

FTA
Transit Asset Management
Multimodal Roundtable
July 2019

MOVING BEYOND MAP-21: RISK MANAGEMENT



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WHAT IS RISK?

Simply put, risk is the possibility



of something bad occurring.

ASSET RISK

- What are the top risks to your house right now?
 - Did you consider all of the following topics:
 - Financial / Asset Loss
 - Security
 - Climate / Environmental
 - Regulatory / Legal
 - Health and Safety
- How are you mitigating those risks?
- How are you monitoring the risks?

ASSET RISK REGISTER

- Lists identified risks
- Prioritizes/Scores risks
- Determines a mitigation strategy
- Identifies action items to mitigate (if any)
- Designates individuals responsible for any action items
- Establishes critical dates
- Outlines method(s) of monitoring

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Risk Log

ASSET RISK REGISTER – FIRST THINGS FIRST

- Identify the level at which you want to track risks. To help determine the level, consider the following:
 - Which assets/systems are critical to sustain the primary business: Reliably getting customers safely from Point A to Point B
 - If you wish to track risks via register beyond those assets/systems you should consider:
 - How often the register will be updated
 - Who is the intended audience
 - Who will be updating the register
 - Will there be more than one register
- Conduct meetings with stakeholders for input
- Approval from steering committee
- Develop risk register / action log template (Google is your friend!)

ASSET RISK REGISTER: RISK LOG

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IDENTIFY RISKS

- Interviews
 - Select key stakeholders
 - Individual interviews
 - Specific questions
- Brainstorming
 - Wider range of stakeholders
 - Group meeting
 - Less specific, but still leading questions
- Checklist
 - Previously identified risks



Tip: Create an intelligent Risk ID format standard. Consider a format that identifies the Office as part of the Risk ID.

For example, our Risk ID format is:
RR-Office-YY-0000
RR = Risk Register
Office is a 2 or 3 character standard abbreviation.

Example ID: RR-FAC-19-0005

The Risk ID immediately informs the viewer it's a risk identified by Facilities in 2019.

IDENTIFY RISKS

Activity:

Using the provided Asset Risk Register, identify a few risks you have at your agency

PRIORITIZE/SCORE RISKS: THE QUALIFIED HEAT MATRIX

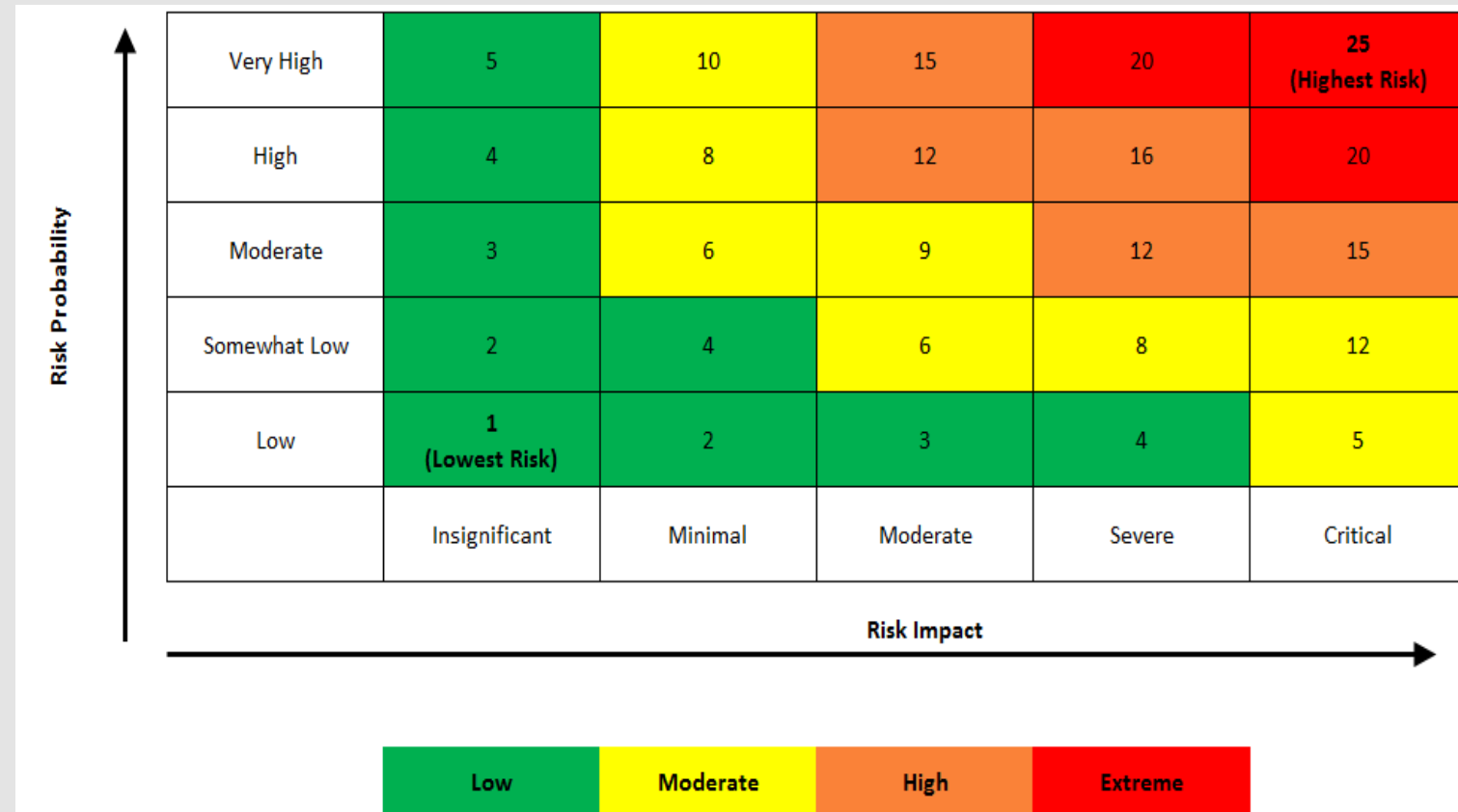
■ Qualified Risk Score

■ Pros

- Good starting point!
- Utilizes SME knowledge of level of risk probability and impact to score the risk

■ Cons

- Subjective
- Not defensible in justifying capital project initiation
- Does not eliminate lobbyist tactics



PRIORITIZE/SCORE RISKS: THE QUANTIFIED HEAT MATRIX

- Quantified Risk Score

- Pros

- Provides pre-defined impact and probability rating criteria for each measure resulting in a less subjective score
 - Defensible in justifying capital project initiation
 - Reduces lobbyist influence when prioritizing projects

- Cons

- Requires more analysis and thus
 - More time
 - More individuals/business units involved

PRIORITIZE/SCORE RISKS: THE QUANTIFIED HEAT MATRIX

Asset Management System Risk Matrix									PROBABILITY					
									Improbable (1)	Not Likely to Occur (2)	Could Occur (3)	Known to Occur (4)	Common Occurrence (5)	
REGIMES		Health and Safety 1	Environmental Impacts 2	Financial and Asset Loss 3	Reputational Damage 4	Regulatory / Legal Impact 5	Quality of Service 6	Service Impact 7	EAM Impact 8	May occur once in over 10 years	May occurs once in 5 to 10 years	May occur once in 1 to 5 years	May occur once in less than a year	May occur more than once in a year
POTENTIAL CONSEQUENCES	Very High (5)	One or more fatalities. Irreversible health problems for employees and/or community.	A release to the environment with major (sub-surface) impacts; leaves MARTA property; requires regulatory reporting; extensive remediation required	Severe financial loss or asset replacement cost impact. (>= \$500,000)	National loss of reputation / Damaging National exposure	Potential for significant, serious penalties and/or sanctions, etc. or multiple major litigations	Severe impact on the quality of service provided resulting in an increase in complaints of more than 50%	Loss of Service	<80% Data Quality KPI Rating	Evaluate Alternatives (5)	Action at Next Opportunity (10)	Immediate Action (15)	Immediate Action (20)	Immediate Action (25)
	High (4)	Partial, or medium-term, disabilities or major health problems for employees and/or customers.	A release to the environment with moderate (superficial) impacts; leaves MARTA property; requires regulatory reporting; limited remediation required	Major financial loss or asset cost impact. (>=\$200,000 < \$500,000)	Significant regional loss of reputation	Potential for penalties, fines or sanctions of a lesser but still material nature / single major litigation or multiple moderate litigations	Considerable impact on the quality of service resulting in a 26 -50% increase in complaints	Gap Service Required	<= 85% but > 80% Data Quality KPI Rating	Low Accept the risk / No action required (4)	Evaluate Alternatives (8)	Action at Next Opportunity (12)	Immediate Action (16)	Immediate Action (20)
	Moderate (3)	Lost-time injuries or potential medium-term health problems for employees and/or community.	A release to the environment with minor (impervious surface) impacts; leaves MARTA property; requires regulatory reporting and/or site restoration	Moderate financial loss or asset cost impact. (>= \$75,000 < \$200,000)	Moderate loss of regional reputation	Potential for minor penalties or fines / Single moderate litigation or multiple minor litigations	Some impact on the quality of services provided resulting in a 10 - 25% increase in complaints	Service delay greater >= 1 hour	<= 30% but < 85% Data Quality KPI Rating	Low Accept the risk / No action required (3)	Evaluate Alternatives (6)	Evaluate Alternatives (9)	Action at Next Opportunity (12)	Immediate Action (15)
	Low (2)	Minor, very short-term health concerns or Recordable Injury cases.	A release to the environment with minor impacts; contained to MARTA property; no regulatory notification required	Tolerable financial loss or asset cost impact. (> \$35,000 < \$75,000)	Light impact on reputation	Breach of company policy or single minor litigation	Minor impact on quality of services provided resulting in an increase in complaints of <10%	Service delay < 1 hour	<= 35% but > 30% Data Quality KPI Rating	Low Accept the risk / No action required (2)	Low Accept the risk / No action required (4)	Evaluate Alternatives (6)	Evaluate Alternatives (8)	Action at Next Opportunity (10)
	Minor (1)	Inherently safe, Unlikely to cause health problems. First aid injuries.	A contained release/a minor spill with little to no environmental impact; no regulatory notification needed	Relatively low financial loss or asset cost impact. (< \$35,000)	No adverse effect	No impact to regulations or legal obligations	No impact on Quality of Service	Failure is not likely to cause any real impact to service	>35% Data Quality KPI Rating	Low Accept the risk / No action required (1)	Low Accept the risk / No action required (2)	Low Accept the risk / No action required (3)	Low Accept the risk / No action required (4)	Evaluate Alternatives (5)

IDENTIFY RISKS

Activity:

Score your Risks using the Quantified Risk Assessment Heat Map

RISK REGISTER

						Risk Analysis		
						Refer to "Risk Matrix Instructions" Tab for Completion		
Risk ID	Date Identified	Risk Owner	Risk Description	Biggest Risk Consequence	Risk Regime #	Probability (1-5)	Consequence (1-5)	Risk Score
RR-RCM-15-0001	5/1/2015	Doug Miller	Rolls Royce APSE IGBT Gate Driver Board design deficiencies.	Excessive Repairs, Excessive Downtime, Financial	7	5	4	20
RR-RCM-15-0002	5/1/2015	Doug Miller	Rolls Royce APSE GTO failures causing loss of component protections and increasing hazards risk to maintenance personnel.	Excessive Repairs, Excessive Downtime, Financial	7	5	4	20
RR-RCM-15-0003	5/1/2015	Doug Miller	Main Battery End of Life failures causing cell overheating and excessive water consumption.	Excessive Repairs, Excessive Downtime, Financial	7	5	4	20
RR-RCM-17-0019	4/1/2017	Doug Miller	PBG Assembly inadequate Power Design	Excessive Downtime	7	5	2	10
RR-RCM-17-0020	4/1/2017	Doug Miller	End of Life failures	Excessive Downtime	7	2	2	4
RR-RCM-17-0023	4/1/2017	Doug Miller	CQ312 Compressor Contactor End of Life failures	Excessive Repairs, Excessive Downtime, Financial	7	5	3	15
RR-RCM-17-0024	4/1/2017	Doug Miller	R-22 Obsolesence	Excessive Repairs, Excessive Downtime, Financial	7	5	3	15
RR-RCM-17-0025	4/1/2017	Doug Miller	Lighting Component End of Life failures	Excessive Downtime	7	2	2	4
RR-RCM-17-0036	4/1/2017	Doug Miller	BTE & PTE HW Obsolesence.	Excessive Downtime	7	5	3	15

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Action Plan

RISK REGISTER

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DETERMINE A MITIGATION STRATEGY

The mitigation strategies you choose will be largely based upon the risk score and the risk tolerance of your Agency, Department, and/or Office.

Risk tolerance is defined by the Institute of Risk Management as “The amount and type of risk that an organization is willing to take in order to meet their strategic objectives.”

The four mitigation strategies are:

- Avoid
- Reduce
- Transfer – Outsource / Insurance
- Accept

IDENTIFY ACTION ITEMS TO MITIGATE (IF ANY)

Dependent upon the mitigation strategy selected for a risk, you will need to decide what actions will be taken to address the risk.

Let's say you have an elevator that was just put into service. It is discovered it's getting utilized 3x as often as predicted. This is a risk and indicates the elevator will fail well before the estimated useful life. The options and actions to be assigned could be as follows:

- Avoid – Shut the elevator down and replace all relevant parts with upgraded to ensure estimated life will be achieved and failures avoided
- Reduce – Shorten time between inspections and preventive maintenance. Establish predictive maintenance as soon as trends allow
- Transfer – Outsource maintenance of the elevator to 3rd party with insurance provisions for failure
- Accept – Keep an eye on it but take no actions at that time

DESIGNATE INDIVIDUALS RESPONSIBLE FOR ANY ACTION ITEMS AS WELL AS CRITICAL DATES

When giving consideration to designating individuals responsible for any action items, you may opt to notate each of the following:

- Plan Developer
- Plan Approver
- Plan Implementer

This allows for a clear line of accountability.

OUTLINE METHOD(S) OF MONITORING

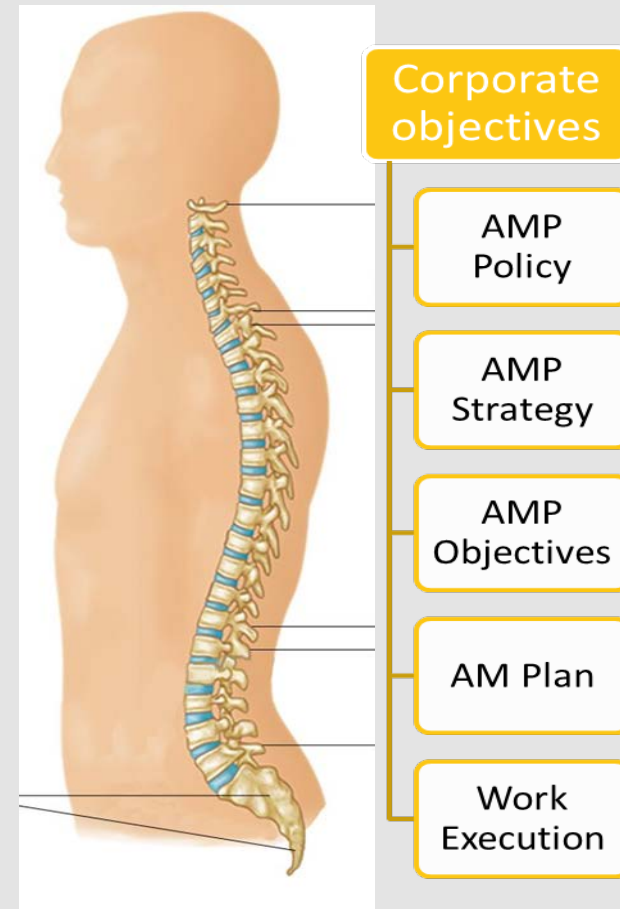
- How will the risk be monitored going forward
 - KPIs?
 - Increased unscheduled downtime
 - Increased scheduled downtime (more frequent PMI required)
 - Increased cost per hour/mile/gallon
 - Elevated customer complaints
 - Status Meetings
 - Future Risk Reassessment

RISK REGISTER

Risk ID	Risk Description	Mitigation Options	Reason for Selected Option	Performance Measures	Proposed Action Plan	Time Required	Reporting/Monitoring Requirements	Plan	Plan	Plan
								Developer	Approver	Implementer
1	Canterbury Diamond Crossover Switch ties	Gauge Rods and Switch fastening/reset, Slow order	Able to keep turnouts in acceptable state	MO'w Rail Delays/ T&S Slow order hour/miles	Turnouts to be replaced in TR IV project. Bid currently being evaluated. Switch Ties have been spotted in to mitigate the risk.	2 years	Twice weekly track inspections, monthly detailed switch inspections and twice yearly automated track geometry inspections	Dwight Perkins	Tim Elsberry	Dwight Perkins
2	Trk Circuits at Lindbergh, obsolete parts.	Purchase 1 time part order	Quickest method to address	MO'w Rail Delays/ATC Trouble Calls	Purchase 1 time part order and implement Capital Project to replace.	2 years	RSCC Sup Log, ATC Trouble Call Data	Addi Matthew	Tim Elsberry	Addi Matthew
3	Trk Circuits at Lenox, obsolete parts.	Purchase 1 time part order	Quickest method to address	MO'w Rail Delays/ATC Trouble Calls	Purchase 1 time part order and implement Capital Project to replace.	2 years	RSCC Sup Log, ATC Trouble Call Data	Addi Matthew	Tim Elsberry	Addi Matthew
4	Trk Circuits at Brookhaven, obsolete parts.	Purchase 1 time part order	Quickest method to address	MO'w Rail Delays/ATC Trouble Calls	Purchase 1 time part order and implement Capital Project to replace.	2 years	RSCC Sup Log, ATC Trouble Call Data	Addi Matthew	Tim Elsberry	Addi Matthew
5	Trk Circuits at Lakewood, obsolete parts.	Purchase 1 time part order	Quickest method to address	MO'w Rail Delays/ATC Trouble Calls	Purchase 1 time part order and implement Capital Project to replace.	2 years	RSCC Sup Log, ATC Trouble Call Data	Addi Matthew	Tim Elsberry	Addi Matthew
6	Trk Circuits at Oakland City, obsolete parts.	Purchase 1 time part order	Quickest method to address	MO'w Rail Delays/ATC Trouble Calls	Purchase 1 time part order and implement Capital Project to replace.	2 years	RSCC Sup Log, ATC Trouble Call Data	Addi Matthew	Tim Elsberry	Addi Matthew
7	Trk Circuits at West End, obsolete parts.	Purchase 1 time part order	Quickest method to address	MO'w Rail Delays/ATC Trouble Calls	Purchase 1 time part order and implement Capital Project to replace.	2 years	RSCC Sup Log, ATC Trouble Call Data	Addi Matthew	Tim Elsberry	Addi Matthew
8	Trk Circuits at Sandy Springs, obsolete parts.	Purchase 1 time part order	Quickest method to address	MO'w Rail Delays/ATC Trouble Calls	Purchase 1 time part order and implement Capital Project to replace.	2 years	RSCC Sup Log, ATC Trouble Call Data	Addi Matthew	Tim Elsberry	Addi Matthew

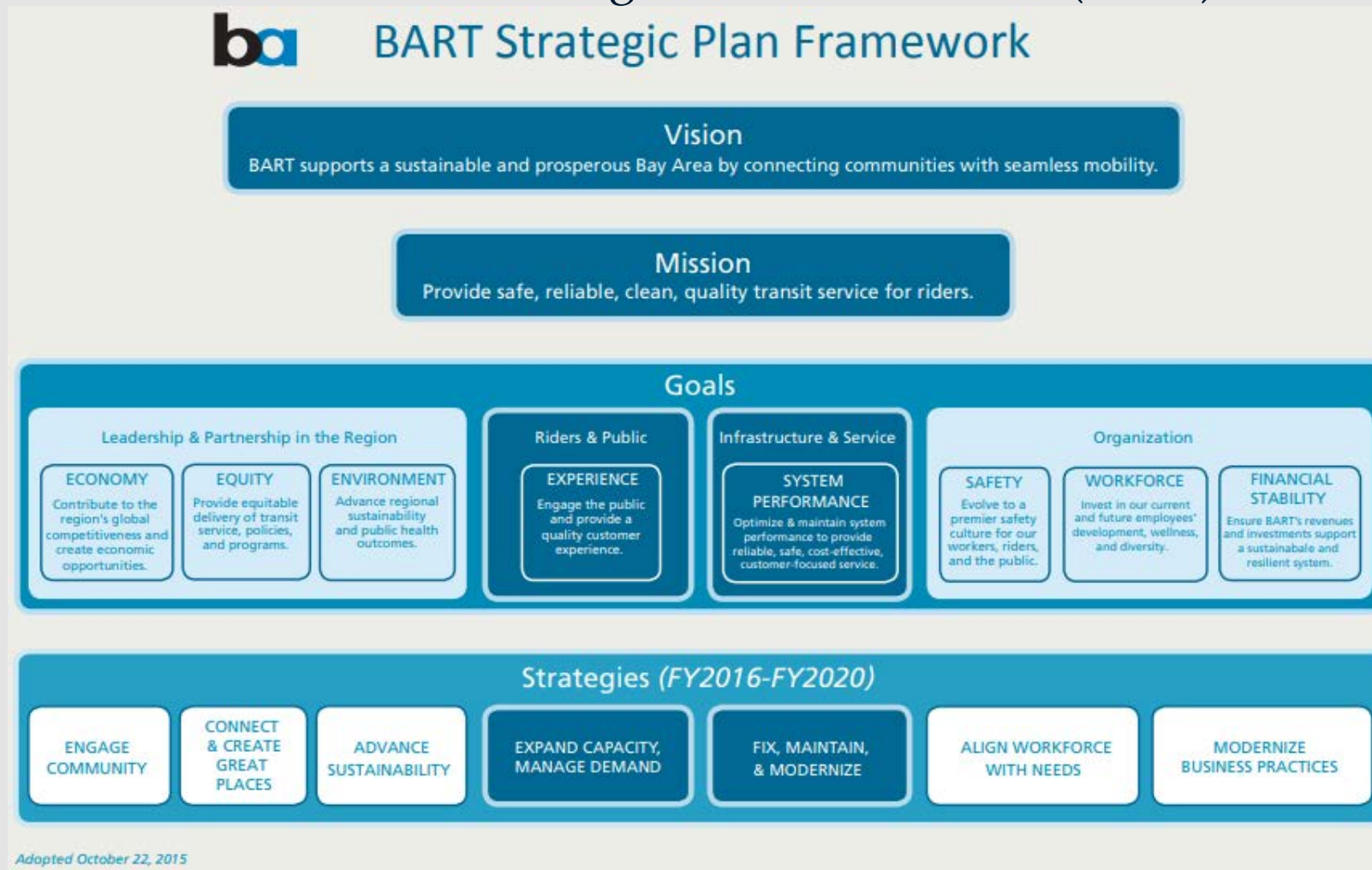
STRATEGIC RISK APPROACH SUPPORTS IAM & ISO55000

Strategic Asset Management is concerned with risk to your organizational objectives.



THINKING BEYOND PHYSICAL ASSET RISK

Strategic Asset Management is concerned with risk to your organizational objectives. For BART that's our Strategic Plan Framework (BSPF):



IDENTIFYING STRATEGIC RISK – BALANCING PRIORITIES

Although we are a transit agency, we also support other priorities. For example our BSPF Strategies include activities that address issues such as:

- Homelessness
- Sustainability
- Transit Oriented Development
- Art Program

? - Does your agency have competing priorities as well?

Strategies (FY2016-FY2020)

ENGAGE
COMMUNITY

CONNECT
& CREATE
GREAT
PLACES

ADVANCE
SUSTAINABILITY

EXPAND CAPACITY,
MANAGE DEMAND

FIX, MAINTAIN,
& MODERNIZE

ALIGN WORKFORCE
WITH NEEDS

MODERNIZE
BUSINESS PRACTICES

DEPARTMENT 4-YEAR WORKPLANS – DAY TO DAY GOALS

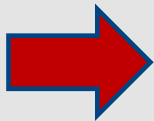
- Day to day activities align with BSPF Goals:

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DEPARTMENT 4-YEAR WORKPLANS – STRATEGIC IMPROVEMENTS

AM Program performs outreach with all the BART departments to document their activities, align activities with the BSPF and understand the risks to accomplishing their objectives (D4YWP)

- Special projects (“Strategic Improvements or SI’s”) align with a cross functional BSPF Strategy owned by an Assistant General Manager
- AM engages departments at the end of the fiscal year to record and communicate SI status



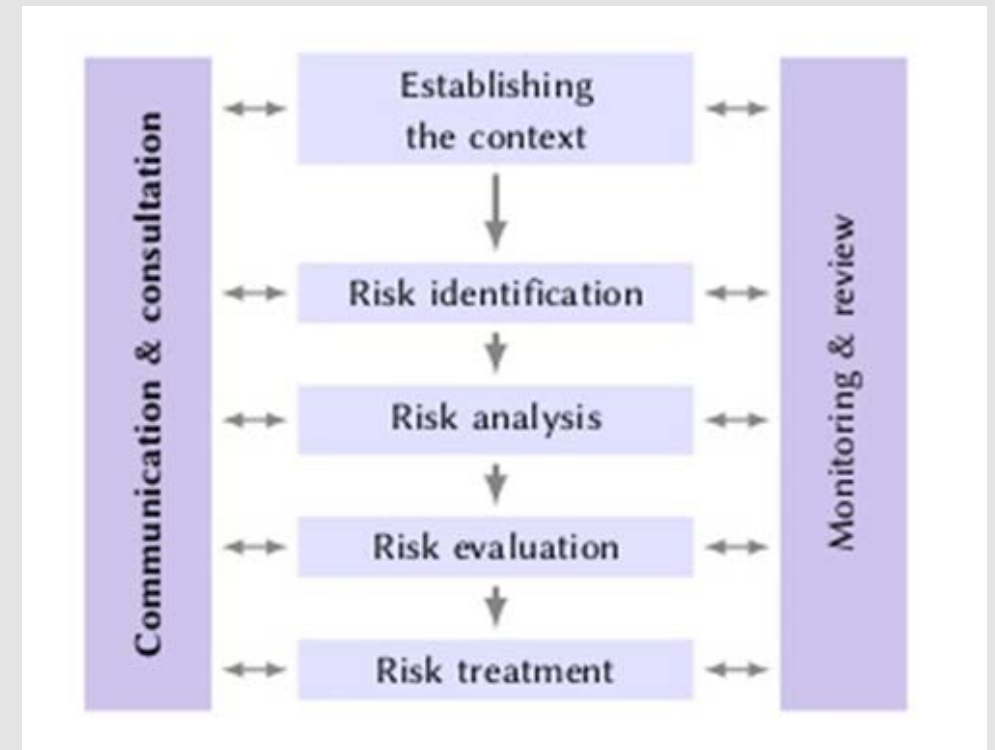
Departmental Four Year Work Plan: COMMUNICATIONS						
Strategic Improvements						
ENGAGE COMMUNITY	Strategic Improvement	FY17 Goal	FY18 Goal	FY19 Goal	FY20 Goal	Improves
Communications						
External Affairs: Communications (DW1047)	Increase Strategic Social Media Output by 10% in FY18 and 5% in FY19 & FY20		Increase Strategic Social Media Output by 10% Annually	Increase Strategic Social Media Output by 5% Annually	Increase Strategic Social Media Output by 5% Annually	Experience 
External Affairs: Communications (DW916)	Plan & Implement a Redesign of BART.gov to Streamline Navigation & Improve Ease of Use	Plan the BART.gov Redesign to Improve Functionality & Content (With OCIO)	Implement the BART.gov Redesign to Improve Functionality & Content (With OCIO)			Experience 

D4YWPS PROVIDE A PLATFORM TO IDENTIFY / RECORD RISKS

Inquire regarding what keeps them from meeting their objectives. Stakeholders typically requests solutions, the Strategic Risk Register needs a problem statement & a description of what we're "buying"

Help stakeholders describe the risk event with an if / then statement & identify multiple solutions into a Resource Request:

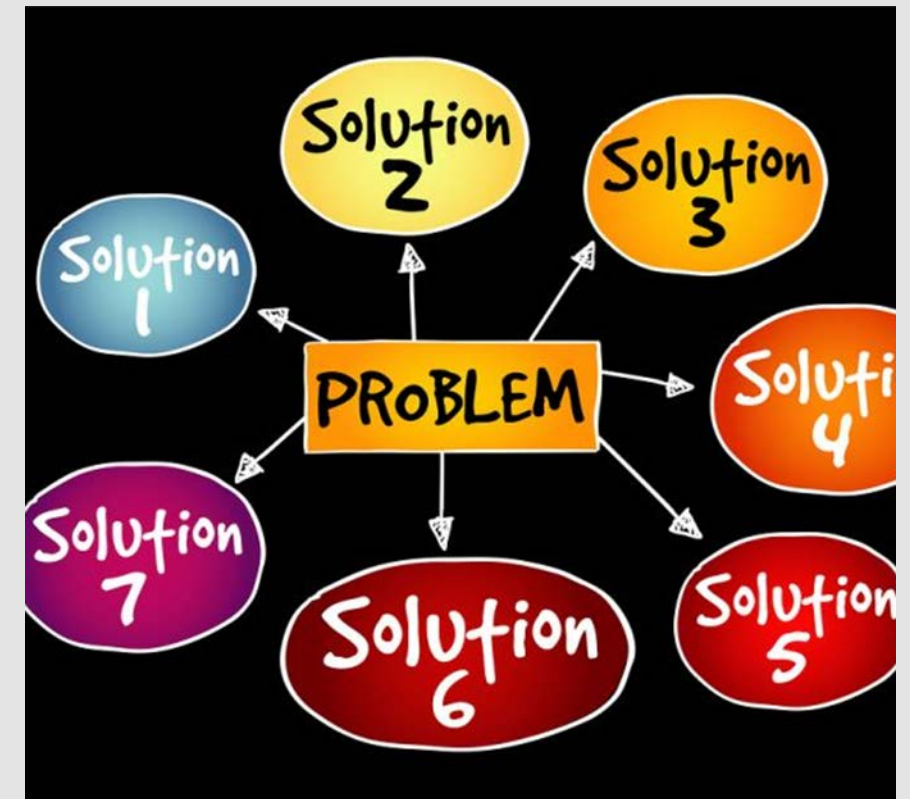
- ✓ *If people fare evade then revenue is lost; customers disgruntled; "bad actors" can compromise passenger or property security*
Impacts BSPF Strategy Connect & Create Great Places: Will save X \$\$
- ✓ *If spare parts are not available from inventory then maintenance will be delayed causing reduced availability; passenger inconvenience; increased costs*
Impacts BSPF Strategy Fix Maintain & Modernize: Will improve availability by X%



CREATING THE STRATEGIC RISK REGISTER

The Strategic Risk Register records the department's Resource Requests and the list is provided to executives for review. Executives have the opportunity to:

- View all departmental resource requests & advocate / identify synergies
- Perform outreach / ask questions about identified risks – especially when it impacts their resources
- Escalate Resource Requests that mitigate the greatest risks
- Notify AM Program of Resource Requests that should be invited to prepare a Business Case (White Paper)
 - Due to the time required to prepare a business case invites are kept to a minimum



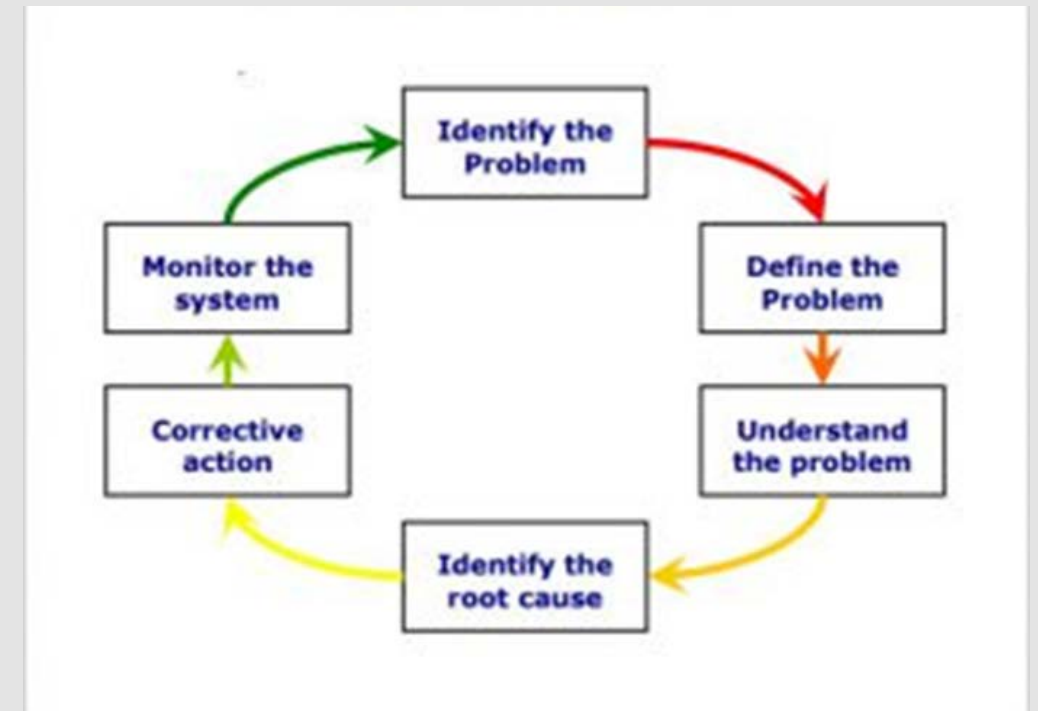
INFORMING INVESTMENT DECISION MAKING

The prioritized Strategic Risk Register and Business Cases are used by the General Manager during the budget process

- Gives a ground up perspective on risks
- AM advocates for risks that may be overlooked
- Risks that receive treatment are followed up to track whether the desired results were achieved
- Untreated risks are tracked and revisited on an annual basis
- The Strategic Risk Register can be used by other departments such as Grants to find \$\$\$

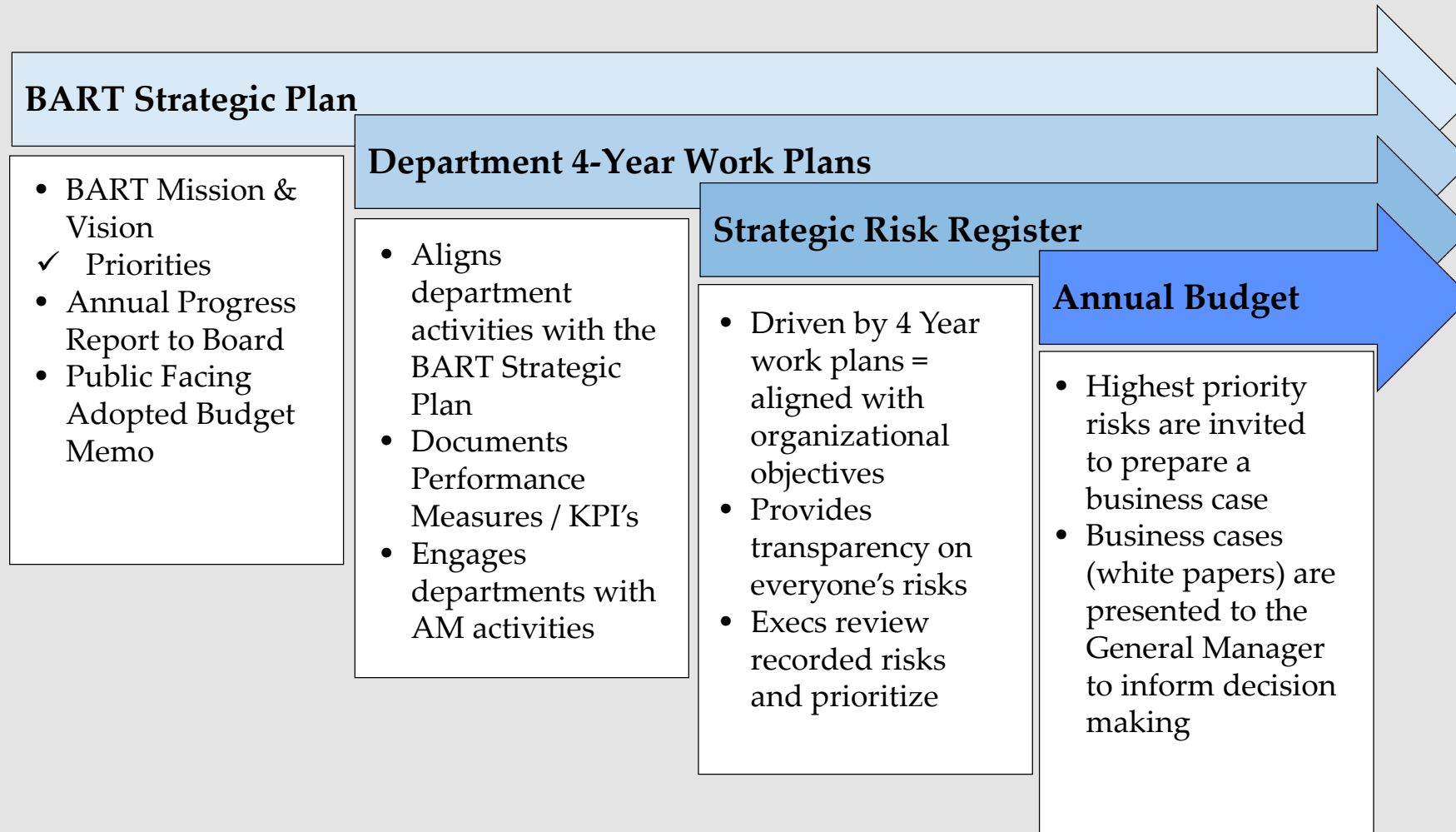
? – Is the Strategic Risk Register followed exactly?

- Of course not, but we've done our job to inform decision makers of the highest risks



DOCUMENTING A STRATEGIC RISK REGISTER - OVERVIEW

Asset Management coordinates with the Budget Department to create the Strategic Risk Register and integrate identified risks into the budget process:



QUESTIONS?

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THANK YOU!