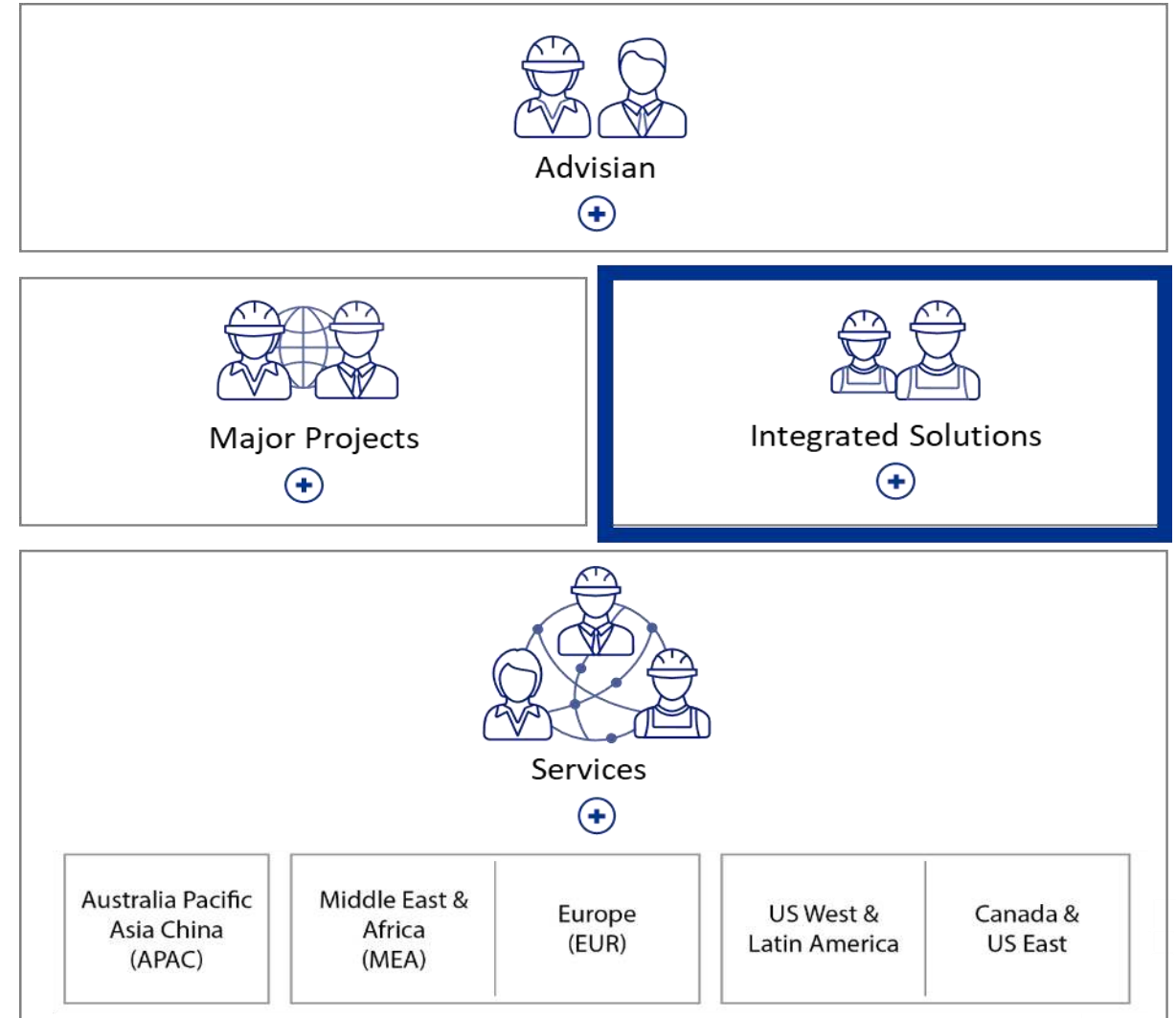
Delivering:

- maintenance, modification, operations
- engineering, fabrication, construction,
- hook-up and commissioning

In support of greenfield and brownfield assets

Leveraging:

- Open shop or union resources





# Saskatchewan Customers

- Co-op Refinery
- Enbridge
- TC Energy
- Husky Energy
- Nutrien
- BHP
- Mosaic
- Yara
- Akzo Nobel



# Notable Projects

## Refinery Expansion and Revamp

Client: Coop Refinery

Location: Regina, Saskatchewan

- Grass roots 30,000 BPD FCCU complex and a poly plant
- EPCM for major revamp and brownfield expansion



## Tier III Gasoline Desulphurization Unit

Client: Coop Refinery

Location: Regina, Saskatchewan

- Modifications in the Gasoline Desulphurization Unit
- Front End & Detailed Engineering Design, and Construction support





# Notable Projects

## Kronau Potash Solution Mine

Client: Vale Potash Canada Ltd (now Mosaic)

Location: Saskatchewan, Canada

- Front End Engineering for Solution mine, process plant, and infrastructure

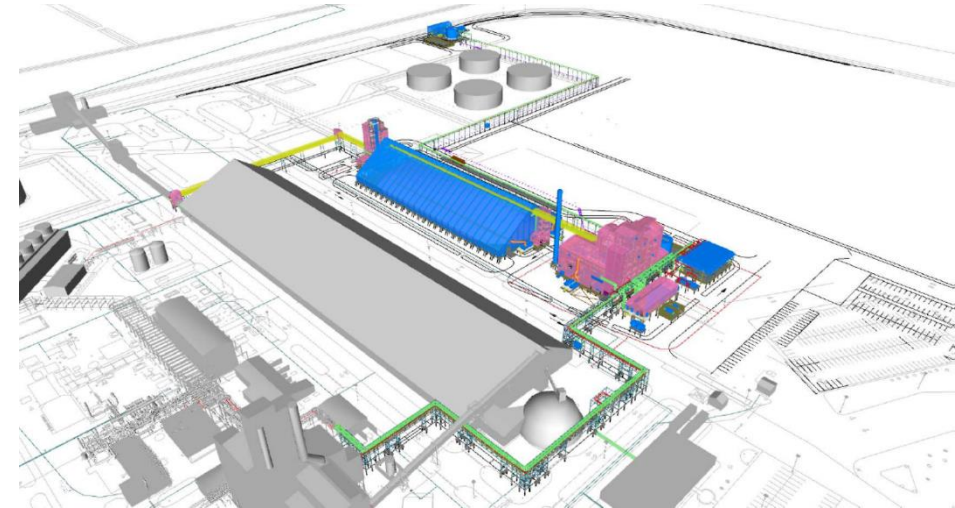


## Yara Belle Plaine Expansion Project

Client: Yara

Location: Saskatchewan, Canada

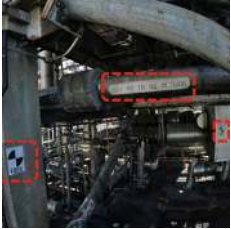
- Front End Engineering for 1,000 tpd expansion to existing fertilizer complex including storage and loadout facilities



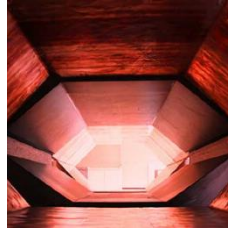


# Digital assets focused on Capex, Opex and Safety (sample)

## Capex & Opex reduction



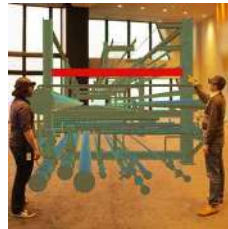
**Asset Capture**  
Text/tag/symbol  
extraction from  
documents and photos



**NextOre**  
Detect ore grade using  
magnetic resonance  
technology



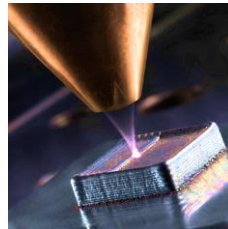
**PredictML**  
Machine learning to uncover  
hidden insights from asset  
data



**AR / VR**  
Training and site  
maintenance



**Requis**  
Supply chain and commerce  
platform for supply  
chain professionals



**AdditiveNow**  
Bespoke 3D printed metal  
complex parts for the energy  
and resources industry

## Safety



**SaltGrid**  
Better HSE decisions using  
artificial intelligence



**Drones**  
Inspection in hard to reach  
places



**Fugitive emissions**  
Find and quantify  
leaks using analytics and  
object recognition  
technology



# Making Safe Decisions

October 3, 2019

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[www.advisian.com/saltgrid](http://www.advisian.com/saltgrid)



**Advisian**digital  
WorleyParsons Group

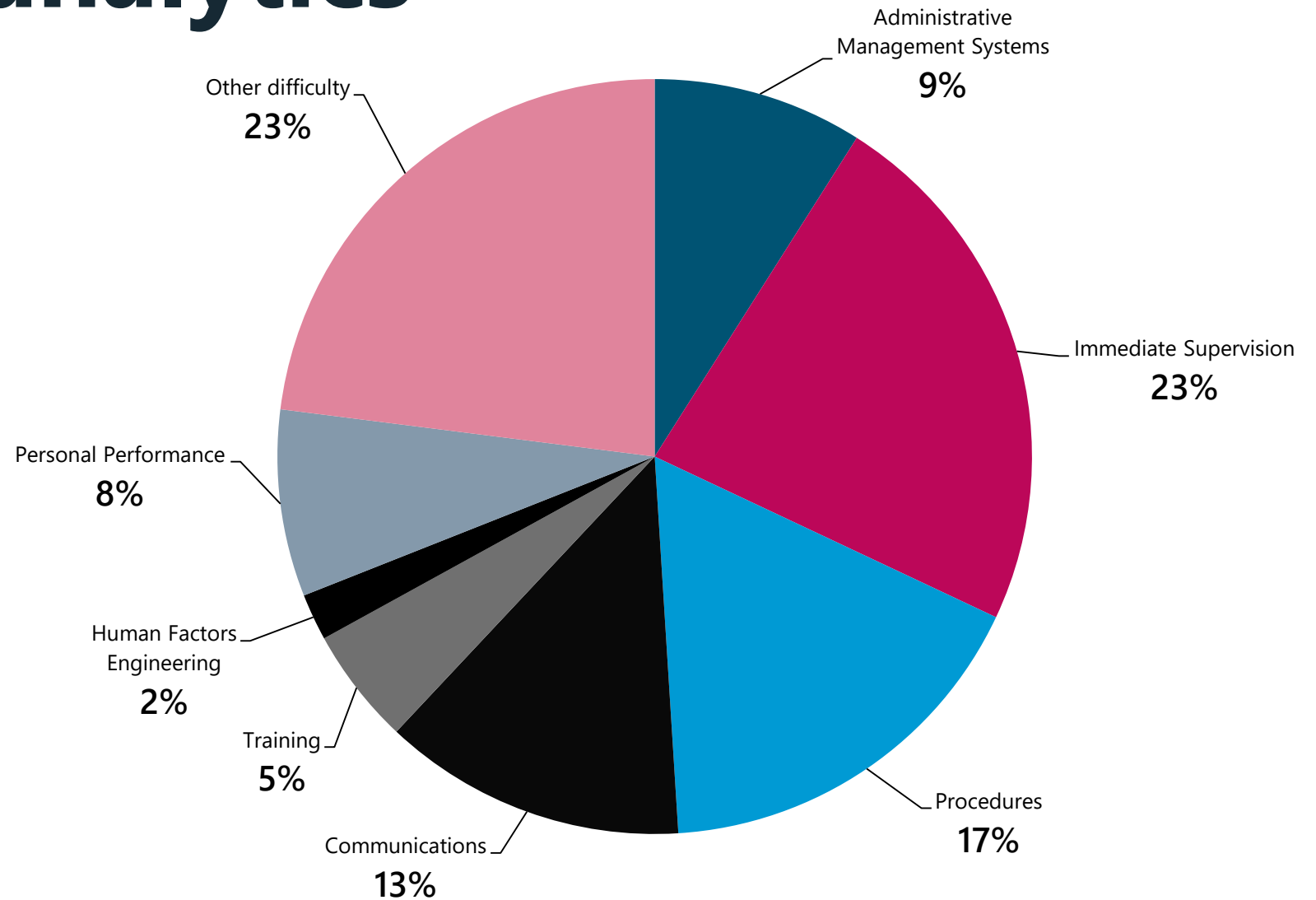




# Our goal

**Make better HSE  
decisions** to reduce  
injury and incidents

# Standard analytics





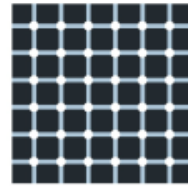
# There is a better way



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+



**SALTGRID**

=

Experience and expertise of  
WorleyParsons Group

Leading data science  
company, SaltGrid

Minimizing health,  
safety and  
environmental  
incidents in the  
energy and resources  
space by leveraging  
**predictive analytics**

# SaltGrid

## answers three key questions



### What can we expect?

SaltGrid can **accurately predict the nature and timing** of upcoming incidents



### Why is this happening?

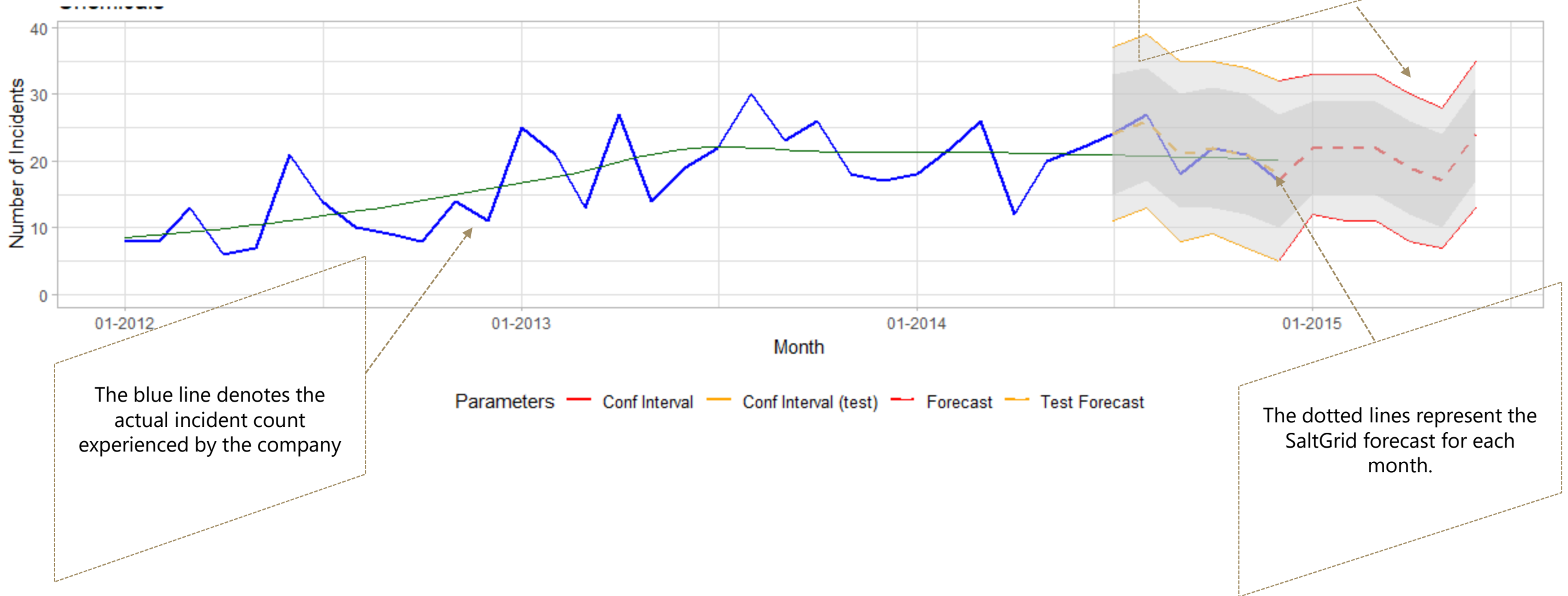
SaltGrid can **recognize patterns and relationships** that standard BI does not, stripping out human bias from trending and analysis efforts



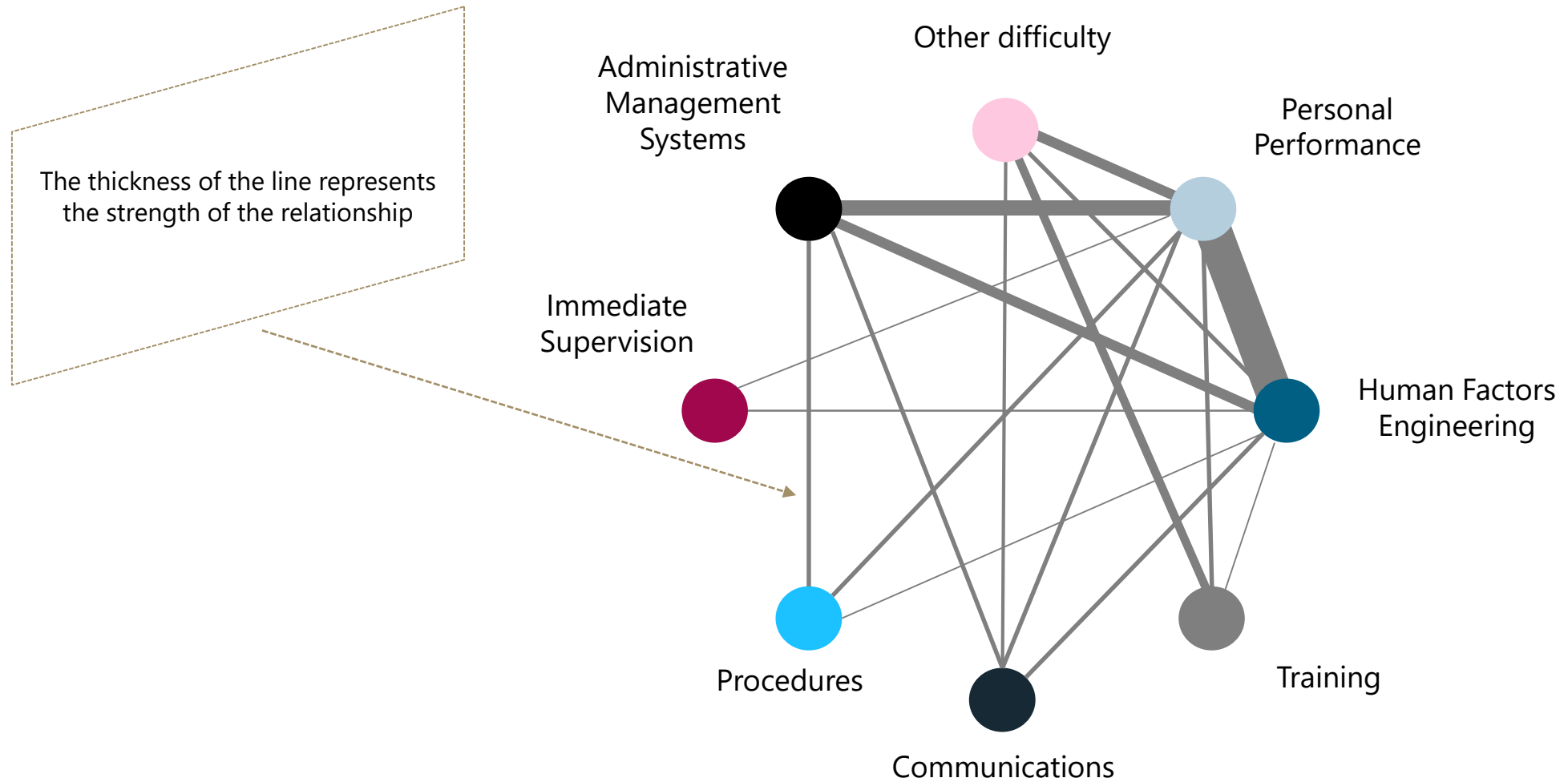
### What can we do better?

SaltGrid can **provide insight** into what HSE efforts are working...and what is not

# What can we expect?



# Why is this happening?





# What can we do better?

People	Action Enhancing Zero Harm	HSE Site Walk	SAZ Conversation or Presentation
1	0.41	0.19	0.35
2	0.43	0.37	0.28
3	0.16	0.42	0.19
4-5	0.36	0.21	0.20
6-9	0.48	0.26	0.32
10-20	0.57	0.69	0.32
+21	0.53		0.29

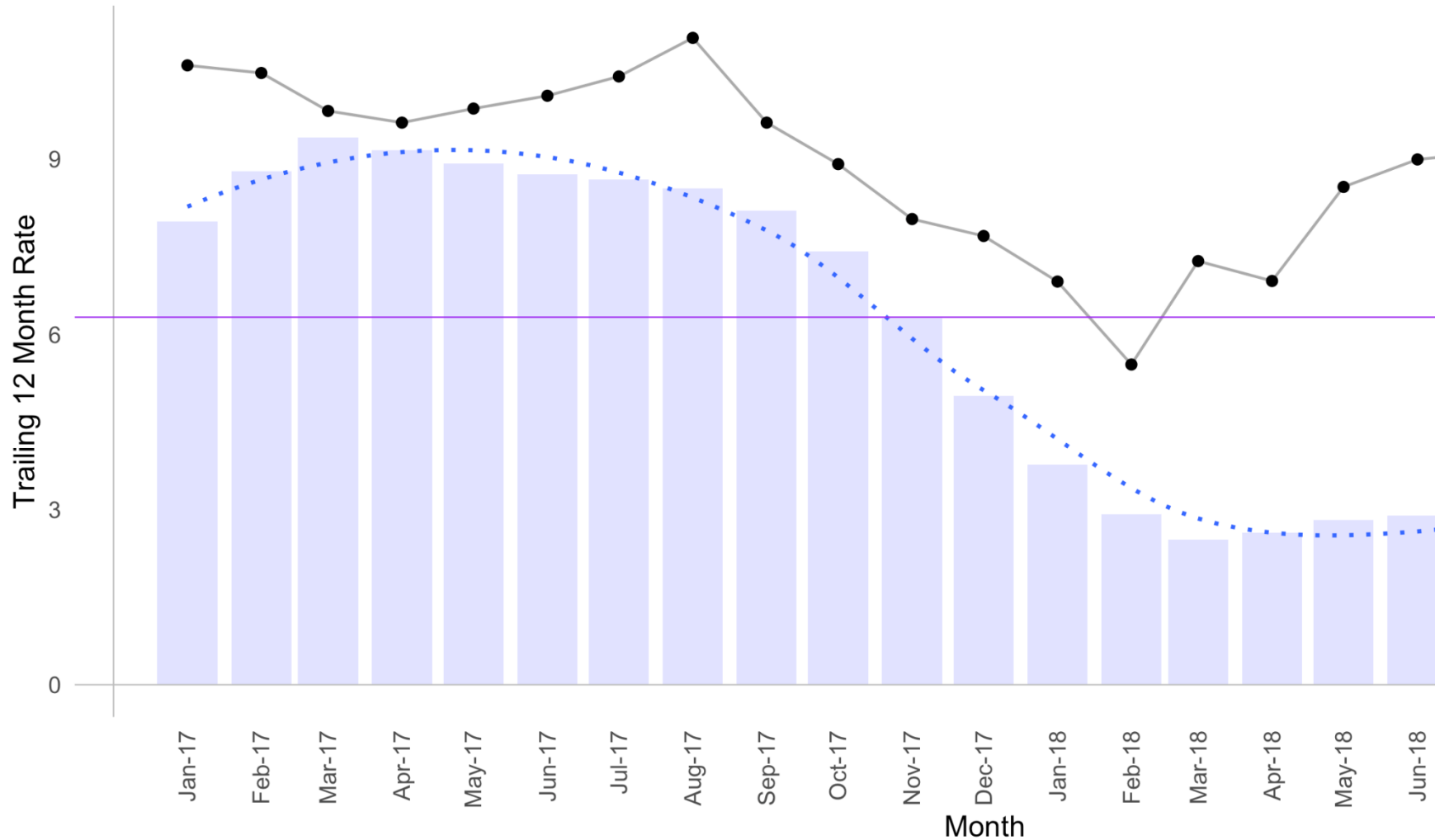
The numbers in this table represent the effectiveness, where 1 is most effective and 0 is least effective

# **A short case study on preventive measures**

# The Challenge

## Trailing 12 Month Incident Rate (Line) vs Worked Hours (Bars)

Previously, downward trends in rates were associated with reductions in worked hours



# Results

1. More conversations lead to less hazards
2. Targeted feedback reduced hazards
3. The conversation cards didn't promote targeted feedback



**SAZ Serious About Zero Conversation Record**

UPPERCASE letters. Mark Inside Box Only X

1 2 3 Use blue or black ink pen ONLY

All Safe/Positive ☐

Observation Date: --

Observer's First Name:

Observer's Last Name:

Observer's Company:

Project Name:

Area Observed:

Observed Effect of the Issue:

Agreement Reached: ☐ Yes ☐ No

Summary of Agreement/Disagreement:

**SAZ Serious About Zero Conversation Record**

Use of PPE

Working at Heights

Material Handling

Accidents/Incidents

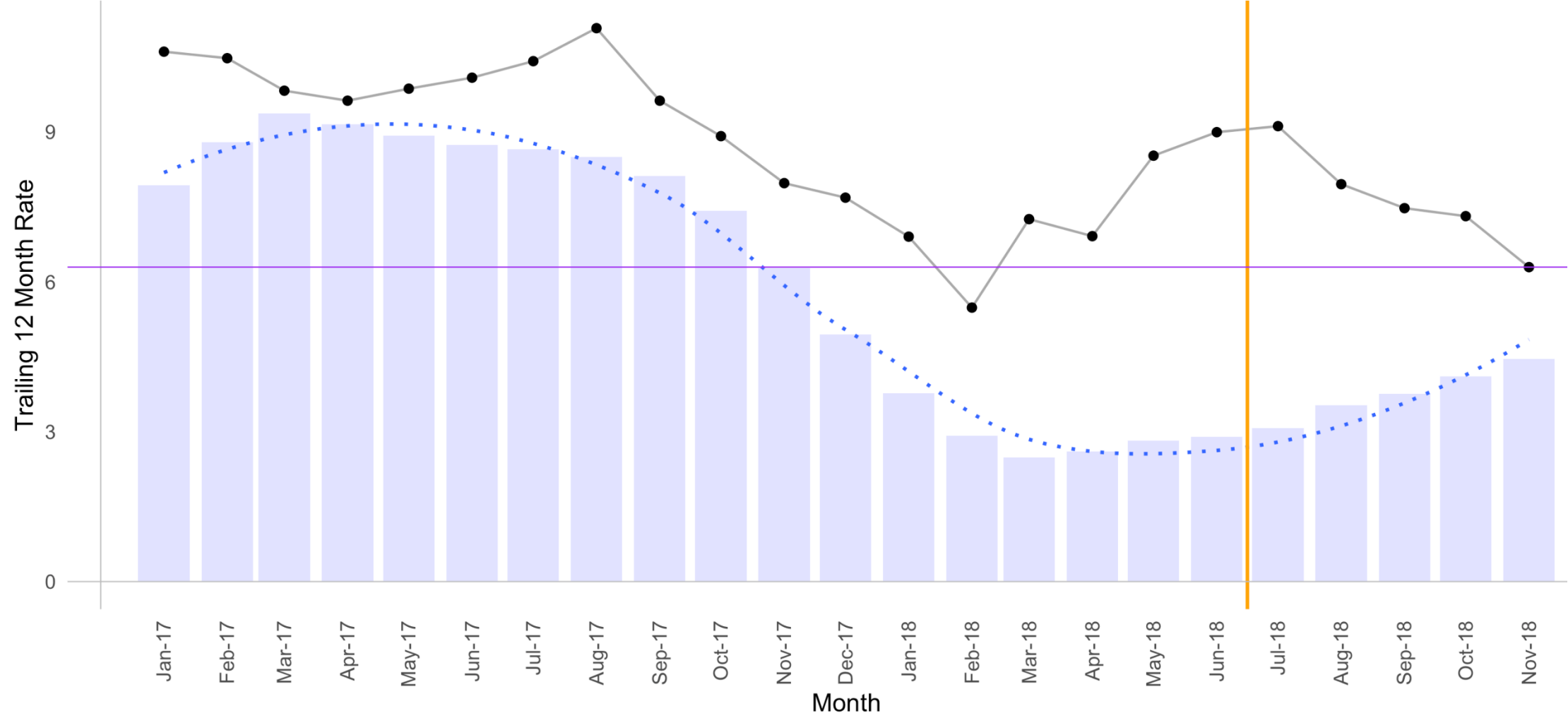
Summary of Actions:

# As a result, the project team:

- Elevated the focus on one-on-one conversations, specifically related to closing out actions
- Committed to delivering far more targeted feedback
- Changed the card itself to promote more specific and targeted feedback

# The Outcome

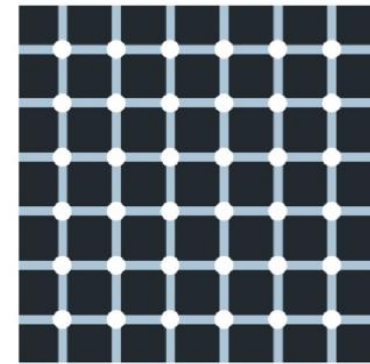
Trailing 12 Month Incident Rate (Line) vs Worked Hours (Bars)  
Previously, downward trends in rates were associated with reductions in worked hours





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**SALTGRID**

QA





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