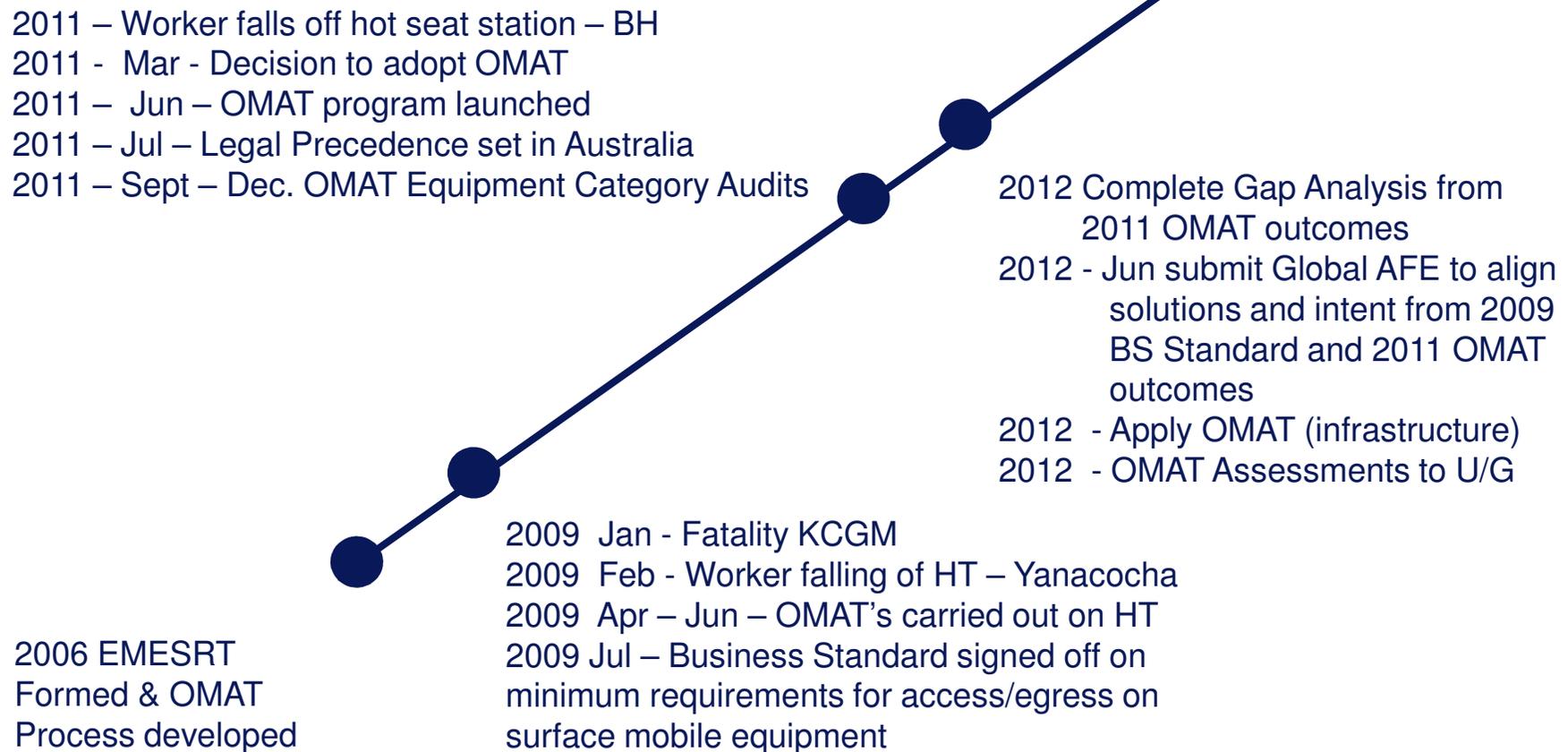


A decorative banner with a complex, colorful, and textured pattern, possibly representing a mineral or geological formation, is positioned above the main text area.

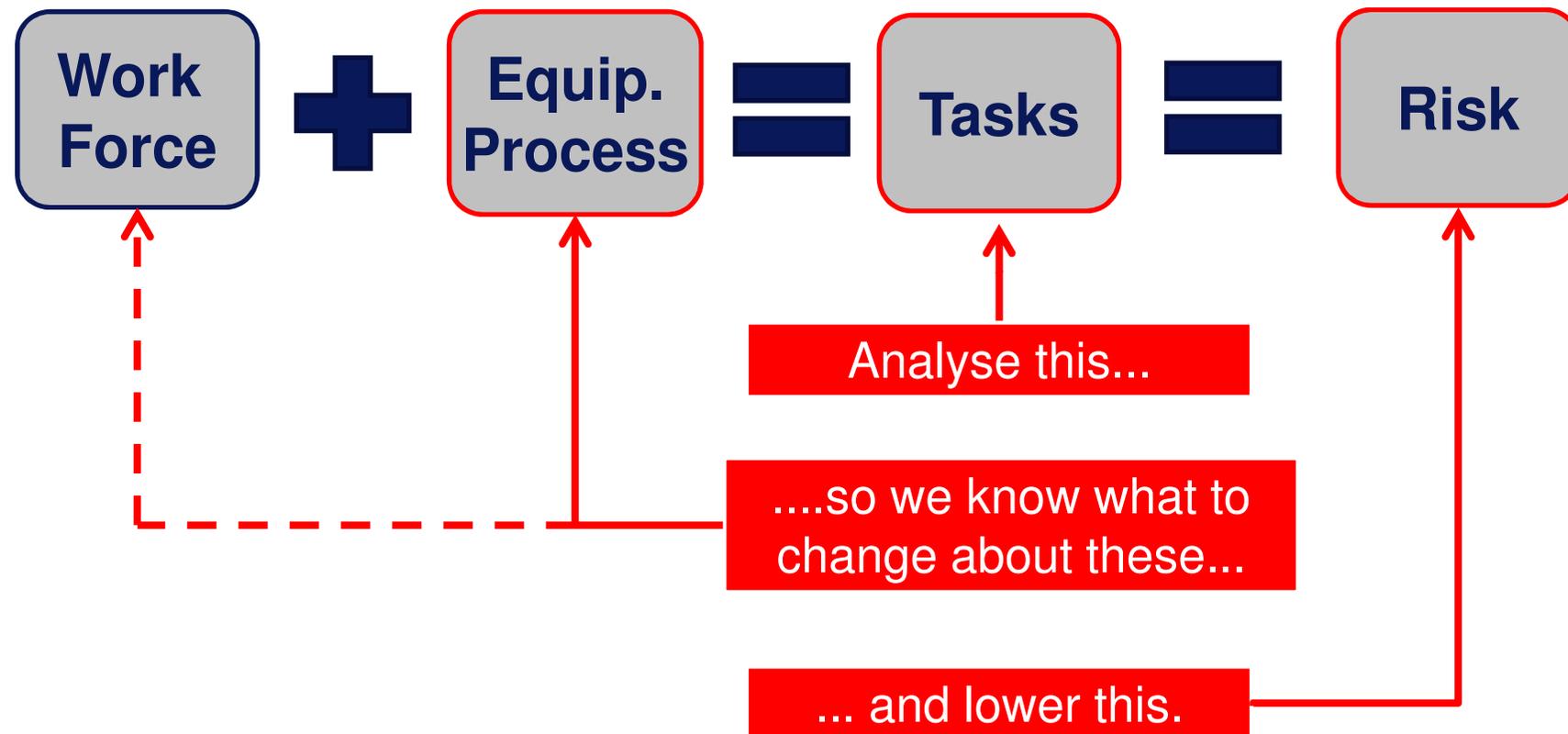
OMAT – Operability Maintainability Analysis Technique

Batu Hijau - 16th February 2012

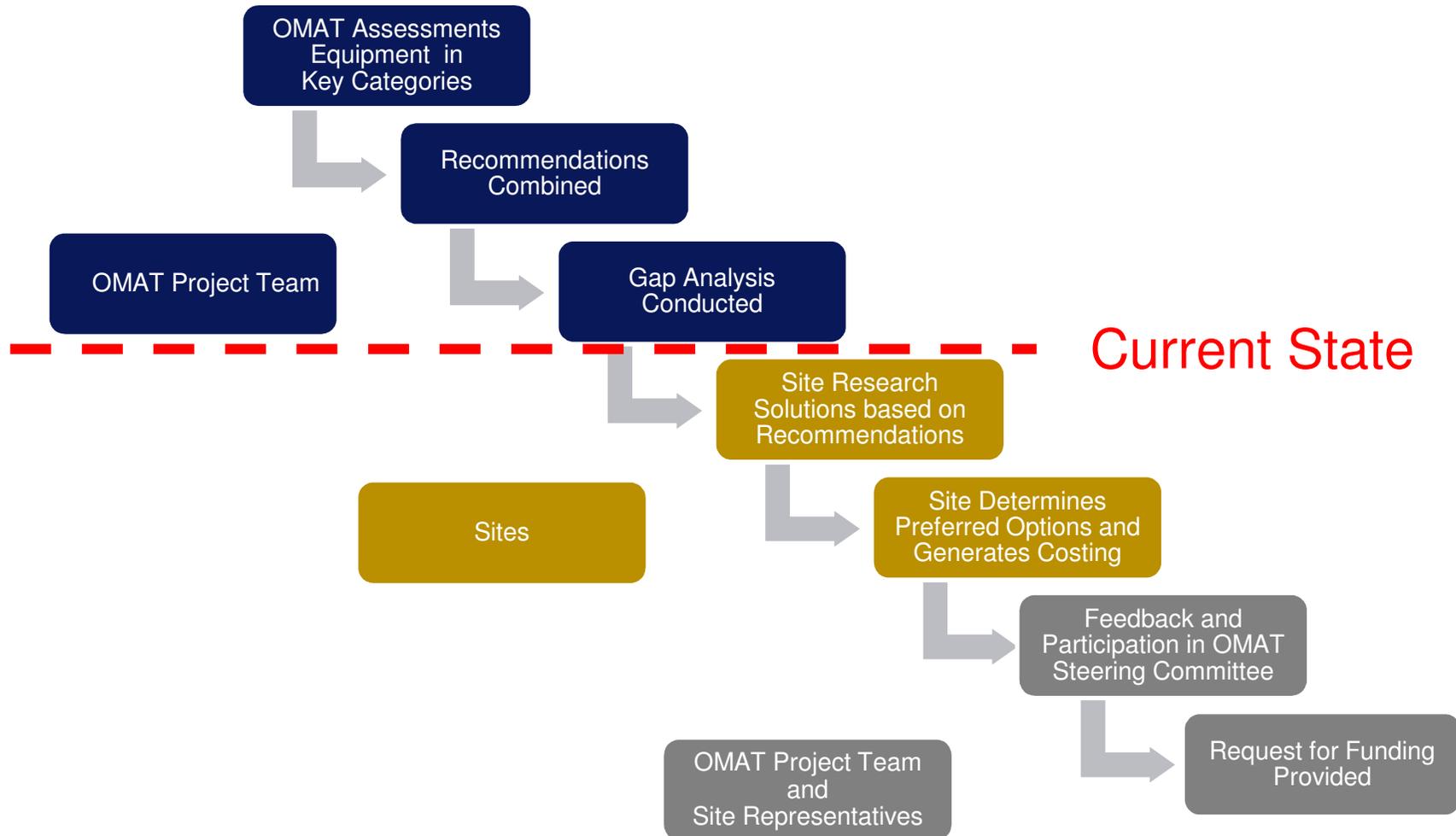
Newmont OMAT Program



OMAT Simplified



OMAT Project Timeline



Graders – A&E

Access Innovations

Identified Gap



Batu Hijau

Site Configuration



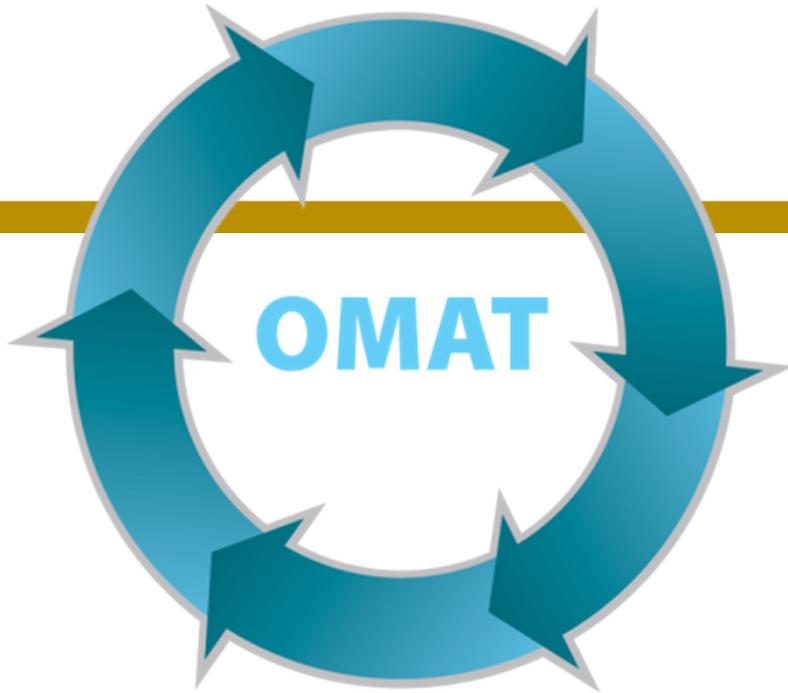
Boddington

Rear Access Platform



Leading Practice

Where is our Alliance Partners
in Leading Practices??



**Cat 24H Grader – Batu Hijau
OMAT
Common Access Egress Tasks
September 2011**



Associated Tasks:

OPAE1 Access Cabin via Left Side Ladder

OPAE2 Egress Cabin to Ground via Left Side Ladder

OPAE3 Access & Egress to clean side rear vision mirrors from cabin

Found Risks ranked from Medium to Extreme





Area 1 Example Problem

Weight going backwards whilst ladder flexes and hands need to transfer to handrails external of cabin. Fall to ground or onto blade possible.

Associated Tasks:

OPAE5 Access & Egress to Back Windows Via Engine Hood
MTAE1 Access & Egress to clean or replace lights/beacon on top of cabin

Found Risks ranked from Medium to Extreme





Area 2 Example Problem

Limited footing and loss of three point contact whilst twisting towards back windscreen. Fall into articulation of machine and/or to ground possible.

Associated Tasks:

OPAE4 Access & Egress to Front Windscreen Via Cabin Platform

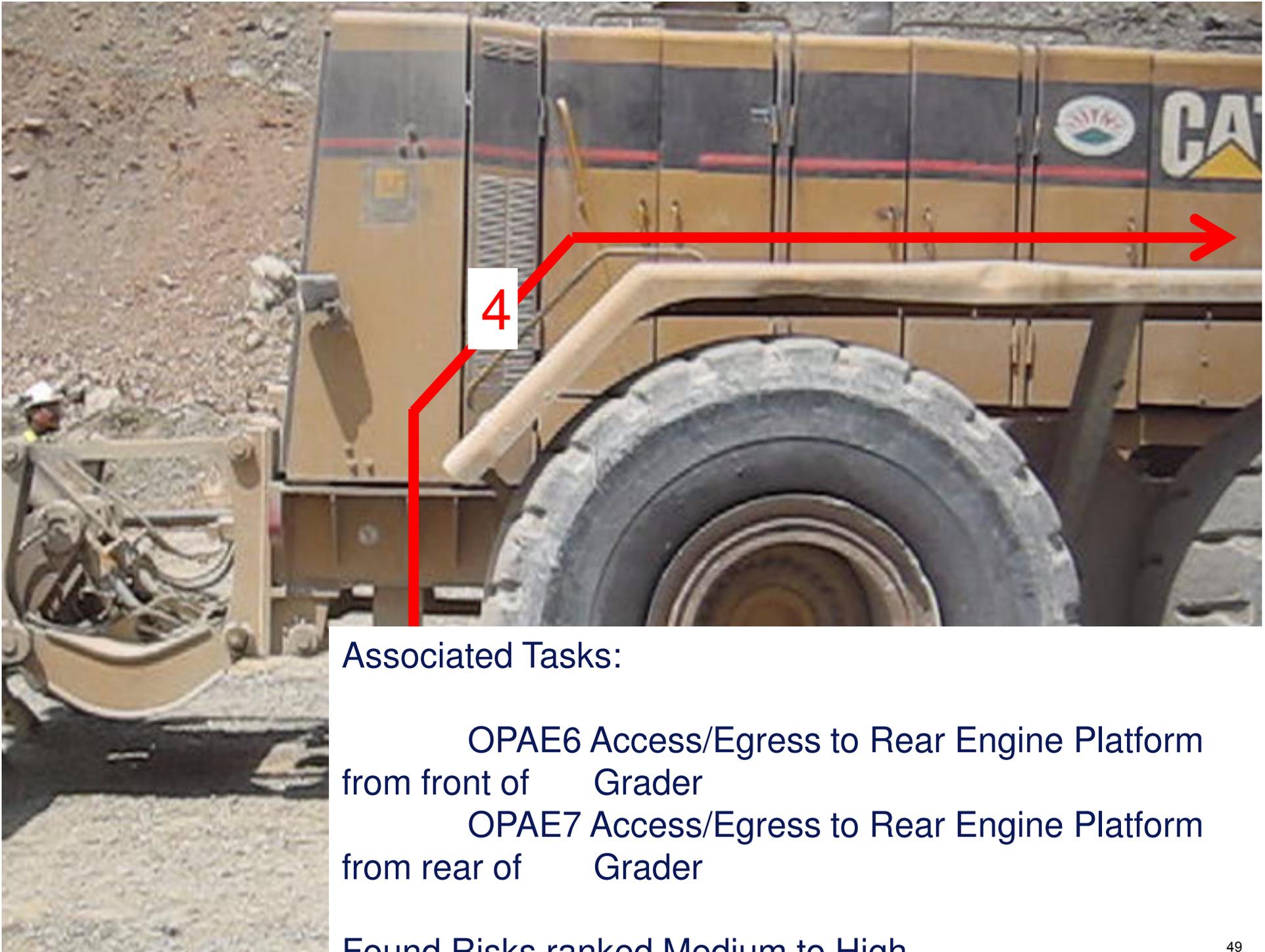
Found Risks ranked Extreme





Area 3 Example Problem

There is no safe access to clean areas of front windscreen including those not covered by wiper blades. If it was attempted then there would be a significant risk of fall to ground/blade



Associated Tasks:

OPA6 Access/Egress to Rear Engine Platform
from front of Grader

OPA7 Access/Egress to Rear Engine Platform
from rear of Grader

Found Risks ranked Medium to High



Area 4 Example Problem

Awkward hand transfers whilst turning sideways through narrow gap between engine housing and mudguard. Slip and fall to ground may be possible.

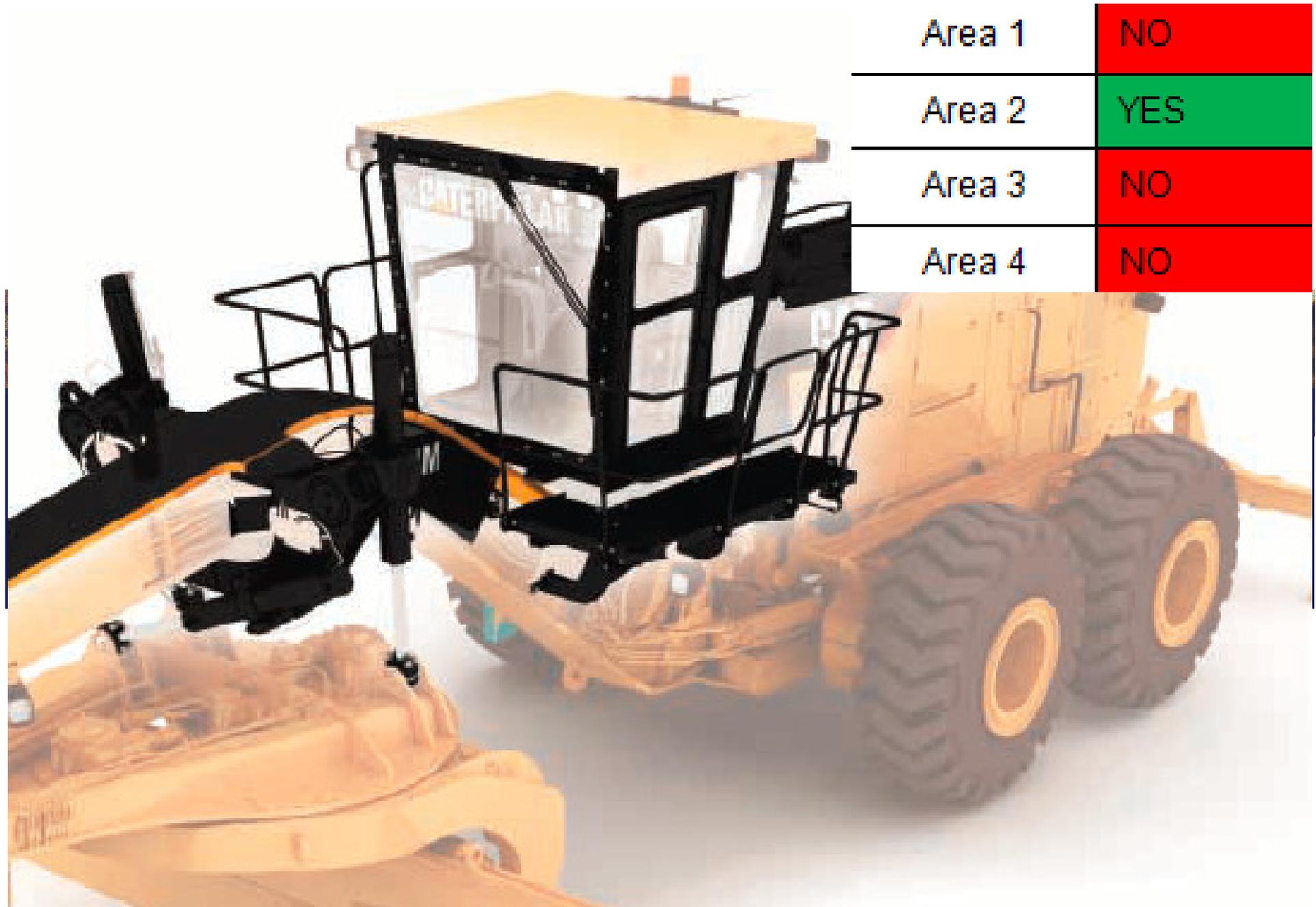
Area	Area Picture	Associated Tasks	Risk Rank Range	Summary Recommendations
1		<ul style="list-style-type: none"> - OPAE1 Access Cabin via Left Side Ladder - OPAE2 Egress Cabin to Ground via Left Side Ladder - OPAE3 Access & Egress to clean side rear vision mirrors from cabin 	<p>Medium To Extreme</p>	<p>Install a fixed stairway or angled ladder from the platform to near ground level that folds up when equipment is in operation, including continuous or near continuous handrails.</p>
2		<ul style="list-style-type: none"> - OPAE5 Access & Egress to Back Windows Via Engine Hood - MTAE1 Access & Egress to clean or replace lights/beacon on top of cabin 	<p>Medium To Extreme</p>	<p>Platform access around the cabin from the front windscreen to the rear windscreen. Fall protection, including a kickboard, mid-rail and upper rail around the platform.</p>
3		<ul style="list-style-type: none"> - OPAE4 Access & Egress to Front Windscreen Via Cabin Platform 	<p>Extreme</p>	<p>Platform access around the cabin from the front windscreen to the rear windscreen. Fall protection, including a kickboard, mid-rail and upper rail around the platform.</p>
4		<ul style="list-style-type: none"> - OPAE6 Access/Egress to Rear Engine Platform from front of Grader - OPAE7 Access/Egress to Rear Engine Platform from rear of Grader 	<p>Medium To High</p>	<p>Modify the ladder access so that handrails are not awkward to grasp. Add handrails/fall protection along tandem housing. Eliminate/prevent fall gaps in-between tandem housing to engine doors/mudguard hood.</p>



24H/M Grader Solution Options



Caterpillar Option 24M Only!



Area 1

NO

Area 2

YES

Area 3

NO

Area 4

NO

Caterpillar Option 24M Only!



Hydraulic Steps at Boddington - Down



Area 1	YES
Area 2	YES
Area 3	NO
Area 4	NO

Hydraulic Steps at Boddington

Newmont's Leading Practice



Access Innovations Mini-System

Newmont's Leading Practice

Area 1

YES

Area 2

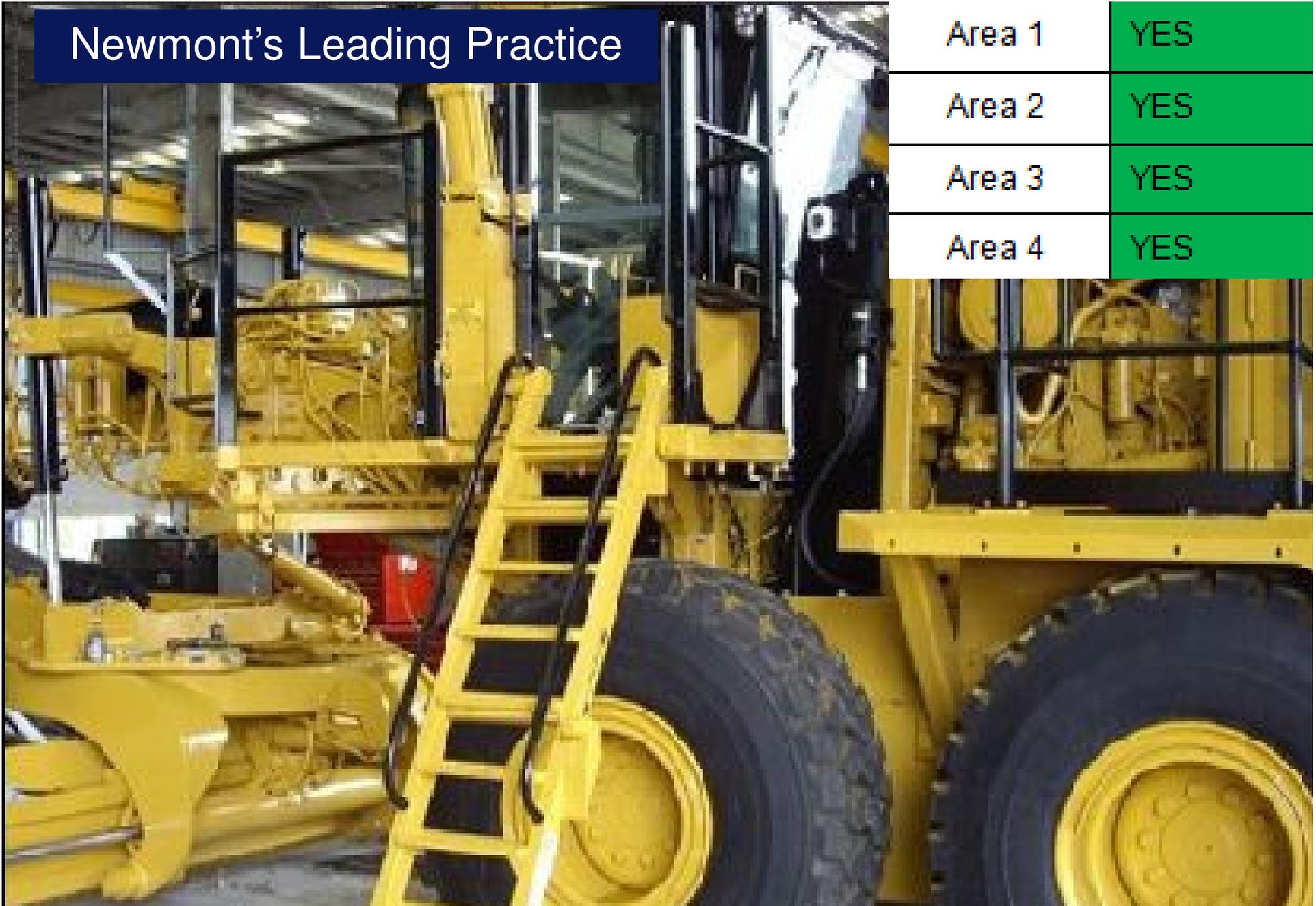
YES

Area 3

YES

Area 4

YES



Access Innovations Mini-System

Newmont's Leading Practice



Access Innovations Full System

Newmont's Leading Practice

Area 1

YES

Area 2

YES

Area 3

YES

Area 4

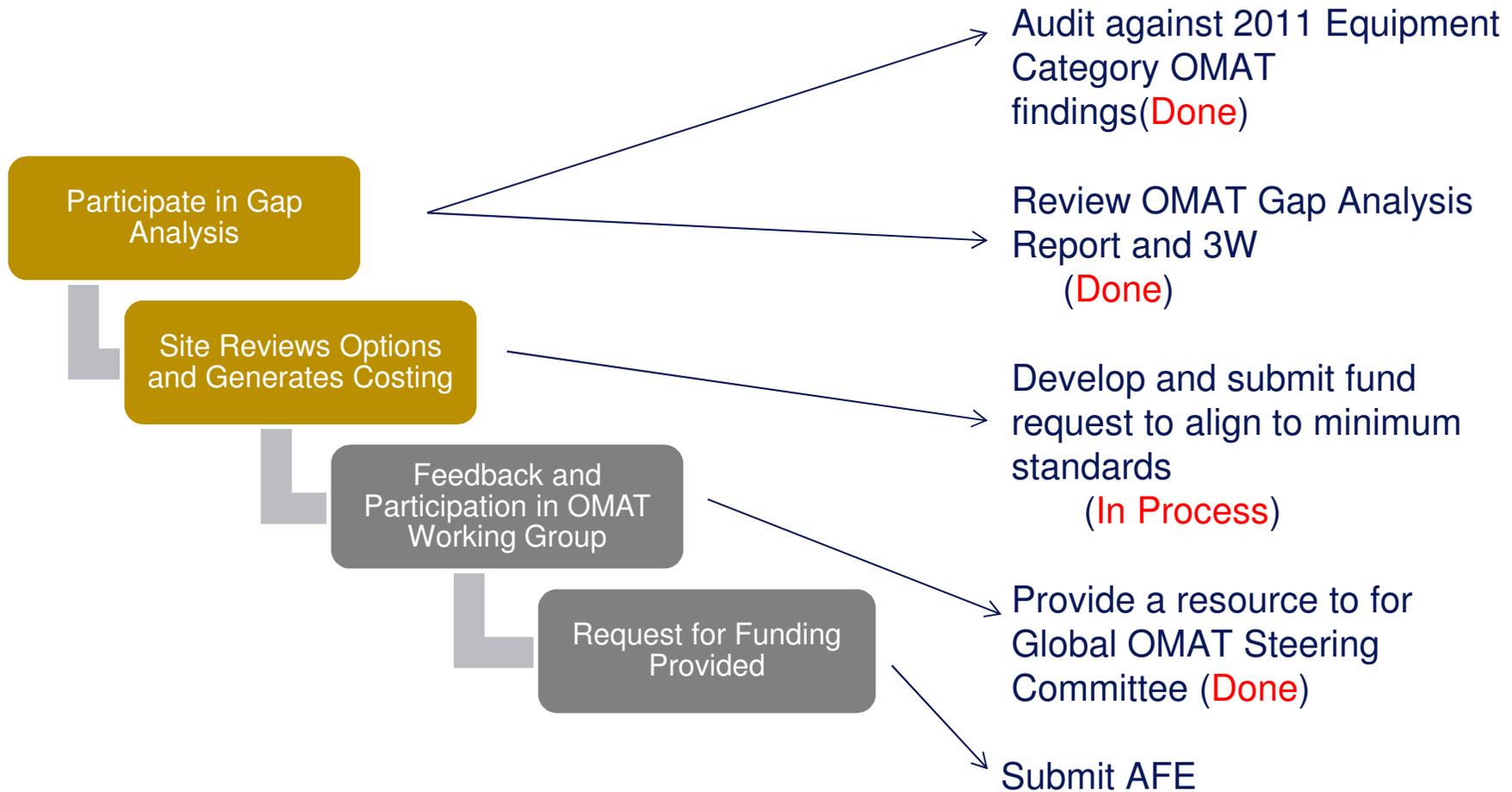
YES



Access Innovations Full System

System	Picture	Likely to Fulfil Recommendations?		Comments
Hydraulic steps and platform in place at Boddington		Area 1	YES	The system in place at Boddington appears to be well designed to access the Cabin (areas 1) and the rear windscreen (Area 2). It does not provide improved access to the windscreen (Area 3), though this access may be able to be avoided with site level controls (eg. pressure cleaner) or (Area 4).
		Area 2	YES	
		Area 3	NO	
		Area 4	NO	
Caterpillar Modification Option		Area 1	NO	Caterpillar modification option, found in the 24 M Catalogue, is extremely similar to the option in place at Boddington except that there the ladder rather than stairs. Therefore the comments and recommendations are the same except for area 1, where it does not meet the recommendations.
		Area 2	YES	
		Area 3	NO	
		Area 4	NO	
Access Innovations 'mini-system' Including Mudguard Option		Area 1	YES	The Access Innovations mini-system appears well designed to provide access all areas where extreme risks were found on the current designs (Areas 1–3). This includes access to the windscreen area, not provided by the Boddington solution. The system can also be coupled with redesigns to the handrails/ladders on the rear mudguard area addressing the final area (Area 4).
		Area 2	YES	
		Area 3	YES	
		Area 4	YES	
Access Innovations 'full system'		Area 1	YES	The Access Innovations full system appears well designed to provide access to all areas noted. However, it requires some re-engineering including replacing the doors to the engine bay. The egress for the driver also become longer and to the rear of the grader past the engine.
		Area 2	YES	
		Area 3	YES	
		Area 4	YES	

Site Actions



Current 2012 OMATs Planned – Mobile Equipment



March-April

- Identify **options currently available to eliminate OMAT risk** findings to meet our companies commitment to workplace safety
- Determine if CAT is prepared to put safety first and get on board with OMAT solutions to eliminate risks or go to 3rd Party entities.
- If CAT is not prepared, determine if Trakindo is prepared to support OMAT solutions to engineer out risks directly or through 3rd Party entities.
- Complete GAP analysis identification of engineering changes with costing's for Global AFE submittal and approval

April- December

- Implement OMAT changes based on GAP review
- Carry out 10 additional OMAT reviews on mobile equipment at Batu Hijau
- Work with SCM to ensure future equipment purchases include pre-delivery risk mitigation engineered solutions

April 2012 GAP Fleet

Make	Model
CATERPILLAR	24H/M 16H/M
CATERPILLAR	D10R, D10T
CATERPILLAR	D11R
CATERPILLAR	WHEEL DOZER 834G
CATERPILLAR	WHEEL DOZER 834H
CATERPILLAR	WHEEL LOADER 988F
CATERPILLAR	WHEEL LOADER 994F
CATERPILLAR	793C
CATERPILLAR	777F
P & H	4100/2800
HITACHI	5500/3600
ATLAS COPCO	PV351/235 D65/F9