Safety Management System

**The basis for FTA's new
Public Safety Transportation Program**

Pennsylvania Public Transportation Association

DAECHER CONSULTING GROUP

Traditional vs. System Safety

- ## Traditional Safety
  - Management reviews accident/injury/incident data and decides that rates are to high, then directs safety to implement tactics to reduce rates.
  - Reactive to accidents and incidents: Individual focus
  - Safety solely in the hands on the Safety Manager

- ## System Safety

  Executive Management Commitment

  - Proactive approach
  - Focus on management and organizational systems
  - Continuous management process that spreads throughout the organization

Critical Concerns

**Two Types of Accidents**

- Individual Accidents
  - Those resulting from the actions or inactions of people
- Organizational Accidents
  - Those resulting from actions or inactions of organizations

Are we addressing both types of accidents?
  - Think about how we currently address accidents

Critical Concerns

Imperfect Systems – The Practical Drift

Work as imagined

Start of Operations

Procedures

Practical Drift

Work as actually done
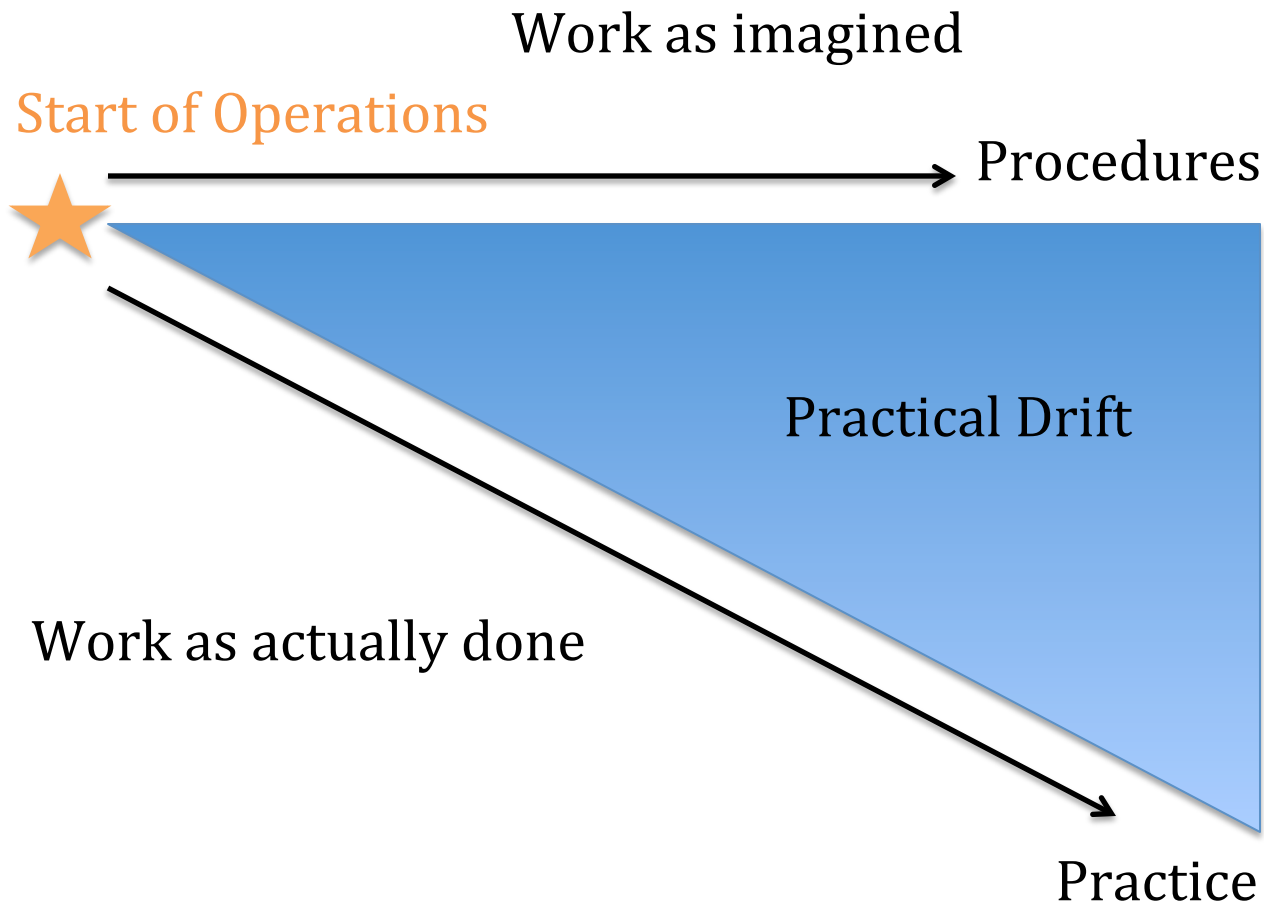
Practice

Why? What Happened?
- Service pressures
- Procedure not practical
- Short cuts
- Supervisor allows it
- Informal process
- Training inadequately conveyed

Public Transportation Safety Program

- MAP-21: FTA was directed to establish a Public Transportation Safety Program to strengthen the performance of the public transportation safety industry

- Adopt the Safety Management System as the basis for the FTA's new Public Transportation Safety Programs
  - NPRM: 49 CFR Part 670: Docket No. FTA-2015-0009
  - http://www.gpo.gov/fdsys/pkg/FR-2015-08-14/pdf/2015-20021.pdf

Safety Management System

So why the Safety Management System?

- SMS allows public transportation agencies to examine how organizational factors contribute to incidents, accidents and near misses.

- Organizational factors include how an agency:
  – Allocates its resources
  – Defines and established operational procedures
  – Supervises frontline personnel
  – Selects and trains staff
  – Resolves human performance issues

Safety Management System

SMS helps answer questions we should be asking

- 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?

SMS Framework Components

There are four SMS Framework Components

1. Safety Management Policy

2. Safety Risk Management

3. Safety Assurance

4. Safety Promotion

***4 Main Components
11 Sub-Components**

- SMS Framework
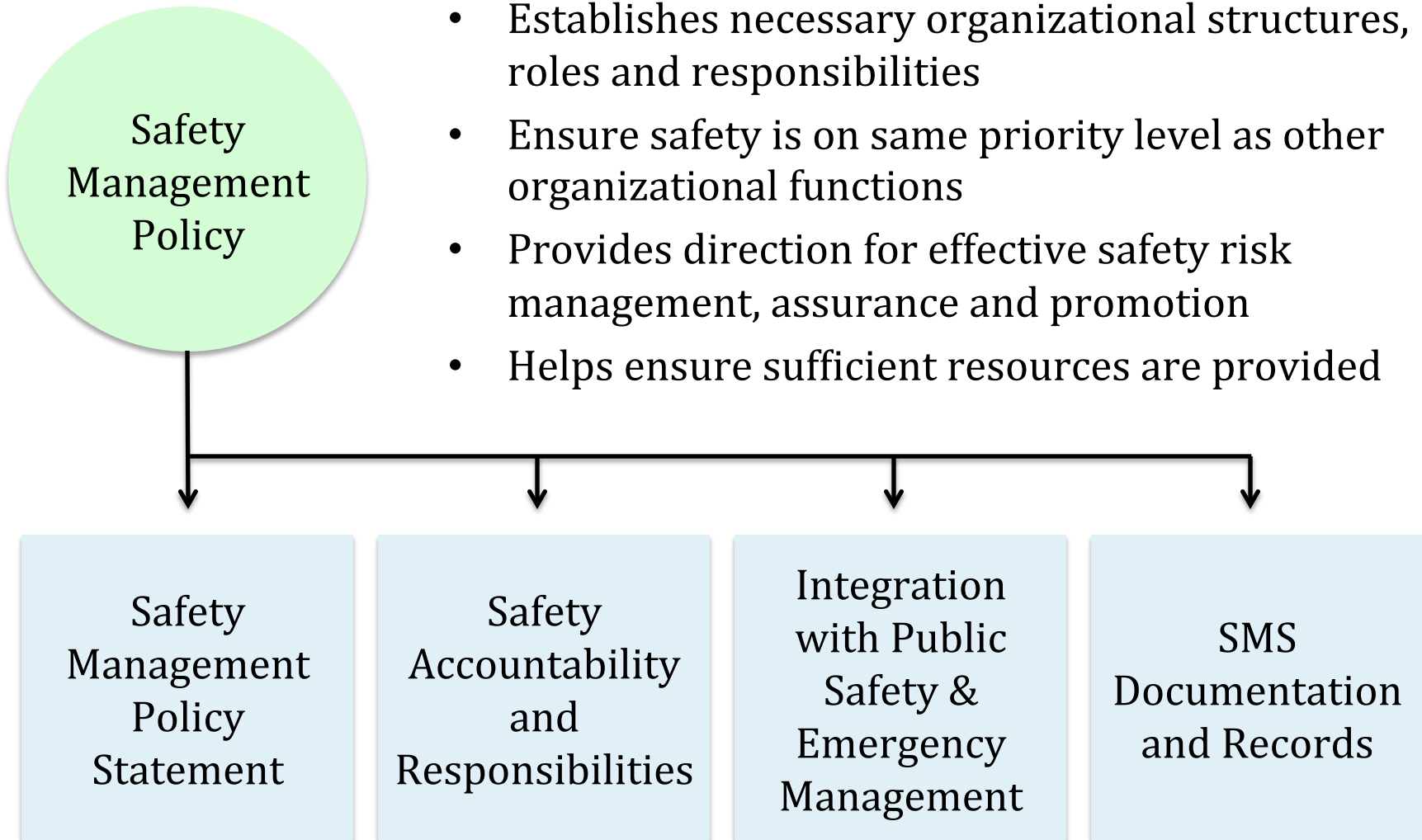 - https://safety.fta.dot.gov/cms/resources/view/fta-sms-framework

SMS Framework Components

- SMS provides flexibility for each transit agency to decide how to implement these processes and activities.

- SMS components interact with each other to provide an effective system of feedback.

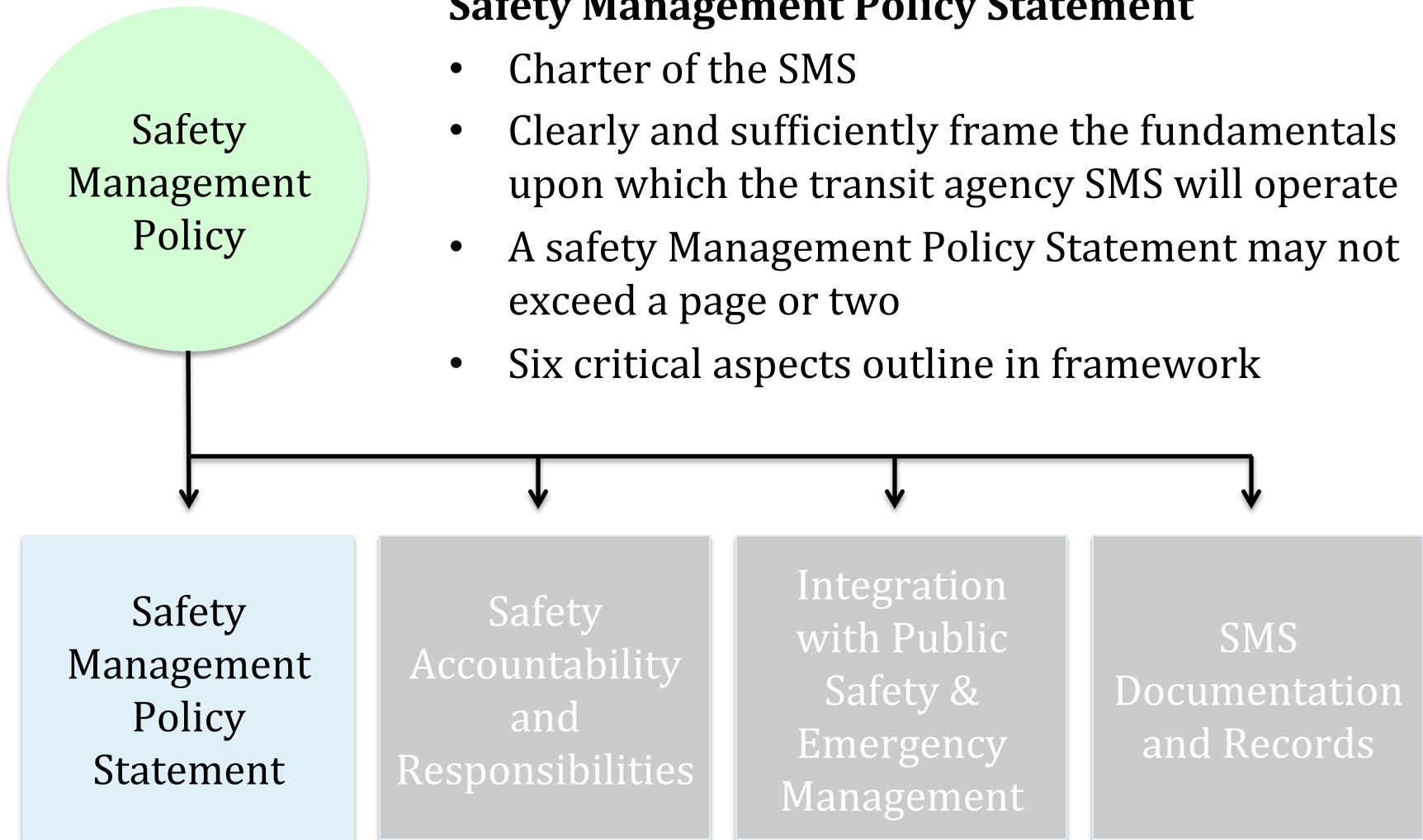**Communication. Communication. Communication.**

Safety Management Policy

Safety Risk Management

Safety Assurance

Safety Promotion

Safety Management Policy

Safety Management Policy

- Establishes necessary organizational structures, roles and responsibilities
- Ensure safety is on same priority level as other organizational functions
- Provides direction for effective safety risk management, assurance and promotion
- Helps ensure sufficient resources are provided

| Safety Management Policy Statement | Safety Accountability and Responsibilities | Integration with Public Safety & Emergency Management | SMS Documentation and Records |

Safety Management Policy
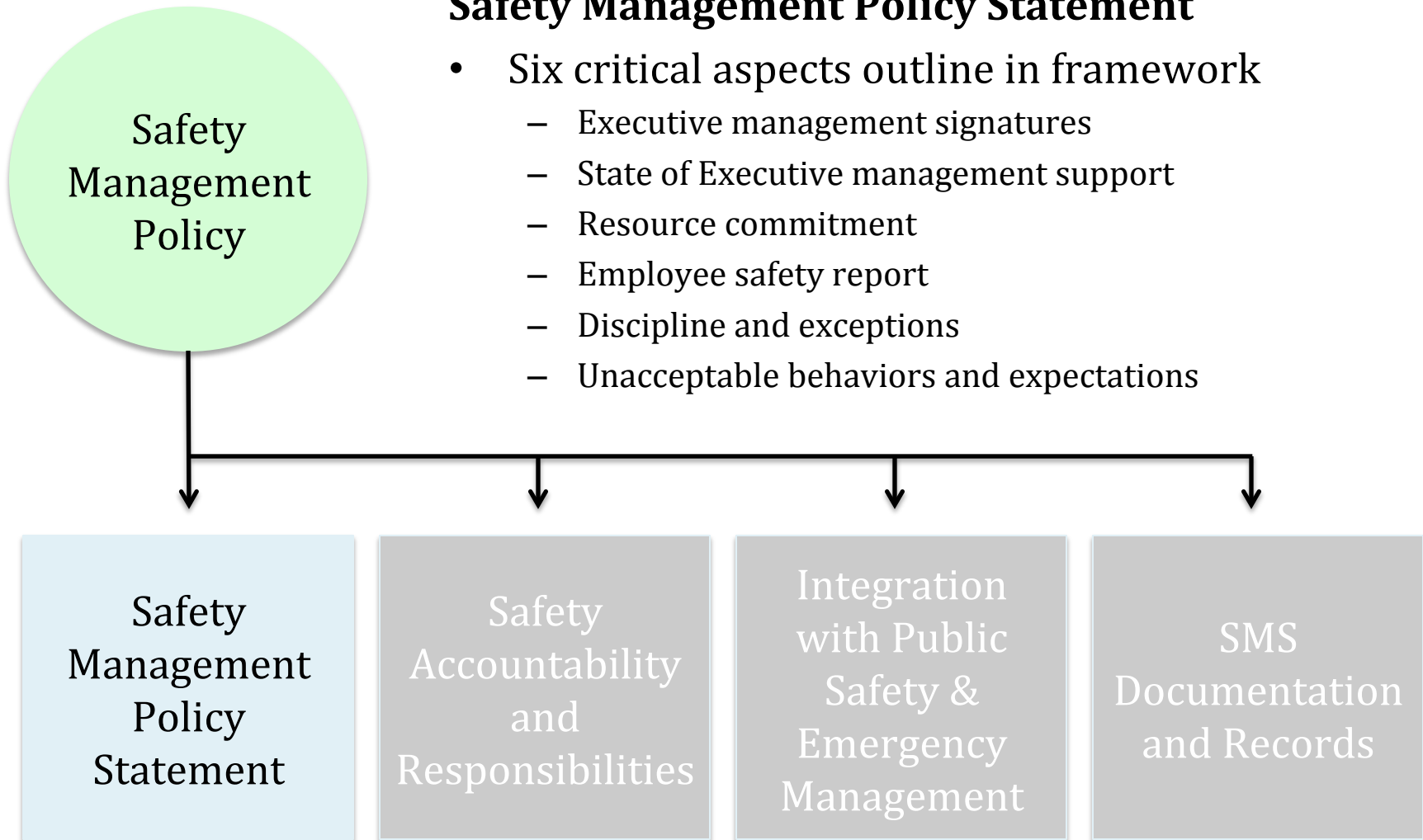
Safety Management Policy Statement

- Charter of the SMS
- Clearly and sufficiently frame the fundamentals upon which the transit agency SMS will operate
- A safety Management Policy Statement may not exceed a page or two
- Six critical aspects outline in framework

Safety Management Policy

Safety Management Policy Statement

Safety Accountability and Responsibilities

Integration with Public Safety & Emergency Management

SMS Documentation and Records

Safety Management Policy
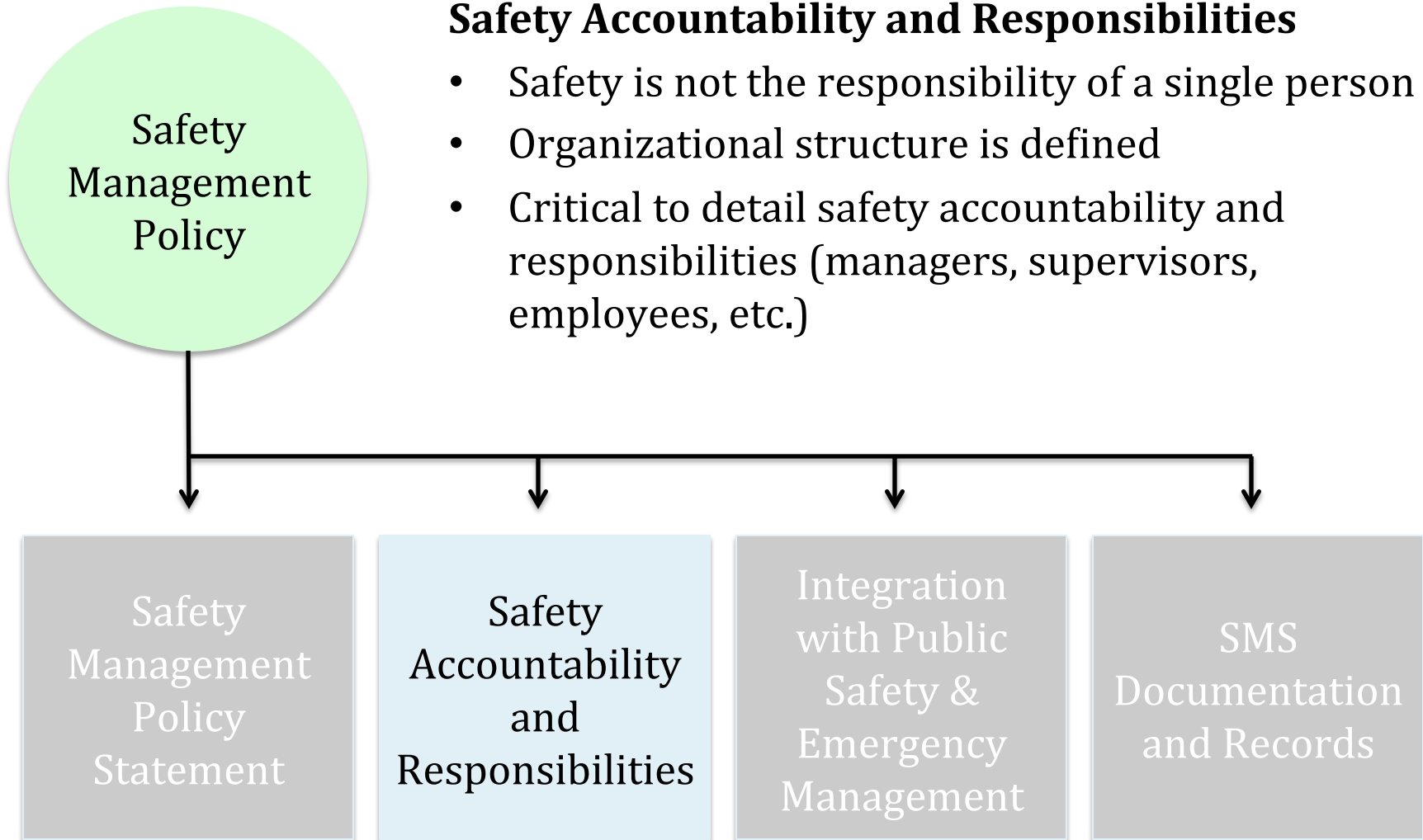
Safety Management Policy Statement

- Six critical aspects outline in framework
  - Executive management signatures
  - State of Executive management support
  - Resource commitment
  - Employee safety report
  - Discipline and exceptions
  - Unacceptable behaviors and expectations

Safety Management Policy

| Safety Management Policy Statement | Safety Accountability and Responsibilities | Integration with Public Safety & Emergency Management | SMS Documentation and Records |

Safety Management Policy

Safety Accountability and Responsibilities

- Safety is not the responsibility of a single person
- Organizational structure is defined
- Critical to detail safety accountability and responsibilities (managers, supervisors, employees, etc.)

Safety Management Policy

| Safety Management Policy Statement | Safety Accountability and Responsibilities | Integration with Public Safety & Emergency Management | SMS Documentation and Records |

Safety Management Policy

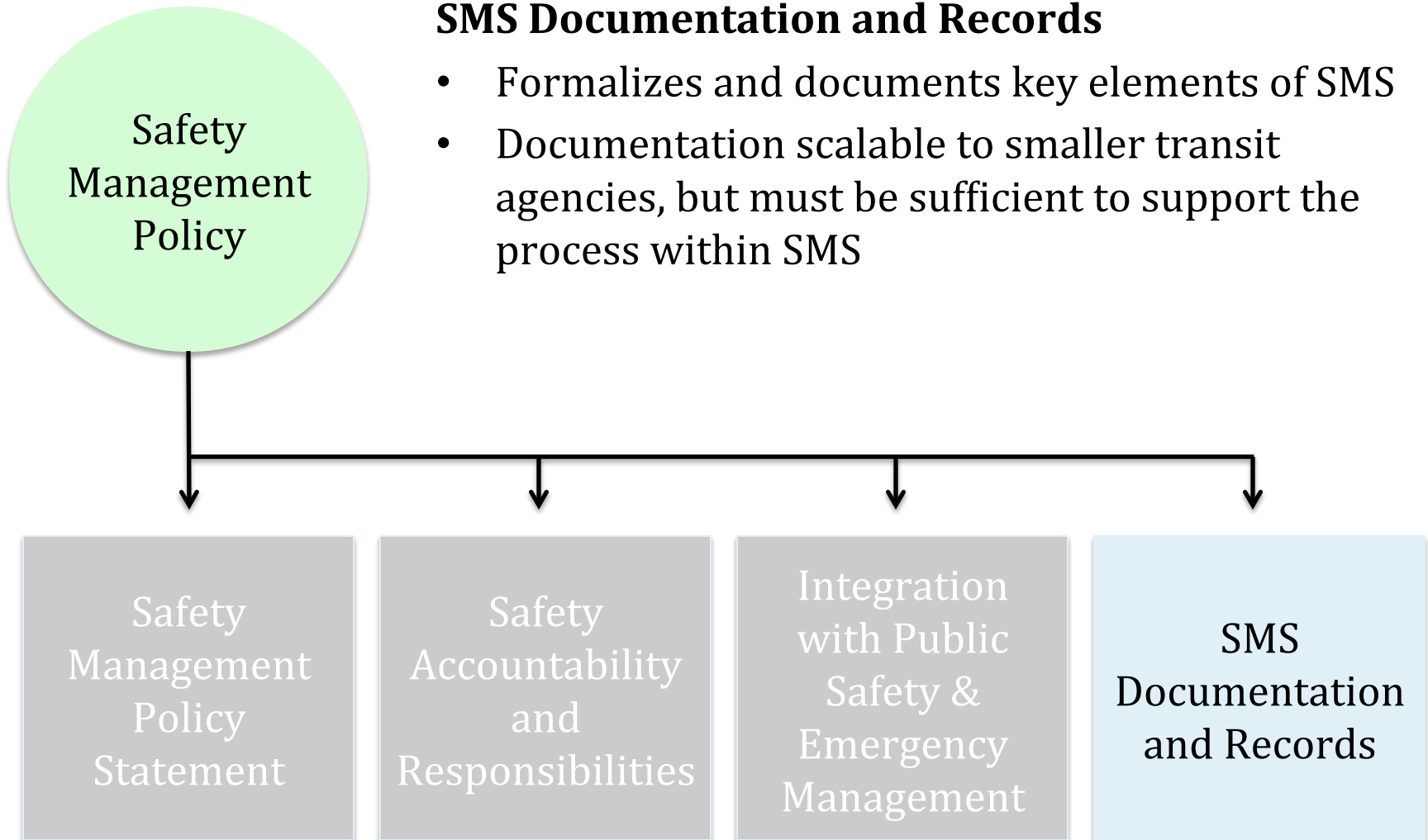**Integration with Public Safety & Emergency Management**

- Integration of programs that have input into, or output from, the SMS

- Identifies and describes the interaction with external organizations (law enforcement, etc.)

- Coordination in planning for response

Safety Management Policy

Safety Management Policy Statement

Safety Accountability and Responsibilities

Integration with Public Safety & Emergency Management

SMS Documentation and Records

Safety Management Policy
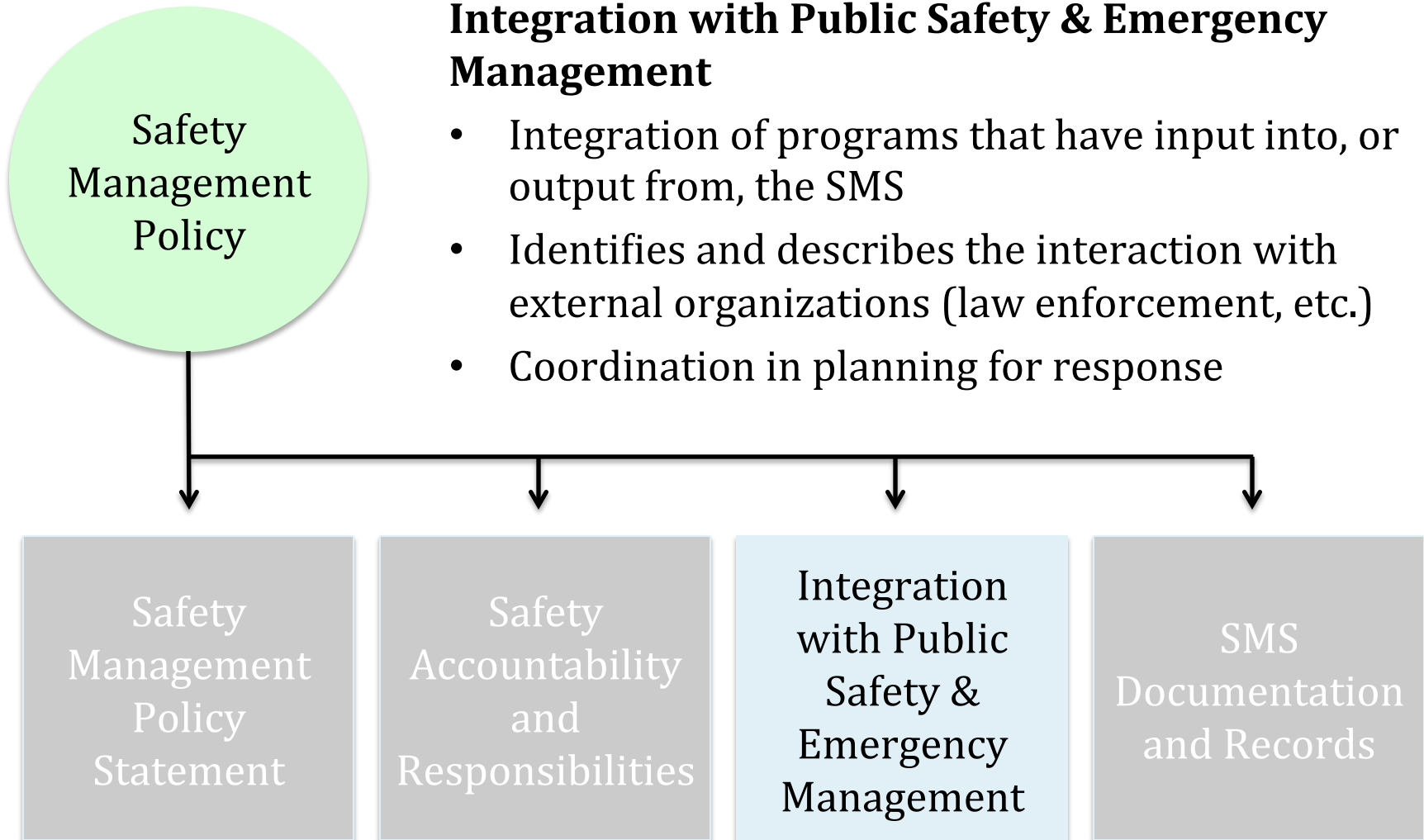
Safety Management Policy
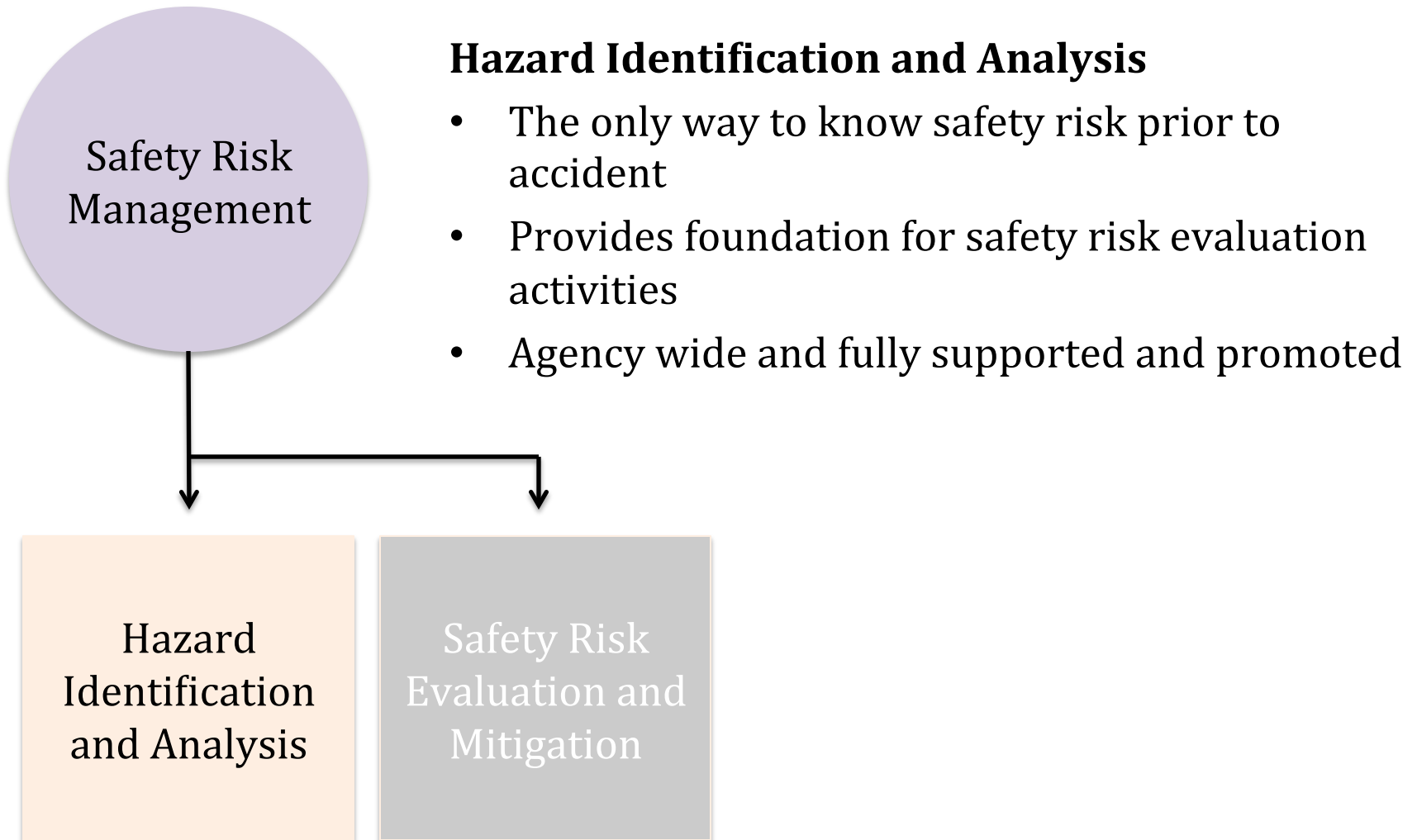
SMS Documentation and Records

- Formalizes and documents key elements of SMS
- Documentation scalable to smaller transit agencies, but must be sufficient to support the process within SMS
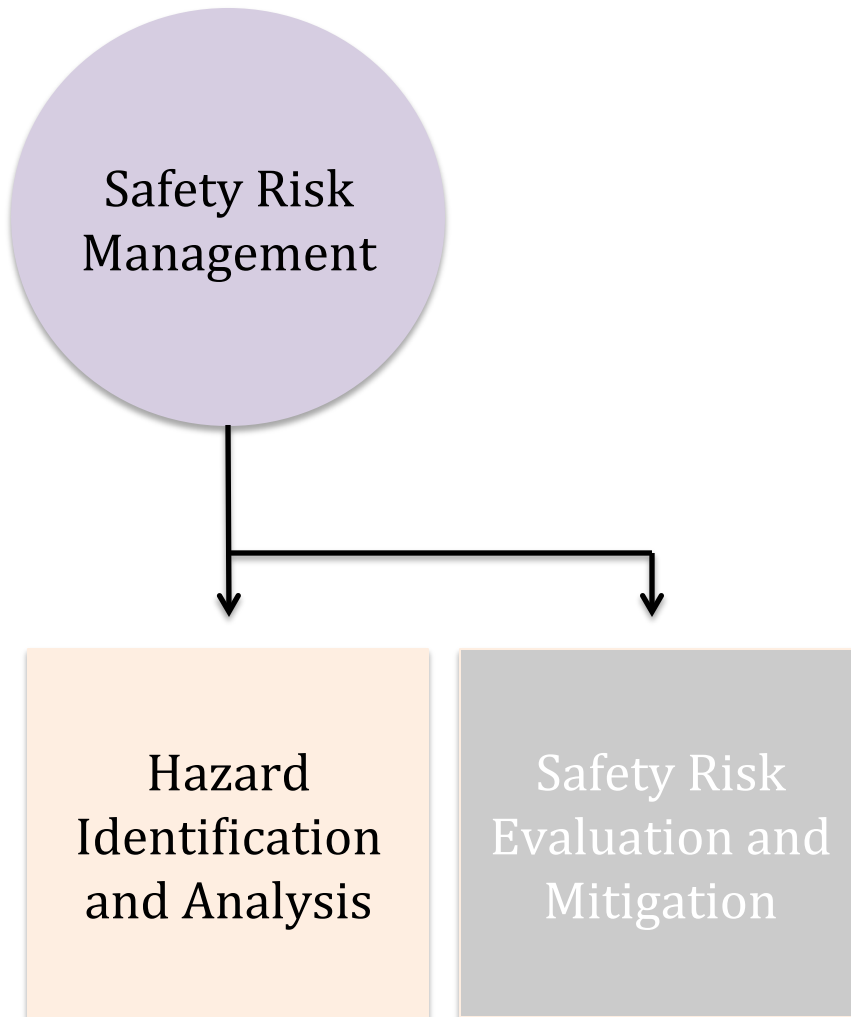
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Safety Risk Management

Safety Risk Management

- Vital to the success of the SMS
- Before an SMS can be effectively build or improved, safety hazards must be identified in your operation and mitigations need to be in place to manage the safety risk
- Safety risk management is a continuous process

Hazard Identification and Analysis

Safety Risk Evaluation and Mitigation

Safety Risk Management

Safety Risk Management

Hazard Identification and Analysis

- The only way to know safety risk prior to accident
- Provides foundation for safety risk evaluation activities
- Agency wide and fully supported and promoted

Hazard Identification and Analysis

Safety Risk Evaluation and Mitigation

Safety Risk Management

Safety Risk Management

Hazard Identification and Analysis

Safety Risk Evaluation and Mitigation

Hazard Identification Sources

- Employee reporting
- Observations of operations
- Inspections
- Internal safety investigations
- Accident reports
- Compliance programs
- Committee reviews
- Industrial data
- Government sources (FTA, NTSB, etc.)

Safety Risk Management

Safety Risk Management

Frequency and Severity

Hazard Identification and Analysis

Safety Risk Evaluation and Mitigation
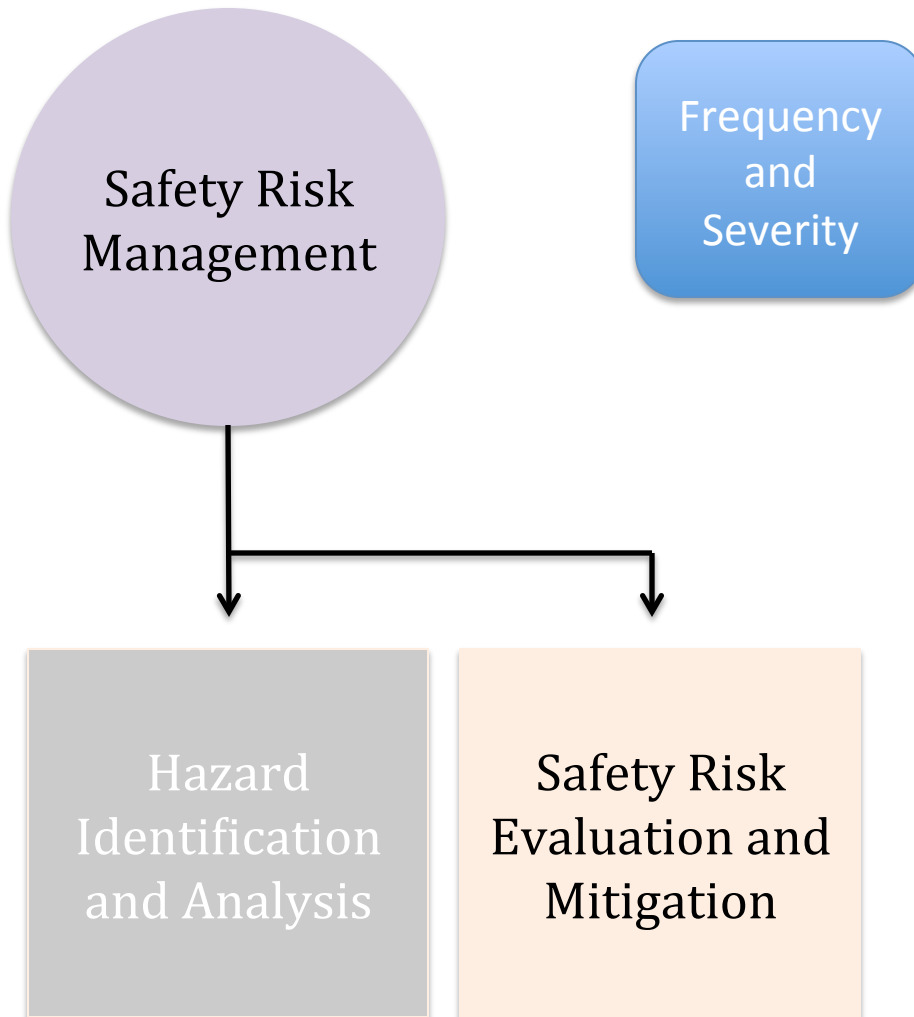
Safety Risk Evaluation

- Ways to measure potential consequences of identified hazards
- How existing defenses could mitigate hazards
- Determine acceptable levels of risk
- Data driven – safety resource allocation

Safety Risk Mitigation

- Enables us to manage risk
- Aim to reduce safety risks
- Provides course of action

Safety Assurance

Safety Assurance

- A continuous process, constantly interacting with Safety Management
- Safety performance data is collected and analyzed
- Monitoring and recording safety performance
- Verify if safety performance is in line with objectives and targets

Safety Performance Monitoring and Measurement

Management of Change

Continuous Improvement
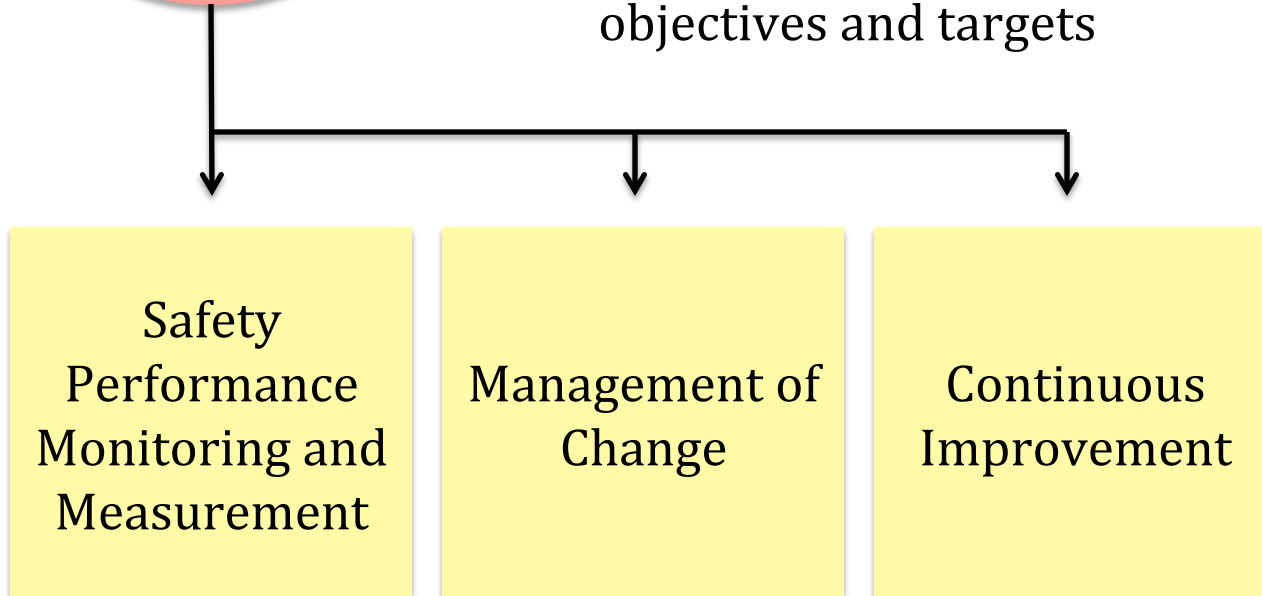
Safety Assurance
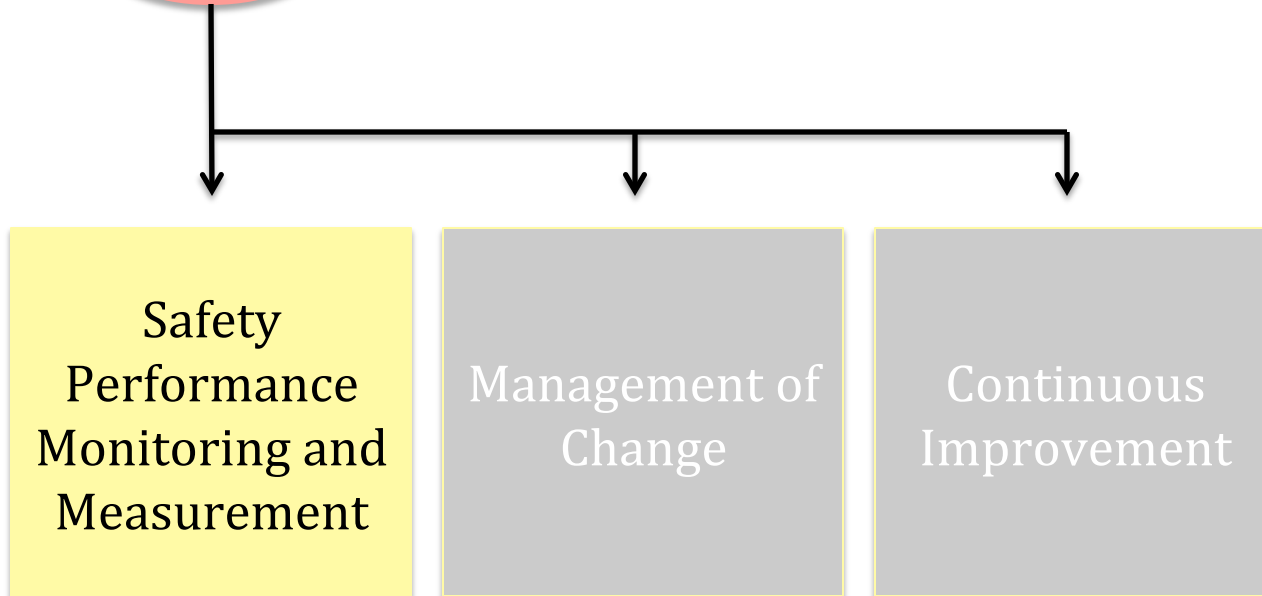
Safety Assurance

Safety Performance Monitoring & Measurement

- Safety management requires feedback on safety performance
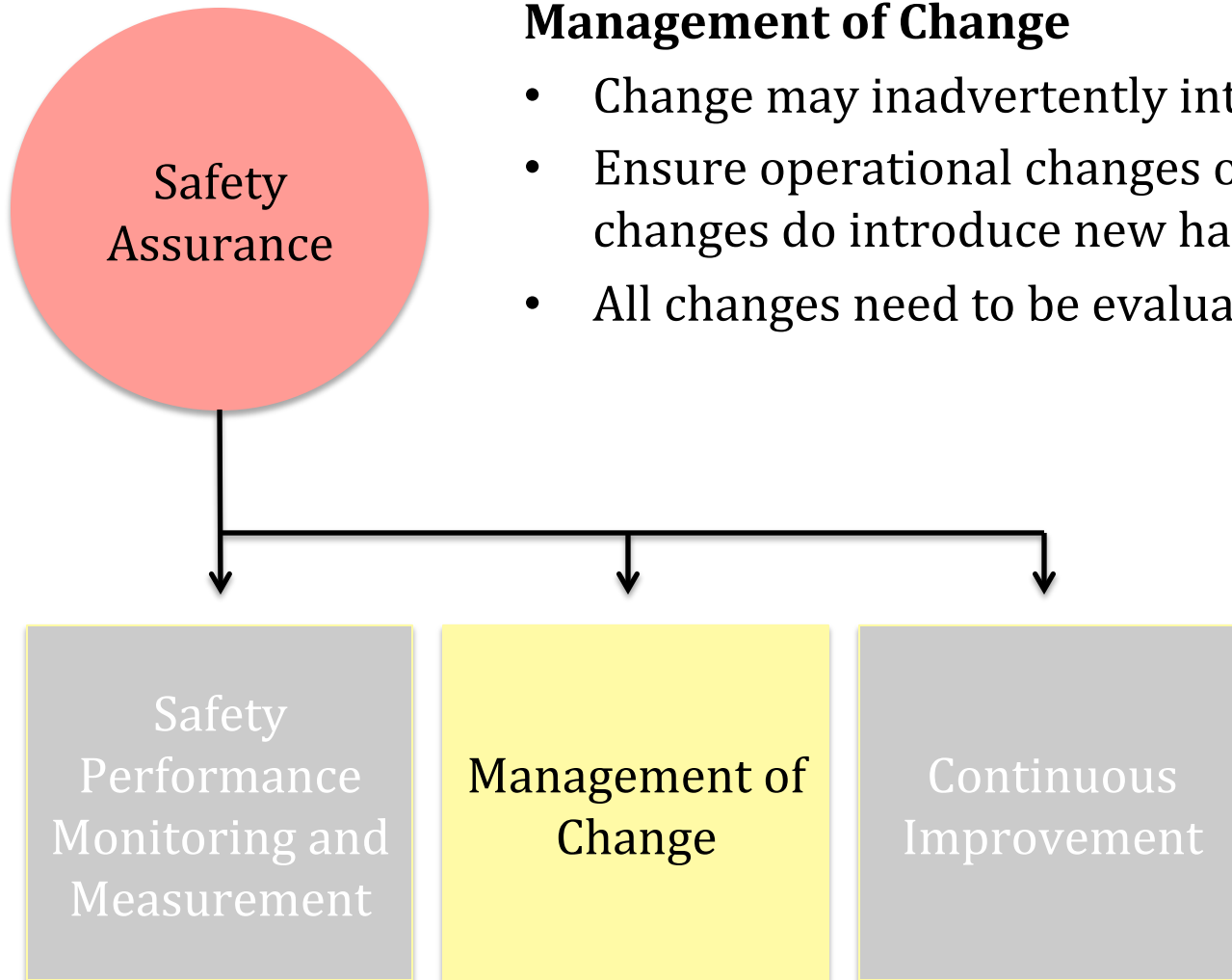- Safety performance monitoring and measurement provides feedback

Examples

- Onboard Evaluations
- Vehicle Shadowing
- Road Observations
- Inspections & surveys

Safety Performance Monitoring and Measurement

Management of Change

Continuous Improvement

Safety Assurance

Management of Change

- Change may inadvertently introduce hazards
- Ensure operational changes or proposed changes do introduce new hazards
- All changes need to be evaluated

Safety Assurance

Safety Performance Monitoring and Measurement

Management of Change

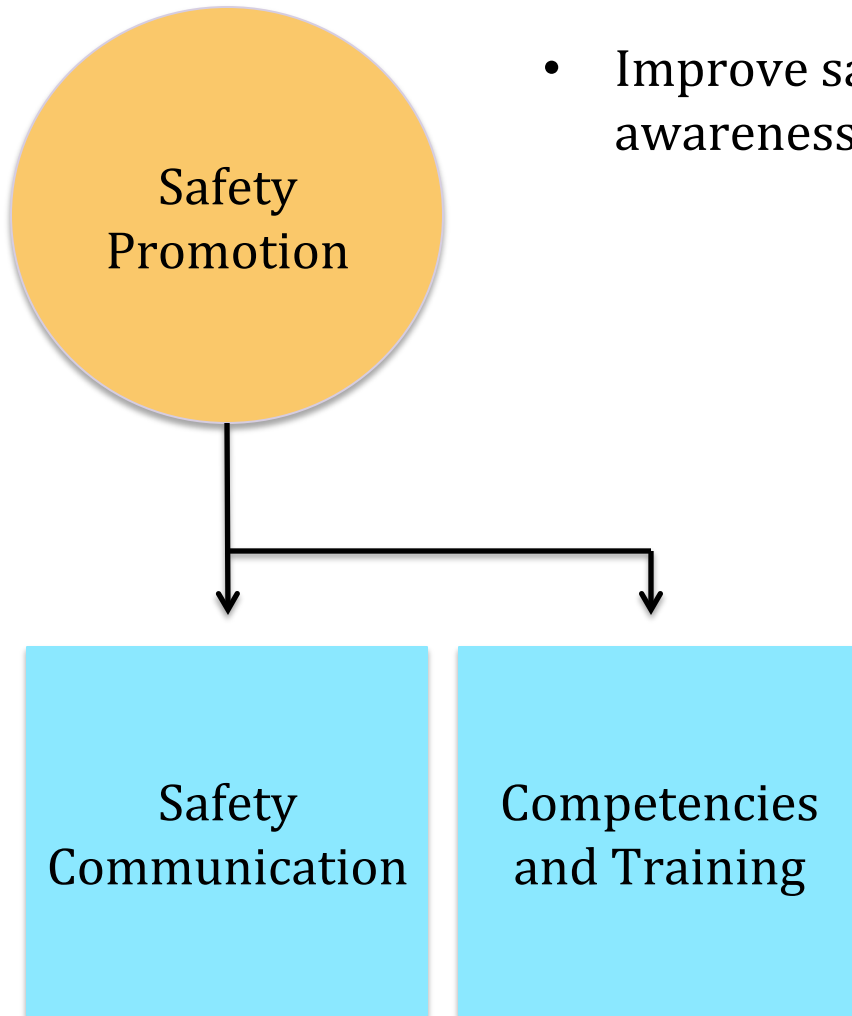Continuous Improvement

Safety Assurance

Continuous Improvement

- Performance measure are established to monitor various components of SMS
- Helps ensure safety risk mitigations are working and safety performance objectives are being met

Examples

- Reviewing programs and compliance
- Annual safety reviews

Safety Assurance

Safety Performance Monitoring and Measurement

Management of Change

Continuous Improvement

Safety Promotion

Safety Promotion

- Improve safety performance by increased awareness through communication and training

Safety Communication

Competencies and Training
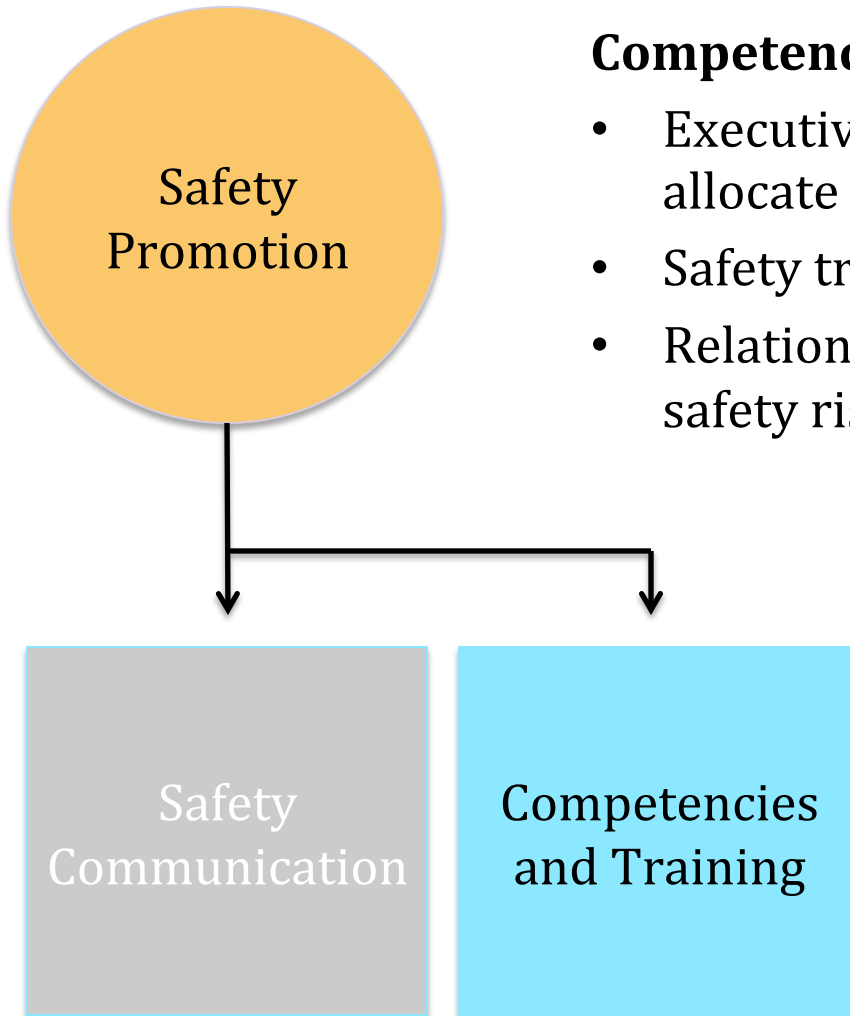
Safety Promotion

Safety Promotion

Safety Communication

- Continuous management commitment to communication

- One of management's most important responsibilities is to encourage and motivate others to want to communicate openly, authentically, and with concern for reprisal

Safety Communication

Competencies and Training

Safety Promotion

Competencies and Training

- Executive management responsibilities to allocate resources to training

- Safety training development process

- Relationship between safety training and safety risk management and safety assurance

Safety Promotion

Safety Communication

Competencies and Training

What are the challenges

Considerations

- What do we have in place already?
- Scaled down implementation plan for smaller transit agencies
- FTA will provide guidance and templates

Potential Challenges

- Staff, time and resources
- Enhanced documentation
- Performance monitoring
- Added training needs
- Formalizing employee safety reports

Discussion

- Questions and comments?