

# **SMS - Enterprise Risk Management**

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*RTD - CSSO, AGM*

*Denver, CO*



2018 Rail Conference

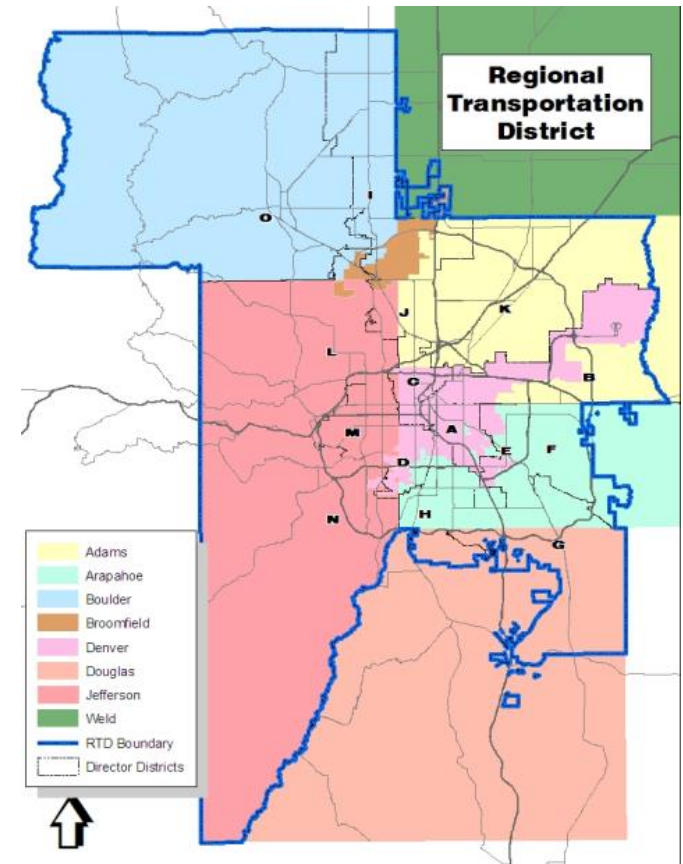
# Key Presentation Take-Aways

- Who is RTD?
- What is Risk?
- Traditional Risk Management vs Enterprise Risk Management Framework
- Safety Reporting is Critical
- Everyone is a Risk Manager
- Communicating the SMS Safety Culture



# RTD Overview

- Created in 1969
- Eight-county service area
- 2,410 square mile service area
- 3.03 million service area population
- 15 elected Board members
- 1 percent sales tax



# RTD Overview

- 172 light rail vehicles
- 176 routes
- 76 park-n-rides
- 10,053 bus stops
- 2,863 employees
- 59 miles of light rail
- 54 light rail stations
- 9 Commuter Rail Stations
- 101 million annual boardings (400,000 per weekday)
- 6 operating facilities, 2 administrative facilities
- **\$675** million operation's budget

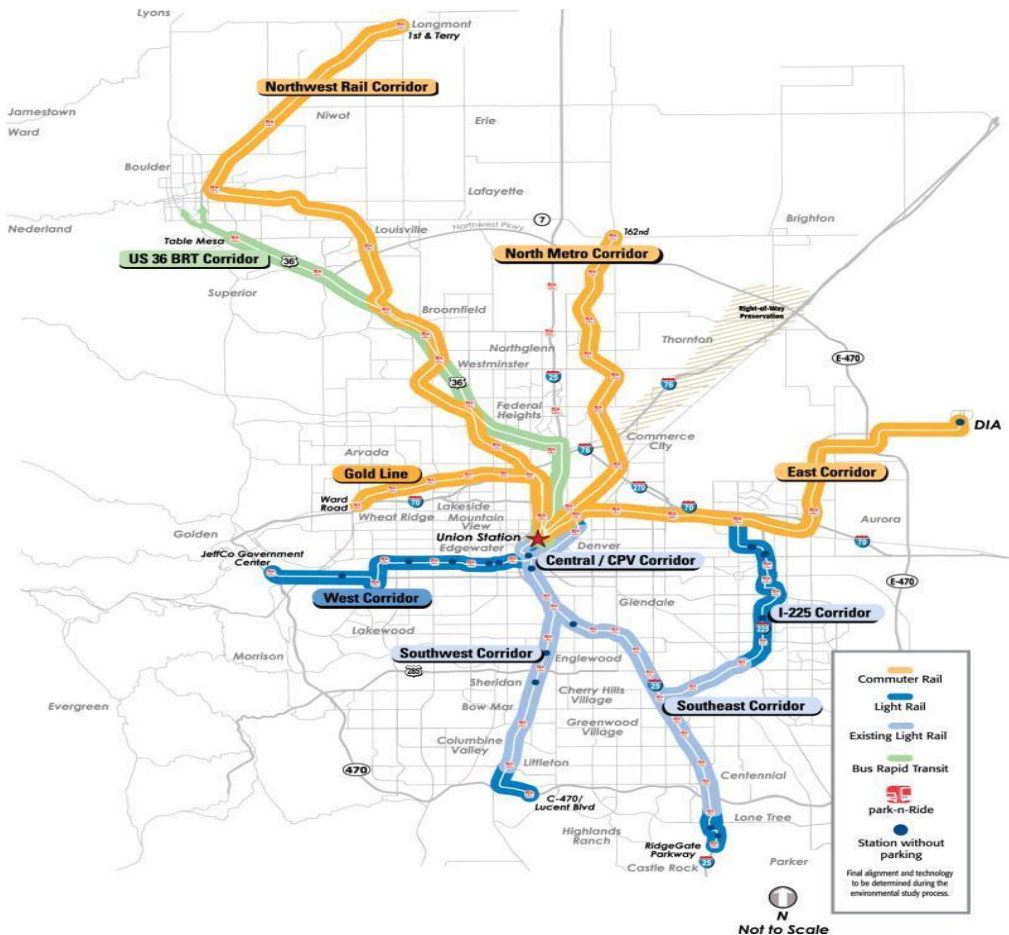


# RTD Overview

- **RTD offers a variety of transit modes**
  - **Bus**
  - **Light Rail**
  - **access-a-Ride**
  - **bike-n-Ride**
  - **call-n-Ride**
  - **Free 16<sup>th</sup> Street Mall Shuttle (29,649/day)**
  - **Transfer stations**
  - **Commuter Rail**



# RTD Rail System Overview



- **122 miles of new light rail and commuter rail**
- **18 miles of Bus Rapid Transit (BRT) service**
- **Eagle P3 project (Public Private Partnership)**
- **New Denver Union Station**
- **Civic Center Station**

# Risk

- Probability and magnitude of a loss, disaster, or other undesirable event. - Hubbard
- Exposure to the chance of injury or loss; hazard or dangerous chance. – Dictionary. Com
- The hazard or chance of loss; Degree of probability of such loss – Insurance Institute
- The possibility that something unpleasant or unwelcome will happen – Oxford
- **All these say - Something bad could happen**





# Traditional Risk vs Enterprise Risk

**Enterprise risk management** (ERM) is an extension of traditional **risk management**, and differs in the following ways.

Strategic application.

**Risks** considered.

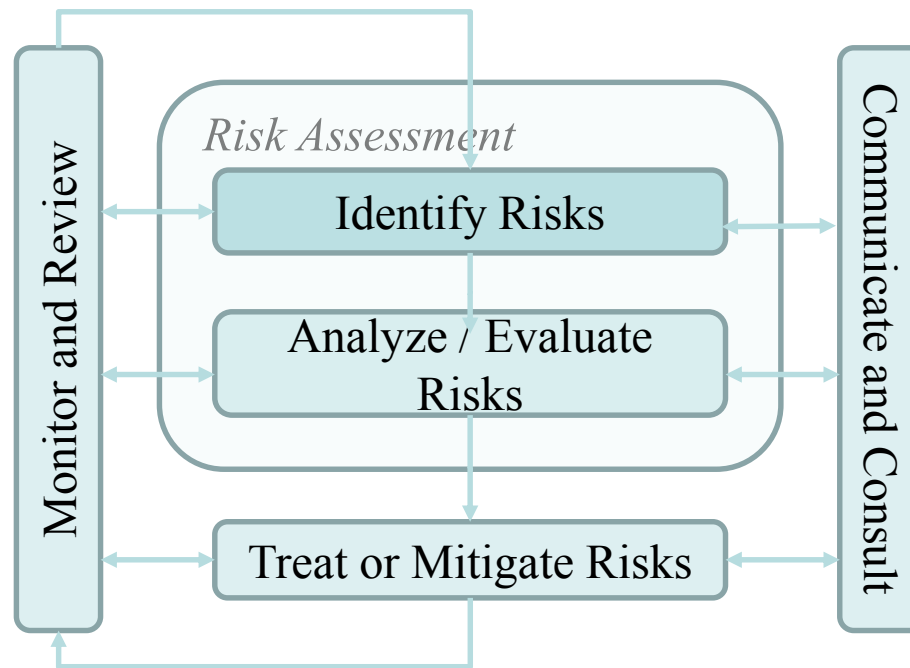
ERM involves **managing** all of the **risks** affecting an organization's ability to meet its goals, regardless of the types of **risks** being considered.





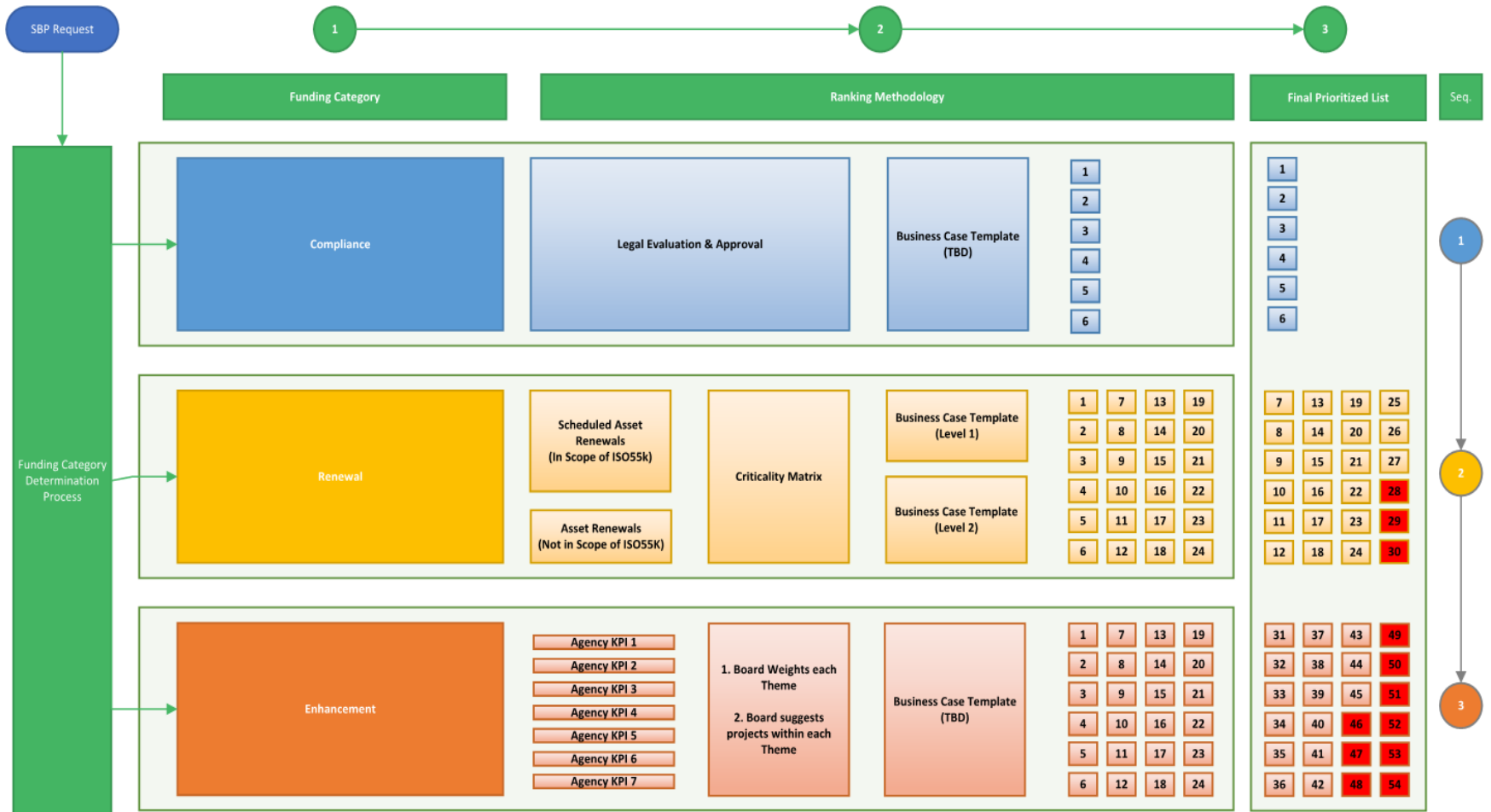
# Simplified Risk Management Process

- Service Risks
- Safety Risks
- Security Risks
- Cyber Risks
- Contractual Risks
- Financial Risks
- Funding Risks
- Human resources Risks
- Operation Risks
- Legal Risks
- Network Risk
- Asset Risk
- Competency Risk



- Reputational Risks
- Capacity Risks
- Credit Risk
- Insurance Risks
- Pension risk
- Operation Risks
- Capacity Risks
- Information Risk
- Weather Risks
- Competition Risks
- Unknown

# Enterprise Risk Management Budgeting Process



# Enterprise Risk Management Legal

## System Safety and Security Management

RTD may require a Safety and Security Certification for any construction projects on RTD's property. RTD will provide guidance, in the project scope of work, on expected deliverables, to satisfy the contract. Potential deliverables may include Safety and Security Certification, Preliminary Hazard Analysis (PHA), and Threat and Vulnerability Assessment (TVA). Contractor shall at all times comply with, and ensure that each of the Subcontractors at all times complies with, all Health, Safety and Security Management Requirements.

Neither this document nor the safety services provided by RTD or RTD's designee are intended to mitigate the obligation, of Contractor and Subcontractors, to provide a safe and healthful work environment for their employees; and to secure the Project Site to ensure the safety of the RTD transit system. No accommodations will be made to the Contractor and Subcontractors due to ignorance regarding safety requirements.

This document shall become part of the Contract Documents. The requirements contained herein are binding and failure to comply will be deemed non-compliance with or default of the Contract. RTD may withhold payments to Contractor withheld until RTD determines that Contractor or Subcontractor is no longer in default. Failure to comply may result in removal from the Project.

The RTD reserves the right to make any changes and modifications to this document via bulletin form or any other written communication.



# **SMS - Risk Management**

**RTD – Safety Reporting**



# **Questions we need to ask that SMS helps answer**

- What are our most serious safety concerns?
- How do we know this?
- What are we doing about it?
- Is what we are doing working?
- How do we know what we are doing is working?
- (Find, Fix, Follow-up)



# Effective Safety Reporting

- **TRUST**
- Ease of reporting
  - Simple requisites
- Timely, accessible, and informative feedback
  - Feedback is motivational tool
- Protection
  - Information only used for the purposes it was collected
- Vehicle for change
  - Issues reported are solved; validates employee reporting

# How Can I Report Safety Concerns

- HUB – Click on the Blue Safety Person Icon  
Fill out the Safety Concern Form
- [Safety@rtd-Denver.com](mailto:Safety@rtd-Denver.com)
- Safety Hotline – 303-299-2258
- Safety Committees
- Contact Your Supervisor
- Contact anyone in the Safety Department





## Safety Hazard and Close Call Reporting

### Hazard Identification

Safety Hotline 303.299.2258

All-Hazards Line 303.299.2500

Type \*

☐

Hazard

☐

Close Call

☐

Safety Concern  
(other)

☐

Security  
Concern

Remain  
Anonymous

☐

No

☐

Yes

Location of  
Hazard or Close  
Call or Concern

[Use current location or Specify coordinates](#)

Location Type \*

Description of  
Hazard or Close  
Call or Concern \*

Photo(s)

[Upload](#)


Recommendation  
to Correct

Submit

Save as Draft

# Safety Reporting

# Safety Reporting



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your city

## Hazard Analysis, Risk Evaluation, and Risk Mitigation Plan

Hazard Analysis

Safety Risk Evaluation

Existing Measures

Safety Risk Mitigation Plan

### Impact Area

☐ Bus ☐ Light Rail ☐ Commuter Rail

Photo(s)

### Hazards

Identified Hazard	Hazard Classification	Possibility	Consequence
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>


[Add](#)

Previous

Next

Comments

# Safety Reporting



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**Hazard Analysis, Risk Evaluation, and Risk Mitigation Plan**

Hazard Analysis

Safety Risk Evaluation

Existing Measures

Safety Risk Mitigation Plan

Risk Severity and Probability Evaluation

Risk Description	Risk Severity	Risk Probability	Risk Assessment 1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Add

Previous

Next

Comments

## Hazard Analysis, Risk Evaluation, and Risk Mitigation Plan

[Hazard Analysis](#) [Safety Risk Evaluation](#) [Existing Measures](#) [Safety Risk Mitigation Plan](#)

## Corrective Action Plan (CAP)

Identified Hazard

Risk

Risk Assessment 1

[Add](#)

Safety Compliance Officer

Safety Compliance Officer Email

Corrective Action Narrative

Implementation of Corrective Action Date  

Follow Up Review Date  

## Key Performance Indicator(s)

Indicator

☐ Yes ☐ No

Supporting Documentation

☐ Yes

☐ No

[Add](#)

KPI Document(s)

## Training

Training Needed

☐ Yes ☐ No

[Add](#)

## Repairs/Maintenance

Repairs or Maintenance Needed	Description	Submitted Service Request	Service Request Ticket	Submitted Date
<input type="radio"/> Yes <input type="radio"/> No	<input type="text"/>	<input type="radio"/> Yes <input type="radio"/> No	<input type="text"/>	<input type="text"/> 

[Add](#)

[Submit Service Request](#) (showing we can link out to URLs for ease of use)

## Resource(s)

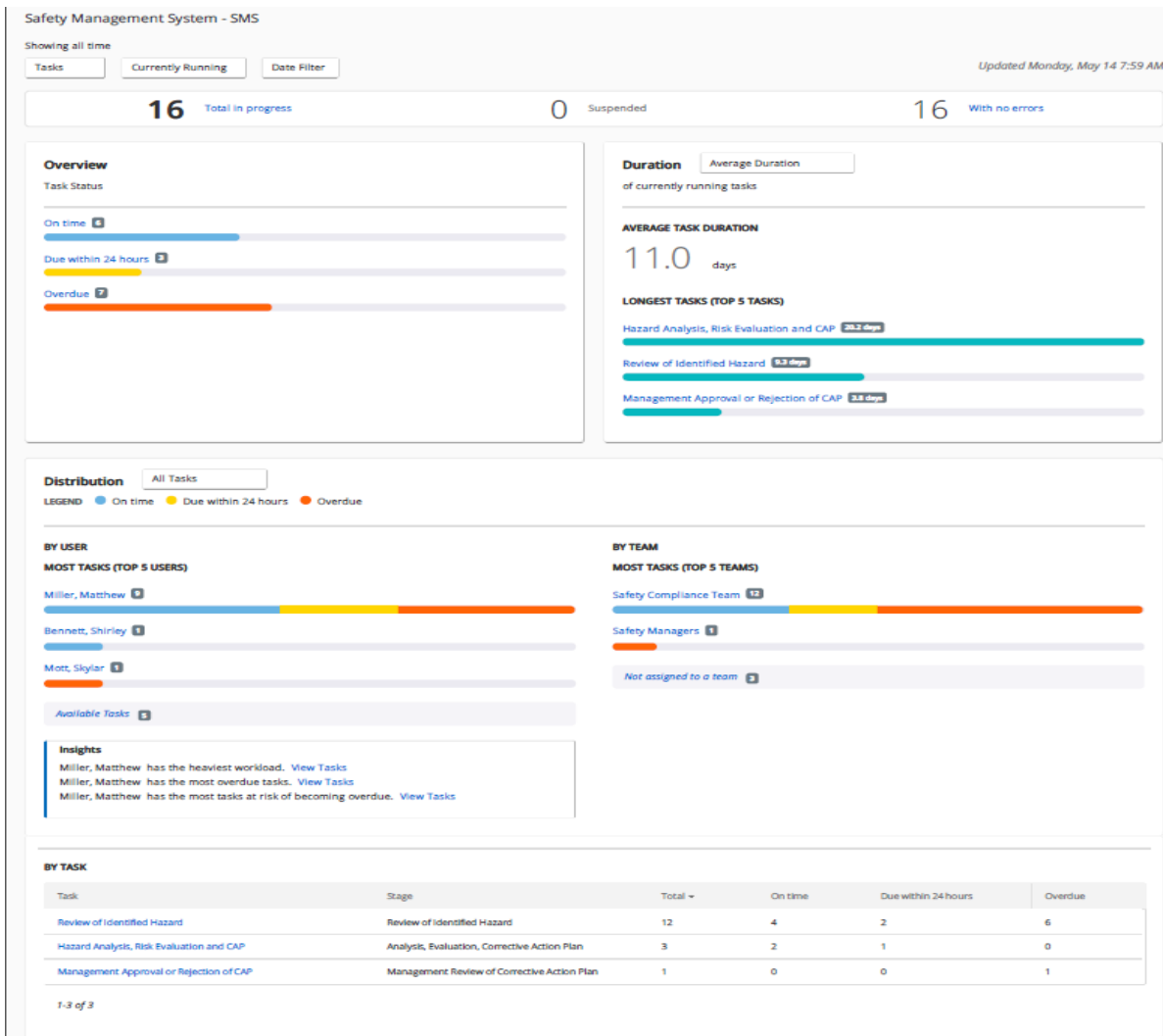
Role in Plan

[Add](#)[Previous](#)[Next](#)

Comments

# Safety Reporting

# Safety Reporting



# Safety Reporting

## Safety Management System - SMS

Showing all finished within last 30 days

Tasks

Finished

Date Filter

Updated Monday, May 14 7:59 AM

25 Total Finished

25 Completed

0 Interrupted

0 Terminated

### Overview

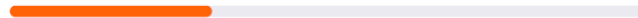
View by percentage

Task Status

On time 68%



Overdue 32%



#### OVERDUE TASKS (TOP 5 TASKS)

Task	Overdue %	Total performed
Management Approval or R...	80%	5
Risk Mitigation Review and ...	33%	6
Review of Identified Hazard	25%	8

### Duration

AVERAGE TASK DURATION 5.6 days

#### LONGEST TASKS (TOP 5 TASKS)

Task	Duration	Total performed
Review of Identified Hazard	9.7 days	8
Management Approval or R...	6.0 days	5
Risk Mitigation Review and ...	4.5 days	6
Hazard Analysis, Risk Evalua...	20.5 hours	6

# **SMS - Risk Management**

**RTD – Risk  
Assessment/Analysis**

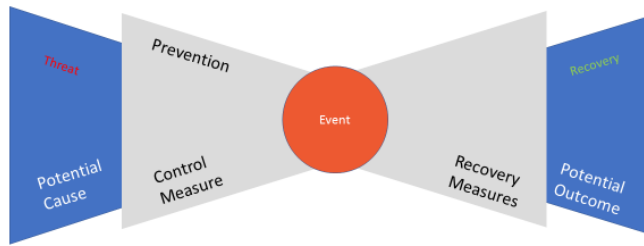




# Risk Assessment Methods

## Pick One

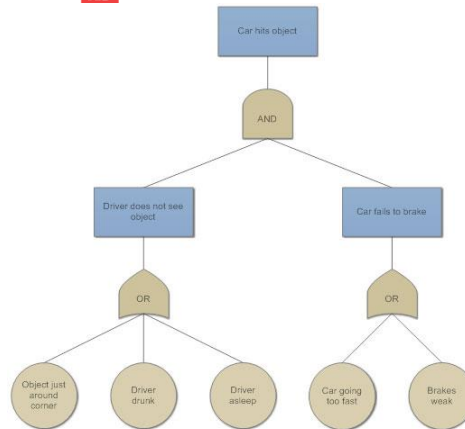
Bowtie



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- **Why?** - The battery is dead. (First why)
- **Why?** - The alternator is not functioning. (Second why)
- **Why?** - The alternator belt has broken. (Third why)
- **Why?** - The alternator belt was well beyond its useful service life and not replaced. (Fourth why)
- **Why?** - The vehicle was not maintained according to the recommended service schedule.

(Fifth why, a root cause)



# Risk Analysis

## RTD”ized”

RTD Risk Assessment Matrix		SEVERITY			
		1. Catastrophic	2. Critical	3. Marginal	4. Negligible
PROBABILITY	A. Frequent	High	High	Serious	Medium
	B. Probable	High	High	Serious	Medium
	C. Occasional	High	Serious	Medium	Low
	D. Remote	Serious	Medium	Medium	Low
	E. Improbable	Medium	Medium	Medium	Low
	F. Eliminated	Eliminated			
Resolution Requirements					
High		Unacceptable	correction required		
Serious		Undesirable	correction may be required, decision by management		
Medium		Acceptable w/ review	with review and documentation by management		
Low		Acceptable	without review		
Eliminated		Acceptable	no action needed		

SEVERITY					
Severity Level		Injury or Occupational Illness	Other than Injury		
			Property Damage (PD)	System disruption (SD)	Evacuation
1	Catastrophic	Death (does not include suicides, or death by natural causes)	> \$ 250,000;	> 24 hrs	Fire / Life Evacuation
2	Critical	Fracture, Severe Bleeding, Paralysis, Brain injury, Dismemberment	\$250,000 – \$100,000	12 - 24 hrs	
3	Marginal	Bruising, Abrasions, Bleeding, Sprains/Strains (Ambulance transport)	\$100,000 – \$25,000	4 – 12 hrs	
4	Negligible	Bruising, Abrasions, Sprains/Strains (No Ambulance transport)	< \$25,000;	< 4 hrs	

PROBABILITY					
Probability Level		Likelihood of event in life of an Specific item	MTBE*in Operating Hours (oh)	Occurrence within Fleet or Inventory	MTBE in days
A	Frequent	Will occur frequently	< 1,000 OH	Continuously Experienced	1 per month
B	Probable	Will occur several times	1,000 – 100,000 oh	Will occur frequently	1 per year
C	Occasional	Likely to occur sometimes	100,000 – 1,000,000 oh	Will occur several times	1 per 2 years
D	Remote	Unlikely but possible to occur	1,000,000 - 100,000,000	Unlikely, but can be expected to occur	1 per 5 years
E	Improbable	So unlikely, assumed occurrence may not be experienced.	> 100,000,000 oh	Unlikely to occur, but possible	1 per 10 years
F	Eliminate	Actions taken to remove the hazard / conflict	Never	Will not occur	N/A

# Risk Risk Analysis

## RTD”ized”

SEVERITY	CHARACTERISTICS			
	People	Equipment/Services	Financial	Reputational
<b>Catastrophic 1</b>	Several deaths and/or numerous severe injuries	Total loss of equipment or system interruption, requiring months to repair	Estimated loss from the incident in excess of \$1 million	Ongoing media coverage, irreparable reputational damage, government intervention (weeks – months)
<b>Critical 2</b>	Low number of deaths and/or severely injured	Significant loss of equipment or system interruption, requiring weeks to repair	Estimated loss from the incident in the range of \$100,000 to \$1 million	Prolonged media campaign, serious reputational damage, sustained government involvement (days – weeks)
<b>Moderate 3</b>	Minor injury and possible serious injury	Some loss of equipment or system interruption, requiring seven or less days to repair	Estimated loss in the range of \$50,000 to \$100,000	Adverse media coverage, reputational damage, government involvement
<b>Minor 4</b>	Possible minor injury	Some loss of equipment, no system interruption, less than 24 hours to repair	Estimated losses are relatively minor, in the range of \$1,000 to \$49,999	Local media coverage and some reputational damage
<b>Insignificant 5</b>	No injury	Minor damage to equipment no system interruption, no immediate repair necessary	Estimated loss from the incident is likely less than \$1,000	No adverse media coverage or reputational damage

# Experience is inevitable. Learning is not.

– Paul Schoemaker



# **SMS - Risk Management**

**RTD – Safety Promotion**






Safety fail

chris052597, ifunny.mobi

# Safety Communication Employees



## Our Safety Commitment

Our Safety Commitment embodies who we are as a company. It is a constant reminder of RTD's core value and belief, and it guides our every decision and action.

think safe. work safe. be safe.



### As a valued RTD employee I commit:

To live and embrace our core value of Safety. I will never compromise this value for any reason.

To put Safe Operations above all else. "Zero" is the only truly acceptable result when measuring accidents and injuries. Through my actions RTD will achieve "Zero".

To report any safety concern, near miss, and accident, no matter how minor. I recognize that every incident must be treated the same, because prevention comes from awareness.

To drive as if the cars around me have my family and loved ones in them.

To maintain vehicles, equipment, infrastructure and facilities as if my family and loved ones will be using them.

To fully appreciate the risk of my job. I will plan and anticipate.

To always wear my PPE and be fully aware of my surroundings.

To eliminate all distractions when performing my duties and particularly safety sensitive tasks.

To always take my time and "do it right."

To call a time out for a safety concern at any time, and support anyone that stops work activities for safety concerns. I understand that it is my responsibility to report that concern as soon as the situation permits.

To help my team continuously improve through clear and consistent communication.


To remember that Safety stems from my behavior.

To always do my part to build a strong Safety Culture at RTD.

By signing this commitment, I accept my responsibility to create and maintain a safe environment for my family, my RTD family, our customers and everyone around me. With my commitment, I will Think Safe. Work Safe. Be Safe.

Signature

Date



## Your Safety

Safety is a core value at RTD, and you're part of a culture of dedicated men and women who operate and maintain a safe system. To ensure a safe and healthy workplace for all employees and guests, we're providing guidelines which are intended to enhance safety awareness by focusing on complying with all safety procedures, identifying hazards, reporting unsafe conditions, and adopting safe practices.


### Best practices

- Be aware of departmental and facility emergency plans and procedures, before an emergency strikes.
- Always be cautious no matter the activity, and perform tasks in a manner that does not endanger you or those around you.
- Intervene or report when you see an unsafe act or condition.
- Call a timeout for safety concerns at any time.
- Keep all aisles, hallways, walkways, and exits clear and unblocked at all times.
- Use tools and equipment properly. Do not operate machinery or use equipment unless you are properly trained.
- Do not attempt to lift objects over 50 pounds alone. Ask someone for help.
- Do not text and walk or drive at the same time.
- Dress and shoes should be appropriate for the weather, tasks, and office or facility environment.
- Be alert for slip and trip hazards, and use caution when walking around blind corners.
- Lead by personal example.



### For emergencies

Call 911 or RTD Command Center  
303.299.2911 (call)  
303.434.9100 (text)



## Safety Reporting

A safe environment for employees, customers, and the community we serve is RTD's most important commitment. We are cultivating a "just" safety culture in which employees feel comfortable and are encouraged to bring safety concerns to the attention of management. It is important that all RTD employees understand they have a responsibility to report any and all safety concerns, so that they can be addressed and RTD can continue to improve.

### It's safe to report

All employees are advised that **RTD management will not penalize or discipline any employee who discloses a concern or occurrence** that could or does impact the safety of RTD employees, customers, or the general public. We've developed several ways for employees to report safety concerns that are designed to protect the identity of the employee, while providing the opportunity for two-way communication with safety professionals and those required to mitigate or eliminate the concern.


Report all safety concerns, hazards, and unsafe acts or conditions immediately.

**Your reporting will make a difference.**



### Safety reporting methods

- Safety email: [safety@rtd-denver.com](mailto:safety@rtd-denver.com)
- Safety hotline: 303.299.2258
- Safety on The Hub: click safety icon
- Safety reporting box at divisions
- Safety committee member



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## Safety Hazard and Close Call Reporting

### Hazard Identification

Safety Hotline 303.299.2258

All-Hazards Line 303.299.2500

Type\* ☐ Hazard ☐ Close Call ☐ Safety Concern (other) ☐ Security Concern

Remain Anonymous ☐ No ☐ Yes

Location of Hazard or Close Call or Concern [Use current location or Specify coordinates](#)

Location Type\*

Description of Hazard or Close Call or Concern\*

Photo(s) [Upload](#)

Recommendation to Correct

[Submit](#) [Save as Draft](#)





# Safety Communication

## Customers/Public

**RTD** Become a partner in safety

### At RTD, your safety is our core value.

Whether you're a bus or train passenger, pedestrian, cyclist, or motorist, we all need to work together to increase everyday safety awareness. We encourage people to pay attention to their surroundings, avoid distractions from the use of mobile devices, and make smart choices to ensure your safety.

### Safety starts with you.

**STOP, LOOK, and LISTEN** when you're around buses, trains, tracks, crossings, and construction areas.

### Following these tips can keep you safe.

#### Train safety

- Cross at designated crossings & follow traffic rules.
- Always look both ways before crossing rail tracks.
- Never walk, bike, or drive across rail tracks when you see a moving train or red traffic signal.
- Stand behind the yellow warning lines on rail platforms until the train stops and the doors open.
- Never walk or bike along train tracks.
- Never lean against train doors.
- Never climb between train cars.
- Never skateboard, skate, or ride a bike on the platform, stairs, or escalators.
- Stay away from the overhead train power lines.
- Trains are quiet, be on high alert.

**RTD** Become a partner in safety

### Bus safety

- Wait on the sidewalk away from the curb, not in or near the street.
- Buses have blind spots, don't follow too closely.
- When using bike racks, exit front door and remind driver, stay in view of the operator.
- Never cross in front of a bus or between buses after exiting.
- Remain seated while approaching your bus stop.
- Use handrails when boarding or exiting the bus.

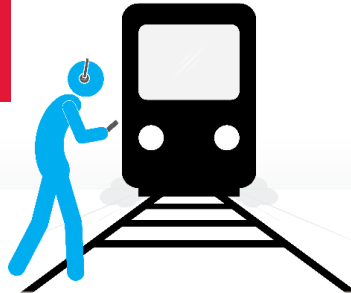
### General safety

- Never chase or hit a moving bus or train.
- Never try to outrun a bus or train.
- If you drop something when exiting, leave it on the ground until the bus or train drives away.
- Watch your step, especially at night or in wet weather.
- Take a seat if possible, or use handrails while vehicle is in motion.

be safe around buses and trains.



## distracted?

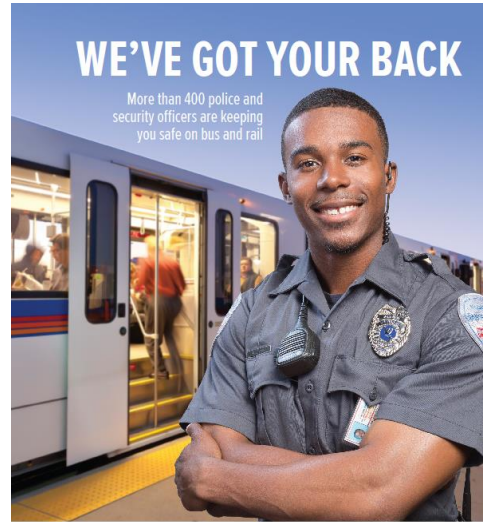


Don't let your mobile device end your life.

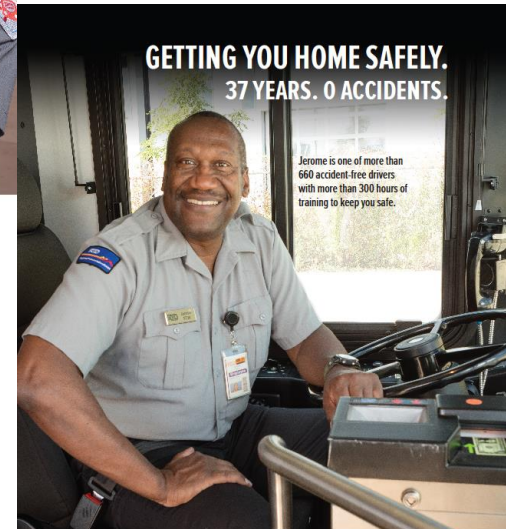


Be safe around buses and trains.

rtd-denver.com



To learn more about how RTD keeps you safe, visit [rtd-denver.com/ridewithus](http://rtd-denver.com/ridewithus).



To learn more about how RTD keeps you safe, visit [rtd-denver.com/ridewithus](http://rtd-denver.com/ridewithus).



safely connecting your city