Using a Risk Based Approach to Emergency Planning Resources

The "Alberta Risk Protocol"

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Project Goal

The project charter was initiated by the Albert Fire Marshal's office and has been ratified by the project partners including emergency services departments for Alberta, BC, Saskatchewan and Manitoba.

The purpose of the project is to:

Develop a software solution that is:

- community based
- covers all-hazards
- risk management focused
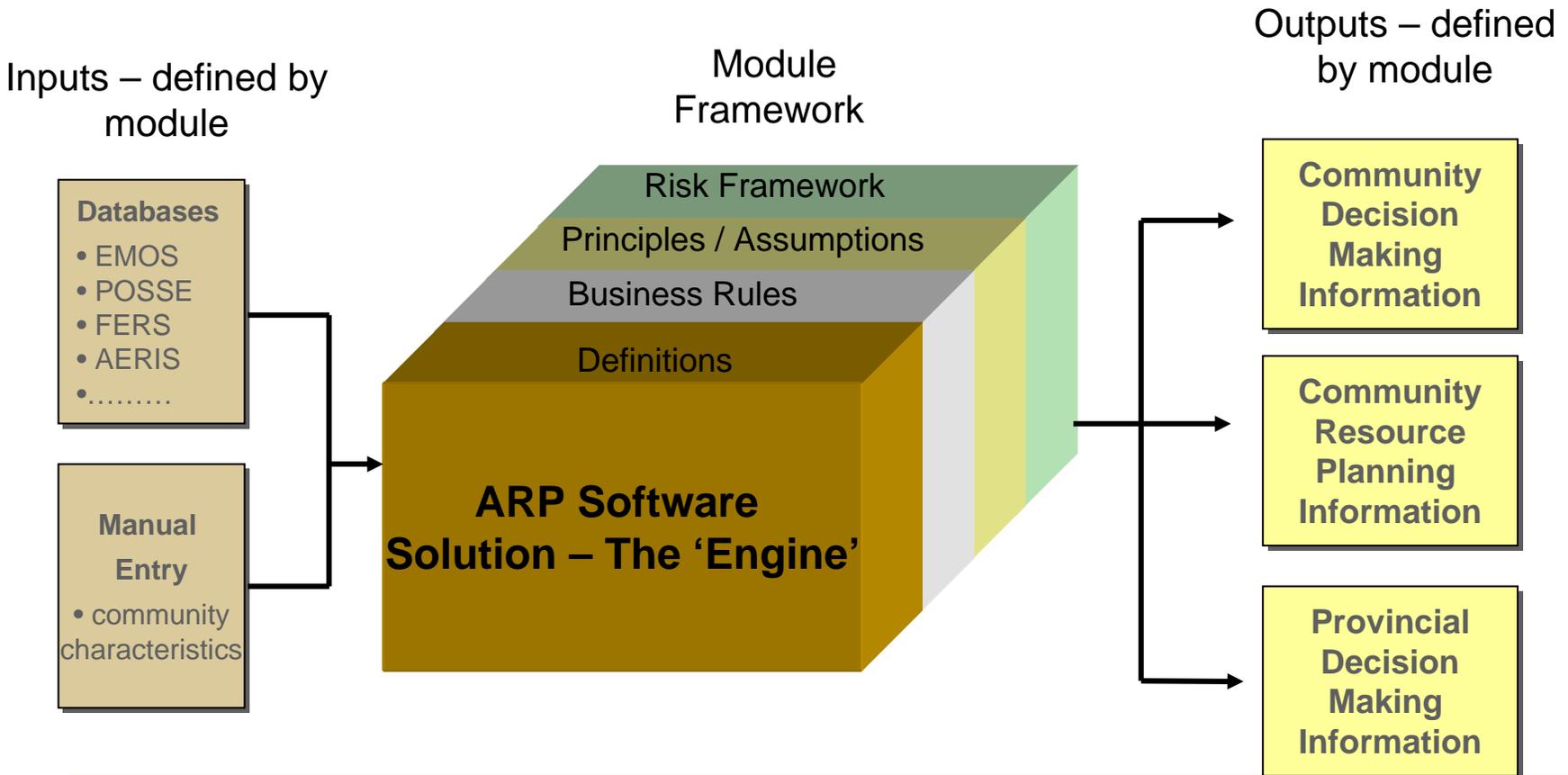
Project Goal

The ARP:

- Covers all governance structures and means:
    - capable of being implemented at a 'community' or local government level
    - scaleable to communities of various size
    - includes First Nation Communities and Metis Settlements

- All-hazards refers to:
    - Any situation where there is potential for human injury, damage to property, damage to the environment or some combination of these (as defined in EMA's Basic Emergency Preparedness Glossary)
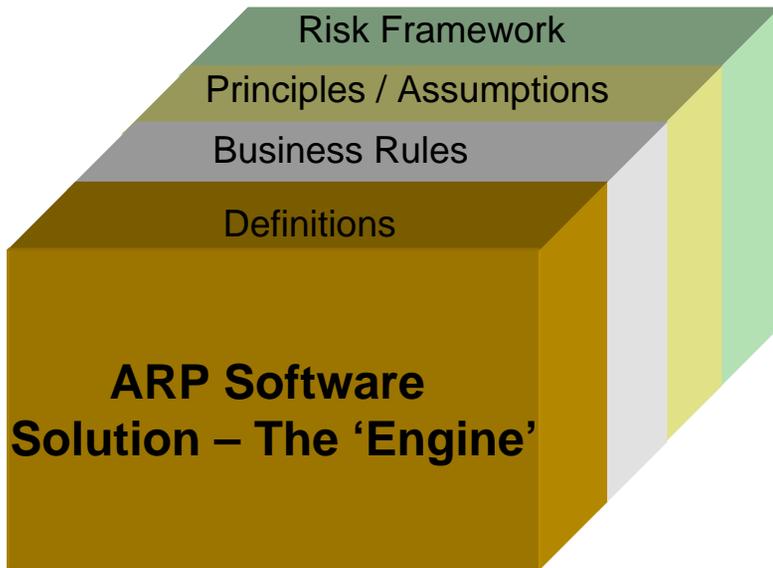
- Uses a risk management approach which means any activity in which information is provided into the decision making process regarding risk

How will the tool work?

Each of the modules will be built around the following basic system framework:

Inputs – defined by module

Module Framework

Outputs – defined by module

Databases
- EMOS
- POSSE
- FERS
- AERIS
- ....

Manual Entry
- community characteristics

Risk Framework

Principles / Assumptions

Business Rules

Definitions

ARP Software Solution – The 'Engine'

Community Decision Making Information

Community Resource Planning Information

Provincial Decision Making Information

The ARP 'engine' will be built around a module framework.

Risk Framework

Principles / Assumptions

Business Rules

Definitions

ARP Software Solution – The 'Engine'

Each of the modules will be built around a common module framework that outlines:

1. How the adopted solution risk framework will apply to the module.

2. The principles and assumptions that are built into the logic of the module

3. The business rules that define such things as how the analysis is performed and what the outputs will look like.

4. The definitions of key terms that are used in the module. Where terms are used in more than one module, a consistent definition will be used.

Outputs – Many Options

- Outputs will be provided at two levels:
    - Community Summary Risk Factor - the summation of the end risk assessment will be the overall risk gas gauge for the Community eg. adding up the risk levels of each of the risk 'buckets' identified
    - Module Risk Indicators - a single risk indicator for each module that represents the level of risk being faced at the current time by the Community

- There will be drill-down information provided for each module which will indicate why the specific rating was given

- Outputs may vary based on a classification of community. For example, based on risk resource capacity
    - Low (Summer Villages with no permanent staff)
    - Medium (Smaller Municipalities with a few Administrative staff)
    - High (Larger Municipalities and Counties with their own Risk Managers)

- The ARP team will work with stakeholders to obtain their input at the appropriate time

Risk Management Framework – CAN/CSA – Q850-97

- National Standard of Canada

- Comprehensive and rigorous

- Addresses wide range of risks

- Sector specific realities and methods accepted

- Recognizes critical roles of:

  - stakeholder perceptions

  - stakeholder values

  - risk communications

Initiation
Preliminary Analysis
Risk Estimation
Risk Evaluation
Risk Control
Action/Monitoring

Risk Communication

Another key user is the Government of Alberta

How will the ARP assist the GoA?

- Pointing out hazard areas in the province
- Increasing the awareness and understanding of risk management throughout the province
- Identifying areas where support or services are required

The ARP should address at least Step 4 of the risk management process to be most useful
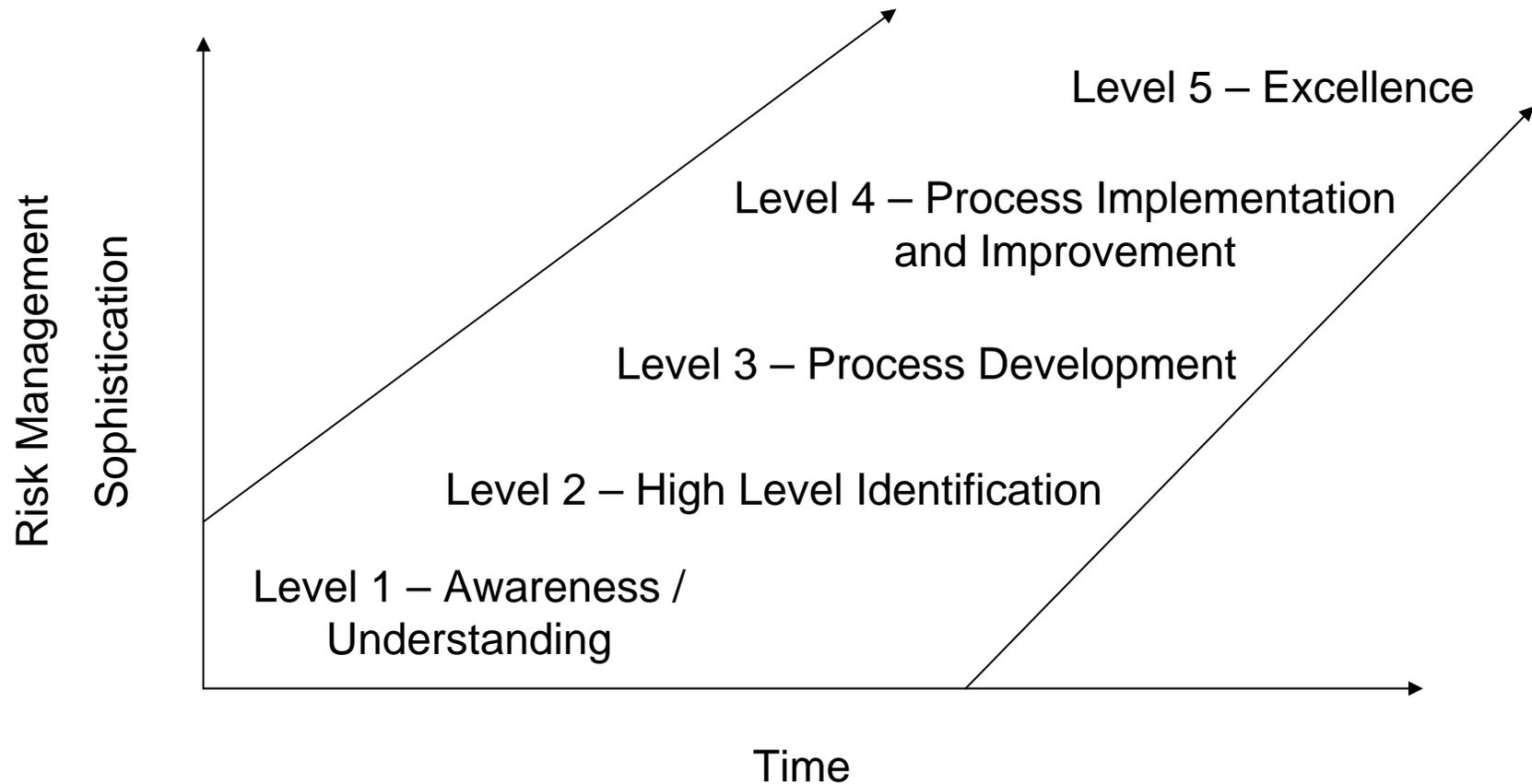
		Alternative Development Approaches					
					Alberta Risk Protocol		
		Technical Analysis			Policy	Implementation	
Scope of Coverage --CSA Standard		1	2	3	4	5	6
Risk Management	Hazard ID/Initiation						
	Risk Analysis						
	Risk Estimation						
	Risk Evaluation						
	Risk Control						
	Action & Monitoring						
Evaluation Criteria							
Complexity of Data need	20	8	6	5	3	2	2
Portability across Communities	10	10	6	6	5	2	2
Flexible for Risk Type	10	8	7	7	7	4	3
Decision Making Relevance	40	3	7	8	9	4	4
Incremental Cost	15	8	3	2	7	6	7
CSA Framework Coverage	5	2	6	7	8	9	10
Total	**100**	**5.9**	**6.05**	**6.15**	**6.85**	**3.95**	**4.05**

What were some of the key findings?

- **Each Community is Unique**
  - Alberta communities – at different stages in their understanding and application of the community risk management process

  - A multi-level implementation plan must be used

  - Assessing communities on a risk management 'excellence scale'

  - The ARP needs to provide support at all levels of the excellence scale

  - Different manual and electronic tools may be required at different levels depending on the community's risk sophistication

Sample Risk Management Excellence Model

Risk Management Sophistication (vertical axis) vs Time (horizontal axis)

Level 1 – Awareness / Understanding

Level 2 – High Level Identification

Level 3 – Process Development

Level 4 – Process Implementation and Improvement

Level 5 – Excellence

What were some of the key findings?

- ARP – More than an Electronic Tool
  - Alberta communities require more than one tool to help them manage risk

  - the ARP should be a comprehensive system of risk management that addresses education, training, process, controls, accountability, and manual and electronic supporting tools

What were some of the key findings?

- A Community Faces Many Risks
  - a standard, common nomenclature for referring to risks, hazards, or events in Alberta communities does not exist

  - The Canadian Standards Association defines four categories covering all hazards; this classification was adopted by the ARP team and expanded on

  - The number of risk events associated with all community hazards is very high, well into the hundreds

What were some of the key findings?

- **A Community Faces Many Risks (cont'd)**
  - To apply a detailed risk management process to each and every risk event for each hazard would be extremely time consuming and expensive. In addition, an individual with a very high level of risk management expertise would be needed to complete the process

  - Risks facing communities change over time and some have more serious outcomes

  - The ARP should be multi-leveled and have the ability to assess in greater detail those risks that have more severe outcomes

What are examples of the hazards that communities face?

1. Natural – atmosphere, water, land, dieses and epidemics

2. Economic – financial, inflation, depression, tax changes

3. Technological – transportation vehicles and routes, hazardous materials, etc.

4. Human – public gathering, compliance, political, etc.

What activities will be carried on early in Phase 3?

- Developing a community risk management excellence model – covering all risk management levels from innocence to excellence

- Defining the components of each level in the excellence model including education, training, process, controls, accountability, manual tools, electronic tools

- Developing a community self-assessment tool to assist communities to determine where they are at within the excellence model

What activities will be carried on early in Phase 3?

- Working with select communities to perform a self-assessment

- Working with communities as well as experts to identify top areas of risk for Alberta communities at the current time

- Developing the implementation plan for the components of each level in the excellence model using the results of the self-assessment

- Commencing development and implementation of the risk system.

Any Questions?