MAP-21 Data Assessment Workshop

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WELCOME!

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Objectives for Today:

(1) Identify threats and opportunities inherent to the implementation of a risk-based asset management plan.

(2) Identify risks to NHS condition, effectiveness, and system performance as they relate to the operation of its physical assets.

Agenda

- Review current state of practice for enterprise risk management at Caltrans and in the transportation sector
- Review key risk principles
- Review requirements for risk management under MAP-21
- Conduct a risk assessment of NHS assets and the development and implementation of an asset management plan

Current State of Practice for Enterprise Risk Management:

at Caltrans and in the Transportation Sector

Background

- The Office of Enterprise Risk Management was established by the Caltrans Executive Board in February 2013

What is Enterprise Risk Management?

Enterprise Risk Management (ERM) is a strategic business discipline that supports the achievement of an organization's objectives by addressing the full spectrum of its risks and managing the combined impact of those risks as an interrelated risk portfolio

What Role does ERM Play in Asset Management?

- “Risk” or “risk-based approaches” are mentioned more than 30 times in MAP-21.
- Many of these references deal with infrastructure and project delivery risks. But those represent only a portion of the risks that must deal with at a strategic level on a regular basis.
- ERM facilitates comprehensive identification, analysis, and engagement of operations, reporting, and compliance risks that can impair achievement of organizational objectives and helps to align them with overall business strategy.

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Peers, Policy, and Research

- National and International Peers
  - Washington State DOT, Minnesota DOT
  - Australia, New Zealand, United Kingdom

- Federal and State Policy
  - MAP-21, SLAA

- Transportation Research Board and American Association of State Highway and Transportation Officials
  - National Cooperative Highway Research Program(NCHRP) Project # 08-93: Managing Risk Across the Enterprise
  - NCHRP Project # 20-24: Launching U.S. Transportation ERM Programs

- International Standards
  - ***ISO 31000***, a family of standards relating to risk management
  - COSO's *"Enterprise Risk Management – Integrated Framework"* and the *Federal Green Book*

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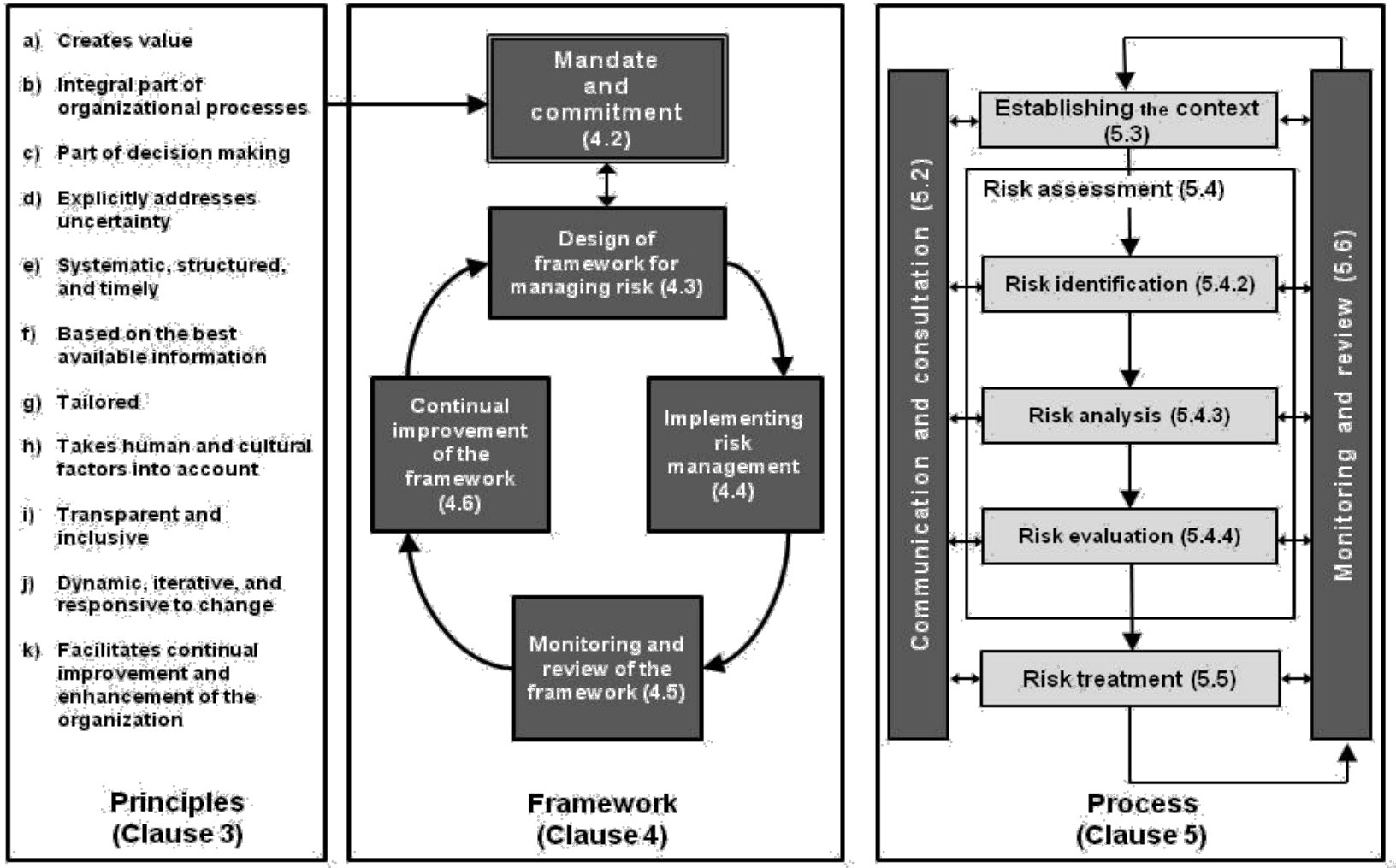
Key Risk Principles

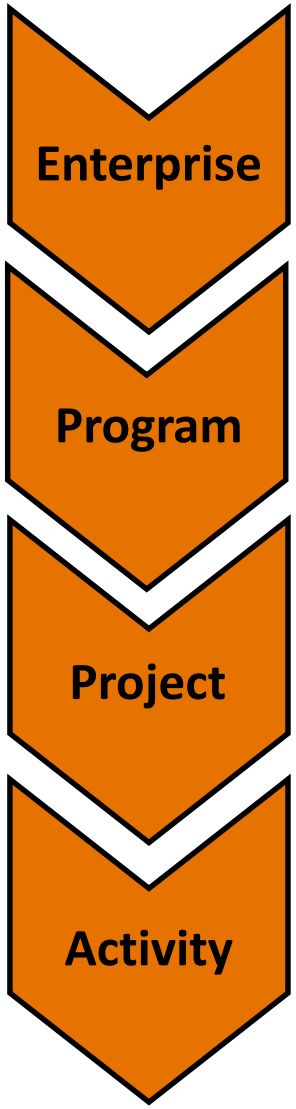
Risk = effect of uncertainty upon objectives

- An effect is a deviation from the expected – can be positive or negative
- Objectives can have different aspects and apply at different levels
- At Caltrans, we have a Mission, Vision and Goals. Various Districts, Divisions, programs, and projects have additional, specific goals

The ISO 31000 Framework



Levels of Risk Management



Enterprise: Risks to the organization's strategic objective, or which involve multiple levels
Responsibility: Senior executives, policy makers.

Program: Risks that are common to groups of projects that achieve strategic goals.
Responsibility: Program managers.

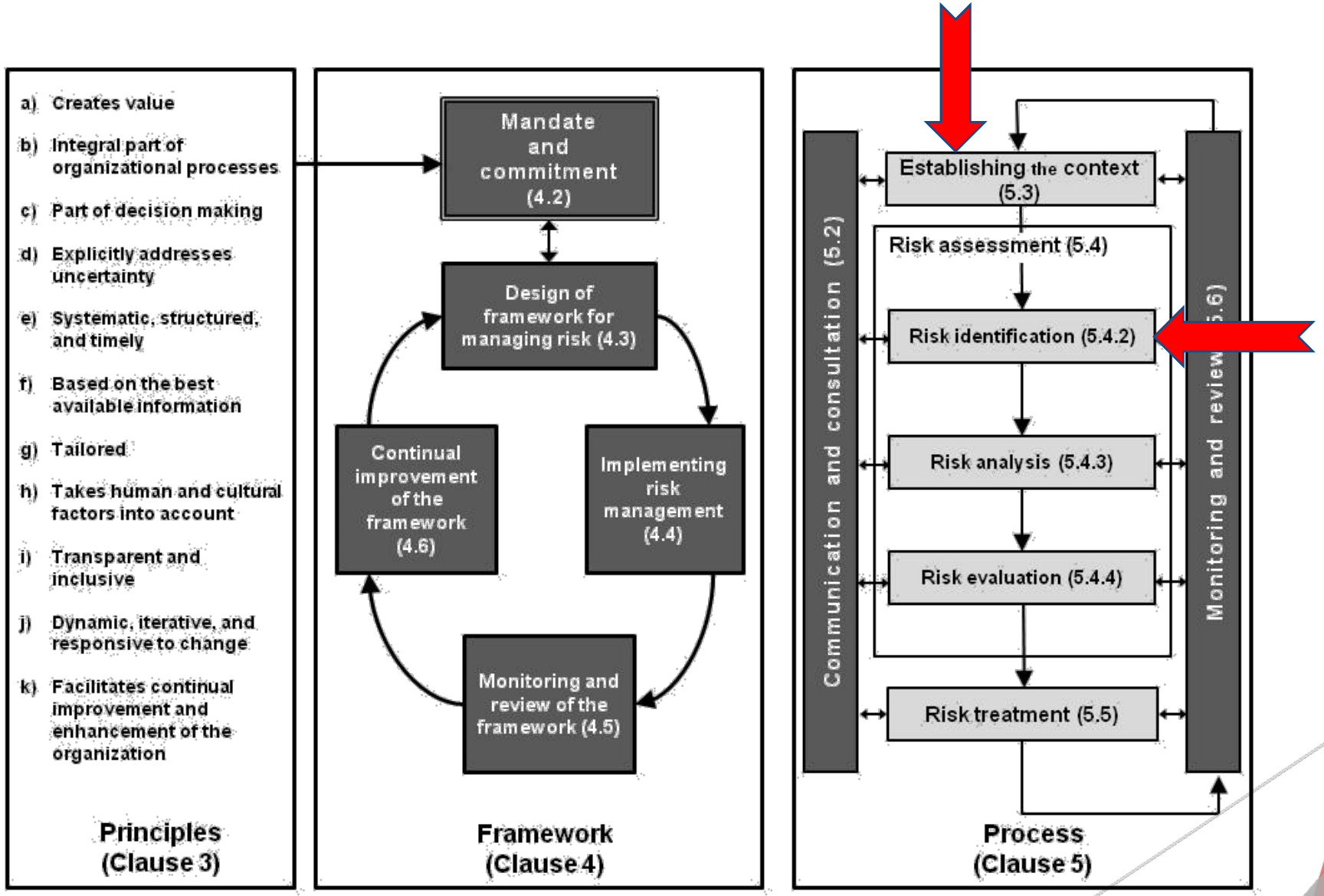
Project: Risks that are specific to individual projects.
Responsibility: Project managers.

Activity: Risks that are specific ongoing functions that support programs or projects.
Responsibility: Activity managers.

Risk Can Be Positive or Negative

Impact											Impact
Critical 5	5	10	15	20	25	25	20	15	10	5	Critical 5
Major 4	4	8	12	16	20	20	16	12	8	4	Major 4
Moder-ate 3	3	6	9	12	15	15	12	9	6	3	Moderate 3
Minor 2	2	4	6	8	10	10	8	6	4	2	Minor 2
Insignifi-cant 1	1	2	3	4	5	5	4	3	2	1	Insignifi-cant 1
	Remote 1	Unlikely 2	Possible 3	Likely 4	Expected 5	Expected 5	Likely 4	Possible 3	Unlikely 2	Remote 1	
	Likelihood					Likelihood					

What are We Doing Today?



The Risk Identification Process

The Beginning of Risk Assessment

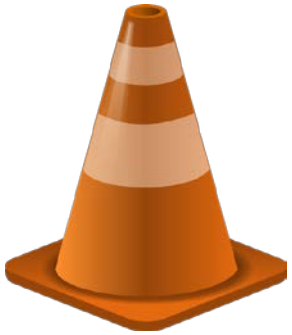
Things To Consider

- Caltrans Goals and Objectives
- MAP-21 Performance Targets
- Your Goals and Objectives
- Types of Impacts
- Emerging Risks
- Other Legislation, Regulations, or Policy Pressures

- ***Mission:*** Provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability.

- ***Vision:*** A performance-driven, transparent, and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation, and teamwork.

Caltrans Goals



- Safety & Health

- Stewardship & Efficiency
- Sustainability, Livability, & Economy
- System Performance

- Organizational Excellence

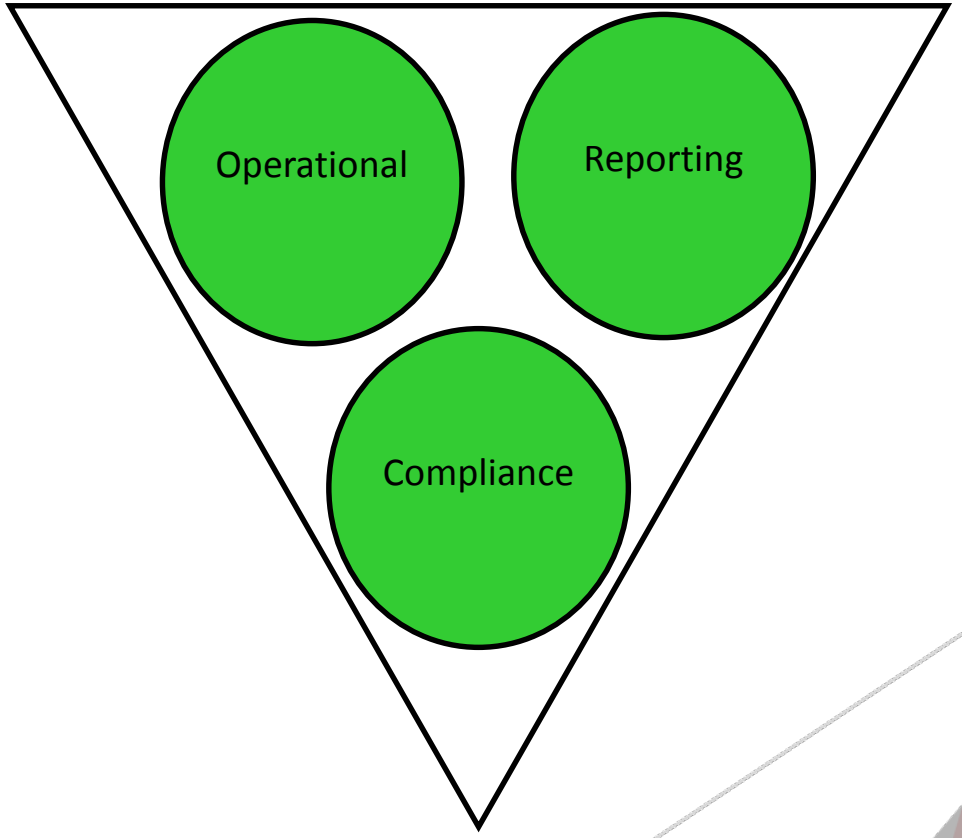
Your Organizational Objectives

- What are your organizational goals, objectives, and priorities?

- How do those objectives relate to Caltrans' objectives?

Types of Impacts to Our Objectives

- There can be a variety of risks to objectives:
  - Asset management
  - Safety
  - External threats
  - Finances
  - Information
  - Business operations
  - Project and program management



How About an Example?

Risk Level	Issue / Trigger	Current Controls	Impacts to Caltrans Goals and Values	Risk Type	Likelihood	Impact	Risk Ranking
Enterprise	If we do not modify our pavement guidelines to fund all route classifications, then incorrect pavement strategies may be approved	Budget, internal processes	Mobility	T	2	3	Very High

How About More Examples?

1. Climate change
2. Federal funding increasingly limited to NHS
3. Data availability and management

MAP-21
Risk Assessment

Risk Management Analysis under MAP-21 § 515.007 (a)(3)

Establish a process that produced the following:

- **Identification of risks** that can affect NHS condition and effectiveness
- **Assessment of these risks** in terms of likelihood, impact, consequence
- **Evaluation and prioritization** of these risks
- **Mitigation plan** addressing top priority risks
- **Approach for monitoring** top priority risks
- **Evaluation of facilities**, carried out under § 515.019

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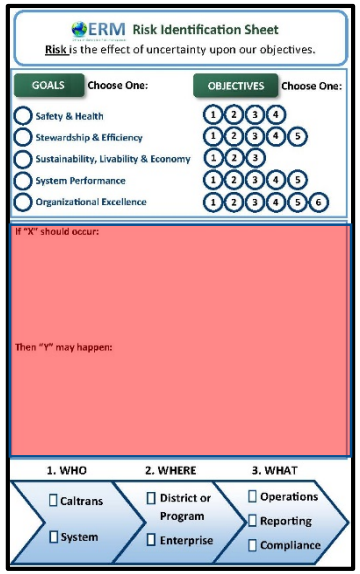
Objective for Today: Identification of Risk

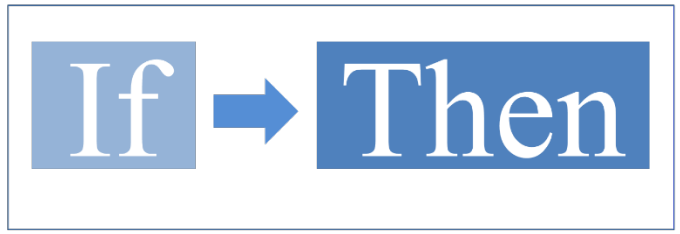
(1) Identify threats and opportunities inherent to the implementation of a risk-based asset management plan.

(2) Identify risks to NHS condition, effectiveness, and system performance as they relate to the operation of its physical assets.

Completing the Risk Identification Sheet: Risk Statement

- Components of a risk statement
- If “X” happens, then “Y” may occur
- How would “Y” affect a Caltrans Objective





Risk Assessment Structure

- Break out into table discussion groups
- Brainstorm and document risk identifications
- Reconvene to share information

Table Topics

1. Risks inherent to the development and implementation of a risk-based asset management plan.

2. Risks affecting assets in the plan, including NHS condition, effectiveness, and system performance as it relates to the operation of its physical assets.

3. Risks to assets evaluated pursuant to 1315(b) of MAP-21 because they have required repair and reconstruction activities on two or more occasions due to emergency events.

4. Processes of risk assessment, evaluation, prioritization, and mitigation

5. Other items

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Brainstorming

In Conclusion

- Reviewed current state of practice for enterprise risk management at Caltrans and in the transportation sector
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THANK YOU!!

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