

Appendix – Details of Business Inputs with Opportunities for Improvement and Credible Failure Mode Links

This appendix organises validation workshop ‘Opportunities for Improvement’ (OFI) by Business Input and links these to specific Credible Failure Modes.

This resource assists Vehicle Interaction Control Improvement planning by grouping Opportunities for Improvement into categories that can be reviewed for relevance, priority, links, and project sequencing.

Each suggested OFI for site work processes and practices (Business Inputs) can be considered by senior personnel by asking:

1. Is the Opportunity for Improvement (OFI) relevant and practical?
2. Will it deliver value?
3. Can it be implemented and maintained efficiently?
4. Will it improve the current site Business Inputs that prevent or mitigate the linked Credible Failure Mode from compromising the relevant Required Operating States?

Table 1 – Opportunities for Improvement Mapped to Business Inputs with related Credible Failure Modes

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
<p>OFI-2: Improve rollout of SOP changes</p> <p>OFI-23: Review style and effectiveness of training modules.</p> <p>OFI-4: Review and improve general operator training including spatial awareness.</p> <p>OFI-6: Review site processes for authorising site maintainers and technicians.</p> <p>OFI-7: Confirm that the specification and application of vehicle interaction controls for maintainers across workgroups.</p>	BI-CDA.03 There is an appropriate and up-to-date training management system	A process should be in place for delivering and maintaining competency-based training to provide skilled personnel for all roles on site.	<p>The training management system:</p> <ul style="list-style-type: none"> • Matches skills to roles e.g. through a training needs analysis • Presents information that is appropriate for the audience • Confirms requirements for safe and productive operations • Assesses competency e.g. through written and practical tests • Requires ongoing maintenance of skills for operational, design, planning, and leadership role holders <p>PLN-001 Safety and Health Management Plan - S7 Mine Training Scheme <i>The Mine Training Scheme describes the systems in place to ensure that all CMW's at Curragh have the appropriate Training, Competence and Authorisation to complete tasks and activities safely...</i></p> <p>SMS-021 Mine Training Scheme V8.3 - S3 Scope <i>This scheme outlines responsibilities and guidelines for the training, tuition and assessment of all Coal Mine Workers (CMW) working at or visiting the Coronado Curragh Complex operations. Generally - covers induction,</i></p>	<ul style="list-style-type: none"> • Appropriately qualified trainers deliver well-structured training. • Regular refresher training and self-learning activities are planned and executed to maintain currency of skills for all personnel on site <p>RIIV201-ASQ Operate Light Vehicle Assessment - typical module requiring demonstrating of trainer oversight, achieved and confirmation of understanding of theory.</p> <p>OFI-002 Improve rollout of SOP changes</p> <p>Workshop participants discussed potential improvements to how changes to standard operating practises (SOPs) are communicated and understanding is confirmed. Currently when SOPs changes are made, there are potential issues from inconsistent communication of the change to the workers on crew. Review the approach to communicating SOP changes and develop a consistent and effective way of passing any changes on to operators and confirming their</p>	<ul style="list-style-type: none"> • Reports are generated from the training management system to confirm employee competence and skill levels. • Audits and challenge tests are conducted to confirm standards of skill development and maintenance are in place. <p>Assurance - Coronado Global Resources (Australia) Business Level Standard (BLS) CGRA BLS-018 V1.0 S1 Purpose <i>The purpose of this Assurance Business Level Standard (BLS-018 Assurance Business Level Standard) is to describe the Assurance System processes to verify that Operations have effectively developed, implemented, and are maintaining responsible health and safety practices, including the effectiveness of their Safety and Health Management Systems (SHMS).</i></p> <p>S6 Training and Qualifications requires auditors to be appropriately qualified and understand training management systems. Appendix 1 requires audits of the TMS on a 3-year cycle.</p>	<p>CFM-CDA.06.02 Operator drives vehicle at the incorrect speed (too fast or too slow).</p> <p>CFM-CPA.10.02 Operators unaware of give way requirements for light vehicles</p> <p>CFM-CPA.10.04 Operators unaware of right of way requirements or operating constraints</p> <p>CFM-CPA.10.20 Operators of heavy and light vehicles (or pedestrians) fail to follow the designated travel path</p> <p>CFM-CPA.11.01 Equipment operator or pedestrian mistake in estimating</p>

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			<p>training and assessment process (different persons), sequence of training (apply then under direct supervision then general supervision then competent), and recognition of prior learning process.</p> <p>CGRA BLS-006 Training - Requires sites to establish Training Needs Analyses, use reputable providers, include key points in Inductions (Company overview, statutory obligations, site risks and required controls, PPE, and common measures for safe work). For new-to-site equipment a first competent person process to maintain standards of understanding.</p> <p>OFI-004 Review and improve general operator training including spatial awareness Currently workshop participants report that operator training does not provide consistent instruction and competency verification for operating in wet weather, spatial awareness at night, etc. Many site vehicle interaction incidents confirm a lack of operator understanding about where the vehicles are placed relative to obstructions, other vehicles, and pedestrians. Improving operator situational awareness and competence in estimating distances can decrease the frequency of vehicle interaction incidents. Review and identify improvements to training modules and training practises for mobile equipment operators. Use site incident experience to focus the review and consider the benefits of improving operator spatial and situational awareness, night driving, and wet weather operations etc.</p> <p>OFI-023 Review style and effectiveness of training modules Workshop participants discussed the style and effectiveness of training modules and support information. It was agreed that the most effective resources are short and graphically visual with diagrams and pictures. An example discussed was the</p>	<p>practical understanding. Consider using visual references that illustrate the change with practical examples and also reinforce all SOP requirements. Taking this approach can assist with achieving a consistency in understanding and operational practice across the multiple contractor workgroups working under the Coronado North Curragh Mine SOPs.</p> <p>OFI-006 Review site processes for authorising site maintainers and technicians. Workshop participants discussed differences in training, site authorisation, and confirmation of competencies for site technicians and maintainers. It was recognised that each contractor group applies their own company and site processes and performance metrics i.e. there are variations in process. Review how Coronado, as the SSE for CNOC Mine, authorises maintainers to work at site, focus on confirming that required SSE outcomes for a competent maintainer are delivered as well as meeting associated company processes.</p> <p>OFI-007: Confirm that the specification and application of vehicle interaction controls for maintainers across workgroups. Workshop participants questioned if there were application variations in maintenance related vehicle interaction control practices between different workgroups including authorisation and processes for moving equipment in and out of workshops, use of spotters, workshop parking, field maintenance practices etc. The accountability for vehicle</p>		<p>clearance distance CFM-CPA.11.03 Operators and/or passengers do not use fitted seatbelts or restraints CFM-CPA.11.05 Operator does not drive on available segregated roads CFM-CPA.11.10 Operators or co-workers have required communications equipment but are not contactable CFM-CPV.11.20 Operators or passenger has limb outside cabin while travelling CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced visibility, road narrowing, road surface etc. CFM-CRA.03.20 Personnel do not manage heavy vehicle blind spots CFM-CRA.03.21 Incorrect action on vehicle system alarm - not understood CFM-CRA.11.21 No action taken on over speed alarm CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or</p>

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			<p>style and content of current training and references for walkways around mobile equipment, and go lines can be improved with graphics.</p> <p>While people learn in different ways, using a consistent visual format that is audience appropriate should be cornerstone of training modules and reference information.</p> <p>Review style and format of training modules and reference information.</p> <p>Identify topics and information that can be improved with improved graphics.</p> <p>Consider digitisation and animation opportunities.</p>	<p>interaction controls during site maintenance practices rests with the site SSE. The SSE meets their accountabilities through site SOPs, authorisation processes, and periodic reviews.</p> <p>Consider a review of vehicle interaction controls that apply specifically to maintainers and technicians that confirms:</p> <ul style="list-style-type: none"> • The site level and SSE authorised requirements are practical and can be applied i.e. is there adequate detail to develop consistent performance measures that can apply across workgroups. • The alignment between site level SSE authorised requirements and contractor workgroup procedures, work instructions, practices, outcomes, and performance measures. • Workgroup performance metrics that deliver a consistent and disciplined application of site vehicle interaction controls relevant to maintainers and technicians. 		<p>steering or controlled functions CFM-EPA.32.06</p> <p>Loose objects in cabin or around vehicle remain unsecured CFM-EPA.33.40</p> <p>Communication equipment absence, failure or poor reception CFM-EPV.26.10</p> <p>Routine or occasional overloading of vehicles CFM-LPA.44.05</p> <p>Appropriate distances from fixed and overhead structures are not maintained CFM-LPV.44.02</p> <p>Operational personnel do not maintain minimum standards for berms, windrows and other zone protection. CFM-LPV.54</p> <p>Excessive water (Dust Control) is applied to road surface CFM-MPA.63.01</p> <p>Operator does not meet site requirements when parking CFM-MPA.63.02</p> <p>Vehicle operator does not check pathway after being parked CFM-MPA.66.01</p>

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						<p>Incorrect communication protocol CFM-MPA.72.02 Operational access control (pedestrian and vehicle) is inadequate CFM-MPA.72.03 Mobile equipment operator or pedestrian does not notify when entering a controlled work area CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots</p>
<p>OFI-26: Review and update site health and lifestyle training and support materials. OFI-84: Investigate the benefits of introducing operator alertness monitoring technology.</p>	BI-CDA.09.01 Fit for work processes with specific advice on self-management	Operating sites should develop and maintain processes that support personnel to be both fit for work and to maintain a healthy work-life balance.	<p>Personnel are trained in how to manage shift work and other workplace demands. The training covers site requirements for:</p> <ul style="list-style-type: none"> Managing and reporting impairment e.g. caused by fatigue, medication, illness etc. Impairment screening e.g. alcohol and other drug screening Mental health and wellness goals <p>SMS-010 CNOC Fatigue V4.7 - <i>The purpose of this Curragh procedure is to endeavour to: 1. Ensure that Curragh meets its obligations to Coal Mine Workers, visitors and the community to carry out its activities safely. 2. Ensure that Curragh takes all reasonable steps to minimise Fatigue-related risk through comprehensive education and training. 3. Provide a safe working environment at Curragh by taking all reasonable steps to control the workplace hazards associated with Fatigue. 4. Actively promote a culture among all Coal Mine Workers on the Curragh site that it is unacceptable to commute outside of their current individual Journey Management Plans, or to commence or continue work where a</i></p>	<p>Training and assessment carried out to schedule. Health and wellness self-management information is provided. Routine reinforcement of site impairment management expectations and processes.</p> <p>BLS-011-FRM-4 Fitness for Work - Roster Fatigue Assessment - provides calculation sheets for available rosters and grades worker's roster by sleep opportunity, work environment, and task factors.</p> <p>BLS-011-FRM-01 Restrictions Management Plan - formal recording of any physical or medical restrictions on tasks and work-times that a CMW can perform.</p> <p>BLS-011-FRM-02 FFW Medical Declaration - form for capturing the medications that workers are taking that are on the notify list.</p> <p>BLS-011-FRM-03 FFW Individual Journey Management Plan - Formal process to capture car pooling, allowable travel hours, and additional controls for a CMW to put in place for safe travel to or from site, or when on company business.</p>	Confirmation that fit for work training and awareness is completed to schedule and that work area references are available. Fatigue monitoring technology, incident reviews.	<p>CFM-CPA.11.02 Impaired or inattentive operator operates mobile equipment CFM-CRA.04.30 Operators change behaviour after fatigue alerting system is fitted CFM-CTA.11.01 Supervisor does not identify or act when operator is fatigued or intoxicated CFM-ERA.33.40 In vehicle fatigue monitoring and alerting system fails CFM-SDA.83 Organisation Work Scheduling and Planning is inadequate CFM-SDA.86 Work Environment and Work Demands result in Fatigued</p>

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			<p><i>Coal Mine Worker is potentially unsafe due to Fatigue. Generally covers requirements for identifying fatigue, training CMW to react to fatigue, task and work area designs. Notes specific fatigue tools of Journey Management Plans, FFW declaration (for managing hours on site), and personal fatigue guidelines. At S14 Covers allowance for worker napping (SMS-010A) and escalation if poor personal preparation for work is a repeated occurrence.</i></p> <p>SMS-011 Physical and Psychological Impairment V2.2 S2 Purpose <i>This procedure: Provides practical guidance on detection and action where impairment is suspected; Provides a safe working environment by controlling the workplace hazards associated with personnel affected by physical and psychological impairment</i> The process described is one of detection->medical centre review->medical practitioner consultation and ongoing support for the affected CMW (including through support from an external Employee Assistance Provider (EAP)). Relevant personnel are trained in requirements.</p> <p>SMS-012 Alcohol and Other Drugs, V2.2 - S2 Purpose <i>This procedure identifies and controls risks associated with the consumption of alcohol and other drugs at Curragh.</i> Requirements for all CMW and visitors to attend site with a BAC of 0.00 and includes the steps for testing and training for use on site.</p> <p>CGRA BLS-011 Fitness for Work V1.0 - Refers to CMW Health Scheme and how sites are to react to assessment reports. Reinforces Drugs and Alcohol, Personal Fatigue, Physical and Psychological Impairment, and Injury Management with processes to monitor and react to identified conditions.</p> <p>OFI-026 Review and update site health and lifestyle training and support materials.</p>			<p>Mobile Equipment Operators or other Health Affects</p>

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			<p>Workshop participants confirmed that additional self-management advice about balancing health, lifestyle, and work commitments can assist the Curragh North workforce. Providing practical information about approaches that assist individuals to make appropriate personal choices and can include diet, sleep and rest, commuting, alcohol and other drug choices, medication management, health support etc.</p> <p>Mine shift rosters are challenging and a lack of rest and general lifestyle choices can lead to fatigue and impairment outcomes in the short-term and poor health and personal issues in the medium to long-term.</p> <p>Review current site health and lifestyle training and support materials. Benchmark against good practice for remote mining operations, consider seeking expert input. As required update site processes emphasising processes for self-management to meet work requirements.</p> <p>OFI-084 Investigate the benefits of introducing operator alertness monitoring technology</p> <p>Workshop participants confirmed that there are comprehensive site fatigue and impairment management resources and processes in place to manage the hazards arising from continuous operations with 12 hour shift rosters. These site resources include advice and support for self management.</p> <p>While the site fatigue management and impairment processes align with industry good practice, the effectiveness of these administrative controls for managing fatigued or impaired operators is limited. Benchmark with other surface operations and consider investigating the benefits of introducing operator alertness monitoring technology.</p>			
OFI-20: Review driving at night	BI-CPA.03.01 Trained, Competent	All workers who operate mobile	All workers who operate mobile equipment at the mine (and other workers	Mobile equipment operator training is delivered to schedule. Where	Training status reports. Skills matrix reviews and updates.	BID-144: BI-CPA.03.01 Trained,

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<p>training for LV operators. OFI-4: Review and improve general operator training including spatial awareness. OFI-70: Review Opportunities to consistently apply site traffic management standards and measure performance. OFI-97: Review Heavy Mobile Equipment Login Process</p>	and Authorised Mobile Equipment Operators	equipment at the mine are trained and assessed for competency for operating defined equipment type, identifying and managing operating environment and vehicle interaction hazards.	<p>who routinely interact with vehicles e.g. maintainers) are trained and assessed for competency covering site and role relevant aspects including:</p> <ul style="list-style-type: none"> • Understanding requirements for authorisation to operate equipment and to be in a work area (supervisor or mining official clearances) • Completion of pre-start inspections • Correct operating techniques (including communications required for starting and moving, identifying and maintaining no-go zones around mobile equipment etc.); appropriate brake and retarder use during equipment operation • Equipment load limits - weight and dimensions • Site requirements for loading and unloading covering: Load security and stability based on site conditions and requirements; Vehicle stability precautions to be taken when raising trays, tubs, or buckets and tipping loads e.g, identifying loads types that can hang up e.g. when transporting clays; Securing of loads; • Proper movement of people: wearing seatbelts; not transporting passengers in buckets, trays etc.; ensuring that passengers wear seatbelts or other restraints • Preparation before servicing and maintenance, including: Electrical isolation of equipment; cleaning of all mud or loose material; travelling to maintenance location or parking fundamentally stable • Identification and management of infrastructure hazards e.g. HV powerlines 	<p>applicable training is supported by use of equipment simulators - to safely confirm competency in emergency and unwanted situations such as mechanical or electrical faults, fire, emergency stop, over-speed, sticky loads, etc.)</p> <p>RIIVFH201-ASQ Operate Light Vehicle Assessment - typical module requiring demonstrating of trainer oversight, achieved and confirmation of understanding of theory.</p> <p>OFI-020 Review driving at night training for LV operators Workshop participants discussed driving at night training components for light vehicle operation in production areas. They identified an inconsistent and incomplete understanding by LV drivers about changes to heavy vehicle sight lines and visibility during darkness. Review and update site training and practical assessment for light vehicle operators so that it includes night driving on site.</p>	<p>Routine audits of the training management system are commissioned and reviewed by senior personnel.</p> <p>Assurance - Coronado Global Resources (Australia) Business Level Standard (BLS) CGRA BLS-018 V1.0 S1 Purpose <i>The purpose of this Assurance Business Level Standard (BLS-018 Assurance Business Level Standard) is to describe the Assurance System processes to verify that Operations have effectively developed, implemented, and are maintaining responsible health and safety practices, including the effectiveness of their Safety and Health Management Systems (SHMS).</i></p> <p>S6 Training and Qualifications requires auditors to be appropriately qualified and understand training management systems. Appendix 1 requires audits of the TMS on a 3-year cycle.</p> <p>OFI-097 Review Heavy Mobile Equipment Login Process Workshop participants discussed the comprehensive training, competency and authorisation processes that apply for site mobile equipment operators from all contractor companies and workgroups. The discussion included the site process for logging in and operating heavy mobile equipment (HME). They had questions about two potential application gaps;</p> <ol style="list-style-type: none"> 1. Is the site authorisation process linked to HME log-in permissions so that personnel with expired authorities cannot operate equipment? 2. Are personnel using a general training identity to log in and operate HME, and is this being 	<p>Competent and Authorised Mobile Equipment Operators</p> <p>CFM-CDA.06.02 Operator drives vehicle at the incorrect speed (too fast or too slow).</p> <p>CFM-CPA.10.02 Operators unaware of give way requirements for light vehicles</p> <p>CFM-CPA.10.04 Operators unaware of right of way requirements or operating constraints</p> <p>CFM-CPA.10.20 Operators of heavy and light vehicles (or pedestrians) fail to follow the designated travel path</p> <p>CFM-CPA.11.01 Equipment operator or pedestrian mistake in estimating clearance distance</p> <p>CFM-CPA.11.02 Impaired or inattentive operator operates mobile equipment</p> <p>CFM-CPA.11.03 Operators and/or passengers do not use fitted seatbelts or restraints</p> <p>CFM-CPA.11.05 Operator does not drive on available segregated roads</p>

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			<ul style="list-style-type: none"> • Use of refuelling equipment and refuelling procedures • Park-up procedures to achieve fundamental stability • Identification and reporting of poor road conditions such as substandard delineation, windrows or bund heights, road surface, obstructions etc. • Tyre management including preventing and dealing with tyre heating and managing flat tyres • Identifying and responding to mechanical and electrical faults while driving • Constraints for operating around pedestrians • Precautions for use of remote controlled equipment • Responding to unintended equipment operations or movements • Site emergency requirements • Prevention of and response to tyre fires including activating the fire suppression system • Responding to events that impact on tyre and vehicle integrity (e.g. contact with debris, etc.) <p>PLN-001 Safety and Health Management Plan - S7 Mine Training Scheme <i>The Mine Training Scheme describes the systems in place to ensure that all CMW's at Curragh have the appropriate Training, Competence and Authorisation to complete tasks and activities safely...</i></p> <p>SMS-021 Mine Training Scheme V8.3 - S3 Scope <i>This scheme outlines responsibilities and guidelines for the training, tuition and assessment of all Coal Mine Workers (CMW) working at or visiting the Coronado Curragh Complex operations. Generally - covers induction, training and assessment process (different persons), sequence of training (apply, then, under direct supervision,</i></p>		<p>monitored and aligned to expectations?</p> <p>Review and confirm that the HME log-in process meets design expectations. Work with a cross sectional team to compare design with actual practice. Consider frequency of use for generic logins e.g. for training, and confirm if an expired authorisation status prevents log-in and HME operation. Explore how performance monitoring and reporting can be improved.</p>	<p>CFM-CPA.11.10 Operators or co-workers have required communications equipment but are not contactable</p> <p>CFM-CPV.11.20 Operators or passenger has limb outside cabin while travelling</p> <p>CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced visibility, road narrowing, road surface etc.</p> <p>CFM-CRA.03.21 Incorrect action on vehicle system alarm - not understood</p> <p>CFM-CRA.11.22 Operator non-compliance (including to alarms)</p> <p>CFM-CTA.10.90 Personnel do not alert others to presence of hazards</p> <p>CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions</p> <p>CFM-EPA.32.06 Loose objects in cabin or around vehicle remain unsecured</p> <p>CFM-ERA.32.20 Operator fails to</p>

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			<p>then, general supervision, then, competent), and recognition of prior learning process.</p> <p>CGRA BLS-006 Training - Requires sites to establish Training Needs Analyses, use reputable providers, include key points in Inductions (Company overview, statutory obligations, site risks and required controls, PPE, and common measures for safe work). For new-to-site equipment a first competent person process to maintain standards of understanding.</p> <p>SOP-017 Using Mobile Plant - Mine Traffic Rules - multiple sections address the requirements for Vehicle Operators and cover the nominated scenarios and requirements for training.</p> <p>OFI-004 Review and improve general operator training including spatial awareness Currently workshop participants report that operator training does not provide consistent instruction and competency verification for operating in wet weather, spatial awareness at night, etc. Many site vehicle interaction incidents confirm a lack of operator understanding about where the vehicles are placed relative to obstructions, other vehicles, and pedestrians. Improving operator situational awareness and competence in estimating distances can decrease the frequency of vehicle interaction incidents. Review and identify improvements to training modules and training practises for mobile equipment operators. Use site incident experience to focus the review and consider the benefits of improving operator spatial and situational awareness, night driving, and wet weather operations etc.</p> <p>OFI-070 Review Opportunities to consistently apply site traffic management standards and measure performance Workshop attendees discussed variations</p>			<p>conduct effective pre-start that meets requirements CFM-ERV.33.23 Seat belt use indicators disabled or compromised CFM-MPA.63.01 Operator does not meet site requirements when parking CFM-SPA.83.01 Operator fails to comply with site requirements</p>

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			<p>in applying vehicle interaction controls and operating approaches between workgroups at Curragh North Mine. They noted that while the Coronado SOPs apply to all workgroups:</p> <ul style="list-style-type: none"> • Some SOPs that are not specific enough about performance requirements and how performance is measured. This allows variations in how standards are interpreted and applied in the same areas by different workgroups. • There are different performance requirements by area e.g. between the Mine Industrial Area (MIA) and Mine Operational Area (MOA) for positive communications, road construction for gradient and ramp speed, heavy vehicle access, escorting requirements etc. <p>At an operational level this can result in different workplace layout standards between OCEs and conflicting directions confuse supervisors. A non-standard approach also inhibits the introduction of consistent performance measures and digital technology such as Collision Avoidance Systems.</p> <p>Leverage the knowledge and capability of the contractor support companies to review Curragh SOPs. Consider developing</p> <ul style="list-style-type: none"> • Visual specification details and references • Illustrate the performance standard required using examples • Review and develop performance measures that support the consistent delivery of site standards across all workgroups. 			
<p>OFI-52: Develop visual information for mobile equipment operators covering each</p>	<p>BI-CPA.04.01 General features by vehicle type - information prepared for</p>	<p>General features and information organised by vehicle type, are documented and communicated to</p>	<p>Training modules for vehicle operators includes relevant information and key safety features for the vehicles in use on the site. The information is provided in a format that is audience appropriate and</p>	<p>Training and assessment of vehicle operators about the general features of the vehicle they are operating. Training Management System - Site personnel complete competency</p>	<p>Confirmation that work area references are available. Initial and refresher training assessment outcomes. Records of topics covered at inductions, training, pre-shift</p>	<p>CFM-LPV.54 Excessive water (Dust Control) is applied to road surface</p>

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equipment type in use.	operators	vehicle operators.	<p>available as a reference in the work area.</p> <p>Learning Material - Komatsu 930E-5 Rigid Haul Truck (undated no ref) - Provides information on pre-use checks, general machine specifications, isolation point, key gauges and normal positions, emergency features (access, steer and brake), cabin features, and machine operation.</p> <p>Workshop Discussion Prompt - Should training modules be more site specific than just the OEM provided Operator and Maintenance manuals?</p>	<p>based training which is tracked and loaded into the LMS by Peter Ryan and team.</p> <p>OFI-052 Develop visual information for mobile equipment operators covering equipment types in use. Workshop participants discussed and confirmed that only generic information is provided about mobile equipment operation and features. At site there is a wide range of equipment types and models in use. Consider updating information for operators for each vehicle type in use covering blind spots, key operating and safety features, emergency protocols etc. Provide the information in a visual format that is audience appropriate and can be used as a reference in the work area with a copy in the vehicle. Explore digital options for sharing information.</p>	<p>meetings, etc.</p> <p>Training Management System - TNA output available for supervisors and superintendents. Expiring competencies trigger requirement for renewal. Workers can track their status on MobiliseMe.</p>	
<p>OFI-18: Review and improve mobile equipment blind spot and sight line training and awareness.</p> <p>OFI-20: Review driving at night training for LV operators.</p>	BI-CPA.04.02 Sight lines and blind spots by vehicle type - information prepared for vehicle operators	Mobile equipment sight lines and blind spot information, by vehicle type, is documented and communicated to vehicle operators.	<p>Training modules include specific information on operator vision limits and sight lines for the vehicles in use. The information is provided in a format that is audience appropriate and available as a reference in the work area.</p> <p>Training Management System - No specific blind spot awareness packages are available.</p> <p>Workshop Discussion Prompt - Should there be a blindspot awareness package prepared for all workers?</p>	<p>Training and assessment for people who operate mobile equipment covers sight lines and blind spots. Mobile equipment operators are aware of vehicle sight lines and blind spots by vehicle type and this information is regularly reinforced.</p> <p>OFI-018 Review and improve mobile equipment blind spot and sight line training and awareness</p> <p>Workshop participants discussed and confirmed that the understanding and knowledge that operators and the people who work around mobile equipment have of blind spots and sight lines is uneven. This may be leading to inadvertent breaches of site protocols and assumptions about short-cuts e.g. parking maintenance vehicles within 50 m. Consider developing or updating information on blind spots and sight lines covering all of the equipment in use at site.</p>	<p>Confirmation that work area references are available.</p> <p>Records of topics covered at inductions, training, pre-shift meetings, near miss reviews etc.</p> <p>Interaction monitoring with by-exception reporting from vehicle cameras and collision avoidance technology.</p>	<p>CFM-CRA.03.20 Personnel do not manage heavy vehicle blind spots</p> <p>CFM-MPA.63.01 Operator does not meet site requirements when parking</p> <p>CFM-MPA.63.04 Parked vehicles block view for pedestrians and other equipment operators</p> <p>CFM-MPA.65.04 Light or heavy vehicle remains in a heavy vehicle blind spot during intersection approach</p>

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				<p>Provide the information in a visual format that is audience appropriate and can be used as a reference in the work area with a copy in the vehicle. Explore digital options for sharing information. Once developed, review training, rules reinforcing, and awareness processes including how understanding is confirmed. Increase in-field monitoring that standards are being maintained. Also, when Collision Avoidance System Technology is being considered by site, explore if digital monitoring of equipment parking distances can be included in the process.</p> <p>OFI-020 Review driving at night training for LV operators Workshop participants discussed driving at night training components for light vehicle operation in production areas. They identified an inconsistent and incomplete understanding by LV drivers about changes to heavy vehicle sight lines and visibility during darkness. Review and update site training and practical assessment for light vehicle operators so that it includes night driving on site.</p>		
<p>OFI-8: Review site standards and processes for mobile equipment selection and introduction to site.</p>	<p>BI-CPA.04.03 Vehicle lights and markings requirements - information prepared for operators</p>	<p>Site standards for vehicle lights and markings to improve vision from and visibility of mobile equipment are documented and communicated in a style that is appropriate for the audience.</p>	<p>Training modules include specific information on site standards for vehicle lights and markings. The information is provided in a format that is audience appropriate and available as a reference in the work area. Supervisors, vehicle operators, and maintainers routinely check that lights and markings meet site standards, are operating, and are visible.</p> <p>Multiple Training Documents - Text only description of lights on the vehicle. CSP-048-CCV-03-02 Mobile Equipment - Vehicle Safety & Operations - CCV does not specifically require checking of lights and vehicle markings - although some</p>	<p>Training and assessment for supervisors, mobile equipment operators, and maintainers covers minimum site standards for vehicle lights and markings. Training and assessment includes identifying vehicle types by lighting and markings, prestart check processes, defect reporting, and repair prioritisation.</p> <p>OFI-008 Review site standards and processes for mobile equipment selection and introduction to site Workshop participants discussed the application of site standards for onboarding mobile equipment. They identified some inconsistencies in</p>	<p>Vehicle operator, maintainers and co-workers are assessed on their understanding of minimum site standards for vehicle lights and markings. Confirmation that work area references are available. Mobile equipment prestart checks confirm that vehicle lights and markings meet minimum standards before the equipment is operated. Maintenance and service records confirm that:</p> <ul style="list-style-type: none"> • light failures detected during operations are identified and repaired • lights and markings are 	<p>CFM-CPA.11.01 Equipment operator or pedestrian mistake in estimating clearance distance CFM-EPV.27.20 Mobile Equipment does not meet standards for safe access, lighting, signage and identification markings</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>have comments around this point.</p> <p>Workshop Discussion Prompt - Should CCVs, training modules, and other site documented requirements include specific checks needed for lights and vehicle markings?</p>	<p>applying standards for lights and vehicle markings and confirmed how this can result in additional operating hazards e.g. vehicle misidentification during positive communication. Review site processes and standards applied for mobile equipment selection and site use approval across contractor and company workgroups. Confirm that site standards are adequate and the processes for their application are effective. Review how performance is monitored. Include lights and vehicle markings in the review. Update site personnel on the review outcomes and expected standards.</p>	<p>inspected during planned maintenance.</p>	
	BI-CPA.04.04 Required emergency checks before operation - information for operator by vehicle type.	Required emergency checks before operation are documented and communicated to vehicle operators.	<p>Vehicle operator emergency check training by vehicle type covers:</p> <ul style="list-style-type: none"> • Cabin integrity • Cabin housekeeping (restraining/removing loose objects) • Use of seatbelts, restraints and interlocks • Rescue and escape devices e.g. installation of oxygen generating self-rescuers in dozers that operate on stockpiles where there is a risk of falling into a void • Emergency escape • Auto shutdown • Reversing alarms • Other relevant information about protective systems <p>The information is provided in a format that is audience appropriate and available as a reference in the work area.</p> <p>Multiple Training Modules - References made to specific emergency preparedness checks on vehicles. Most learning guides include photographs of the gauges, locations, and functions to check (and how to use them).</p>	<p>Training and assessment of vehicle operators confirms that they understand the required emergency related prestart check requirements for the vehicle that they are operating. Prestart inspection forms capture that emergency checks are completed.</p>	<p>Training system records confirm that vehicle operators are trained and competent in carrying out required prestart checks. Supervisors and maintainers review the quality of prestart records. Maintenance reports confirm that faults detected at prestart checks are being corrected.</p>	<p>CFM-CRA.11.22 Operator non-compliance (including to alarms)</p> <p>CFM-EPA.32.06 Loose objects in cabin or around vehicle remain unsecured</p> <p>CFM-ERA.31.09 Installed equipment system status alarms do not operate</p> <p>CFM-ERA.32.20 Operator fails to conduct effective pre-start that meets requirements</p> <p>CFM-ERV.33.20 Compromised vehicle cabin no longer meets OEM or site specific specifications</p>
OFI-33: Review and update vehicle alert	BI-CPA.04.05 Alarm and vehicle	Expected responses to vehicle alarms and	Vehicle operator training modules include required responses to vehicle alarms and	Before operating unsupervised, vehicle operators are assessed as being	Confirmation that references are available in vehicles. Vehicle operator	CFM-CRA.03.21 Incorrect action on

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
<p>and alarm information for operators.</p>	<p>information panel expected response - information prepared for Operators</p>	<p>information displays are documented by vehicle type and communicated to vehicle operators.</p>	<p>information panel indicators for each vehicle type in use. Training is based on good operating practice and includes real world scenarios covering:</p> <ul style="list-style-type: none"> • Understanding, acknowledging, and responding to OEM alarms and notifications • Understanding, acknowledging, and responding to installed technology alarms and notifications e.g. collision avoidance, fatigue monitoring, autonomous haulage etc. • Managing abnormal tyre situations • Reacting to overload alarms and conditions • Slowing and parking in an appropriate location • Notifying emergency services • Equipment shutdown • Activation of fire suppression system • Use of fire extinguishers, and • Exiting the machine including using an alternate means of egress <p>The information is provided in a format that is audience appropriate and available as a reference in the vehicle. Multiple Training Modules - Modules provide information on indications of equipment faults, emergency conditions, and required responses.</p>	<p>competent in responding to alarms and information panel indicators, for each type of vehicle that they operate. This includes details of the site process for seeking further maintenance advice. Reference information is available and regularly reinforced. RIIMPO208-ASQ Operate Support Equipment - General - Assessment V2.0 31/03/2023 - Practical Assessment, Point 1 -Locate and interpret all procedures for fires, accidents, and emergencies Workshop Discussion Prompt - Should formal and supervisor assessment of operator skills cover off on understanding of alarms, warning devices (gauges and lights), and specific responses?</p> <p>OFI-033 Review and update vehicle alert and alarm information for operators Workshop participants confirmed that vehicle information covering responses to alerts and alarms is not available in some haul trucks and not usually provided for light vehicles. This leads to an inconsistent operator responses to equipment and installed technology messages, alerts, and alarms. This inconsistency can result in emergencies e.g. equipment fires, unwanted vehicle interactions, and equipment damage. Review the quality of training and reference information prepared for mobile equipment operators about expected responses to vehicle information panels and installed technology messages, alerts, and alarms. Confirm that each vehicle model and type is covered and that reference information is available. Consider the practicality of providing OEM and third-part technology</p>	<p>training and assessment records. Vehicle operation monitoring with by-exception reporting alarm and indicator panel reporting. By exception incident reviews.</p>	<p>vehicle system alarm - not understood CFM-CRA.04.30 Operators change behaviour after fatigue alerting system is fitted CFM-CRA.10.30 Proximity alarms do not assist operator CFM-CRA.11.21 No action taken on over speed alarm CFM-CTA.11.34 Incorrect action taken on proximity alarm CFM-ERA.29.01 Multiple vehicles system alarms overwhelm and confuse the operator CFM-ERA.39.20 Overload warning system fails is incorrect or absent CFM-ETA.40.01 Routine false positive alarms CFM-MDV.71.01 Proximity alarms do not perform to specification (false negatives and false positives) CFM-SRA.92 Unit key system status and alarms are not monitored</p>

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<p>OFI-12: Review Tyre Hazard Training and Awareness by Role OFI-13: Update tyre handling training</p>	BI-CPA.04.06 Tyre hazard awareness for all personnel.	Tyre hazards and their controls are documented and communicated to all personnel, based on their role.	<p>Awareness and training information provides information on tyre hazards and their controls covering:</p> <p>Mobile Equipment Operations</p> <ul style="list-style-type: none"> Reinforcing equipment operations that extend tyre life Tyre maintenance area access Tyre and wheel assembly pre use inspections and defect reporting Emergencies, including: Managing electrical storms; High voltage - emergency response; Equipment fires; Quarantine park up areas; Tyre pad access; Tyre pre use inspections and defect reporting <p>Awareness and training material is illustrated with information about actual incidents and is based on organisational role.</p> <p>AURHTJ103LM Remove, Inspect and Refit Heavy Vehicle Wheel and Tyre Assessmblies, Learning Material V1.0 13/11/2023 - General Responsibilities of an Operator at Pg 9 covers key points to check around tyre condition.</p>	<p>manuals in vehicles or providing links for operator use.</p> <p>Tyre hazard and control material is prepared for a range of organisational roles.</p> <p>There is training and assessment for mobile equipment operators on tyre management including emergency response.</p> <p>General tyre hazardous awareness information is part of site and operating area inductions.</p> <p>Awareness material on tyre hazards and their controls is documented and used for pre-shift and safety meetings etc.</p> <p>Workshop Discussion Prompt - Is sufficient information provided for vehicle operators and others around medium and heavy vehicle tyre hazards?</p> <p>OFI-012 Review Tyre Hazard Training and Awareness by Role</p> <p>Workshop participants discussed and confirmed that while general site and company tyre awareness training is undertaken, the information provided is sorted by site role.</p> <p>This means that some of the training and awareness information provided is not relevant for particular roles. It also means that important information by role is being diluted. This includes during general operations and in emergency situations.</p> <p>Review tyre hazard awareness training and provide information that is role relevant. For example</p> <ul style="list-style-type: none"> All personnel - provide hazard information as part of site and operating area inductions covering tyre bay access restrictions and general emergency response Mobile Equipment Operators - prestart inspections, 	Vehicle operator training and assessment confirms that tyre hazard management and controls are well understood and applied for general operations and in emergencies. Induction and awareness records confirm that all personnel are aware of tyre hazards and their controls appropriate to their role.	<p>BID-146: BI-CPA.04.06 Tyre hazard awareness for all personnel.</p> <p>CFM-CTA.10.90 Personnel do not alert others to presence of hazards</p> <p>CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions</p> <p>CFM-EPV.39.42 Vehicles are operated outside specified tyre conditions</p> <p>CFM-ERA.32.20 Operator fails to conduct effective pre-start that meets requirements</p> <p>CFM-LDA.43.01 Vehicle parking, including emergency parking is inadequately considered in mine design and routine work planning</p>

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				<p>equipment operation, specific emergency response for fires, lightning strikes, tyre faults, vehicle access to tyre maintenance areas etc.</p> <p>OFI-013 Review and Update Tyre Handling Performance Requirements</p> <p>Workshop participants discussed site tyre and rim service and maintenance processes. They raised issues about how jacking points for removing wheel assemblies are defined in procedures noting an inconsistency between what is documented and actual practice in the tyre bay.</p> <p>Tyre and rim management is specialist mine site function that manages significant hazards. Generally tyre fitters are supervised by maintenance personnel without specialist knowledge. If the documented requirements do not align with actual practice then performance monitoring is ineffective.</p> <p>Review site tyre and rim management documentation and practices. Benchmark against Industry Good practice e.g. RM Tyre and Rim Management CFw and EMESRT animations. Align work as documented with work as done and establish performance measures.</p>		
<p>OFI-67: Review and align installed technologies for consistent travel speed alerting and performance monitoring.</p>	<p>BI-CPA.04.10 Site specific travelling speed information prepared for vehicle operators</p>	<p>Site travelling speeds by vehicle type are documented and communicated in a style that is appropriate for the audience.</p>	<p>Training modules for vehicle operators include specific information on travelling speeds by vehicle type for all relevant scenarios.</p> <p>Training should be assessed to ensure that personnel understand vehicle speed expectations:</p> <ul style="list-style-type: none"> • At crests • On curves and at intersections • In restricted or congested areas (where vision aids or spotters should be considered) • When towing 	<p>Training and assessment of vehicle operator understanding of safe travel speeds by vehicle type for a range of scenarios and conditions.</p> <p>Mobile equipment operators are aware of travel (and operating) speeds and this information is regularly reinforced.</p>	<p>Vehicle operator training and assessment records.</p> <p>Confirmation that work area references are available.</p> <p>Vehicle operation monitoring with by-exception speed reporting.</p> <p>By exception incident reviews.</p> <p>Critical Control Verification FH03 Mobile Equipment (BLS-004 FH03-CCV-02-FH03) - 4 monthly check on the conduct of Pre-Starts, interviews with Drivers/Operators, inspection of working area, HME equipment check status (in-date ItS sticker),</p>	<p>BID-145: BI-CPA.04.10 Site specific travelling speed information prepared for vehicle operators</p> <p>CFM-CDA.06.02 Operator drives vehicle at the incorrect speed (too fast or too slow).</p> <p>CFM-LDV.42.02 Speed limits and over-speed</p>

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			<ul style="list-style-type: none"> When loaded (and adjusting for different types of load) When conditions change (slippery, rough, spillage, loss of sight lines, etc.) <p>The training information is provided in a format that is audience appropriate and available as a reference in the work area</p> <p>Multiple Training Modules - Address key aspects of speed (e.g. ramp speeds for haul trucks, etc.)</p> <p>Induction materials - Operating speeds in various locations addressed in induction materials.</p> <p>SOP-017 Using Mobile Plant - Mine Traffic Rules - S5.11 Speed Limits LMHV and HME describes the speed limits, and S5.3 Drive to Conditions, references the use of TARP levels to respond to adverse conditions.</p>		<p>understanding of speed requirements. August Speed Checks and PPT Summary of Vehicle Safety and Operations CCV - Speed checks are taken on a regular basis and reviewed as part of CCV activities for LV operations.</p> <p>OFI-067 Review and align installed technologies for consistent travel speed alerting and performance monitoring</p> <p>At Curragh North Mine there is a misalignment of outputs from installed fleet management technologies. Thiess use the IVOLVE system while MaxMine is used by other contractors.</p> <p>The different mining fleets share haul roads and workshop participants report issues with different travelling speeds in the same location that has resulted in frustration and unplanned vehicle interactions.</p> <p>Review how the MaxMine system can be upgraded so that there is in-cab notification travelling speed based on geofenced location. This will align site operations and avoid conflicts with the Thiess fleet that applies the travel speed information available. Also review opportunities to leverage the installed technology for performance monitoring and reporting e.g. by exception speed limit exceedance reporting.</p>	<p>management are inadequately considered in mine design and routine work planning</p> <p>CFM-SRV.96.20 No aggregated monitoring and response to over speed alarms</p>
<p>OFI-4: Review and improve general operator training including spatial awareness.</p> <p>OFI-9: Improve hopper demarcation, visual aids, and lighting, then update training modules.</p>	<p>BI-CPA.04.11 Site clearance requirements and processes for accurately estimating distances - information prepared for Operators</p>	<p>Site clearance requirements are documented and communicated in a style that is appropriate for the audience.</p>	<p>Training modules for vehicle operators and personnel who routinely work around mobile equipment includes specific information on required separation distances and clearances:</p> <ul style="list-style-type: none"> For each phase of the operational work cycle During maintenance and service activities. <p>Specific information examples usually include using road delineators to calibrate</p>	<p>Training and assessment confirms that vehicle operators understand site clearance and separation distance requirements for all operational scenarios and conditions.</p> <p>Training and assessment confirms that personnel who work around mobile equipment understand all relevant site clearance and separation distance requirements.</p> <p>RIIMPO337-LM Learning Materials -</p>	<p>Vehicle operator training and assessment records.</p> <p>Confirmation that work area references are available.</p> <p>Vehicle operation monitoring and reporting using proximity detection technology.</p> <p>By exception incident reviews.</p> <p>Note - proximity detection not available at CNOC.</p>	<p>CFM-CPA.11.01 Equipment operator or pedestrian mistake in estimating clearance distance</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>following distances, and site practices for positioning near dig units, dumping, interactions with dozers, dumping into hoppers, road works, parking, when to use spotters (operating in restricted spaces), etc.</p> <p>The information is provided in a format that is audience appropriate and available as a reference in the work area.</p> <p>PLN-005 PHMP - Mobile Equipment Incidents S4.5 Safe Operations of Vehicles and when in Vicinity of Vehicles - requirement for spotters when reversing in congested areas.</p> <p>OFI-004 Review and improve general operator training including spatial awareness</p> <p>Currently workshop participants report that operator training does not provide consistent instruction and competency verification for operating in wet weather, spatial awareness at night, etc. Many site vehicle interaction incidents confirm a lack of operator understanding about where the vehicles are placed relative to obstructions, other vehicles, and pedestrians. Improving operator situational awareness and competence in estimating distances can decrease the frequency of vehicle interaction incidents. Review and identify improvements to training modules and training practises for mobile equipment operators. Use site incident experience to focus the review and consider the benefits of improving operator spatial and situational awareness, night driving, and wet weather operations etc.</p>	<p>conduct Articulated Haul Truck Operations Positioning (pg36) 50m Rule – A separation distance of 50 metres shall be maintained between all vehicles when travelling on roads used by surface mining equipment (SME). When following SME, position the vehicle in the field of view of the SME operator’s mirrors.</p> <p>OFI-009 Improve hopper demarcation, visual aids, and lighting, then update training modules</p> <p>Workshop participants discussed the loading of material into hoppers and identified opportunities to install in-field visual aids around the hoppers and improve training.</p> <p>The current lack of visual aids, lighting and warning signs at hopper combined with inconsistent levels of training create vehicle interaction hazards and cause production losses e.g. hoppers become choked stopping feed caused by over filling due to dump truck and loader operators not seeing the red light.</p> <p>Review hopper management and consider enhancements that enhance vehicle interaction controls and production. Update operator training.</p>		
OFI-92: Review mine design requirements and confirm requirements for segregated roadways.	BI-CPA.04.12 Give way requirements information prepared for mobile equipment operators and pedestrians	Site give way, and right of way requirements are documented and communicated in a style that is appropriate for the audience.	<p>Training modules include specific information on site give way and right of way requirements.</p> <p>The information is provided in a format that is audience appropriate and available as a reference in the work area.</p> <p>Workshop Discussion Prompt - Learning modules reviewed do not have specific guidance around requirements for giving</p>	<p>Training and assessment records confirm that vehicle operators and personnel who work around mobile equipment understand site give way requirements for vehicle interactions relevant to their role.</p> <p>At a minimum this includes understanding site give way requirements for:</p>	<p>Vehicle operator training and assessment records.</p> <p>Confirmation that work area references are available.</p> <p>Vehicle operation monitoring and reporting using proximity detection technology and geofencing records.</p> <p>By exception incident reviews.</p>	BID-147: BI-CPA.04.12 Give way requirements information prepared for mobile equipment operators and pedestrians CFM-CPA.10.02

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p><i>way - as everything relies on following QLD Road Rules on site. Should site include training and assessment requirements around expected behaviours at intersections and where traffic flows cross?</i></p> <p>OFI-092 Review mine design requirements and confirm requirements for segregated roadways Workshop participants discussed site road design standards for segregating Heavy Vehicles (HV) from Light Vehicles (LV). They were unaware of design requirements for LV segregation, where practical, in site standards. Segregating LVs from HVs is a consistently reliable vehicle interaction control. Its deployment depends on mine layout, forward planning, and commitment of resources. Review the cost benefits from constructing and operating segregated roadways on site. Identify where they can add value, consider contractor position. Develop a design approach with decision criteria for construction. Present a case for management approval.</p>	<ul style="list-style-type: none"> • Right of way • Hierarchy of vehicles • Intersection approach speeds • Intersection spacing requirements 		Operators unaware of give way requirements for light vehicles CFM-CPA.10.04 Operators unaware of right of way requirements or operating constraints CFM-MPA.65.04 Light or heavy vehicle remains in a heavy vehicle blind spot during intersection approach
<p>OFI-53: Extend parking performance expectations to all vehicle categories. OFI-56: Review Site Parking Standards and their application OFI-58: Improve parking elements of training modules.</p>	BI-CPA.04.13 Minimum requirements for parking in any situation - information prepared for operators	Site requirements for parking in any situation are documented and communicated in a style that is appropriate for the audience.	Training modules for vehicle operators include site specific parking requirements for all scenarios covering: <ul style="list-style-type: none"> • Confirming that a parked vehicle is always fundamentally stable e.g. through the use of wheel chocks, ditches, trenches or wheels turned towards the wall • Entering and leaving defined parking locations • Parking to minimise interactions with other vehicles • Servicing, maintenance, and breakdown situations in operating areas • Parking in mobile equipment emergencies e.g. fires or potential fire situations 	Training and assessment confirms that vehicle operators understand: <ul style="list-style-type: none"> • How to park mobile equipment so that it is fundamentally stable • Minimum site requirements for parking for in all scenarios and conditions. <p>RIIMPO-338-ASQ Conduct Rigid Haul Truck Operations Assessment - Q52 confirming understanding of which brakes to be applied when parking. Practical Module 5 (Q13) confirm safe and level area or designated parking area and park appropriately. RIIMPO304-LM Conduct Wheel Loader Operations V2.0 12/4/2023 - Park up Procedure covers key point to achieve a fundamentally stable park</p>	Vehicle operator training and assessment records. Confirmation that work area references are available. Workplace inspections of parking practices. Vehicle operation monitoring and reporting using proximity detection technology. By exception incident reviews. SOP-049-FRM-04 Mining Area Shift Safety Inspection Checklist - Supervisor - 1.b (Go Line) Is the v-drain/hump for parking fundamentally stable maintained and adequate? 1.f (Go Line) - Equipment parked at least 5 metres apart 3. Waste Dump 3.c Bunds in place for LV parking and 5. Loading area 5.b checks for bunds in	BID-148: BI-CPA.04.13 Minimum requirements for parking in any situation - information prepared for operators CFM-MPA.63.01 Operator does not meet site requirements when parking CFM-MPA.63.04 Parked vehicles block view for pedestrians and other equipment operators

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>The information is provided in a format that is audience appropriate and available as a reference in the work area.</p> <p>Workshop Discussion Prompt - Training modules and the PHMP all refer to a fundamentally stable state position for parking - but there are no specific requirements for this to be achieved (some mention of drains and humps - but not much more than this). Is there a requirement for more specific information and examples to be included in training resources for site?</p>	<p>(including test for unit rolling). Parking guidance also includes requirements for parking in the event of a breakdown.</p> <p>OFI-056 Review Site Parking Standards and their application</p> <p>Workshop participants confirmed inconsistencies in the application of site parking standards. For example spoon drains or parking humps are not consistently available for parking areas in work locations. They also noted that the standards for parking areas are not regularly audited for compliance and were unaware of a process to for confirm that newly built parking areas meet standards before being handed to operations. There was also discussion on restricted parking availability in some locations</p> <p>Substandard parking area construction and limited availability can result in roll-aways and parking in the wrong location e.g. in heavy vehicle blind spots, in positions that compromise pedestrians etc.</p> <p>Review site parking area design standards, update if required. Confirm that there is a process for handover that has a construction commissioning check that confirms 'as built' meets design requirements. Consider parking requirements and demands by working group, location, and vehicle type.</p> <p>Review performance monitoring processes to confirm that vehicle operators are meeting site standards.</p> <p>OFI-058: Improve parking elements of training modules</p> <p>The workshop participants confirmed that Curragh North training and awareness materials and assessment tools do not reinforce parking vehicles in a fundamentally stable state. A lack of understanding of fundamentally stable parking requirements can lead to vehicle</p>	<p>place for LV parking.</p>	<p>CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>runaways from parked positions. Update all learning materials that applies to wheeled equipment on site. Confirm that fundamentally stable parking is described and illustrated consistently.</p> <p>OFI-053: Extend parking performance expectations to all vehicle categories.</p> <p>Workshop participants discussed site standards, expectations, training, and reinforcement covering parking of mobile equipment. There are some good documented examples of expected standards e.g. for wheeled loaders.</p> <p>The approach for communication parking expectations does not extend to all vehicle types, locations, and situations e.g. haul truck fire</p> <p>Review existing good practice examples and extend to all vehicle categories and circumstances e.g. go line, parking areas, in pit, for emergency etc.</p>		
	<p>BI-CPA.04.14 Managing road works, including grader operations - information prepared for operators</p>	<p>Information on managing road works is documented and communicated in a style that is appropriate for the audience.</p>	<p>Training modules for vehicle operators include specific information on road maintenance hazards and controls covering:</p> <ul style="list-style-type: none"> • Roles and responsibilities for briefing, communications, and instructions • Non-standard road conditions e.g. temporary narrowing • How to pass or overtake an operating grader • Communication requirements between road works crews and vehicle operators • Hazard notification, awareness, and management e.g. the use of signs • Scenarios based on incidents that illustrate what can go wrong <p>The information is provided in a format that is audience appropriate and available</p>	<p>Vehicle operator training and assessment confirms managing road works across the full range of scenarios and conditions, including grader operations, is well understood and applied.</p> <p>Road work briefings and with update communications take place before and across shifts.</p>	<p>Vehicle operator training and assessment records.</p> <p>Confirmation that work area references are available.</p> <p>Workplace observations during road maintenance.</p> <p>Vehicle operation monitoring and reporting using proximity detection technology.</p> <p>By exception incident reviews.</p> <p>Multiple CCV and Inspection Records - Positive communication observations need to be confirmed.</p>	<p>CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced visibility, road narrowing, road surface etc.</p> <p>CFM-LPV.54 Excessive water (Dust Control) is applied to road surface</p>

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			<p>as a reference in the work area.</p> <p>PLN-005 PHMP Mobile Equipment Incidents S4.3 <i>Overtaking is not permitted (except for limited circumstances with positive communications).</i></p> <p>Conduct Rigid Haul Truck Operations - Section-Hauling <i>Working dozers and graders on haul roads and benches should be approached with caution – they may be overtaken if positive radio contact is made with the dozer or grader operator and verbal clearance is given</i></p> <p>Workshop Discussion Prompt - Plans and Learning Guides <i>require Positive Communications but there is no guidance in these documents (although there is a good example in SOP-017 Using Mobile Plant - Mine Traffic Rules). Should specific examples of what is (and is not) positive communications be provided?</i></p>			
	<p>BI-CPA.04.15 Minimum requirements for hazard notification and demarcation - information prepared for operators</p>	<p>Information about site standards for hazard notification and demarcation, are documented and communicated in a style that is appropriate for the audience.</p>	<p>Information about the full range of hazard notification and demarcation approaches used at site is documented and provided to operators in training modules, awareness updates, and in reference resources. The information provided uses real scenarios and details expected responses. Examples of hazard notification and demarcation can include:</p> <ul style="list-style-type: none"> Alerts, such as: Information Signs; Flashing lights; Block lights; Intersection signage; Use of high visibility markers and cones (surface) Physical warnings, such as: Chains; Guard rails; Delineation on roadway edges e.g. reflector posts; Draw point delineation Constructed devices, such as: Edge protection; Toe of slope delineation; Tip and dump edge windrows; stop blocks at tip points or stope edges <p>Scenarios may include:</p> <ul style="list-style-type: none"> Road hazards e.g. broken down equipment 	<p>Training and assessment for vehicle operators confirms that they understand general road network safety features, including:</p> <ul style="list-style-type: none"> Site standards for different types of hazard notification and demarcation Where they are used, and How to report issues and defects <p>Multiple Learning Material documents - Include requirements for CMW Vehicle Operators to be alert to and respond to hazards - with reporting as required to manage the hazard(s).</p>	<ul style="list-style-type: none"> Vehicle operator training and assessment records. Confirmation that work area references are available. Workplace hazard reporting by vehicle operators. By exception incident reviews. <p>RIIMPO305F-A Conduct Coal Stockpile Dozer Operations Assessment (typical of CNOC training assessments for vehicles on site) Theory and Practical Demonstration of identifying hazards then communicating and reporting as required.</p>	<p>BID-100: BI-CPA.04.15 Minimum requirements for hazard notification and demarcation - information prepared for operators</p> <p>BID-149: BI-CPA.04.15 Minimum requirements for hazard notification and demarcation - information prepared for operators</p> <p>CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<ul style="list-style-type: none"> Changes in operating conditions Emergencies <p>The information is provided in a format that is audience appropriate and available as a reference in the work area.</p> <p>CGRA BLS-007 Communication and Reporting V1.0 S4 Identified hazard reporting as a positive measure, S5 Internal communications requires hazards to be reported at start-of-shift meetings, S5.1 Consultation with Workers requires CMW to report hazards to supervisors and identify and assess hazards as part of their work.</p>			
	BI-CPA.04.16 Minimum requirements for windrows (bunds) - information prepared for operators	Information about site standards for segregation windrows (bunds) is documented and communicated in a style that is appropriate for the audience.	<p>Training modules and awareness updates for vehicle operators covers road network safety features including the different size and types of windrows (bunds) in use for:</p> <ul style="list-style-type: none"> Edge protection minimum height and width based on equipment in use at site Functional edge protection at tip points (truck, loader, etc.) Road way segregation on corners Road way segregation at intersections including approach heights for light vehicle visibility Temporary bunding e.g. for in field maintenance <p>The information is provided in a format that is audience appropriate and available as a reference in the work area.</p>	<p>Training and assessment for vehicle operators confirms that they understand general road network safety features, including</p> <ul style="list-style-type: none"> Site standards for different types of windrows (bunds) Where they are used, and How to report bund issues and defects 	<p>Vehicle operator training and assessment records. Confirmation that work area references are available. Workplace hazard reporting by vehicle operators. By exception incident reviews.</p> <p>Intersection Audits (Multiple) - Golding prepared reviews from Surveys which indicate locations where there are non-conformances to site requirements for windrows and pavement widths.</p>	<p>BID-150: BI-CPA.04.16 Minimum requirements for windrows (bunds) - information prepared for operators</p> <p>CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning</p>
<p>OFI-20: Review driving at night training for LV operators.</p> <p>OFI-23: Review style and effectiveness of training modules.</p>	BI-CPA.04.20 Sight lines and blind spots - information prepared for people who work around vehicles.	Sight line and blind spot information, by vehicle type, is documented and communicated to personnel who work around mobile equipment.	<p>Training modules include specific information on operator vision limits and sight lines for the vehicles in use. The information is provided in a format that is audience appropriate and available as a reference in the work area.</p> <p>SMS-021 Mine Training Scheme CNOOC, V8.3 9/3/22 - Appendix 3 Light Vehicle Training ... The candidate must spend at least one hour in a haul truck (to be captured in their training log) and demonstrate an understanding of HME visibility and blind spots.</p> <p>OFI-023 Review style and effectiveness</p>	<p>Training and assessment for people who work around mobile equipment covers limits on vision, from the equipment operator position. Personnel who interact with mobile equipment are aware of vehicle sight lines and blind spots by type and this information is regularly reinforced.</p> <p>Multiple Training Modules Including Rigid Haul Truck Practical Assessment ...Is aware of blind spots/obstructions from the cabin...</p> <p>OFI-020 Review driving at night training for LV operators.</p>	<p>Confirmation that work area references are available. Records of topics covered at inductions, training, pre-shift meetings, near miss reviews etc. Interaction monitoring with by-exception reporting from vehicle cameras and collision avoidance technology.</p> <p>Workshop Discussion Prompt - Blind spot understanding is not called up as an item to check for in CCV and Supervisor Audits. Should it be?</p>	<p>CFM-CRA.03.20 Personnel do not manage heavy vehicle blind spots</p> <p>CFM-LDV.44.08 Blind spots on heavy vehicles are not considered in workplace layout</p> <p>CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots</p>

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			<p>of training modules</p> <p>Workshop participants discussed the style and effectiveness of training modules and support information. It was agreed that the most effective resources are short and graphically visual with diagrams and pictures. An example discussed was the style and content of current training and references for walkways around mobile equipment, and go lines can be improved with graphics.</p> <p>While people learn in different ways, using a consistent visual format that is audience appropriate should be cornerstone of training modules and reference information.</p> <p>Review style and format of training modules and reference information. Identify topics and information that can be improved with improved graphics. Consider digitisation and animation opportunities.</p>	<p>Workshop participants discussed driving at night training components for light vehicle operation in production areas.</p> <p>They identified an inconsistent and incomplete understanding by LV drivers about changes to heavy vehicle sight lines and visibility during darkness.</p> <p>Review and update site training and practical assessment for light vehicle operators so that it includes night driving on site.</p>		
<p>OFI-16: Review the value-add of a QA step after mobile equipment maintenance.</p> <p>OFI-6: Review site processes for authorising site maintainers and technicians.</p> <p>OFI-7: Confirm that the specification and application of vehicle interaction controls for maintainers across workgroups.</p>	BI-CPA.05.01 Skilled and experienced personnel are accountable for maintaining mobile equipment	All workers who maintain mobile equipment are trained, competent and authorised for the tasks that they carry out.	<p>Mobile equipment maintainers are trained and competent for the tasks that they undertake, including:</p> <ul style="list-style-type: none"> Preparation for works: Understanding and accessing work orders and checklists; preparing and receiving permits for activities such as hot work live work, or confined space entry; Isolation of energies Monitoring, inspecting, checking and measuring for: Temperature of components; V-belts; pre- and post-maintenance; testing (normally) pressurised components; safety related devices (isolation points, brakes, steering, load carrying members, etc.) Replacing, repairing, or adjusting: Hoses; restraints and brackets; specific equipment in safety or operational systems; fire suppression systems; fuel 	<ul style="list-style-type: none"> Mobile equipment maintainer competency training is delivered to schedule. Maintainers complete work orders based on their skills and training and site supervision requirements. Identified defects are repaired or referred to maintenance planners, and if serious lead to the machine not being put back into service until repairs are completed. <p>OFI-006 Review site processes for authorising site maintainers and technicians.</p> <p>Workshop participants discussed differences in training, site authorisation, and confirmation of competencies for site technicians and maintainers. It was recognised that each contractor group applies their own company and site processes and performance metrics i.e. there are</p>	<ul style="list-style-type: none"> Training, competency, and skills status reports. Equipment reliability metrics, defect analysis and by exception incident reports. <p>OFI-016 Review the value-add of a QA step after mobile equipment maintenance.</p> <p>Workshop participants discussed the benefits of having a quality assurance (QA) sign-off step following maintenance, as part of equipment handover to operations. They confirmed range of site practices even across the same contractor. The primary approach reported is that the hand over pivots on the judgement and sign-off of the fitter who undertook the maintenance. It was also noted that not all OEM references and manuals are referenced in procedures and work instructions. Consider the value-add of a consistent and measurable maintenance QA step before</p>	<p>BID-101: BI-CPA.05.01 Skilled and experienced personnel are accountable for maintaining mobile equipment</p> <p>BID-109: BI-CPA.05.01 Skilled and experienced personnel are accountable for maintaining mobile equipment</p> <p>CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions</p> <p>CFM-EPV.27.20 Mobile Equipment does not meet standards for safe</p>

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			<p>systems; brake and steering components; fitting of energy restraint components such as lagging, heat shields, sound insulation, guards, etc.</p> <ul style="list-style-type: none"> Identifying and reacting to any defects identified. <p>Interview Comments by Engineering Departments - Qualified trades workers are selected and deployed on site - and are given area and equipment familiarisation training.</p> <p>Multiple Learning Materials for Equipment Training - OEM provided Maintenance and Operation manuals included in training resources.</p>	<p>variations in process.</p> <p>Review how Coronado, as the SSE for CNOC Mine, authorises maintainers to work at site, focus on confirming that required SSE outcomes for a competent maintainer are delivered as well as meeting associated company processes.</p> <p>OFI-007: Confirm that the specification and application of vehicle interaction controls for maintainers across workgroups.</p> <p>Workshop participants questioned if there were application variations in maintenance related vehicle interaction control practices between different workgroups including authorisation and processes for moving equipment in and out of workshops, use of spotters, workshop parking, field maintenance practices etc.</p> <p>The accountability for vehicle interaction controls during site maintenance practices rests with the site SSE. The SSE meets their accountabilities through site SOPs, authorisation processes, and periodic reviews.</p> <p>Consider a review of vehicle interaction controls that apply specifically to maintainers and technicians that confirms:</p> <ul style="list-style-type: none"> The site level and SSE authorised requirements are practical and can be applied i.e. is there adequate detail to develop consistent performance measures that can apply across workgroups. The alignment between site level SSE authorised requirements and contractor workgroup procedures, work instructions, practices, outcomes, and performance 	<p>equipment is handed back to operations. Confirm that OEM references and manuals are available for maintainers on site.</p>	<p>access, lighting, signage and identification markings</p> <p>CFM-ERA.40.22</p> <p>Over speed warning alarm fails to operate</p> <p>CFM-ERV.33.20</p> <p>Compromised vehicle cabin no longer meets OEM or site specific specifications</p> <p>CFM-SRA.87.10</p> <p>Equipment faults arising from poor standard of maintenance</p>

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				<p>measures.</p> <ul style="list-style-type: none"> Workgroup performance metrics that deliver a consistent and disciplined application of site vehicle interaction controls relevant to maintainers and technicians. 		
OFI-54: Review PPE holdings and compliance	BI-CPA.08.02 Equipment and PPE standards for entering operational areas - information prepared for all personnel	Site standards for PPE, high visibility clothing, lights, communication equipment, alerting devices, and other items required in operational areas are documented and communicated in a style that is appropriate for the audience.	<p>Requirements for personnel visiting or working in operating areas are documented in a style that is appropriate for the audience. They provide details and illustrations covering minimum standards for PPE, high visibility clothing, lights, communication equipment, alerting devices, and other items required in operational areas.</p> <p>Multiple Training Modules - Requirements for wearing and maintaining PPE included in training resources.</p> <p>SOP-006 Personal Protective Equipment - Details requirements for protective and high-visibility clothing in working areas on site.</p>	<p>Information on the minimum PPE and equipment standards before entering operational areas is provided at inductions and during training. Information detailing standards is communicated to all employees, contractors, and visitors.</p> <p>Multiple Training Modules - Include requirements for appropriate PPE to be worn while operating equipment and when present in the working areas of the site (also covered in the Induction packages).</p> <p>OFI-054 Review PPE holdings and compliance</p> <p>Workshops participants discussed situations when required PPE for coal mine workers is not available and there is a delay before reissue. Working in operating areas without meeting minimum site PPE standards, particularly for hi-vis clothing, can result in vehicle operators failing to see pedestrians.</p> <p>Review how PPE is issued to workgroups at site. Confirm that sufficient stocks are available to meet expected demands. Also consider how required PPE standards are communicated and maintained.</p>	By exception reporting, and investigation of circumstances where minimum PPE and equipment standards are breached.	<p>CFM-MPA.72.02 Operational access control (pedestrian and vehicle) is inadequate</p> <p>CFM-SPA.83.02 Inconsistent application of performance management processes</p>
OFI-79: Consider deploying operator alert system technology.	BI-CPA.09.01 Site fatigue management processes are comprehensive and optimise work rosters	Site fatigue management processes are comprehensive and designed to support employees.	<p>Site fatigue management processes include:</p> <ul style="list-style-type: none"> Education and awareness packages for shift workers Optimum shift roster design Hours of work and rest requirements including travel time Additional work hours management 	<p>Compare industry good practice to current site approaches covering:</p> <p>Work Hours Policy</p> <p>Develop working-hours policy for daily work hours, maximum average weekly hours, total hours over a three-month period, and managing commutes and work-related travel.</p> <p>Managing Work Rosters</p>	<p>Site fatigue management awareness and training is being completed to schedule.</p> <p>Site hours worked tracking systems send reports and identify exceedances.</p> <p>DAMSTRA System - provides reports and raises warnings when recorded time on site exceeds set parameters.</p>	<p>CFM-CPA.11.02 Impaired or inattentive operator operates mobile equipment</p> <p>CFM-CRA.04.30 Operators change behaviour after fatigue alerting system is fitted</p>

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			<ul style="list-style-type: none"> • Advice and support for supervisors to remove fatigued persons from the workplace e.g. prestart fitness for work judgments, • Fatigue call ups during shift <p>SMS-010 CNOC Fatigue V4.7 - Includes requirements for determining impacts of rosters.</p> <p>OFI-079 Consider deploying operator alert system technology.</p> <p>Workshop participants discussed the deployment of operator alert system (OAS) Technology at other mines. They confirm that when the technology is operationally integrated, then it provides an additional and reliable control for managing operator fatigue. In some cases, it can assist individuals to identify and manage underlying health issues.</p> <p>The consequences of a fatigued mobile equipment operator falling asleep at work can be catastrophic. Without a technology monitoring approach, site leaders have little visibility on the effectiveness on site fatigue management processes other than self-reporting and incident investigations. Benchmark the application of commercially available technology with other Australian operations. Make the business case of how it can be deployed to complement and enhance existing site fatigue management approaches.</p>	<ul style="list-style-type: none"> • Design working hours and rosters to provide for adequate sleep opportunity (considering time for eating, washing, personal commitments etc.). • Make sure that there is enough time in a break for a minimum of six hours sleep • Set the number of consecutive days that can be worked. • Adopt a forward rotation roster systems for shift work (day-evening-night). • Avoid quick shift changeovers such as finishing at 11 am and starting again at 7 am. • Avoid starting or finishing shifts between 10 pm and 6 am. • As far as possible maintain predictable shift rosters and provide adequate notice of changes. • Allocate shift and night workers consecutive days off to allow for at least two full nights rest including some weekends. <p>Hours of Work</p> <ul style="list-style-type: none"> • Ensure that workers have and take adequate and regular breaks so that they can rest, eat, and rehydrate. • Ensure adequate lunchroom and ablution facilities. • Control the length of shifts - increase resourcing, control overtime especially unscheduled overtime. • Put in place overtime restrictions when people already work 12 hour shifts. • Control the length of shifts to 14 hours, except for exceptional circumstances. • Control emergency call outs, shift swapping and overtime to 		<p>CFM-CTA.11.01 Supervisor does not identify or act when operator is fatigued or intoxicated</p> <p>CFM-SDA.83 Organisation Work Scheduling and Planning is inadequate</p> <p>CFM-SDA.86 Work Environment and Work Demands result in Fatigued Mobile Equipment Operators or other Health Affects</p>

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				<p>ensure at least two consecutive nights sleep before and after commencing roster to allow for recovery.</p> <ul style="list-style-type: none"> • Limit use of standby and on-call duties. • Ensure that responding to emergencies does not result in excessive hours. • Except for emergencies, give at least 24 hrs notice before changing someone from day shift. • Consider alternatives for personnel who have difficulties adjusting to working hours and shift patterns. <p>Commuting and Travel</p> <ul style="list-style-type: none"> • Use journey planning to manage long commutes and travel requirements. • Provide alternative transport options at end of overtime and shift work to relieve commuting burden. <p>Work Demands</p> <ul style="list-style-type: none"> • Schedule safety critical work outside low body clock periods (i.e. between 2 am and 6 am). • Structure shifts and work plans so that demands are highest towards the middle of the shift and decrease towards the end. • Adequate multiskilling across crews to allow for fatigue relief. • Provide adequate resources to cover breaks for operators of equipment that is in service continually. <p>Shift and Night Work;</p> <ul style="list-style-type: none"> • Keep sequential night shifts to a minimum. • Avoid overtime allocations after afternoon or night shifts. • Include rest periods in the work schedule and allow time for 		

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				<p>controlled sleeping and napping if necessary.</p> <p>Monitor Performance</p> <ul style="list-style-type: none"> Monitor actual time worked against the allocated roster to identify if excessive hours are being worked. <p>BLS-011-FRM-4 FFW Roster Fatigue Assessment - Provides guidance for Superintendents and Supervisors to confirm the CMW deployed have the optimum sleep opportunity.</p> <p>BLS-011-FRM-03 FFW Individual Journey Management - Helps supervisors and workers plan for travel to and from site, and when on company business off-site.</p>		
<p>OFI-10: Consider making camera feeds available to improve performance monitoring.</p> <p>OFI-47: Review the effectiveness of site approaches for delivering toolbox talks. Identify opportunities for improvement, including providing adequate question and answer opportunities.</p> <p>OFI-50: Review hazard and control communications with work crews.</p> <p>OFI-61: Improve shift-to-shift handover processes on site</p>	<p>BI-CPA.10 Task expectations are well communicated and reinforced over the work shift.</p>	<p>Task performance expectations are clearly communicated at task allocation and then reinforced over the shift.</p>	<p>Each shift there is a process to allocate tasks and reinforce task relevant mobile equipment interaction controls. There is further communication during the shift as tasks or conditions change. Where appropriate, visual information (photographs, maps of roadways, etc.) are used.</p> <p>SOP-049 Safety Inspections & Checking and Examining Work Areas V6.1 27/8/2021 - S4.2 OCE Inspection Reports requires all OCE reports to be included in the pre-shift meeting for the incoming crew.</p> <p>OFI-061 Improve shift-to-shift handover processes on site.</p> <p>Workshop participants confirmed variable standards between different groups for preparing and handing over information between shift supervisors There is no site standard template available in use and the quality and quantity of information is inconsistent even for items relevant to every production workgroup e.g. roadworks, in-pit maintenance, OCE reports etc.</p> <p>Incorrect or incomplete information transferred between supervisors can lead to hazards in the operation not being recognised and controlled by incoming</p>	<p>Pre-shift meetings, and as required, communications are logged and monitored for quality and effectiveness.</p> <p>Inspections and Interviews - Pre-shift meetings delivered by supervisors observed by RM included information specific instructions for work crews.</p> <p>OFI-047 Review the effectiveness of site approaches for delivering toolbox talks.</p> <p>Identify opportunities for improvement, including providing adequate question and answer opportunities.</p> <p>Workshop participants discussed the effectiveness of site tool box talks. Sometimes delivery is reported as being a straight presentation with limited opportunity for questions and answers.</p> <p>If the audience is unable to question the material presented then this can lead to two suboptimal outcomes:</p> <ul style="list-style-type: none"> The audience may misunderstand key points from the information presented and then make incorrect decisions The presenters and line 	<p>Records from pre-shift meetings and other relevant communications. Communication logs with individuals.</p> <p>SOP-049-FRM-01 Supervision Verification Audit Form - Superintendent - Oversight and checklist for confirming that supervisor conduct all required inspections, communication, and hand-overs.</p> <p>OFI-010 Consider making camera feeds available to improve performance monitoring.</p> <p>Supervisors and open cut examiners (OCE) spend many hours per shift in the field monitoring performance. Currently OCEs and supervisors review performance by observing operating practices and inspecting the operating environment condition at close proximity and from available lookouts.</p> <p>Review how area camera feeds can be used by OCE and supervisor to complement this process, particularly as a reliable way to monitor workgroup interaction performance. Consider also the opportunity to use Artificial Intelligent (AI) technology to detect and amplify performance drift</p>	<p>BID-151: BI-CPA.10 Task expectations are well communicated and reinforced over the work shift.</p> <p>CFM-CPA.11.05 Operator does not drive on available segregated roads</p> <p>CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced visibility, road narrowing, road surface etc.</p> <p>CFM-SPA.83.01 Operator fails to comply with site requirements</p> <p>CFM-SRA.87 Inadequate monitoring that mine traffic management requirements have been implemented and are being</p>

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			<p>operators. Confirm minimum standards for handovers. Consider developing a standard template for shift supervisor transfer notes. Review the use of digital technology options e.g. for consistent messages that can be pushed to all relevant workgroups before handovers and used to aggregate multiple handover logs.</p>	<p>managed assumptions on understanding may be incorrect can lead to gaps in understanding of key information. Review the effectiveness of site approaches for delivering toolbox talks. Identify opportunities for improvement, including providing adequate question and answer opportunities. OFI-050 Review hazard and control communications with work crews Workshop participants discussed the challenges of running effective prestart meetings that communicate operational and safety information and performance expectations that reinforce individual and workgroup norms. At Curragh North the prestart meeting provides the only daily opportunity to communicate to a workgroup and discuss relevant hazards and their controls. Shift prestart meetings have to be efficiently transactional and also cover production elements e.g. assigning equipment etc. The current prestart sequence means that there can be shift long delays for sharing new information from a meeting across other workgroups e.g. for road works, changes to intersections, broken down equipment. and other short-term changes. Workshop participants also noted that there are always production drivers covering "time to the first load." Workshop participants also noted the challenges of crew size, supervisor experience and effectiveness, employee turnover, and production pressures that have to be managed. Review the effectiveness of preshift meetings, consider developing performance measures and improve support for supervisors. Consider</p>	<p>based on camera feed analysis.</p>	<p>maintained</p>

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				augmenting shift prestart meetings with hazard and control information e.g. SOP reviews, incident case studies that can be used during stoppages e.g. during wet weather.		
<p>OFI-74: Review Site Access Controls.</p> <p>OFI-75: Review Site Induction Processes.</p> <p>OFI-78: Consider reducing the number of drivers with operating area authorisation.</p>	BI-CPV.08 Protocols for site induction and operating areas access	Induction processes for people using the road network are in place and applied at operating sites.	<p>Induction training and underlying procedures and rules cover:</p> <ul style="list-style-type: none"> • Site access including access to nominated areas, such as working face areas, stockpiles, reclaim areas, workshops and other high traffic locations • Escorting requirements including vehicle communication protocols, permission to travel and general warning requirements • Incident reporting and emergency response • Person Protective Clothing and Equipment (PPE) requirements • Seat belts and other in-vehicle restraints are worn when fitted • Strict requirements to never modify safety equipment • Handheld mobile phones and other personal electronic devices (PEDs) are never used when operating mobile equipment (and guidance on the presence of detection devices on these items) • Handheld mobile phones are never used when working around mobile equipment <p>SOP-017 Using Mobile Plant - Mine Traffic Rules V6.5 - Has sections covering all the noted points S4 Curragh Traffic Areas for access, S5.1 for Escort Operators, multiple sections note required response and reference to PLN-005 for incidents, S8 for rules around changes, Mobile Phones and Devices managed as per BLS-010 Security (at S8 only allows devices which will not cause a risk of interaction).</p> <p>SOP-006 Personal Protective Equipment V7.6 - S3.1 Standard Requirements notes</p>	<p>All personnel at and visitors to operating sites undertake inductions and these are recorded. Inductions clearly communicate minimum site standards.</p> <p>Curragh Site Familiarisation Doc Ref 1021 V2.10 12/6/2024 - Is an assessment tool for confirming that CMW are familiar with the CNOC area and site traffic flows. Also confirming checks (pg 3) for mobile plant and machinery interactions in HME/LV Workshop, Field Maintenance, Lube Bay, CN Workshop, CN Tyre Bay</p> <p>OFI-074 Review Site Access Controls</p> <p>Uncontrolled site access between North and South Curragh operations in the the Curragh complex may lead to unplanned and unwanted vehicle interactions. Workshop participants discussed differences between operator understanding of vehicle interaction protocols for different vehicle types on the main access road into Curragh North Operations. They discussed how these differences might cause unwanted vehicle interactions e.g. between transport floats and light vehicles, and when transporting materials e.g. in situations when waste from the preparation plant has to be transported to the CNOC mine. Review the understanding and application of vehicle interaction protocols for site access. Upgrade current access protocols if required.</p>	Regular inspections and personal hazard awareness records are made - with non-conformance corrected or escalated as appropriate. Periodic reviews of site access logs confirm all personnel have required inductions	<p>BID-152: BI-CPV.08 Protocols for site induction and operating areas access</p> <p>CFM-MPA.72.01 Access control infrastructure is inadequate</p> <p>CFM-MPA.72.02 Operational access control (pedestrian and vehicle) is inadequate</p>

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			<p>High Visibility and reflective tape requirements.</p> <p>OFI-075 Review Site Induction Processes Current site inductions are completed online. Workshop participants discussed how effective this process is to present information and confirm understanding both generally and specifically for understanding the application of vehicle interaction controls. They were concerned that successfully answering questions in a site induction does not demonstrate a practical understanding of how and when vehicle interaction controls apply and can lead to unwanted interactions at site e.g. pedestrians around the workshop. Review site induction practises, consider including a face-to-face step to confirm understanding of vehicle interaction controls for visitors and new starters who will be working around mobile equipment.</p> <p>OFI-078 Consider reducing the number of drivers with operating area authorisation Workshop participants discussed light vehicle access permissions and confirmed that gaining authorisation to drive light vehicles in restricted operational areas is straightforward with limited oversight. Many site personnel have authorisation to drive light vehicles in operational areas. For surface mining, the most significant fatality mechanism (pathway) is a collision between a heavy vehicle and a light vehicle. A reliable control is to reduce the number of vehicle interactions between light vehicles and heavy mobile equipment and the decision demands on drivers. The simplest control is to limit the number of light vehicles in operational areas. Other controls include stopping heavy vehicle movements when light vehicles are on operating circuits, or segregation including light vehicle only access roads. Review and confirm the current number of drivers with light vehicle authorisations to</p>			

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			drive in operational areas. Consider how many licences are required for operational efficiencies and assess the impact of reducing the number of authorisations to decrease the number of light vehicles in operating areas.			
<p>OFI-42: Review the design and application of site performance management processes.</p> <p>OFI-69: Confirm site performance expectations align their performance management application.</p>	BI-CRA.11.01 Supervisors and trainers provide clear performance management expectations by role	Performance expectations for safe and productive outcomes are documented and communicated to all personnel.	<p>Performance requirements are detailed by role and are used for training and competency assessments. Supervisors continually review, reinforce performance expectations. Performance management processes provide feedback that supports safe and productive behaviours and corrects unsafe and non-productive behaviours.</p> <p>BLS-001 Leadership and Accountability - Outlines the CARE (Collaboration, Accountability, Respect and Excellence) values of Coronado with good performance recognised and poor performance addressed.</p> <p>CGRA BLS-002 Organisational Roles and Responsibilities - S6 Managers and Supervisors participate in the FELT leadership program which includes addressing any performance issues by CMW.</p> <p>OFI-042 Review the design and application of site performance management processes.</p> <p>Each contractor and Coronado Global Mining have their own (commend or correct) performance management processes in place. Workshop participants discussed inconsistent application of the process between companies and between supervisors. The discussion covered how the supervisors and superintendents who apply the processes can be better supported to deliver consistent outcomes. They noted that some of the most important vehicle interaction controls are people dependent and are based ongoing judgment and continuous good decisions of mobile equipment operators. These frontline decision are informed by training</p>	<p>Employee training and assessment confirms understanding of site performance expectations for:</p> <ul style="list-style-type: none"> • Obeying site rules • Following site procedures • Responding to instructions • Meeting site standards • Reporting and responding to safety issues <p>CSP-049 Life Saving Rules - Sets minimum requirements for general worker actions and behaviours and includes information on performance management expectations around these rules.</p> <p>OFI-069 Confirm site performance expectations align their performance management application.</p> <p>Workshop participants confirmed that supervisors and trainers from different contractors and business units interpret site performance expectations and apply performance management (commend or correct) processes inconsistently. A range of interpretations of site expectations for vehicle interaction controls can lead to variable behaviours and potential conflicts of operating practices. Define site performance expectations, communicate using real-world scenarios and examples. Confirm the process with all contractors and business units and align performance management approaches applied.</p>	<p>Training system and employee records confirm that all personnel understand the site performance expectations that are relevant to their role.</p> <p>Leader Interview - Formal processes in place to record and monitor CMW performance to optimise compliance with safety and operational requirements.</p>	<p>BID-116: BI-CRA.11.01 Supervisors and trainers provide clear performance management expectations by role</p> <p>BID-129: BI-CRA.11.01 Supervisors and trainers provide clear performance management expectations by role</p> <p>BID-153: BI-CRA.11.01 Supervisors and trainers provide clear performance management expectations by role</p> <p>CFM-CDA.06.02 Operator drives vehicle at the incorrect speed (too fast or too slow).</p> <p>CFM-CPA.10.20 Operators of heavy and light vehicles (or pedestrians) fail to follow the designated travel path</p> <p>CFM-CPA.11.02 Impaired or inattentive operator operates mobile equipment</p> <p>CFM-CPA.11.03 Operators and/or passengers do not</p>

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			<p>on the practical application of site standards. Appropriate performance monitoring with short cycle feedback is required to maintain the reliability of people dependent vehicle interaction controls.</p> <p>Review line manager performance training and support processes. Develop vehicle interaction control examples as part or training to reflect the importance of following site rules and reporting hazards etc. Confirm the task level limitations (decision rights) and permissions required to deviate from site standards. Consider developing performance feedback to operators that supports self-monitoring.</p>			<p>use fitted seatbelts or restraints CFM-CPA.11.05 Operator does not drive on available segregated roads CFM-CPA.11.10 Operators or co-workers have required communications equipment but are not contactable CFM-CPA.11.21 Operator fails to see signage installed to standard CFM-CPV.11.20 Operators or passenger has limb outside cabin while travelling CFM-EPA.32.06 Loose objects in cabin or around vehicle remain unsecured CFM-EPV.26.10 Routine or occasional overloading of vehicles CFM-EPV.39.42 Vehicles are operated outside specified tyre conditions CFM-ERA.32.20 Operator fails to conduct effective pre-start that meets requirements CFM-LPA.44.05 Appropriate distances from fixed and overhead structures are not</p>

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						maintained CFM-LPV.54 Excessive water (Dust Control) is applied to road surface CFM-MPA.66.01 Incorrect communication protocol CFM-MPA.72.02 Operational access control (pedestrian and vehicle) is inadequate CFM-MPA.72.03 Mobile equipment operator or pedestrian does not notify when entering a controlled work area CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots CFM-SPA.83.01 Operator fails to comply with site requirements CFM-SPA.83.02 Inconsistent application of performance management processes
OFI-26: Review and update site health and lifestyle training and support materials.	BI-CTA.12.01 Pre-commencement and periodic medicals for mobile equipment operators	Pre-employment and periodic medicals confirm that personnel meet position requirements.	Personnel who operate mobile equipment have pre-commencement and periodic medicals to confirm that they can safely and productively carry their assigned tasks. Medicals are carried out by appropriately trained personnel with oversight from a physician. Medical assessments include all regulatory requirements.	For relevant positions, the site hiring and selection process includes a requirement for a medical assessment. Medicals are completed before position offers are made. A senior site manager has the accountability for the site process for organising and managing the results of employee periodic medicals.	Reviews confirm the site process is being applied Reviews confirm that the site process meets records management and privacy standards. Multiple Employee Records - Include details of training conducted and successful completion of CMWHS examinations by an Approved Medical Adviser.	CFM-CPA.10.20 Operators of heavy and light vehicles (or pedestrians) fail to follow the designated travel path CFM-CPA.11.01 Equipment operator or pedestrian

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>CGRA BLS-011 Fitness for Work V1.0 - S4 Highlights conformance with the QLD Coal Mine Workers' Health Scheme which requires Appointed Medical Advisers to physically examine and functionally review all staff and CMW on site.</p>	<p>Medical assessments meet all regulatory requirements.</p> <p>OFI-026 Review and update site health and lifestyle training and support materials. Workshop participants confirmed that additional self-management advice about balancing health, lifestyle, and work commitments can assist the Curragh North workforce. Providing practical information about approaches that assist individuals to make appropriate personal choices and can include diet, sleep and rest, commuting, alcohol and other drug choices, medication management, health support etc.</p> <p>Mine shift rosters are challenging and a lack of rest and general lifestyle choices can lead to fatigue and impairment outcomes in the short-term and poor health and personal issues in the medium to long-term. Review current site health and lifestyle training and support materials. Benchmark against good practice for remote mining operations, consider seeking expert input. As required update site processes emphasising processes for self-management to meet work requirements.</p>		<p>mistake in estimating clearance distance CFM-CPA.11.10 Operators or co-workers have required communications equipment but are not contactable CFM-CPA.11.21 Operator fails to see signage installed to standard CFM-CRA.04.30 Operators change behaviour after fatigue alerting system is fitted CFM-ERA.33.40 In vehicle fatigue monitoring and alerting system fails CFM-STA-91 Regulator prosecution</p>
	BI-CTA.12.02 Medical support and rehabilitation of injured personnel	Workers whose health has been degraded are supported to return to full (or alternate) duties.	<ol style="list-style-type: none"> 1. Medical providers and site based rehabilitation officers are appointed and support the recovery of injured workers 2. Alternate duties are identified as required to support an injured worker transition back into their original role 3. Permanently impaired workers transition to alternate site based roles or leave the site to obtain off-site employment and care <p>PLN-001 Safety and Health Management Plan S11 Health and Hygiene ...the plan provides for rehabilitation of injured workers...</p>	<ol style="list-style-type: none"> 1. When an incident occurs where a worker is injured the site rehabilitation officer engages with medical services to support a return-to-work process and document the requirements as a return-to-work plan 2. Medical assessments are carried out prior to commencement and regularly during workers' employment 3. Injured workers follow their return-to-work plan whilst they are continuing to recover 4. Fully healed workers return to 	<ol style="list-style-type: none"> 1. Medical and rehabilitation reports are prepared by the return-to-work coordinator for review by senior leaders 2. As required the Human Resources Manager or other leaders intervene to support a worker transitioning to alternate roles, employment, or care 3. Records of injury outcomes are provided to relevant stakeholders for tracking and reporting 	<p>CFM-CPA.11.02 Impaired or inattentive operator operates mobile equipment CFM-CTA.11.01 Supervisor does not identify or act when operator is fatigued or intoxicated</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				full time duties 5. Workers who can not return to their original roles are guided to alternate site, or off site, roles and treatment programs		
OFI-35: Confirm site standards for operator displays and general cabin ergonomics.	BI-EDA.22.01 Specifications for operator displays	Appropriately consistent operator displays provide the information necessary for safe and productive outcomes.	1. Site specifications for mobile equipment operator displays are confirmed with OEMs, and third-party suppliers and consider: Operator size range (anthropometrics); Operating conditions e.g. lighting levels, background noise; Communicating routine machine status information (gauges, warning lights, etc.); Key controls including those related to abnormal and emergency situations 2. Display specifications required information about critical safety related systems, including: Speed; Pressure of pneumatic or hydraulic brake systems health; Brake circuit charging pressure; Parking brake applied; Steering Function health (hydraulic); Temperature of key components, and; Vision aids (cameras, proximity, etc.); Pressure in hydrostatic drives if service braking is hydrostatic; Temperature of oil-immersed brakes; Fire suppression system operating pressures; 3. Other display specifications for additional information, such as: a. Electrical system health: battery charge; on-machine sensor status; warning lights (illuminating during start-up); System voltage b. Consumable status: Fuel level; Hydraulic reservoir level; Engine oil pressure; Hydraulic oil	Mobile equipment is assessed and approved for use by a competent person following the Introduction to Site processes. All vehicles in operating areas meet site requirements for consistent operator displays. The details of equipment being used are listed in asset registers. OEM provided asset documentation is added to Plant Safety File. Maintenance planners review introduction to site records and add work orders for the maintenance of key systems. SOP-024 Maintaining Hygienic Work Environment V4.2 20/6/2021 - S4.1.5 Work Areas and Work Stations consider the space between items and allowances for emergency evacuation including promoting ergonomic body positions. Workshop Discussion Prompt - Should there be a more formal approach to the fitting of after-market systems inside HME and LV operator cabins?	Operator training and feedback on displays by equipment model and type. Introduction to Site documentation and records. OEM provided documentation covering display details are part of the Asset Plant Safety File and inform operator training. Maintenance reviews and investigations e.g. failure to act on vehicle alarm. Interviews - Operator Displays are included in Maintenance Work Orders	BID-103: BI-EDA.22.01 Specifications for operator displays CFM-CRA.03.21 Incorrect action on vehicle system alarm - not understood CFM-CRA.10.30 Proximity alarms do not assist operator CFM-CTA.11.34 Incorrect action taken on proximity alarm CFM-ERA.29.01 Multiple vehicles system alarms overwhelm and confuse the operator CFM-ERA.40.22 Over speed warning alarm fails to operate CFM-MDV.71.01 Proximity alarms do not perform to specification (false negatives and false positives)

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>temperature; Cooling water temperature; Hydraulic transmission temperature; Transmission oil pressure; Engine oil temperature; Hydraulic oil pressure</p> <p>c. General operating information: Running time or distance travelled meter; Service hour meter; Slope indicator</p> <p><i>Note: where there is more than one driving position, the display should be similar at each.</i></p> <p>Key Source References:</p> <ul style="list-style-type: none"> • Section 4.7 of ISO 19296 Mining - Mobile machines working underground - Machine Safety First edition 2018-11 • Each display shall be marked by clear symbols in accordance with ISO 6405-1 and ISO 6405-2. <p>CGRA BLS-014 Engineering V1.0 - S5 Design and Manufacture to consider ergonomics of equipment in Selection, Risk Assessments, Inspections, and RAMBO Design reviews.</p> <p>OFI-035 Confirm site standards for operator displays and general cabin ergonomics.</p> <p>Workshop participants discussed cabin ergonomics and confirmed that a range of installation standards for third-party screens for mobile equipment in use at site.</p> <p>Inconsistent placement of operator displays for information transfer can lead to errors in operator decision making e.g. information not received. It can also result in installed displays restricting emergency access and egress. Other issues can include actuating fire suppression systems if the actuator position varies. Consider developing a cabin layout standard for each type of equipment in service. Benchmark against other surface</p>			

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			mining operations, seek input from OEM and third-party technology suppliers.			
	BI-EDA.24.01 QA/QC Processes used in Equipment Manufacture	Manufacturers, dealers and equipment assemblers have formal quality management processes in place to ensure that their products meet all required standards.	Manufacturers, dealers and equipment assemblers have formal quality management processes in place to ensure that their products meet all required standards.	Operational sites only purchase equipment and materials from pre-qualified suppliers.	Periodic reviews and audits. Records are taken and provided to sites of Witness and Hold Points on critical build stages of the items of plant.	CFM-EDA.21.10 Equipment or Component Design is not error tolerant CFM-LPA.42.03 Obscured or missing signage CFM-LPA.44.05 Appropriate distances from fixed and overhead structures are not maintained CFM-LPV.41.20 Loading requirements for vehicles inadequately considered in mine design, equipment selection and work planning
	BI-EDA.26.05 Standards that set minimum requirements for cabin integrity, restraints, access and escape, auto shutdowns and other relevant protective systems	Equipment selected for site use is fit for purpose and delivers safe and productive outcomes.	Mobile equipment specifications are in place that include requirements for: <ul style="list-style-type: none"> • Cabin integrity and operator restraint (seat belts, noise reduction, dust removal or mitigation) • Auto shutdowns • Ergonomics of seats, control panels/devices (allowing for different size/weight workers and in place to reduce any whole body vibration effects) • Communications and information devices are sourced and fitted to minimise distraction • Warning devices e.g. status of safety systems (including seat belt fitment), tilt switches on remote controllers, proximity alarms, movement alarms, state displays (gear selected etc.) • Protective devices for emergencies 	Senior managers including representative of operations and maintenance approve equipment selection recommendations. A rigorous introduction to site process checks that received mobile equipment meets site requirements before it is permitted to operate.	All equipment in use is approved and documented. The details of equipment being used are listed in asset registers. OEM provided asset documentation is added to Plant Safety File. Maintenance planners review: introduction to site records and add work orders to maintain site standards. SOP-016-FRM-08 HME Pre-Start Inspection and SOP-016-FRM-07 LMHV Pre-Start Inspection Form Seat Belts and Seat checks and other key systems in the RED tag out or repair immediately section. Access Ways and Handrails included for HME in RED section.	BID-104: BI-EDA.26.05 Standards that set minimum requirements for cabin integrity, restraints, access and escape, auto shutdowns and other relevant protective systems BID-110: BI-EDA.26.05 Standards that set minimum requirements for cabin integrity, restraints, access and escape, auto shutdowns and other relevant protective systems CFM-EDA.21.10

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>(fire, collision, etc.)</p> <ul style="list-style-type: none"> Egress / escape by alternate exit in the event of an emergency e.g. through removable or non-laminated glass windows Required ratings for Light Vehicles Confirming that statutory conformance requirements are met for Heavy Vehicles e.g. ROPS / FOPS and head/whiplash protection As required the installation of self-rescuers for vehicles that may be engulfed e.g. dozers that operate on stockpiles. Monitoring and alarm devices for safety systems (thermal, in-vehicle-monitoring-systems (IVMS) for conformance with site rules meeting prevailing conditions, speed alarms, and alerts on pressure of brakes, steering, tyres, etc.) <p>CGRA BLS-014 Engineering V1.0 S5.3.1 Safe Access Systems requiring walkways, railings, steps and an alternate means of exiting a vehicle or work area. S5.4 Operator Controls and Restraints aiming for a minimum of 2 point (e.g. lap belt) or 3 point preferred (e.g. lap-sash).</p>			<p>Equipment or Component Design is not error tolerant CFM-ERV.33.20 Compromised vehicle cabin no longer meets OEM or site specific specifications CFM-SPA.83.01 Operator fails to comply with site requirements</p>
<p>OFI-35: Confirm site standards for operator displays and general cabin ergonomics.</p>	<p>BI-EDA.29.01 Mobile equipment operator interfaces consider ergonomics and cognitive loading</p>	<p>Information provided by screens, control panels, alerts, alarms, and other installed devices assists mobile equipment operators to deliver safe and productive outcomes.</p>	<p>There is a site process that considers cab ergonomics when installing screens, control panels, alerts, alarms, and other devices that:</p> <ul style="list-style-type: none"> References site and company standards References industry standards e.g. AS 2359.5 - Symbols for operator controls and other displays Considers good practice industry research Consults with experienced operators, maintainers, and technicians Reviews and adjusts, as required, based on outcomes from 	<p>The site process is applied when selecting, trialling, and installing screens, control panels, alerts, alarms, and other devices.</p> <p>SOP-024 Maintaining Hygienic Work Environment V4.2 20/6/2021 - S4.1.5 Work Areas and Work Stations consider the space between items and allowances for emergency evacuation including promoting ergonomic body positions.</p> <p>Workshop Discussion Prompt - Should there be more involvement of operational personnel when considering systems inside HME and LV operator cabins?</p>	<p>Records of the site process being applied. Logs and records that demonstrate the installed device and interface is being used as designed. Operator feedback.</p>	<p>BID-111: BI-EDA.29.01 Mobile equipment operator interfaces consider ergonomics and cognitive loading CFM-CRA.04.30 Operators change behaviour after fatigue alerting system is fitted CFM-CRA.10.30 Proximity alarms do not assist operator CFM-CTA.11.34 Incorrect action</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>installation pilots</p> <p>The site process also reviews changes in cognitive load for mobile equipment operators covering:</p> <ul style="list-style-type: none"> • The additional cognitive load of newly installed or activated interfaces • The cumulative load when combined with other screens, control panels, alerts, alarms, and devices • The range of operating environments and circumstances that are relevant for the device or interface • How the expected outcomes will be delivered e.g. improvements in situational awareness, operator decision making, and performance • Related potential failure modes and their controls <p>CGRA BLS-014 Engineering V1.0 - S4 Asset Management Systems includes requirements around selection with a need to identify potential risks, required controls, identification of safety critical systems, and generation of maintenance strategies. S5 Design and Manufacture to consider ergonomics.</p> <p>OFI-035 Confirm site standards for operator displays and general cabin ergonomics.</p> <p>Workshop participants discussed cabin ergonomics and confirmed that a range of installation standards for third-party screens for mobile equipment in use at site.</p> <p>Inconsistent placement of operator displays for information transfer can lead to errors in operator decision making e.g. information not received. It can also result in installed displays restricting emergency access and egress. Other issues can include actuating fire suppression systems if the actuator position varies. Consider developing a cabin layout</p>			<p>taken on proximity alarm</p> <p>CFM-ERA.29.01 Multiple vehicles system alarms overwhelm and confuse the operator</p> <p>CFM-ETA.40.01 Routine false positive alarms</p> <p>CFM-SRA.92 Unit key system status and alarms are not monitored</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			standard for each type of equipment in service. Benchmark against other surface mining operations, seek input from OEM and third-party technology suppliers.			
<p>OFI-25: Review site equipment selection and onboarding processes.</p> <p>OFI-8: Review site standards and processes for mobile equipment selection and introduction to site.</p>	BI-EPA.26 Fit-for-purpose equipment selection and Introduction to Site processes	Equipment selected for site use is fit-for-purpose and delivers safe and productive outcomes - meeting all site requirements for worker ergonomics, control integrity, matched technology (to site), equipment performance and operating environment constraints.	<p>Sites have an equipment selection process that involves maintainers and operational personnel in a team review (Risk Assessment format) and uses asset specifications when:</p> <ul style="list-style-type: none"> • Purchasing new or used equipment • Transferring equipment to site • Hiring equipment • Assessing contractor equipment <p>Equipment specifications ensure that mobile equipment assets meet site production and operating environment demands (including provision of systems for monitoring location (including geofencing), communicating and visibility/sight lines). The specifications also cover the use of ancillary equipment such as forklifts, scissor lifts, elevating work platforms etc. and considers suitability for the operating environment (stability, use of quick detach systems, character of the material being transported, temperature ranges, etc.)</p> <p>Equipment specifications include allowance for all safety related functions such as energy constraint (guarding), removal of energy (isolation), and protection against unwanted operation. Information on equipment use limitations from the OEM should be provided to the operators/maintainers with training modules that also check for understanding.</p> <p>CGRA BLS-014 Engineering V1.0 - S4 Asset Management Systems includes requirements around selection with a need to identify potential risks, required controls, identification of safety critical systems, and generation of maintenance strategies.</p>	<p>Senior managers including representatives of operations and maintenance approve equipment selection recommendations.</p> <p>A rigorous introduction to site process checks that received mobile equipment meets site requirements before it is permitted to operate. This includes ensuring that site requirements are met for:</p> <ul style="list-style-type: none"> • Safety related systems including: Brakes; Steering; Control and warning and alarm systems that meet requirements (including technology solutions); Warning devices are in place to detect fatigue, use of mobile phones or personal electronic devices, and other site required systems; Radios or communication systems matching site requirements; Integrity of lifting and load moving components • Visibility and demarcation: Head lights; Running lights; Indicators; Vehicle identification numbers that are clear and visible • General operability: Running gear e.g. tyres; Remote control technologies with associated fail safes to prevent unintended operation; Noise and fume generation matched to site requirements; Other components meeting site requirements for surfaces (cleanliness, coatings, external FRAS), strength, and confirming it is matched to site 	<p>Maintenance strategies confirm the status of all mobile equipment and associated infrastructure systems. Safety related components/checks are addressed with additional rigour (e.g. proof test requirements) with status reports available to senior personnel.</p> <p>Equipment specifications are regularly reviewed, and if required after significant incidents.</p> <p>CGRA BLS-014 Engineering V1.0 - S11 Maintenance indicates requirements for appropriately qualified personnel to conduct inspections, make repairs, and arrange for supplies of components and consumables.</p>	<p>BID-105: BI-EPA.26 Fit-for-purpose equipment selection and Introduction to Site processes</p> <p>BID-112: BI-EPA.26 Fit-for-purpose equipment selection and Introduction to Site processes</p> <p>BID-130: BI-EPA.26 Fit-for-purpose equipment selection and Introduction to Site processes</p> <p>BID-154: BI-EPA.26 Fit-for-purpose equipment selection and Introduction to Site processes</p> <p>CFM-EDA.21.10 Equipment or Component Design is not error tolerant</p> <p>CFM-EDV.21.22 Steering and brake alarms not fitted</p> <p>CFM-EPA.25.20 Load shape, or restraints or load securing devices fail causing an incident</p> <p>CFM-ERA.31.09 Installed equipment system status alarms do not operate</p> <p>CFM-ERV.33.20 Compromised vehicle cabin no longer meets OEM or site specific specifications</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>engineering and maintenance capabilities</p> <ul style="list-style-type: none"> Maintenance information and work orders are confirmed to be in place for the incoming items of equipment as required with information included in site information management systems (plant safety files). <p>CGRA BLS-014 Engineering V1.0 - S9 <i>Introduction to Site Operations SHMS are to include procedures and tools to ensure that plant, equipment, and structures procured, installed, and commissioned are authorised or otherwise approved to commence operations. Plant, equipment, and structures must be inspected and approved by a competent person who must record the inspection and findings on appropriately constructed checklists. A copy of the approval for the plant, equipment or structure must be maintained in the Asset Management System against the relevant Asset Number (see section 13. Documentation).</i></p> <p>OFI-008 Review site standards and processes for mobile equipment selection and introduction to site Workshop participants discussed the application of site standards for onboarding mobile equipment. They identified some inconsistencies in applying standards for lights and vehicle markings and confirmed how this can result in additional operating hazards e.g. vehicle misidentification during positive communication. Review site processes and standards applied for mobile equipment selection and site use approval across contractor and company workgroups. Confirm that site standards are adequate and the processes for their application are effective. Review how</p>		<p>CFM-ETV.25.05 Fitted airbags fail to deploy CFM-ETV.33.01 OEM supplied seat belts are disabled or removed CFM-LPV.41.20 Loading requirements for vehicles inadequately considered in mine design, equipment selection and work planning CFM-SDA.86 Work Environment and Work Demands result in Fatigued Mobile Equipment Operators or other Health Affects CFM-SPA.88 Inadequate management of change</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>performance is monitored. Include lights and vehicle markings in the review. Update site personnel on the review outcomes and expected standards.</p> <p>OFI-025 Review site equipment selection and onboarding processes.</p> <p>Workshop participants discussed situations where stakeholders e.g. operators and maintainers have not had input into the site equipment selection process.</p> <p>A lack of input from knowledgeable and experienced stakeholders in selecting and onboarding new equipment can result in potential operational, servicing, and maintenance issues being missed or under-examined. It also delays constructive consultation, and explanations of the reasons behind selection e.g. cost and performance drivers, company agreements with particular OEMs, contractor deploying spare equipment etc. and planning to manage potential issues e.g. workshop access for larger equipment, spares inventories, service agreements etc.</p> <p>Review processes for equipment selection and onboarding, confirm that there is a step requiring consultation with site stakeholders. Confirm measures and monitor performance.</p>		
	<p>BI-EPA.27.50 New or upgraded technology specification, test, and commissioning process.</p>	<p>The operational deployment of new or upgraded communications equipment and technology is well managed.</p>	<p>There is a site standard for selection, testing, and operational deployment of new or upgraded communications equipment and technology. It is supported by site processes and protocols for technology selection that require:</p> <ul style="list-style-type: none"> • A use case that summarises the costs and benefits • Site duty requirements for the technology • Functional requirement details 	<p>New or upgraded communications and technology is tested and commissioned before being operationally deployed. Selected technology testing, pilots, reviews, and operational deployment approaches include:</p> <ul style="list-style-type: none"> • Pilot assessment of technology against site duty requirements • Cold commissioning e.g. collision detection initially done in silent mode to minimise operational 	<p>An approved project management plan for the operational deployment of new or upgraded communications equipment and technology.</p>	<p>CFM-EPA.33.40 Communication equipment absence, failure or poor reception CFM-MPA.66.01 Incorrect communication protocol</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<ul style="list-style-type: none"> • Technical requirements e.g. communications infrastructure WIFI networks, dedicated telecommunication networks, cabling, on and off site computing capacity, etc. • Performance requirement details • Selection, pilot, and operational deployment <p>CGRA-BLS-014 Engineering S7 Installation and Commissioning appears to only cover new (to site) plant, equipment and structures. Workshop Discussion Prompt - <i>Reviewed documents only mention commissioning of electrical systems. Although personal comments from Engineering team members indicated that new-to-site equipment and systems are formally commissioned - should the requirements be formally documented in site systems?</i></p>	<p>disruptions and integrate other business systems</p> <ul style="list-style-type: none"> • Confirming ongoing logistics, and maintenance support requirements. 		
<p>OFI-71: Review site speed control improvement and enhancement options.</p>	<p>BI-EPA.30.01 Mobile equipment is speed limited</p>	<p>If required, mobile equipment is reliably speed limited.</p>	<p>Where site speed limit governing of mobile equipment is required, specifications are set considering:</p> <ul style="list-style-type: none"> • Equipment type • Equipment application e.g. a tractor unit used in an underground man hauler may have a higher speed than a tractor unit configured as a forklift • Location (operating environment) <p>Tamper proof and tamper evident requirements</p> <p>PLN-005 CNOC PHMP Mobile Equipment Incidents - speed limits mentioned in multiple locations but no reference to engineered limiting of speed</p> <p>Interviews - Indications were speed is constrained by gear selection and reinforced in training modules.</p> <p>OFI-071 Review site speed control improvement and enhancement options. Workshop participants identified that site speed constraints are currently</p>	<p>Speed limiting of mobile equipment that meets site requirements is confirmed at each step of the:</p> <ul style="list-style-type: none"> • Site specify, purchase, delivery, acceptance, commissioning, and the introduction to site checks • In mobile equipment safety files • During maintenance and servicing <p>Workshop Discussion Prompt - Is there merit in extending the application of speed limited equipment to site?</p>	<p>Site speed limiting specifications are in place and applied and captured in mobile equipment safety files. Equipment prestart checks and defect reports By exception - speed limiter compromises detected during periodic maintenance are reported and investigated</p>	<p>BID-115: BI-EPA.30.01 Mobile equipment is speed limited CFM-EPV.31.33 Speed limiting device compromised</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>determined by gear selection and this is reinforced in training modules. Speed limiting as an engineering control is not used at site, but there are in vehicle monitoring systems in place and used by contractor Mining Pro. However, this control implementation is dependent on the decisions made of equipment operators. Review options for monitoring and reinforcing site speed controls using technology e.g. Geo fencing with required speed advice, wide use of in vehicle monitoring with automatic analysis and by exception reports etc.</p>			
<p>OFI-91: Review Site Vehicle Marking Standards.</p>	<p>BI-EPA.30.05 New to site mobile equipment meets specifications for vehicle lights, signage, and markings.</p>	<p>All vehicles in operating areas meet site specifications for lights, signage, and markings.</p>	<p>The Introduction to Site process confirms that mobile equipment specifications for:</p> <ul style="list-style-type: none"> • Reversing and head lights • Running lights • Indicators • Identification numbers • Supporting documentation • Maintenance and servicing requirements details <p>Apply when:</p> <ul style="list-style-type: none"> • Purchasing new or used equipment • Transferring equipment to site • Hiring equipment • Assessing contractor equipment <p>SOP-017 Using Mobile Plant - Mine Traffic Rules - S9 Vehicles and Mobile Equipment - Lighting Requirements, covers the different colour, spacing and type of lights required on vehicles.</p> <p>SOP-016 Checking Mobile Plant - S4.3 Safety Feature Checks include confirmation of lights, identification call-signs and accesses. S9 Vehicle Site Identification Number requires legibility of numbers from >50m and at S15 need high-viz markings and flags (for LVs).</p>	<p>Mobile equipment is assessed and approved for use following the Introduction to Site processes. All vehicles in operating areas meet site requirements for:</p> <ul style="list-style-type: none"> • Reversing and head lights • Running lights • Indicators • Identification numbers • Supporting documentation of conformance for plant safety dossiers • Maintenance and servicing requirements <p>Multiple Pre-Start Checks - Include confirmation of functionality of lights and visibility of unit numbers and vehicle identification decals.</p> <p>OFI-091 Review Site Vehicle Marking Standards</p> <p>Workshop participants confirmed that there is mobile equipment operating on site with inadequate visible signage for plant numbers. This makes it hard to make out the numbers to achieve positive communications. Failing to be able to make effective POS comms can lead to unwanted vehicle interactions. Note defects in vehicle markings identified and reported during prestarts do not</p>	<p>Mobile equipment approval for site use records for mobile equipment. Maintenance records e.g. replacement of non-standard components post mobile equipment deployment. By exception reporting of non-conformance of operating mobile equipment. Regular mobile equipment operational and maintenance audit findings.</p>	<p>BID-114: BI-EPA.30.05 New to site mobile equipment meets specifications for vehicle lights, signage, and markings. BID-155: BI-EPA.30.05 New to site mobile equipment meets specifications for vehicle lights, signage, and markings. CFM-EDV.21.22 Steering and brake alarms not fitted CFM-EPV.27.20 Mobile Equipment does not meet standards for safe access, lighting, signage and identification markings</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>always result in issues being corrected.</p> <p>Review site standards for onboarding and approving equipment for site.</p>		
<p>OFI-15: Review access to Blackrock and other relevant Content Management Systems.</p> <p>OFI-16: Review the value-add of a QA step after mobile equipment maintenance.</p> <p>OFI-17: Review and improve communications between maintenance and production.</p> <p>OFI-34: Confirm that maintainers and technicians have access to OEM and Third-Party Technology Manuals.</p> <p>OFI-94: Review Maintenance Performance Monitoring Processes.</p>	<p>BI-EPA.31.01 Maintenance of safety and operational systems on mobile equipment</p>	<p>Safety and operational systems on mobile equipment are maintained to a schedule and repaired when they breakdown. Mobile equipment with compromised safety and operational systems does not operate.</p>	<p>Maintenance strategies in place for all mobile and related plant based on OEM requirements for inspections, replacement and lubrication of components. Work on safety systems includes proof testing where appropriate e.g. after maintenance on brakes and steering systems, for exhaust gas levels, emergency stop functions, etc. Faults detected at prestart checks and during operations are classified and prioritised for maintenance as a defect management process. Fault types where equipment should not be used and the process to follow in this situation are well defined.</p> <p>CGRA BLS-014 Engineering V1.0 undated - S11 Maintenance references skills required for maintainers and relevant safety (and operational) components which require inclusion in site maintenance strategies. S12 Forklifts, Telehandlers and Tyre Handlers call up additional requirements that should be in place for these high energy related machines.</p>	<p>Maintenance planners issue work orders for mobile plant in line with confirmed strategies, containing checklists, instruction, procedures, and guidance for records to be prepared and submitted on completion of the work order. Maintenance workers conduct work order tasks in line with site requirements (which may extend beyond OEM procedures). Completed work order records are returned to the maintenance planners for permanent storage. Senior engineering and operational personnel review records to confirm maintenance strategy meets site requirements.</p> <p>Interviews and Inspections - Engineering crews work through maintenance plans on equipment and coordinate with stores to access work packs with appropriate components for replacement.</p> <p>OFI-015 Review access to Blackrock and other relevant Content Management Systems.</p> <p>Workshop participants discussed the situation where contractor site operators and maintainers who do not have a company email cannot gain Blackrock access. Without direct access, personnel either do not access the information or asked their respective health and safety function to provide print outs. Either outcome which ignores the latest information or delays access to it is sub-optimal. Review site strategy for proving access to Blackrock and other relevant systems so that:</p> <ul style="list-style-type: none"> Personnel have access to 	<p>Equipment availability metrics. Reports on maintenance work order close out are prepared by maintenance planners for review by senior personnel</p> <p>Metrics on the status of safety related work orders. Reviews and investigations after significant maintenance failures.</p> <p>BLS-004 FH03-CCV-02-FH03 Mobile Equipment - Vehicle Safety & Operations - CCV checks on vehicles to confirm status of maintenance records and vehicle condition.</p> <p>Interviews and Inspections - Completed work orders, flagged where additional faults (non-critical) were identified are returned to maintenance planners for inclusion in subsequent maintenance tasks on the machinery. Reports are prepared on the status of maintenance work orders for review by more senior site personnel.</p> <p>OFI-016 Review the value-add of a QA step after mobile equipment maintenance.</p> <p>Workshop participants discussed the benefits of having a quality assurance (QA) sign-off step following maintenance, as part of equipment handover to operations. They confirmed range of site practices even across the same contractor. The primary approach reported is that the hand over pivots on the judgement and sign-off of the fitter who undertook the maintenance. It was also noted that not all OEM references and manuals are referenced in procedures and work instructions. Consider the value-add of a consistent and measurable</p>	<p>BID-113: BI-EPA.31.01 Maintenance of safety and operational systems on mobile equipment</p> <p>BID-117: BI-EPA.31.01 Maintenance of safety and operational systems on mobile equipment</p> <p>CFM-EDA.21.10 Equipment or Component Design is not error tolerant</p> <p>CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions</p> <p>CFM-EPA.33.40 Communication equipment absence, failure or poor reception</p> <p>CFM-EPV.27.20 Mobile Equipment does not meet standards for safe access, lighting, signage and identification markings</p> <p>CFM-ERA.31.09 Installed equipment system status alarms do not operate</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>required information</p> <ul style="list-style-type: none"> There is no delay in accessing information <p>OFI-017 Review and improve communications between maintenance and production Workshop participants discussed communications between maintenance and production e.g. on equipment availability. They confirmed that there is an inconsistent standard that depends on the companies and importantly on the different supervisors involved. Well maintained mobile equipment that is fit for use delivers consistent safety and productivity outcomes for mining organisations. Identify current good practice examples for communication between production and maintenance personnel, confirm which processes are effective, the standards and performance expected from stakeholders - supervisors, superintendents, and managers. Monitor performance.</p> <p>OFI-034 Confirm that maintainers and technicians have access to OEM and Third-Party Technology Manuals Workshop participants questioned if technicians and maintainers at site have access to original equipment manufacturer and third-party technology manuals and other reference information. They also discussed how a lack of access to information can lead to poor maintenance outcomes. Confirm that maintainers and technicians have ready access to and are using OEM and Third-Party Technology Manuals and other relevant information in their work.</p>	<p>maintenance QA step before equipment is handed back to operations. Confirm that OEM references and manuals are available for maintainers on site.</p> <p>OFI-094 Review Maintenance Performance Monitoring Processes There is limited monitoring and feedback to operators around the conduct of maintenance activities on site. Information on what has been completed effectively and what is a known issue rescheduled to a later maintenance service is not available. Lack of knowledge of the status of maintenance can lead to frustrations in conducting pre-starts and ultimately to unwanted vehicle failings during operations. Review maintenance performance management processes and consider how feedback to operators can be improved.</p>	<p>CFM-ERA.33.40 In vehicle fatigue monitoring and alerting system fails CFM-ERA.39.20 Overload warning system fails is incorrect or absent CFM-ETV.33.01 OEM supplied seat belts are disabled or removed CFM-SRA.87.10 Equipment faults arising from poor standard of maintenance</p>
	BI-EPV.26.01 Skilled and experienced personnel specify	Suitably qualified and experienced personnel, with	The process for preparing equipment and component specifications considers relevant company and site standards for:	Suitably qualified and experienced personnel, with operating site knowledge:	Deployed mobile equipment and associated components deliver required production outcomes at the	CFM-EDA.21.10 Equipment or Component Design

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
	and select mobile equipment and mobile equipment components.	operating site knowledge, specify and select fit for purpose mobile equipment and related components (e.g. tyres, trailers, and attachments).	<ul style="list-style-type: none"> Operator and passenger protection e.g. seating, restraints, protection from cargo etc. Lights and markings Speed settings for different vehicle configurations e.g. low speed with tray or tub up) <p>The process for selecting equipment and component considers where the vehicle will be operated:</p> <ul style="list-style-type: none"> Location e.g. surface or underground Road network layout Sight line requirements Type and condition of surface Road gradient Road camber or profile Turn radii Type and condition of dumping and loading areas Climate range <p>The process for selecting equipment and component considers how the vehicle will be operated:</p> <ul style="list-style-type: none"> Average and maximum speeds Maximum wheel load, average load, TKPH, and weight distribution Cycle length empty and laden Shift duration and number of cycles per shift) Special components such as water tanks and sprays, suitability for road works, explosives or hazardous goods transport, etc. <p>The selection process also considers supplier relationships and ongoing site support.</p> <p>BLS-014 Engineering - Covers a range of relevant Standards but does not indicate a requirement for nomination of a senior Engineering team member to be accountable and responsible for the specifications and selection processes on site</p> <p>Workshop Discussion Prompt - Should there be a formal requirement for</p>	<ul style="list-style-type: none"> Confirm site current and future operating conditions Apply relevant company and site standards Prepare equipment and component specifications Select equipment and components that meet site requirements 	<p>expected cost e.g. equipment maintenance and service schedules meet plan.</p> <p>Consider equipment performance measures e.g. availability, planned versus breakdown maintenance, mean time to failure etc.</p>	<p>is not error tolerant</p> <p>CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions</p> <p>CFM-EPA.32.06 Loose objects in cabin or around vehicle remain unsecured</p> <p>CFM-EPV.27.20 Mobile Equipment does not meet standards for safe access, lighting, signage and identification markings</p> <p>CFM-ERA.31.09 Installed equipment system status alarms do not operate</p> <p>CFM-LPV.41.20 Loading requirements for vehicles inadequately considered in mine design, equipment selection and work planning</p> <p>CFM-SRA.87.10 Equipment faults arising from poor standard of maintenance</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<i>selection of appropriate specifications and equipment for mobile equipment on site? (RM Note that Engineering team members were doing this type of work - but there was no documented requirement sighted).</i>			
	BI-EPV.30.01 Skilled and experienced personnel are accountable for setting mobile equipment operating parameters.	Skilled and experienced personnel consider equipment design and site requirements when setting operating parameters for mobile equipment in use.	<p>Accountable personnel setting mobile equipment operating parameters consider:</p> <p>Operating conditions: Type of surface; Condition of surface; Road gradient; Road camber or profile; Turn radii; Quarry or underground; Type and condition of dumping and loading areas; Climate and season (and associated road watering and maintenance requirements); Operator constraints and requirements</p> <p>Routine operations: Average and maximum speeds; Maximum wheel load; Average load; TKPH; Weight distribution - load stability and security; Cycle length - empty and laden; Shift duration; Number of cycles per shift; Mix and numbers of vehicles to deploy (as for short-term planning)</p> <p>Periodic duty: Towing capacity; Loading and tipping non routine loads - clay, water-logging, reactive etc.</p> <p>SOP-016 Checking Mobile Plant, SOP-017 Using Mobile Plant - Mine Traffic Rules, and other documents - Generally provide guidance on equipment operating parameters but the role accountable for setting these is not stated.</p> <p>Workshop Discussion Prompt - <i>Should there be a formally nominated role for setting equipment operating parameters?</i></p>	The accountability for setting and reviewing site mobile equipment operating parameters is assigned to organisational roles with the appropriate knowledge, capability, and experience of site operational requirements.	<p>Confirm that the accountability for setting operating parameters for mobile equipment in use has been assigned.</p> <p>Review mobile equipment reliability and production outcomes.</p> <p>Confirm that equipment is operating within site operating parameters e.g. haul distances, speed etc.</p>	<p>BID-118: BI-EPV.30.01 Skilled and experienced personnel are accountable for setting mobile equipment operating parameters.</p> <p>CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions</p> <p>CFM-EPV.27.20 Mobile Equipment does not meet standards for safe access, lighting, signage and identification markings</p> <p>CFM-LPV.41.20 Loading requirements for vehicles inadequately considered in mine design, equipment selection and work planning</p>
	BI-EPV.40 Mobile Equipment data send	When sensors that monitor equipment components and systems have been fitted, the data is utilised to improve and sustain performance.	<p>When sensors and monitoring systems for equipment components and systems have been fitted, the data is utilised to improve and sustain performance.</p> <p>Site infrastructure requirements for data transfer are specified.</p> <p>Onboard and off-board data capture, transfer, and storage are specified e.g. tyre pressure and temperature, acceleration,</p>	<p>On-board systems monitor equipment usage, data is transferred via site infrastructure.</p> <p>The data is aggregated and sorted so that it can be used for performance monitoring, reporting, and analysis.</p>	<p>Accurate, timely, and tailored reports on equipment usage and performance are provided to operators, supervisors, mine planners, maintenance personnel, training, and management.</p> <p>Reports are reviewed and performance drifts are identified and corrected.</p>	<p>BID-106: BI-EPV.40 Mobile Equipment data send</p> <p>CFM-EDV.21.22 Steering and brake alarms not fitted</p> <p>CFM-ERA.31.09 Installed equipment system status</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			braking, engine revs, speed, strut pressure, alarm status etc. Specifications for how equipment data is aggregated, sorted, monitored for drift, reported, and analysed are in place. Interviews with Operational and Engineering Leads - Some data is returned from equipment to generate usage reports and provide guidance on problem areas and operating practices. A key Coronado Global philosophy for equipment is that all monitoring and processing should be happening local to the machine.			alarms do not operate CFM-SRA.92 Unit key system status and alarms are not monitored
	BI-EPV.40.01 Local and remote failsafe for sensors, alarms, and installed safety devices.	Sensor and alarm faults for equipment components, systems, and installed safety devices are detected with local notification, data capture and fault information send.	There are specifications for fault reporting from sensors, alarms, and safety devices installed on mobile equipment. The specifications include requirements for local notification, data capture and fault information send. The specifications confirm fault priority and category and required action. When monitoring systems for equipment components alarm or safety devices are compromised, this data is captured and is sent for analysis and review. CGRA BLS-014 Engineering - Only reversing and brake alarms are mentioned - with no requirements noted around fail-safe specifications (apart from for E-stops and warning devices).	When monitoring systems for equipment components alarm or safety devices are compromised there is local notification and relevant fault data is captured, transmitted off vehicle. The data is transmitted, aggregated and sorted so that it is available to: <ul style="list-style-type: none"> • Provide instructions back to the operator • Monitor performance • Prepare reports • Undertake diagnostics and analysis 	Accurate, timely, and tailored reports on fault reporting from sensors, alarms, and safety devices installed on mobile equipment are provided to supervisors, maintenance personnel, training, management, suppliers, contract service providers and others as required. Interviews and Inspections - Alarms and sensors included in maintenance work-orders and these are completed and tracked on site.	CFM-CRA.03.21 Incorrect action on vehicle system alarm - not understood CFM-CRA.11.22 Operator non-compliance (including to alarms) CFM-EDV.21.22 Steering and brake alarms not fitted CFM-ERA.31.09 Installed equipment system status alarms do not operate CFM-SRA.92 Unit key system status and alarms are not monitored
OFI-36: Review how mobile equipment performance is reported and monitored at a site level. OFI-94: Review Maintenance Performance Monitoring Processes.	BI-ERA.31.02 Inspection and maintenance of mobile equipment cabin integrity, restraints, access and escape, auto shutdowns and other relevant protective systems.	The protective systems and safety related components of on-site approved mobile equipment remain functional.	Maintenance strategies related to cabins, passenger restraints, access and egress, auto shutdown and other relevant protective systems are in place for all vehicles on site and include: <ul style="list-style-type: none"> • Regular visual checks and inspections • Measurements (with tolerances) • Proof testing Replacement of components based on OEM schedule, recommendations, and	Work orders for equipment on site are completed in a timely manner covering: <ul style="list-style-type: none"> • Cabin integrity, • Restraints (including load carrying restraints), • Access and emergency egress • Auto shutdown and other relevant protective systems Maintenance planners close out work orders when confirmed as completed	Equipment availability metrics. Reports on maintenance work order close out are prepared by maintenance planners for review by senior personnel Metrics on the status of safety related work orders. Reviews and investigations after significant maintenance failures. Multiple pre-start documents - Includes checks in the RED (do not use until repaired) area for safety	CFM-ERV.33.20 Compromised vehicle cabin no longer meets OEM or site specific specifications CFM-ETV.25.05 Fitted airbags fail to deploy CFM-SRA.87.10 Equipment faults arising from poor

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>site duty requirements.</p> <p>CGRA BLS-014 Engineering V1.0 undated - S11 Maintenance references skills required for maintainers and relevant safety (and operational) components which require inclusion in site maintenance strategies. S12 Forklifts, Telehandlers and Tyre Handlers call up additional requirements that should be in place for these high energy related machines.</p>	<p>and prepare regular status reports on work order status for equipment on site.</p> <p>Inspections and Interviews - Work packs and work-orders included cabin integrity, seat and seat belts, access and egress, and alarm or protection systems.</p> <p>OFI-036 Review how mobile equipment performance is reported and monitored at a site level. Multiple contractor groups provide support to Curragh North Open Cut Mine. There is a mix of how the equipment used by each contractor group is operated and maintained. This includes the use of different maintenance processes and support systems covering prestart checks and defect reporting, inspections, servicing, reactive and planned maintenance.</p> <p>The mine owner and operator (SSSE) of Curragh North Open Cut mine has overarching company and legislative obligations to maintain and operate mobile equipment that is fit for use. This approach requires performance measures that identify and correct systems issues before incidents occur. Given the multiple systems and workgroups involved in mobile equipment maintenance at site, setting and applying performance measures is neither straight forward nor simple.</p> <p>Review and confirm the minimum performance measures required at a mine operator level to meet company and legislative expectations and how they will be reported and monitored. Work with maintenance specialists from all contractor groups and identify the information required to report site performance. Consider how the required information can be harvested from their current maintenance</p>	<p>related systems on equipment.</p> <p>OFI-094 Review Maintenance Performance Monitoring Processes</p> <p>There is limited monitoring and feedback to operators around the conduct of maintenance activities on site. Information on what has been completed effectively and what is a known issue rescheduled to a later maintenance service is not available. Lack of knowledge of the status of maintenance can lead to frustrations in conducting pre-starts and ultimately to unwanted vehicle failings during operations.</p> <p>Review maintenance performance management processes and consider how feedback to operators can be improved.</p>	<p>standard of maintenance</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
<p>OFI-36: Review how mobile equipment performance is reported and monitored at a site level.</p>	<p>BI-ERA.31.03 Inspection and maintenance of mobile equipment lights and markings</p>	<p>Mobile equipment in use always meets category standards for lights and markings.</p>	<p>Each category of mobile equipment has an approved standard for lights and markings. There are comprehensive site processes in place to apply and maintain this mobile equipment standard including:</p> <ul style="list-style-type: none"> • Selection • Site use approval • Inspection • Cleaning and washing • Defect reporting • Equipment stand down • Repairs • Planned maintenance including the replacement of components based on OEM schedule, recommendations, and site duty requirements. <p>CGRA BLS-014 Engineering V1.0 undated - S11 Maintenance references skills required for maintainers and relevant safety (and operational) components which require inclusion in site maintenance strategies - standards for lighting and signage required to be achieved.</p>	<p>systems or other sources. With a focus on safe and productive operations, consider performance measures that confirm the application of key maintenance processes from inspections, prestart checks and defect reporting and resolution, planned vs breakdown maintenance etc.</p> <p>Inspection, defect reporting, repair and maintenance processes that consider lights and marking for mobile equipment are consistently applied. Prestart checks include:</p> <ul style="list-style-type: none"> • Confirming functioning lights and indicators • Visible decals • Whip flags (e.g. for surface mining light vehicles) • Flashing lights (colour as specified) <p>Inspections and Interviews - Work packs and work-orders included lights, warning lights, horns etc., and equipment decals (markings).</p> <p>OFI-036 Review how mobile equipment performance is reported and monitored at a site level.</p> <p>Multiple contractor groups provide support to Curragh North Open Cut Mine. There is a mix of how the equipment used by each contractor group is operated and maintained. This includes the use of different maintenance processes and support systems covering prestart checks and defect reporting, inspections, servicing, reactive and planned maintenance.</p> <p>The mine owner and operator (SSSE) of Curragh North Open Cut mine has overarching company and legislative obligations to maintain and operate mobile equipment that is fit for use. This approach requires performance measures that identify and correct</p>	<ol style="list-style-type: none"> 1. The current and approved standard for each category of mobile equipment details requirements for lights and markings. 2. Monitoring that prestart checks are being undertaken to required standard. 3. Equipment availability metrics include defect stand down information. 4. Reports on maintenance work order close out are prepared by maintenance planners for review by senior personnel. <p>Multiple pre-start documents - Includes checks in the RED (do not use until repaired) area for lights and markings on equipment.</p>	<p>CFM-EPV.27.20 Mobile Equipment does not meet standards for safe access, lighting, signage and identification markings</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>systems issues before incidents occur. Given the multiple systems and workgroups involved in mobile equipment maintenance at site, setting and applying performance measures is neither straight forward nor simple.</p> <p>Review and confirm the minimum performance measures required at a mine operator level to meet company and legislative expectations and how they will be reported and monitored.</p> <p>Work with maintenance specialists from all contractor groups and identify the information required to report site performance. Consider how the required information can be harvested from their current maintenance systems or other sources. With a focus on safe and productive operations, consider performance measures that confirm the application of key maintenance processes from inspections, prestart checks and defect reporting and resolution, planned vs breakdown maintenance etc.</p>		
<p>OFI-36: Review how mobile equipment performance is reported and monitored at a site level.</p>	<p>BI-ERA.31.04 Inspection and Maintenance of Mobile Equipment alarms, monitors, cameras, and other warning devices.</p>	<p>Mobile equipment alarms, cameras and advice screens are functional during operations.</p>	<p>Each category of mobile equipment has an approved standard for alarms, cameras, advice screens, and other warning devices.</p> <p>There are comprehensive site processes in place to apply and maintain this mobile equipment standard including:</p> <ul style="list-style-type: none"> • Selection • Site use approval • Inspection and calibration • Proof testing • Cleaning and washing • Defect reporting • Equipment stand down requirements • Repairs and replacement • Planned maintenance including proof testing, component replacement based on OEM 	<p>Inspection, calibration, proof testing, defect reporting, repair, maintenance and other processes relevant to mobile equipment alarms, cameras, and in cabin monitors, and other warning devices are consistently applied.</p> <p>Prestart checks and infield calibration includes checking and reporting on the status of operator relevant alarms, cameras, advice screens, and other warning devices.</p> <p>Inspections and Interviews - Work packs and work-orders include functional checks on alarms, monitors, cameras and other warning devices.</p> <p>OFI-036 Review how mobile equipment performance is reported and monitored at a site level.</p>	<ol style="list-style-type: none"> 1. The current and approved standard for each category of mobile equipment details requirements for alarms, cameras, advice screens, and other warning devices. 2. Monitoring that prestart checks are being undertaken to required standard. 3. Equipment availability metrics include defect stand down information. 4. Reports on maintenance work order close out are prepared by maintenance planner <p>Multiple pre-start documents - Includes checks in the RED (do not use until repaired) area for safety related systems on equipment.</p>	<p>CFM-CRA.10.30 Proximity alarms do not assist operator</p> <p>CFM-ERV.33.23 Seat belt use indicators disabled or compromised</p> <p>CFM-ETA.40.01 Routine false positive alarms</p> <p>CFM-SRA.92 Unit key system status and alarms are not monitored</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>schedule, recommendations, and site duty requirements.</p> <p>CGRA BLS-014 Engineering V1.0 undated - S11 Maintenance references skills required for maintainers and relevant safety (and operational) components which require inclusion in site maintenance strategies. S12 Forklifts, Telehandlers and Tyre Handlers call up additional requirements that should be in place for these high energy related machines. Alarms and cameras not specifically identified.</p>	<p>Multiple contractor groups provide support to Curragh North Open Cut Mine. There is a mix of how the equipment used by each contractor group is operated and maintained. This includes the use of different maintenance processes and support systems covering prestart checks and defect reporting, inspections, servicing, reactive and planned maintenance.</p> <p>The mine owner and operator (SSSE) of Curragh North Open Cut mine has overarching company and legislative obligations to maintain and operate mobile equipment that is fit for use. This approach requires performance measures that identify and correct systems issues before incidents occur. Given the multiple systems and workgroups involved in mobile equipment maintenance at site, setting and applying performance measures is neither straight forward nor simple.</p> <p>Review and confirm the minimum performance measures required at a mine operator level to meet company and legislative expectations and how they will be reported and monitored. Work with maintenance specialists from all contractor groups and identify the information required to report site performance. Consider how the required information can be harvested from their current maintenance systems or other sources. With a focus on safe and productive operations, consider performance measures that confirm the application of key maintenance processes from inspections, prestart checks and defect reporting and resolution, planned vs breakdown maintenance etc.</p>		
	BI-ERA.31.05 Inspection,	Mobile equipment maintenance tools,	Key maintenance tools and measuring components on equipment are regularly	Work orders are raised and issued to achieve inspection and calibration of	1. Current inspection, calibration, maintenance, and	BID-120: BI-ERA.31.05

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
		speedometers and other indicators are accurate.	calibrated, including: <ol style="list-style-type: none"> 1. Speed measurement devices include speedometers 2. Operator information panels 3. OEM and third-party monitoring technology 4. Torsion wrenches and pressure monitoring devices Inspection, calibration and maintenance is scheduled in line with OEM or third-party provided nominated maintenance strategies. CGRA BLS-014 Engineering V1.0 undated - S11.4 Brake Testing and S11.8 specifically require maintenance and calibration of tooling with 3rd party confirmation of conformance.	maintenance tools and speed measurement devices follows OEM or third-party provider schedule, recommendations. Inspections and Interviews - key tools were noted to be in calibration with Work Orders in place to prompt for re-calibration in line with standards.	software version records for each mobile equipment unit. <ol style="list-style-type: none"> 2. Maintenance status reports. Inspections and Interviews - documentation on calibration included in site information management system as part of the safety files for equipment on site.	Inspection, calibration, maintenance, and updating of mobile equipment tools and speed measuring systems CFM-ERA.39.21 Speedometer does not indicate actual speed CFM-ERA.40.22 Over speed warning alarm fails to operate CFM-SRV.96.20 No aggregated monitoring and response to over speed alarms
OFI-17: Review and improve communications between maintenance and production. OFI-36: Review how mobile equipment performance is reported and monitored at a site level.	BI-ERA.31.08 Inspection and maintenance of mobile equipment key systems, brakes, steering, and wheel assemblies	Key mobile equipment systems and components such as brakes, electric drive propulsion elements, steering, and wheel assemblies do not fail without detection or warning.	Each category of mobile equipment has an approved standard for key systems and components. There are comprehensive site processes in place to apply and maintain this mobile equipment standard including: <ul style="list-style-type: none"> • Selection • Site use approval • Inspection and calibration • Prestart checks • Reporting operator performance • Defect reporting • Equipment stand down requirements • Repairs and replacement • Planned maintenance and component replacement based on OEM schedule, recommendations, and site duty requirements. Defect reports, alarms, and non-conforming actions of operators and maintainers are analysed to consider additional inspections and maintenance, further operator training, and performance monitoring. CGRA BLS-014 Engineering V1.0 undated	Inspection, calibration, defect reporting, repair, maintenance, and other processes relevant to mobile equipment key systems are consistently applied. Mobile equipment prestart checks and in field testing check and report on the status of key systems. A defect reporting system is in place with clear guidance on the actions to be taken if mobile equipment key systems are compromised. Inspections and Interviews - Work packs and work-orders included brakes, steering and wheel assemblies (with additional tyre-fitting work provided at a dedicated tyre bay on site). OFI-036 Review how mobile equipment performance is reported and monitored at a site level. Multiple contractor groups provide support to Curragh North Open Cut Mine. There is a mix of how the equipment used by each contractor group is operated and maintained. This includes the use of different	<ol style="list-style-type: none"> 1. The current and approved standard for each category of mobile equipment details key system and component operational requirements. 2. Monitoring that prestart checks are being undertaken to the required standard and frequency. 3. Equipment availability metrics include defect stand down information. 4. Reports on maintenance work orders close out for key systems. 5. Incident analysis of component or key system failures that occurred without warning or detection. Multiple pre-start documents - Includes checks in the RED (do not use until repaired) area for brakes, steering and wheel assemblies on equipment.	BID-119: BI-ERA.31.08 Inspection and maintenance of mobile equipment key systems, brakes, steering, and wheel assemblies CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions CFM-EPV.39.42 Vehicles are operated outside specified tyre conditions

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>- S5.3.2 Brake Integrity, S5.10.1 Trailer Braking Systems, S11.1 competencies for evaluating heavy vehicle brake systems, and S11.4 Brake Testing (max 6 months frequency) all require a clear focus on braking and steering systems.</p>	<p>maintenance processes and support systems covering prestart checks and defect reporting, inspections, servicing, reactive and planned maintenance.</p> <p>The mine owner and operator (SSSE) of Curragh North Open Cut mine has overarching company and legislative obligations to maintain and operate mobile equipment that is fit for use. This approach requires performance measures that identify and correct systems issues before incidents occur. Given the multiple systems and workgroups involved in mobile equipment maintenance at site, setting and applying performance measures is neither straight forward nor simple.</p> <p>Review and confirm the minimum performance measures required at a mine operator level to meet company and legislative expectations and how they will be reported and monitored. Work with maintenance specialists from all contractor groups and identify the information required to report site performance. Consider how the required information can be harvested from their current maintenance systems or other sources. With a focus on safe and productive operations, consider performance measures that confirm the application of key maintenance processes from inspections, prestart checks and defect reporting and resolution, planned vs breakdown maintenance etc.</p>		
<p>OFI-1: Review radio handset positioning in cabs and the training around channel changes</p>	<p>BI-ERA.31.30 Selection, inspection, and maintenance of radios and other communication equipment</p>	<p>Operating sites deploy fit for purpose, effective, and reliable radios and other communication equipment.</p>	<p>There is a site performance standard for site radios and other communication equipment There are comprehensive site processes that define:</p> <ul style="list-style-type: none"> • Required communication equipment by equipment category • Required communication 	<p>Prestart checks, defect reporting, radio channel allocation, signal coverage, repair, maintenance, and other processes relevant to communications equipment are consistently applied. Interviews and Inspections - Workshop work orders included</p>	<p>Maintenance planners close out work orders when completed and prepare regular status and performance reports for communications equipment. Work orders for equipment repair are completed in a timely manner. Multiple pre-start documents -</p>	<p>BID-107: BI-ERA.31.30 Selection, inspection, and maintenance of radios and other communication equipment</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>equipment for personnel who work around mobile equipment e.g. handheld devices</p> <ul style="list-style-type: none"> Assigned radio channels Acceptable practices when communication equipment is faulty, out of range, or unavailable Expected maintenance performance metrics <p>BLS-014 Engineering S5 Design requirements to include provision for permanently mounted two-way radios. Interviews and Inspections - functioning radios a clear requirement for all deployed plant on site.</p> <p>OFI-001 Review radio handset positioning in cabs and the training around channel changes.</p> <p>Workshop participants discussed how the positioning of radio hand sets in the cab and consistent practices for changing channels e.g. by button position can avoid the need to look away from the road when changing channels.</p> <p>Some operators have difficulty accessing the radio, changing the channel (particularly when there are many channels to choose from) and so are taking their eyes off the road when they reach out for the handpiece or change radio channels.</p> <p>Some operators have difficulty accessing the radio, changing the channel (particularly when there are many channels to choose from) and so are taking their eyes off the road when they reach out for the handpiece or change radio channels.</p>	<p>confirming functionality of communication systems.</p>	<p>Includes checks in the RED (do not use until repaired) area for radios and communication systems on equipment.</p>	<p>CFM-EPA.33.40 Communication equipment absence, failure or poor reception CFM-MPA.66.01 Incorrect communication protocol</p>
	<p>BI-ERA.31.50 Protocols for the calibration of measuring equipment</p>	<p>Measuring and position monitoring equipment is inspected and calibrated.</p>	<p>There is a site standard for the regular inspection, calibration, and upgrade management of measuring equipment. It is supported by site processes that detail:</p> <ul style="list-style-type: none"> Skills, qualifications, and experience required by personnel undertaking at site inspections and 	<p>Site personnel are trained, competent, and authorised to use measuring equipment for:</p> <ul style="list-style-type: none"> Equipment maintenance e.g. pressure, braking, and other measures Measurement of as built conditions in the operating 	<p>Reports on the calibration status of measuring equipment. Records confirm the competence of personnel undertaking measuring or surveying tasks.</p> <p>Inspections and Interviews - documentation on calibration included in site information</p>	<p>CFM-CDA.06.02 Operator drives vehicle at the incorrect speed (too fast or too slow). CFM-EPA.31.20 Equipment or component failure</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			equipment calibration <ul style="list-style-type: none"> • Offsite provider support • Inspection, calibration, and software upgrade management for deployed technologies e.g. position systems CGRA BLS-014 Engineering V1.0 undated - S11.4 Brake Testing and S11.8 specifically require maintenance and calibration of measuring equipment with 3rd party confirmation of conformance.	environment The training includes inspecting, testing, and confirming that measuring and position equipment is calibrated before use. Inspections and Interviews - key tools were noted to be in calibration with Work Orders in place to prompt for re-calibration in line with standards.	management system as part of the safety files for equipment on site.	during operations e.g. brakes or steering or controlled functions CFM-EPV.39.42 Vehicles are operated outside specified tyre conditions CFM-ERA.39.20 Overload warning system fails is incorrect or absent CFM-ERV.33.20 Compromised vehicle cabin no longer meets OEM or site specific specifications
OFI-14: Review mobile equipment prestart processes as applied by different workgroups. OFI-40: Review and update monitoring of mobile equipment prestart quality.	BI-ERA.32.01 Operator pre-start checks include safety and operational elements	Equipment operators carry our prestart checks to confirm equipment can be operated and work area hazards are identified and managed. Equipment that is compromised does not operate and work environment issues are addressed before commencing work.	Equipment operators are competent and supported to carry equipment and work area prestart checks. Mobile equipment prestart checks include: <ul style="list-style-type: none"> • Brakes including warning systems • Steering including warning systems • Tyres and other running gear • Conditions of vehicle - load carrying elements, guards and covers, lights and signage, hydraulic lines, and ground engaging tools • Access and egress (normal and emergency) in good condition and accessible • Communications (radios etc.) • Fire extinguishers and fire suppression system status, • Any attachments, e.g. buckets, jacks, lifting equipment, spare wheels etc. Faults detected at prestart checks and during operations are classified: <ul style="list-style-type: none"> • When equipment cannot continue to operate and how to manage 	Equipment operators are trained, competent and authorised to carry equipment and work area prestart checks before operating equipment. Prestart checklists are prepared for each type of equipment. Prestart equipment and work area checks are logged. There is a site defect reporting and management system. Multiple Assessment Tools - Assessment tools which accompany the training modules include a formal requirement to check both theory understanding as well as demonstrated practical skills for conducting pre-start checks. OFI-014 Review mobile equipment prestart processes as applied by different workgroups. Workshop participants discussed and confirmed that while there is an overarching site requirement, operator mobile equipment prestart checks vary across different workgroups. They also note production pressure (real or perceived) to have equipment working early in each shift e.g. first	Supervisors monitor the quality of operator prestart checks. Maintenance planners review prestart forms and raise work orders as required. Prestart records confirm that checks of work areas and key systems, including - communications, brakes, steering, tyres and running gear are completed. Interviews - Identified faults are reported through to the supervisor, maintenance planners and others to action any required repairs. OFI-040 Review and update monitoring of mobile equipment prestart quality. Workshop participants confirmed that there is an inconsistency in how mobile equipment prestart checks are monitored for quality and quantity. Some reasons discussed included operator training and competence, first load production pressures, nil consequences for sub-standard checks. Inconsistent and poorly executed pre-start checks can lead to mobile	BID-156: BI-ERA.32.01 Operator pre-start checks include safety and operational elements CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions CFM-EPV.39.42 Vehicles are operated outside specified tyre conditions CFM-ETV.33.01 OEM supplied seat belts are disabled or removed

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>repair or removal from work area</p> <ul style="list-style-type: none"> When equipment can continue to be operated (and communication of tolerable faults) <p>Work area checks include identifying and managing hazards from: Vehicle moving off; Obstacles; Road conditions; Road stability (presence of cracking or signs of slumping of, or onto roadway); Weather (rain, wind (dust), other threats), and; Vision and sight line restrictions</p> <p>Multiple Pre-Start Documents - Include checks in the RED area for safety and operational components</p> <p>Multiple Training (Learning Material) Modules - Pre-start checks outlined in the Learning Materials and cover key pass or fail criteria.</p>	<p>load by 0630. From time-to-time this results in situations where mobile equipment has left the go line before defects are detected e.g. faulty radios etc. Workshop participants discussed a need for a consistent site equipment prestart equipment performance standard before installing additional technology such as operator alert or collision alerting systems. Standardisation is also required before digitising prestart check processes. Review application of existing vehicle prestart processes, consider how to best balance production drivers, equipment health checks, defect reporting, and operator safety. Develop a roadmap to consistent site performance and the operational integration of digital technologies.</p>	<p>equipment operating with defects have not been identified or where hazards are not managed using the site fault classification process. Also without quality and quantity data, reviews and improvements to overall process design cannot be made. Review how performance monitoring of operator mobile equipment prestart checks can be improved. Establish system monitoring for daily outputs with quality and quantity outputs. Once reliable data is available review the application and design of the prestart processes covering training, application of defect classifications, defect response and repair times etc.</p>	
<p>OFI-014 Review mobile equipment prestart processes as applied by different workgroups.</p> <p>OFI-40: Review and update monitoring of mobile equipment prestart quality.</p>	<p>BI-ERA.32.07</p> <p>Prestart checks of radio and other communication devices</p>	<p>Prestart checks confirm that mobile equipment operators and people who work around mobile equipment can communicate.</p>	<p>Mobile equipment operators and personnel who work around mobile conduct prestart checks that confirm:</p> <ul style="list-style-type: none"> Radios are working Radios are set on the correct channel Other communication devices are working and set up correctly (where relevant) <p>There is a well-defined site defect management process to manage faults in communications equipment before and during operations. It includes what to do when there is a fault.</p> <p>Multiple Pre-Start Documents - Include checks in the RED area for safety and operational components</p> <p>Multiple Training (Learning Material) Modules - Pre-start checks outlined in the Learning Materials and cover key pass or fail criteria.</p>	<p>Radio and other communication device users are trained in:</p> <ul style="list-style-type: none"> Site call up and response standards Managing faults and defects Emergency calls Equipment prestart checks <p>Multiple Assessment Tools - Assessment tools which accompany the training modules include a formal requirement to check both theory understanding as well as demonstrated practical skills for conducting pre-start checks.</p> <p>OFI-014 Review mobile equipment prestart processes as applied by different workgroups.</p> <p>Workshop participants discussed and confirmed that while there is an overarching site requirement, operator mobile equipment prestart checks vary across different workgroups. They also note production pressure (real or perceived) to have equipment working early in each shift e.g. first</p>	<p>Training record reviews. Prestart records confirm that checks are completed. Supervisors monitor and coach on the quality of operator prestart checks. Maintenance planners review prestart forms and raise work orders as required. As required investigations of communication faults.</p> <p>Interviews - Identified faults are reported through to the supervisor, maintenance planners and others to action any required repairs.</p> <p>OFI-040 Review and update monitoring of mobile equipment prestart quality.</p> <p>Workshop participants confirmed that there is an inconsistency in how mobile equipment prestart checks are monitored for quality and quantity. Some reasons discussed included operator training and competence, first load production pressures, nil consequences for sub-standard checks.</p>	<p>BID-157: BI-ERA.32.07 Prestart checks of radio and other communication devices</p> <p>CFM-CPA.11.10 Operators or co-workers have required communications equipment but are not contactable</p> <p>CFM-EPA.33.40 Communication equipment absence, failure or poor reception</p> <p>CFM-MPA.66.01 Incorrect communication protocol</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>load by 0630. From time-to-time this results in situations where mobile equipment has left the go line before defects are detected e.g. faulty radios etc. Workshop participants discussed a need for a consistent site equipment prestart equipment performance standard before installing additional technology such as operator alert or collision alerting systems. Standardisation is also required before digitising prestart check processes. Review application of existing vehicle prestart processes, consider how to best balance production drivers, equipment health checks, defect reporting, and operator safety. Develop a roadmap to consistent site performance and the operational integration of digital technologies.</p>	<p>Inconsistent and poorly executed prestart checks can lead to mobile equipment operating with defects have not been identified or where hazards are not managed using the site fault classification process. Also without quality and quantity data, reviews and improvements to overall process design cannot be made. Review how performance monitoring of operator mobile equipment prestart checks can be improved. Establish system monitoring for daily outputs with quality and quantity outputs. Once reliable data is available review the application and design of the prestart processes covering training, application of defect classifications, defect response and repair times etc.</p>	
<p>OFI-40: Review and update monitoring of mobile equipment prestart quality.</p>	<p>BI-ERA.32.11 Prestart checks of mobile equipment alarms and monitors</p>	<p>Prestart checks confirm that mobile equipment alarms, monitors and information panels are working.</p>	<p>Mobile equipment operators conduct prestart checks, or monitor equipment self-checks, to confirm alarms, monitors, and information panels are working. There is a well-defined site defect management process to manage faults before and during operations. It includes what actions to take based on fault type. Multiple Pre-Start Documents - Include checks in the RED area for safety and operational components Multiple Training (Learning Material) Modules - Pre-start checks outlined in the Learning Materials and cover key pass or fail criteria.</p>	<p>Mobile equipment operators are trained and competent in conducting and monitoring equipment prestart checks. This training includes:</p> <ul style="list-style-type: none"> Alarm checks Alarm response Monitor and information panel check Monitoring status and responding to monitor and information panel checks Managing faults and defects during operations <p>Multiple Assessment Tools - Assessment tools which accompany the training modules include a formal requirement to check both theory understanding as well as demonstrated practical skills for conducting pre-start checks. OFI-014 Review mobile equipment prestart processes as applied by different workgroups. Workshop participants discussed and confirmed that while there is an overarching site requirement, operator</p>	<ol style="list-style-type: none"> Training record review confirm the currency of vehicle operator skills including alarm and other indicator prestart checks and meanings and expected response. Prestart records confirm that checks are completed. Supervisors monitor and coach on the quality of operator prestart checks. Maintenance planners review prestart forms and raise work orders as required. As required investigations of alarm, monitor, and information panel faults. <p>Interviews - Identified faults are reported through to the supervisor, maintenance planners and others to action any required repairs. OFI-040 Review and update monitoring of mobile equipment prestart quality. Workshop participants confirmed that there is an inconsistency in how mobile equipment prestart checks are</p>	<p>CFM-CRA.10.30 Proximity alarms do not assist operator CFM-CRA.11.22 Operator non-compliance (including to alarms) CFM-ERA.32.20 Operator fails to conduct effective pre-start that meets requirements CFM-ERV.33.23 Seat belt use indicators disabled or compromised CFM-SRA.92 Unit key system status and alarms are not monitored</p>

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				mobile equipment prestart checks vary across different workgroups. They also note production pressure (real or perceived) to have equipment working early in each shift e.g. first load by 0630. From time-to-time this results in situations where mobile equipment has left the go line before defects are detected e.g. faulty radios etc. Workshop participants discussed a need for a consistent site equipment prestart equipment performance standard before installing additional technology such as operator alert or collision alerting systems. Standardisation is also required before digitising prestart check processes. Review application of existing vehicle prestart processes, consider how to best balance production drivers, equipment health checks, defect reporting, and operator safety. Develop a roadmap to consistent site performance and the operational integration of digital technologies.	monitored for quality and quantity. Some reasons discussed included operator training and competence, first load production pressures, nil consequences for sub-standard checks. Inconsistent and poorly executed prestart checks can lead to mobile equipment operating with defects have not been identified or where hazards are not managed using the site fault classification process. Also without quality and quantity data, reviews and improvements to overall process design cannot be made. Review how performance monitoring of operator mobile equipment prestart checks can be improved. Establish system monitoring for daily outputs with quality and quantity outputs. Once reliable data is available review the application and design of the prestart processes covering training, application of defect classifications, defect response and repair times etc.	
<p>OFI-28: Consider designing and constructing passing lanes for Light Vehicles.</p> <p>OFI-51: Review site Road Design standards for useability, assign accountabilities and monitor performance.</p> <p>OFI-76: Confirm site road designer qualifications.</p>	BI-LDA.41.01 Road design guidelines set minimum standards for the construction and maintenance of the road network	Site tailored road design standards support the delivery of safe and productive outcomes and are applied to construct and maintain haul roads, ramps, benches, loading and dumping areas, parking areas, access to service areas and other relevant infrastructure.	<p>The site road design specifications consider prevailing weather conditions, equipment in use, operator experience, available construction materials, tyre and equipment life, equipment maintenance, fuel usage, and productivity. Site road design guidelines provide tailored specifications for:</p> <ul style="list-style-type: none"> Physical constraints: Width of pavements, sizes of roadways, linear and cross grades, and ramp size (guidance based on type of equipment in use and tasks undertaken); Curvature (both horizontal and vertical); pavement shape; materials for use in sub-grades, base-course, and running surfaces Site specific requirements: Emergency stopping and run-off areas if required for long downhill sections of roadway; Surface / 	<p>Road networks (and excavations) are constructed following design guidelines and 'as built' is checked off against design before handover. Maintenance crews reference design guidelines during routine maintenance, repair e.g. after flooding and upgrades, to confirm that minimum standards are in place. Routine mine road housekeeping rapidly removes spillage, maintains good water drainage, repairs potholes, rutting and depressions.</p> <p>Workshop Discussion Prompt - SMS-032 references out to other documents (which appear unlinked - such as SOP-017 which has no Appendices in the 11/6/2024 version although it is meant to describe the roadway signage). Is there benefit in simplifying the mine design documentation and offering clearer guidance for operational</p>	<p>In date and approved site road design guidelines and supporting resources. Sign-off records of as built and as maintained against design standards. Work area inspections non-conformance reports and analysis. CAS technology heatmaps and reports. Monitoring of equipment operators reporting and resolution of debris and deterioration.</p> <p>Multiple Supervisor Inspections and CCV Records - Confirming checks being made of road conditions.</p> <p>Workshop Discussion Prompt - Would records from equipment used (e.g. strut pressure heat maps) be useful for informing design improvements?</p> <p>OFI-051: Review site Road Design standards for useability, assign accountabilities and monitor</p>	<p>BID-171: BI-LDA.41.01 Road design guidelines set minimum standards for the construction and maintenance of the road network</p> <p>CFM-CDA.06.02 Operator drives vehicle at the incorrect speed (too fast or too slow).</p> <p>CFM-CPA.10.02 Operators unaware of give way requirements for light vehicles</p> <p>CFM-CPA.11.05 Operator does not drive on available segregated roads</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>pavement material; Construction or mining of segregated roadways that separate heavy mobile equipment and light vehicles; Parking areas covering location, size, and delineation; Storage areas covering separation, segregation and access requirements; Workshops, fuel bays and battery charging locations (considering any introduced flammable liquids or gases, distances, and traffic flow requirements); Stockpiles; Access to bins or tip points (crushers, passes, etc.); Safety berms or windrows; Dump geometry (including tip heads); Roadways around infrastructure e.g. overhead HV lines; Line of sight for equipment operators (including orientation of UG portals, break-aways and intersections, workshops, management of doors and ventilation screens, and longer haul roads)</p> <ul style="list-style-type: none"> General road network features: Guideposts, delineators, roadway signage (beside or above roadway); Signs and barriers; Lighting (area and traffic control); The installation of one way block lights for intersections, long driveages and drifts; Location and requirements for installation of required infrastructure (pipes, cables, lighting, etc.) <p>Accountabilities are assigned for the complete road network life-cycle: Preparing designs; Processes to achieve as-built sign-off; Roadway inspections; Scheduled roadway maintenance; Interim repair works; Decommissioning or moving to alternate uses.</p> <p>SMS-032 Specification for Design and Construction of Mine Roads V7.1 26/3/2024 - Document aligned with QLD</p>	<p><i>deployment?</i> OFI-76 Confirm site road designer qualifications Workshop participants confirmed that there are site requirements for road designer qualifications (RPEQ). There was some discussion about how designer qualifications are confirmed and updated as personnel change. Review site processes for confirming road designers have appropriate qualifications, are keeping road design standards current, and are periodically inspecting construction, and assisting with handover acceptance.</p>	<p>performance. There is a detailed site specification for the design and construction of mine roads that is aligned with regulator requirements. However, the mine design specifications are detailed across multiple related documents that may be missing important details. Mine roads as constructed and maintained do not reflect site performance standards and are below industry good practice e.g. for intersection design, camber, drainage, debris removal, signage etc. Review mine road design documentation, improve its useability and guidance for design, construction, sign-off and handover, and ongoing maintenance. Assign accountabilities and improve road standards. Consider developing hot spot reports based on haul truck strut pressures to direct maintenance resources. Note this can also assist with the management of whole body vibration for mobile equipment operators.</p>	<p>CFM-MDA.61.06 Inadequate work planning means that heavy vehicle operators approach fixed structures that are incidental to achieving operational outcomes CFM-MPA.65.04 Light or heavy vehicle remains in a heavy vehicle blind spot during intersection approach CFM-SDV.81.20 Inadequate mine traffic management plan (specification)</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>Regulator RS19 detailing requirements for the road network on site. Includes pavement widths, geometry, edge protections (windrows and bunds), and ancillary road features.</p> <p>OFI-028 Consider designing and constructing passing lanes for Light Vehicles</p> <p>An absence of light vehicle passing bays on access roads and operations has resulted in poor choices that do not meet site standards when light vehicle operators pass heavy mobile equipment. Travel speed differences have resulted in LV operators breaching clearance requirements when passing HME. The reliability of existing controls depends on the judgement and decisions made by LV operators.</p> <p>Consider the cost benefits of designing and constructing passing lanes for Light Vehicles on mine roads to complement and improve the consistency and reliability of site passing controls.</p>			
<p>OFI-24: Review the effectiveness and frequency of inspections of parking and other infrastructure walkways.</p> <p>OFI-53: Extend parking performance expectations to all vehicle categories.</p> <p>OFI-56: Review Site Parking Standards and their application</p> <p>OFI-57: Review parking area construction, handover, inspection, maintenance, and audit process.</p>	BI-LDV.43 Road design guidelines specify minimum parking area requirements	Parking area designs are fit for purpose. Parking areas are constructed and maintained to meet site requirements.	<p>Parking area designs and construction include layouts for crib areas that segregate vehicle types, optimise traffic flows to avoid conflicts, protect infrastructure, and provide walkways at safe locations.</p> <p>CGRA BLS-FH03 Mobile Equipment - Fatal Hazard Protocol V1.0 - S5 Traffic Rules ...Designated parking areas for equipment by size that includes light vehicles to be parked in a location, and/or position that is separated from, and is clearly visible by operators of mobile equipment....Rules when vehicles and mobile equipment is to be left unattended (fundamentally stable), including broken / stood down equipment and equipment undergoing maintenance.</p> <p>SMS-032 Specification for Design and Construction of Mine Roads V6.2 26/3/2024 - S3.2 Road Design Characteristics, ...provide for safe parking areas near the locations of circuit call up</p>	<p>Designs are executed by road construction crews - placing windrows and berms as required to segregate vehicle types, infrastructure and walkways.</p> <p>Supervisors direct and monitor the activities of road maintenance and construction crews.</p> <p>Learning Material - Komatsu 930E-5 Haul Truck (and other training modules) - Covers means of parking and parking brake functions.</p> <p>Workshop Discussion Prompt - Training modules do not uniformly reinforce fundamentally stable parking requirements. Should they?</p> <p>OFI-024 Review the effectiveness and frequency of inspections of parking and other infrastructure walkways.</p> <p>Workshop participants discussed situations where degraded walkways e.g. in parking areas and around site</p>	<p>Commissioning and handover records confirming that 'as built' meets design requirements</p> <p>Supervisor inspection records.</p> <p>Inspections and Interviews - Parking areas are included in the survey pick-ups and are shown on mine aerial photographs and plans.</p> <p>BLS-004-FH03-CCV-03 Mobile Equipment - Management of Interactions V1.0 - Go line prompt covers park-up to minimise LMHV and HME interactions.</p> <p>OFI-057: Review parking area construction, handover, inspection, maintenance, and audit process.</p> <p>Site parking area requirements are documented but they are not always constructed as per the design. Some of the parking areas at site seem to have been constructed without reference to design standards. It is understood that pickups are done</p>	<p>CFM-LDA.43.01 Vehicle parking, including emergency parking is inadequately considered in mine design and routine work planning</p> <p>CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots</p> <p>CFM-SDV.81.20 Inadequate mine traffic management plan (specification)</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>signs... S4.4 Safety Berm Guidelines - Operational Areas ...Parking Areas - must be separated from other vehicle traffic by suitable safety berm.</p> <p>OFI-056 Review Site Parking Standards and their application</p> <p>Workshop participants confirmed inconsistencies in the application of site parking standards. For example spoon drains or parking humps are not consistently available for parking areas in work locations. They also noted that the standards for parking areas are not regularly audited for compliance and were unaware of a process to for confirm that newly built parking areas meet standards before being handed to operations. There was also discussion on restricted parking availability in some locations</p> <p>Substandard parking area construction and limited availability can result in roll-aways and parking in the wrong location e.g. in heavy vehicle blind spots, in positions that compromise pedestrians etc.</p> <p>Review site parking area design standards, update if required. Confirm that there is a process for handover that has a construction commissioning check that confirms 'as built' meets design requirements. Consider parking requirements and demands by working group, location, and vehicle type. Review performance monitoring processes to confirm that vehicle operators are meeting site standards.</p>	<p>infrastructure have remained unrepaired for long periods. If walkways are not regularly inspected and maintained then their effectiveness as a control in separating pedestrians from vehicles can be compromised e.g. bund protections cannot stop vehicles, pedestrians walk on roadways to avoid water and mud, pedestrian crossings are not identified by vehicle operators etc.</p> <p>Review the effectiveness and frequency of site infrastructure inspections, confirm that defects identified are captured and there is a process to track corrective action progress.</p> <p>OFI-053: Extend parking performance expectations to all vehicle categories.</p> <p>Workshop participants discussed site standards, expectations, training, and reinforcement covering parking of mobile equipment. There are some good documented examples of expected standards e.g. for wheeled loaders.</p> <p>The approach for communication parking expectations does not extend to all vehicle types, locations, and situations e.g. haul truck fire</p> <p>Review existing good practice examples and extend to all vehicle categories and circumstances e.g. go line, parking areas, in pit, for emergency etc.</p>	<p>by surveyors but the workshop attendees had no knowledge as to whether there is a review step that confirms correct construction and compliance to site standards. Poor parking area standards cause unwanted vehicle interactions e.g. roll-aways, unsighted parked vehicles, pedestrian hazards etc.</p> <p>Review the adequacy of site parking area designs and standards. Benchmark against industry good practice. Confirm the approval, construction, handover, inspection, maintenance, and audit process.</p>	
<p>OFI-44: Review and Improve site lighting delineation and signage standards.</p> <p>OFI-81: Review how site road standards are monitored</p>	<p>BI-LPA.42.04 Lighting, delineation and signs are installed and maintained to standards that meet minimum site road design requirements.</p>	<p>There are minimum standards for the installation, inspection and maintenance of lighting, delineation, and signs that assist vehicle operators maintain situational awareness.</p>	<p>Designs and construction requirements include standards for lighting of high traffic areas (e.g. around the mine infrastructure areas, vehicle (including remotely controlled) operating areas, dump edges, intersections, etc.) and signs to alert vehicle operators of road network requirements. Permanent signs are erected to provide warnings around fixed infrastructure and temporary signs or</p>	<p>Survey marks out the requirements for road network infrastructure to meet site requirements.</p> <p>Road construction crews place and maintain permanent and temporary lighting, communication and information signage around the road network.</p> <p>Work crews place demarcation and warning signage around their work</p>	<p>Survey records.</p> <p>As built plans with sign-off.</p> <p>Workplace inspections.</p> <p>By exception incident investigations.</p> <p>Critical Control Verification FH03 Mobile Equipment (BLS-004 FH03-CCV-02-FH03) - 4 monthly check on the conduct of Pre-Starts, interviews with Drivers/Operators, inspection of working area, HME equipment check</p>	<p>BID-158: BI-LPA.42.04 Lighting, delineation and signs are installed and maintained to standards that meet minimum site road design requirements.</p> <p>CFM-CPA.10.02</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>warning devices (traffic cones, barrier tape, etc.) are used around temporary work areas or road network hazards not yet repaired.</p> <p>PLN-005 PHMP - Mobile Equipment Incidents - S4.2 References the <i>Critical Control: Management of Interactions - Traffic signage and delineators are correctly installed and maintained.</i></p> <p>SOP-017 Using Mobile Plant - Mine Traffic Rules - Generally covers requirements for vehicle mounted lights.</p> <p>SOP-017-APP-01 Using Mobile Plant - Mine Traffic Rules - Signage V6.0 21/11/22 - provides guidance on delineation and signage with extensive information on the types of signs and cones used on site (as for other documents area lighting is not described).</p> <p>Workshop Discussion Prompt - Is there a requirement for more clarity around area lighting for operating crews?</p>	<p>areas and nominated access routes. 'As built' is checked off against design by operations.</p> <p>CPS PLN 5.0 Survey Manual - S3.0 Field Responsibilities indicates pick-up by Survey on at least a weekly basis for all coal seams, highwalls, etc. General surveys are conducted by exception. At S3.6 Reference made to loading designs from Trimble into equipment.</p> <p>Workshop Discussion Prompt - The Survey Manual is dated 2015 and appears to not include the extensive use of drones and supporting technology observed in September 2024 - should it be updated?</p> <p>OFI-044 Review and Improve site lighting delineation and signage standards.</p> <p>Workshop participants discussed a lack of clarity on speed signs and their placement. They also discussed general signage e.g. circuit boards together with an absence of as built plans for roads detailing signs, limited checking, and failing to perform detailed workplace inspections is contributing to poor sign discipline at site.</p> <p>Signage and other warnings when not present or incorrect can contribute to unwanted vehicle interactions. Review and improve processes for meeting, maintaining, and monitoring site standards for lighting, delineation and signage.</p>	<p>status (in-date ItS sticker), understanding of speed requirements. OFI-081 Review how site road standards are monitored</p> <p>Workshop participants identified that the construction and maintenance of site roads including lighting, delineation and signs does not always align with site standards. The design, construction, handover, and maintenance of site roads is a key vehicle interaction control. While operators can adjust to non-standard conditions, the decision demands on them increase and this increases the likelihood of a mistake or error. Review and confirm how site roads are monitored to confirm that they meet site standards. Review and confirm the practicality and application of site processes for road construction, handover, and ongoing maintenance.</p>	<p>Operators unaware of give way requirements for light vehicles</p> <p>CFM-CPA.11.05</p> <p>Operator does not drive on available segregated roads</p> <p>CFM-LPA.42.03</p> <p>Obscured or missing signage</p> <p>CFM-MPA.63.04</p> <p>Parked vehicles block view for pedestrians and other equipment operators</p>
	BI-LPA.42.11 Competent and site experienced water cart operators	Dust is well controlled without overwatering the road surface.	<p>Site performance requirements are in place for water cart operators so that dust is controlled without creating a slippery road.</p> <p>Performance requirements may include:</p> <ul style="list-style-type: none"> • Spray application e.g. strip spraying • Spray bar patterns and timing • Water application based on speed 	<p>Mobile equipment operators provide feedback on dust control and overwatering.</p> <p>Supervisors monitor dust control watering operations.</p> <p>Trainers reinforce importance of watering and communication for water cart operators.</p> <p>RIIMPO206-ASQ Conduct Bulk Water Truck Operations Assessment -</p>	<p>Water cart operator performance assessment against site requirements for dust management without overwatering.</p> <p>By exception incident reporting.</p> <p>Digital reports from automated water carts.</p> <p>CCV-FH03 Road and Intersection Design & Construction - Addresses confirming checks for water cart</p>	<p>BID-159: BI-LPA.42.11</p> <p>Competent and site experienced water cart operators</p> <p>CFM-CRA.03.01</p> <p>Operator fails to identify and act on changes in conditions: reduced</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<ul style="list-style-type: none"> Using an automated spray system <p>SOP-037 Maintaining and Watering Mine Roads V4.4 23/09/2022 S5 Watering Mine Roads covers requirements for Water Cart operators to enter a circuit, apply dust suppression water in a manner that will minimise potential for vehicle to lose control (by strip spraying), regulating spray flow rate on ramps, corners and intersections, and adjusting watering techniques when at Stockpiles, LMV Roads and Other Work Areas.</p>	<p>Extensive theory checks covering all aspects of operating the cart and using the spray system - practical assessment covers general safety and operations, pre-start checks, checks on start-up, operating vehicle and deploying sprays, refuelling, and end of day clean-up and reporting.</p>	<p>operators and dust suppression effectiveness.</p>	<p>visibility, road narrowing, road surface etc. CFM-LPV.54 Excessive water (Dust Control) is applied to road surface</p>
OFI-46: Review site bunding practices.	BI-LPA.42.20 Infrastructure protection using barriers or warning devices.	Site infrastructure is protected from unplanned contact with mobile equipment.	<p>When constructing roads near infrastructure, hazardous locations or work areas the documented requirements include placing windrows, bunds or physical barriers (designed to reduce injury threats if struck (i.e. rounded and/or frangible)) - and where these cannot be placed (e.g. for overhead lines) then warning devices (over height alarms, cable balls, geo fencing etc.), or vision enhancing components (mirrors, translucent ventilation curtains etc.) are installed.</p> <p>Information is prepared on requirements and workers are trained in how to implement and adjust protection barriers and warning devices.</p> <p>Specification ES-006 11kV and 22kV Overhead Transmission Lines (undated) - S6.5 Protection required when crossing over roads (goal posts to warn over-height vehicles) and minimum clearance heights noted (10 metres which may be insufficient for crossing haul roads)</p> <p>Specification CS-007 Road Furniture, 15/9/2018 - Details requirements for the physical sizes of delineators, signage, guard rails, etc. <i>Specification seems to be meant for use on public roads - is this in use at CNOC haul roads?</i></p>	<p>Barriers and warning devices that protect site infrastructure from contact with mobile equipment are installed as designed.</p> <p>Protection types include physical barriers that prevent contact through to warning/vision enhancing devices to enhance vehicle operator's situational awareness.</p> <p>Workers only remove or modify barriers in line with site requirements.</p> <p>Inspections and Interviews - key infrastructure (e.g. conveyors) are separated from HME movements and have berms protecting against inadvertent entry into the conveyor trace (corridor), other infrastructure protected by solid bollards and berms.</p> <p>OFI-046 Review site bunding practices</p> <p>Workshop participants discussed site bunding processes especially for high-risk areas. They identified that infrastructure protection in the McKellar yard is inadequate They also identified an issue with the site bund standards and practice where hazards are created from using larger rocks on the surface of the bund.</p> <p>Inadequate bunding can lead to vehicles crossing over or penetrating bunds i.e. not stopped through gaps, insufficient height and width etc. This is made more significant in areas where bunds are protecting</p>	<p>Records of as designed, installation of barriers and warning devices.</p> <p>Regular inspection and test records confirm performance requirements are being maintained.</p> <p>CPS-PLN-5.0 Survey Manual - Requires pick-up of all installed infrastructure.</p>	<p>CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning CFM-LPA.44.05 Appropriate distances from fixed and overhead structures are not maintained CFM-LPV.44.02 Operational personnel do not maintain minimum standards for berms, windrows and other zone protection. CFM-MPA.72.02 Operational access control (pedestrian and vehicle) is inadequate CFM-SDV.81.20 Inadequate mine traffic management plan (specification)</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>pedestrians, environmental hazards (drop-offs etc.), and conflicting traffic flows.</p> <p>Implement a campaign to identify key bund problems and address them. Consider a rock size or smoothness criteria for construction and maintenance.</p>		
	BI-LPA.48.01 Power line working distance management process	Safe working distances are always maintained between power lines and mobile equipment e.g. cranes, trucks, forklifts, etc.	<p>Procedures in place specifying minimum approach distances and required controls when working near and travelling under powerlines.</p> <p>Warning devices required on power lines - Tiger Tails, Signage and Power Line Corridor entry permits.</p> <p>Specification ES-006 11kV and 22kV Overhead Transmission Lines (undated) - S6.5 Protection required when crossing over roads (goal posts to warn over-height vehicles) and minimum clearance heights noted (10 metres which may be insufficient for crossing haul roads)</p>	<p>Supervisors and mine planners are aware of minimum approach distances to power lines from mobile plant implement expected controls e.g. use of permits in some circumstances.</p> <p>Supervisor, superintendents, and managers monitor the activities of vehicle operators working around powerlines and confirm meet site performance requirements.</p> <p>CSP-036 Surface Trailing Cable Handling System - at S13.4 covers use of cable towers and requirements for separation from overhead powerlines and arrangements to allow for passage by traffic.</p> <p>SOP-041 Using Plant Near Electricity V6.1 10/4/2024 - S4 Procedure covers minimum approach distances, notification requirements, and requirements for JSAs and Permits (and when needed).</p>	<p>Task level workflow logs</p> <p>Permits</p> <p>Supervisor inspections</p> <p>Lift plan records</p> <p>Interviews with Engineering - Permits for work in corridor are approved and maintained in line with site requirements.</p>	<p>CFM-CPA.11.01</p> <p>Equipment operator or pedestrian mistake in estimating clearance distance</p> <p>CFM-LPA.44.05</p> <p>Appropriate distances from fixed and overhead structures are not maintained</p>
<p>OFI-10: Consider making camera feeds available to improve performance monitoring.</p> <p>OFI-45: Review performance monitoring for application of road rules including adjustments to conditions and circumstances.</p> <p>OFI-68: Consider</p>	BI-LPA.57.01 Mobile equipment operators follow road rules and adjust based on conditions and circumstances.	Mobile equipment operators follow road rules drive to conditions and circumstances.	<p>Mobile equipment operators follow road rules and adjust based on conditions and circumstances by:</p> <ul style="list-style-type: none"> Decreasing speed Increasing clearance distances Stopping if required Notifying or removing hazards (road conditions, spillage, etc.) <p>SOP-017 Using Mobile Plant - Mine Traffic Rules - S5.3 Drive to Conditions, references the use of TARP levles to respond to adverse conditions.</p>	<p>Ongoing briefings and checks that confirm that mobile equipment operators understand road rules and are aware of necessary operating adjustments based on conditions and circumstances.</p> <p>Multiple Training Modules - Indicate requirements for driving to conditions with theory and practical assessments to confirm understanding.</p> <p>SOP-017-FRM-02 Traffic Management Plan (TMP) Form - indicates setting up specific guidance for intended traffic flows in an area, with required sign off and notifications</p>	<p>Supervisor and despatch oversight.</p> <p>Supervisors and peers monitor vehicle operator performance.</p> <p>By exception hazard reporting and incident investigation.</p> <p>Critical Control Verification FH03 Mobile Equipment (BLS-004 FH03-CCV-02-FH03) - 4 monthly check on the conduct of Pre-Starts, interviews with Drivers/Operators, inspection of working area, HME equipment check status (in-date ItS sticker), understanding of speed requirements.</p> <p>OFI-068 Consider using radar speed</p>	<p>BID-160: BI-LPA.57.01 Mobile equipment operators follow road rules and adjust based on conditions and circumstances.</p> <p>CFM-LPA.42.03</p> <p>Obscured or missing signage</p> <p>CFM-LPV.44.02</p> <p>Operational personnel do not maintain minimum</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
<p>using radar speed detection in operational areas. OFI-70: Review Opportunities to consistently apply site traffic management standards and measure performance. OFI-87: Review Site Speed Limits and Monitor Performance.</p>				<p>to affected vehicle operators (CMW). Workshop Discussion Prompt - Training modules are not specific around the types of road conditions and required responses (using a "drive to conditions" requirement). Should there be specific examples for trainees? OFI-045 Review performance monitoring for application of road rules including adjustments to conditions and circumstances Workshop participants confirmed that how and where operators are adjusting their speed to conditions e.g. for dust is not consistent across site. There was also discussion of different travel speeds on the same haul roads between workgroups that are speed monitored and those that are not. Inconsistent travel speeds can lead to significant vehicle interactions (loss of control, dovetail collisions etc.) that are compounded by poor visibility. Review site and business speed standards. Include a review of speed monitoring including how condition adjustments are made. Improve performance consistency and align with critical control verification and other checks. Consider developing processes to provide operator performance feedback for self-monitoring and performance management. OFI-087 Review Site Speed Limits and Monitor Performance Workshop participants discussed an absence of consistent guidance for speed limits for the go line and on different grades of ramp. Not providing guidance in high traffic areas and where vehicle runaway is possible can lead to unwanted vehicle interactions. Review the setting of speed limits for the go line and site ramps. Confirm</p>	<p>detection in operational areas. Workshop participants confirmed that there are regular radar measurements of vehicle speeds on access roads. However, they confirm that the same approach is not in use in pit operations. Mobile equipment speed management relies on operator decisions to drive to conditions and maintain site road rules. Using radar speed checks confirms and reinforces that operators are making the right decisions in production areas. Consider applying a site-wide approach for speed monitoring using radar. Align this work with vehicle speed monitoring using technology installed on equipment. OFI-070 Review Opportunities to consistently apply site traffic management standards and measure performance Workshop attendees discussed variations in applying vehicle interaction controls and operating approaches between workgroups at Curragh North Mine. They noted that while the Coronado SOPs apply to all workgroups:</p> <ul style="list-style-type: none"> Some SOPs that are not specific enough about performance requirements and how performance is measured. This allows variations in how standards are interpreted and applied in the same areas by different workgroups. There are different performance requirements by area e.g. between the Mine Industrial Area (MIA) and Mine Operational Area (MOA) for positive communications, road construction for gradient and ramp speed, heavy 	<p>standards for berms, windrows and other zone protection. CFM-LPV.54 Excessive water (Dust Control) is applied to road surface CFM-MDA.61.06 Inadequate work planning means that heavy vehicle operators approach fixed structures that are incidental to achieving operational outcomes CFM-SPA.81.07 Inadequate implementation of site traffic management plan</p>

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				<p>communication and training processes, introduce performance monitoring</p>	<p>vehicle access, escorting requirements etc. At an operational level this can result in different workplace layout standards between OCEs and conflicting directions confuse supervisors. A non-standard approach also inhibits the introduction of consistent performance measures and digital technology such as Collision Avoidance Systems. Leverage the knowledge and capability of the contractor support companies to review Curragh SOPs. Consider developing</p> <ul style="list-style-type: none"> • Visual specification details and references • Illustrate the performance standard required using examples • Review and develop performance measures that support the consistent delivery of site standards across all workgroups. <p>OFI-010 Consider making camera feeds available to improve performance monitoring. Supervisors and open cut examiners (OCE) spend many hours per shift in the field monitoring performance. Currently OCEs and supervisors review performance by observing operating practices and inspecting the operating environment condition at close proximity and from available lookouts. Review how area camera feeds can be used by OCE and supervisor to complement this process, particularly as a reliable way to monitor workgroup interaction performance. Consider also the opportunity to use Artificial Intelligent (AI) technology to detect and amplify performance drift based on camera feed analysis.</p>	

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	BI-LPV.56.01 Road surface changes are identified and managed by vehicle operators	<p>There is a site process that details expected responses from operators when there are changes in road surfaces.</p> <p>SOP-017 Using Mobil Plant - Mine Traffic Rules V6.5 30/12/2022 - S5.3 requires vehicle operators to drive to conditions and conform with speed limits as per S5.11.</p>	<p>Site specific information is available for vehicle operators to assist with identifying and managing changes in road surfaces based on vehicle type covering:</p> <ul style="list-style-type: none"> • Weather variables such as rain, snow, ice etc. • Changes in road sheeting • Over watering for dust control • During road maintenance or construction • Slips and debris (including responding to strata failure monitoring systems and observed conditions (surface and underground)) • Movement of work areas such as tip heads (movement of edge) and stockpiles (slip/slump of material being dug) • Presence of animals on or near roadways • Loading and unloading areas <p>Initiating road maintenance activities (pavement and signage).</p>	<p>Training, assessment, and sign-off that vehicle operators can identify and notify changing road conditions including in excavations and dump areas.</p> <p>Vehicle operators notify supervisors about changes to, and hazards, present within the road network. Supervisors or Superintendents respond to the identified hazard or change.</p> <p>Blackrock TARP - Screen grab from SharePoint shows how all supervisors and others with computer access are notified of prevailing TARPs for Inclement and Severe Weather</p>	<p>Hazard reports. Road maintenance records. Supervisor inspections and logs.</p>	<p>CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced visibility, road narrowing, road surface etc.</p>
	BI-LRA.41.10 Construction, inspection, and maintenance of site infrastructure and fixed plant	<p>Site infrastructure and fixed plant meets site requirements and remains structurally sound.</p>	<p>There is a site standard for the design, construction, inspection, and maintenance of infrastructure and fixed plant.</p> <p>It is supported by comprehensive site processes for:</p> <ul style="list-style-type: none"> • Construction approval • Construction and commissioning • Inspections of infrastructure and fixed plant • Repairs and maintenance • Isolation from mobile equipment • Weather damage failures • Demolition <p>Site infrastructure and fixed plant remains structurally sound and available for its designed purpose during normal operations and failures are managed if they occur.</p> <p>Specification ES-006 11kV and 22kV Overhead Transmission Lines (undated) - S6.5 Protection required when crossing</p>	<p>Construction, inspection, and maintenance and other processes relevant to site infrastructure and fixed plant are consistently applied.</p> <p>A defect reporting system is in place with clear guidance on the actions to be taken if site infrastructure or fixed plant are compromised.</p> <p>Inspections and Interviews - key infrastructure (e.g. conveyors) are separated from HME movements and have berms protecting against inadvertent entry into the conveyor trace (corridor), other infrastructure protected by solid bollards and berms.</p>	<p>Infrastructure and fixed plant inspection, maintenance, and repair reports.</p> <p>As required, investigations of infrastructure and fixed plant failures.</p> <p>CPS-PLN-5.0 Survey Manual - Requires pick-up of all installed infrastructure.</p> <p>PLN-005 PHMP - Mobile Equipment Incidents - S4.2 Includes requirements for audits and inspections of all roads and parking areas, bunds and protective structures.</p>	<p>BID-121: BI-LRA.41.10 Construction, inspection, and maintenance of site infrastructure and fixed plant</p> <p>CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions</p> <p>CFM-LPA.44.05 Appropriate distances from fixed and overhead structures are not maintained</p> <p>CFM-LPV.44.02 Operational</p>

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			<p>over roads (goal posts to warn over-height vehicles) and minimum clearance heights noted (10 metres which may be insufficient for crossing haul roads)</p> <p>Specification CS-007 Road Furniture, 15/9/2018 - Details requirements for the physical sizes of delineators, signage, guard rails, etc.</p>			<p>personnel do not maintain minimum standards for berms, windrows and other zone protection.</p>
<p>OFI-67: Review and align installed technologies for consistent travel speed alerting and performance monitoring.</p>	<p>BI-LRA.42.02 Speed and operating environment parameter data send</p>	<p>Relevant equipment operating data is used to improve the design, construction, and maintenance of the operating environment.</p>	<p>Equipment operating data relevant to the design, construction, and maintenance of the operating environment is captured and transferred and may include:</p> <ul style="list-style-type: none"> • Speed • Travel paths • Engine performance • Loading • Others <p>Specifications for how equipment data related to the operating environment is aggregated, sorted, monitored, reported, and analysed are in place.</p> <p>Interviews with Operational and Engineering Leads - Some data is returned from equipment to generate usage reports and provide guidance on problem areas and operating practices. A key Coronado Global philosophy for equipment is that all monitoring and processing should be happening local to the machine.</p>	<p>On-board systems monitor equipment usage, data is transferred via site infrastructure.</p> <p>The data is aggregated and sorted so that it can be used for performance monitoring, reporting, and analysis.</p>	<p>Accurate, timely, and tailored reports on operating environment impacts on equipment are provided to operators, supervisors, mine planners, maintenance personnel, training, and management.</p> <p>Reports are reviewed and performance drifts are identified and corrected.</p> <p>OFI-067 Review and align installed technologies for consistent travel speed alerting and performance monitoring</p> <p>At Curragh North Mine there is a misalignment of outputs from installed fleet management technologies. Thiess use the IVOLVE system while MaxMine is used by other contractors.</p> <p>The different mining fleets share haul roads and workshop participants report issues with different travelling speeds in the same location that has resulted in frustration and unplanned vehicle interactions.</p> <p>Review how the MaxMine system can be upgraded so that there is in-cab notification travelling speed based on geofenced location. This will align site operations and avoid conflicts with the Thiess fleet that applies the travel speed information available. Also review opportunities to leverage the installed technology for performance monitoring and reporting e.g. by exception speed limit exceedance reporting.</p>	<p>BID-161: BI-LRA.42.02 Speed and operating environment parameter data send</p> <p>CFM-CRA.11.21 No action taken on over speed alarm</p> <p>CFM-CRA.11.22 Operator non-compliance (including to alarms)</p> <p>CFM-ERA.31.09 Installed equipment system status alarms do not operate</p> <p>CFM-ERA.40.22 Over speed warning alarm fails to operate</p> <p>CFM-SRV.96.20 No aggregated monitoring and response to over speed alarms</p>
<p>OFI-80: Review site processes for</p>	<p>BI-LTA.56 Formal processes for</p>	<p>There are formal processes in place for</p>	<p>Procedures in place for managing changes to normal mobile equipment operations</p>	<p>Supervisors and workers are trained in developed TARPs and their</p>	<p>Training and awareness records. TARP levels and site responses are</p>	<p>CFM-CDA.06.02 Operator drives</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
<p>communicating alerts and information about operating conditions.</p>	<p>managing changes in conditions</p>	<p>managing changes in conditions that can compromise safe production.</p>	<p>covering:</p> <ul style="list-style-type: none"> • Electrical storms • High winds and raised dust • Reduced visibility (e.g. fog, mist, loss of area lighting) • Road pavement conditions (wet, damaged, etc.) • Compromised access controls, etc. <p>Also conditions which compromise normal road traffic operations such as:</p> <ul style="list-style-type: none"> • Limited access to working areas • Short term work plans increase vehicle movements and interaction intensity • External traffic movements e.g. escorting loads <p>Consider developing Trigger Action Response Plans for site relevant changes in conditions. Use gradated levels with required responses such as:</p> <ul style="list-style-type: none"> • Green Level. Threat is not present or can be well managed using routine processes and equipment. • Yellow Level (optional). Threat is present but not yet hazardous. This level is communicating situation detail, increasing awareness, and monitoring and communication changes. • Amber Level. Threat level has increased and can be managed through changes to processes and heightened vigilance of workers and supervisors. • Red Level. Threat is continuing to increase and workers (apart from any deployed to reduce the threat) are withdrawn to safe locations. <p>Multiple Documents - refer to changes in conditions and management of deteriorating road, visibility, or traffic levels.</p>	<p>competence is confirmed. Conditions beyond those expected trigger an appropriate response from sites escalating awareness and ceasing operations as appropriate. Significant (Amber and above) triggers are communicated to more senior personnel on site.</p> <p>RIIMPO337-LM Learning Material - Conduct Articulated Haul Truck Operations (and other similar modules) V1.0 17/1/23 - S-Adapt to Changing Conditions, describes considerations and issues that would require a change in how the vehicles are being operated.</p> <p>OFI-080 Review site processes for communicating alerts and information about operating conditions.</p> <p>Workshop participants noted that process for the timely communication of information on road network changes covering haul route intersections, road maintenance and construction, changes in road conditions e.g. slumps, parked vehicles, and general operating conditions e.g. congestion, and interactions with other workgroups can be improved.</p> <p>Productive and safe surface mining requires ongoing good decision making from mobile equipment operators of both light and heavy vehicles. Providing information about operational changes and advice on the expected response supports consistently good decision making. Review and confirm that communication processes for mobile equipment operators, supervisors, LV operators, drill and blast and other stakeholders covering changes in roads and intersections and other operating conditions is effective, consistent and comprehensive.</p>	<p>approved and in-date. Records of communications and notifications of Amber and Red levels, including with external parties as required.</p> <p>RIIMPO337-ASQ - Conduct Articulated Haul Truck Operations Assessment - Theory Q36 What are some conditions to consider regarding speed? Practical Obs 22 demonstrate driving to conditions.</p>	<p>vehicle at the incorrect speed (too fast or too slow). CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced visibility, road narrowing, road surface etc.</p>

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				Consider digital enhancements.		
	BI-LTA.57 Ceasing Operations Procedure - compromised operating environment	Significant compromises to the operating environment will initiate the site cease operations process and plans.	<p>There is a process and threshold for ceasing operations at site because of compromised operating conditions that considers:</p> <ul style="list-style-type: none"> Physical conditions, including: Failure of roadways e.g. slumps, washouts, sink holes; Actual or potential geotechnical failures; Infrastructure potential or actual failure e.g. fall of HV lines; Falls of ground; Seismic events; Fallen trees Sight lines and visibility, including: Fires and smoke near site; Precipitation: snow, sleet, rain, hail etc.; Dust; Loss of ventilation (Underground) Pavement changes, such as: Flooding; Temperature extremes; Major Damage; Traction loss due to water or presence of oils Other factors, including: Trespassers; Animals <p>Interviews with Operational Leaders - Prevailing conditions inform TARP levels which include stopping operations.</p>	<p>Training and assessment in the process and threshold for initiating the ceasing operations process for mobile equipment operators, supervisors and managers.</p> <p>Summary information on the process steps and thresholds is available on Trigger Action Response Plans (TARP) or equivalent.</p> <p>The summary information includes site relevant operating environment thresholds and expected actions when it is no longer safe to continue normal operations using mobile equipment.</p> <p>Interviews and Observations - TARP levels for various TARPs are shared across site via Start-of-Shift meetings and via SharePoint (for those with logins).</p>	<p>Training records.</p> <p>Approved and in-date Trigger Action response Plans (TARPs) with site relevant operating environment thresholds and expected actions.</p> <p>Risk and control management records.</p>	<p>BID-162: BI-LTA.57 Ceasing Operations Procedure - compromised operating environment</p> <p>CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced visibility, road narrowing, road surface etc.</p> <p>CFM-LPA.56.01 Operations continue when operating environment is significantly compromised</p> <p>CFM-SDV.81.20 Inadequate mine traffic management plan (specification)</p> <p>CFM-SPA.81.07 Inadequate implementation of site traffic management plan</p>
	BI-LTA.58.01 Lightning and Extreme Weather Management	There are formal processes in place for managing heavy rain, electrical storms, and other extreme weather events.	<p>Procedures in place for storm situations and other weather impacts on roads and mobile equipment operations.</p> <p>Develop and implement a process to minimise potential for fire from lightning strikes and other weather impacts</p> <ul style="list-style-type: none"> Monitor lightning activity using meteorological forecasts and other early warning detection systems Lightning protection or diversion systems should be installed in accordance with appropriate standards (e.g. National Fire Protection Agency 780 2011 Standard for Installation of 	<p>Training and assessment in the process and threshold for initiating the ceasing operations process for mobile equipment operators, supervisors, and managers during storms and other weather conditions impacting road network safety</p> <p>Summary information on the process steps and thresholds is available on Trigger Action Response Plans (TARP) or equivalent.</p> <p>The summary information includes site relevant weather condition thresholds and expected actions when it is no longer safe to continue normal operations using mobile equipment.</p> <p>RIIMPO337-LM Learning Material -</p>	<p>Supervisors monitor activities of Vehicle Operators during storms - confirming their activities meet site requirements.</p> <p>Training records are regularly checked to confirm currency of workers understanding around storm and lightning response requirements.</p>	<p>CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced visibility, road narrowing, road surface etc.</p> <p>CFM-LPA.56.01 Operations continue when operating environment is significantly compromised</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>Lightning Protection Systems; AS/NZS 1768 2007 Lightning Protection)</p> <ul style="list-style-type: none"> • Provide timely communications to allow sufficient time for all exposed site personnel to seek appropriate safe shelter • Place equipment in protected area away from fuel sources (i. stop damage; ii. Stop spread to fleet) • Instigate awareness training for workers that highlights the risks of lightning strikes and other exposure to weather related impacts (slippery roads, etc.) • Develop a trigger action response plan (TARP) for lightning and electrical storms that outlines responses to a storm at certain distances away from the mine (e.g. a staged response depending on distance) • Procedure for the use and protection of explosives in known lightning conditions <p>Multiple Documents - refer to changes in conditions and management of deteriorating road, visibility, or traffic levels.</p>	<p>Conduct Articulated Haul Truck Operations (and other similar modules) V1.0 17/1/23 - Section - Adapt to Changing Conditions, describes considerations and issues that would require a change in how the vehicles are being operated.</p> <p>Interviews and Screen shot - BlackRock portal provides guidance on the prevailing TARP settings for the operations.</p>		
	BI-MDA.67.01 Protocols for working on equipment in production areas	Personnel undertaking inspection, servicing, maintenance or recovery work on equipment in operational areas are protected from mobile equipment and other workplace hazards.	<p>Sites have a consistent, defined, and measurable process for managing mobile equipment and other hazards in production areas during:</p> <ul style="list-style-type: none"> • Inspection • Equipment servicing • Equipment maintenance work • Equipment recovery <p>The process defines:</p> <ul style="list-style-type: none"> • Where, and in what circumstances it applies • Hazard identification and control assignment • How decisions on delineation are made and deployed • The experience and competency required before authorisation to 	<p>Trades, service and other personnel meet site requirements for working on equipment in production areas - with placement of windrows, barriers, cones, warning signage, geo fences and other measures implemented. Designated and segregated in-pit work areas.</p> <p>Communication protocols with mine controller and supervisor.</p> <p>Inspection and Interview - If maintainers are required to work in an operating area, this is cleared by the OCE and the working area is coned off, with a LMHV area allocated, and no entry into the area occurs without Pos Comms with the maintenance crew.</p>	<p>Planning documentation. Operational logs for service and maintenance personnel. Authorisation records for personnel who carry out servicing and maintenance tasks in operational areas. Notification records. Maintenance, production supervisors, and mobile equipment operators monitor performance. Maintenance and production supervisors monitor trades and service personnel to confirm performance.</p>	<p>BID-163: BI-MDA.67.01 Protocols for working on equipment in production areas CFM-CRA.03.20 Personnel do not manage heavy vehicle blind spots CFM-MPA.63.01 Operator does not meet site requirements when parking CFM-MPA.72.03 Mobile equipment</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>work in a production area</p> <ul style="list-style-type: none"> • Communication requirements • Responsibilities of trades and service personnel • Mobile equipment responsibilities • Production area owner responsibilities <p>SOP-017 Using Mobile Plant - Mine Traffic Rules - S8.11 Disable Equipment (Breakdown) describes requirements for a vehicle operator in the event of equipment breakdown whilst in an operating area.</p> <p>Workshop Discussion Prompt - Is there a formal process for isolating a broken down item of equipment before commencing field repairs? Techniques described during interviews are sound for preventing unwanted interactions around in-field maintenance locations - is there a need for more formal guidance?</p>			<p>operator or pedestrian does not notify when entering a controlled work area</p> <p>CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots</p> <p>CFM-SDV.81.20 Inadequate mine traffic management plan (specification)</p>
<p>OFI-55: Review and update site vehicle escort requirements.</p>	<p>BI-MDA.72.11 Escort Requirements</p>	<p>Vehicles and operators that are not approved for unrestricted site access, are escorted. Site escort requirements are clear and deliver safe and productive outcomes.</p>	<p>Sites have a consistent, defined, and measurable escort process for managing access when:</p> <ul style="list-style-type: none"> • When vehicles are not approved for general site access • Vehicle operators who do not have required site permits or licences <p>The escort process defines:</p> <ul style="list-style-type: none"> • Where, and in what circumstances it applies • The experience and competency required before an escort is authorised • Who must be notified, how they are notified, and when they are notified • Communication requirements between the vehicles under escort and the escort • Equipment required e.g. radios, lights, Collision Avoidance Systems, flags, etc. • Approval steps and documentation requirements e.g. permits, gatehouse logs etc. <p>SOP-017 Using Mobile Plant - Mine</p>	<p>The site escort process is applied, and vehicle operators being escorted are briefed on:</p> <ul style="list-style-type: none"> • Communication protocols • Travel separation distances • Restricted locations • Road conditions • Emergency protocols • Other site requirements • Parking and first movement requirements <p>Personnel who provide the escort are authorised and competent, and confirm that escorted vehicles are operated and parked in accordance with site requirements. Required site documents are completed.</p> <p>SOP-017-FRM-01 Escort Checklist - covers vehicle condition (including load sizes), working 2-way comms, induction or training of all personnel, refers to Oversize Transport SOP-015 if relevant.</p>	<p>Escort documentation. Authorisation records for personnel approved to act as escorts. Escort notification records. Supervisors and mobile equipment operators monitor performance of escorts and escorted vehicles.</p>	<p>BID-164: BI-MDA.72.11 Escort Requirements</p> <p>CFM-CPA.10.20 Operators of heavy and light vehicles (or pedestrians) fail to follow the designated travel path</p> <p>CFM-MPA.72.02 Operational access control (pedestrian and vehicle) is inadequate</p>

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			<p>Traffic Rules V6.5 - S5.1 requires escort operators to be trained, S6 Escort Rules nominates when an escort is required, requirements for Escort Driver to be qualified, make contact with the OCE and vehicles in the area, complete the escort checklist (also completed by operators of vehicle(s) being escorted).</p> <p>OFI-055 Review and update site vehicle escort requirements Workshop participants discussed site escort requirements and confirmed that there are two SOPs available. Currently the training of escort vehicle operators is ad hoc. There is no training and competency assessment for the personnel selected to act as escorts. Further, the process is inconsistent without completed records from the escort driver that:</p> <ul style="list-style-type: none"> • Confirm the escorted driver has been briefed e.g. covering following distances, travel route, expected hazards and their controls etc. • Log the activity and identifying any issues and improvement opportunities <p>Escort activities are an important vehicle interaction control. If the control design is inadequate or not applied, then it can cause significant vehicle interaction issues. Review the site site escort process, confirm required controls and training required to apply them consistently. Capture and analyse escorting records to confirm controls are applied and the escorted driver is briefed. Consider potential digital applications.</p>			
	BI-MDV.63.01 Established requirements for approaching parked mobile equipment in operational areas	Personnel approaching a vehicle parked in operational areas are protected from unexpected vehicle movements.	Sites set minimum requirements for approaching and accessing parked mobile equipment, these consider the: <ul style="list-style-type: none"> • Possibility of a resting operator who wakes up and moves off without detecting the person 	Training and assessment in requirements for accessing parked vehicles for: <ul style="list-style-type: none"> • Operators • Supervisors • Maintenance and service 	Training and assessment records. Induction records. Supervisors and mobile equipment operators monitor performance. Reports from CAS Systems	BID-165: BI-MDV.63.01 Established requirements for approaching parked mobile equipment in operational areas

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>accessing the parked equipment.</p> <ul style="list-style-type: none"> The position for parking other vehicles. Communication with parked equipment to confirm the presence of an operator. Direction of travel if the parked vehicle drives or rolls away. Isolation requirements on entering the footprint of the parked vehicle. <p>SOP-017 Using Mobile Plant - Mine Traffic Rules - S8.5 Approach Equipment covers requirement for 50m stand-off unless positive communication occurs then implements lowered (parked fundamentally stable), and operator out of cabin before approaching.</p> <p>CSP-025 People and Equipment Working Around Draglines V3.2 17/11/2022 - 30 metre exclusion zone and the 5 metre approach zones described - with clear positive communication from the DL operator before any approach can occur (comms include dragline (DL) activities and permission to approach).</p>	<p>personnel</p> <ul style="list-style-type: none"> Trainers Specialist contractors <p>Requirements are reinforced in site and area inductions.</p> <p>Multiple Training Modules - describe the controls required for parking vehicles</p> <p>Workshop Discussion Prompt - Training modules offer some guidance (e.g. for Wheel Loader Operations) but this is not in place for all training modules (e.g. for Articulated Haul Truck Operations). Should the specific approach training be extended to all deployed equipment on site?</p>		<p>CFM-LDA.43.01 Vehicle parking, including emergency parking is inadequately considered in mine design and routine work planning</p> <p>CFM-MPA.63.01 Operator does not meet site requirements when parking</p> <p>CFM-MPA.63.02 Vehicle operator does not check pathway after being parked</p> <p>CFM-MPA.66.01 Incorrect communication protocol</p> <p>CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots</p>
	BI-MDV.63.05 Established requirements for parking and resting in vehicles	First movement from parking is consistent and well controlled and avoid vehicle interaction incidents.	<p>Where permitted on site, there is a documented requirement for vehicle operators to park in an authorised location, isolate the vehicle prior to resting and complete an around vehicle inspection before moving off.</p> <p>SMS-010a Napping Guidelines V1.2 5/1/2014 - S3 Guidelines for Napping due to Fatigue - Not encouraged in cabs but if needed, park safely and isolate equipment then contact supervisor and nap for no longer than 35 minutes.</p> <p>SOP-017 Using Mobile Plant (Mine Traffic Rules) - covers requirements for parking equipment and approaching parked-up equipment.</p>	<p>Where resting in vehicles is permitted on site, there is a documented and communicated process that confirms requirements covering</p> <ul style="list-style-type: none"> Vehicle operator responsibilities Authorised locations for resting Vehicle isolation prior to resting Inspections and checks before moving off e.g. completing an around vehicle inspection <p>SMS-010a Napping Guidelines V1.2 5/1/2014 - provides for napping in vehicles to combat extreme fatigue (with subsequent feedback and support from supervisors and HST.</p>	<ul style="list-style-type: none"> Training and awareness records. Supervisors and mobile equipment operators monitor performance. 	<p>BID-166: BI-MDV.63.05 Established requirements for parking and resting in vehicles</p> <p>CFM-LDA.43.01 Vehicle parking, including emergency parking is inadequately considered in mine design and routine work planning</p> <p>CFM-MPA.63.02 Vehicle operator does not check pathway after being parked</p>
OFI-21: Review the design standards,	BI-MDV.64.01 Road design guidelines	Walkways are designed, constructed,	Walkway design and construction follows site design requirements for protecting	Walkways are constructed and maintained to meet site requirements.	Walkway commissioning and handover records confirming that 'as	BID-167: BI-MDV.64.01 Road

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<p>construction, and maintenance of site walkways. OFI-22: Review the design standards, construction, and maintenance of Go Lines.</p>	<p>specify walkway designs considering vehicle sight lines</p>	<p>and maintained to site standards.</p>	<p>walkways near vehicle travel paths. These may include using:</p> <ul style="list-style-type: none"> • Windrows and bunds • Physical barriers • Pedestrian crossings • Under or over passes • Delineation of no-go and danger zones for pedestrians etc. <p>Vehicle sightlines and other features such as lighting and proximity alarms are considered when designing and constructing walkways.</p> <p>CSP-028 Barricades V3.2 25/4/2023 - Offers guidance on requirements for tags and visibility around the MOA.</p> <p>PLN-005 PHMP Mobile Equipment - S4.1 Design and Construction of Roads and Parking Areas ...Pedestrian areas are designated, and where practicable, separated from vehicle interaction. The Critical Control - Management of Interactions includes considerations for pedestrian and traffic areas. S4.3 Traffic Management - requires designated pedestrian areas separated from vehicles.</p> <p>OFI-021 Review the design standards, construction, and maintenance of site walkways.</p> <p>Workshop participants confirmed that designated walkways around site workshops and parking areas are inconsistent.</p> <p>Lack of clear and designated walkways can lead to pedestrians being in the incorrect (or unexpected) positions.</p> <p>Review the design standards of walkways including demarcation and bunding requirements. Confirm processes for construction, maintenance, inspection and repair are adequate and can be measured. Monitor performance.</p> <p>OFI-022 Review the design standards, construction, and maintenance of Go Lines</p> <p>Workshop participants confirmed that Go Lines on site are inconsistent for Heavy</p>	<p>Site design requirements are referenced before any walkway modifications are made e.g. new mobile equipment, facility use change etc.</p> <p>Multiple Training Modules - Includes requirements in the General Operational Safety for either stopping operations (HME) or slowing down and passing with extreme caution (LMHV).</p>	<p>built' meets design requirements Housekeeping and facilities inspection records. Maintenance records.</p> <p>CCV CFH03 - Mobile Equipment / Vehicle Interaction - Has requirements for confirming designated pedestrian access around Go-Lines and confirmation that CMW are using designated pathways (pedestrian or vehicle).</p>	<p>design guidelines specify walkway designs considering vehicle sight lines CFM-CRA.03.20 Personnel do not manage heavy vehicle blind spots CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning CFM-LDV.44.08 Blind spots on heavy vehicles are not considered in workplace layout</p>

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			<p>Mobile Equipment park ups, light vehicle and pedestrian access.</p> <p>Inconsistency in the design HV parking areas (Go Line) can lead to confusion and unwanted vehicle interactions e.g. for service and maintenance staff who work across site.</p> <p>Review the design standards for heavy vehicle parking. Confirm processes for construction, maintenance, inspection and repair are adequate and can be measured. Monitor performance.</p>			
<p>OFI-62: Review the adequacy of excavator and truck operator training for loading.</p> <p>OFI-63: Consider how supervisor inspections can combined to identify system level operating challenges.</p>	BI-MDV.65.31 Clear requirements for loading and unloading of trucks by excavator or loader	Loading, transporting and dumping (unloading) of mobile equipment with bulk materials is safe and productive.	<p>The loading system must be designed so that the vehicle cabin is prevented from being under a load that could exceed the maximum weight impact for the cabin or impact vehicle stability.</p> <p>Operational and safety requirements are specified in procedures and other documents and media e.g. instructional videos. They provide information to the operator about:</p> <ul style="list-style-type: none"> • Vehicle access • Vehicle loading, travelling and unloading (including waste) • Vehicle exit • Leaving the vehicle during loading • Emergency response <p>They include relevant change management thresholds such as:</p> <ul style="list-style-type: none"> • Changes in vehicle type • New operators <p>PLN-005 PHMP - Mobile Equipment Incidents - S4.4. Fit for Purpose Vehicles requires the load to be within operating limits</p> <p>SOP-015 Transport of Heavy Plant and Supplies V6.3 1/12/2022 - S3.9 Requires load planning (and risk identification), notification of travel routes, and considering load stability over the load-travel-unload cycle.</p>	<p>Engineering sign-off that the loading system and the vehicle in use meet are fit for use.</p> <p>Vehicle operators are trained and assessed in loading requirements, including emergency response.</p> <p>Supervisor oversight.</p> <p>RIIMPO301-LM - conduct Hydraulic Excavation Operations V2.0 3/4/2023</p> <p>Section Loading - highlights requirement to work as a team and communicate movement and hazards.</p> <p>Section Loading Operation - requires operator to develop a plan and not overload the trucks. Methods for filling bucket and using different geometries (over-the-side, through-the-gate, double-side, drive-by) are explained.</p> <p><i>Different geometries of loads in the truck are not explained - should they be?</i></p> <p>Workshop Discussion Prompt - The learning guides, CCV, Inspection SOP and other documents don't offer specific guidance on do's and don'ts for loading trucks. Should they?</p> <p>OFI-062 Review the adequacy of excavator and truck operator training for loading</p> <p>Workshop participants confirmed that training resources in use at site may be missing key information for excavator operators and truck operators about setting up for loading. This includes managing poorly blasted (blocky)</p>	<p>Equipment selection records.</p> <p>Training records.</p> <p>Supervisor inspection records of loading operations.</p> <p>SOP-049 Safety Inspections & Checking and Examining Work Areas Appendix 1 - OCE to inspect all areas where mining is taking place once a shift</p> <p>OFI-063 Consider how supervisor inspections can combined to identify system level operating challenges</p> <p>Workshop participants discussed the effectiveness of supervisor inspections of loading operations. While they provide oversight of task execution in real-time and an opportunity to correct and improve performance, the information for the inspection does not seem to be fully leveraged. That is, inspection reports from knowledgeable and experienced personnel are not being aggregated and analyzed to identify ongoing improvements to site processes. An example discussed was determining the cost benefits from increasing powder factor for blasting to reduce over-size material and minimise truck loading challenges.</p> <p>Ongoing challenging loading conditions make excessive decision and performance demands on excavator and truck operators. This</p>	CFM-SDV.81.20 Inadequate mine traffic management plan (specification)

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				<p>materials. A misalignment between truck operators and excavators for truck setups can result in safety issues and drop in productivity such as:</p> <ul style="list-style-type: none"> Excessive truck movements in and around the dig units Unwanted vehicle interactions when moving into and out of queued positions Large material can also contribute to eccentric loading of trucks (and problems with stability during truck movements). <p>Review the training resources and in pit observations and performance monitoring of excavator and truck loading operations. Confirm there are adequate levels of understanding of how site standards are applied. Include requirements for managing poorly blasted materials.</p>	<p>can result in errors that cause unwanted vehicle interactions and equipment damage. Consider opportunities to leverage site inspections for analysis and performance improvements. Review digital technology options.</p>	
<p>OFI-27: Review standards for call signs and monitor performance. OFI-28: Consider designing and constructing passing lanes for Light Vehicles.</p>	<p>BI-MDV.66.05 Positive communication protocol for passing or moving close to a vehicle</p>	<p>Passing of vehicles in operational areas is clear, applied and requires vehicle identification and positive communications.</p>	<p>There are site standards, processes, procedures, and work instructions, that detail communications requirements when passing vehicles. At a minimum these cover:</p> <ul style="list-style-type: none"> Where and when passing is permitted Radio (or other communications) call up protocols Mobile equipment identification Confirming that communication has been received <p>CGRA BLS-001 Leadership and Accountability V1.0 - S9 Life Saving Rules Definition, OLSR#3 Minimum Approach Distance - requires establishing Positive Communication using operational identification numbers between vehicles and before entering a work area. CGRA BLS-FH03 Mobile Equipment - Fatal Hazard Protocol V1.0 - S5 Traffic Rules which requires clear two-way communication for interactions between all vehicles, mobile equipment and</p>	<p>Training and Assessment in requirements for Positive Communications for passing a vehicle are included and reinforced in multiple training and awareness modules e.g. operator training and area inductions. Requirements are routinely reinforced and communicated at shift briefings covering:</p> <ul style="list-style-type: none"> Active haul circuits and work areas. Information on where passing is permitted. Communications requirements. <p>OFI-027 Review standards for call signs and monitor performance. Workshop participants discussed radio chatter issues on the dig floor and how improving call sign standards can improve performance. Excessive radio chatter reduces the available bandwidth on radio channels and subsequently delays or prevents</p>	<p>Training system records confirm currency of skills. Supervisors and peers monitor vehicle operator radio calls and actions. Training records confirm the currency of vehicle operator understanding of communication requirements. Specified review period to retain competencies are stated and tracked.</p> <p>CCV-CFH03-Mobile Equipment/Vehicle Interaction - Requirement to Interview and Observe 3 CMW vehicle to vehicle interactions confirming 50 metre distance honoured and calling on entry and departure.</p>	<p>BID-168: BI-MDV.66.05 Positive communication protocol for passing or moving close to a vehicle CFM-CPA.11.01 Equipment operator or pedestrian mistake in estimating clearance distance CFM-MPA.66.01 Incorrect communication protocol</p>

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			<p>pedestrians.</p> <p>OFI-028 Consider designing and constructing passing lanes for Light Vehicles</p> <p>An absence of light vehicle passing bays on access roads and operations has resulted in poor choices that do not meet site standards when light vehicle operators pass heavy mobile equipment. Travel speed differences have resulted in LV operators breaching clearance requirements when passing HME. The reliability of existing controls depends on the judgement and decisions made by LV operators.</p> <p>Consider the cost benefits of designing and constructing passing lanes for Light Vehicles on mine roads to complement and improve the consistency and reliability of site passing controls.</p>	<p>the application of positive communication identification as a key vehicle interaction control.</p> <p>Consider assembling a cross-representative workgroup to review current practice and identify call sign improvement opportunities, particularly on dig floors. Consider performance monitoring enhancements.</p>		
<p>OFI-48: Review and improve pre-shift meeting process and execution.</p> <p>OFI-50: Review hazard and control communications with work crews.</p> <p>OFI-61: Improve shift-to-shift handover processes on site</p>	<p>BI-MPA.62</p> <p>Handover process between work crews</p>	<p>There is a formal handover process between work crews that records and communicates operational status.</p>	<p>There is a formal handover process between work crews that records and communicates:</p> <ul style="list-style-type: none"> • Progress to plan • Equipment status • Operating and work environment conditions, hazards, and controls in place • Interactions with other work groups or people • Any other current and anticipated issues <p>SOP-049 Safety Inspections & Checking and Examining Work Areas V6.1 27/8/2021 - S4.2 OCE Inspection Reports requires all OCE reports to be included in the pre-shift meeting for the incoming crew.</p> <p>CGRA BLS-007 Communication and Reporting V1.0 S5 Internal Communication requires information to be gathered and shared in a two-way communication meeting across all levels.</p> <p>Workshop Discussion Prompt - Coronado Global requirements for shift to shift supervision and planning were not</p>	<p>At the beginning of the work period, supervisors brief their work crews on relevant items.</p> <p>At the end of the work period, a log is prepared for the next work crew.</p> <p>Inspections and Interviews - Pre-shift meetings delivered by supervisors observed by RM included information from the outgoing supervisors and OCEs. These supervisors were also preparing plans for the next shift to execute on.</p> <p>OFI- 048 Review and improve pre-shift meeting process and execution.</p> <p>Workshop attendees identified a requirement for a better pre-start meeting environment along with more effective meeting format and content. The discussion developed from a content communication question that considered how Curragh North mine SOPs are communicated to the workforce.</p> <p>If mobile equipment operators miss information at their pre-start meetings, this lack of knowledge can result in</p>	<p>Communications logs are completed and available for the next work crew. Prework briefings are delivered.</p> <p>SOP-049-FRM-01 Supervision Verification Audit Form - Superintendent - Oversight and checklist for confirming that supervisor conduct all required inspections, communication, and hand-overs.</p>	<p>BID-131: BI-MPA.62 Handover process between work crews</p> <p>BID-169: BI-MPA.62 Handover process between work crews</p> <p>CFM-CPA.10.20 Operators of heavy and light vehicles (or pedestrians) fail to follow the designated travel path</p> <p>CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced visibility, road narrowing, road surface etc.</p> <p>CFM-CTA.10.90 Personnel do not alert others to presence of hazards</p> <p>CFM-EPA.31.20 Equipment or</p>

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			<p><i>noted to be specifically required in Management Plans - only being addressed in the Group Standard. Is this a requirement at CNOC - or is it addressed by the contracting groups conducting the works?</i></p> <p>OFI-061 Improve shift-to-shift handover processes on site. Workshop participants confirmed variable standards between different groups for preparing and handing over information between shift supervisors There is no site standard template available in use and the quality and quantity of information is inconsistent even for items relevant to every production workgroup e.g. roadworks, in-pit maintenance, OCE reports etc. Incorrect or incomplete information transferred between supervisors can lead to hazards in the operation not being recognised and controlled by incoming operators. Confirm minimum standards for handovers. Consider developing a standard template for shift supervisor transfer notes. Review the use of digital technology options e.g. for consistent messages that can be pushed to all relevant workgroups before handovers and used to aggregate multiple handover logs.</p>	<p>unwanted vehicle interactions. If information content and meaning checks require asking your peer what the supervisor said then key points can be lost or diluted. Review the process, location, and execution of pre-start meetings across workgroups. Confirm site minimum standards and develop performance measures. OFI-050 Review hazard and control communications with work crews Workshop participants discussed the challenges of running effective prestart meetings that communicate operational and safety information and performance expectations that reinforce individual and workgroup norms. At Curragh North the prestart meeting provides the only daily opportunity to communicate to a workgroup and discuss relevant hazards and their controls. Shift prestart meetings have to be efficiently transactional and also cover production elements e.g. assigning equipment etc. The current prestart sequence means that there can be shift long delays for sharing new information from a meeting across other workgroups e.g. for road works, changes to intersections, broken down equipment. and other short-term changes. Workshop participants also noted that there are always production drivers covering 'time to the first load.' Workshop participants also noted the challenges of crew size, supervisor experience and effectiveness, employee turnover, and production pressures that have to be managed. Review the effectiveness of preshift meetings, consider developing performance measures and improve support for supervisors. Consider augmenting shift prestart meetings</p>		<p>component failure during operations e.g. brakes or steering or controlled functions CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning CFM-LPV.41.20 Loading requirements for vehicles inadequately considered in mine design, equipment selection and work planning CFM-SPA.81.07 Inadequate implementation of site traffic management plan CFM-SPA.88 Inadequate management of change CFM-SRA.87 Inadequate monitoring that mine traffic management requirements have been implemented and are being maintained</p>

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				with hazard and control information e.g. SOP reviews, incident case studies that can be used during stoppages e.g. during wet weather.		
OFI-19: Consider implementing individual circuit traffic management plans.	BI-MPA.66.11 Expected routes by vehicle type are effectively communicated	All vehicle operators are aware of the routes that they are expected to travel on based on the vehicle type that they are operating e.g. segregated routes for light vehicles.	<p>There are multiple communication processes that provide expected route information to vehicle operators including:</p> <ul style="list-style-type: none"> • Start of shift briefings • Start of work roster traffic updates • Maps and plans prepared (by surveyors or engineers) of the road network • Despatcher or supervisor advice • Scheduling software • Road signs <p>Multiple Training Modules - cover requirements for operating equipment on site, but do not offer specific guidance on traffic routes on site.</p> <p>Curragh Site Familiarisation Doc Ref 1021 V2.10 12/6/2024 - Is an assessment tool for confirming that CMW are familiar with the CNOC area and site traffic flows. Also confirming checks (pg 3) for mobile plant and machinery interactions in HME/LV Workshop, Field Maintenance, Lube Bay, CN Workshop, CN Tyre Bay</p>	<p>Ongoing briefings and checks that vehicle operators understand the road network and how they are expected to operate i.e. where they are and the direction that are to travel.</p> <p>Interviews and Inspections - Pre-shift meetings provide guidance on general working conditions and updates on activities occurring. General traffic information is provided in large scale plans and specifics appear to be dominantly via briefings from Supervisors.</p> <p>OFI-019 Consider implementing individual circuit traffic management plans</p> <p>Workshop participants confirmed that Traffic Management Plans (TMP), organised by individual circuits are not prepared.</p> <p>They confirmed situations where the absence of a specific up-to-date details about an operating circuit has resulted in operator misunderstandings and unplanned vehicle interactions e.g. for carrying out in-field equipment services, adjustments for water damage etc. Traffic management plans (or their equivalent) are hierarchical dynamic resources that set standards for mine design, construction, maintenance, and operation. They also confirm the planning processes that manage workgroup interfaces. Their effectiveness at a circuit workflow and task level requires the communication and check for understanding of specific and up-to-date information. Review site processes for Traffic Management processes, evaluate the benefits of preparing and communication operating details by</p>	<p>Supervisor and despatch oversight. Supervisors and peers monitor vehicle operator performance. By exception hazard reporting and incident investigation.</p> <p>SOP-049-FRM-01 Supervision Verification Audit Form - Superintendent - Confirming checks made on how supervisors are planning, communicating and monitoring vehicle operators (and other CMW).</p>	<p>BID-170: BI-MPA.66.11 Expected routes by vehicle type are effectively communicated</p> <p>CFM-CPA.10.20 Operators of heavy and light vehicles (or pedestrians) fail to follow the designated travel path</p> <p>CFM-CPA.11.05 Operator does not drive on available segregated roads</p> <p>CFM-MPA.65.04 Light or heavy vehicle remains in a heavy vehicle blind spot during intersection approach</p> <p>CFM-SPA.81.07 Inadequate implementation of site traffic management plan</p>

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<p>OFI-100: Review blasting practices to improve VI outcomes</p> <p>OFI-86: Reinforce site load movement protocols.</p> <p>OFI-87: Review Site Speed Limits and Monitor Performance.</p>	BI-MPA.76 Safe and Productive Movement of Loads	Site load movements are well planned, and hazards are identified and managed.	<p>There are site processes in place for planning and managing materials and equipment load movements covering:</p> <p>Load movements</p> <ul style="list-style-type: none"> Identifying and managing complex or heavy load requirements (including downward forces (excavators and loaders)) Equipment selection for loading and unloading - confirming the load is within the rated capacity of the vehicle or trailer (for towing) Transport equipment selection - confirming the load is within the rated capacity and appropriate for the planned transport route Load restraints Transport routes consider interactions with other workgroups including travel speeds Unloading locations and tip points are level, stable, and suited to the vehicle and load being unloaded or tipped, with edges and drop-offs adequately protected Notifications and warning e.g. to operations Barriers between the load and personnel in the transport vehicle As required off-site transport permits <p>Hazardous materials transport</p> <ul style="list-style-type: none"> Flammable liquids or explosives are transported in rated and approved vehicles Site notification, communication, and warnings are deployed <p>CGRA BLS-FH03 Mobile Equipment - Fatal Hazard Protocol V1.0 - S4 General Requirements requires sites to develop guidance and procedures for managing estimating weight and stability, moving the load, and adjusting vehicle operations for abnormal loads.</p>	<p>Personnel apply site processes to plan and execute safe and productive load movements.</p> <p>Personnel involved in the movement of loads understand their accountabilities and are authorised to apply site processes for:</p> <ul style="list-style-type: none"> Identifying load weights Equipment required for loading and unloading Equipment required for transporting Determining transport route constraints Documentation, notification, communication, and warning Identifying and managing other hazards <p>Multiple training modules - address requirements for loading bulk and specific materials and operating when loaded.</p> <p>OFI-086 Reinforce site load movement protocols</p> <p>Workshop participants report variable conformance with site processors for planning and executing safe and productive load movements.</p> <p>Unwanted vehicle interactions can occur due to poorly placed loads. Reinforce requirements for planning and executing safe and productive load movements.</p> <p>OFI-100 Review blasting practices to improve VI outcomes</p> <p>Significant amounts of over-size material is frequently present in blasted shots.</p> <p>This over-sized material makes loading and dozer pushes more difficult and increases the potential for injuries to operators (whole body vibration) and damage to equipment.</p> <p>Review the blasting practices and</p>	<p>Load movement plans are documented and logged.</p> <p>By exception equipment damage and incident investigation findings.</p> <p>Hazardous material movement audits.</p> <p>Transport equipment maintenance records e.g. barriers remain in place</p> <p>Multiple assessment tools - confirm understanding of the hazards and required controls around movement of loads.</p>	<p>CFM-EPA.25.20 Load shape, or restraints or load securing devices fail causing an incident</p> <p>CFM-EPV.26.10 Routine or occasional overloading of vehicles</p> <p>CFM-EPV.39.42 Vehicles are operated outside specified tyre conditions</p> <p>CFM-ERA.39.20 Overload warning system fails is incorrect or absent</p> <p>CFM-LPV.41.20 Loading requirements for vehicles inadequately considered in mine design, equipment selection and work planning</p> <p>CFM-SDV.81.20 Inadequate mine traffic management plan (specification)</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>PLN-005 PHMP Mobile Equipment Incidents - S4 requires escorting of wide loads, loading within vehicle limits, and separation of loads from operators and passengers.</p> <p>SOP-017 Using Mobile Plant - Mine Traffic Rules - addresses safe movement of loads at S5.9 Load Carrying, S5.11 Speed Limits LMHV and HME, S6 Escort Rules, S8.9.1 Loaded Trucks (Parking) only for hot-seat change and in the event of a situation that prevents the requirement for emptying the load before parking up.</p> <p>OFI-087 Review Site Speed Limits and Monitor Performance Workshop participants discussed an absence of consistent guidance for speed limits for the go line and on different grades of ramp. Not providing guidance in high traffic areas and where vehicle runaway is possible can lead to unwanted vehicle interactions. Review the setting of speed limits for the go line and site ramps. Confirm communication and training processes, introduce performance monitoring.</p>	<p>achieved size distribution of shots. Consider giving preference to higher powder factors which will reduce particle size and improve loading and dozing conditions.</p>		
<p>OFI-30: Review site short-term planning processes and confirm that vehicle interaction is considered.</p> <p>OFI-31: Review processes for monitoring of short-term planning effectiveness.</p>	<p>BI-MPV.61.01 Vehicle interactions are considered during short-term planning processes</p>	<p>Mobile equipment interactions and operating requirements are always considered when approving, planning, and scheduling work.</p>	<p>Short term planning processes consider interactions between workgroups and mobile equipment operating requirements when approving, planning, and scheduling work.</p> <p>SOP-017 Mine Traffic Rules, and PLN-005 PHMP for Mobile Equipment Incidents - are not clear on planning and scheduling requirements for short to medium term consideration of vehicle interactions.</p> <p>CPS PLN 6.0 Activities & Time Utilisation Model and CPS WI 2.72 Short and Mid-Term model - do not address pro-active considerations for vehicle interaction outcomes from any decisions made.</p>	<p>Technical planners and operational superintendents review skills of available operators and vehicle/work group interactions during planning. Supervisors issue instructions based on short term plans.</p> <p>Interviews and Observations - General planning is focussed on the geographical locations of intended mining blocks. This indicates an assumption that traffic flows will be managed at a contractor supervisor level in accordance with the higher level plans and rules.</p> <p>Workshop Discussion Prompt - <i>There may be occasions where scheduling of mining blocks leads to an increase in interaction hot spots (e.g. many vehicles arriving at the one intersection, difficult LMHV traffic paths through HME traffic flows, etc.)</i> -</p>	<p>Performance is monitored referencing instructions from short term plans e.g. through supervisor inspections. Adjustments are made when required.</p> <p>OFI-031 Review processes for monitoring of short-term planning effectiveness Workshop participants discussed how site personnel meet production challenges and questioned if performance reviews considering the success or failure of short-term mining plans are held. They suggested that reviews would not only consider reaching production goals but also how well vehicle interactions have been managed e.g. intersection construction, tightness of load areas, haul distances, managing sub-optimal blasts, shared haul roads, working adjacent to drill and blast, etc.</p>	<p>BID-172: BI-MPV.61.01 Vehicle interactions are considered during short-term planning processes CFM-CPA.10.20 Operators of heavy and light vehicles (or pedestrians) fail to follow the designated travel path CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning</p>

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				<p><i>should there be more consideration made in the planning and scheduling areas for the site?</i></p> <p>OFI-030 Review site short-term planning processes and confirm that vehicle interaction is considered. Workshop participants discussed how short-term term planning decisions required to meet monthly coal targets can lead to increased vehicle interaction intensities that include the construction of awkward intersection geometries. A focus on early access to coal in variation to the mine plan can result in tight mining conditions and non-standard road and intersection builds. Review site strategy and discipline to follow medium term operating plan. Consider introducing a formal step to confirm that vehicle interactions are considered during short-term variation decisions. This can include formal processes that should be triggered when overriding site standards and good practise as per the medium term operating plan.</p>	<p>However, without periodic reviews of short-term plans that go beyond meeting production numbers then site norms of scrambling to solve short-term problems can develop. Comprehensive short-term planning reviews identify and log any adaptations and compromises made to site processes and standards to meet goals. This can include impacts on long-term mine plan, increases in vehicle interaction intensity, managing contractor costs, maintaining overburden strip ratios etc. Consider formalising a site short-term and medium-term review process (monthly and quarterly) that considers all of the impacts of changes that are made to meet coal production demands. Include positive and negative impacts on vehicle interaction intensity and incident investigation findings.</p>	<p>CFM-LDV.42.02 Speed limits and over-speed management are inadequately considered in mine design and routine work planning CFM-LDV.42.20 Reducing vehicle interactions through intersection design and traffic rules is inadequately considered in mine design and routine work planning CFM-MDA.61.01 Reducing vehicle interactions by maintaining clearances is inadequately considered routine work planning</p>
OFI-72: Review worker on foot communication and operating protocols.	BI-MPV.64.01 Pedestrian working in operational area communication and operating protocols	There is an effective and applied communication protocol for managing interactions between pedestrians and mobile equipment.	<p>Sites have consistent, defined, and measurable processes for managing interactions between pedestrians and mobile equipment. These define communication requirements based on the situation including:</p> <ul style="list-style-type: none"> Approaching and accessing heavy vehicles Working independently in an area where vehicles are operating Working alongside a vehicle in the same workgroup How to move past a vehicle when working underground or in a constricted space e.g. if pedestrians cannot move to a position of safety in a roadway, the vehicle must stop, the operator must acknowledge the pedestrian 	<p>Training and assessment in requirements for working in operational areas as a pedestrian. Requirements are reinforced in area inductions and periodically at start of shift or similar briefings. Planners and supervisors identify workgroup interactions and confirm required communication before entry and during work. Permanent or mobile signs provide call up information Curragh North Open Cut Area Familiarisation - No mention of rules for pedestrians in working areas. Should there be? OFI-072 Review worker on foot communication and operating protocols Workshop participant discussions</p>	<p>Training records confirm that relevant personnel are competent e.g. maintainers, service personnel operators, supervisors. Supervisors monitor performance. Records of start of shift or similar awareness briefings. Collision avoidance system logs and reports on equipment and pedestrian interfaces. By exception hazard and incident reporting.</p>	<p>CFM-MPA.66.01 Incorrect communication protocol CFM-MPA.72.03 Mobile equipment operator or pedestrian does not notify when entering a controlled work area CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>presence and allow the pedestrians to walk past the vehicle before continuing</p> <p>They also confirm what communication equipment and signage is required for different situations on site, for example</p> <ul style="list-style-type: none"> • When personnel are working on the ground at least one member of the work party must be in possession of a two way radio or equivalent. • Standard radio (or other communications) call-up protocols are followed. • Signage alerting vehicle operators to the presence of work in an area. • Cap lamp signals when working underground. • Collision Avoidance System handshake or acknowledgements etc. <p>SOP-017 Using Mobile Plant - Mine Traffic Rules -S7.3 Separation - Pedestrians Pedestrians must always give way to vehicles unless crossing at designated pedestrian crossings. S8.3 Access and Egress - pedestrians to give way to HME unless they are already on the go-line in which all HME remain stationary. S8.5 Approaching Equipment - if there are pedestrians within 50m the Operator must stand outside the cabin. S8.13 Hot Seat Changeover can only occur where there is a designated position for pedestrians. S8.15 Pedestrians TMP for Go Lines and Crib Huts to have designated walkways with signage.</p>	<p>identified a gap in site requirements covering communication requirements for pedestrians working in operational areas. The Curragh North open cut familiarisation information and induction does not have rules for pedestrians in working areas. A failure to consistently set and meet communication requirements for pedestrians working in operating areas creates an ongoing vehicle to pedestrian interaction hazard that is inadequately controlled. Update the NCOC area familiarisation to include rules around pedestrians in working areas. Confirm minimum communication requirements, barriers, permits, risk and control management. Review and update as required. Use practical examples to illustrate the application of standards.</p>		
OFI-11: Review use of spotters on site	BI-MPV.64.02 Around vehicle inspection or use of spotters to identify hazards before and during movement	There are no unplanned vehicle to person or vehicle to vehicle contacts on first movement.	<p>Before moving off from being parked or driving into locations with limited clearance, vehicle operators carry out an around vehicle inspection e.g. a HV walk around inspection.</p> <p>If required by site, horns are used to indicate vehicle operation e.g. once prior to starting the vehicle, twice before forward movement, three times before</p>	<p>Training and assessment in requirements for vehicle operators to conduct an around vehicle inspection prior to first movement after parking. Use of spotters and vision aids as required to manage operation in locations with restricted clearance.</p> <p>SOP-016-FRM-07 LMHV Pre-start Inspection Form - No requirement for</p>	<p>Supervisors monitor vehicle operator prestart check including around vehicle inspection. Area cameras provide records of vehicle operation that are regularly reviewed.</p> <p>BLS-004-CCV-03-FH03 Mobile Equipment - Management of Interactions - Includes requirements</p>	<p>CFM-CRA.03.20 Personnel do not manage heavy vehicle blind spots</p> <p>CFM-LDA.43.01 Vehicle parking, including emergency parking is inadequately</p>

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			<p>reversing. Where movement in constrained locations is required, a spotter is used by the operator (and nominated by a supervisor). SOP-017 Mine Traffic Rules - Spotters only identified as required for HV reversing in workshops and other areas near equipment.</p>	<p>a walk-around to be completed as part of checks (although this is needed to check all lights are functioning). OFI-011 Review use of spotters on site Workshop participants confirmed that site level SOP-017 Mine Traffic Rules includes information and rules for managing hazards when spotters are used to direct mobile equipment. However, they observed that the SOP-017 rules and information can be interpreted in many ways. They also confirmed that moving equipment in and around workshops was sometimes taking place without using spotters. The use of spotters when moving equipment with blind spots is an established vehicle interaction control. While it is effective, using a spotter introduces a dynamic vehicle to pedestrian interaction hazard where consistent reliable performance depends on the judgment and actions of two people - the operator and the spotter. More reliable controls include a workplace layout where spotters are not usually required e.g. drive through service areas, defined parking areas, and maintenance scheduling that avoids parked up equipment awaiting maintenance. Review the use of spotters, confirm site requirements, update SOPs and establish a performance monitoring process.</p>	<p>to confirm activities, understanding and training of CMW.</p>	<p>considered in mine design and routine work planning CFM-MPA.63.02 Vehicle operator does not check pathway after being parked CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots CFM-SRA.87.10 Equipment faults arising from poor standard of maintenance</p>
	<p>BI-MPV.64.03 Protocols for approaching and accessing heavy mobile equipment</p>	<p>Approaching and accessing mobile equipment follows a consistent, defined, and measurable process.</p>	<p>Sites have consistent, defined, and measurable process for approaching and accessing mobile equipment. The process covers pedestrians and light vehicles approaching:</p> <ul style="list-style-type: none"> • Working heavy vehicles • Parked heavy vehicles • Required positive communications • When it is safe to enter a work area 	<p>Training and assessment in positive communications and the process for accessing a heavy vehicle are included and reinforced in multiple training and awareness modules e.g. operator training and area inductions. The site requirements for managing interactions between:</p> <ul style="list-style-type: none"> • Pedestrians and vehicles • Heavy vehicles and light 	<p>Training records confirm that relevant personnel are competent e.g. maintainers, service personnel operators, supervisors. Supervisors monitor performance. Collision avoidance system logs, reports, and heatmaps. By exception hazard and incident reporting.</p>	<p>CFM-MPA.63.01 Operator does not meet site requirements when parking CFM-MPA.66.01 Incorrect communication protocol CFM-MPA.67.10</p>

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			<ul style="list-style-type: none"> Heavy vehicle safe state e.g. park brake engaged, access ladder lowered and implements grounded (if relevant) <p>SOP-017 Mine Traffic Rules - S8.5 Approaching Equipment has the key requirements of: only approach inside 50m after pos comms confirmed; Operator outside when pedestrians within 50m; CMW must achieve Pos Comms when departing HME work area.</p>	<p>vehicles are routinely reinforced and communicated at shift briefings.</p> <p>Learning Material - Conduct Wheel Loader Operations and other HME training modules - Section Entering a Loader Exclusion Zone is dominantly about changing operators and mentions be fundamentally stable but not about standing outside cabin.</p> <p>RIIO304-ASQ Conduct Wheel Loader Operations Assessment and other HME assessments - does not formally confirm understanding of 50m rule, requirement to be outside the cabin when there are pedestrians nearby, etc.</p> <p>Workshop Discussion Prompt - <i>Is there a requirement for a formal part of training to cover interactions with pedestrians?</i></p>		<p>Operations continue when there are significant interaction threats</p> <p>CFM-MPA.72.03 Mobile equipment operator or pedestrian does not notify when entering a controlled work area</p> <p>CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots</p>
	BI-MPV.65.02 Road demarcation for changing conditions, commissioning, and live testing	There are effective road demarcation processes in place that manage hazards and interactions between workgroups.	<p>There are site standards, processes, procedures, work instructions, that detail road demarcation and hazard communication requirements for:</p> <ul style="list-style-type: none"> Roadworks and remediation e.g. installing drainage, clearing catch berms etc. Breakdowns and repairs Commissioning or decommissioning considering the movement range of the equipment Live testing Changes in road conditions Geotechnical hazards Other site hazards <p>SOP-017 Mine Traffic Rules (and Appendix 1, Signage) - Signage is mentioned - but there are no clear requirements around required signage for changing conditions, commissioning, and live testing.</p> <p>Workshop Discussion Prompt - <i>Is there a requirement for specific rules and guidance for maintainers and operators around required demarcation for changing</i></p>	<p>Road demarcation, hazard warning and management requirements are included and reinforced in multiple training and awareness modules e.g. operator training and area inductions. Requirements are routinely reinforced and communicated at shift briefings covering:</p> <ul style="list-style-type: none"> Demarcated locations and the reason Other hazard controls <p>Breakdowns and other events which interrupt or change a travel way are notified to other road users and appropriate demarcation and warnings are put into place. Supervisors monitor and update status for shift handover.</p> <p>Inspections and Observations - Signage is used to identify locations where a hazard exists or some particular action is required of vehicle operators or pedestrians.</p>	Pre work hazard assessments for field crews working on equipment. Supervisor inspection records.	CFM-CRA.03.20 Personnel do not manage heavy vehicle blind spots

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<i>conditions? Is the supervisor being aware of the issue sufficient?</i>			
OFI-59: Review conformance with site travelling and queuing separation protocols.	BI-MPV.65.11 Same direction travelling and queuing separation protocols	Nil vehicle to vehicle contacts during travelling and queuing operations.	<p>Site requirements for separation between vehicles when travelling in the same direction, and when queuing, are clearly stated.</p> <p>SOP-017 Using Mobile Plant - Mine Traffic Rules S8.6 Following distance - 50 metres requires a separation between vehicles travelling in the same direction, and S8.10 Queuing Rules for Haul Trucks - which allows for 15 metre separation and describes how to progress or leave a queue for a dig unit.</p>	<p>Vehicle operators are trained and assessed on their understanding of required separation distances - including challenge testing and observation to confirm they are alert to road network features which provide additional guidance on how far they are from the vehicle in front.</p> <p>Multiple Training Modules (Learning Materials) - very brief mention of following road rules - no additional examples provided regarding separation and queuing requirements.</p> <p>OFI-059: Review conformance with site travelling and queuing separation protocols.</p> <p>Operator understanding of separation distances for travelling and queuing are not regularly challenged, tested, or monitored.</p> <p>The reliability of controls for maintaining separation distances through the load and dump cycle, including during queuing, depends on constant good decisions being made by mobile equipment operators. Review and confirm the adequacy of competence testing, auditing, critical control verification and oversight around travelling and queuing separation protocols. Consider developing performance measures, include a monitoring capability in future technology implementations for collision avoidance.</p>	<p>Training records confirm the currency of vehicle operator understanding of separation distances. Specified review period to retain competencies are stated and tracked. Supervisors monitor vehicle operator performance. Proximity detector logging and exception reporting.</p> <p>BLS-004-FH03-CCV-02-FH03 Mobile Equipment - Vehicle Safety & Operations - no specific requirement for observing separation and queuing behaviours. <i>Should there be more detail?</i></p>	CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots
OFI-27: Review standards for call signs and monitor performance. OFI-73: Review Positive Communications requirements for HME operators when entering a work area.	BI-MPV.65.12 Vehicle entering a work area positive communications protocol	All personnel operating vehicles remain alert and situationally aware when working in congested areas.	<p>There are site standards, processes, procedures, and work instructions, that detail vehicle entry requirements to congested work areas e.g. when loading and dumping, or when accessing workshop areas</p> <p>At a minimum, these detail:</p> <ul style="list-style-type: none"> • Work area delineation (where to stop and queue etc.) 	<p>Training and Assessment in requirements for Positive Communications for Entering a Work Area requirements are included and reinforced in multiple training and awareness modules e.g. operator training and area inductions. Requirements are routinely reinforced and communicated at shift briefings covering:</p>	<ol style="list-style-type: none"> 1. Training records confirm the currency of vehicle operator understanding of communication requirements. 2. Specified review period to retain competencies are stated and tracked. 3. Supervisors monitor vehicle operator performance. 4. Supervisors and peers monitor 	CFM-MPA.66.01 Incorrect communication protocol CFM-MPA.72.03 Mobile equipment operator or pedestrian does not notify when entering a controlled work

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<ul style="list-style-type: none"> • Radio (or other communications) call up protocols • Identification • Confirming that communication has been received • Following signs and directions. <p>SOP-017 Using Mobile Plant - Mine Traffic Rules - S5.12 Positive Two-Way Radio Communication requires formal notification from HME operator before progressing closer than 50 metres.</p>	<ul style="list-style-type: none"> • Active haul circuits and work areas • Information on the area owners and communications before entry. <p>Permanent or mobile signs are provided with call up requirements.</p> <p>Multiple Training Modules (Learning Materials) - notification requirement for entering a HME 50 metre zone for LMV - but no requirement for notification when HME approaching HME.</p> <p>Workshop Discussion Prompt - <i>Should the requirements for notifying of approach be included in HME training? Is it a common practice on site (even if not in the training modules)?</i></p> <p>OFI-027 Review standards for call signs and monitor performance. Workshop participants discussed radio chatter issues on the dig floor and how improving call sign standards can improve performance. Excessive radio chatter reduces the available bandwidth on radio channels and subsequently delays or prevents the application of positive communication identification as a key vehicle interaction control. Consider assembling a cross-representative workgroup to review current practice and identify call sign improvement opportunities, particularly on dig floors. Consider performance monitoring enhancements.</p> <p>OFI-073 Review Positive Communications requirements for HME operators when entering a work area</p> <p>Workshop participants questioned if Heavy Mobile Equipment (HME) includes specific requirements for two-way communication etiquette and positive communications</p>	<p>vehicle operator radio calls and actions</p> <p>Multiple CCV - Interviews and Observation of positive communication required - no clarity on notifying SSE on entry to a circuit.</p>	<p>area CFM-MPV.63.02</p> <p>Light vehicles stop or park in heavy vehicle blind spots</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>requirements when vehicles are entering work areas.</p> <p>They noted the importance of positive communications as a vehicle interaction control and how inconsistent positive communications can lead to unwanted vehicle interactions.</p> <p>Review site requirements and confirm when HME operators are required to use positive communication protocols to acknowledge vehicles approaching and entering work areas.</p>		
OFI-29: Review and improve site delineation practices.	BI-MPV.66.01 Road design guidelines specify minimum requirements for delineation	The design and installation of delineators assists mobile equipment operators to accurately estimate separation distances.	<p>Road designs and construction requirements include standards for the accurate spacing of delineators along the road network.</p> <p>Spacing guideposts are placed at distances relative to the distance required to be maintained between mobile vehicles.</p> <p>Site design requirements specific the use of reflector colours e.g. Use red reflectors on the left, white on the right.</p> <p>SOP-017 Mine Traffic Rules - Notes requirement for delineators - but with no specific guidance on placement.</p> <p>SMS-032 Specification for Design and Construction of Mine Roads - S4.8 Delineators and Guideposts provides guidance on height and placement of delineators (100m on straight and 50m at intersections) <i>Other sites use 50m spacing on delineators to provide a visual prompt for travelling distance. Is this worth considering for CNOC?</i></p>	<p>Road construction crews place and maintain delineators at required distances.</p> <p>Inspections and Interviews - Signage and delineation installed largely to conform with requirements.</p> <p>OFI-029 Review and improve site delineation practices</p> <p>Workshop participants confirmed that site delineation standard vary including the agreed distance between delineators. They agreed that the maximum distance between delineators should be 50 m. This distance provides a reliable definition of the road edge while assisting with drivers to estimate of following distances.</p> <p>Non standard spacing of road delineators can confuse mobile equipment operators on correct following distances during same-direction travel and road edge positions.</p> <p>Review site delineation design standards. Confirm site requirements e.g. installed and maintained at a consistent 50 metre spacing on longer runs and closer at intersections and around corners (e.g. chevron delineators). Review processes for installing, inspecting, and maintaining the standards.</p>	<p>Commissioning and handover records confirming that 'as built' meets design requirements</p> <p>Supervisor inspection records.</p> <p>BLS-004 FH03-CCV-01-Mobile Equipment - Road and Intersection Design & Construction - Requirement to check signage, boom gates and other safety components (but no specifics on delineation marker distances on site and around intersections).</p> <p>Workshop Discussion Prompt - <i>Is there merit in considering requirements for Survey (drone scans) to provide reports on non-conforming delineation and windrows?</i></p>	CFM-CPA.11.01 Equipment operator or pedestrian mistake in estimating clearance distance
OFI-64: Review the	BI-MPV.68	Refuelling and	Operating sites have refuelling procedures	Training and assessment for personnel	Housekeeping Inspections.	CFM-MPA.63.01

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
<p>cost benefit for in-pit service bays for in-cycle servicing. OFI-65: Review mining Pro training modules. OFI-66: Improve performance monitoring for in-pit refuelling.</p>	Refuelling and Lubrication Practices	lubrication of mobile equipment is productive and safe.	<p>that confirm requirements for:</p> <ul style="list-style-type: none"> • Mobile equipment refuelling system specifications • Operation of fuel and lubrication transfer systems • Refuelling and lubrication of vehicles, equipment and fixed plant - management of interactions between service vehicles and operating vehicles • Housekeeping in refuelling bays and requirements for inspection of fire suppression systems and fire extinguishers • Emergency procedures including spill response • Replacement or changing of fuel cells or storage tanks • For underground operations - refuelling outside refuelling bays <p>SOP-014 Servicing, Lubricating and Refuelling Mobile Plant V4.5 21/10/2022 - S3.4 Refuelling Plant and Equipment provides guidance on all the steps required and covers parking, control isolation (operator on ground), positive communication for start and end of refuelling.</p> <p>OFI-065 Review mining Pro training modules. Workshop participants raised an issue - Mining Pro training modules have removed requirements for vehicle operators to test and report operational functions during regular in-pit or in-cycle servicing. A lack of knowledge of operational function testing can lead to poorer quality pre-start checks that do not detect equipment failings that can lead to incidents. Review the decision for removing operational function testing in Mining Pro training modules.</p>	<p>responsible for refuelling and lubrication. Training and assessment for mobile equipment operators. Site refuelling and servicing infrastructure and equipment meets site standards. Multiple Training Modules - cover requirements for refuelling and address interaction, environmental, and fire prevention controls. OFI-064 Review the cost benefit for in-pit service bays for in-cycle servicing. Workshop participants report high levels of vehicle interactions on the go lines, particularly when in-pit refuelling operations are occurring at the same time as other vehicle movements. Having workers on the ground at the same time as HME vehicle movements are occurring leads to higher potential for an unwanted interaction. Review the provision of dedicated service bays for refuelling and shift servicing.</p>	<p>Training system currency of refueller skills. Audits of site refuelling infrastructure and equipment. Approved and in-date emergency response plans and periodic exercises. OFI-066 Improve performance monitoring for in-pit refuelling Workshop participants confirmed that audits and other performance reviews of in-pit refuelling practices are sporadic and may not be happening in any clear and obvious manner. Failure to get regular status information around key activities such as in-pit refuelling can lead to a drift in standards and ultimately unwanted vehicle interaction incidents and equipment fires. Review in-pit servicing performance monitoring, consider task logs, minimum audit requirements and make updates, as required.</p>	<p>Operator does not meet site requirements when parking CFM-MPV.63.02 Light vehicles stop or park in heavy vehicle blind spots CFM-SDA.90 Emergency or incident response is inadequate</p>
	BI-MRA.71.03 Selecting and Deploying Proximity	Proximity Detection Systems meet site functional,	Proximity Detection Systems are selected to deliver site relevant Capable Solution Use Case	Applying User Requirements to assess and select technology to: <ul style="list-style-type: none"> • Prepare a comprehensive 	When implementing vehicle interaction control improvement technology projects consider:	CFM-CPA.11.01 Equipment operator or pedestrian

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
	Detection Systems and other Technologies	performance, and technical requirements and deliver capable solution outcomes.	<ul style="list-style-type: none"> A capable solution delivers better vehicle interaction control performance by improving the quality of decision-making from task execution through to mine operations and design. A capable solution considers relevant aspects of the operating environment, production requirements and equipment design. Where technology is a part of a capable solution, it is operationally integrated. <p>The Capable Solution Use Case has these elements: Technology Functional Requirements – these define what new technology Vehicle Interaction Controls can and do not do.</p> <ul style="list-style-type: none"> Identify relevant company vehicle interaction requirements for new technology controls (EMESRT Level 8 and 9) based on operation type: e.g. underground coal mining, underground hard rock mining, open cut mining, refinery etc. Upgrade potential, data management and fit with future mine digitisation plans and other relevant information for each option. Compare site and company requirements, identify any difference e.g. additional site-specific requirements and/or restrictions e.g. requirement for machine swing interlocks, orebody precludes use of magnetic field PDS etc. <p>Technology Performance Requirements – site performance requirements are determined by site personnel considering the site personnel considering the consequences of operating without the new technology control in place.</p>	<p>Request for Proposal (RFP) for potential collision control technology provider Capable Solution User Requirements</p> <ul style="list-style-type: none"> Issue the RFP to potential technology providers asking for details of how their product performance against site functional and performance requirements. In the RFP, confirm site technical and infrastructure requirements if that technology option is selected. Review each RFP response and summarise capability, installation and maintenance costs, logistical support, upgrade potential, data management and fit with future mine digitisation plans and other relevant information for each option. Select the best fit from technology suppliers and prepare a shortlist for senior management review and decision. Include and assessment of the costs and benefit of each shortlisted option including: The Credible Failure Mode(s) being addressed from VICE Baseline Potential new Credible Failure Modes Impacts on other current Vehicle Interaction Controls Practicality and impact, has the approach been applied elsewhere? <p>Pilot work with technology option personnel and experienced site personnel to:</p> <ul style="list-style-type: none"> Plan a feasibility pilot for vehicle interaction control 	<ul style="list-style-type: none"> Demands on operations during deployment e.g. releasing personnel for training, making mobile equipment available for technology installations. Logistics and infrastructure upgrade timing, these may be determined by availability of technology and key personnel. Practical management of performance requirements e.g. how are technology failures managed. Following deployment what roles will be accountable and responsible for control effectiveness, involve these roles in operational deployment before project handover. Stakeholder management covering how feedback will be captured during deployment and after handover. Impacts on existing site process and approaches e.g. supervisor workloads, availability of technicians for maintenance and repairs, capacity of digital infrastructure, reporting capability etc. The direct performance metrics provided by technology, including how the information will be applied to support decision making at multiple levels including: Responses to non-standard events detected by technology. Adjustment of technology configurations and thresholds based on site functional requirements. 	<p>mistake in estimating clearance distance CFM-CRA.10.30</p> <p>Proximity alarms do not assist operator CFM-CTA.11.34</p> <p>Incorrect action taken on proximity alarm CFM-MDA.61.01</p> <p>Reducing vehicle interactions by maintaining clearances is inadequately considered routine work planning CFM-MDV.71.01</p> <p>Proximity alarms do not perform to specification (false negatives and false positives) CFM-SDV.81.20</p> <p>Inadequate mine traffic management plan (specification)</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<ul style="list-style-type: none"> Review site equipment defect reporting and classification processes. Working with operational personnel, set version 1 of expected performance parameters. Summarise site expected performance capability, installation and maintenance costs, upgrade potential, data management and fit with future mine digitisation plans and other relevant information in that can be deployed in a Request for Proposal (RFP) and to assess responses. <p>Site Technical and Infrastructure Requirements – where relevant, these cover technical requirements to support the deployment, installation, and operational integration of new controls e.g. extensions of site WiFi networks, installation of private 5G networks. Include questions on technical and infrastructure requirements in Request for Proposal (RFP). Prepare a site functional, performance and technical specification for use when issuing a Request for Proposal (RFP), assessing, and selecting VI Collision Control technology options offered by Original Equipment Manufacturers (OEMs) and Third-party technology suppliers.</p>	<p>improvement technology projects approved by senior management (consider a multi-stage feasibility pilot with stage gates to identify and deselect shortlisted options that do meet site expectations)</p> <ul style="list-style-type: none"> Train people who will work directly with the technology option and make the balance of the workforce aware of the feasibility pilot(s). Report back on feasibility pilot results and confirm the results align with User Requirements, include feedback from operational personnel involved in the feasibility pilot. Summarise the outcomes from each technology option feasibility pilot against Site User Requirements. Consider functional, performance, technical, infrastructure, logistics and support requirements if the technology option is selected. <p>Based on the pilot results, make a go-or no-go decision on operational deployment.</p>	<ul style="list-style-type: none"> Applying aggregated data to review and improve current design and operating approaches. Practical management of performance requirements e.g. how are technology failures managed. How to leverage new performance metrics indirectly to improve understanding of the effectiveness of existing vehicle interaction controls. 	
	BI-MRA.71.05 Proximity detection system data send	Installed proximity detection systems are fully leveraged to assist equipment operators, pedestrians, supervisors, and site management improve operational performance.	Installed proximity detection systems are fully leveraged to assist equipment operators, pedestrians, supervisors, and site management improve operational performance.	<p>When proximity detection systems are fitted, data is from vehicles, pedestrians, and infrastructure is sent to:</p> <ul style="list-style-type: none"> Support and monitor operator performance, including making interventions. Alert and update supervisors on operator performance. Analyse and improve operational processes. <p>Data and associated information are managed following site privacy and</p>	<p>Reports confirm proximity data is being captured, transmitted, aggregated, analysed and applied improve vehicle interaction performance for:</p> <ul style="list-style-type: none"> Individuals Supervisors Operating sites <p>Confirmation that site privacy management standards are being maintained e.g. through audits or reviews.</p> <p>Performance metrics e.g. operator</p>	<p>CFM-CRA.10.30 Proximity alarms do not assist operator</p> <p>CFM-CRA.11.21 No action taken on over speed alarm</p> <p>CFM-CRA.11.22 Operator non-compliance (including to alarms)</p> <p>CFM-CTA.11.34 Incorrect action taken on proximity</p>

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				record keeping standard. Reports and analysis may include: <ul style="list-style-type: none"> • Inputs to operator score cards. • Heat maps that check planning assumptions. • Checks on operating environment layouts. 	score cards, supervisor interactions, construction and maintenance of the operating environment meets design standards.	alarm CFM-MDV.71.01 Proximity alarms do not perform to specification (false negatives and false positives)
OFI-78: Consider reducing the number of drivers with operating area authorisation. OFI-90: Review Operational Area Access Infrastructure.	BI-MRA.72.01 Controlled Access to Operational Areas	Site access infrastructure controls are in place and permissions to enter operational areas are clear, applied, and well managed.	There are site standards, processes, procedures, work instructions, and specification to manage site and area access for personnel (including third parties), animals, and mobile equipment. These cover: <ol style="list-style-type: none"> 1. Site operational areas, other locations, and circumstances where access controls are required e.g. blasting, autonomous mining, and other high consequence activities etc. 2. How these areas are delineated and identified e.g. sign posts, site maps, geo fencing, (boom) gates, barriers etc 3. Who is accountable for controlling access e.g. security or sentries for blasting 4. Specifications for any required physical infrastructure e.g. fences, permanent barriers, temporary barriers, light curtain interlocks, security gates, turnstiles etc. 5. Minimum standards for authorised access to a controlled area e.g. vehicle marking and lights, PPE, training and awareness, permitted persons (inspectors, etc.), notification requirements (in and out) etc. 6. How access standards are monitored e.g. regular inspections to confirm boundary, barrier and delineation performance integrity. 7. How access permissions are monitored e.g. access system reports 8. The process for dealing with 	<ol style="list-style-type: none"> 1. Training and assessment in applying relevant site access requirements are included and reinforced in multiple training and awareness modules for direct and indirect employees. 2. Fences and gates are included in site maintenance strategies and are regularly inspected and maintained 3. Security patrols confirm integrity of boundary and alert site personnel if entry is occurring or has occurred. 4. Sentries provide warning to approaching vehicles and notify workers inside perimeter if an entry is required to occur. 5. Security patrols, sentries and others complete inspection forms to confirm site requirements are being met. 6. Barriers to high consequence areas are installed and maintained to meet requirements. 7. Work area barriers are regularly inspected and maintained. OFI-074 Review Site Access Controls Uncontrolled site access between North and South Curragh operations in the the Curragh complex may lead to unplanned and unwanted vehicle interactions. Workshop participants discussed differences between operator understanding of vehicle interaction protocols for different vehicle types on the main access road into Curragh North Operations.	<ol style="list-style-type: none"> 1. Training and induction records are created and controlled in site information management systems. 2. Inspection records are created and reviewed by more senior personnel on site. 3. Access logs and reports are generated and maintained. 4. By exception reporting and investigation of access barrier failures. 5. Audits of high consequence site activities e.g. blasting, autonomous mining etc. Workshop Discussion Prompt - No formal CCV in place around general access to site. Should there be?	CFM-MPA.72.01 Access control infrastructure is inadequate

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>unauthorised access by direct and indirect employees and by third-parties or animals.</p> <p>Interviews and Inspections - Site fencing in place Chain Link near MIA and rural more generally. Permitted access controlled via DAMSTRA system.</p> <p>CS-006 Fencing - Specification covering requirements for fence installation. No specific guidance on where to install what type of fence.</p> <p>OFI-078 Consider reducing the number of drivers with operating area authorisation</p> <p>Workshop participants discussed light vehicle access permissions and confirmed that gaining authorisation to drive light vehicles in restricted operational areas is straightforward with limited oversight. Many site personnel have authorisation to drive light vehicles in operational areas. For surface mining, the most significant fatality mechanism (pathway) is a collision between a heavy vehicle and a light vehicle. A reliable control is to reduce the number of vehicle interactions between light vehicles and heavy mobile equipment and hence the decision demands on all drivers. The simplest mechanism to apply this control is through limiting the number of light vehicles in operational areas. Other controls include stopping heavy vehicle movements when light vehicles are on operating circuits, or segregation including light vehicle only access roads. Review and confirm the current number of drivers with light vehicle authorisations to drive in operational areas. Consider how many licences are required for operational efficiencies and assess the impact of reducing the number of authorisations to decrease the number of light vehicles in operating areas.</p>	<p>They discussed how these differences might cause unwanted vehicle interactions e.g. between transport floats and light vehicles, and when transporting materials e.g. in situations when waste from the preparation plant has to be transported to the North Curragh mine.</p> <p>Review the understanding and application of vehicle interaction protocols for site access. Upgrade current access protocols if required.</p> <p>OFI-090 Review Operational Area Access Infrastructure</p> <p>Workshop participants discussed the adequacy of infrastructure to manage site access including access to various operational areas.</p> <p>Unexpected vehicles or pedestrians in operating areas can lead to high consequence, unwanted vehicle interactions.</p> <p>Review protocols and infrastructure for limiting access to operational areas. Benchmark with other regional coal mining operations.</p>		
	BI-MTV.65.01 Ceasing Operations Procedure - significant	Significant interaction threats will initiate the site cease operations process and plans.	There is a process and threshold for ceasing mobile equipment operations at site because of significant interaction threats caused by:	Significant interaction threat awareness, training and assessment for vehicle operators, supervisors and management covering:	Training and assessment records. Approved and in-date TARPs or equivalent. By exception post incident reviews.	BID-132: BI-MTV.65.01 Ceasing Operations Procedure -

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	interaction threats		<ul style="list-style-type: none"> • Unauthorised access (pedestrian, wildlife, or vehicles). • Non reversible equipment moving on a roadway (e.g. into underground or down a narrow ramp). • Breakdowns. • Emergency response e.g. fires, compromised tyres etc. • Escorted vehicles. • Other relevant site circumstances. <p>Interviews - No specific documented requirement about developing TARPs. Should there be some guidance around subject areas and required approaches for developing Trigger Action Response Plans?</p>	<ul style="list-style-type: none"> • Anticipating and identifying significant interaction threats • Notifying • Expect actions e.g. using Trigger Action response Plan (TARP) thresholds and actions • Worker observations of potentially dangerous situations <p>Real world examples are used for training, induction, and start of shift briefings. Examples include an explanation of how interaction threats develop</p> <p>BlackRock System - TARP status visible on login page of BlackRock.</p>		<p>significant interaction threats</p> <p>CFM-LPA.56.01 Operations continue when operating environment is significantly compromised</p> <p>CFM-MPA.67.10 Operations continue when there are significant interaction threats</p> <p>CFM-MPA.72.02 Operational access control (pedestrian and vehicle) is inadequate</p> <p>CFM-SDV.81.20 Inadequate mine traffic management plan (specification)</p> <p>CFM-SPA.81.07 Inadequate implementation of site traffic management plan</p>
OFI-88: Confirm that required roles have been assigned in the site organisational structure.	BI-SDA.81 Organisational structure, role requirements and reporting	All decision makers on site have clarity around the business input activities they are accountable and responsible for - and how they should be reporting on them	<p>The site requirements for achieving alignment with the business mission include:</p> <ol style="list-style-type: none"> 1. Establishing an organisational structure which nominates roles that are accountable and responsible for performance of required business inputs 2. The structure provides guidance on reporting lines and authority for different aspects of the business input activities 3. Accountable role holders have site (or broader) duties to coordinate execution or improvement, and report on the performance of required activities 4. Responsible role holders execute the required activities, report on the quantity and quality of 	<ol style="list-style-type: none"> 1. The business identifies site requirements through assessment of site issues with adoption and refinement of good practices to match prevailing conditions (including any statutory requirements) 2. Role structures based on RACI (responsible to the task, accountable for the business input requirements, consulted on implementation/change, and informed on performance) match the identified site requirements 3. Persons are formally appointed to the role (in a permanent or relief capacity), provided with the role description requirements and assessed, or 	<ol style="list-style-type: none"> 1. Reports on business input execution are reviewed by accountable role holders and reported, as appropriate, to more senior personnel 2. Internal and external audits and inspections are commissioned, reviewed and acted upon by senior leadership 3. Non-conformances with role requirements are addressed through performance management processes 	<p>BID-133: BI-SDA.81 Organisational structure, role requirements and reporting</p> <p>CFM-CTA.11.01 Supervisor does not identify or act when operator is fatigued or intoxicated</p> <p>CFM-SDA.83 Organisation Work Scheduling and Planning is inadequate</p> <p>CFM-SDV.81.20 Inadequate mine traffic management plan (specification)</p> <p>CFM-SPA.81.07</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>execution, and recommend improvement opportunities</p> <p>5. Role descriptions include required certification and qualification, and associated resources provide clarity for role holders on their role's requirements</p> <p>6. Performance standards, aligned with role descriptions are developed and available to the senior leadership team</p> <p>Work Health and Safety Policy, Coronado Global Resources, 16 Feb 2023 - Enabling document for the allocation of resources to support safe outcomes on site. Commits to practices, procedures, HSMS updates, training and supervision, culture support, provision of safe workplaces, and maintenance of these standards.</p>	<p>trained and assessed, to confirm understanding</p> <p>4. Activities are executed in line with prevailing site requirements including reporting on: performance; identifying and escalating problems; identifying improvements opportunities, and; mentoring other responsible role holders to lift standards</p> <p>OFI-088 Confirm that required roles have been assigned in the site organisational structure The workshop participants were unclear if all of the documented organisational role requirements were being executed as required. Gaps in leadership and execution of required tasks can lead to hazards and issues emerging in the operation. Revisit site protocols for assigning site leadership team role requirements. Confirm performance measures.</p>		<p>Inadequate implementation of site traffic management plan CFM-SPA.83.02 Inconsistent application of performance management processes CFM-STA-91 Regulator prosecution</p>
	BI-SDA.85 Effective contractor selection and management processes	Nominated personnel assist contractors, and other service providers, to deliver site business and operational objectives, efficiently and effectively.	<p>Contractors are selected based on their ability to provide required services and their alignment with company business, environmental, community, and health and safety values and management systems.</p> <p>Nominated personnel assist contractors, and other service providers, to deliver site business and operational objectives, efficiently and effectively.</p> <p>At contract commencement nominated site personnel provide information on site requirements including:</p> <ul style="list-style-type: none"> • Mobilisation information • Access and induction information • Allocation of facilities e.g. workshops, parking, offices, equipment laydown, operating areas etc. • Equipment minimum standards e.g. vehicle markings, lighting 	<p>Site contract managers regularly meet with contractors and other service providers and review:</p> <ul style="list-style-type: none"> • Performance against contract or service agreement obligations • Personnel are meeting site requirements e.g. for access control, traffic management, fatigue management etc. • Equipment meets site requirements e.g. plant files, maintenance records, minimum requirements for access, fire detection and suppression system etc. • Issues and hazard management <p>BLS-008-FRM-03 Contractor Safety and Health Management Plan Template - This general document</p>	<p>Contractor performance review meeting records. Records that contractor issues are documented and resolved e.g. hazard management. Observations and audit findings e.g. contractor equipment matches site minimum standards. Feedback from contractors.</p>	<p>BID-1: BI-SDA.85 Effective contractor selection and management processes BID-134: BI-SDA.85 Effective contractor selection and management processes CFM-CPA.10.02 Operators unaware of give way requirements for light vehicles CFM-CPA.10.04 Operators unaware of right of way requirements or operating constraints CFM-EPV.27.20</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>requirements, fire detection and suppression standards</p> <ul style="list-style-type: none"> • Traffic management and other operational interfaces • Site induction and training requirements • Emergency management <p>After project commencement, there is an agreed meeting or series of meeting to review performance, consult and resolve issues.</p> <p>BLS-008 Management of Contractors Business Level Standard is to ensure that the engagement and ongoing management of suppliers and contractors meets Coronado Global Resources (Australia) standards, and that those standards are consistently applied</p> <p>Section 9 Mobilise has both specific and general requirements relevant to vehicle interaction controls</p> <p>Mobilisation of Contractors must follow the requirements of the Operations SHMS for the approval of Mobile and other Equipment, Hazardous Chemicals, and the induction and training of Contractors workers:</p> <ul style="list-style-type: none"> • Contractor Site Representatives and other relevant Contractor personnel have access to IT systems as required. • Ensure that Contractor Site Representative and other relevant parties have access to the Operations SHMS. • The requirements for the induction of Contractors personnel is in place, or being conducted. • An induction, authorisation schedule is in place, if necessary, to ensure the Contractors personnel are ready to begin activities. • Mobile equipment approval process is understood / underway. • A mobile equipment approval 	<p>that includes a scope of work details by contractor and links to Coronado Safety Health and Management System elements. For contractor activities that include the use of vehicles, its application links contractor approaches with company processes at a systems level.</p>		<p>Mobile Equipment does not meet standards for safe access, lighting, signage and identification markings</p> <p>CFM-SPA.83.01 Operator fails to comply with site requirements</p> <p>CFM-SRA.87 Inadequate monitoring that mine traffic management requirements have been implemented and are being maintained</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
OFI-49: Review site hazard identification and reporting KPIs.	BI-SDA.86.01 Risk and Control Management for Routine Tasks	Practical hazard identification, risk assessment, and control management processes are applied by task-level decision makers to safely and productively complete routine work.	<p style="color: red;">schedule is in place, if necessary.</p> <p>For routine tasks in standard work situations, the site has a documented process that that can be applied by all employees and contractors before and during their work to identify hazards, assess risks, and apply required controls. The process is well designed and supports workgroup members to manage minor variations in work steps or work settings. The process:</p> <ol style="list-style-type: none"> Describes the situations and thresholds for its application e.g. before beginning a new task. Supports an individual worker to identify hazards and confirm their controls using a checklist, task instruction, digital workflow, procedure, and other resources directly relevant to the work being undertaken. Supports a team to identify hazards and confirm their controls using a checklist, task instruction, digital workflow, procedure, and other resources directly relevant to the work being undertaken. Confirms when additional risk and control requirements must be applied, such as JSEA, permit processes and critical control verifications, for routine tasks with high potential consequences e.g. hot work, work in high voltage areas, process and equipment isolation, confined space entry etc. Confirms the site requirements for documenting or recording process steps e.g. permits, Take 5, Stop-Look-Assess-Manage (SLAM) forms, and digital workflows. Details how records are captured, monitored, and analysed. <p>Checklists, task instructions, digital workflows, procedures, and other relevant resources are: Designed by subject matter</p>	<ol style="list-style-type: none"> Workgroup members and supervisors are trained, and competency assessed in application of site risk and control management processes for routine tasks in standard work conditions. Workers understand thresholds and seek further guidance when identifying hazards, assessing risks, and implementing required controls for non-routine tasks and routine tasks in non-standard conditions. Supervisors are trained, and competency assessed in coaching and assisting workgroups to apply site risk and control management processes. Supervisors are trained, and competency assessed in reviewing how workgroups have applied site risk and control management processes. Site records are kept Senior leaders monitor the application of the site risk and control management processes including supervisor checks and reviews. Periodic audits and reviews confirm that site processes for hazard identification, risk assessment, and control management are practical, applied, align with good practice, and meet legislative and company requirements. Leaders consider opportunities for improvement arising from reviews, audits, incident investigations, employee feedback etc. and when 	<ol style="list-style-type: none"> Performance reporting on the actual vs expected records of process being applied. Training and competency records are generated and maintained for task-level decision makers. Records of field observations and inspections by supervisors and more senior personnel that confirm: Processes are understood and have been applied; Required controls are in place; Any follow-up actions are logged, monitored, and closed-out Periodic reviews and audits of the design, application, and process outputs. Quality analysis of task-level risk management records including improvement feedback to users. As required post incident reviews. 	<p>CFM-CPA.10.04 Operators unaware of right of way requirements or operating constraints</p> <p>CFM-CPA.10.20 Operators of heavy and light vehicles (or pedestrians) fail to follow the designated travel path</p> <p>CFM-CPA.11.02 Impaired or inattentive operator operates mobile equipment</p> <p>CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced visibility, road narrowing, road surface etc.</p>

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			<p>experts and authorised by an accountable senior person, and; Current and available for review and application e.g. through document and Information management systems.</p> <p>PLN-001 Safety and Health Management Plan - S6 Risk Management Level 1 - Pre-task hazard identification (STAR) for all tasks or when conditions change</p>	<p>required they assign appropriate corrective actions.</p> <p>OFI-49: Review site hazard identification and reporting KPIs</p> <p>Workshop attendees discussed and highlighted that North Curragh sets Key Performance Indicators (KPIs) for safety related activities including hazard identifications. Concerns were raised that major drivers for generating reports are to meet KPI numbers. This may mean that the information does not reflect actual hazards, status of controls, and their management in the operating environment. Excessive numbers of hazard reports on a wide range of issues driven by quantity KPI metrics can lead and misalignment of organisational response and focus leading to 'boy who cried wolf type outcomes.' Effective management of hazards requires an adequacy analysis that considers current control(s) design, the reliability of their application, the potential for enhancement e.g. through technology and digitisation. Review how site KPIs are set for hazard identification and other routine risk and control management tasks. Consider both quality and quantity metrics and how the reported information can be leveraged for improvement. Use the hazard reporting, incident, and other performance measures to prepare user requirements for technology and other digital solutions.</p>		
	<p>BI-SDA.86.02 Risk and Control Management for Routine Tasks in a non-standard or changing work setting.</p>	<p>Practical hazard identification, risk assessment, and control management processes are applied by supervisors and experienced task-level decision makers to safely and productively</p>	<p>For routine tasks in non-standard work situations, the site has a documented process that can be applied and authorised by supervisors to work with experienced employees and contractors, before and during their work to identify hazards, assess risks, and apply required controls. The process is well designed and supports workgroup members to</p>	<ol style="list-style-type: none"> Short-term planners confirm when routine work in non-standard situations is scheduled and provide guidance on which site risk and control management approaches should apply for work crews and supervisors. Experienced workgroup 	<ol style="list-style-type: none"> Periodic audits and reviews confirm that site designs, planning, and processes for hazard identification, risk assessment, and control management are practical, applied, align with good practice, and meet legislative and company requirements. 	<p>CFM-MDA.61.06 Inadequate work planning means that heavy vehicle operators approach fixed structures that are incidental to achieving operational</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
		complete routine work in non-standard situations.	<p>safely and productively complete routine work in non-standard situations, with supervisory oversight and approval. Non-standard situations include changing work environments and where there may be non-standard interactions between workgroups.</p> <p>The process:</p> <ol style="list-style-type: none"> 1. Confirms situations and thresholds for its application 2. Supports supervisors and experienced work group members to review normal procedures and work steps to identify hazards, assess risks, and confirm controls 3. Defines site requirements for documenting or recording the review and confirming control application e.g. Critical Control Verification records, Job Safety and Environment Analysis JSEA, Workplace Risk Assessment and Control forms (WRAC), etc. 4. Confirms additional risk and control requirements, and requires them to be included in the prepared JSEA or other assessment form 5. Details how all involved personnel are briefed on hazards, risks, and the maintenance of controls including handovers between shifts or work crews 6. Details how all involved personnel acknowledge their understanding of their required tasks and the maintenance of relevant controls 7. Details how, where, and when related documents are stored, communicated, and updated e.g. JSEAs, shift pre-start and control acknowledgement records 8. Details how records of the process are captured, monitored, and analysed. <p>Checklists, task instructions, digital workflows, procedures, permits and other</p>	<p>members and supervisors are trained, and competency assessed in application of site risk and control management processes for routine work in non-standard conditions.</p> <ol style="list-style-type: none"> 3. Workers understand thresholds and seek further guidance when identifying hazards, assessing risks, and implementing required controls for non-routine tasks and routine tasks in non-standard conditions. 4. Supervisors are trained, and competency assessed in coaching and assisting workgroups to apply site risk and control management processes. 5. Supervisors are trained, and competency assessed in reviewing how workgroups have applied site risk and control management processes. 6. Site records are kept. 	<ol style="list-style-type: none"> 2. Leaders consider opportunities for improvement arising from reviews, audits, incident investigations, employee feedback etc. and when required, they assign appropriate corrective actions 3. Performance reporting on the actual vs expected records of process being applied. 4. Training and competency records for task-level decision makers. 5. Senior leaders monitor the application of the site risk and control management processes including supervisor checks and reviews. Records of field observations and inspections by supervisors and more senior personnel that confirm: <ul style="list-style-type: none"> o Processes are understood and have been applied, o Required controls are in place o Any follow-up actions are logged, monitored, and closed-out 6. Quality analysis of task-level risk management records including improvement feedback to users. 7. As required post incident reviews. 	<p>outcomes</p> <p>CFM-MPA.63.04 Parked vehicles block view for pedestrians and other equipment operators</p> <p>CFM-MPA.67.10 Operations continue when there are significant interaction threats</p> <p>CFM-MPA.72.03 Mobile equipment operator or pedestrian does not notify when entering a controlled work area</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>relevant resources are: Designed by subject matter experts and authorised by an accountable senior person, and; Kept current and available for review and application e.g. through document and Information management systems.</p> <p>PLN-001 Safety and Health Management Plan - S6 Risk Management Level 2 - Pre-task risk evaluation (JSA) for complex tasks or work in an unfamiliar environment and / or process / change of work conditions</p>			
	BI-SDA.86.03 Risk and Control Management - Permit Process	Practical hazard identification, risk assessment, and control management processes are formalised in site permit processes with oversight from manager-level decision makers	<ol style="list-style-type: none"> 1. The site has a permit process for identifying hazards and applying controls for defined activities such as confined space entry, electrical work, maintenance isolations, hot work, dig permits, etc. The process is well designed and supports the safe and productive completion of high consequence tasks in complex work situations. . 2. The process: <ol style="list-style-type: none"> a. Confirms situations and thresholds for its application (tasks and workflows requiring permits) b. Is managed by trained, competent, and manager approved personnel (permit authoriser). c. Details how all involved personnel are briefed on hazards, risks, and the maintenance of controls including handovers between shifts (permit issue and sign-on or off). d. Details how all involved personnel acknowledge their understanding of their required tasks and the maintenance of relevant controls (risk assessment for tasks covered in the permit as part of sign-on). e. Details how, where, and 	<ol style="list-style-type: none"> 1. Short-term planners confirm when permits are required. 2. Permit issuers and authorisers are trained, competent, and authorised to issue permits. 3. Personnel are trained, and competency assessed in their accountabilities in the permit processes. 4. Workers understand thresholds (TARPs) and seek further guidance when permit situations change. 5. Supervisors are trained, and competency assessed in coaching and assisting workgroups to apply site permit processes. 6. Supervisors are trained, and competency assessed in reviewing how workgroups have applied site permit processes. 7. Site records are kept. <p>3. Scope The procedure applies to activities undertaken under the following documents (hazard types) for which a Permit to Work is required:</p> <ul style="list-style-type: none"> • SMS-023 Cutting, Drilling or Excavating near a Concealed Service • SOP-025 Controlling Access to and Working in Confined Space • SMS-027 Working at Heights • SOP-028 Cutting and Welding 	<ol style="list-style-type: none"> 1. Training, competency, and authorisation records for permit issuers. 2. Records of field observations and inspections by supervisors and more senior personnel that confirm: <ol style="list-style-type: none"> a. Processes are understood and have been applied, b. Required controls are in place c. Any follow-up actions are logged, monitored, and closed-out 3. Periodic audits and reviews confirm that site permit processes for hazard identification, risk assessment, and control management are practical, applied, align with good practice, and meet legislative and company requirements. 4. Senior leaders monitor the application of the permit processes including supervisor checks and reviews. as input to the quality analysis of permit records generating improvement feedback to users. 5. As required post incident reviews. 	<p>CFM-CTA.11.01 Supervisor does not identify or act when operator is fatigued or intoxicated</p> <p>CFM-EPV.27.20 Mobile Equipment does not meet standards for safe access, lighting, signage and identification markings</p> <p>CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning</p> <p>CFM-MPA.67.10 Operations continue when there are significant interaction threats</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>when related documents are stored, communicated, and updated (permits with signatures, and associated risk assessments).</p> <p>f. Details how records of the process are captured, monitored, and analysed (for continuous improvement).</p> <p>3. Permits and other relevant resources are: Designed by subject matter experts and authorised by an accountable senior person, and; kept current and available for review and application e.g. through document and Information management systems.</p> <p>CSP-012 Permit to Work 1. Introduction - Permit to Work systems are used for certain activities to enable an extra level of scrutiny and authorisation for inherently high-risk tasks... Also learning materials for Permit Holder and Permit Issuers</p>	<p>While other 'permits' exist under Curragh's Safety & Health Management System (SHMS), the permit process is addressed in those respective documents and is not covered by this Permit to Work system. This procedure covers the common aspects of the Permit to Work system to be applied across the hazard types. Additional specific requirements are detailed in the respective SOP/SMS documents</p>		
<p>OFI-89: Review and confirm Curragh complex emergency preparedness and capability.</p>	<p>BI-SDA.89 Emergency Preparedness</p>	<p>There should be a formal approach to emergency preparedness on site. It should include local response, emergency response through to crisis management.</p>	<p>There should be a formal approach to emergency preparedness on site. It should include local response, emergency response through to crisis management and may include formal liaison with external agencies.</p> <p>Specific response plans for foreseeable site emergencies e.g. traumatic injuries, entrapment, rescue from heights, fires, spills etc. are:</p> <ul style="list-style-type: none"> • Prepared • Resourced (equipment and personnel) • Practiced and tested • Reviewed and improved • Maintained <p>At a minimum, site emergency response capability requires that:</p> <ul style="list-style-type: none"> • All personnel at site know how to notify a site emergency • All employees (direct and indirect) 	<p>A senior site position is accountable for site emergency and crisis management response and recovery capability.</p> <p>Emergency response plans have a review cycle and are also reviewed after incidents. Emergency response information is available in the workplace in a format that is audience appropriate.</p> <p>Visitor inductions include emergency notification and evacuation requirements.</p> <p>Employees (direct and indirect) are trained in:</p> <ul style="list-style-type: none"> • Emergency notification • First response - first aid, fire fighting etc. • Evacuation • Where relevant - the use of self-rescuers and refuge 	<p>Capability reports for Emergency Responders, Employees, and Visitors. Reviews of emergency response drills. Maintenance reports on the status of site emergency response equipment. By exception incident reviews.</p> <p>OFI-089 Review and confirm Curragh complex emergency preparedness and capability.</p> <p>Workshop participants discussed site emergency preparedness. They questioned the need for a review based on the recent operational separation between the north and south mines.</p> <p>Confirm that site emergency response across the Curragh complex is adequate and meets both company and legislative standards. The review should consider the logistics of moving volunteers e.g. availability of light vehicles.</p>	<p>BID-135: BI-SDA.89 Emergency Preparedness CFM-SDA.90 Emergency or incident response is inadequate CFM-SPA.90 Emergency response is significantly delayed</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>understand first-response actions after notification for fires, injuries, spills, and other foreseeable incidents</p> <ul style="list-style-type: none"> • There are trained and competent emergency responders, supported with appropriate equipment, and who may be supported by external agencies • There are processes to notify and carry out emergency evacuations <p>Emergency Management CORONADO GLOBAL RESOURCES (AUSTRALIA) Business Level Standard (BLS) Document Number: CGRA BLS-017. This general standard describes the minimum requirements for Operations to establish and maintain an emergency capability and identify appropriate resources to provide effective emergency response to operational emergencies.</p> <p>PLN-001 Safety and Health Management Plan - Section 10 Emergency Response - Curragh maintains an emergency and crisis management capability for identified potential operational emergencies and; crises, developed from the Broad Brush Risk Assessment, and informed by legislation, industry standards, appropriate codes of practice and specialist advice.</p> <p>PLN-005-RA PHMP Risk Assessment Mobile Equipment Incidents The register has multiple vehicle interaction entries.</p>	<p>chambers</p> <p>Emergency responders:</p> <ul style="list-style-type: none"> • Are trained and competent to manage foreseeable site emergencies • Have access to up to date plans, support materials, and navigation aids • Have access to adequate equipment to manage foreseeable emergencies <p>SMS-006 Managing Emergencies at the Mine. This comprehensive document details requirements and processes to manage emergency response for all activities associated with surface coal mining at the Curragh Complex, including vehicle interactions while meeting legislative requirements.</p>		
	BI-SDA.89.01 Vehicle Incident Emergency Preparedness	The site has a formal approach for emergency preparedness that includes vehicle incidents.	<p>There should be a formal approach to emergency preparedness on site that includes vehicle incidents. Planning should consider multiple scenarios and locations and the corresponding capabilities for local response, site emergency response, and assistance from external agencies.</p> <p>Vehicle incident scenarios include:</p> <ul style="list-style-type: none"> • Pedestrians struck by vehicles • Single vehicle crashes • Crashes between multiple vehicles 	<p>A senior site position is accountable for site emergency and crisis management response and recovery capability.</p> <p>Emergency response plans have a review cycle and are also reviewed after incidents. Emergency response information is available in the workplace in a format that is audience appropriate.</p> <p>SMS-006 Managing Emergencies at the Mine. This comprehensive document details requirements and</p>	<p>Reviews of vehicle related emergency response drills.</p> <p>By exception incident reviews.</p>	<p>CFM-SDA.90 Emergency or incident response is inadequate</p> <p>CFM-SPA.90 Emergency response is significantly delayed</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<ul style="list-style-type: none"> • Vehicle roll overs • Equipment fires • Emergency escapes from heights • Entrapment • Engulfment e.g. stockpile dozer falls into a void, vehicle in water • Environmental incidents - spills of material being carried and releases of fuels and lubricants <p>Consider all locations taking into account potential response times, the capability of local and site emergency responders, and the availability of recovery equipment and other resources.</p> <p>Emergency Management CORONADO GLOBAL RESOURCES (AUSTRALIA) Business Level Standard (BLS) Document Number: CGRA BLS-017. This general standard describes the minimum requirements for Operations to establish and maintain an emergency capability and identify appropriate resources to provide effective emergency response to operational emergencies.</p> <p>PLN-001 Safety and Health Management Plan - Section 10 Emergency Response - Curragh maintains an emergency and crisis management capability for identified potential operational emergencies and crises, developed from the Broad Brush Risk Assessment, and informed by legislation, industry standards, appropriate codes of practice and specialist advice.</p> <p>PLN-005-RA PHMP Risk Assessment Mobile Equipment Incidents The register has multiple vehicle interaction entries.</p>	<p>processes to manage emergency response for all activities associated with surface coal mining at the Curragh Complex, including vehicle interactions while meeting legislative requirements.</p>		
	BI-SDA.91 Document and Information Management System is fit for purpose	There is an effective document and information management system in place that meets requirements and prevents sensitive information being shared inappropriately.	<ul style="list-style-type: none"> • Company information is documented, applied by operating sites projects, and continually improved. • Management System components are prepared in a style appropriate for their intended audience. • Storage duration and access restrictions are specified for 	<ul style="list-style-type: none"> • Relevant management System components are available and used at an operational level. • Information from operational and technical teams is stored in line with site requirements (including statutorily required record books and display boards). 	<ul style="list-style-type: none"> • Document management system effectiveness and efficiencies are periodically audited with improvement opportunities actioned as appropriate. • Leaders routinely check that resources are available and applied at a task level during 	CFM-CRA.11.21 No action taken on over speed alarm CFM-ERV.33.20 Compromised vehicle cabin no longer meets OEM or site specific specifications

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>different information and document types.</p> <ul style="list-style-type: none"> Provision of information to required onsite, company, and third parties is enabled by the system. <p>BLS-005 Controlled Documents and Records Business Level Standard This Controlled Documents and Records Business Level Standard describes the standards and processes required by Coronado Global Resources (Australia) Operations to create, review, approve and store Safety and Health Management System (SHMS) Controlled Documents...</p>	<ul style="list-style-type: none"> Documents, records and information are shared with site, company workers, and third parties in line with requirements. 	<p>task observations, inspections, and other interactions.</p>	<p>CFM-SDA.83 Organisation Work Scheduling and Planning is inadequate CFM-STA-91 Regulator prosecution</p>
	BI-SDA.95.50 Consultation and Engagement with Regulators and Third Parties	Site status and requirements are shared with the Regulator and other stakeholders.	<p>Site requirements for consultation and engagement include:</p> <ol style="list-style-type: none"> Nomination of an accountable role holder to coordinate all communication with government agencies and third-parties Development of a schedule for communicating that aligns with all requirements of leases, licenses and commitments Implementing a process for communicating any incidents or complaints to relevant parties providing information on the event and site plans for managing these Summary reports being prepared on all communication and consultation activities Engagement with lobbying groups to be alerted to and provide guidance on government policies which could impact site operations 	<ol style="list-style-type: none"> Accountable and responsible role holders are informed of obligations for consultation and communication as part of their role descriptions Scheduled communication activities are tracked and executed on Any events on site which could trigger interest (either mandated or generally) from third-parties are pro-actively communicated to relevant stake-holders Advocacy activities occur in line with emerging interests by site and external stakeholders <p>BLS-018 Assurance Business Level Standard - describes the Assurance System processes to verify that Operations have effectively developed, implemented, and are maintaining responsible health and safety practices.</p> <p>Consultant Comment - Consider formalising consultation and engagement processes with regulators and third parties.</p>	<ol style="list-style-type: none"> Senior management on site regularly confirm understanding of consultation requirements with nominated role holders Reports on communication activities are reviewed by senior management on site Information provided to third-parties is included in site information management systems, with tracking to generate follow-up or review as appropriate Senior leadership updated on advocacy activities 	<p>CFM-STA-91 Regulator prosecution</p>
	BI-SDV.94.01 External to site obligations for Vehicle Interaction	The site Traffic Management Plan (or equivalent), and associated	The Traffic Management Plan (TMP) and associated documents detail how relevant external to site expectations are met for:	<p>External expectations and obligations are:</p> <ul style="list-style-type: none"> Mapped to site activities 	TheTraffic Management Plan lists all relevant external requirements with details of how they are met on site. The status of the site activities	BID-136: BI-SDV.94.01 External to site obligations for Vehicle

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
	Controls are effectively met.	documents, describe how relevant external to site expectations are met.	<ul style="list-style-type: none"> Regulatory and legal obligations Company requirements International Standards and good practice <p>This information is maintained and updated as part of site document management requirements.</p>	<ul style="list-style-type: none"> Assigned to responsible personnel based on their role <p>If the mapping process identifies gaps and opportunities for improvement, then these are reviewed by management for relevance and possible action.</p> <p>BLS-018 Assurance Business Level Standard - describes the Assurance System processes to verify that Operations have effectively developed, implemented, and are maintaining responsible health and safety practices.</p>	mapped to external expectations are monitored and reviewed. The Traffic Management Plan is periodically updated.	Interaction Controls are effectively met. CFM-STA-91 Regulator prosecution
	BI-SPA.82.11 Comprehensive fitness for work processes	Site requirements that all employees, contractors and visitors are fit for duty (unimpaired) while in the workplace.	<p>There is an effective site fitness for duty approach that:</p> <ul style="list-style-type: none"> Applies equally to all, influences positive behaviours, and assist people Emphasizes self-management, individuality accountability, and shared responsibilities Includes credible threat AOD (alcohol and other drugs) impairment screening processes and consequential discipline Recognizes and responds to the multiple reasons why people may be impaired at work covering fatigue, stress, intoxication, and workplace stressors e.g. hot working conditions Supports supervisors to remove impaired persons from workplaces and then deal with the reason for impairment Minimizes inconvenience to the majority, while delivering required business outcomes <p>BLS-011 Fitness for Work Business Level Standard - This comprehensive business level standard includes these elements: Coal Mine Workers Health Scheme; Drugs; Alcohol; Prescribed and Non-prescribed Medication; Personal fatigue; Physical and psychological impairment; and Injury</p>	<p>Training and awareness for all personnel on site fitness for work process and their responsibilities. Associated infrastructure for amenity, hygiene, meal breaks, and rest are provided.</p> <p>The application of BLS-011 Fitness for Work Business Level Standard is supported by: BLS-011-FRM-02_Fitness for Work – Restricted Management Form; BLS-011-FRM-02_Fitness for Work-Medical Declaration; BLS-011-FRM-03 Individual Journey Management Plan; BLS-011-FRM-04 Fitness for Work - Roster Fatigue Assessment - a comprehensive resource; SMS-011 Physical and Psychological Impairment; SMS-012 Alcohol and Other Drugs (This procedure identifies and controls risks associated with the consumption of alcohol and other drugs at Curragh)</p>	A comprehensive fitness for work processes is in place and being applied. Screening reports. Employee assistance reports. Training and awareness sessions completed to schedule.	<p>BID-137: BI-SPA.82.11 Comprehensive fitness for work processes CFM-CPA.11.02 Impaired or inattentive operator operates mobile equipment CFM-CPA.11.21 Operator fails to see signage installed to standard CFM-CTA.11.01 Supervisor does not identify or act when operator is fatigued or intoxicated CFM-SDA.83 Organisation Work Scheduling and Planning is inadequate OFI-79: Consider deploying operator alert system technology.</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>management OFI-079 Consider deploying operator alert system technology. Workshop participants discussed the deployment of operator alert system (OAS) Technology at other mines. They confirm that when the technology is operationally integrated, then it provides an additional and reliable control for managing operator fatigue. In some cases, it can assist individuals to identify and manage underlying health issues. The consequences of a fatigued mobile equipment operator falling asleep at work can be catastrophic. Without a technology monitoring approach, site leaders have little visibility on the effectiveness on site fatigue management processes other than self-reporting and incident investigations. Benchmark the application of commercially available technology with other Australian operations. Make the business case of how it can be deployed to complement and enhance existing site fatigue management approaches.</p>			
<p>OFI-41: Review and improve supervisor performance management on site. OFI-50: Review hazard and control communications with work crews.</p>	<p>BI-SPA.83.02 Supervisor performance requirements</p>	<p>Leadership and supervisory expectations of supervisors are documented, communicated, and performance is routinely assessed.</p>	<p>There is a supervisor development and appointment pathway. Reference company supervisory and leadership models are in place and available for ready reference by supervisors. Leadership Skills reinforced:</p> <ul style="list-style-type: none"> • Motivates and builds the team • Safety and productivity leadership - emphasising safe production without undue pressure or coercion of workers • Judgment and timely decision making • Understanding of company requirements <p>Supervisory Skills:</p> <ul style="list-style-type: none"> • Planning and communication • Delegation • Conflict management • Delivering outcomes and maintaining standards 	<p>Supervisors apply their leadership and supervisory skills to deliver safe and productive outcomes. Line managers support the supervisors who report to them. Functional roles such as Human Resources and Safety assist supervisors with information and support. SOP-049-FRM-01 Supervision Verification Audit Form - Superintendent - is used to assess supervisor capability OFI-041 Review and improve supervisor performance management on site Supervisor skills were discussed and inconsistencies in the application of employee performance management processes (commend and correct) were noted. This applies to both periodic performance reviews</p>	<p>Supervisor appraisals completed to schedule. Supervisor development plans are prepared and implemented. There are records and evidence that supervisor are applying their skill e.g. completed employee appraisals, task reviews, inspections, performance management commend or correct records, daily planning, prestart meetings, review of operational logs etc.</p>	<p>BID-138: BI-SPA.83.02 Supervisor performance requirements CFM-CPA.11.02 Impaired or inattentive operator operates mobile equipment CFM-EPV.26.10 Routine or occasional overloading of vehicles CFM-EPV.39.42 Vehicles are operated outside specified tyre conditions CFM-ERA.32.20 Operator fails to</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<ul style="list-style-type: none"> Employee performance management Employee appraisal and development <p>BLS-001 Leadership and Accountability This Business Level Standard describes the minimum leadership, culture, and accountability requirements for Coronado Global Resources (Australia) and its Operations. It includes C.A.R.E. values, role expectations and Felt Leadership covering: Layered audits; Critical Control Observations; Planned Task Observations; Safety Interactions; Section 10.1 outlines breaches to life saving rules</p> <p>BLS-002 Organisational Roles and Responsibilities defines the roles and responsibilities attributed to each management level in the Organisation. It includes statutory positions, Coal Mine Workers, Site Safety and Health Representatives, risk and control owners.</p> <p>OFI-042 Review the design and application of site performance management processes. Each contractor and Coronado Global Mining have their own (commend or correct) performance management processes in place. Workshop participants discussed inconsistent application of the process between companies and between supervisors. The discussion covered how the supervisors and superintendents who apply the processes can be better supported to deliver consistent outcomes. They noted that some of the most important vehicle interaction controls are people dependent and are based ongoing judgment and continuous good decisions of mobile equipment operators. These frontline decision are informed by training on the practical application of site standards. Appropriate performance monitoring with short cycle feedback is required to maintain the reliability of people dependent vehicle interaction</p>	<p>and as required. Reviews are reported as being ad hoc and are captured in different ways e.g. using of iAuditor and SharePoint. There have been issues with information being lost, overwritten etc. There is also an absence of supervisor support e.g. understanding preferred personal leadership style and adapting based on the situation. Many vehicle interaction controls in mining are people dependent and require effective supervision with performance feedback. Poor or ineffective supervision can lead to slipping standards and result in performance drops e.g. unwanted vehicle interactions. Review and implement a good practise model for employee performance management. support. Consult with contractors and confirm how site expectations can be consistently met by applying their supervisor development and support processes. Consider training and development for supervisors, recording processes and support.</p> <p>OFI-050 Review hazard and control communications with work crews Workshop participants discussed the challenges of running effective prestart meetings that communicate operational and safety information and performance expectations that reinforce individual and workgroup norms. At Curragh North the prestart meeting provides the only daily opportunity to communicate to a workgroup and discuss relevant hazards and their controls. Shift prestart meetings have to be efficiently transactional and also cover production elements e.g. assigning equipment etc. The current prestart sequence means that there can be shift long delays for sharing new</p>		<p>conduct effective pre-start that meets requirements CFM-LPV.44.02 Operational personnel do not maintain minimum standards for berms, windrows and other zone protection. CFM-MPA.63.01 Operator does not meet site requirements when parking CFM-SDA.83 Organisation Work Scheduling and Planning is inadequate CFM-SPA.83.02 Inconsistent application of performance management processes</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>controls. Review line manager performance training and support processes. Develop vehicle interaction control examples as part or training to reflect the importance of following site rules and reporting hazards etc. Confirm the task level limitations (decision rights) and permissions required to deviate from site standards. Consider developing performance feedback to operators that supports self-monitoring.</p>	<p>information from a meeting across other workgroups e.g. for road works, changes to intersections, broken down equipment. and other short-term changes. Workshop participants also noted that there are always production drivers covering 'time to the first load.' Workshop participants also noted the challenges of crew size, supervisor experience and effectiveness, employee turnover, and production pressures that have to be managed. Review the effectiveness of preshift meetings, consider developing performance measures and improve support for supervisors. Consider augmenting shift prestart meetings with hazard and control information e.g. SOP reviews, incident case studies that can be used during stoppages e.g. during wet weather.</p>		
<p>OFI-41: Review and improve supervisor performance management on site. OFI-42: Review the design and application of site performance management processes. OFI-69: Confirm site performance expectations align their performance management application.</p>	<p>BI-SPA.83.03 Supervisors have management and HR support when applying performance management approaches</p>	<p>Competent supervisors are supported when they apply site performance management processes.</p>	<p>Accountabilities are clearly defined in site performance management processes. This includes details about how managers and support personnel such as human resources or industrial relations advisors are expected to support supervisors. OFI-042 Review the design and application of site performance management processes. Each contractor and Coronado Global Mining have their own (commend or correct) performance management processes in place. Workshop participants discussed inconsistent application of the process between companies and between supervisors. The discussion covered how the supervisors and superintendents who apply the processes can be better supported to deliver consistent outcomes. They noted that some of the most important vehicle interaction controls are people dependent and are based ongoing</p>	<p>Site performance management processes are documented and current and approved by senior managers. Supervisors are trained and supported when they apply site performance management processes to:</p> <ul style="list-style-type: none"> Recognise and reward good performance Coach for performance improvement Manage ongoing inadequate performance and non-conformance Respond to significant operating breaches <p>SOP-049-FRM-01 Supervision Verification Audit Form - Superintendent - is used to assess supervisor capability OFI-041 Review and improve supervisor performance</p>	<p>Review personnel records to confirm that performance management processes are applied routinely and consistently by supervisors to:</p> <ul style="list-style-type: none"> Recognise and reward good performance Coach for performance improvement Manage ongoing inadequate performance and non-conformance Respond to significant operating breaches 	<p>CFM-ERA.32.20 Operator fails to conduct effective pre-start that meets requirements CFM-SPA.83.01 Operator fails to comply with site requirements CFM-SPA.83.02 Inconsistent application of performance management processes</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>judgment and continuous good decisions of mobile equipment operators. These frontline decision are informed by training on the practical application of site standards. Appropriate performance monitoring with short cycle feedback is required to maintain the reliability of people dependent vehicle interaction controls.</p> <p>Review line manager performance training and support processes. Develop vehicle interaction control examples as part or training to reflect the importance of following site rules and reporting hazards etc. Confirm the task level limitations (decision rights) and permissions required to deviate from site standards. Consider developing performance feedback to operators that supports self-monitoring.</p>	<p>management on site</p> <p>Supervisor skills were discussed and inconsistencies in the application of employee performance management processes (commend and correct) were noted. This applies to both periodic performance reviews and as required.</p> <p>Reviews are reported as being ad hoc and are captured in different ways e.g. using of iAuditor and SharePoint. There have been issues with information being lost, overwritten etc. There is also an absence of supervisor support e.g. understanding preferred personal leadership style and adapting based on the situation.</p> <p>Many vehicle interaction controls in mining are people dependent and require effective supervision with performance feedback. Poor or ineffective supervision can lead to slipping standards and result in performance drops e.g. unwanted vehicle interactions.</p> <p>Review and implement a good practise model for employee performance management. support. Consult with contractors and confirm how site expectations can be consistently met by applying their supervisor development and support processes. Consider training and development for supervisors, recording processes and support.</p> <p>OFI-069 Confirm site performance expectations align their performance management application.</p> <p>Workshop participants confirmed that supervisors and trainers from different contractors and business units interpret site performance expectations and apply performance management (commend or correct) processes inconsistently.</p> <p>A range of interpretations of site</p>		

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>expectations for vehicle interaction controls can lead to variable behaviours and potential conflicts of operating practices.</p> <p>Define site performance expectations, communicate using real-world scenarios and examples. Confirm the process with all contractors and business units and align performance management approaches applied.</p>		
<p>OFI-39: Review the effectiveness of hazard reporting feedback.</p> <p>OFI-49: Review site hazard identification and reporting KPIs.</p> <p>OFI-85: Consider refreshing site hazard reporting processes,</p>	BI-SPA.86 Hazard and incident reporting and response processes are in place, effective, and well used.	The site has an effective and well used hazard and incident response and reporting process which avoids placing workers at risk of injury.	<p>There is an effective site hazard and incident reporting processes that:</p> <ul style="list-style-type: none"> • Can be applied by all personnel, including contractors and visitors. • Aligns with the site emergency response and notification process (such as provision of first aid). • Allows personnel to efficiently report and resolve work area problems including allowances for not working if there is a threat to health or safety, or a potential to cause environmental or community harm. • Captures information for investigation, reporting and trend analysis. <p>BLS-019 Incident Reporting and Investigation - This comprehensive Business Level Standard describes the incident management process required at Coronado Operations and includes good practice approaches along with business and legislative requirements. It is supported by site based reporting systems.</p> <p>OFI-085 Consider refreshing site hazard reporting processes,</p> <p>Workshop participants discussed situations where hazards are not rectified to any determined timeline because there are competing priorities and focus on production. they also report situations where hazards have not been reported due to a fear of reprisal. The process for providing feedback on completed hazards</p>	<p>Personnel on site:</p> <ul style="list-style-type: none"> • Are trained in site processes for incident and hazard identification, reporting and control. The training includes guidance on when to cease work and also when to preserve an incident scene. • Identify any hazard present is reacted to by removing or isolating the hazard (ceasing work as required) • Report any incident which occurs. 	<ul style="list-style-type: none"> • Reviews are made on the quantity and quality of hazard and incident reports. • Tracking of corrective actions. • Time to complete incident investigations is tracked and reported on. • Timing and quality of feedback to personnel who reported hazards or incident is tracked and reported on to senior personnel on and off site. <p>OFI-039 Review the effectiveness of hazard reporting feedback</p> <p>Workshop participants confirmed that there is comprehensive incident and hazard reporting process in place at Curragh North Opencut Mine. Workshop participants discussed how the process can be improved. They noted that after reporting hazards, there is negligible feedback about hazard resolution and the quality of the reporting (accuracy, timeliness, etc.). This lack of feedback discourages future hazard reporting i.e. people do not see the value of their efforts.</p> <p>Review site hazard and incident reporting process. Consider the how effective the feedback steps are i.e. to the person making the report and their workgroup covering status, progress, actions taken, quality of report etc.</p> <p>OFI-49: Review site hazard identification and reporting KPIs</p>	<p>CFM-CPA.11.21 Operator fails to see signage installed to standard</p> <p>CFM-CRA.11.21 No action taken on over speed alarm</p> <p>CFM-CTA.10.90 Personnel do not alert others to presence of hazards</p> <p>CFM-LDV.42.02 Speed limits and over-speed management are inadequately considered in mine design and routine work planning</p> <p>CFM-LPA.44.05 Appropriate distances from fixed and overhead structures are not maintained</p> <p>CFM-LPV.54 Excessive water (Dust Control) is applied to road surface</p> <p>CFM-MDA.61.06 Inadequate work planning means that heavy vehicle operators approach fixed structures that are incidental to</p>

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			<p>is inadequate so personnel are not informed when issues have been resolved or corrected.</p> <p>Incomplete or absent hazard reporting can lead to persistent unresolved issues in work environments that compromise vehicle interaction controls.</p> <p>Review or refresh the hazard and incident reporting process, pay attention to promoting hazard reporting and providing follow-ups on the status of reported hazards.</p>		<p>Workshop attendees discussed and highlighted that North Curragh sets Key Performance Indicators (KPIs) for safety related activities including hazard identifications. Concerns that reports were being generated to meet KPI numbers and this information does not reflect actual hazards and their management in the operating environment.</p> <p>Excessive numbers of hazard reports on a wide range of issues driven by quantity KPI metrics can lead and misalignment of organisational response and focus leading to 'boy who cried wolf type outcomes.'</p> <p>Effective management of hazards requires an adequacy analysis that considers current control(s) design, the reliability of their application, the potential for enhancement e.g. through technology and digitisation.</p> <p>Review how site KPIs are set for hazard identification and other routine risk and control management tasks. Consider both quality and quantity metrics and how the reported information can be leveraged for improvement. Use the hazard reporting, incident, and other performance measures to prepare user requirements for technology and other digital solutions.</p>	achieving operational outcomes
<p>OFI-24: Review the effectiveness and frequency of inspections of parking and other infrastructure walkways.</p> <p>OFI-37: Review and extend the site critical control verification processes.</p> <p>OFI-63: Consider how supervisor</p>	BI-SPA.87 Planned Inspections and Task Observations	Planned inspections and task observations assess and provide timely feedback about the effectiveness and efficiency of performance standards (work as documented) as they are applied in the workplace (work as done).	<p>Planned inspections and task observations assess and provide timely feedback about the effectiveness and efficiency of performance standards (work as documented) as they are applied in the workplace (work as done).</p> <p>The site processes for inspections and task observations have these elements:</p> <ul style="list-style-type: none"> Inspections and task observations are scheduled and assigned to site roles, and consider the work intensity and exposure of workers to harm (including checks on work environments, workers performing 	<p>Senior site personnel confirm that scheduled inspections and task observations match schedule and quality expectations.</p> <p>Site Inspection and Task Observations processes are applied to:</p> <ul style="list-style-type: none"> Assess operating conditions, Review work practices, Confirm the status of plant and equipment status, Identify effects from changes in materials and process Confirm the close out of 	<p>Inspection and task Observation reports meet site performance expectations for quantity and quality. There is a process that manages defects, non-conformances, and other performance issues identified from inspections and task observations. These are assessed and where necessary remedial actions with due by dates are assigned. Performance reports track remedial action status.</p> <p>Trend analyses reports that identify drift from expected performance.</p>	<p>CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions</p> <p>CFM-EPA.33.40 Communication equipment absence, failure or poor reception</p> <p>CFM-EPV.27.20 Mobile Equipment</p>

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<p>inspections can combined to identify system level operating challenges. OFI-83: Review options for analysing critical control verifications and other field observations.</p>			<p>tasks alone or in remote locations, and work group interactions),</p> <ul style="list-style-type: none"> Minimum competence and experience requirements, based on inspection or task observation type, are detailed, Reference to available information e.g. checklists, aide memoirs detailing expected standards and performance requirements, There is process for performance reporting, identifying defects, and assigning remedial actions, Outputs from multiple inspections and task observations monitored for performance drift trends. <p>Task Observations provide additional information about:</p> <ul style="list-style-type: none"> Training effectiveness, Task assignment and performance expectations, Procedures and task instructions, Employee engagement and contributions. <p>Site Planned Inspections:</p> <ul style="list-style-type: none"> Assess the application of methods and practices performance standards in a systematic and organised way, Confirm that people have the resources required to complete their work safely and productively, in an appropriate work environment, Identify and deal with potential problems and issues before losses occur, Identify effects of changes, Identify equipment defects, Confirm the status of remedial actions. <p>BLS-001 Leadership and Accountability This Business Level Standard describes the minimum leadership, culture, and accountability requirements for Coronado Global Resources (Australia) and its</p>	<p>remedial actions</p> <ul style="list-style-type: none"> Evaluate management performance Analyse the effectiveness and efficiency of workflows from approval, through planning, scheduling, resourcing, and task execution <p>Critical Control Verification FH03 Mobile Equipment (BLS-004 FH03-CCV-02-FH03) - 4 monthly check on the conduct of Pre-Starts, interviews with Drivers/Operators, inspection of working area, HME equipment check status (in-date ITS sticker), understanding of speed requirements.</p> <p>OFI-024 Review the effectiveness and frequency of inspections of parking and other infrastructure walkways. Workshop participants discussed situations where degraded walkways e.g. in parking areas and around site infrastructure have remained unrepaired for long periods. If walkways are not regularly inspected and maintained then their effectiveness as a control in separating pedestrians from vehicles can be compromised e.g. bund protections cannot stop vehicles, pedestrians walk on roadways to avoid water and mud, pedestrian crossings are not identified by vehicle operators etc. Review the effectiveness and frequency of site infrastructure inspections, confirm that defects identified are captured and there is a process to track corrective action progress.</p> <p>OFI-037 Review and extend the site critical control verification processes. Workshop participants report that senior contractor managers are not included in site level critical control</p>	<p>OFI-063 Consider how supervisor inspections can combined to identify system level operating challenges Workshop participants discussed the effectiveness of supervisor inspections of loading operations. While they provide oversight of task execution in real-time and an opportunity to correct and improve performance, the information for the inspection does not seem to be fully leveraged. That is, inspection reports from knowledgeable and experienced personnel are not being aggregated and analyzed to identify ongoing improvements to site processes. An example discussed was determining the cost benefits from increasing powder factor for blasting to reduce over-size material and minimise truck loading challenges. Ongoing challenging loading conditions make excessive decision and performance demands on excavator and truck operators. This can result in errors that cause unwanted vehicle interactions and equipment damage. Consider opportunities to leverage site inspections for analysis and performance improvements. Review digital technology options.</p> <p>OFI-83: Review options for analysing critical control verifications and other field observations. Critical control verifications are carried out routinely at North Curragh by senior managers. This is a positive activity that focuses on preventing serious incidents. While verification activities are monitored and maintained, there is little analysis and feedback on findings beyond the immediate fixes required at a task level. Consider options for aggregating</p>	<p>does not meet standards for safe access, lighting, signage and identification markings CFM-ERA.39.21 Speedometer does not indicate actual speed CFM-ERA.40.22 Over speed warning alarm fails to operate CFM-LDV.44.08 Blind spots on heavy vehicles are not considered in workplace layout CFM-LPA.42.03 Obscured or missing signage CFM-LPV.54 Excessive water (Dust Control) is applied to road surface</p>

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			<p>Operations. It includes C.A.R.E. values, role expectations and Felt Leadership covering:</p> <ul style="list-style-type: none"> Layered audits Critical Control Observations Planned Task Observations Safety Interactions <p>Section 10.1 outlines breaches to life saving rules</p> <p>BLS-002 Organisational Roles and Responsibilities defines the roles and responsibilities attributed to each management level in the Organisation. It includes statutory positions, Coal Mine Workers, Site Safety and Health Representatives, risk and control owners.</p>	<p>verifications. Currently these are completed by the Coronado leadership team.</p> <p>In mid 2025, the 2024 amendment of Queensland Mining regulations to include Critical Controls comes into force so there are legislative drivers to review site processes for the effective management of critical controls, including those relevant to vehicle interaction management.</p> <p>Consider extending the site level critical control verification process to involve contractor leaders, also consider the benefits of capturing and reporting current contractor control verification activities. Confirm minimum requirements to meet legislative requirements and update site processes. Consider apply digital approaches for capturing and reporting field activities.</p>	<p>critical control verifications to assist with understanding the effectiveness of control design and implementation.</p>	
<p>OFI-39: Review the effectiveness of hazard reporting feedback.</p> <p>OFI-93: Review Site Managements of Change Processes.</p>	<p>BI-SPA.88 Change and Risk Management Process</p>	<p>Applied and effective change management processes, incorporating comprehensive risk and control management steps, assist senior manager decision-makers to deliver safe and productive outcomes for the business.</p>	<p>There is a defined change and risk management process that:</p> <ul style="list-style-type: none"> Confirms the reason and goals Engages stakeholders and communicates reasons as a business case (risk and rewards) Uses good practice project management approaches to develop a plan with a schedule and outcomes. Includes and references inputs from subject matter and technical experts in the project plan. Where appropriate, the plan and associated work program are reviewed and formally analysed using a facilitated group process involving subject matter and technical experts, site leaders, workers, designers, suppliers, and other stakeholders. Applies risk and control management processes that support the work program by 	<p>Senior managers identify when thresholds for applying the change and risk management process are crossed such as:</p> <ul style="list-style-type: none"> New technology implementations A change in work process e.g. moving from development to production, transitioning from surface to underground mining, changes in traffic flows The introduction of new equipment types Scale up of workforces Significant workforce changes e.g. use of contractors Significant operational changes in infrastructure e.g. for road network layouts Opening of new operating areas Significant onsite capital works Regulated and periodic review triggers for existing risk 	<p>Reports on change and risk management activities are reviewed by maintenance planners, technical services and engineering personnel. Process change reports are reviewed by the relevant Manager. Changes are authorised by an accountable supervisor or manager who confirm that the change has been:</p> <ul style="list-style-type: none"> Assessed over a representative period and under a variety of operational conditions. Included in all relevant processes including training, maintenance, documents and future specifications. Communicated to all relevant stakeholders including the Regulator when applicable Detailed on relevant plans, process maps, schematic diagrams, documents and 	<p>BID-139: BI-SPA.88 Change and Risk Management Process CFM-SPA.88 Inadequate management of change</p>

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			<p>identifying hazards, considering relevant loss experiences, assessing risks including critical risks and confirming their controls.</p> <ul style="list-style-type: none"> • Gains senior manager approval to resource and execute the plan. • Monitors and evaluates progress to plan • Continues to communicate with stakeholders. • Adapts and adjusts to hazards and controls based on work program schedule. • Confirms and delivers the operating processes, procedures, equipment, infrastructure, risk and control management processes required after the change is fully implemented. • Recognises milestones and celebrates success. <p>The level of effort and rigour applied to the hazard identification, risk assessment, and application of controls during change management considers situation complexity, the range of potential outcomes, and the likelihood of a loss of one or more required operating states.</p>	<p>analyses supporting site controls</p> <p>Accountability for applying the process is assigned to a role e.g. project manager.</p> <p>The level of effort and rigour applied to the hazard identification, risk assessment, and application of controls during change management considers situation complexity, the range of potential outcomes, and the likelihood of a loss of one or more required operating states.</p> <p>PLN-005-RA Risk Assessment PHMP Mobile Equipment Incidents - The purpose/objective of this risk assessment is to identify, analyse and assess the risks associated with vehicle/mobile equipment interactions at Curragh Mine operations, in particular single and multiple fatality events. This risk assessment will form the basis for the development of the Vehicle PHMP, with further analysis to identify the Critical Controls via the Bow-tie methodology and the associated verification requirements.</p> <p>PLN-001 Safety and Health Management Plan - S6 Risk Management Level 3 - Qualitative risk assessment (WRAC) for new or changes to equipment, process or operation, including shutdowns and projects. Underpins SOP's; Level 4 - Principal and Fatal Hazard risk management (BBRA), Bowtie and other Semi Quantitative processes, for the establishment / confirmation of Principal and Fatal hazards, establishing critical controls and SHMS requirements. S6.1 Broad Brush Risk Assessment A BBRA is conducted at intervals to ensure that advancement of the coal mine, and / or other major activities have not resulted in additional or changed Principal or Fatal Hazards. The BBRA includes</p>	<p>procedures.</p> <p>OFI-039 Review the effectiveness of hazard reporting feedback. Workshop participants confirmed that there is comprehensive incident and hazard reporting process in place at Curragh North Opencut Mine. Workshop participants discussed how the process can be improved. They noted that after reporting hazards, there is negligible feedback about hazard resolution and the quality of the reporting (accuracy, timeliness, etc.). This lack of feedback discourages future hazard reporting i.e. people do not see the value of their efforts.</p> <p>Review site hazard and incident reporting process. Consider the how effective the feedback steps are i.e. to the person making the report and their workgroup covering status, progress, actions taken, quality of report etc.</p>	

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				<p><i>identifying plausible risk events for each of the Principal and Fatal Hazards.</i></p> <p>OFI-093 Review Site Managements of Change Processes. Workshop participants discussed how changes are captured as part of the site management of change process and are tracked using FPE. They identified some situations where the process has not been applied. Failure to identify and track changes can lead to hazards arising due to unexpected or unwanted equipment or roadway conditions. Revisit the change management process to make it more streamlined and suited to working with the situation on site.</p>		
	<p>BI-SPA.88.01 Site change management processes apply to the introduction of new types and models of mobile equipment</p>	<p>Applied and effective change management processes are in use at the operating site, and these apply to the introduction of new types and models of mobile equipment.</p>	<p>The introduction of new mobile equipment components, new models and new types e.g. introduction of electric battery powered equipment follow a defined change management process that:</p> <ul style="list-style-type: none"> • Confirms the scope • Identifies potential impacts for mobile equipment and personnel • Confirms how hazards will be controlled e.g. equipment fires • Communicates relevant information to personnel 	<p>When senior managers confirm that change management thresholds for new equipment will be crossed, relevant parts of the process are applied to manage the introduction of the equipment e.g. for new models, different types etc.</p>	<p>New equipment controls are communicated and implemented.</p>	<p>CFM-CPA.10.20 Operators of heavy and light vehicles (or pedestrians) fail to follow the designated travel path CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced visibility, road narrowing, road surface etc. CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine</p>

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						design and work planning CFM-LPV.41.20 Loading requirements for vehicles inadequately considered in mine design, equipment selection and work planning CFM-LRA.44.01 Inadequate Inspection and Management of Operating Environment CFM-SPA.81.07 Inadequate implementation of site traffic management plan CFM-SPA.88 Inadequate management of change CFM-SRA.87 Inadequate monitoring that mine traffic management requirements have been implemented and are being maintained
<p>OFI-60: Improve change management as applied to on-site traffic changes OFI-77: Review and consider the value of adopting a vehicle hierarchy approach at Curragh North Mine. OFI-80: Review site processes for</p>	BI-SPA.88.02 Site change management processes apply to changes in road networks and traffic flows	Applied and effective change management processes are used when there are changes in road networks and traffic flows.	Changes to road networks and traffic flow adjustments follow a defined change management process that: <ul style="list-style-type: none"> • Confirms the scope • Identifies potential impacts for mobile equipment and personnel • Confirms how hazards will be controlled e.g. signs, barriers, etc. • Communicates relevant information to personnel <p>OFI-077 Review and consider the value</p>	When change management thresholds for modifying the road network or traffic flows are crossed, supervisors apply relevant parts of the site change management process. <p>OFI-080 Review site processes for communicating alerts and information about operating conditions.</p> <p>Workshop participants noted that process for the timely communication of information on road network</p>	New performance standards controls are communicated and implemented. Traffic modifications, new hazards and their controls are logged and communicated to shift crews.	CFM-CPA.10.20 Operators of heavy and light vehicles (or pedestrians) fail to follow the designated travel path CFM-CRA.03.01 Operator fails to identify and act on changes in conditions: reduced

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<p>communicating alerts and information about operating conditions.</p>			<p>of adopting a vehicle hierarchy approach at Curragh North Mine. Curragh North mining operations currently deploy a road rules approach to set intersection priorities. Workshop participants discussed the benefits of changing to a priority or vehicle hierarchy based approach. They noted that the most probable pathway to vehicle interaction fatalities at site is a collision between a heavy vehicle and a light vehicle. Vehicle hierarchy approaches have been successfully deployed across mining and deliver both production and safety efficiencies. Light vehicles always give way to heavy vehicles and loaded vehicles have priority. Consult stakeholders and consider the value of adopting a vehicle hierarchy approach at Curragh North Mine.</p>	<p>changes covering haul route intersections, road maintenance and construction, changes in road conditions e.g. slumps, parked vehicles, and general operating conditions e.g. congestion, and interactions with other workgroups can be improved. Productive and safe surface mining requires ongoing good decision making from mobile equipment operators of both light and heavy vehicles. Providing information about operational changes and advice on the expected response supports consistently good decision making. Review and confirm that communication processes for mobile equipment operators, supervisors, LV operators, drill and blast and other stakeholders covering changes in roads and intersections and other operating conditions is effective, consistent and comprehensive. Consider digital enhancements. OFI-060: Improve change management as applied to on-site traffic changes COM and TMP for intersection changes etc. are sometimes poorly communicated. For example, a new TMP with an intersection change may not be passed on between work crews. Further, some supervisors are unaware of their requirements to communicate, report and manage changes that are required. Lack of knowledge of changes to the road network and required traffic flows can lead to operating errors and unwanted vehicle interactions. Review and improve the adherence to site change management requirements, particularly around input changes issued and authorised by supervisors. Consider how information is communicated across</p>		<p>visibility, road narrowing, road surface etc. CFM-EPA.31.20 Equipment or component failure during operations e.g. brakes or steering or controlled functions CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning CFM-LPV.41.20 Loading requirements for vehicles inadequately considered in mine design, equipment selection and work planning CFM-LRA.44.01 Inadequate Inspection and Management of Operating Environment CFM-SPA.81.07 Inadequate implementation of site traffic management plan CFM-SPA.88 Inadequate management of change CFM-SRA.87 Inadequate monitoring that mine traffic management</p>

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				multiple affected workgroups.		requirements have been implemented and are being maintained
OFI-3: Review the site incident investigation process and confirm that lessons learned are communicated and understood.	BI-SPA.90 Effective incident reporting, and corrective action closeout.	Incident investigation is a business improvement process for identifying and solving issues that can compromise site safety and productivity.	<p>Sites have formal approach for incident reporting, investigation and determining corrective actions. The approach is effective at a site level while meeting company and regulatory requirements for incident reporting, scene preservation, and management. Incident reports include what happened, loss potential, why it happened, likelihood of recurrence and provide a business case for corrective actions.</p> <p>CGRA BLS-019 Incident Reporting and Investigation V1.0 S1 Purpose - <i>The purpose of this Incident Reporting and Investigation Business Level Standard (BLS-019 Incident Reporting and Investigation Business Level Standard), is to describe the incident management process for Operations to adopt in accordance with business and legislative requirements Requires a response to all incidents, with more significant investigation of serious (or potentially serious) incidents. More serious (and notifiable) incidents are investigated applying an ICAM approach. Roles are described for an Investigation Owner (commissions and reviews analysis), ICAM Team Leader (guides process and prepares reports) and ICAM participants (contribute to analysis).</i></p> <p>PLN-001 Safety and Health Management Plan S9 Incident Management - <i>Curragh maintains a management culture that promotes the recognition, response, reporting and investigation of incidents, including near misses. Operational incident systems include site relevant response measures, recording and notification requirements, and investigation processes. Investigations include root cause analysis methodology relevant to the actual or potential incident</i></p>	<p>The site incident investigation approach and supporting processes:</p> <ul style="list-style-type: none"> • Set the investigation scope. • Confirm training requirements for personnel leading investigations. • Detail incident report contents e.g. what happened, its loss potential, why it happened, the likelihood of recurrence and making the business case for corrective actions. • Describe the process for senior manager review and approval of corrective action recommendations and opportunities for improvement. • Explain how site information feedback about the incident, investigation findings, and corrective actions. • Document the thresholds for externally reporting investigation findings e.g. within a company, to regulators, and OEM relevant information if equipment design has contributed to an incident. <p>OFI-003 Review the site incident investigation process and confirm that lessons learned are communicated and understood. Workshop participants discussed how visits by work crews to incident scenes can improve understanding and on-ground input to investigations and practical corrective actions. Incident investigations that determine causes and consequential control improvements do not involve enough people with operational experience</p>	<p>Incident management process is in place and personnel know how to apply it.</p> <p>Senior management records of</p> <ul style="list-style-type: none"> • Incident investigation reviews • Approval of corrective actions and opportunities for improvement <p>Assignment of approved corrective actions</p> <p>Progress tracking of corrective actions</p> <p>Periodic analysis of incident patterns including</p> <ul style="list-style-type: none"> • Who makes the reports. • Causes. • Incident location and time. • Equipment involved. • Corrective actions types. • The adequacy of any emergency response. 	<p>CFM-EDA.21.10 Equipment or Component Design is not error tolerant</p> <p>CFM-LDA.43.01 Vehicle parking, including emergency parking is inadequately considered in mine design and routine work planning</p>

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			<i>consequence, whichever is higher. Appropriate corrective actions are to be implemented, and applicable findings and information from actual or potential incidents are to be shared across the site.</i>	about work is done can result in missing underlying causes and recommending impractical corrective actions. Examples include assigning major causes to 'operator did not follow procedures' with a corrective action of 'reemphasise requirements at the next toolbox talk' do not usually deliver lasting performance improvements based on understanding and applying required controls in defined circumstances. Include work crew representatives in incident investigations and preparing the lessons learned processes. Where practical consider communicating lessons learned to relevant workgroups at the incident scene. Alternatively, prepare and use visual aids (e.g. intersections drawn on whiteboards to dynamically demonstrate the incident) to communicate and answer 'what if questions. inspections to improve the incident review process.		
	BI-SPA.94 Managing Legal and Other External to Site Expectations.	All legal expectations, company policies, standards, and other obligations are mapped to site processes.	Sites shall ensure that general and specific external requirements are mapped directly to the Management System Framework and, as required, to other business processes so that commitments to meet external expectations are effectively delivered. Source documents (e.g. legislation, ISO Standards etc.) shall be available to all employees.	Legal and other requirements shall be communicated appropriately to direct and indirect employees and inform operational work processes. Sites shall implement and maintain a process that systematically identifies, registers, updates, and assigns both general and specific external requirements, including contractual and legal, to organisational positions. Information and plans as required are generated, transmitted to external parties, and kept secure and private.	There are periodic checks to confirm that sites have identified and mapped all relevant external expectations to company processes. Reviews also confirm that these company processes meet the requirements of these external expectation requirements and this is appropriately recorded.	BID-108: BI-SPA.94 Managing Legal and Other External to Site Expectations. BID-140: BI-SPA.94 Managing Legal and Other External to Site Expectations. CFM-SPA.81.07 Inadequate implementation of site traffic management plan CFM-STA-91 Regulator prosecution
OFI-24: Review the effectiveness and frequency of inspections of parking and other infrastructure	BI-SPV.81.05 Clear accountabilities for managers, superintendents, and supervisors in site relevant road	Site road design guidelines and traffic management plans identify specific accountabilities by organisation position.	Site road design guidelines and traffic management plans confirm site performance requirements and assign accountability for their delivery to an organisation position. Competent senior managers, line	There are formal processes and design references that are applied by competent and experienced line managers to: <ul style="list-style-type: none"> Develop, maintain, review, and update the site traffic 	Traffic management plans are applied and maintained. Site inspection and reporting processes confirm that new and existing roads and supporting infrastructure meet site performance	BID-141: BI-SPV.81.05 Clear accountabilities for managers, superintendents, and supervisors in

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<p>walkways. OFI-43: Improve supervisor understanding and execution of their accountabilities. OFI-70: Review Opportunities to consistently apply site traffic management standards and measure performance.</p>	<p>design guidelines and traffic management plans</p>		<p>managers, engineers and technical workers, and supervisors understand their responsibilities and accountabilities to:</p> <ul style="list-style-type: none"> Develop and maintain roads and supporting infrastructure that meet site, company, and regulatory design standards and requirements. Anticipate, identify, prevent, and mitigate compromises to roads and supporting infrastructure Develop, communicate, and maintain effective traffic management plans. <p>Operational accountabilities for road design are assigned to Critical Control Owner and Fatal hazard Owners. Critical control verifications are routinely completed using these and other forms.</p> <ul style="list-style-type: none"> BLS-004 FH03-CCV-03- Mobile Equipment – Management of Interactions BLS-004FH03-CCV-02-FH03Mobile Equipment–Vehicle Safety & Operations BLS-004 FH03-CCV-01- Mobile Equipment - Road and Intersection Design & Construction CSP-048-CCV-03-02 Mobile Equipment-Pedestrian Interaction - Vehicle Safety & Operations <p>As per Queensland Coal Mining legislation both Open Cut Examiners and Industry Health and Safety representatives routinely inspect operations, record their findings, and pass the information to management for action.</p> <p>OFI-070 Review Opportunities to consistently apply site traffic management standards and measure performance</p> <p>Workshop attendees discussed variations in applying vehicle interaction controls and operating approaches between</p>	<p>management plan (or equivalent)</p> <ul style="list-style-type: none"> Maintain existing roads and supporting infrastructure. Develop new roads and supporting infrastructure. <p>The design references set site performance standards and consider site, company, and regulatory design standards and requirements.</p>	<p>expectations, for example:</p> <ul style="list-style-type: none"> Supervisors monitor road construction and maintenance crews to confirm their activities meet site requirements Superintendents and planners schedule operations for safe and productive traffic management outcomes Mine planners consider future vehicle interaction hazards and reliable controls 	<p>site relevant road design guidelines and traffic management plans CFM-CPA.11.05 Operator does not drive on available segregated roads CFM-CTA.11.01 Supervisor does not identify or act when operator is fatigued or intoxicated CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning CFM-LDV.42.02 Speed limits and over-speed management are inadequately considered in mine design and routine work planning CFM-LDV.44.08 Blind spots on heavy vehicles are not considered in workplace layout CFM-LRA.44.01 Inadequate Inspection and Management of Operating Environment CFM-SDA.90 Emergency or incident response is inadequate CFM-SDV.81.20 Inadequate mine traffic management</p>

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			<p>workgroups at Curragh North Mine. They noted that while the Coronado SOPs apply to all workgroups:</p> <ul style="list-style-type: none"> Some SOPs that are not specific enough about performance requirements and how performance is measured. This allows variations in how standards are interpreted and applied in the same areas by different workgroups. There are different performance requirements by area e.g. between the Mine Industrial Area (MIA) and Mine Operational Area (MOA) for positive communications, road construction for gradient and ramp speed, heavy vehicle access, escorting requirements etc. <p>At an operational level this can result in different workplace layout standards between OCEs and conflicting directions confuse supervisors. A non-standard approach also inhibits the introduction of consistent performance measures and digital technology such as Collision Avoidance Systems.</p> <p>Leverage the knowledge and capability of the contractor support companies to review Curragh SOPs. Consider developing</p> <ul style="list-style-type: none"> Visual specification details and references Illustrate the performance standard required using examples Review and develop performance measures that support the consistent delivery of site standards across all workgroups. <p>OFI-043 Improve supervisor understanding and execution of their accountabilities.</p> <p>Workshop participants discussed traffic management accountabilities and the supervisor actions that they drive. They noted that even if clear accountabilities</p>			<p>plan (specification) CFM-SPA.90 Emergency response is significantly delayed CFM-STA-91 Regulator prosecution</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>and requirements are documented for managers, superintendents, and supervisors in the procedures and processes that make up the site Traffic Management Plan, they are not being consistent and visibly delivered at the coal face.</p> <p>A lack understanding and/or failure to apply site standards to consistently perform key supervisor tasks can increase the likelihood and consequence of unwanted vehicle interactions e.g. hazards on roads, non-standard intersections, not maintaining following distances, incorrect watering of roads, inadequate positive communications. Workshop attendees flagged that most supervisors only receive detailed training around meeting legislated requirements - with limited exposure to additional technical, and associated non-technical skills not being covered. The training is largely theoretical with limited practical examples.</p> <p>Review the level of training and amount of information on supervisor obligations and their accountabilities. Identify ways that training and resources can be made more readily available to all supervisors.</p>			
<p>OFI-81: Review how site road standards are monitored OFI-92: Review mine design requirements and confirm requirements for segregated roadways.</p>	<p>BI-SPV.81.10 Clear accountabilities for designers, surveyors, engineers, and planners in site relevant management plans</p>	<p>Site mine and road design guidelines and execution plans identify specific accountabilities for designers, engineers, and planners.</p>	<p>Site mine and road design guidelines and execution (e.g. traffic) management plans confirm site performance requirements and include specific accountabilities for designers, engineers, and planners. Designers, Surveyors, Engineers, and Planners reference and apply relevant site management plans (for stability, road design and traffic management) to provide for safe and productive operations. Designers, Surveyors, Engineers, and Planners manage and allocate resources to:</p> <ul style="list-style-type: none"> Develop and maintain work areas, roads and supporting infrastructure that meet site, company, and regulatory design standards and requirements. 	<p>Designers, surveyors and engineers generate designs by applying site requirements and, as required, conducting risk assessments for new locations or requirements. Short term planners trained and assessed in mine design guidelines and develop plans according to the guidelines. Issued designs are formally reviewed and marked as approved to mine or construct. Traffic management is considered at each process step.</p>	<p>Regular planning meetings review traffic management. Design plans and related instructions are signed off by competent accountable personnel confirming that relevant road design and traffic management requirements are being met. Mine planners consider future vehicle interaction hazards and reliable controls.</p> <p>OFI-081 Review how site road standards are monitored Workshop participants identified that the construction and maintenance of site roads including lighting, delineation and signs does not always align with site standards.</p>	<p>CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning CFM-LRA.44.01 Inadequate Inspection and Management of Operating Environment CFM-MDA.61.06 Inadequate work planning means that heavy vehicle</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<ul style="list-style-type: none"> Develop, maintain, review, and update the site management plans (as required). <p>Consultant Comment - confirm accountabilities for road design between mine owner and contractors.</p> <p>OFI-092 Review mine design requirements and confirm requirements for segregated roadways</p> <p>Workshop participants discussed site road design standards for segregating Heavy Vehicles (HV) from Light Vehicles (LV). They were unaware of design requirements for LV segregation, where practical, in site standards. Segregating LVs from HVs is a consistently reliable vehicle interaction control. Its deployment depends on mine layout, forward planning, and commitment of resources.</p> <p>Review the cost benefits from constructing and operating segregated roadways on site. Identify where they can add value, consider contractor position. Develop a design approach with decision criteria for construction. Present a case for management approval.</p>		<p>The design, construction, handover, and maintenance of site roads is a key vehicle interaction control. While operators can adjust to non-standard conditions, the decision demands on them increase and this increases the likelihood of a mistake or error. Review and confirm how site roads are monitored to confirm that they meet site standards. Review and confirm the practicality and application of site processes for road construction, handover, and ongoing maintenance.</p>	<p>operators approach fixed structures that are incidental to achieving operational outcomes</p> <p>CFM-SDV.81.20</p> <p>Inadequate mine traffic management plan (specification)</p> <p>CFM-SRA.87</p> <p>Inadequate monitoring that mine traffic management requirements have been implemented and are being maintained</p>
<p>OFI-19: Consider implementing individual circuit traffic management plans.</p> <p>OFI-77: Review and consider the value of adopting a vehicle hierarchy approach at Curragh North Mine.</p> <p>OFI-82: Consider periodic state of the nation interactions across North Curragh Mine Complex</p>	BI-SPV.82.01 Traffic Management Plan consultation and communication	Operators and other involved personnel contribute to the safe and productive use of mobile equipment at site.	<p>The site has a formal consultation and communication approach that includes the development and maintenance of a traffic management plan.</p> <p>The process:</p> <ul style="list-style-type: none"> Involves knowledgeable and experienced personnel in planning Informs all personnel about their responsibilities and expected actions Engages with all personnel as part of any updating of the plan, technology selection or introduction of new processes Gathers information about concerns, hazards, incidents, and other matters related to safe and productive operations <p>Work Health and Safety Policy</p>	<p>The traffic management plan is signed off.</p> <p>Operators, and other personnel who work around mobile equipment:</p> <ul style="list-style-type: none"> Are trained about formal and informal processes for health and safety consultation and communication at site. Participate in traffic management planning and review processes including equipment changes, layout changes, and process changes. Contribute to mobile equipment incident reviews Workers/operators report hazards, incidents and other concerns to supervisors and 	<p>The site Traffic Management Plan is current, signed by a senior manager, and has a process for formal consultation and communication with operators and other personnel who work around mobile equipment. Contribution measures such as:</p> <ul style="list-style-type: none"> Incident and hazard reporting records related to mobile equipment Records of training, awareness, and employee feedback sessions - content, attendance, and participation Records of reviews that involve operators and other personnel who work around mobile equipment e.g. job safety analyses, task 	<p>BID-142: BI-SPV.82.01 Traffic Management Plan consultation and communication</p> <p>CFM-LRA.44.01</p> <p>Inadequate Inspection and Management of Operating Environment</p> <p>CFM-SPA.81.07</p> <p>Inadequate implementation of site traffic management plan</p> <p>CFM-SRA.87</p> <p>Inadequate monitoring that mine traffic</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>Coronado Global Resources Inc. as reviewed by the Board on 16 February 2023. Purpose ...In order to meet these safety objectives and achieve this commitment, the Company has adopted a safety risk management framework designed to identify and assess safety risks to ensure that suitable measures are identified, implemented and reviewed so far as is reasonably practicable. In doing so, the Company recognises the importance of consultation and ongoing promotion of safety awareness and individual commitment and responsibility to safety on the part of all people involved in our operations, including contractors and other business partners.</p> <p>Coronado Coal Mine Operator Safety and Health Policy (undated)</p> <p>OFI-077 Review and consider the value of adopting a vehicle hierarchy approach at Curragh North Mine. Curragh North mining operations currently deploy a road rules approach to set intersection priorities. Workshop participants discussed the benefits of changing to a priority or vehicle hierarchy based approach. They noted that the most probable pathway to vehicle interaction fatalities at site is a collision between a heavy vehicle and a light vehicle. Vehicle hierarchy approaches have been successfully deployed across mining and deliver both production and safety efficiencies. Light vehicles always give way to heavy vehicles and loaded vehicles have priority. Consult stakeholders and consider the value of adopting a vehicle hierarchy approach at Curragh North Mine.</p>	<p>more senior site personnel as required</p> <p>Supervisors routinely communicate and reinforce Traffic Management Plan requirements for:</p> <ul style="list-style-type: none"> • Maintaining vehicle interaction controls • Reporting hazards and incidents <p>Curragh North Open Cut PLN-001 Safety and Health Management Plan version 3.6 4.2 Communication and Consultation Curragh has a range of communication processes to ensure that CMW's are informed of hazards in their work areas: have access to, and are familiar with, relevant SHMS documents. CMW's will be informed of the following matters: Hazards; Significant changes in site / work area conditions; The commencement of significant activities; Changes that impacts on work methods; Incidents; Any matters affecting the safety and health of CMW's must be communicated to CMW's, at Curragh these communications may be in the form of elements of: Pre-start meetings; Toolbox talks; Site Alerts and other notices; Incident information.</p> <p>Curragh requires that there are adequate avenues for CMW's to raise and resolve safety issues by raising issues with Supervisors and other Leadership, raising issues at pre-start and toolbox meetings, and providing for a Site Safety Committee to ensure that safety matters, including safety initiatives and improvements, affecting the wider Curragh community can be recommended and actioned.</p> <p>Doc No 2018 Appointment – Site Safety & Health Representative</p> <p>OFI-019 Consider implementing individual circuit traffic management plans</p>	<p>observations, change management reviews etc.</p> <p>Interviews with operators and other personnel who work around mobile equipment confirm knowledge about Site Traffic Management plan responsibilities and key processes.</p>	<p>management requirements have been implemented and are being maintained</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>Workshop participants confirmed that Traffic Management Plans (TMP), organised by individual circuits are not prepared.</p> <p>They confirmed situations where the absence of a specific up-to-date details about an operating circuit has resulted in operator misunderstandings and unplanned vehicle interactions e.g. for carrying out in-field equipment services, adjustments for water damage etc.</p> <p>Traffic management plans (or their equivalent) are hierarchical dynamic resources that set standards for mine design, construction, maintenance, and operation. They also confirm the planning processes that manage workgroup interfaces. Their effectiveness at a circuit workflow and task level requires the communication and check for understanding of specific and up-to-date information.</p> <p>Review site processes for Traffic Management processes, evaluate the benefits of preparing and communication operating details by circuit. Develop performance standards and measures.</p> <p>OFl-082 Consider periodic state of the nation interactions across North Curragh Mine Complex</p> <p>Workshop participants noted that different contract organisations have different ways and briefing their employees. It was also noted that Coronado currently does not do state of the nation briefings.</p> <p>State of the nation briefings from mine operators to all work groups including contractors are routinely carried out at other operations. They provide consistent messaging and allow discussions and questions from all employees.</p> <p>Consider the value of having periodic state of a nation briefings for all</p>		

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
<p>OFI-38: Provide real world examples of the application of the site traffic management plans and processes. OFI-70: Review Opportunities to consistently apply site traffic management standards and measure performance. OFI-77: Review and consider the value of adopting a vehicle hierarchy approach at Curragh North Mine.</p>	<p>BI-SPV.98.01 There is a documented site Traffic Management Plan</p>	<p>There is a documented and current site Traffic Management Plan that assigns accountabilities and details the processes required for safe and operationally integrated outcomes when working with mobile equipment.</p>	<p>There is a site process for developing, implementing, and maintaining a traffic management plan (TMP) or equivalent that:</p> <ul style="list-style-type: none"> • Documents the safe and productive outcomes required when working with or around mobile equipment • Includes requirements covering travel to and from the site (journey management) and addresses health and hygiene considerations for site rest and comfort areas • Identifies the situations and circumstances, where working with or around mobile equipment can result in fatalities, injuries and incidents (assessing hazards and risks) • Details the business and operational processes that prevent or mitigate the development of these potentially harmful situations and circumstances • Confirms how the status of these business and operational processes is monitored • Describes how these business and operational processes are maintained and improved <p>Curragh North Open Cut Mine PLN-005 Principal Hazard Management Plan – Mobile Equipment Incidents (version 16 May 2024) is equivalent of the site Traffic Management Plan (TMP). This PHMP applies to:</p> <ul style="list-style-type: none"> • All movements of vehicles, mobile plant and equipment at Curragh • All employees, contractors, and visitors 	<p>personnel at North Curragh mine. Typical frequency is every 3 to 4 months. Processes can be benchmarked from other operations and this should include how questions are responded to and followed up.</p> <p>The Traffic Management Plan details the site processes:</p> <ul style="list-style-type: none"> • That ensure that people who operate or work around mobile equipment are trained, competent and authorised. • That govern how fit-for-purpose mobile equipment is selected and approved for site use. • For managing pedestrian and mobile equipment interactions and mobile equipment to mobile equipment interactions. • That guide knowledgeable and experienced people through the design, construction, and maintenance of the operating environment for mobile equipment. <p>The TMP also confirms there is adequate capability and a plan for managing mobile equipment emergencies involving:</p> <ul style="list-style-type: none"> • Trauma first aid • Freeing trapped or pinned personnel • Rescue from heights • Equipment fires • Equipment contacts with powerlines • Equipment struck by lightning <p>The TMP also documents how relevant external to site expectations are met for:</p> <ul style="list-style-type: none"> • Regulatory and legal obligations • Company requirements • International Standards and 	<p>The TMP is reviewed, updated, and confirmed as being fit-for-purpose by senior management:</p> <ul style="list-style-type: none"> • After high potential mobile equipment incidents • Before significant operational changes e.g. engagement of contractors, opening of new production areas, deployment of new equipment etc. • Before the introduction of new technology e.g. mobile equipment operator fatigue monitoring, proximity detection systems etc. • Periodically – at least annually <p>Reviews are triggered by the following events:</p> <ul style="list-style-type: none"> • A site or external accident or incident directly related to the document contents. • A legislated change directly related to the document contents. • Requirements from directives issued orally or as Mine Record Entry’s by the Department of Natural Resources and • Mining inspectors or Industry Safety and Health Representatives or Site Safety and Health Representatives directly • related to the document contents. • A change required by Coronado directly related to the document contents. • A change required by the SSE 	<p>CFM-EPV.27.20 Mobile Equipment does not meet standards for safe access, lighting, signage and identification markings CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning CFM-LDA.43.01 Vehicle parking, including emergency parking is inadequately considered in mine design and routine work planning CFM-LDV.42.02 Speed limits and over-speed management are inadequately considered in mine design and routine work planning CFM-LDV.42.20 Reducing vehicle interactions through intersection design and traffic rules is inadequately considered in mine design and routine work planning</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>It references Standard Operating Procedure (SOPs) and other site documents for identifying and controlling the mobile equipment risks that may arise and forms part of Curragh’s Safety and Health Management System (SHMS). These related documents are referenced and when combined, they deliver the equivalent of a Site Traffic Management Plan</p> <ul style="list-style-type: none"> • Coronado Work Health and Safety Policy • PLN-005-RA Risk Assessment • PLN-001 Safety and Health Management Plan • PLN-002 Broad Brush Risk Assessment • BLS-004 Risk Management (details the processes for the identification and monitoring of fatal hazard Critical Controls) • SMS-032 Specification for Design and Construction of Mine Roads • SOP-009 Recovering Fixed and Mobile Plant • SOP-013 Safety of Persons when Plant is being Towed • SOP-014 Servicing, Lubricating and Refueling Mobile Plant Curragh North Open Cut • SOP-015 Transport of Heavy Plant and Supplies • SOP-016 Checking Mobile Plant • SOP-017 Using Mobile Plant - Mine Traffic Rules • SOP-036 Spoil Dumps and Excavated Faces • SOP-037 Maintaining and Watering Mine Roads. • SOP-041 Using Plant Near Electricity • SOP-042 People and Equipment Working On and Around Stockpiles and Reject Dumps • CSP-025 People and Equipment Working around Dragline 	<p>good practice</p> <p>1. HST Area Hardstand and Carpark Scope of Works - provides an example of considerations given on site for projects. <i>This document does not have specific guidance on intended traffic movements during construction, should it?</i></p>	<p>directly related to the document contents.</p> <ul style="list-style-type: none"> • The passing of a review date on the document as per BLS-005 Controlled Documents and Records. 	<p>CFM-LPV.41.20 Loading requirements for vehicles inadequately considered in mine design, equipment selection and work planning</p> <p>CFM-LPV.44.02 Operational personnel do not maintain minimum standards for berms, windrows and other zone protection.</p> <p>CFM-MDA.61.01 Reducing vehicle interactions by maintaining clearances is inadequately considered routine work planning</p> <p>CFM-MPA.72.01 Access control infrastructure is inadequate</p> <p>CFM-SDV.81.20 Inadequate mine traffic management plan (specification)</p> <p>CFM-SPA.81.07 Inadequate implementation of site traffic management plan</p> <p>CFM-SPA.88 Inadequate management of change</p> <p>CFM-SRA.87 Inadequate monitoring that mine traffic management</p>

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			<p>Other relevant documents include:</p> <ul style="list-style-type: none"> • SMS-021 Mine Training Scheme providing site-specific training for coal miners as required by s82 of the Coal Mining Safety and Health Regulation. • CSP-026-TARP-001 Mine Access Roads - Inclement Weather TARP invoked where weather events change road surfaces • SMS-006 Managing Emergencies at the Mine • BLS-019 Incident Reporting and Investigation <p>OFI-038 Provide real world examples of the application of the site traffic management plans and processes. During the work as documented mapping a Scope of Works (SOW) covering HST Hardstand and Car Park was reviewed and noted as a good practice project document. However, the document did not consider traffic management during construction. Workshop discussions confirmed that traffic management during project work and road maintenance work is generally adequate. This gap illustrates an opportunity to practically demonstrate the practical application of site traffic management standards for road work to manage hazards from both project and maintenance. Developing this resource can confirm expected site performance standards. Consider developing reference resources based on real examples of how site traffic management processes and standards were applied for construction works and during road maintenance.</p> <p>OFI-070 Review Opportunities to consistently apply site traffic management standards and measure performance Workshop attendees discussed variations in applying vehicle interaction controls</p>			<p>requirements have been implemented and are being maintained</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>and operating approaches between workgroups at Curragh North Mine. They noted that while the Coronado SOPs apply to all workgroups:</p> <ul style="list-style-type: none"> • Some SOPs that are not specific enough about performance requirements and how performance is measured. This allows variations in how standards are interpreted and applied in the same areas by different workgroups. • There are different performance requirements by area e.g. between the Mine Industrial Area (MIA) and Mine Operational Area (MOA) for positive communications, road construction for gradient and ramp speed, heavy vehicle access, escorting requirements etc. <p>At an operational level this can result in different workplace layout standards between OCEs and conflicting directions confuse supervisors. A non-standard approach also inhibits the introduction of consistent performance measures and digital technology such as Collision Avoidance Systems.</p> <p>Leverage the knowledge and capability of the contractor support companies to review Curragh SOPs. Consider developing</p> <ul style="list-style-type: none"> • Visual specification details and references • Illustrate the performance standard required using examples • Review and develop performance measures that support the consistent delivery of site standards across all workgroups. <p>OFI-077 Review and consider the value of adopting a vehicle hierarchy approach at Curragh North Mine.</p> <p>Curragh North mining operations currently deploy a road rules approach to set intersection priorities. Workshop</p>			

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>participants discussed the benefits of changing to a priority or vehicle hierarchy based approach. They noted that the most probable pathway to vehicle interaction fatalities at site is a collision between a heavy vehicle and a light vehicle. Vehicle hierarchy approaches have been successfully deployed across mining and deliver both production and safety efficiencies. Light vehicles always give way to heavy vehicles and loaded vehicles have priority. Consult stakeholders and consider the value of adopting a vehicle hierarchy approach at Curragh North Mine.</p>			
<p>OFI-32: Review the effectiveness of site consultation and communication processes.</p> <p>OFI-47: Review the effectiveness of site approaches for delivering toolbox talks. Identify opportunities for improvement, including providing adequate question and answer opportunities.</p> <p>OFI-82: Consider periodic state of the nation interactions across North Curragh Mine Complex</p>	BI-SRA.82 Consultation and communication	Multiple processes are in place to support effective health and safety communications between and across all organisational levels.	<p>Multiple processes are in place to support effective two-way health and safety communication between and across all organisational levels, including:</p> <ul style="list-style-type: none"> • Consultative hazard identification and control management processes at operational, task and individual levels (risk assessments, job safety analysis, and personal task checklists (risk analyses)). • Start of shift meetings and information boards addressing: Relevant operational information (general and from the preceding shift); Reinforcing task level hazard identification and control requirements; Promoting discussions and feedback on safety, health and operational matters, as required; Relevant external information to inform site workers of hazards and required controls. • Representative committees with nominated worker representatives reflecting operating site structure, are established and monitor processes, performance, and progress against improvement plans and respond to incidents on 	<p>Health and safety consultation and communication processes are in place that:</p> <ul style="list-style-type: none"> • Are accessible and understood by everybody, including contractors, and people who are culturally or linguistically diverse • Are part of routine communications e.g. during tool-box talks, start of shift meetings, presentations, surveys and feedback forms, workplace observations • Where necessary include formal structured processes such as health and safety committees supported by worker representatives e.g. in large complex workplaces or team based risk analyses <p>These consultation and communication processes:</p> <ul style="list-style-type: none"> • Provide information about workplace changes and any external notifications workers should be informed of • Communicate health and safety performance including progress against plans • Share information about issues 	<ul style="list-style-type: none"> • Records from training, assessment, induction, and other meetings confirm that all personnel are aware of the site health and safety consultation and communication processes are maintained in site information management platforms. • Meeting and communication records include details on items and issues discussed. • Records of communication are collected, stored and accessed based on site document (information) control and privacy requirements. • Internal and external audits monitor the quality and quantity of hazard, incident and other reports to supervisors and more senior site personnel, as required. 	<p>CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning</p> <p>CFM-LDA.43.01 Vehicle parking, including emergency parking is inadequately considered in mine design and routine work planning</p> <p>CFM-LDV.42.20 Reducing vehicle interactions through intersection design and traffic rules is inadequately considered in mine design and routine work planning</p> <p>CFM-SDA.90 Emergency or incident response is inadequate</p> <p>CFM-SPA.83.01 Operator fails to comply with site</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
			<p>and off site.</p> <p>Work Health and Safety Policy Coronado Global Resources Inc. as reviewed by the Board on 16 February 2023 Purpose ...In order to meet these safety objectives and achieve this commitment, the Company has adopted a safety risk management framework designed to identify and assess safety risks to ensure that suitable measures are identified, implemented and reviewed so far as is reasonably practicable. In doing so, the Company recognises the importance of consultation and ongoing promotion of safety awareness and individual commitment and responsibility to safety on the part of all people involved in our operations, including contractors and other business partners.</p> <p>Coronado Coal Mine Operator Safety and Health Policy (undated)</p>	<p>and incidents</p> <ul style="list-style-type: none"> Reinforce health and safety hazards and their controls Gather information about concerns, practical hazard management, and other matters relating to safe and productive operation Allow workers to participate in workplace planning and review processes such as: <ul style="list-style-type: none"> Improvement planning and tracking; Incident reviews; Planning for workplace layout and process changes; Changes to equipment and plant in use <p>Curragh North Open Cut PLN-001 Safety and Health bPlan version 3.6 4.2 Communication and Consultation</p> <p>Curragh has a range of communication processes to ensure that CMW's are informed of hazards in their work areas: have access to, and are familiar with, relevant SHMS documents. CMW's will be informed of the following matters:</p> <ul style="list-style-type: none"> Hazards Significant changes in site / work area conditions The commencement of significant activities Changes that impacts on work methods Incidents <p>Any matters affecting the safety and health of CMW's must be communicated to CMW's, at Curragh these communications may be in the form of elements of:</p> <ul style="list-style-type: none"> Pre-start meetings Toolbox talks Site Alerts and other notices Incident information <p>Curragh requires that there are adequate avenues for CMW's to raise</p>		<p>requirements CFM-SRA.87 Inadequate monitoring that mine traffic management requirements have been implemented and are being maintained</p>

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				<p>and resolve safety issues by raising issues with Supervisors and other Leadership, raising issues at pre-start and toolbox meetings, and providing for a Site Safety Committee to ensure that safety matters, including safety initiatives and improvements, affecting the wider Curragh community can be recommended and actioned.</p> <p>OFI-047 Review the effectiveness of site approaches for delivering toolbox talks. Identify opportunities for improvement, including providing adequate question and answer opportunities.</p> <p>Workshop participants discussed the effectiveness of site tool box talks. Sometimes delivery is reported as being a straight presentation with limited opportunity for questions and answers.</p> <p>If the audience is unable to question the material presented then this can lead to two suboptimal outcomes:</p> <ul style="list-style-type: none"> • The audience may misunderstand key points from the information presented and then make incorrect decisions • The presenters and line managed assumptions on understanding may be incorrect can lead to gaps in understanding of key information. <p>Review the effectiveness of site approaches for delivering toolbox talks. Identify opportunities for improvement, including providing adequate question and answer opportunities.</p> <p>OFI-032 Review the effectiveness of site consultation and communication processes.</p> <p>Workshop participants discusses inconsistencies for site consultation and communication processes. These variations include how the same</p>		

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				<p>information is presented, discussed for relevance with checks for understandings, and if feedback is captured and applied.</p> <p>The two way flow of information and knowledge Coronado Global through to the operational workers is restricted and moderated by use of contractor workgroups. Also discussed was the willingness of new-to-industry and labour hire personnel to share information. Relevant information is not always accessible e.g. some coal mine workers do not have access to the BlackRock information system. Other examples discussed include how hazard sheets are completed, communicated and remain accessible for coalmine workers. There limited safety committee meetings and information is not being shared across all site operations.</p> <p>Review site consultation and communication processes to confirm that all stakeholders and contract workers have the opportunity to be involved in health and safety improvements e.g. for vehicle interaction control improvements. Confirm that company and regulatory expectations are met.</p> <p>OFI-082 Consider periodic state of the nation interactions across North Curragh Mine Complex</p> <p>Workshop participants noted that different contractor organisations have different ways and briefing their employees. It was also noted that Coronado currently does not do state of the nation briefings.</p> <p>State of the nation briefings from mine operators to all work groups including contractors are routinely carried out at other operations. They provide consistent messaging and allow discussions and questions from all employees.</p>		

Opportunity for Improvement	BI Name	BI Expectation	Specify	Implement	Monitor	Related CFMs
				Consider the value of having periodic state of a nation briefings for all personnel at North Curragh mine. Typical frequency is every 3 to 4 months. Processes can be benchmarked from other operations and this should include how questions are responded to and followed up.		
	BI-SRA.97.10 Auditing of Management Systems	The safety management system conforms with requirements, is operationally integrated and adds value.	<p>Requirements -</p> <ol style="list-style-type: none"> 1. An annual external audit is commissioned and formally received and actioned 2. A schedule of internal audits, carried out by trained and competent leaders, is established for key elements of the HSMS. The frequency of internal audits carried out for each element is decided on a risk based approach. 3. A system of recording the outcomes of audits is maintained. <p>PLN-001 Safety and Health Management Plan - S12 Assurance Periodic internal and external safety and health audits of Curragh operations will be scheduled and conducted</p> <p>CGRA BLS-018 Assurance V1.0 - S1 Purpose <i>The purpose of this Assurance Business Level Standard (BLS-018 Assurance Business Level Standard) is to describe the Assurance System processes to verify that Operations have effectively developed, implemented, and are maintaining responsible health and safety practices, including the effectiveness of their Safety and Health Management Systems (SHMS). Details of process for confirming that all key regulated and mandated requirements are met by site particularly where there have been changes to processes, concerns raised, or business challenges encountered. Includes requirements for internal (to site) and external auditing with preparation of reports and tracking of identified opportunities for improvement.</i></p>	<ol style="list-style-type: none"> 1. Arrangements are made with an external auditor to carry out the required annual audits of the HSMS 2. Site leaders delegated with the task of completing internal audits are trained and assessed in the audit process and have access to required audit instruments/tools 3. The outcomes of both external and internal audits are reviewed by site senior leaders with non conformances addressed as required <p>CCV-FH03 Mobile Equipment (completed audit) 22 June 2024 - Covered negative as well as positive findings around the condition of intersections, bunding and road surfaces.</p>	<ol style="list-style-type: none"> 1. Audit findings and reports are included in site document and information management systems. 2. Recommendations from audits are reviewed by senior leaders and included in action tracking systems as appropriate. <p>CCV-FH03 Mobile Equipment Audit 22 June 2024 - Interview confirmed document loaded to appropriate location on site SharePoint.</p>	<p>CFM-CPA.10.04 Operators unaware of right of way requirements or operating constraints</p> <p>CFM-CPA.11.10 Operators or co-workers have required communications equipment but are not contactable</p> <p>CFM-SDA.90 Emergency or incident response is inadequate</p> <p>CFM-STA-91 Regulator prosecution</p>
OFI-70: Review	BI-SRV.83.02 Senior	Senior managers	The Traffic Management Plan is reviewed,	Traffic Management Plan reviews are	Routine operational reports confirm	BID-143: BI-

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<p>Opportunities to consistently apply site traffic management standards and measure performance.</p>	<p>management review, update, and confirm the Traffic Management Plan as being fit-for-purpose</p>	<p>periodically confirm that the site Traffic Management Plan (or equivalent) is fit-for-purpose.</p>	<p>updated, and confirmed as being fit-for-purpose by senior management:</p> <ul style="list-style-type: none"> After high potential mobile equipment incidents; Before significant operational changes e.g. engagement of contractors, opening of new production areas, deployment of new equipment etc. Before the introduction of new technology e.g. mobile equipment operator fatigue monitoring, proximity detection systems etc. Periodically - at least annually. <p>Curragh North Open Cut Mine PLN-005 Principal Hazard Management Plan – Mobile Equipment Incidents (version 16 May 2024) is equivalent of the site Traffic Management Plan (TMP). This PHMP applies to:</p> <ul style="list-style-type: none"> All movements of vehicles, mobile plant and equipment at Curragh All employees, contractors, and visitors <p>It references Standard Operating Procedure (SOPs) and other site documents for identifying and controlling the mobile equipment risks that may arise and forms part of Curragh’s Safety and Health Management System (SHMS). These related documents are referenced and when combined, they deliver the equivalent of a Site Traffic Management Plan.</p> <p>OFI-070 Review Opportunities to consistently apply site traffic management standards and measure performance</p> <p>Workshop attendees discussed variations in applying vehicle interaction controls and operating approaches between workgroups at Curragh North Mine. They noted that while the Coronado SOPs apply to all workgroups:</p> <ul style="list-style-type: none"> Some SOPs that are not specific enough about performance 	<p>prepared by Technical and Operational superintendents and reviewed by relevant stakeholders representing Survey, Engineering, Maintenance, Development, Services, and other relevant sections. The review process also involves inputs from knowledgeable and experienced operators, supervisors and health and safety committee members.</p>	<p>that the road network has been constructed and is being maintained to standard. By exception incident reporting. Formal reviews of the Traffic Management Plan to confirm if the site performance requirements are being met. Reviews also consider alignment between site performance requirements and</p> <ul style="list-style-type: none"> Industry good practice Regulatory requirements Company standards <p>Reviews are triggered by the following events:</p> <ul style="list-style-type: none"> A site or external accident or incident directly related to the document contents. A legislated change directly related to the document contents. Requirements from directives issued orally or as Mine Record Entry’s by the Department of Natural Resources and Mining inspectors or Industry Safety and Health Representatives or Site Safety and Health Representatives directly related to the document contents. A change required by Coronado directly related to the document contents. A change required by the SSE directly related to the document contents. The passing of a review date on the document as per BLS-005 Controlled Documents and Records. 	<p>SRV.83.02 Senior management review, update, and confirm the Traffic Management Plan as being fit-for-purpose</p> <p>CFM-EPV.27.20 Mobile Equipment does not meet standards for safe access, lighting, signage and identification markings</p> <p>CFM-LDA.42.01 Reducing vehicle interactions through segregation is inadequately considered in mine design and work planning</p> <p>CFM-LDA.43.01 Vehicle parking, including emergency parking is inadequately considered in mine design and routine work planning</p> <p>CFM-LDV.42.02 Speed limits and over-speed management are inadequately considered in mine design and routine work planning</p> <p>CFM-LPV.41.20 Loading requirements for vehicles inadequately considered in mine design, equipment selection and work</p>

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			<p>requirements and how performance is measured. This allows variations in how standards are interpreted and applied in the same areas by different workgroups.</p> <ul style="list-style-type: none"> • There are different performance requirements by area e.g. between the Mine Industrial Area (MIA) and Mine Operational Area (MOA) for positive communications, road construction for gradient and ramp speed, heavy vehicle access, escorting requirements etc. <p>At an operational level this can result in different workplace layout standards between OCEs and conflicting directions confuse supervisors. A non-standard approach also inhibits the introduction of consistent performance measures and digital technology such as Collision Avoidance Systems.</p> <p>Leverage the knowledge and capability of the contractor support companies to review Curragh SOPs. Consider developing</p> <ul style="list-style-type: none"> • Visual specification details and references • Illustrate the performance standard required using examples • Review and develop performance measures that support the consistent delivery of site standards across all workgroups. 			<p>planning CFM-SDA.86 Work Environment and Work Demands result in Fatigued Mobile Equipment Operators or other Health Affects CFM-SDV.81.20 Inadequate mine traffic management plan (specification) CFM-SPA.81.07 Inadequate implementation of site traffic management plan</p>