*"RIGHT-OF-WAY STEWARD"** ACCREDITATION PROGRAM

A program focused on promoting the principles of integrated vegetation management on the high voltage grid.

March 2013

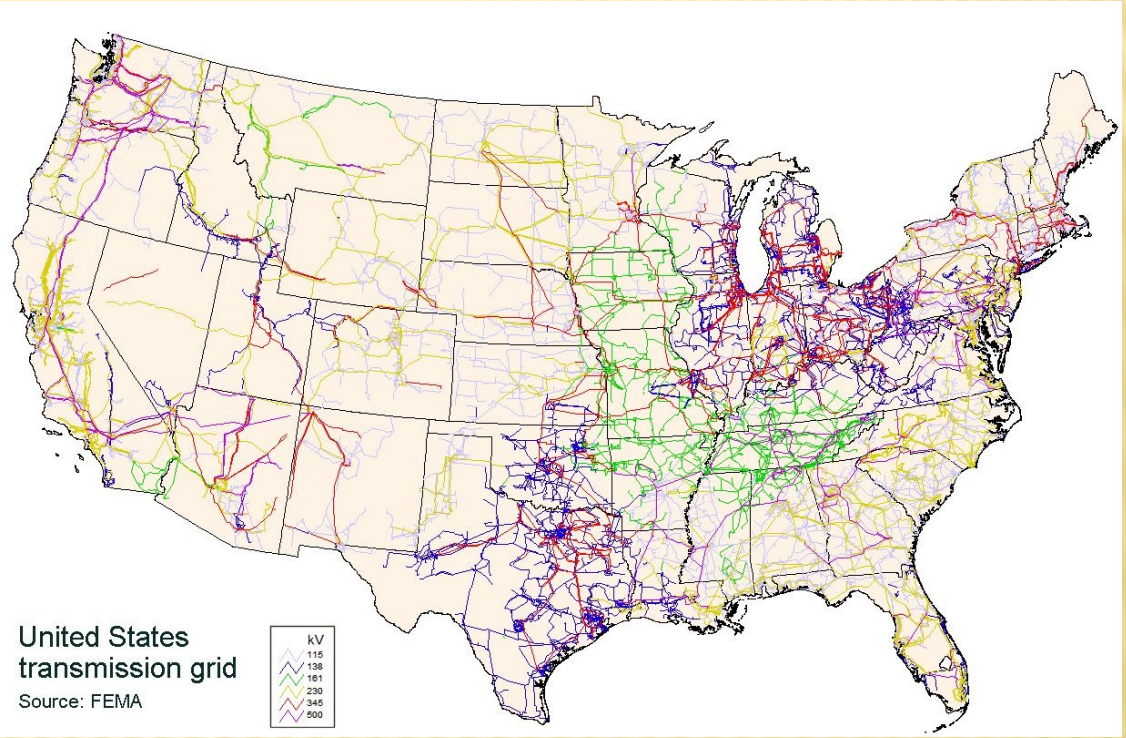
IN A NUT SHELL

The intent of the ROW Steward initiative is to create a validation program that recognizes excellence in Integrated Vegetation Management on the North American Transmission Grid

160,000 miles of transmission line operating at 230-765 kilovolts (kV),

North American transmission system in total, including those lines that operate at 35 kV and above is estimated at over 450,000 miles.

The Electric Power Research Institute (EPRI) has estimated the total land area being managed as transmission corridors encompasses 8.6 million acres.



HOW BIG A LAND AREA IS CURRENTLY MANAGED AS TRANSMISSION ROW?

HISTORICAL CONTEXT

- *"Plight of the ROW Domain"* (F. Eglar) 1960's
- Adaption of principles of Integrated Pest Management (IPM) to Integrated Vegetation Management (IVM) 1970's
- Forest Stewardship Council (FSC) & Sustainable Forestry Initiative (SFI) 1980's
- ANSI A300 part 7
- ISA BMP *"Integrated Vegetation Management"*
- August 14, 2003 "*Great Northeast Blackout*"
- FAC-003 v.1, 2006, citation with big fines $$$!
- EPRI: *"Standards for Assessing Performance of Integrated Vegetation Management on Rights-of-Way"* 2008
- FAC-003 v.2 2013

BRIEF HISTORY OF ROW STEWARD

- Field work, Closed Chain of Custody BMP 2009
- UAA Annual meeting, August 2010
- Conceptual proposal to UAA EC Dec 2010
- UAA Resource Committee work in Q1 2011
- Presentation to System Foresters, Feb 2011
- Proposal to UAA EC, March 2011
- Stakeholder meetings, March & July 2012
- St. Croix “retreat”, September 2012
- Technical Advisory Committee, Nov 2012
- Steering Committee, December 2012
- Steering Committee to meet March 2013

CONCEPTUAL MODEL

1. An independent accreditation organization.
2. Formal application based on criteria establishing excellence in IVM on electric transmission systems.
3. Verification of application and practices by independent audit.
4. Formal accreditation if the applicant's IVM program is found to be compliant.
5. Active requirements for maintaining accreditation.

DEFINING ACCREDITATION:

Certification:

- A voluntary process by which individuals are assessed against predetermined standards for knowledge/skills/competencies and granted a time-limited credential. (e.g . ISA Certified Arborist)

Licensure:

- A mandatory government requirement necessary to practice in a particular profession or occupation. Implies both practice protection and title protection. (e.g. Pesticide Applicator Licenses)

Certificate/Qualification program:

- A relatively short, non-degree granting program that provides instruction and training to aid participants in acquiring knowledge/skills/competencies and designates that participants have passed an end-of-program assessment derived from the learning/course objectives.
- Although assessment is an integral part of the certificate program, the primary purpose of the program is to provide instruction and training. (e.g. new ISA Tree Risk Assessor Qualification (TRAQ), possible UVM Auditor Qualification.)

Accreditation:

- The establishment of the status, legitimacy or appropriateness of an institution, program or module of study based on meeting approved criteria or standards. Accreditation is usually for a limited duration at which time re-accreditation procedures come into operation.

THREE CORE ELEMENTS TO BE ADDRESSED

1. **Governance:** It will be necessary to establish an organization, appropriate organizational structures, and processes.
2. **Audits & Auditing:** Independent validation is central to accreditation. Audit processes need to be developed and auditors selected and trained.
3. **Accreditation Requirements:** A hierarchical requirements document including principles, criterion, indicators, and verifiers is in development.

GOVERNANCE

A Steering Committee composed of IVM asset managers ,service providers and stakeholders will provide strategic direction.

Two technical committees will support the Steering Committee:

1. An Audit Committee will develop audit processes and oversee the work of independent auditors.
2. A Committee of experienced practitioners and subject matter experts will provide technical support.

Two new committees were established by the Steering Committee at the December meeting:

1. Governance committee
2. Marketing committee

Program administrator will handle logistical, administrative, and managerial support.

PROPOSED MAKEUP OF STEERING COMMITTEE

Responsibilities

- Approve final applications
- Approve final reports
- Approve/deny accreditation
- Manage appeals

Processes

- Elect own chair & vice-chair
- Accept nominations from all stakeholder groups
- Elect own members
- Quarterly conference calls

15 Members

- 3 Utility members
- 3 Environmental NGO's
- 1 UVM Contractor member
- 1 UVM Consultant member
- 1 UVM Supplier member
- 1 Government/Regulatory member
- 1 Public Citizen member
- 1 Academic member
- Chair of Technical Committee (non-voting)
- Chair of Audit Committee (non-voting)

Initial Steering Committee

Constituency	Member	Affiliation
Environmental NGO	Josianne Bonneau	Wildlife Habitat Council
Environmental NGO	Bill Toomey	The Nature Conservancy
Environmental NGO	Vicki Wojcik	Pollinator Partnership
Academic Member	Ron Gardner	Cornell University
Public at large	Ruth Stein	Private Citizen
UVM Contractor	Lee Atkins (invited)	Progressive Solutions
UVM Consultant	Derek Vannice	CN Utility
UVM Supplier	Mark Rice	DuPont
Government/Regulator	Steve Hopkins (invited)	US EPA
Industry Organization	John Goodrich-Mahoney	EPRI
T-ROW Asset Owner/Manager	Diane Fitzgerald	American Electric Power
T-ROW Asset Owner/Manager	Lisa Randall	Pacific Gas &Electric
T-ROW Asset Owner/Manager	Alex Brown	Exelon
Audit Committee Chair (non-voting)	Chris Nowak	SUNY ESF
Technical Committee Chair (non-voting)	John Goodfellow	BioCompliance Consulting, Inc.

TECHNICAL ADVISORY COMMITTEE

Panel of Subject Matter Experts

- Convenes once each year.
- Maintains contact through the year via IT.
- Individual members serve 5-year terms (staggered).
- Members recruit other members, Steering Committee may recommend members.
- Members are recognized amongst their peers as true Subject Matter Experts.

Responsibilities

- Develop and maintain accreditation requirements,
- Evaluate audit findings and refine requirements as necessary
- Perform a formal review complete accreditation requirements every 3-5 years.
- Provide ad hoc technical input to the Steering Committee as needed.

Current Technical Advisory Committee

Member	Affiliation
John Goodfellow (chair)	BioCompliance Consulting, Inc.
Randy Miller	PacifiCorp
Geoff Kempter	Asplundh Tree Expert Co.
Rich Hendler	Dow AgroSciences
Paul Appelt	Environmental Consultants Inc
Harvey Holt	Purdue University (retired)
Kevin McLoughin	NY Power Authority (retired)
Jenny Arkett	Duquesne Light
Rick Johnstone	IVM Partners
Ryan Aylesworth	Audubon International

AUDIT COMMITTEE

- Full committee makeup is yet to be determined.
- Interim membership includes lead auditor and other lead auditor candidates.
- Audit committee members will be appointed by the Steering committee.

Responsibilities

- Develop audit processes
- Develop auditor training program
- Review applications of potential auditors
- Maintain roster of qualified auditors
- Oversee assignment of independent auditors to review of applicants
- Establish audit report formats
- Review audit reports for quality

Process

- The UAA may manage the auditor training program
- The UAA may fund the training program through training course fees

Initial Audit Committee

...a small team will be involved in three pilot audits

Member	Affiliation
Chris Nowak, Lead Auditor	SUNY ESF
Tom Sullivan, Auditor	National Grid USA (retired)
Nelson Money, Auditor	Pacific Gas & Electric (retired)
Phil Charlton	Environmental Consultants Inc, (retired)
Others?	

PROGRAM ADMINISTRATOR

- ROW Steward is envisioned as being offered by an independent entity.
- A RFP was let, and viable proposals were received.
- The initial intent is to "tuck in" ROW Steward under an existing nonprofit organization for the purposes of administration.

Responsibilities

- Primary facilitator/manager of program
- Review and forward initial applications
- Facilitate board and committee meetings (agenda, board packets,….)
- Facilitate assignment of auditors
- Answer phone calls, emails,…
- Send out recognition materials
- Assist in PR and marketing
- Manage website

APPLICATION PROCESS

A two step process is envisioned:

1. Initial simple application to confirm that utility's IVM program meets basic accreditation criteria.
2. Full detailed application with supporting documentation submitted through a web portal.

Full Application to include:

Basic information defining the scope of the applicant's IVM program

Documentation supporting compliance with Requirements. This may include the following:

- A copy of the vegetation management program strategic plan.
- Example of a tactical vegetation maintenance project plan
- Examples of engagement with stakeholders and communities
- Details on UVM staff qualifications
- UVM programs policy and procedure documents
- Other documents as required in the requirements established by the Technical Advisory Committee

AUDITS & AUDITING

The audit process must be consistent.

Audit findings must be replicable.

The audit must be a positive experience and encourage continuous improvement.

Auditors/Audit Teams

- ✓ Are Credible
- ✓ Have substantial IVM experience (can have varied avenues to experience)
- ✓ Have technical ability (understand UVM techniques)
- ✓ Thoroughly understand ROW Steward requirements
- ✓ May have varied backgrounds (e.g., UVM, financial, socio-economic, wildlife,…)
- ✓ Demonstrate care to avoid any perception of conflict of interest - Zero conflict!
- ✓ Excellent communication skills

AUDITOR TRAINING

- Potential auditors with sufficient experience and qualifications will need to be trained on specific ROW Steward accreditation requirements, audit processes, and audit report writing.
- Auditor “apprenticeship” (OJT) is envisioned as a primary strategy for developing qualified auditors.
- Auditor qualification will include testing (knowledge) and demonstrated performance requirements (experience on a team)
- There is a critical need to develop training materials and a qualified bench of auditors!

AUDITOR/TEAM ASSIGNMENT

A roster of prequalified auditors, trained in ROW Steward Accreditation requirements and processes, needs to be developed and maintained.

An applicant is provided prequalified auditors and will have the right to request a substitution to the audit team.

The typical audit team has 2-3 members:

- 1 Lead auditor
- 1-2 qualified auditors

AUDIT REPORTING

- Results reported by ROW Steward Principles & Criteria
- Auditors will debrief with utility's team for transparency & verification of findings
- Public & Confidential aspects to reporting
- Steering Committee review and acceptance
- NEED: To develop a scoring/weighting system
- NEED: To develop a report template

IMPLEMENTATION – THE NEXT STEPS

Select an organization to act as Program Administrator

Initiate 4 pilot accreditation pilot audits:

1. Arizona Public Service (March/April)
2. Vermont Electric (May/June)
3. Avista Utilities (July/August)
4. Duquesne Light (August/September)

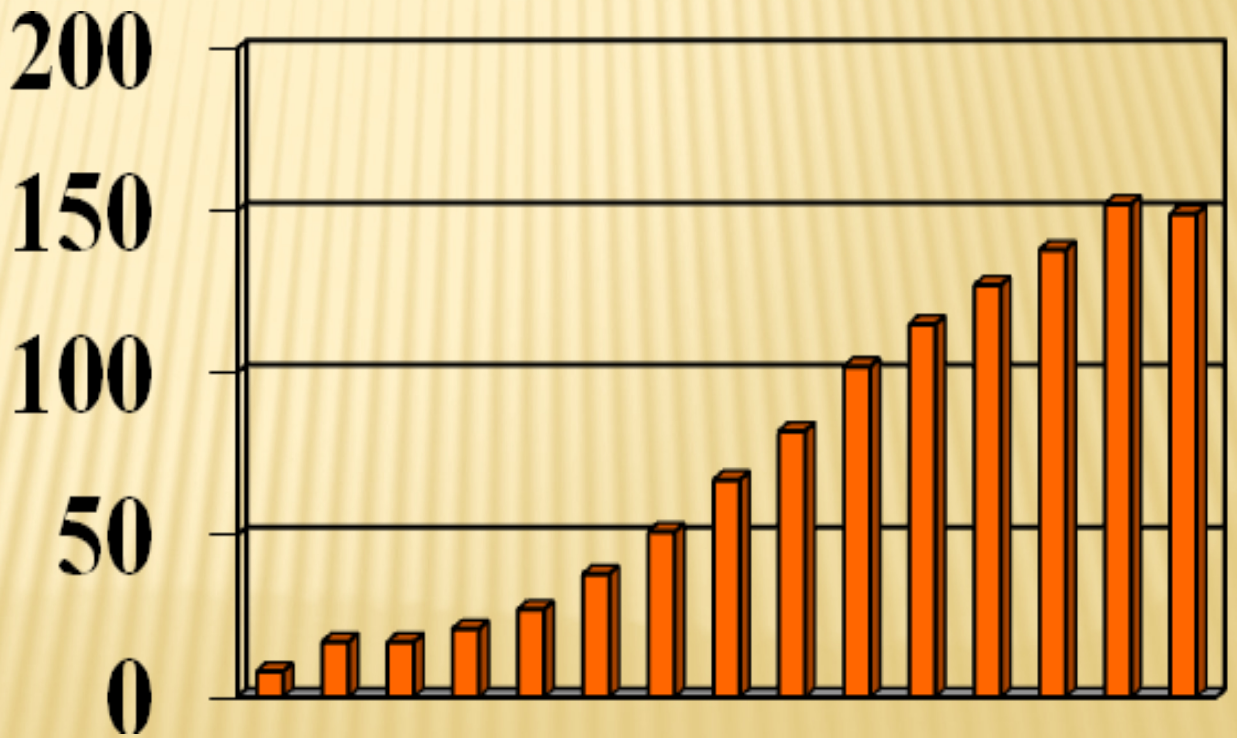
Secure additional Start-up funding.

Launch ROW Steward Industry wide!

What level of participation do we expect?

The rate of adoption of TreeLine USA by the industry provides a benchmark in terms of "ramp rate".

It took 15 years for TreeLine to get to the current level of stable participation.



ACCREDITATION CRITERIA

Draft *Requirements* document has been developed based on long history of similar programs: FSC, SFI, NY DOT, and EPRI IVM assessment principles.

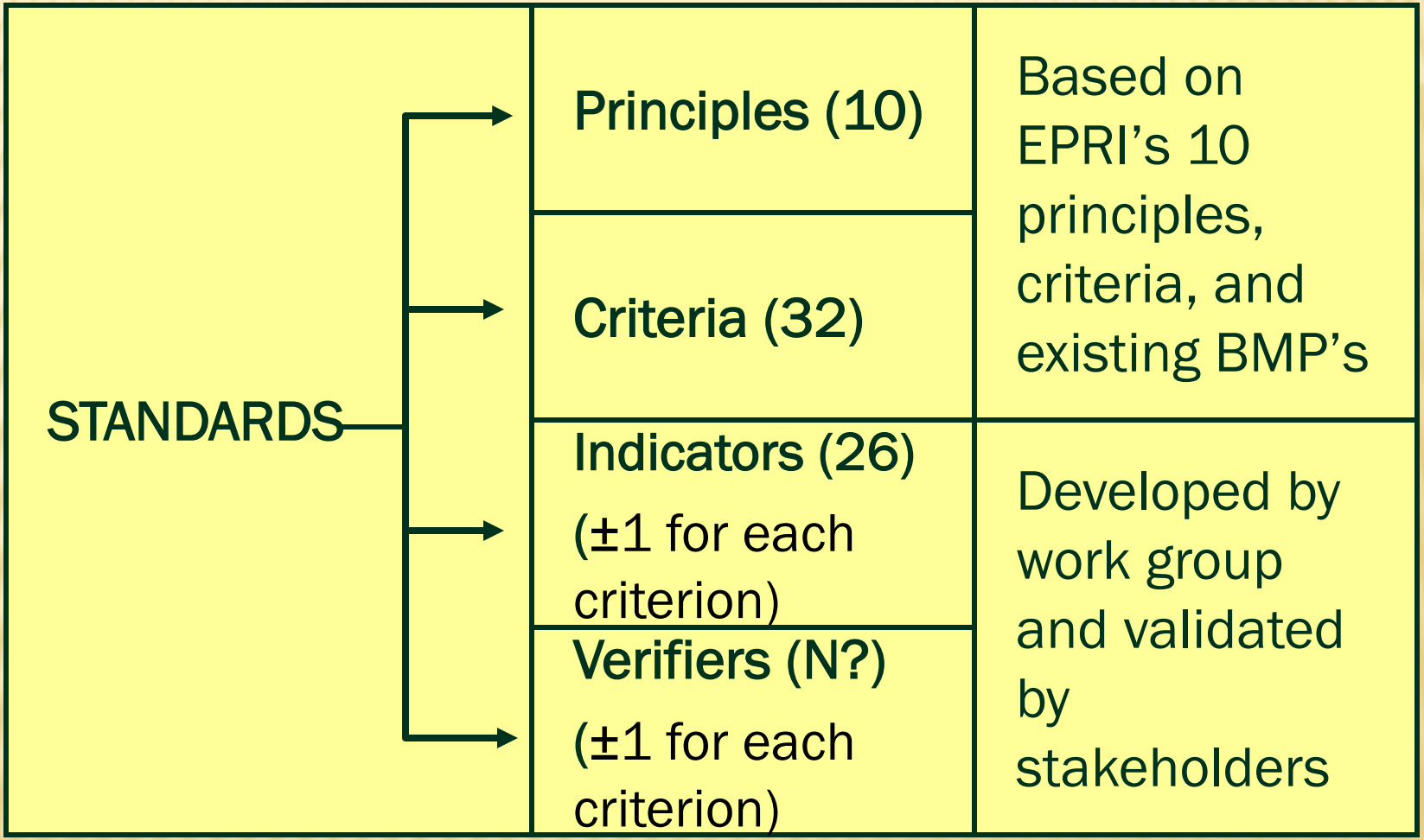
Requirements use a hierarchical model:

- Principles – high level statements
  - Criteria – things like existing BMP's
    - Indicators – metrics and related
      - Verifiers – evidence, outcomes

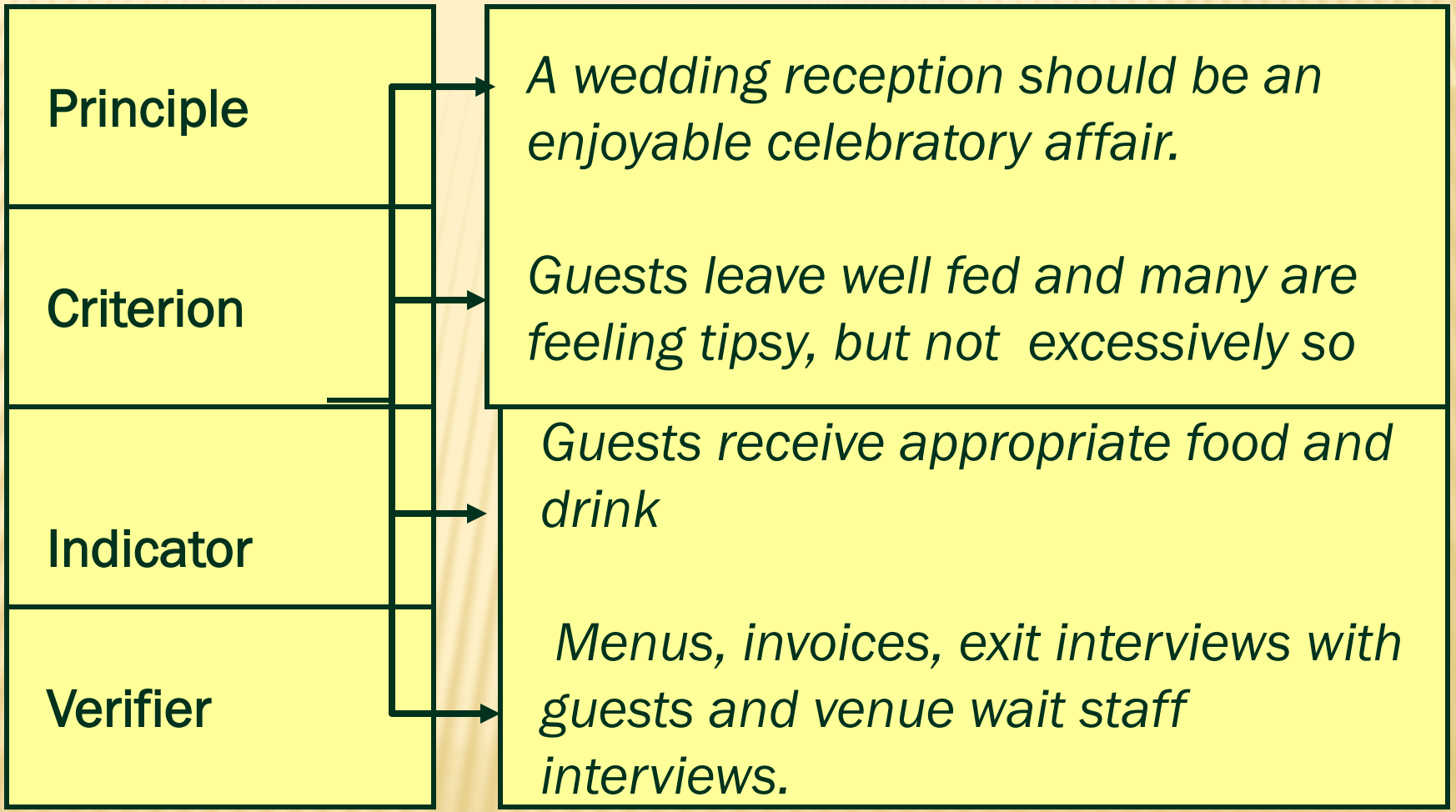
Draft Requirements document has been validated by recent survey of industry practitioners.

The current Requirements document has been approved by the Steering Committee and will be further refined during pilot phase.

HIERARCHICAL ASSESSMENT CONSTRUCT



"EXAMPLE" OF CONSTRUCT



Actual Example from Requirements Document

Principle 1	Compliance with laws, standards, and Best Management Practice
Criterion 1.2	Unauthorized uses of the ROW are discouraged.
Indicator 1.2a	ROW Asset Manager supports and implements measures to prevent illegal and unauthorized uses.
Verifier	Confirmed use of signage and gates.

ROW STEWARD PRINCIPLES 1-4: *RESPONSIBLE MANAGEMENT*

1. Compliance with Laws
2. Tenure, Use Rights, and Responsibilities
3. Community Relations and Workforce Development
4. Management Planning

ROW STEWARD PRINCIPLES 5-10: *TENANTS OF IVM*

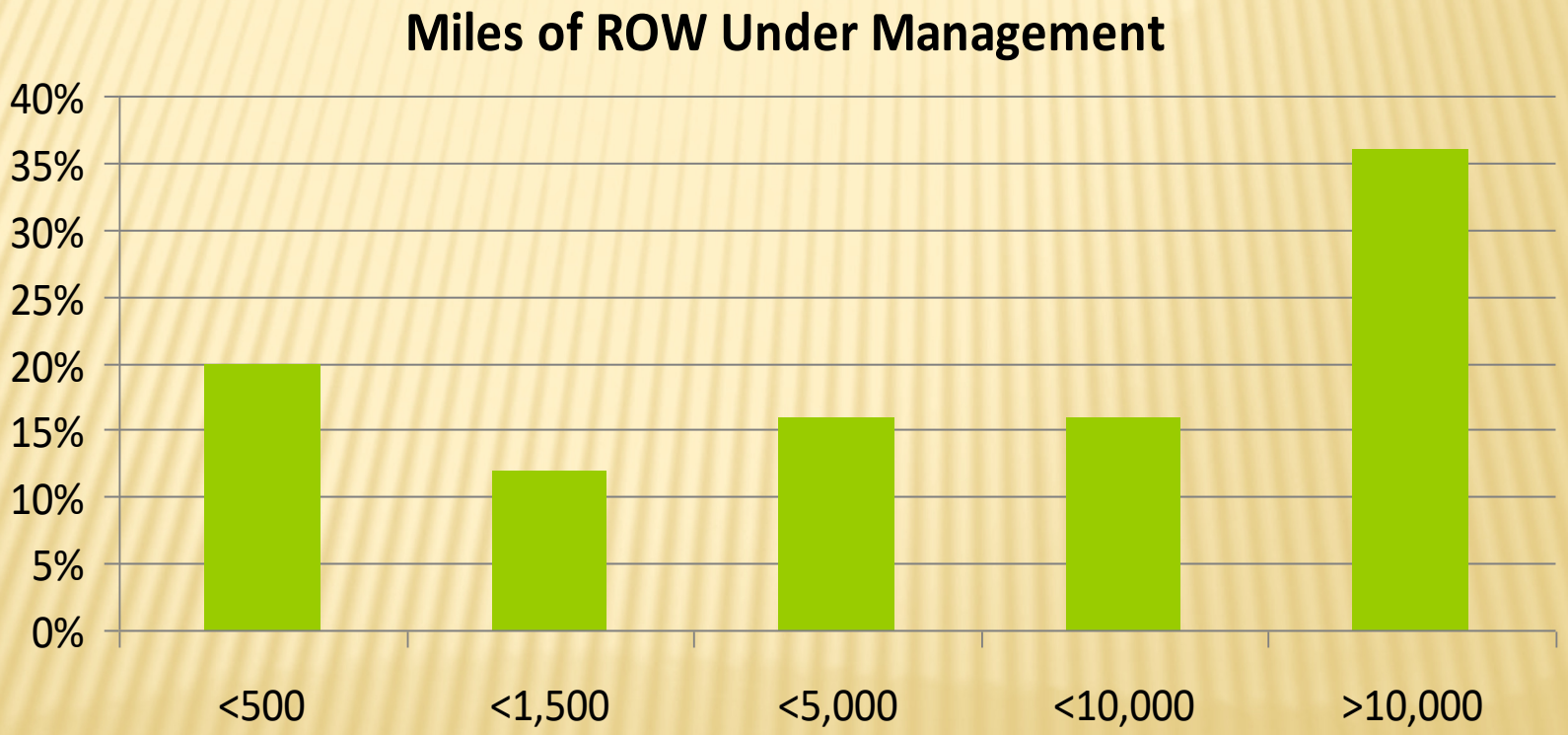
5. Understanding Pest and Ecosystem Dynamics
6. Setting Management Objectives and Tolerance Levels
7. A Broad Array of Vegetation Maintenance Practice Options
8. Accounting for Economic and Ecological Effects of Vegetation Maintenance Practices
9. Site Specific Implementation of Vegetation Maintenance Practices
10. Adaptive Management and Monitoring

SUSTAINABILITY REFLECTED IN ROW STEWARDSHIP ACCREDIDATION

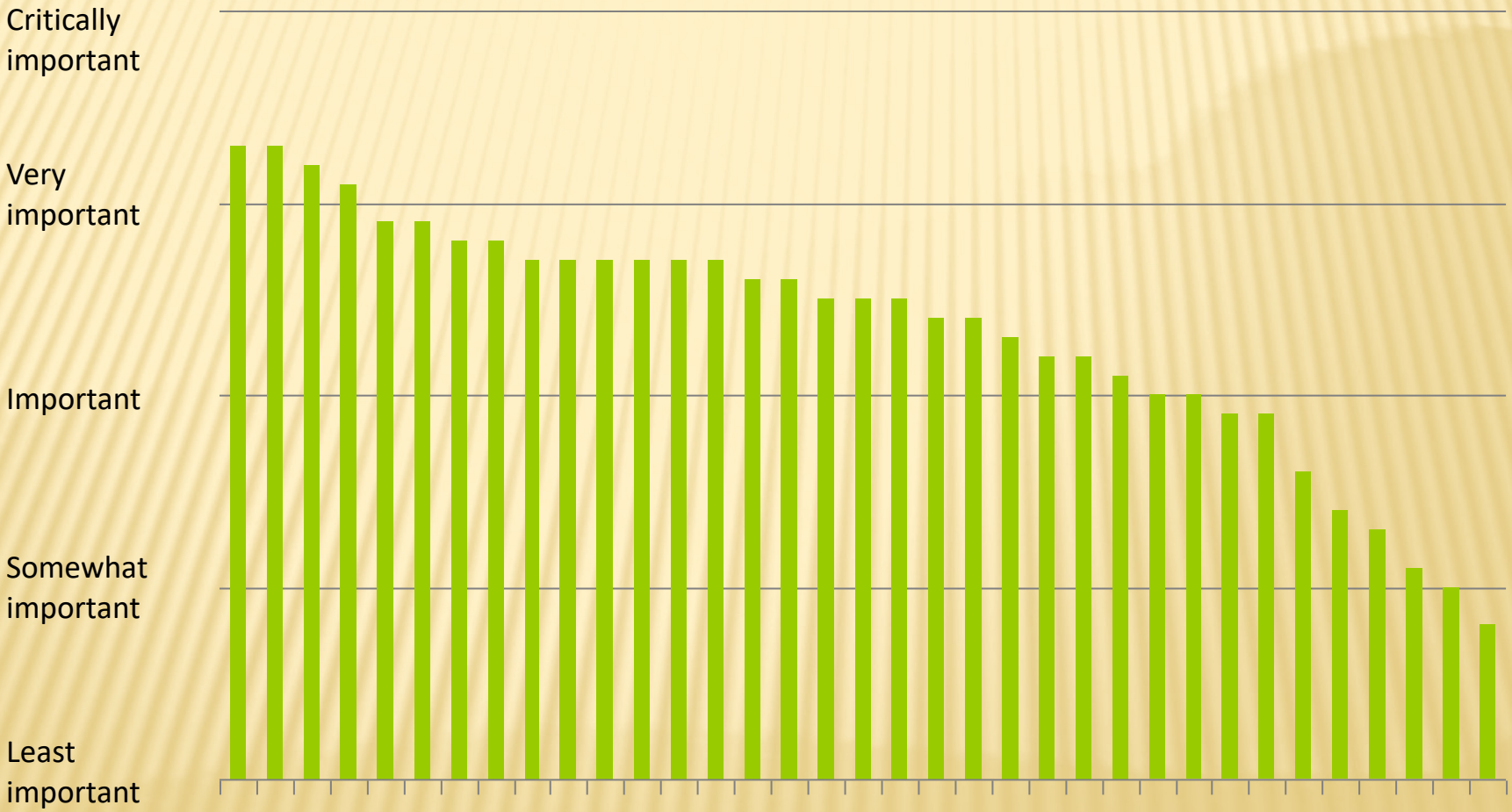
- Managing risk of invasive species on ROW.
- Managing (mitigating) risk to endangered species due to ROW IVM activities
- Recognizing ROW as wildlife habitat, and as transit corridors between habitats
- Considering native cover type conversions – e.g. prairie grass restoration efforts.
- Right tree (plant) in the right place.
- Waste reduction and/or recycling efforts.

Survey of 124 T-ROW Vegetation Managers

>25% Response Rate! (32 Respondents and counting)

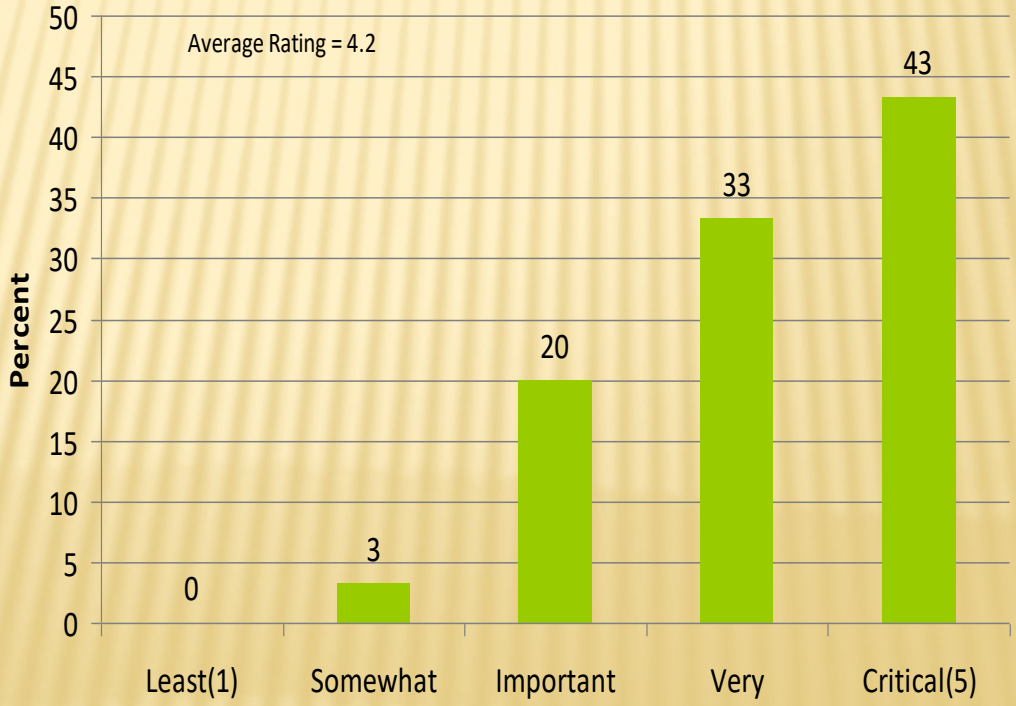


Comparative Ranking of the 35 Criterion



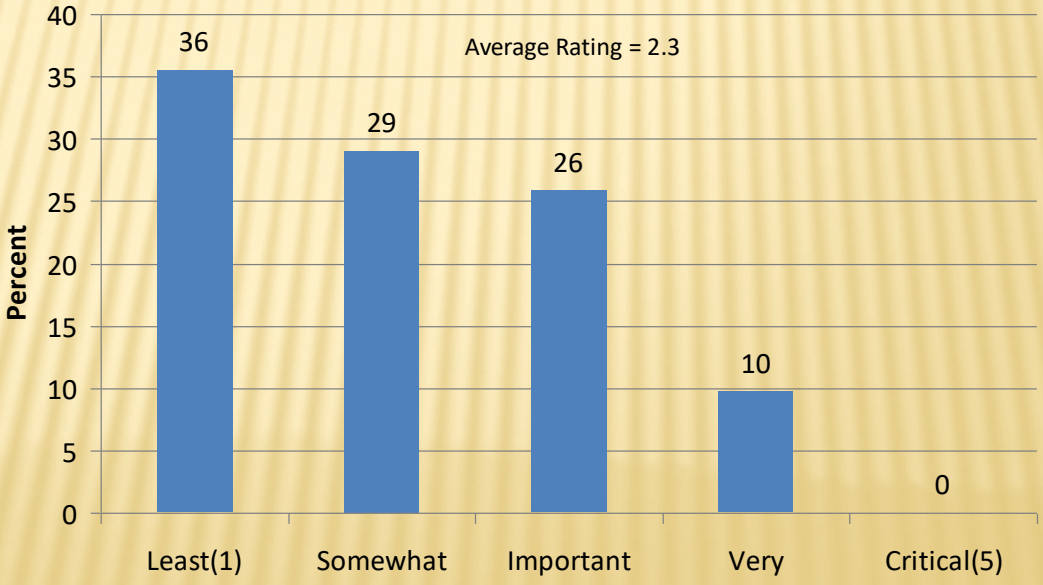
PRINCIPLE #7. COMPILATION OF A BROAD ARRAY OF TREATMENT TECHNIQUES

- CRITERION 7.1: A wide variety of methods including manual, mechanical, physical, chemical, cultural, and biological/ecological maintenance practices are available for consideration on all sites.



PRINCIPLE #4: MANAGEMENT PLANNING

- CRITERION 4.7: While respecting the confidentiality of information, Vegetation Managers make publicly available a summary of primary elements of the management plan, including those listed in Criterion 4.1.



BENEFITS: WHY DO THIS?

1. Direct benefits to the IVM program through adoption of best practices
2. Regulatory benefit
    1. assures compliance with regulatory requirements
    2. more comprehensive than current NERC audits
3. Active engagement with stakeholders
4. Customer and public education and outreach
5. Environmental stewardship

FUTURE EXPANSION – INCLUSION OF OTHER ROW VEGETATION MANAGERS

- Owners/managers of pipeline rights of way
  - There are 306,000 miles of petroleum and natural gas pipeline in the US which represent approximately 2.1 million acres of ROW.
- Owners/managers of transportation corridors
  - The rural interstate highway system occupies over 33,000 miles of ROW
  - There are over 3.1 million miles of rural road in the US.
  - There are over 170,000 miles of railroad ROW in North America.
- Longer term the accreditation model could be applied to electric distribution system vegetation management programs.

WHY DO THIS, REPRISE

If we don't take the initiative it may come to the UVM industry by way of outside interest!

Case in point:

- Forest Stewardship Council (FSC) came first from the "environmental" community.
- The Sustainable Forestry Initiative (SFI) was industry's response.

" Development of a Business Case for Scheduling Utility Vegetation Management on a Preventive vs. Corrective Maintenance Basis"

The project has four main components:

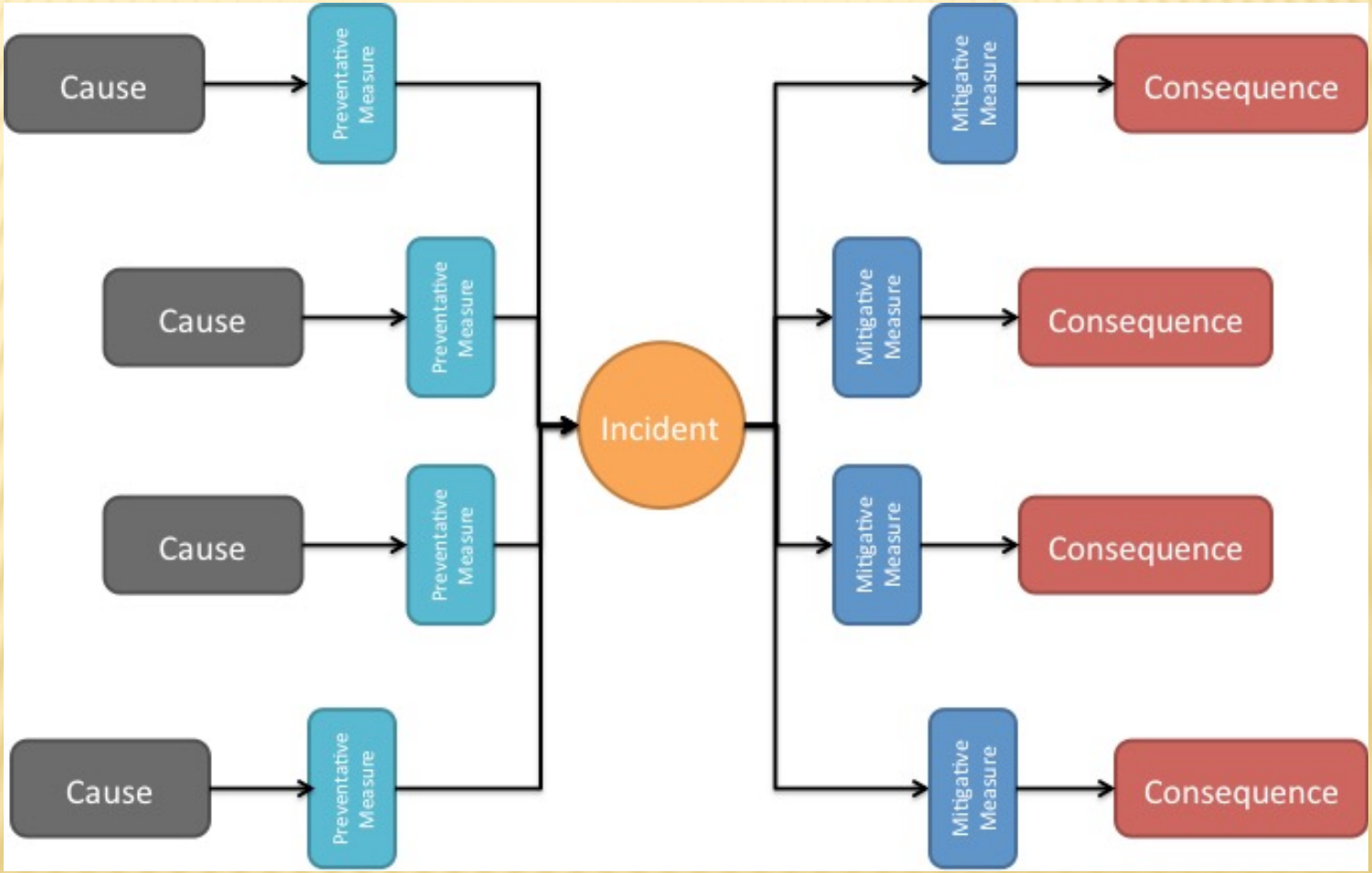
1. A review of relevant literature
2. Development of a library of potentially useful variables
3. Development of conceptual economic model(s)
4. Development of a plan for completing the next logical steps in this project including refining data requirements and sources and the creation of a business model for UVM.

How do you determine an “optimal” cycle?

One of the first findings form the study - There are at least five approaches that have been used in the UVM industry!

1. Clearance Model
2. Cost Model (of deferral)
3. Reliability Model
4. Annual Increment Model
5. Regulatory Model

Bow-tie Analysis



Current Status of the Project

Phase 1 report was submitted March 23, 2013.

Fund raising is underway for Phase 2.

Current remaining need is $9,200.

Project (Phase 1 &2) has been accepted for presentation at UAA's Annual Conference in Toronto in August 2013.