

# Innovative approach to permanent **Pothole Repairs**





# The

# Problem

Current highway repair methods are physically demanding and pose safety risks to workers.

- teams are often required to perform back-breaking manual labour near dangerous roads, increasing the risk of injury and reducing overall efficiency.

We needed to deliver more value from our budget and reduce reliance on outsourcing.

- With limited resources, it was essential to find a smarter, more cost-effective way to carry out repairs—one that empowered our own teams, minimised external contractor costs, and maximised the impact of every pound spent.

The existing repair process is inefficient and environmentally unsustainable.

- A needed a solution that could reduce waste, lower costs, and minimise the environmental impact of our operations while still delivering high-quality results.



# Peopl

e

The highway network is relied on every day as little happens without us needing to walk, cycle, use public transport or a private vehicle.

Highways departments are on the frontline of keeping that road network working day and night so that our city's people can access work, education, healthcare, shops, leisure and our work is fundamental to keeping communities and the local economy prosperous.

Best known for filling potholes, most Highway teams portfolio includes patching, drainage, fabrication, winter gritting, call-out and is usually the council's first on scene in an emergency.

# Operatives

## health

Traditional repair methods use a handheld circular saw to cut the tarmac, hydraulic breakers to break up the surface, and shovels to shovel away the rubble into the back of a truck. All this exposes our people to several potential musculoskeletal issues, simply due to the immense strain on the worker's spine and back muscles, while the hydraulic breaker exposes workers to hand-arm vibration syndrome (HAVS).

Workforce Daily Exposure [Help](#)  
12 months 13/09/2022 to 12/09/2023, Highway

Pothole Pro vs traditional HAVS exposure



Pothole Pro vs Traditional HAVS exposure over 12 months (13/08/2022 – 12/08/2023) This graph shows a years' worth of daily HAVS exposure to an operative. The blue line refers to traditional methods (handheld saws & shovels)

# Operatives

Exposing operatives to all types of weather overtime can affect sickness and muskelito issues along with further risks to operatives health, the industry needs to work smarter this day and age and away from traditional tools

**Before**



**After**



# Smarter Repairs

Shifted from reactive to planned maintenance using asset management tools

Grouped defects geographically to reduce roading time and optimise Pothole Pro deployment

Planned asphalt delivery and spoil removal in sync with daily targets to avoid delays

Leveraged JCB Livelink to monitor machine usage and refine scheduling

Achieved **lower cost per defect**, improved network condition

Empowering internal teams and boosted workforce motivation

# Efficient Repairs

Deployed Pothole Pro with traffic management and spoil logistics for rapid defect preparation

Minimised manual handling, reducing crew size and improving safety

Operates across varied traffic setups (full closures, single lane, Stop & Go) for urban and rural flexibility

Sequential workflow: Pothole Pro prepares site, reinstatement crews follow — maximising machine utilisation

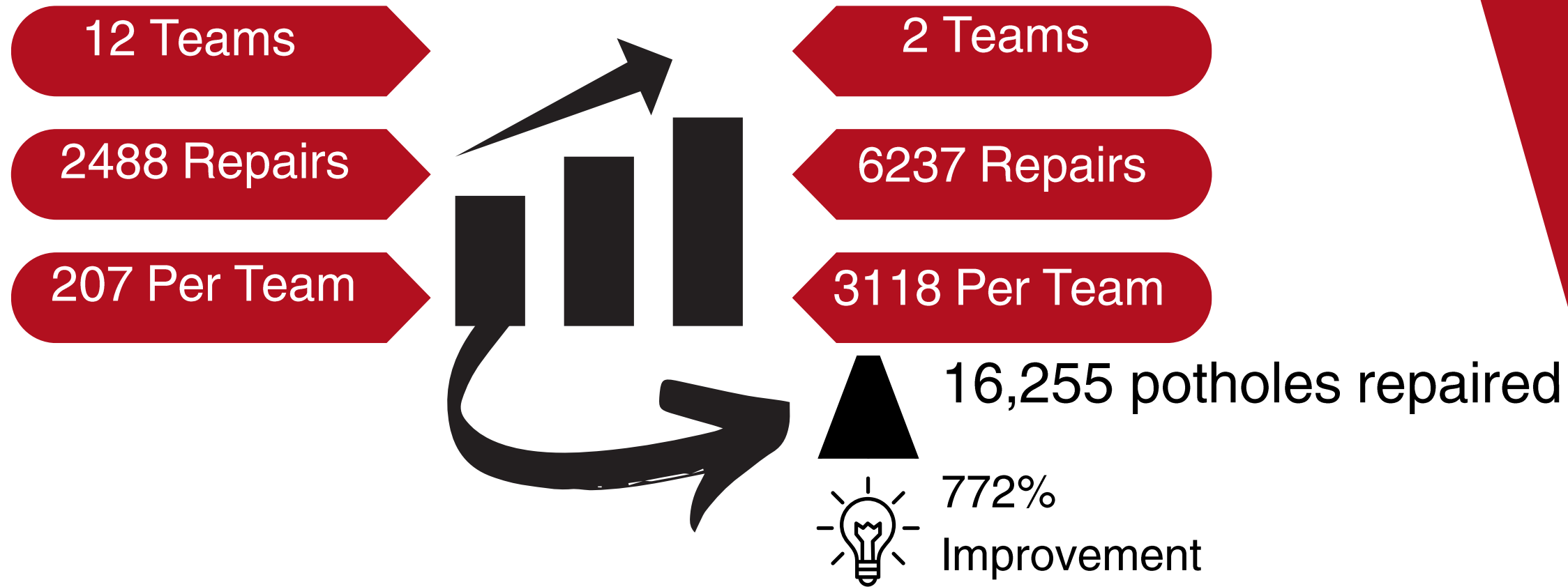
Hotboxes matched to output targets enable up to 300m<sup>2</sup> of permanent repairs per day

GIS route optimisation and coordinated planning allow multiple locations per shift

Result: **lower costs, reduced waste, improved productivity**, and a more sustainable repair process



# Performance



The information in this table shows the performance gains achieved by using the Pothole Pro since June 2021.

Year	Patches repaired	Completed Area (m2)	Potholes Repaired	Actual Completed (Days)	Actual Completed (Yrs.)	Traditional Method (Days)	Traditional Method (Yrs.)
	Output			Pothole Pro Time		Modelled Traditional Time	
21/22	228	12748m <sup>2</sup>	-	181	0.72	1320.5	5.3
22/23	279	18991m <sup>2</sup>	4,937	239.50	0.95	2,027.50	8.1
This Year	194	11407m <sup>2</sup>	6,005	186.75	0.74	1180.00	4.7
<b>Total</b>	<b>701</b>	<b>43146m<sup>2</sup></b>	<b>10,942</b>	<b>607</b>	<b>2.42 Yrs.</b>	<b>4528</b>	<b>18 Yrs.</b>

# Quick stats



## Goal # 1

35% reduction in carbon emissions



## Goal # 2

Avoided 10,942 future jobs and their potential congestion



## Goal # 3

10.7 years of roadworks avoided & congestion saved



## Goal # 4

Avoids £781K of future repair costs



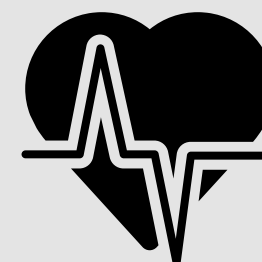
## Goal # 5

740% increased output  
18 years of traditional work completed in 2.4 years



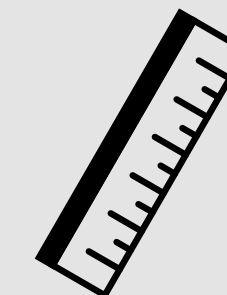
## Goal # 6

Operatives 772% more productive



## Goal # 7

Doubles the repair life of defects



## Goal # 8

43,146m<sup>2</sup> repaired in 2.4yrs

# Our Planet

Over an 8month period

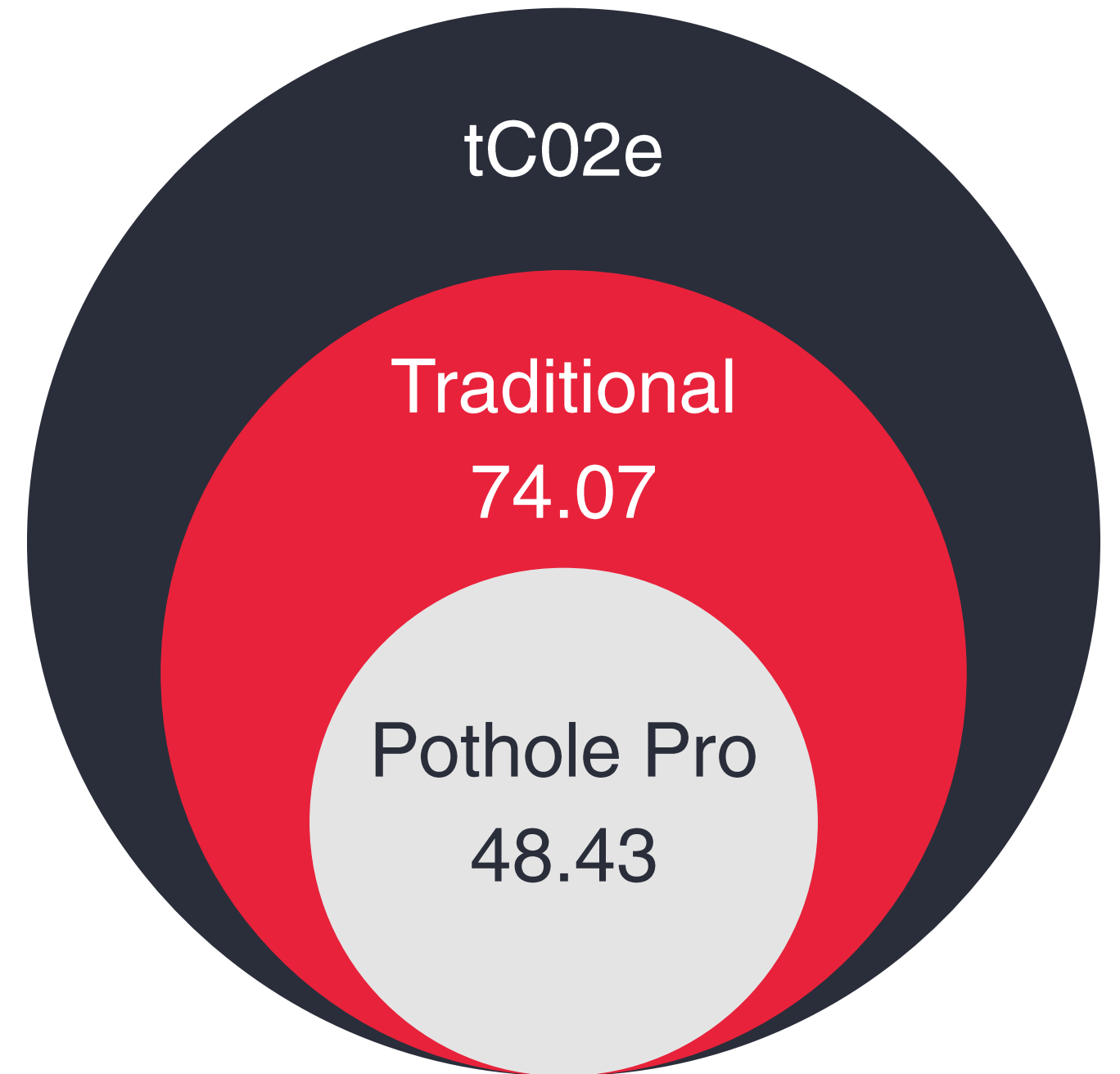
Traditional repair method

**74.07 tC02e**

Pothole Pro repair method

**48.43 tC02e**

Pothole Pro on a like for like basis reduced carbon emissions by 35%, by extrapolation we discovered the reduction equated to the carbon captured by 574 tree saplings over 10 years



# Your Network

Want to experience the benefits of the Pothole Pro on your own network, we are here to help



Tree Shear



Log Grab



Flail



Forks



Ditching



Excavation



Potholes



Patching



Groundworks

**Available with  
Operated or Self  
Operated on Short to  
Long term hires**

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