



# Safety Culture Assessment & Continuous Monitoring Approach

Presenter: Laura Zaleschuk

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Safety Culture: What is it?

Attitudes

Behaviors

Beliefs

# Different definitions, but common themes...

“the collective set of attitudes, values, norms, beliefs and practices that a pipeline operator’s employees and contractor personnel share with respect to risk and safety”

- *API RP 1173 – Pipeline Safety Management Systems*

“encompasses both individuals and the organization, and thus must effectively address both attitudes and structure.”

- *International Civil Aviation Organization*

“That assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance”

- *International Nuclear Safety Group*

“it influences the decisions and actions (behaviours) of people in an organization and these behaviours ultimately drive safety outcomes and performance”

- *National Energy Board (NEB) Safety Culture Statement*



# Traditional Safety Culture Measurement Approaches

Many different approaches have been developed to measure and assess organizational attitudes and behaviours, with the goal of improving safety culture.

Traditional approaches for measurement can provide a baseline and have focussed on:

- Questionnaires/Surveys;
- Interviews;
- Observations (Inspections/Audits);
- Focus Groups; and
- Document Analysis



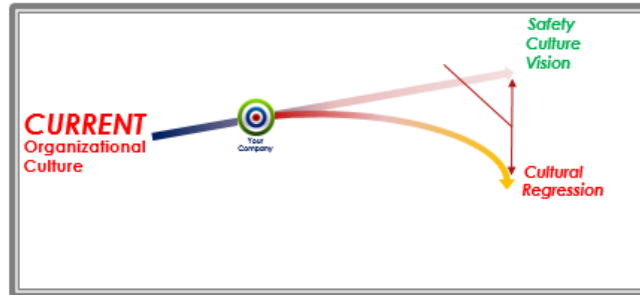
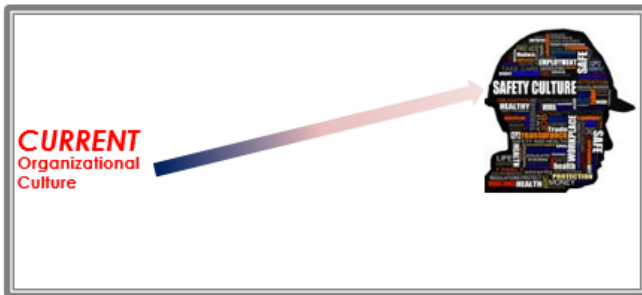
# Progressive Safety Culture Measurement Approaches

- More progressive approaches are being considered by leading companies.
- Establishment of Safety Culture Indicators and continuous monitoring is becoming more prevalent.
- Continuous Monitoring is leveraging the management systems that companies are putting into place to help manage their increasingly complex operating environments.
- Regulators are beginning to reference continuous monitoring as an additional approach to be included in a company's toolbox for assessing safety culture.



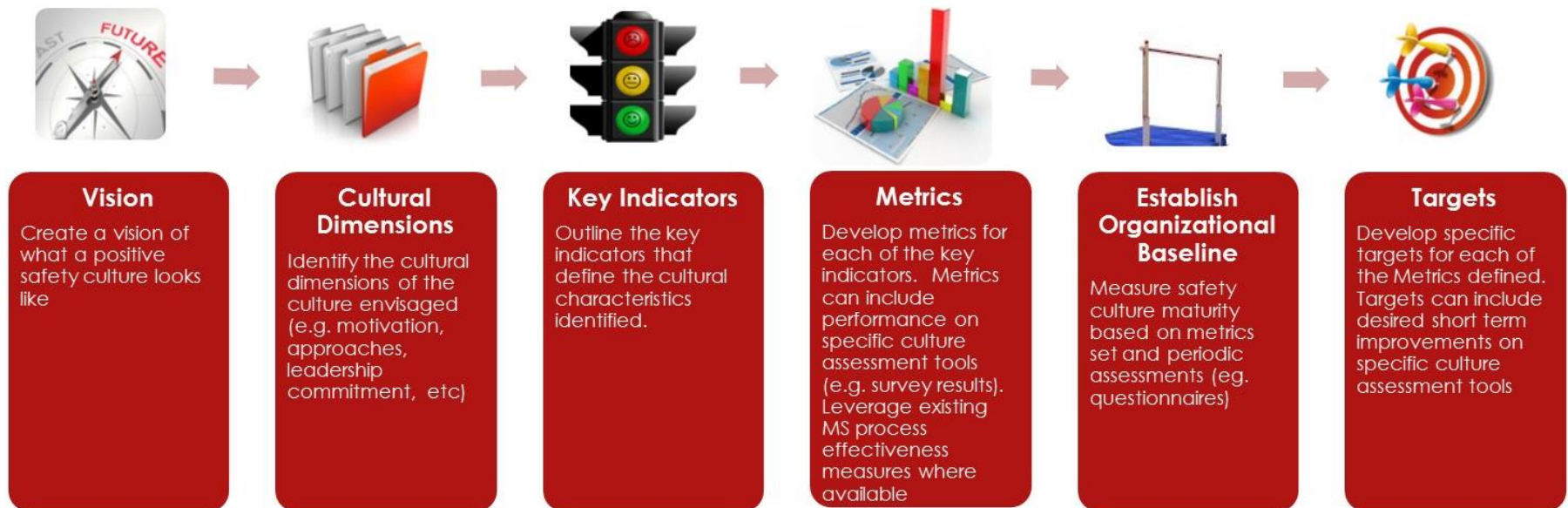
# Getting the Culture you want

- The shortest distance to achieve your Safety Culture Vision is a straight line
- When you rely only on episodic often infrequent assessments such as Safety Culture questionnaires you run the risk of not getting to where you want to go
- Leadership continuously checks and regularly adjusts when they get information from their management reviews that indicate that targets are not met or find out they are off course and at risk of not reaching their safety culture vision



# Approach to Measuring Safety Culture

Senior leadership and/or governance committees can enable the development of the Safety Culture Indicators used to continuously measure desired safety attitudes, behaviours and outcomes.

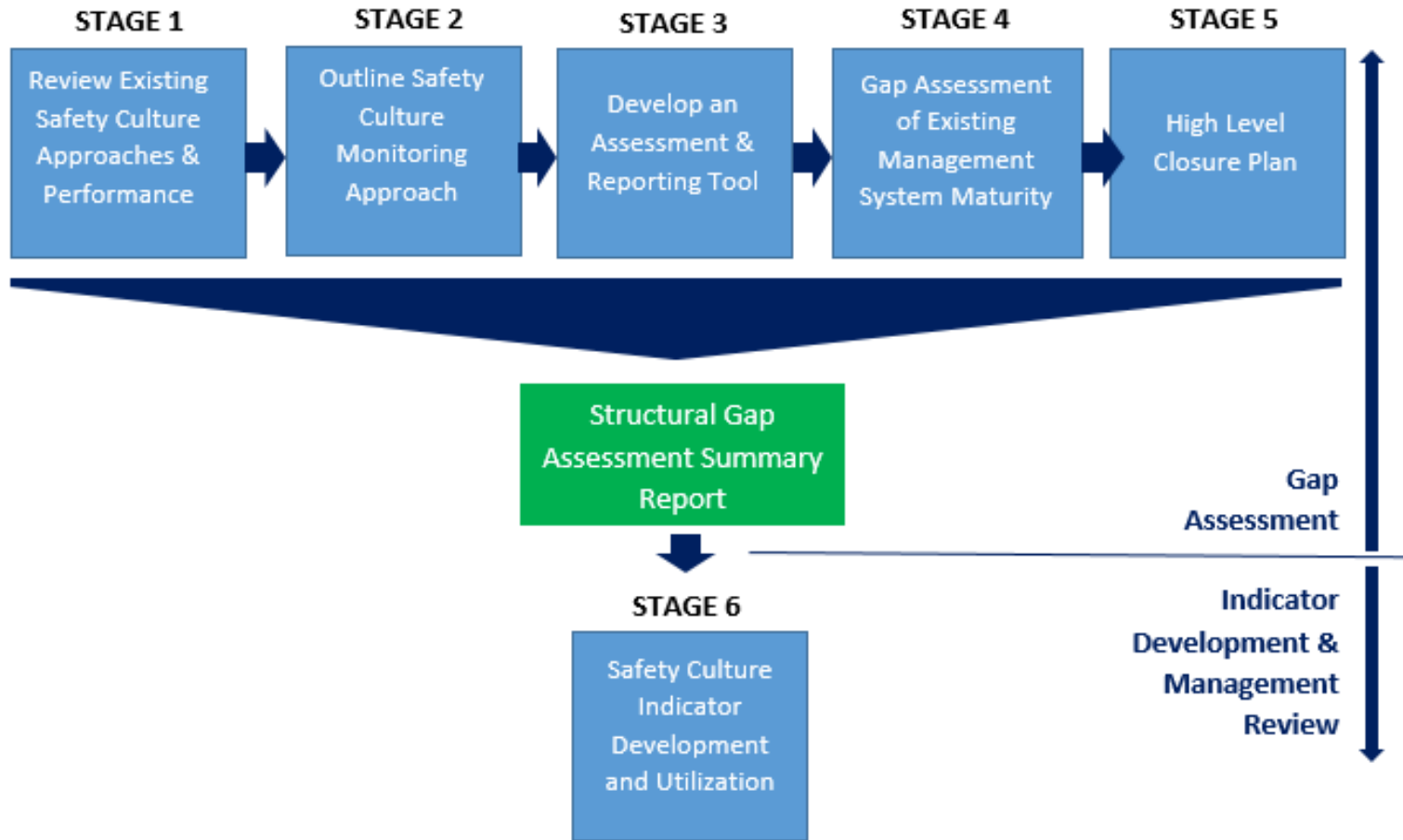




# Safety Culture Assessment Process

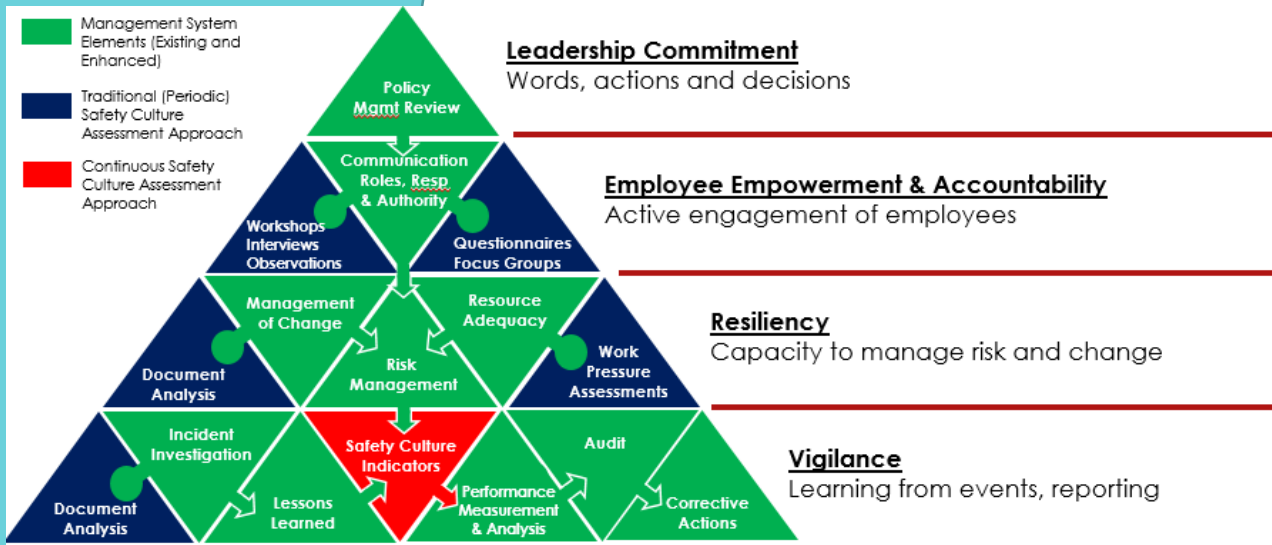


# Applied4Sight 6 Stage Process




# Stage 1: Review Existing Safety Culture Approaches & Performance

- Applied4Sight developed a proprietary Safety Culture Maturity Framework, based on a best practices review of existing Safety Culture maturity scales & tools in use (e.g. rail, chemical, nuclear, air traffic, aerospace, manufacturing, offshore, shipping, transportation, etc.)
- Applied4Sight's Safety Culture Maturity Framework uses an emphasis on key management systems elements that have greater contribution to a continuous safety culture monitoring approach.



# Stage 2: Outline Safety Culture Monitoring Approach

- Each Safety Culture Framework is broken down into specific elements and placed into a A4S developed Maturity Model.
- The 5 level scale starts at level 1 “Emerging” where safety culture is immature to level 5 “Integrated” where Safety Culture is leading and world class.

Safety Culture Framework Levels	<u>Level 1</u> Emerging	<u>Level 2</u> Managing	<u>Level 3</u> Involving	<u>Level 4</u> Co-operating	<u>Level 5</u> Integrated
Leadership Commitment					
Employee Accountability & Empowerment					
Resiliency					
Vigilance					



# Safety Culture Maturity Assessment Scale

## Level 1 - Emerging:

- Organisations believe that individuals, typically at lower levels, cause accidents;
- They implement only what is mandatory, including required checks and audits;
- Most HSE tools are ineffective at this level, as HSE is considered an obstacle to operations;
- Organisations respond to clear regulatory requirements, if enforced, and implement HSE programs only as needed to avoid prosecution; and
- As individuals are generally blamed for incidents, tools dealing with management system issues are unlikely to be adopted.

# Safety Culture Maturity Assessment Scale

## Level 2 - Managing:

- Organisations consider HSE important but believe that most problems lie within the lower levels of the workforce;
- Organisational and individual HSE management skills are at a basic level, suggesting that HSE tools should also be simple;
- Tools appropriate at this level are those that address problems obvious to both management and the workforce;
- Tools that relate to issues that have not yet caused actual accidents are difficult to justify; and
- Managing organisations value those tools that bear a clear relationship to a visible issue. For example, if failure to use seatbelts is identified as a contributor to vehicle related injuries, then a campaign to increase seatbelt use is seen as an appropriate response. It would likely not address other unsafe road behaviours like speeding that may also contribute to vehicle incidents.



# Safety Culture Maturity Assessment Scale

## Level 3- Involving:

- Organisations believe in the value of systems in managing HSE performance and the use of a large number of tools and training;
- The focus on the tools is usually through analysing metrics rather than their effectiveness i.e. number of people trained rather than an assessment of their competence;
- HSE professionals are seen as the drivers for the use of HSE tools and are primarily responsible for HSE performance; and
- In calculative organisations HSE tools need to be justified based on current performance to address a specific issue associated with incidents and related risks e.g. driving and vehicle safety campaign in response to vehicle related injuries.



# Safety Culture Maturity Assessment Scale

## Level 4- Co-operating:

- Organisations consider HSE a fundamental (“core”) value and leaders at all levels genuinely care for the health and well-being of the staff and contractors;
- Organisations understand the role of management system failures as primary causes of incidents;
- Information, including data related to potential consequences (near misses) as well as actual incidents, is used to identify suitable performance targets;
- Tools that simplify work processes and support line management as well as the workforce are used; and
- Continuous improvement is a clear goal of proactive organisations.



# Safety Culture Maturity Assessment Scale

## Level 5 - Integrated:

- Organisations have a high degree of self-sufficiency and strive to understand their entire operating environment;
- Tools are chosen and used by the whole organisation are preferred;
- Mandatory tools may be counter-productive, suggesting lack of trust;
- Everyone feels free to highlight both real and potential issues; and
- Workers feel empowered to resolve HSE issues, and leaders provide the support needed.





# Stage 3: Develop an Assessment & Reporting Tool

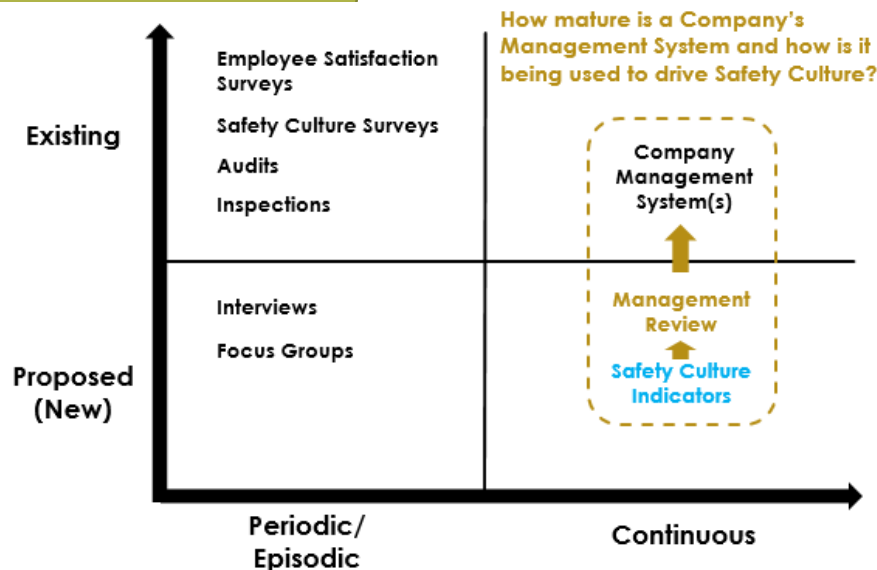
- The Maturity Model combines key and relevant cultural characteristics from the maturity scales researched and Applied4Sight Safety Culture expertise to refine a robust maturity assessment tool.
- With the approach outlined, a comprehensive review of an organization's safety management system can be completed.

Rating	Outputs	Emerging	Managing	Involving	Co-Operating	Integrated
2	<b>Management of Change</b>	<ul style="list-style-type: none"> <li>• Same types of change are re-quired and appear to be managed.</li> <li>• Not all risks associated with a change are identified and/or are not controlled.</li> <li>• The effect the change has on the organization's culture is not considered.</li> </ul>	<ul style="list-style-type: none"> <li>• The importance of change management is understood and there is some degree of control over all types of change.</li> <li>• Changes are planned but are not always adequate.</li> <li>• There is a system for making change, which leads to risks not being identified or controlled following a change.</li> <li>• There is little consideration of the effects a change has on the organization's culture.</li> </ul>	<ul style="list-style-type: none"> <li>• There is an efficient approach to managing any process, organizational and engineering change.</li> <li>• There may be a structured approach to change, involving a number of steps in the change-management system.</li> <li>• There is a consistent approach to risk assessment and risk control after a change is made.</li> <li>• The effect a change has on the organization's culture is considered.</li> </ul>	<ul style="list-style-type: none"> <li>• Review is carried out after a change is introduced to also consider the effect the change has had on the culture of the organization.</li> <li>• The importance of involving employees in the change process is recognized but brings little benefit.</li> </ul>	<ul style="list-style-type: none"> <li>• An understanding that change affects other aspects of business exists. It is clear to business risk being risks to health and safety risk during and/or as a result of any change.</li> <li>• The amount and pace of changes that the organization can handle is considered when planning change.</li> </ul>
3	<b>Risk Management</b>	<ul style="list-style-type: none"> <li>• Risk Assessments are sufficient for the risk involved, in compliance with legislative requirements and are high level and generic.</li> <li>• Risk registers are reviewed reactively when issues arise.</li> <li>• The mitigation plan in place to manage risks is not clearly communicated or maintained regularly.</li> <li>• Individuals are largely unaware of the risks, hazards and impacts their work entails or have no responsibility to control them.</li> </ul>	<ul style="list-style-type: none"> <li>• Specific Risk Assessments are performed. Focus is on process related risk.</li> <li>• The Risk Assessment process is disrupted without fully interlinking Activity, Design, Environment, etc.</li> <li>• Risk registers are reviewed and updated with details of mitigation plans.</li> <li>• Risk management is perceived as the responsibility of Management.</li> <li>• Workforce is engaged in Risk Management at the invitation of Management.</li> <li>• Risks are identified and assessed in line with corporate HSE, etc. requirements, however while managed to some extent individuals generally lack full understanding of these risks, hazards and impact.</li> </ul>	<ul style="list-style-type: none"> <li>• Task specific Risk Assessments are focused on both high risk task and also specific Risks.</li> <li>• Process is open to query, challenge and feedback.</li> <li>• Risk registers and mitigation plans are regularly reviewed and updated proactively.</li> <li>• All business risk processes are integrated.</li> <li>• Workforce is engaged by Management and participating in reviews.</li> <li>• Individuals empowered to report work as a process if they feel the controls are not adequate to manage the risk or impact identified.</li> </ul>	<ul style="list-style-type: none"> <li>• Behavioural risks are identified and fully integrated in risk management processes.</li> <li>• The process is regularly reviewed, adaptable and implements change.</li> <li>• Workforce is actively engaged and participates in reviews.</li> <li>• Lessons Learned processes are fully integrated with Risk Management approach.</li> <li>• All personnel participate in future HSE challenge and fail campaigns to respond appropriately to new (identified or unidentified) hazard situations.</li> </ul>	<ul style="list-style-type: none"> <li>• Various analysis to changes are in use.</li> <li>• Risk management and mitigation planning is fully integrated with Business processes including Innovation, Safety by Design, Lessons Learned, Continuous Improvement.</li> <li>• The feedback mechanisms for the workforce include risk reporting.</li> <li>• Learning is effectively shared across the organization and the supply chain and HSE risk management is embedded as part of an operationally excellent management system.</li> <li>• A consistent state of vulnerability is maintained with individuals continuously looking for indicators of new risks, hazards and opportunities.</li> </ul>
3	<b>Resource Adequacy</b>	<ul style="list-style-type: none"> <li>• HSE aspects of contracts not formally built into all aspects of Contract and Tender process.</li> </ul>	<ul style="list-style-type: none"> <li>• Some formal inclusion of HSE requirements in all aspects of Contract and Tender process.</li> <li>• Contractors are expected to be competent and work safely. In cases where a contractor does not work safely they are stopped from working and removed from site.</li> </ul>	<ul style="list-style-type: none"> <li>• Formal inclusion of HSE requirements in all aspects of Contract and Tender process.</li> <li>• Lessons learned are incorporated in the next cycle of Contract and Tender activities.</li> <li>• Contractors are inducted to ensure they meet all HSE standards, training, capability and competency management is undertaken by contractor organization.</li> <li>• Work plans incorporate any local standards and HSE requirements with contractor following pre-approved methods statements.</li> </ul>	<ul style="list-style-type: none"> <li>• Consistent application of HSE requirements.</li> <li>• Full integration with all Continuous Improvement and audit processes to enable consistency of internal and external measurement.</li> <li>• Contractors are inducted to ensure they meet all HSE standards, training, capability and competency management is undertaken by contractor organization.</li> <li>• Pre-qualification of contractor with evidence of an HSE management system is required with certification in place (if appropriate).</li> <li>• Contractor HSE performance and behaviour are tracked as key differentiators.</li> </ul>	<ul style="list-style-type: none"> <li>• Validation and verification processes are detailed and include delivery of "customer quality expectations".</li> <li>• Qualitative records are maintained of all aspects of internal and external Contract and Tender Process as part of Continuous Improvement.</li> <li>• Integration of the contractor's HSE Management System with evidence to support the link between contractor HSE performance and reduction.</li> </ul>



# Stage 4: Leveraging What You Already Have

- The continuous monitoring approach for Safety Culture leverages both an organization's existing management system and Safety Culture assessment practices already in place.
- The comprehensive assessments completed in Stage 1 and 2 are compared with the Safety Culture maturity model tool outlined in Stage 3.



- The gap assessment focuses on whether an organization has the necessary elements in place to develop meaningful Safety Culture indicators.



# Stage 4: Current Level Criteria and Evidence of Meeting Level

- The criteria details for each individual element are outlined in tables
- The Table shows:
  - each element;
  - the current level and criteria met to achieve that level;
  - the organization's evidence/documentation/interviews used to determine that current level;
  - actions needed to move to the next level;
  - and potential KPIs that could be used to measure progress in moving up to the next level of maturity as well as to perform the continuous monitoring.

RESILIENCY				
	Current Level Details	Organization's Evidence of Meeting Current Level	Actions to meet next level	Potential KPIs
<b>Management of Change</b>	Current Level: <b>Managing</b>  'The importance of change management is understood and there is some degree of control	- MOC changes include technical, administrative and organizational. Cultural Change is not considered. No reference to measurement of the effectiveness of changes implemented. (MOC procedure) - Do you have a process for Change Management (Not MOC) that incorporates safety culture considerations? New process, people in place to	Next Level: <b>Involving</b>  The effect a change has on the organisation's culture is considered	# of Safety Culture considerations made vs MOCs implemented  # of variances in place



# Structural Gap Assessment Summary Report



Dimension	Leadership	Maturity Level	Maturity Rating
Factor 1	Strategy & Planning	Involving	2
Factor 2	Leadership Policies	Involving	2
Factor 3	Leadership Feedback	Involving	2
		Integrated	1
		<b>Average for this Dimension</b>	<b>2</b>
	Accountability		
		Managing	3
		Managing	3
	Authorities	Involving	2
		Integrated	1
		<b>Average for this Dimension</b>	<b>2</b>
		Managing	3
		Involving	2
		Involving	2
		Involving	2
		<b>Average for this Dimension</b>	<b>2</b>
		Integrated	1
		Involving	2
	Analysis	Integrated	1
		Managing	3
		<b>Average for this Dimension</b>	<b>2</b>
		<b>Average Safety Culture Maturity Level</b>	<b>2</b>

Based on the review and analysis a dashboard tool is used to enable consistent, repeatable and effective Safety Culture maturity assessment results for an organization to display.

# Stage 5: High Level Closure Plan

- The criteria details for each individual element have been outlined in tables in the report
- The Table shows:
  - each element;
  - the current level and criteria met to achieve that level;
  - the organization's evidence/documentation/interviews used to determine that current level;
  - **actions needed to move to the next level;**
  - and potential KPIs that could be used to measure progress in moving up to the next level of maturity as well as to perform the continuous monitoring.

RESILIENCY				
	Current Level Details	Organization's Evidence of Meeting Current Level	Actions to meet next level	Potential KPIs
Management of Change	Current Level: <b>Managing</b> The importance of change management is understood and there is some degree of control	- MOC changes include technical, administrative and organizational. Cultural Change is not considered. No reference to measurement of the effectiveness of changes implemented. (MOC procedure) - Do you have a process for Change Management (Not MOC) that incorporates safety culture considerations? New process, people in place to	Next Level: <b>involving</b> The effect a change has on the organisation's culture is considered	# of Safety Culture considerations made vs MOCs implemented # of variances in place



# Safety Culture Indicators

# Characteristics of Safety Culture Indicators

- Accurate
  - Direct relationship with existing organizational system
  - Difficult to manipulate inputs and outcomes
- Predictive
  - Provides directional assessments and the ability to establish trending (especially given the time required to achieve sustainable culture change)
- Current and Continuous
  - Real time information collected and analysed on a regular basis



# Stage 6: Safety Culture Indicator Development

- The criteria details for each individual element have been outlined in tables in the report
- The Table shows:
  - each element;
  - the current level and criteria met to achieve that level;
  - the organization's evidence/documentation/interviews used to determine that current level;
  - actions needed to move to the next level;
  - **and potential KPIs that could be used to measure progress in moving up to the next level of maturity as well as to perform the continuous monitoring.**

RESILIENCY				
	Current Level Details	Organization's Evidence of Meeting Current Level	Actions to meet next level	Potential KPIs
Management of Change	Current Level: <b>Managing</b>  The importance of change management is understood and there is some degree of control	- MOC changes include technical, administrative and organizational. Cultural Change is not considered. No reference to measurement of the effectiveness of changes implemented. (MOC procedure) - Do you have a process for Change Management (Not MOC) that incorporates safety culture considerations? New process, people in place to	Next Level: <b>Involving</b>  The effect a change has on the organisation's culture is considered	# of Safety Culture considerations made vs MOCs implemented  # of variances in place





## Stage 6: Safety Culture Indicator Utilization

- For each indicator, A4S provides an outline of its intent and the types of decisions that could be made in using it.
- A4S has also established the consistent method for calculation for each.

Safety Culture Indicator	Method for Calculation	Intent	Decisions driven by Indicator
<b>KPI</b>	The method of Calculation will outline: <ul style="list-style-type: none"><li>• Information required</li><li>• Source(s) of information</li><li>• How multiple sources of information are combined and indicator calculated</li></ul>	Outline what the indicator is intending to measure within the organization and what the organization achieves by meeting it	Outline the decisions that could be made or actions that should be considered when the measure is not met



# Safety Culture is not a Destination

Safety Culture Assessment & Continuous Monitoring will allow a strong safety culture to continuously adapt, evolve, and be reinforced through:

- Management commitment to safety:
  - leadership safety values and actions,
  - decision making, and
  - a respectful work environment;
  
- Individual commitment to safety:
  - personal accountability,
  - questioning attitude, and
  - effective safety communication
  
- Management systems
  - continuous learning,
  - problem identification and resolution,
  - environment for raising concerns, and
  - work processes.





## Contact:

Mark Jean, P.Eng.

Managing Partner

[mark\\_jean@applied4sight.com](mailto:mark_jean@applied4sight.com)

Laura Zaleschuk

Strategy and Systems Advisor

[laura\\_zaleschuk@applied4sight.com](mailto:laura_zaleschuk@applied4sight.com)

Applied4Sight

[www.applied4sight.com](http://www.applied4sight.com)

Phone: +1 (403) 571-0853

