# REDUCING WILDLIFE-VEHICLE COLLISIONS

## A Policy Process Pocket Guide

Tools, Tips, and Techniques for Evaluating & Reducing Wildlife-Vehicle Collisions

By Emily Zink

# TABLE OF CONTENTS

# PROBLEM SOLVING & THE POLICY PROCESS

Congratulations! Just by opening this Pocket Guide you are one step closer to attaining the skills and concepts required to thoughtfully and holistically solve problems.

**Intended for** professionals and enthusiasts of all degrees, this Guide goes a mile wide and an inch deep to introduce the social values, Social Process, Decision Process, and Accounting techniques that help identify the Common Interest – the critical factor in creating sustainable and effective policy.

**Our goal** here is to guide you through these interdisciplinary steps of the Policy Process to gain a more thorough understanding of the social forces involved in creating policy, and how you can look and think a little deeper to effectively evaluate and reduce wildlife-vehicle collisions.

Conventional & Functional Accounting

The Social Process

The Decision Process

Identifying the Common Interest

*Values*

Cultural & Physical Resources

Clark 2002
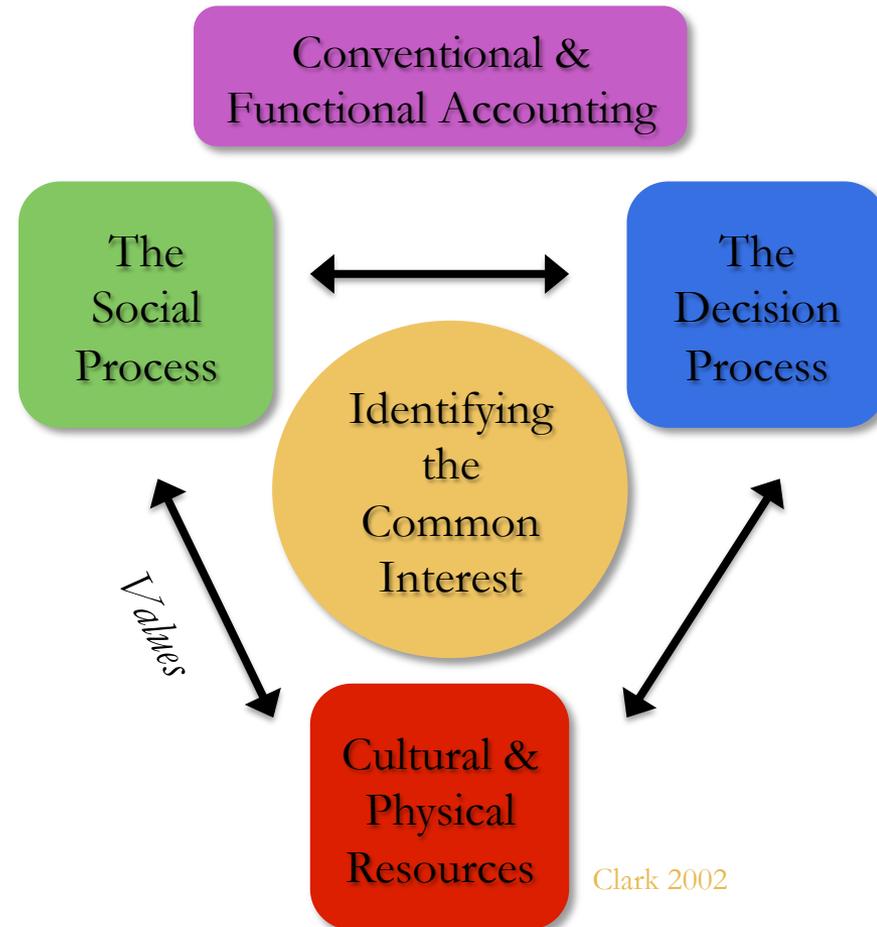
# PROBLEM ORIENTATION

The first step in the Policy Process is clarifying and defining the problem at hand. Comprehensive **Problem Orientation** is achieved when the following questions and topics are addressed:

| | Questions to Ask | For WVCs |
|---|---|---|
| **Goals** | ❑ What is the ultimate objective in addressing WVCs? | Reduce the amount of WVCs that occur on roadways. |
| **Trends** | ❑ What are the historical trends in WVCs? | ❑ Is the number of occurrences decreasing or increasing? |
| **Conditions** | ❑ What other conditions are correlated with the occurrence of WVCs? | ❑ What environmental, political, species-specific events have happened in conjunction with trends? |
| **Projection** | ❑ What trends are expected if no mitigation strategies are employed? | ❑ Can we predict where and under what conditions WVCs will occur in the future? |
| **Alternatives** | ❑ What intermediate or alternative goals can be applied to reach our goal? ❑ What are the policy options? | ❑ What are the structural solutions? ❑ Management options? ❑ Behavior-changing options? |

GOOD LUCK

# THE SOCIAL PROCESS
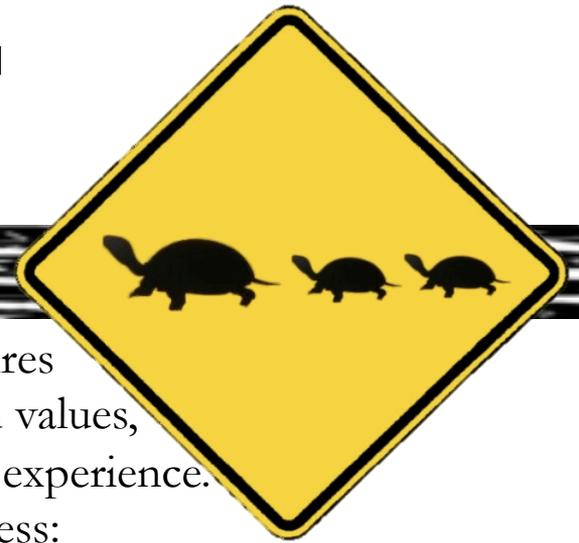
Understanding the social component of policy creation requires a more in-depth analysis of the participants, their perspectives and values, and how these influence where this issues lies in the larger human experience.

Seven components must be accounted for in this Social Process:

| | |
|---|---|
| **Participants** | Groups and individuals related to the case.<br>❑ Private, non-profit, and government organizations.<br>❑ Local, regional, national, or transnational level. |
| **Perspectives** | The *identity*, *expectations*, and *demands* of the participants, and how they influence participants' definition or view of the issue. |
| **Situations** | Identify the arenas and circumstances in which participants interact. |
| **Base Values** | Values possessed by participants. *See pages 6-7* |
| **Strategies** | Strategies for how participants express their values.<br>❑ Diplomatic, Ideological, Economic, or Military? |
| **Outcomes** | Short-term consequences of social interactions, as defined by values. |
| **Effects** | Long-term outcomes in values, groups, and larger society. |

# The Social Process for Wildlife-Vehicle Collision Management

| Participants | Perspectives | Situations | Base Values | Strategies | Outcomes | Effects |
|---|---|---|---|---|---|---|
| Drivers | Expect safe, unimpeded roadways. | On roadways Pay taxes Public forums | Wellbeing Skill | Driving Speed Voting Insurance claims | Safety on roadways | … |
| City Planners | Maximize land space and value for development | … | … | ... | … | … |
| Private Developers | Concerned with government building regulations and client demands | … | … | … | … | … |
| Wildlife & Park Managers | Protection & safety of wildlife | … | … | … | … | … |
| Government Transportation Agency | Protection & safety of drivers & integrity of infrastructure | … | … | … | … | … |
| Wildlife | … | … | … | … | … | … |
| Etc. | | | | | | |

# SOCIAL VALUES IN THE POLICY PROCESS

Social values play a huge role in the creation of people's perceptions and biases, which in turn influence how people define problems, prioritize and process information, and make decisions. Identifying which values are held by the actors involved in the Policy Process is thus an important part of effectively communicating with others and understanding the social and political context. Working and speaking with drivers who are targets for education campaigns, for example, will require a different set of discussion points and arguments than those relevant for government transportation or agents or lawyers who are responsible for enforcing ultimate policy.

Below are the key 8 values to keep in mind:

**WELL BEING**

**AFFECTION**

POWER

SKILL

WEALTH
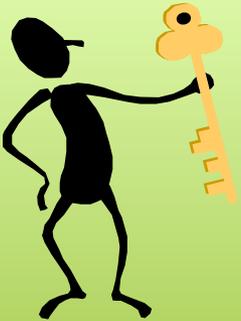
RESPECT
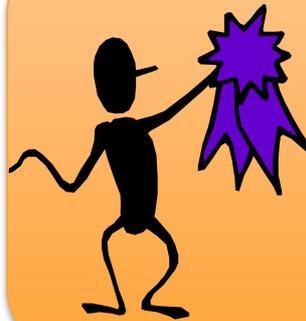
ENLIGHTENMENT

RECTITUDE

ALPACA XING
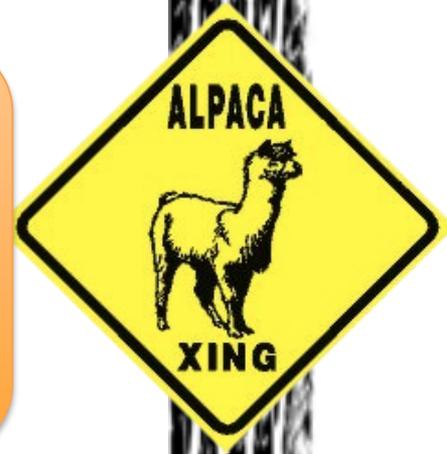
# THE DECISION PROCESS
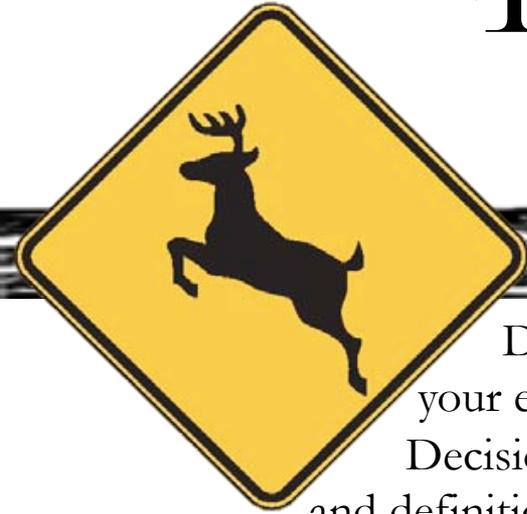
Determining where you fit into the Policy Process – or simply where your efforts may be most impactful - requires an understanding of the Decision Process that encapsulates the life cycle of a policy from the identifying and definition of a problem through its termination.

The Decision Process is comprised of 6 actions:

| **Initiate** Identify & define primary problem. | **Estimate** Study the scale, quality, and impact of the problem. Assess claims and concepts. | **Select** Formulate, discuss, and select a policy program to address the issue. | **Implement** Apply prescribed program or policy. | **Evaluate** Assess expected and achieved outcomes. | **Terminate** Problem is mitigated, current prescription ends or is revised |

Revise if necessary

# Decision Process Questions for Wildlife-Vehicle Collision Management

| | |
|---|---|
| **Initiation** | ❑ Which participants are identifying WVCs as a problem?<br>❑ Whose interests are favored by the initial problem definition?<br>❑ Who are the most suitable participants to involve going forward? |
| **Estimation** | ❑ How many WVCs are happening annually?<br>❑ Are there seasonal trends?<br>❑ Where are the WVC "hotspots"?<br>❑ Which species are of greatest environmental concern? Which are most impacted by WVC related mortality?<br>❑ Which species are associated with greatest vehicle damage? (Economic Impact) |
| **Selection** | ❑ Based on the information above, where are efforts best served to reduce WVCs? Species-specific? Area-specific? Etc<br>❑ Who will be responsible for carrying out this policy (policies)? |
| **Implementation** | ❑ Is the implementation schedule addressing needs in a timely manner?<br>❑ Which participants are fulfilling their responsibilities? |
| **Evaluation** | ❑ Has the overall number of WVCs decrease?<br>❑ Have species and areas identified as primary focus displayed a decrease in WVC involvement? |
| **Termination** | ❑ Is the number of WVCs low enough to justification completion of the project? |

# CONVENTIONAL ACCOUNTING

Conventional Accounting is the process in which we identify the Biological and Extrabiological Considerations related to WVCs. These are the factors that are commonly identified and addressed among most practitioners.

**Biological Considerations**

- Demographic Variables
- Behavioral Variables
- Genetic Variables
- Environmental Variables
- Catastrophic Variable

**PROBLEM**

**Extrabiological Considerations**

- Socioeconomic Variables
- Policy & Program Variables
- Program Organization & Management Variables
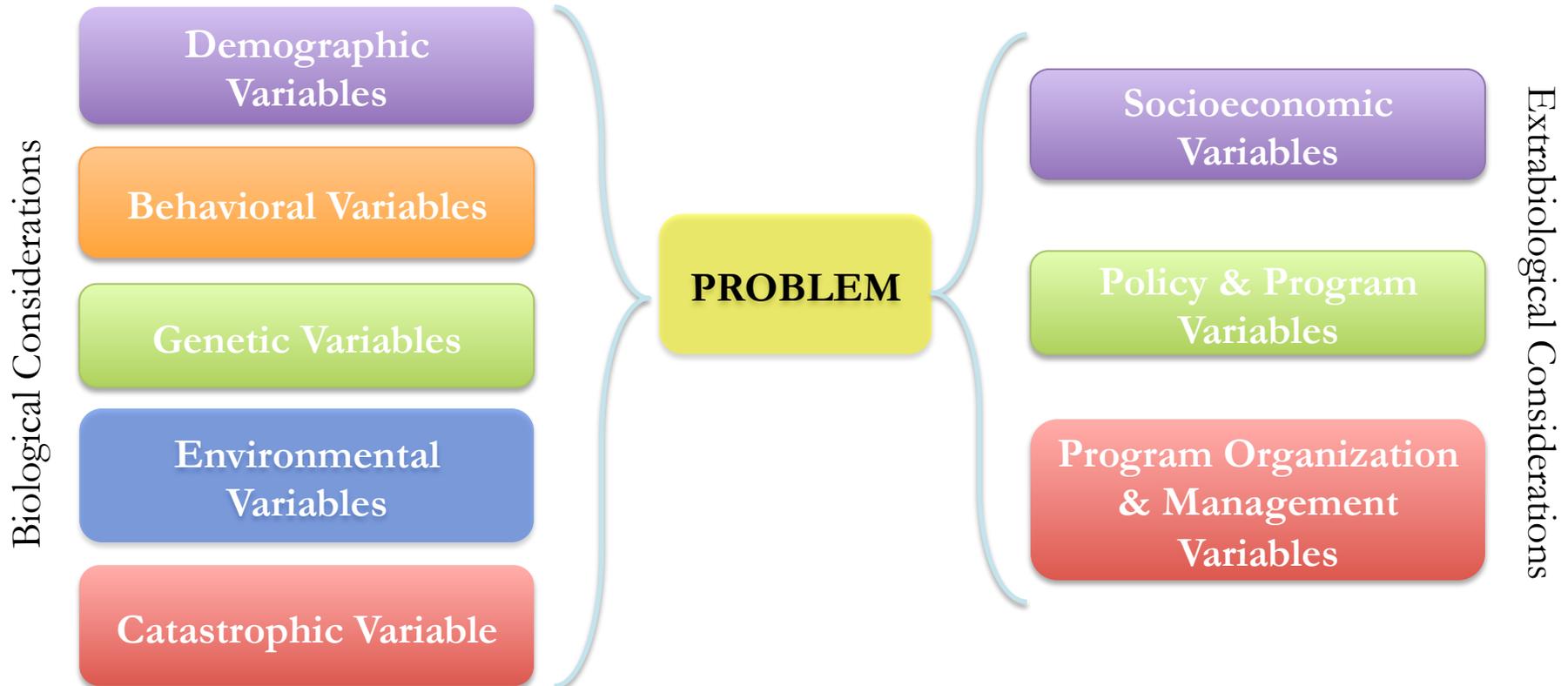
# CONVENTIONAL ACCOUNTING FOR WVCs

- Numbers
- Density
- Distribution
- Mortality
- Emigration
- Immigration
- Dispersal Distances

- Social System
- Mating System
- Reproductive Behavior
- Food Getting
- Anti-Predator Behavior

- Population Size

- Habitat
  - Size & Quality
  - Isolation
  - Food & Water Availability
- Interspecies Interactions
  - Predator/Prey
  - Competition
  - Invasive species
- Trends

**WVCs**

- Societal Values
- Societal Attitudes
- Societal Beliefs
- Societal Economic Patterns

- Federal, state, and local policies
- Budgets
- Personnel
- Plans for conservation of wildlife
- Restrictions and penalties on humans
- Species protection

- Operation & functioning
- Coordinating Roles
- Resources available
- Expertise

# FUNCTIONAL ACCOUNTING

**Lets bring this all together!** Functional Accounting is the process in which we go beyond the standard measures and factors involved in problem solving, and take a more qualitative, interdisciplinary, critical approach to understanding the problem at hand. Functional Accounting is comprised of 5 major question categories that integrate the concepts we have discussed so far, and supplement Conventional Accounting.

**IS IT REASONABLE?**
Problem Orientation
*Page # 4*

IS IT POSSIBLE?
The Social & Decision Processes
*Page # 5-10*

IS IT JUSTIFIED?
Social Process:
Participant Perspectives & Myths
*Page # 5*

WHAT IS MY STANDPOINT?
Identifying my epistemological, organizational, disciplinary, religious, class, parochial, world-view biases that influence my assumptions & analysis.

HOW WILL I INTEGRATE THIS KNOWLEDGE?
How can I fully synthesize and evaluate findings from the preceding questions to improve my skills as a critical thinker, practitioner, and problem-solver in the future?

Go Forth & Problem Solve!