Understanding and Managing Livestock Social Issues

Serecon Consulting
Edmonton

Science to Social Issues

Contents

1 Introduction

Of all the challenges facing the agricultural industry, social issues and conflict could have the most profound effect on the agricultural industry's future competitiveness. While beneficial management practices guidelines for manure management focus on environmental and economic practices and recommendations, guidelines for dealing with the underlying social and community issues are often overlooked and not addressed. If operators of livestock operations do not address the social environment made up of people and their community infrastructure, they can expect objections to their new and expansion projects and difficulties related to their manure management activities.

Five major drivers for greater emphasis on community relations for livestock producers have been identified, including:

- A consequence of increased livestock industry visibility, media attention, publicity gained by activists and prevalence of public hearings and notices;
- Mechanized and systematic raising of livestock and its associated methods are opposed by certain members of the public;
- Demographic shift from the rural to urban centres;
- Production systems becoming more systematic and larger because of economic survival; and,
- Increased potential conflict over basic resources (use of water, air, land) with the growth in population and lifestyle choices (Koehler, 2001).

2 Discussion of Issues

Socio-political issues can be contentious. Opposition to intensive agricultural operations, often based on the NIMBY (not in my backyard) position, can lead to intense and emotional conflict between neighbours, pitting one sector of the community against another. The debate often raises fundamental questions about how we want our communities to evolve and the role of agriculture within these communities. It has been argued that environmental policies must address relevant issues from the standpoint of science (Ament, 1999).

According to Statistics Canada, "A Profile of the Canadian Population – Where We Live", March, 2002, since 1990, population growth decelerated in every province except Alberta. Much of this increase in Alberta is attributed to an inflow of immigrants from the rest of the country. The area most benefiting from this inflow is the Edmonton-Lethbridge corridor. Growth in rural areas and communities is said to be dependent on the proportion of residents who commute to urban centres. The centres of Cochrane, Sylvan Lake and Strathmore have witnessed the greatest population growth (58.9%, 44.5% and 43.4%, respectively).

In the Prairies, statistics have indicated that there is a decreasing number of farms with an increasing farm size. There is a higher percentage of youth in the rural areas than the non-rural areas, while there is a lower percentage of 20- to 39-year-olds in the rural areas, indicating that there is a movement of this age category from the rural to urban centres. Numerous surveys have been conducted to gather local resident perceptions of larger livestock operations (Filson, 1999, Hite, 2001; Thu, et. al., 1999; Wing, 1999).

The Edmonton-Lethbridge corridor remains a stronghold for livestock production. Conflicts can be expected to heighten as the rural, non-farm population continues to grow in typical areas of concentrated livestock production. Although non-farm residents prefer that livestock operations locate in more remote areas, locating livestock operations in remote areas may not always be practical. These operations need access to electricity, good roads and productive lands. A balance is needed between satisfying concerns of neighbours and making the most efficient use of resources and infrastructure.

The highest development pressures occur within the central corridor along Highway #2 and intensive livestock operations are the farming activity most limited by these pressures ('Loss and Fragmentation of Farmland', AAFRD, April, 2002). The last quarter of a century has witnessed the conversion of high capability agricultural land to other uses and the development of lower quality land into agricultural uses. This dynamic has been attributed to rising land prices, limited expansion and development opportunities, and increased fragmentation of

agricultural lands (AAFRD, 2002). Other key contributing factors to loss and fragmentation of the farmland base are the health of the farm economy, shifting demographics, population growth, lack of understanding of normal farm operations, and municipal policies and decision making (AAFRD, 2002).

Growth in the livestock industry is no longer just dependent on negotiations between private owners and regulation. Increased public pressure from some individuals and/or groups, and economic and social effects of livestock expansion have widened the net of interested parties considerably.

The prospect of a new livestock project can promise economic benefits to a community, but it can also raise many fears. Studies identified the following social related issues associated with intensive livestock operations and manure management:

- reduced quality of life (Hudson, 1998; Kleiner et al., 2001; Wing, 1999);
- health symptoms such as respiratory and mucous effects, occurrences of headaches, runny noses, sore throats, coughing, diarrhea, burning eyes (Wing, 1999; Thu et al., 1999) and other issues such as antibiotic resistance and toxicity (Karpati, 1999);
- labour issues including turnover, competition for labour, new support services for outside labour, new low wage job creation (Liebl, 2001);
- outside ownership resulting in return on investment leaving the community (Liebl, 2001);
- impact on infrastructure such as the need for new roads due to increased traffic, new housing requirements (Liebl, 2001);
- rural economic health as indicated by decreased local economic growth, devaluation of property, community moral hazard, shifted costs of waste to other stakeholders in the region, diseconomies of scale (Weida, 2001);
- eroded public trust resulting from past abuse by industry (Hudson, 1998; Thu, 1998); and,
- threat to water quality (Filson & Friendship, 1999; Hudson, 1998; Liebl, 2001).

Large intensive livestock facilities are viewed as posing a direct threat to the social and economic makeup of rural communities. Evidence suggests a disappearance of small and medium size farming operations, and the direct accountability they foster in rural communities. Corporations which may have less ties to local communities and thus less sense of direct responsibility, are more prevalent. The evolving livestock industry is viewed as affecting rural residents' quality of life, including the air they breathe and water they drink (Caldwell, 2001).

Agriculture is becoming larger, more specialized, more intensive while rural communities have become less farm oriented because of the economical pressure to survive, less tolerant towards agriculture, and more politically influential (Caldwell, 2002).

Other authors imply that it is too simplistic to consider the size of operations as the only problem. Increased industrialization impacts social relationships in rural areas. However, Ikerd (2000) suggests that the trend toward fewer and larger farms is but a phase of a cycle that may be nearing its end. Future benefits from further industrialization are questionable given the increasing environmental and social challenges. Rural communities will require strong economic interdependencies among those within the communities in order to be sustainable (Ikerd, 2000). Ikerd implies that attraction of new knowledge workers will be a prerequisite to survival of communities and that attraction to communities will be dependent on the promise of a desirable quality of life.

"Quality of life is a product of human relationships—relationships among people and between people and their environment" (Ikerd, 2000). In addition to employment, safety, economic security, and access to health care, subjective aspects of equity, freedom from discrimination, opportunity, and social acceptance apply. A study by Mackenzie and Krogman (2001) of four Alberta communities reveals that rural residents are demanding greater public involvement in siting decisions through the appeal process. They advocate involvement of the public early in the decision-making and to increase the availability of information. Assessment of the type of publics within a community and the best means of effective communication is essential. Social Impact Assessment (SIA) is a tool which helps address this need.

3 Participative Approach

Participatory decision-making promotes mutual understanding, and helps groups build inclusive, sustainable agreements. By definition, participatory approaches are intensive, systematic but semi-structured learning experiences carried out in a community by a multidisciplinary team which includes members of the community (Pretty et al., 1994). This approach lends itself to use in needs assessment, feasibility studies, identifying priorities for development activities, and implementing development activities.

Connor (1996) advocates a participative approach to social impact assessment and management. This process is described in four phases:

- profiling – a comprehensive and systematic summary of the key characteristics of a community or region;
- projecting – estimates of the future state of the community or region in five or ten years;
- assessing – working with community leaders and key informants, estimates are made about different segments of the community; who gains, who loses, what is gained or lost and how important are these gains and losses to those affected; and,
- managing – ways to maximize the benefits, minimize the losses and compensate for the unavoidable for each segment of the community. These are worked out with community leaders following a publication, open house(s) or planning workshop.

Manitoba Agriculture and Food (2001) has prepared a guide for producers who wish to establish a new operation. This guide advocates a participatory approach whereby the producer develops a strategy for gaining public understanding (building a social profile, personal contacts, responsive publications, open houses, planning workshops, reference centres and informal consultations).

The Livestock Production Programme (LPP) in the United Kingdom (UK) benefits poor and landless livestock keepers in the developing world through generating and promoting innovative solutions to their many problems. The program takes a fully participative approach, i.e. the identification of researchable constraints by involving farming communities, decision makers, advisory and research institutions, and conducts the vast majority of investigative work 'on-farm'.

The participative approach to research and development has grown into a significant discipline in its own right, generating a substantial body of literature. To avoid biases entering into the participant selection process towards "those who do the discourse" (including representatives of poor groups), Richards (2000) suggests the need for detailed, baseline, social science research prior to the participatory exercise. A key challenge for deliberative processes is to assist in reframing debates. The purpose becomes one of informing and stimulating more active plural discourse rather than prescribing and justifying particular options for closure.

4 Developments and Issues

4.1 Guides and Beneficial Practices

Livestock operations now want project design and operational practices to be judged on scientific merit and be risk-based not perception-based. The livestock industry has made a tremendous effort to deal with issues related to the environment. *Beneficial Management Practices* (BMP) guidelines for the livestock industry in Alberta are in development. The BMPs are being developed by the different commodity groups and AAFRD to encompass the most up-to-date, generally accepted management practices. The *Beneficial Management Practices: Environmental Manual for Hog Producers in Alberta* document, developed by Alberta Pork and AAFRD, is intended to provide a range of management options for hog producers of various sizes. One chapter is devoted to the prevention, management and resolution of conflict.

The reference manual, *Beneficial Management Practices: Environmental Manual for Feedlot Producers in Alberta*, was published in September, 2002. This farm practice guideline was developed for Alberta feedlot producers through the cooperation of industry, government and interested stakeholders to create greater awareness and understanding of beneficial environmental practices for Alberta feedlots. It was developed by the Alberta Cattle Feeders' Association (ACFA) and AAFRD. Like the

pork producers' reference manual, this guide also contains one chapter that is devoted to the prevention, management and resolution of conflict.

Several organizations have published guidebooks and brochures to assist livestock producers develop strategies for making livestock operations compatible with neighbours and the community, and projecting a positive visual image. Manure management strategic initiatives have been developed by CETAC-West Saskatchewan, U.S.A. National Pork Producers Council, Manitoba Pork Council and the Manitoba Livestock Manure Management Initiative Inc. Although many guidebooks emphasize technological solutions for manure management problems, several documents advise producers relative to the development of community friendly and pro-active public information campaigns. The Manitoba Pork Council has published guidebooks advising farmers on how to gain acceptance for new or expanding operations and how to help maintain these successful relationships.

Mr. Ron Johnson, Manager of Manitoba Livestock Manure Management Initiative Inc., identifies the main social issues as the following:

- the effect on lifestyle (e.g., odour);
- effects on the environment (e.g., groundwater and surface water);
- food safety; and,
- animal welfare (activists "turn it into an environmental concern to make a point").

The main social concern is described as the effect on lifestyle (odour) including the economics to a minor extent. Little is suggested to be available in the form of guides that address social issues as most address the environmental components. Mr. Johnson advises that examination of social issues must acknowledge positive as well as negative impacts.

Resources are also available which advise producers on conflict resolution relative to issues of impasse, advocacy, communication and mediation. Mayer (2000) provides counsel for handling conflict based on who the people are and how they relate to others. The Canadian Farm Business Management Council (2000), supported by Agriculture and Agri-Food Canada, provides a guide for farmers on preventing and resolving community conflict. This document leads the reader through a process of understanding conflict and its causes, providing tips on preventing and managing conflict, developing communication skills, dealing with special situations, resolving conflict and involving the public. The Alberta Rural Development Specialists-Organizations (RDS-O) also work directly with agricultural communities and organizations to develop consensus decision-making. Alberta Agriculture, Food and Rural Development publications such as 'Finding Common Ground – Negotiating Agreements' provide the basics of interest-based negotiation and illustrate negotiation techniques. The workbook 'Journey to Consensus' outlines the stages of negotiation and provides suggestions to assist in making negotiations effective.

Connor (2000) advocates that producers get their stakeholders (suppliers, neighbours, consumers…) psychologically involved in the success of their operations. His basic strategies include the development of systematic understanding of the community, assembling sound technical plans to deal with issues, communication with the public, direct contact with key members of the public and education of the general public. His recommended strategies are supported by case study work.

Contacts from Co-operative State Research Education and Extension Services (CSREES) indicate that there are not many good examples of beneficial management practices regarding social issues. Ohio has had a process for getting input from the public, but this process is not viewed as very successful due to language and cultural problems. The California county level permitting process for dairies is likewise viewed with limited success.

5 Other Sector Experiences

5.1 Forestry

The forestry sector faces serious challenges to the long-term management and rational utilization of forests. The absence of sustainable forest management practices, tropical deforestation, desertification, forest degradation, and global climate change all threaten the resource (Roberts, 2002). A Tripartite Meeting on the Social and Labour Dimensions of the Forestry and Wood Industries was held in Geneva, 2001, to identify measures which governments, employers and workers and their organizations should take in order to contribute to socially sustainable development. A series of tools were identified which facilitate putting

sustainable forestry into practice by managing forests for the interests of industry, local communities and the general public and for providing independent certification of such management.

The Forestry Stewardship Council (FSC) focuses on the social aspects of forestry taking a holistic approach to the interaction between the social chamber constituents (indigenous people, workers, and community and small-scale forest users) and forest management and the environment (Reinstrom and Rainey, 2002). It includes improvement of the quality of life and relief of poverty for forest dependant people and workers. Social issues figure prominently in the formulation of the Principles and Criteria (P&C), and social members are given an equal voice in the chamber structure.

The FSC is an independent, non-profit, non-governmental member organization committed to responsible forest management world-wide. The FSC certification benefits local communities in developing countries and in such areas as Sweden with its indigenous Sami population. The FSC members (some 460 organizations, companies and individuals) are divided into three chambers – the Environmental, the Social and the Economic – with an equal share of votes. They have endorsed a global set of Principles and Criteria for forest management that includes the recognition of indigenous people's rights and safety of forest workers, the protection of biodiversity, and the conservation of ancient natural woodlands. Products from FSC-certified forests are trade marked in order to communicate to consumers that the products come from independently certified, well-managed forests.

The purpose of the Canadian Forestry Advisers Network (CFAN) of the Canadian International Development Agency's (CIDA) is to stimulate thought on international forestry issues and to provide opportunities. CFAN activities and functions may be divided into the broad categories of Technical Development and Support (meetings, technical workshops and an advisory roster); Information Management and Exchange (projects database, library), and Forestry Communications (publications and website).

Certification is a market-based, voluntary activity designed to demonstrate that forest operations are being managed according to a recognized standard that presumes resource sustainability. The number has grown significantly in recent years to include the Sustainable Forests Initiative (SFI), the Canadian Standards Association's Sustainable Forest Management Standard (CSA), the Pan-European Forest Certification (PEFC), ForestCare, American Tree Farm System, and Green Tag, among others. The concept is evolving from its initial focus only on timber, to include others' products "from the chain of custody". The increasing demand for certified wood and a jockeying for position and logo recognition among the major players has led to the development of Mutual Recognition (MR). This in turn has led to comparison projects, and it is questioned as to what the impact of these independent audits and comparisons will be. The FSC is the only one to specifically include land or user rights of Indigenous Peoples.

According to personal communication with Mr. Neil Shelly, Director of Environmental Affairs for the Alberta Forest Products Association (AFPA), their primary purpose is to ensure the way that they plan involves the public and that members contribute to the community in which they operate. The AFPA includes 60 Alberta company members who manufacture lumber, plywood, pulp and paper and secondary manufactured wood products. The AFPA's greatest social issue is ensuring proper public involvement and input into the use of natural resources. ForestCare provides standards and expectations with regard to the care of forests, environment and the community. Regular annual audits are conducted which last three to four days in duration. Successful audits receive a "ForestCare Certification Status" which is of benefit in communications to the community. AFPA expects members to contribute financially to the communities in which they operate. A general guide is that companies contribute (cash and 'in-kind') $100.00 per employee. A process is in place to monitor how member companies interact with communities, how they support the community and how they contribute to the community.

Mr. Shelly of the AFPA advises that communication to all public stakeholders and use of local observers in audits is key to a successful social component. The AFPA uses local school teachers (pays the school board for a substitute teacher) or farmers/ranchers as local observers. These local resident participants are able to defend the audit process. Mr. Shelly has commented that "if you don't actively involve people

and communicate, then you aren't doing your job." Involvement helps ensure community appreciation and understanding of what you are doing and the measures you are taking.

In 1997, the Community Economic Development Centre at Simon Fraser University was awarded a three-year research grant from Forest Renewal BC to explore the dynamics of community-based developments in rural B.C. Four communities were piloted through this project: the Nuxalk Nation in Bella Coola, Salmon Arm, the Lillooet Tribal Council and the South Cariboo. The best-practices theory behind the approach was applied to help development decisions which contribute to the desired future of the entire community. Development decisions are based on quality information and a clear, participatory process. Projects that are initiated without community involvement face barriers to success, lack community support and are a mismatch with the financial, ecological or human resources available within the community. A wide variety of strategies were applied, including a community-based conflict resolution, community forest planning, tourism development, heritage research and development, creation of a community arts centre and business enhancement and retention programs. It was recommended that training should be locally based and action oriented. Efforts should be taken to link capacity building with issues of community health.

Lessons gained through the community-based development pilots include the following:

- communities and regions are different and localized monitoring systems must reflect that variety;
- monitoring must focus on sustainability and the human well-being in the ecosystem; and,
- indicators should be categorized relative to ethics, conservation, competition and co-operation.

5.2 Military

Community involvement plays a major role in investigative, cleanup and restoration activities of the military. Examples (Former Fort Ord Environmental Cleanup and the Community Relations Plan for Air Force Plant 4) provide examples of community relations plans which assess community interest through survey, public meetings, information sessions, facilitated boards and committees, and open houses and tours.

The planning process for the Canadian Forces Base (CFB) in Calgary included an extensive public involvement program. Members of the public were invited to open houses at a scenario development stage and the draft plan stage, and to special meetings on transportation issues. A community planning advisory committee of local community representatives advised the plan preparation team throughout the process. A community plan was developed to address the best reuse and redevelopment of the vacated lands to a healthy, vibrant residential neighbourhood. In early 1999, the Alberta Association, Canadian Institute of Planners (AACIP) awarded the CFB Community Plan for environmental distinction. In November 2000, the Real Property Institute of Canada recognized the CFB project with awards for Best Practices and Comprehensive Planning.

In 2000, an application to the City of Edmonton was made to develop a Neighbourhood Area Structure Plan for the Griesbach Barracks by Canada Lands Company. Redevelopment planning is expected to take between five to ten years to complete, with conclusion of the development over a longer period of time. Work was not expected to begin until the second half of 2002. The majority of military operations at the Griesbach site have been consolidated on the Namao site north of the city. The proposal is for a predominately residential development. The plan has involved local community representatives.

5.3 Mining

Mining has been identified as contributing to social costs in terms of health (injuries), changes in leadership, impacts of boom and bust cycles, destruction of indigenous livelihoods and other distortions of the local economic base. Wilson (2001) argues that the impact of mining in part depends on the volatility of mineral prices. A report from the Pembina Institute (2002) recommends that the following actions be taken in order to promote social sustainability of the mining sector:

- *"Stop giving new subsidies to the industry. They are bad investments of public funds that earn poor returns.*
- *Withdraw tax breaks and bring mining companies' taxes into line with the general corporate tax structure.*

- *Ensure mines pay appropriate mineral royalties and amounts for energy and water use.*
- *Reallocate the resources given to the mining industry to remediate abandoned mines, and to devise economic strategies for mine-dependent communities.*
- *Require realizable financial assurances from new and operating mines to assure proper closure and cleanup.*"

The Australian based company, BHP, provides one example of how a corporation can incorporate community and social targets into its strategies. It mandates its operations to have community relations management plans and social impact analyses in the feasibility stage of project approvals. They also contribute to community programs, including in-kind support.

A new report from the North-South Institute (media release May 20, 1998) states that Canadian mining companies working overseas must be more accountable to local communities in order to be more socially responsible, and must demonstrate that their international environmental, social, and labour standards at least match their domestic standards. According to the Canadian Development Report (CDR) 1998: "Canadian Corporations and Social Responsibility says that to contribute to social equity in developing countries, Canadian mining companies must engage in community consultation and participation; show respect for workers' basic rights; develop and implement codes of conduct; and pursue corporate governance principles that maximize stakeholder access to information and decision-making".

The Mining Association of Canada (MAC) developed an action plan for reducing greenhouse gas (GHG) emissions in October 2001. The MAC identifies aid to Canada's international climate change commitments. Canada's mining industry GHG emissions are linked, for the most part to energy consumed during the production process. Communication is identified as one of the key requirements for effective energy efficiency programs. The draft guiding principles toward sustainable mining (MAC, November 2001) include provision to involve communities of interest in the design and implementation of the initiative.

Public concerns have emerged about adverse environmental legacies, and some groups have called for more restrictive operating regimes for the mining industry. In the final report "Toward Change" (September, 2002) by Mining, Minerals and Sustainable Development (MMSD)- North America, among its key long term recommendations was to strengthen legislative rules, market incentives and voluntary programs to address legacies of the past. Other recommendations also included the design and implementation of a set of effective dispute resolution mechanisms, and to identify how ecological and social cost, benefits and risks can be more effectively incorporated into decision support modeling.

The Prospectors and Developers Association of Canada (PDAC)'s Environmental Excellence in Exploration (E3) project is designed to advance environmental stewardship in the exploration stage of global mineral development by creating an e-manual, a tool that will provide rapid access to the most up-to-date information on environmental management practices for minerals exploration. This e-manual will also include a section on responsible community engagement and will inform all stakeholders about potential issues and concerns. The e-manual will also identify the most effective best management techniques available to eliminate or mitigate associated environmental impacts.

On the local front, companies like Luscar Ltd. (Canada's largest coal company) advocate their community participation through such activities as:

- involvement in regional wildlife management plans and regional forestry plans;
- construction of public access trails; and,
- cooperative work through a number of local and provincial organizations.

Smoky River Coal Limited is working with a local aboriginal community to identify areas on the mine site and in the region important for fish, wildlife and traditionally used plants for food, medicine, and in ceremonies. Smoky River Coal Limited indicates that they have routine consultation with the local public about land use effects on wildlife and habitat.

Dow Western Canada has a community advisory panel comprising community members and senior management. This panel provides a forum for community concerns to be raised directly with management. A risk management program is being developed which will provide transparency for the company's activities and associated risks. The development process for the risk management program will culminate in a town hall meeting that

will be open to the public. Dow is also involved in the Fort Saskatchewan Ambassador Program as a means of stimulating, diversifying and attracting new businesses to the local economy.

Industry concedes that failure to understand local realities and engage the community constructively creates the risk of costly delays or even termination of mineral projects due to disruption, confrontation and conflict over social, cultural and environmental issues. Lessons learned in developing successful public consultations suggest that focus of efforts should be on special publics as opposed to the general public with an ultimate objective of improvement of public trust rather than simply public image. This is accomplished by what industry does as opposed to simply what they say (Tony Andrews, Executive Director, PDAC).

5.4 Oil and Gas

The relationship between resource dependence of communities and indicators of community well-being across Canada has been examined by Stedman, (2001). Resource-dependent communities are said to face greater potential social problems, such as poverty and low educational attainment.

The oil and gas industry must face the prospect of policies to combat climate change and constraints to access oil and gas reserves. These challenges will have financial impacts on companies.

According to representation from the Petroleum Communication Foundation, one of the main issues facing the petroleum industry is that of odour, primarily from sour gas, however, they do address numerous issues related to pipelines, natural gas, etc. The Foundation acts as an information centre, providing balanced and factual information, and not venturing into the role of lobbying. The information is of value for educating communities. A multi-stakeholder review process is used for review of all publications. Stakeholders include industry, government, academia and the community. Mr. Roger Rowly, Executive Director of the Foundation recommends that some province-wide research on attitudes and knowledge would be useful in manure management.

The Canadian Association of Petroleum Producers (CAPP) developed a guide and standards publication specifically to address public involvement, entitled 'Guide for Effective Public Involvement', 1998. This document is currently being rewritten and, according to Mr. Gary Webster, Manager of Environment, Health and Safety Program, CAPP, the new document is expected to be available in one year. Mr Webster believes that regulations and zoning are an ideal method of dealing with issues because they provide a needed legislative framework. CAPP also has an industry stewardship program, however, it does not represent the total industry.

According to CAPP, some of the issues and initiatives facing the Alberta petroleum industry include the following:

- industry-landowner relations – governments, regulators, communities and industry to develop programs to improve relations between Alberta landowners, communities and petroleum operators. In 2001, stakeholders including synergy group members, the Alberta Energy & Utilities Board (EUB) and the Canadian Association of Petroleum Producers collaborated to organize Making Synergy Real – a unique conference focused on working together effectively;
- Aboriginal initiatives – the consultation process with government and the Dene Tha';
- air quality;
- regulatory improvements; and,
- public involvement – CAPP's "Guide for Effective Public Involvement" is designed to improve understanding of public concerns, respond effectively to them and develop positive community relations. CAPP is working with the EUB to develop an Appropriate Dispute Resolution Program.

There is a growing amount of literature about sustainable development and corporate social responsibility. Many explore the new responsibilities of business as they shift from the "do no harm" approach to the "demonstrate positive development benefit" imperative. Management tools include tri-sector partnership models and sustainable performance indicators. In the tri-sector partnership model, government provides strategic coordination of social programs through local development plans. Oil, gas and mining companies provide employment, supply chain management, local infrastructure, technical skills, a capacity for advocacy, and international standards. Civil society organizations provide local knowledge, methods to ensure relevance, to local livelihoods and monitoring.

Warner (2000) identifies that a common error in trying to build partnerships is for a company to launch into discussions with potential partners before fully understanding its own internal needs and interests (core business interests, on-going social management, negotiating strategies, and anticipated benefits vs risks). The key is said to lay with the view that the development of a partnership with government and civil society is a process of consensual negotiation.

An example of where partnering with public became essential to the resolution of concerns over sour gas operations is that of Canadian Occidental Petroleum Limited (COPL), and its sour gas field east of Calgary. The sour gas field, with a hydrogen sulphide content of up to 35% had been in operation since the 1960's. By the 1980's, Calgary had grown eastward and was moving closer to COPL's facility. The public had also grown more aware of perceived health and safety risks posed by sour gas. COPL was having difficulty empathizing with public concerns because the operation was scientifically shown to be safe and they were there first.

COPL wished to drill additional sour gas wells in the field, but realized that public hearings would result in further deterioration of relations. COPL approached the Alberta Energy Resources Conservation Board to determine whether there was an alternative mechanism to resolve the issues. A voluntary public consultative mechanism was recommended. Residents were asked to participate in a mediation-based, open consultation format to review COPL's development proposal. A neutral third party facilitated the process. Over numerous meetings, gradual mutual respect emerged. COPL had agreed to full disclosure of confidential information. The outcome was a report submitted by the residents which concluded that the residents would not object to the drilling of additional wells subject to implementation of a number of recommendations including the enforcement of the most stringent technological standards available, timing considerations for continued development, ignition practices, further public communication mechanisms and set-back considerations.

COPL suggest that the key elements for the success were the choosing of a facilitator and the immediate establishment of terms of reference for conducting the process. It was also critical that participants represent the spectrum of views on the issues. The key issues related to public safety, orderly and economic development of reserves, land use conflicts and communications. Technical expertise was provided by the government and COPL.

The commitment to consultation by the petroleum sector is strong. Companies like Syncrude have developed company principles outlining how they plan to consult with interested parties. Syncrude has engaged in ongoing mechanisms and groups to fulfill its consultative needs such as the following:

- Athabasca Oilsands Development Facilitation Committee, a forum for getting attention and resources assigned to priority areas and ensuring that physical and human infrastructure needs are addressed. It is comprised of regional and provincial government members and oil sands developers.
- Wood Bison Environmental Association, established in 1997, comprised of Syncrude, Suncor, Northland Forest Products, Fort McKay First Nation, The Fort McMurray Environmental Association, Northern Lights Regional Health Centre, Municipality of Wood Buffalo and Alberta Environmental Protection, to ensure air quality in the Wood Buffalo Region.
- Regional Health Integration Coordination Committee, comprised of representatives of Alberta Health, Northern Lights Regional Health Board, the local community and industry, conducts regional health studies to establish exposure to air contaminants and a basis for action.
- Regional Aquatic Monitoring Program conducts monitoring of surface waters and provides data to understand aquatic issues.
- Oilsand Mining End Land Use Committee, initiated in February, 1997, to develop recommendations related to End Land Uses for land reclaimed by the oil sand industry. This Committee consists of representatives from the oil sands industry, Alberta Environment, the Municipality of Wood Buffalo, Aboriginal Groups, recreational groups and environment organizations.
- Standing Committee on Oil Sands Development, consists of representatives from the Regional Municipality of Wood Buffalo, health, education, local and aboriginal business and environmental groups.

- Regional Socio-Economic Forum, a group to provide a seamless mechanism for getting information from the region's oil sands companies to social and educational groups within the Wood Buffalo region.
- Aboriginal Development Program, a strategy that ensures that the area's Aboriginal population shares in the opportunities stemming from oil sands development.

Coastal communities in other parts of the world have experienced social unrest as a result of the oil and gas industry. Examples include the following:

- The town of Valdez, Alaska reportedly experienced an increase in depression, domestic violence, and the crime rate, as a result of the economic and environmental damage caused by the 1989 Exxon Valdez oil spill.
- In Louisiana, a 1998 report by CEF Consultants found that many of the coastal communities with high populations of transient workers suffer from resulting social problems, such as unstable relationships, drug use, and high crime rates.

Awareness of the importance of environmental and social criteria in business practices has translated into some obligatory disclosure of these kinds of intangibles. France's *Nouvelles Regulations Economiques* mandates reporting (among other things) on human resources, community, and labour standards, and the U.K. government requires ethical, social, and environmental information on occupational pension funds investment policies. Companies like Conoco publish social investment figures (donations and membership dues) as an indicator of their companies' key performance. Suncor measures progress by monitoring selected performance indicators on the environmental, economic and social impacts and benefits to businesses and reportedly uses these for continuous improvement of performance. The indicators of community relations are identified as the dollars involved in Suncor Energy Foundation, community investment, United Way contributions, community service grants and matching grants. Other companies like Marathon have also set up foundations to oversee and direct corporate contributions.

The *Provincial Summary*, an Alberta Energy and Utilities Board (EUB) release in July, 2002, reports on inspections and results for drilling, servicing, oil and gas production facilities, pipelines, and spills. The report also covers enforcement actions taken by the EUB during the year, statistics on the numbers and types of public complaints the EUB responded to, and field staff participation with the public. The report notes an overall increase in the number of major and serious unsatisfactory inspections from 3.3% in 2000/2001 to 4.4% in 2001/2002. This was partially attributed to increased air monitoring for off-lease H_2S odours, increased inspection frequency of sour gas operations, and an enhanced inspection program aimed at mitigating pipeline corrosion. One of the measures of EUB's performance is its response to public complaints. The report indicates a decrease in the number of public complaints in the 2000/2001 year. The most common issue was odour.

The challenges ahead for the oil and gas sector are witnessed by competing visions for the use of land for energy facilities and pipelines and that of people moving to the country for a preferred way of life. In addition, increased uncertainty is evident as science and technology no longer appear to have all the answers. Scientific studies don't adequately account for the social impacts that are less tangible and harder to measure. The public is also conveying greater expectations that industry be more open and accountable. Involvement of landowners, residents and communities in the development of Alberta's oil and gas resources may lead to resolution of local issues at the local level. It is in this reality that the EUB strives to build a framework that will help inspire public confidence. The EUB expects companies, at a minimum, to:

- "communicate with residents within an emergency planning zone during early sour gas project preparations;
- provide full disclosure and consistent, factual information about the project and its impacts to allow for meaningful public input into decisions,
- discuss the potential scope of the project and how it relates to other nearby development,
- inform landowners and residents about land-use restrictions that may occur because of sour gas setback requirements;
- provide information about the regulatory process and how people can participate; and,
- communicate with landowners and residents as early as possible to ensure that special sensitivities are addressed during project planning." (Engaging the Public about Oil and Gas in Alberta, October, 2002)

The Advisory Committee on Public Safety and Sour Gas (the Committee), a multi-stakeholder group set up in January 2000 released its final report entitled *Findings and Recommendations*. Based on extensive input from the public living near sour gas areas and other stakeholders the report sets out the Committee's findings and final recommendations to the EUB. The recommendations are generally directed towards increasing awareness of sour gas and its impacts on public health and safety, improving the sour gas regulatory system and encouraging better consultation that must take place with the public on all sour gas matters.

The number of synergy groups in Alberta has grown from a few to over 50 in the last few years. These groups help companies and communities work together to develop positive relationships and avoid confrontation and conflict. These groups discuss the potential impacts of oil and gas activity on land, land values, aesthetic values and health and safety. Synergy groups are comprised of stakeholders working to find solutions that benefit everyone.

Shell helped establish the Waterton Roundtable in the early 1990s to share information about its development plans in the Waterton field. This synergy group included community representatives, environmental groups, the EUB, and Alberta Forestry. Mr. Roy Woods, Shell Canada Limited, indicates that consultation activity helps find ways of reducing the footprint of industry's activities and helps meet expectations of local stakeholders. Mr. Woods suggests that there is not a one-approach-fits-all when it comes to consultation and that different situations bring together different groups for different reasons.

Examples of successful synergy groups have included: Airdrie and Area Public & Petroleum Awareness Alliance; Sundre Petroleum Operators Group; Pembina Area Natural Resources Advisory Council; Panther Advisory Group; Vulcan Multi-Stakeholders Group; Clean Air Strategic Alliance/ Animal Health Group; Lakeland Industry and Community Association; Calgary North H_2S Action Committee and Lochend Review Group; Butte Action Committee for the Environment; Greater Kakwa; Parkland Airshed Management Zone Association; AUCC; Suncor/Pather Advisory Group; Steering Committee for Rocky Mountain House; Genesee Synergy Group; Crowsnest Forest Stewardship Society; Quirk Creek Gas Processing Community Committee; Industry/Rimbey Stake-holders Group; Industry/Community/Petroleum Industry Association; Shell-Waterton Round Table; Edson Creative Solutions; Regional Infrastructure Working Group; Community Advisory Panel—Olds; Hay Zama Committee; South Peace Crime Prevention Association; Patricia & Area Landowners Association; Canadian 88 Community Advisory Panel; and Gregg Lake Cottage Owners Group.

5.5 Water and Wastewater

In recent years, the water sector has received a growing amount of public attention, and politicians, utilities and the general public are finding themselves confronted with increasing change. Water is now a priority on the agenda of international organizations, financial institutions, municipalities and financial investors. With the water sector as a whole, literature clusters around three value chains in particular (urban water management, agriculture and industry—cooling water, process water and energy production).

Many utility and public service companies advocate greater community involvement in the decision-making process, and in the planning and implementation of services, in order to increase public acceptance and ownership of systems, with benefits for both the affordability and sustainability of systems.

Project CARE is a process used in Australia to involve the community in tackling water and wastewater issues. Along with the need to strengthen and encourage community involvement in problem-solving, other lessons included the importance of an integrated approach to management of water, wastewater and storm water, and the issues of concern in each area.

Access to drinking water and sanitation is often discussed as a human and social right. A Sustainable Asset Management (SAM) Research Study (2001) has identified the following three social sustainability criteria:

- minimum standards must be set governing the availability and quality of water-related services for all populations groups (e.g. access to drinking water and sanitation;
- care must be taken to ensure that all social classes can afford minimum basic water services. This means for example, charging lower prices for basic water consumption and higher prices for luxury consumption; and,

- stakeholders should be sufficiently involved in the decision-making process.

Some common goals relative to public education and involvement include the following:

- providing forums for interested entities to co-operatively and constructively discuss water quality, flow and habitat-related issues;
- developing web pages and other communication means that can be readily accessed by interested parties for information;
- developing a broad base of support, including, but not limited to, wastewater dischargers, water suppliers, farmers, developers, planners, students, teachers, public agencies, business/ industry, community groups, parks and open space users, and other interested citizens;
- promoting responsible land development practices in the rapidly urbanizing watershed, consistent with different levels of government regulations; and,
- informing and educating watershed residents on stream-related environmental issues and measures that they can take to improve and protect water quality, aquatic life and habitat.

The Office of Energy Efficiency (OEE) is a federal office under the Department of Natural Resources Canada. The mandate of the OEE is to renew, strengthen and expand Canada's commitment to energy efficiency, with particular focus on addressing the Kyoto Protocol; this means that the OEE focuses on reducing GHG emissions. The OEE manages 18 programs aimed at moving the market toward improved energy efficiency. These programs target all energy consumers and emphasize partnerships and economic investments. *Trends in Energy Use in Canada*, shows how Canadians have become more efficient in their use of energy by estimating the efficiency of energy use in the residential, commercial/institutional, transportation and industrial sectors.

Between March 1 and April 15, 2002, the government of Alberta consulted with Albertans on the challenges and priorities for water management and supply, and sought fresh ideas for responsible solutions to those challenges. The consultation process had three major components – ideas generation, public outreach and consultation, and a ministerial forum on water. The first phase – ideas generation – was completed in early 2002 when a small, diverse group of Albertans provided the government of Alberta with advice on water management in the province. This "ideas" group identified the challenges associated with managing water in the province, and several opportunities for improving it. In the second phase, key stakeholders and all Albertans were invited to respond to the initial directions proposed by the ideas group. The third stage in the strategy's consultation process was a Minister's Forum on Water, hosted by Alberta's Minister of Environment in late spring 2002. Working with a panel of experts on water issues, Alberta Environment compiled all of the ideas and feedback heard through all three levels of the consultation process to develop a series of recommendations and a framework to serve as the provincial water strategy for sustainability. The new Act allows for regional differences in water management to be reflected through the development of water management plans. Public consultation will be a key component during the development of these plans and will include opportunities for local and regional involvement. Plans may address specific regional water management issues such as whether a transfer of an allocation under a licence may take place or matters related to the issuance of approvals or licences.

5.6 Summary

The forestry sector appears to be the furthest along in terms of application of social assessment techniques. The Forestry Stewardship Council provides certification of members' ability to address social issues and integration of social constituents in its forest management practices. Certification is market-based and voluntary. The Alberta Forest Products Association ensures that the public is involved in their environmental decisions and provides standards and expectations with regard to the care of forests, environment and the community through its program, ForestCare. Community consultation and participation are viewed as paramount to industry success.

Public consultation also plays an important role in t he planning process for relocation and/or restoration activities for the military. Several examples of community involvement in planning decisions are cited for the Canadian Forces Bases in Edmonton and Calgary.

Individual companies in the mining sector have demonstrated efforts toward involvement of communities in their development activities. Use of community advisory panels, town hall meetings, and work with local aboriginal communities are some of the techniques employed. The sector is slowly recognizing the value of community participation in terms of reduction of delays or even termination of mineral projects due to conflict over social, cultural and environmental issues.

The oil and gas sector has employed various techniques to address social issues, including use of information centers, development of guides and standards for public involvement and establishing an industry stewardship program. The commitment to consultation is evident in inclusion of consultation planning in company principles and social criteria disclosed in business practices and reporting. The emergence of synergy groups to help companies and communities work toward positive relationships and the EUB framework for engaging public all help contribute to inspiring public confidence.

Public education and involvement in terms of forums, public outreach and ideas generation have been instrumental to the water sector in Alberta. This process has led to valuable input into water management and strategies for sustainability.

6 Operational Techniques

Participatory processes have been categorized into five types of mechanisms (Beierle, 1998). They are as follows:

- non-deliberative mechanisms for obtaining information from the public (surveys, focus groups, and public comments);
- non-deliberative mechanisms for providing information to the public (information provision, public notice, public education);
- traditional mechanisms (public hearings and Citizen Advisory Committees);
- public deliberation (citizen juries/panels, consensus conferences); and,
- alternative dispute resolution (mediation and regulatory negotiation).

According to Schneider et al. (1997) and Slovic (1993), the ideal mechanism is one which provides the individual citizen with binding decision-making authority. Building trust through public participation is a daunting task. Participation however is advocated as the route to solving regulatory ills, restoring democracy and empowering parties to a decision.

The avenues of prevalence in literature include a mixture of traditional mechanisms and public deliberation: community consultation; stakeholder partnering; farmer out-reach; certification systems; mediation and dispute resolution; land use planning; and, strategic communication plans.

6.1 Community Consultation/Participation

The general public is reputed to be experiencing difficulty in contributing to or playing a significant role in critical decision making (Lacy, 2001). It is suggested that privatization of knowledge contributes to this phenomenon. However, public hearings, advisory panels, public surveys, conferences and community-based research are types of mechanisms for involving citizens. These approaches have had varying effectiveness.

Consultation with the community has been advocated as successful at the local level, on the premises that the people closest to the problems contribute invaluably to resolution of the issues, and local education and input in determining community objectives is valuable for assuring long-term grass-roots support. Community concern and interest can be determined through a number of activities and entities including: survey research, intelligent use of the media, neighbourhood or community meetings, targeted, confidential phone interviews, research among registered voters, and consulting community leaders.

Several papers advocate the importance of stakeholder involvement in critical issue decision-making (Kadvany and Clinton, 2002; Cole, 2002). Tradeoffs depend on what technologies can achieve, and the relative importance of competing stakeholder interests. Stakeholder involvement means broadening dialogue, debate, changes, agreements, implementation and adjustments.

Christensen (2001) suggests that stronger public/private collaboration is needed to supply

livestock owners and operators with essential technical assistance for conservation technology adoption. He also recommends both public and private sector technical field staff training in the economics of conservation technologies, and how to apply it in the comprehensive nutrient management planning processes. A greater partnership effort between different levels of government, farmers/ranchers, researchers, educators, private sector enterprises, interest groups, and communities is also needed.

A news brief by the National Resource Defence Council, July 2001, emphasizes the need for regulation and accountability of "factory farm practices". This can be accomplished with public awareness and participation. This article also supports alternative farming practices which reduce the concentration of animals and use manure safely.

Community-driven, "hands-on" public processes have been identified as effective means for development of plans (Frankish, 2000). Citizens and staff from various levels of government developed a successful partnership to garner funding sources and develop a Liquid Waste Management Plan for Union Bay in British Columbia. Innovative ideas such as the use of "living machines" such as constructed wetlands and solar greenhouses were used to treat wastewater. Sewage was treated as an asset not a liability.

The City of Atlanta reported successful results from the implementation of a "Good Neighbour Program" to address odour problems from its wastewater treatment facilities (Huber, et. al., 2001). The process used significant neighbourhood participation to identify and implement odour control. A public involvement program is credited with the City of Alexander, Alabama, successfully relocating a wastewater outfall (McClellan, 2000).

The City of Yokohama, Japan similarly has embarked on public relations activities and public hearings on all aspects of sewage works to increase awareness of their importance. The City has transformed from the mere provision of civil minimum service to one of a pleasant water environment (Kobayashi, 2001). There are websites with interactive activities and a "Kids' Page" promoting education for the next generation.

Emerging themes through the review include:

- Honesty – the best way to win public respect;
- Setting the parameters for consultation so that people's expectations match the process;
- Be open to community agendas and start where the community is at;
- Feedback to a community is essential if trust – once given – is to be maintained. Trust may take time to establish; and,
- Be flexible to the community's needs and timelines.

6.2 Partners of Common Cause

Alliances or partnerships have been promoted as an effective means for successfully addressing cross cutting relationships and common objectives relative to the agriculture-urban interface, waste management, integrated pest management, and global competitiveness.

Segerlund (2002) states that the international system consists of a complex interaction of organizations and arrangements, where the traditional categories of private and public, national and international are surpassed. It is now based on a hierarchical idea of function. There is also a development of stakeholder activism with the aim of redefining corporate mandates. Segerlund's field research suggests that a whole new "social contract" is being constructed.

In Alberta, the Oldman River Basin Water Quality Initiative was formed in 1997 in response to serious concerns expressed in the community about protecting water quality in the Oldman River Basin. Other initiatives that work directly with communities include, North Saskatchewan River Initiative, Crowfoot Creek Watershed Group …etc.

Prairie Agricultural Machinery Institute (PAMI), Saskatchewan Agriculture and Food (SAF) and the Prairie Swine Centre Inc. (PSCI) have organized tours to demonstrate cost effective methods of odour control on commercial hog farms (Henley, 1998). The tour was targeted at media, municipal politicians and provincial employees because of their impact on public opinion.

Initiatives which include different levels of government, nonprofits, private sector interests and the general public have had success in assessing

problems, prioritizing solutions and implementing changes. Such approaches have been used for watershed protection (Honkonen, 2002).

Benefits of partnering are exemplified by the Tracy, Quebec case where Groupe Conporec of Tracy (a private solid waste management company) partnered with the municipality to manage post-processing, transportation and disposal costs (Heath, 2000).

Reid, Backhouse and Crawford (2000) believe that farmers, politicians, developers, and landowners should become agents of change for communicating stewardship. Such a stewardship communication program needs to draw from the experience of educators and should include marketing principles.

In the article, "Herding Cats: Coordinating Stakeholders in 15 Jurisdictions to Reach One Successful Outcome", Cole (2002) demonstrates how a strategic initiative which brings together major players can be successful in creating a workable plan for meeting environmental/social concerns and regulatory requirements for compliance.

6.3 Farmer Outreach to Community

Diligent efforts in neighbour relations and best management practices are purported to being the most effective solution for farmers (Waters, 2002). Farmers must lobby in their own backyard. Farmer outreach processes are being designed comparable to the 'First Responder Networks'. Equated to that of medical emergency care providers, these networks combine the efforts of agricultural, governmental and community organizations to facilitate the development of good farm-neighbour relationships. (Bellows, 1998). A First Responder Network is a chain of referrals among agencies and organizations, which receive telephone calls from concerned citizens regarding farming practices. The advantages of a First Responder Network go beyond enhancing farm-neighbour understanding. This network may also enhance the credibility and visibility of agricultural and environmental agencies and facilitate the development of improved working relationships among agencies. Many farm-neighbour concerns will be resolved by providing community members with information about "normal and accepted farming practices." Additional concerns may be resolved by the farmer agreeing to make changes in farm management practices.

Farmers of the County of Bruce in Ontario, are partnering with municipalities to implement an Agriculture Environmental Stewardship Initiative (Morris, 2002). The objectives will include awareness building with the livestock sector, a provision of information and to raise public awareness of farmer's efforts with respect to environmental stewardship.

Comparable organizations such as the Texas Alliance for Healthy Communities, a 500+ member collaborative with Vision and Mission statements, a Governance Council, staff support provided by the Texas Department of Health, regular meetings, plans for regional meetings and a Symposium in 2003, have recently emerged to deal with sensitive issues. This organization expounds virtues such as ongoing dialogue, leadership, diversity, understanding and connection.

Advice from other farmers – Pennsylvania's website – contains advice and tips from 36 farmers that are using ways of peacefully co-existing with their non-farming neighbours, and is intended to help you think about ways you can develop better relationships with your neighbours. The Manitoba Pork Council has established the Peer Advisors Program – fellow producers trained in conflict resolution to work with producers and their neighbours. Ms. Melanie Couture is the Peer Advisors Co-ordinator, providing support to a Peer Advisor for recommending corrective action on any complaints.

Hunt, Erb, Rait and Shepard (1998) helped develop a marketing plan to target both farmers and the agriculture support sector in order to provide educational and technical support to farmers regarding integrated pest management and nutrient management. Haworth (2000) and Connor (1998) promote the use of advertising as a form of public outreach, including special sections in newspapers which can be used to describe activities and promote accomplishments. This information may also form a base to educate the public.

Publicly owned treatment works in Northern California and Nevada present examples as to the need for effective public outreach techniques with surrounding neighbours in order to address odour concerns (Witherspoon, Ong, and Sidhu, 2000). Their resulting Odour Control Master Plans called for innovative technical approaches.

6.4 Voluntary and Certification Systems

Environmental Farm Plan (EFP) is a voluntary, confidential self-assessment process to help Alberta farmers and ranchers identify and address environmental strengths and risks on their farm or ranch. The process includes two workshops and a set of worksheets – easy-to-use checklists – to allow participants to review all aspects of their operation. The program is operated by Alberta Environmental Farm Plan, a non-profit company. This initiative is lead by the agricultural industry.

A livestock Environmental Management System (EMS) is a systematic approach involving a continuous cycle of risk assessment, action planning, implementation, review and improvement to fully integrate environmental responsibility into the business of farming. An EMS is intended to improve an organization's compliance with local environmental laws but can have goals beyond this. Through independent certification, an EMS provides assurances to clients, consumers and government about the environmental performance of an organization.

The National Pork Producers Council announced in its December 2001 Legislative Report that the Director of the Virginia Department of Environmental Quality accepted a position as the Vice President of Environmental Affairs and Government Relations at Smithfield Foods. Murphy-Brown LLC, Smithfield Foods' livestock production subsidiary, has also recently received its ISO 14001 certification. Murphy-Brown was the first livestock operation in the world to achieve this environmental management system designation.

Interest in an EMS model for pork producers has increased since the separate agreements signed between the North Carolina Attorney General's Office and Smithfield Foods and Premium Standard – which, among other things, requires both companies to implement an ISO 14001-based EMS on all company-owned farms.

A Water and Wastewater Utilities Accreditation Program is being developed as a form of verification of application of standards. In this program, benefits and incentives (financial, regulatory and social and political) will be identified.

The ISO 14001 voluntary international environmental management standard, mostly used in the manufacturing industry, could be used in agricultural settings to increase quality of environmental management.

A draft standard Canadian Standards Association (CSA) EMS Standard has been agreed upon. It was to be submitted for public review (planned from May-July 2002), and amended if necessary (Canadian Pork Council, September 25, 2002). Fifteen farms have been chosen to verify the accessibility and audit ability of the draft environmental management system standard for hog operations. The pilot studies will take place from September 2002 to March 2003. Committee membership in the draft's development included producers, government and regulatory authorities and the general public. The social issues component remains relatively small, covering the views of interested parties and communication in the Implementation Guidance document (approximately two and one half pages out of 64 pages) and approximately one paragraph out of a total of 25 pages on communications in the Requirements document.

6.5 Mediation Intermediaries and Dispute Resolution

Local mediation committees to mediate local conflicts have the potential to offer workable solutions at low cost (Caldwell, 2002). Caldwell uses the Ontario example, Bill 81, The Nutrient Management Act to illustrate his points.

Community dispute resolution or mediation centres can help resolve conflicts between farmers and neighbours while providing a less expensive and more rewarding alternative to litigation. Beierle, 1998, suggests that Alternative Dispute Resolution (ADR) helps obtain social goals and incorporates public values, assumptions and preferences into decision making, increasing the substantive quality of decisions, reducing conflict and achieving cost-effectiveness. These mechanisms however, only partially support the goal of fostering trust in institutions.

ADR offers substantial opportunity for two-way deliberations among opposing interests (Beierle, 1998). One of the principal criticisms of regulatory negotiations is that they involve lobbyists, NGOs and government officials (professional representatives rather than members of the lay public).

In some cases, the NRCB may find that an operation is in full compliance with the Agricultural Operation Practices Act, regulations and existing development permits. However, if the operation is getting a lot of complaints, the NRCB may refer the case to the Farmers' Advocate of Alberta, the agency chosen by the Minister of Alberta Agriculture, Food and Rural Development, to deal with disputes.

The Farmers' Advocate office will investigate by visiting the site and speaking with local residents. If the nuisance complaint has some validity, the Farmers' Advocate will attempt to informally mediate between the disputing parties. If the dispute is not resolvable at this point, the Farmers' Advocate office may refer the dispute to an Agricultural Practices Review Committee.

The Agricultural Practices Review Committee is made up of 3 people who must have experience in the type of farming operation to which the application or referral relates and one person at large. The Committee will then determine whether or not the operation is following generally accepted farming practices and write a report on its findings. The Committee will also try to mediate the dispute. Its report may include recommendations about how to adjust the livestock operation to prevent the nuisance in the future.

The Alberta Energy and Utilities Board has also increased its facilitation role and now provides options of mediation to the energy industry. The EUB has set as its goal, to help explore and understand people's interests and develop acceptable solutions together. The EUB's Appropriate Dispute Resolution Annual Report shows that in 2001, 161 EUB staff facilitations were initiated between landowners and companies, and 115 were completed, with 98 or 85% fully resolved. In addition, 30 more complex disputes were referred to third party mediators and 23 were completed with 19 or 82% fully resolved. The average cost of the ADR process was $4,300.00 and the average duration from referral to the end of the mediation was 28 days.

6.6 Land-Use Planning Approach

Caldwell (1998) advocates the use of land-use planning to give priority to agriculture. He suggests that this approach should be public, regulated and based on research and quality information. The approach should also be guided by national and international standards.

A Group Spatial Decision Support System is being developed by the U.S. Geological Survey Front Range Infrastructure Resources project which integrates scientific data characterizing an area with that of human settlement patterns to help with community growth decisions (Mladinich and Zirbes, 1999).

In the Nonpoint Education for Municipal Officials (NEMO) Projects (Rozum, Arnold and Nakashima, 2000), a network is designed and based on the land use education, and focuses on land use decision makers as the target audience and use of geospatial technology to facilitate sustainable growth in Connecticut.

Land use implications must always be considered with livestock development. Municipalities in Alberta have been encouraged to identify areas where they would not like CFO development to occur. This can be done though their formal land use planning processes, or by indicating to the NRCB where these CFO-free zones are to be located. Approval officers will consider these when processing application forms for new or expanding operations.

Using geographic information systems (GIS) technologies, the land management and physical design alternatives for livestock operations may be balanced with the need for efficient agriculture while protecting the region's ecological systems and sense of community. Further research is warranted in the use of GIS technology to develop frameworks based on desires to maintain landscape integrity, improve water quality, and maintain neighbourhood cohesion among farm and non-farm neighbours.

6.7 Strategic Communication Plans

Strategic Communication Plans help manage communication goals and expectations within organizations. These plans provide guidance on allocation of resources, clarification of messages, and help ensure protection of the community's integrity. They can address the need for two-way management of risk, identify the group for information exchange,

and identify the most appropriate channels (training programs, newsletters, scientific publications, electronic links…). Several utilities have developed guidelines and Communication Plans (Cole, 2001 and 2002).

In the context of addressing community or social issues, Connor (1997) advocates development of communication plans which target each public. This plan should consider how to overcome mis-information and unwarranted fears, and present research results or field demonstrations that make sense to them. It should also identify their stake in the proposal or problem.

A 'Communication and Stakeholder Involvement Guidebook for Cement Facilities' was prepared by Battelle Memorial Institute and Environmental Resources Management Ltd., March 2002, for the World Business Council for Sustainable Development. The guidebook emphasizes the importance of stakeholder involvement as a critical component of communication. One objective of the plan is that all communications be clear, honest and consistent. The intent of the study is "to share information that will help any cement company—regardless of its size, location or current status of progress—to work constructively toward a sustainable future."

7 Conclusions

The literature review process has outlined drivers for the inclusion of social factors in beneficial management practices for manure management including the following:

- The need to balance real with perceived issues;
- Pressures to urbanize, non-farm developments and evolving rural landscapes leading to greater opportunities for confrontation with agriculture;
- Mechanized and systematic raising of livestock and the associated methods are opposed by certain members of the public;
- Expansion of industrial agriculture facilities and the evolving agricultural industry and environmental concerns; and,
- Loss of political clout for rural communities and agriculture in particular.
- Livestock industry is implementing proactive beneficial management practices related to social issues.

The change is started by the industry itself but it is accentuated by globalization, (call for mitigation effects of producer activities, voluntary codes of conduct or organization initiatives), action groups, regulations, supply-chain pressures, industry peer pressure, and environmental change.

The livestock industry has increased use of community consultation and participation, and partnering to address common objectives in manure management. Although the industry has been proactive in some out-reach activities to the community, accreditation and certification systems, use of alternative dispute resolution mechanisms and the integration of scientific data characterizing settlement patterns are also useful to help in community decision-making.

Other industry sectors appear to be further ahead in their approaches to deal with social aspects and their interaction with social constituents and the environment. Successful application of participatory processes, certification programs, public education, corporate strategic mandates and community relations management plans are provided in the forestry, mining, oil and gas, water and wastewater sectors.

The information reviewed in this document provides the base for identification of research gaps relative to social issues of manure management. In conjunction with the review of other existing beneficial management practices (BMP) manuals, BMP are recommended for addressing social factors in manure management. These components are presented in two separate accompanying documents: 'Research Gaps and Challenges' and 'Beneficial Management Practices Guide'.

Social risk may be a more vague concept than its environmental equivalent, but livestock producers are increasingly attempting to manage their social impact. The BMP Guide describes, in a level of detail useful to Alberta livestock producers, how to prevent, mitigate or alleviate social issues and conflict using a Beneficial Management Practices approach. There are many factors which influence the overall prevention and mitigation of social issues. Some factors take into account the scale or type of enterprise, the level of

public interest, the track record of the operation or proprietor, and the regulatory requirements.

Drawing on experiences from other resource dependent sectors on how they have addressed or avoided social issues, the BMP deals with the gap between the boundary of responsibility which a livestock enterprise acknowledges and that perceived by its stakeholders. The list of relevant stakeholders will vary from situation to situation, and must be selected with care, but typically includes the community, neighbouring operations and pressure groups. Where there is little or no gap between expectations of the operation and its stakeholders, then there is an agreement as to what should happen. This creates trust, and trust is good for business and the industry.

One way in which livestock producers can manage social risk is to work with their stakeholders more effectively. That means working systematically to identify their stakeholders in the first place and to engage them in dialogue - not only via large formal meetings with pressure groups, but also working with the people and communities affected directly. Emphasis in the BMP Guide is placed on public consultation and involvement – when they are necessary; who should participate; and the steps and principles required to ensure their effectiveness.

A number of major companies in forestry, oil and gas and mining have begun producing social reports, documenting their dialogue with their stakeholders. While the quality of the social reports varies considerably, the practicality of doing it is fairly well established. The BMP Guide provides guidelines for auditing and verification through the use of advisory committees, audit and certification programs and communication organizations.

8 Research Gaps and Challenges

Research on social issues related to manure management is needed. This includes the following:

- research to identify the issues;
- research on the extent and severity of the impact on individuals and the community;
- research on the approaches or techniques that can be used to mitigate the impacts; and,
- research on the effectiveness of each technique for each issue.

Best Management Practices need to be developed for dealing with social issues related to manure management. These need to be incorporated into guidelines and new initiatives or programs that may evolve. Examples of approaches and techniques used in other industries exist and should be considered, reviewed and adapted. Approaches and initiatives that include public and community consultation and involvement need to be considered and pursued.

While many scientific seminars are being held at national, provincial, municipal and community levels, few of these include anything on social issues and how to deal with these issues. There is an opportunity to begin by introducing social issue topics within these seminars with an eventual equal representation along with the environmental and economic aspects.

There is an opportunity to apply geospatial technology which integrates scientific data characterizing the community social dimension to help community decision-making. A GIS-based management system can integrate research and quality information to depict environmental, economic and social aspects of importance to the community. This approach would prove valuable for development, policy assessment, and management considerations.

9 Beneficial Management Practices for Social Issues

9.1 Introduction

This Beneficial Management Practices Guide is an attempt at establishing beneficial management practices in Alberta to prevent, mitigate or alleviate social issues related to manure management. In this Guide, social issues refer to the personal, family, neighbourhood, and community relationships and quality of life. The Guide is written in an easy to use format.

This Beneficial Management Practices Guide is the result of a comparative analysis of beneficial management practices that deal with social and

community issues in other renewable resource sectors; i.e., oil and gas, forestry and mining. A number of excellent publications and information sources have been used to develop the guidelines for beneficial management practices contained herein. These are included in a bibliography contained in this Guide.

9.2 Beneficial Management Practices for Social Issues

The best approach for preventing social issues and conflict is to ensure that your manure management practices are beyond reproach. Follow the beneficial management practices contained in environmental and technical guidelines and operate well above the minimum standard. However, even with the best management practices, social issues and conflict can arise.

There are a number of beneficial management practices that are used for preventing, mitigating or alleviating social issues and conflict. They generally fall under two categories as follows:

- public consultation and involvement; and
- conflict management and resolution.

The emphasis of these guidelines and the recommended beneficial management practices for dealing with social issues related to manure management is on the prevention of social and community conflict through public consultation and involvement rather than on managing and resolving conflict after it has occurred. Prevention is suggested as the wisest strategy for the livestock industry to use. These guidelines are intended to improve the effectiveness and fairness of project and business decision-making and the relationships between livestock operations and their neighbours and the communities that they are part of. In times of difficulty, successful public and community consultation and involvement will pay dividends with community support when it is needed most. On the other hand, a project that has neglected its community can expect criticism.

9.3 Public Consultation and Involvement

Public involvement is more than informing people. It includes involving them in decisions that may affect their lives. Public consultation and involvement brings together individuals, groups, organizations and government agencies at all levels. Two-way communication is necessary to determine how a livestock operation and the community can work together and what issues affect both the livestock operation and the community. It also means that livestock operations and the livestock industry need to share some influence over various aspects of planning and decision-making with others. Effective public consultation and involvement builds cooperative working relationships with local communities, interest groups and governments. Public consultation efforts will prevent conflict before it starts and meet many of the obligations and regulatory requirements of regulatory bodies such as the Natural Resources Conservation Board (NRCB).

There are a number of approaches that may be used to foster communication and information sharing with communities that are best organized by industry organizations on behalf of their members. Guidelines for audit and certification programs, communications programs, and social impact assessment and management processes that are potential initiatives for industry organizations are also covered herein.

9.4 When Are Public Consultation and Involvement Necessary?

Public consultation and involvement may be necessary when:

- the scale or type of livestock enterprise is perceived to be significant (e.g., new to the region or larger than others in the area);
- there is public or media interest in a new or expanded livestock operation because of the location or the impact on the community (e.g., odour, water quality, dust, traffic, road access, business opportunities);

- the enterprise is likely to be controversial or contentious (e.g., there are a number of existing livestock operations already in the area, there has been previous concern about development in the region, or there has been controversy about similar livestock operations elsewhere);
- the project needs public support to be implemented;
- those who may be affected or interested have a history or expectation of being involved; or,
- public involvement is a regulatory requirement.

Principles of Effective Public Consultation and Involvement

- Begin the process as early as possible.
- Promote two-way communication and exchange of information.
- Communicate clearly and at the right time.
- Provide full information promptly to encourage fair and informed discussion.
- Respond to information requests fully and quickly.
- Establish clear and realistic timetables for accepting suggestions and submissions.
- Provide information in plain language.
- Be open, accessible and flexible.
- Give everyone equal opportunity to participate.
- Be considerate and respectful to other people and their concerns or opinions.
- Provide frequent feedback.
- Encourage constructive exchange of views.
- Listen to community concerns.
- Genuinely try to address the major issues.
- Frequently monitor and evaluate effectiveness.

9.5 Public Consultation and Involvement Techniques

Most public consultation and involvement programs will consist of a number of approaches and techniques to inform and involve the different interested parties and to resolve the manure management issues. These techniques include both one-way and two-way communication methods. Whenever possible, develop open and informative two-way communication with the public and the community.

There are a number of techniques and approaches that can be used to inform, consult, and involve the public and the community. These are presented in Table 1 with a guide for application based on the size of the operation as defined earlier in Section 3.1 of this Guide. External consultation with municipalities, producer associations, conservation groups and provincial agencies is advisable as recommended in Table 1. Some of these techniques are also best undertaken by an industry partnership of the appropriate existing industry associations, government agencies, and newly-formed non-profit organizations.

Advisory Committees

An advisory committee is usually a relatively small group of people you bring together to represent the ideas and attitudes of a community and to review your project or livestock operation. The establishment and use of an advisory committee is one of the most effective approaches used in public involvement and is discussed in greater detail in Section 9.6.

Arranged Visits to Comparable Operations

Arranging to take local people to other livestock operations to show them comparable factors such as manure management practices, the operation of other community liaison and advisory groups, and the way these operations co-exist with their neighbours and the community is an effective approach if well planned. Do your homework and research the other operations before arranging the visit. Be sure that you visit the right livestock operation with similar geographic and social settings.

Audio-Visual Presentations

Audio-visual presentations involve the use of slides, films, videos and models for the communication of your project information. This technique is a one-way information delivery approach that is best used in combination with other approaches and should include a question and answer period for public input and feedback.

Table 1. *Guide for Public Consultation and Involvement*

Method	Size			External Consultation	Partnership
	Small	Medium	Large		
Advisory Committees		✔	✔	✔	✔
Arranged Visits to Comparable Operations		✔	✔	✔	✔
Audio-Visual Presentations			✔	✔	✔
Audit and Certification Programs			✔	✔	✔
Communication Organizations			✔	✔	✔
Computer-Based Techniques		✔	✔		✔
Direct Mailing	✔	✔	✔	✔	✔
Discussions with Stakeholders	✔	✔	✔		✔
Displays		✔	✔	✔	✔
Hiring Locally		✔	✔		✔
Honoraria		✔	✔		✔
Information Bulletins, Brochures, and Fact Sheets		✔	✔	✔	✔
Information Centres		✔	✔	✔	✔
Links with the Community	✔	✔	✔	✔	✔
Media Briefings, News Releases and Press Conferences		✔	✔	✔	✔
Newsletters		✔	✔		✔
Open Houses		✔	✔		✔
Public Hearings		✔	✔	✔	✔
Public Opinion Polls			✔	✔	✔
Seminars and Workshops			✔	✔	✔
Site Visits and Tours	✔	✔	✔		✔
Surveys			✔	✔	✔
Telephone Hotlines			✔		✔

Audit and Certification Programs

Audit and certification programs are usually organized and managed by a private non-profit organization representing a group of livestock producers. A number of standards would be developed for all aspects of manure management including standards for improving the communication and public involvement practices of the member operations and to communicate these to all public stakeholders. This is an effective approach used in other industries such as forestry and oil and gas.

Communication Organizations

Non-profit communication organizations representing the livestock industry could be formed to create awareness and understanding of the livestock industry. These organizations would provide balanced, factual, and timely information on the livestock industry and manure management to the public. This approach is discussed in greater detail in Section 9.7.

Computer-Based Techniques

Computer-based approaches involve the use of e-mail and web pages to deliver information. While these approaches are becoming very popular, they do not reach everyone. Include a contact name and e-mail address for public input and feedback.

Direct Mailing

Direct mailing of personalized letters, newsletters, press releases or information leaflets can be a cost-effective method of letting specific groups of people know what is happening with your operation. This technique can be a useful avenue for updating information about action taken to meet community concerns.

Discussions with Stakeholders

Meeting with stakeholders, especially those who might be affected by your project or livestock operation can be very useful. A quiet discussion in a home or a mutually convenient place can help reduce concerns and reassure people of your sincerity to address concerns they may have.

Displays

Displays at local events, trade fairs, farmers' markets, rodeos, agricultural fairs, school career days, open houses and information centres increase public awareness of your project or livestock operation. Displays that include posters, models of proposed projects or operations and information bulletins located in a busy public location can reach a large public interest in a project. If you staff a display ensure that the people are able to answer questions and respond to concerns. Consider a mobile display to reach a larger audience.

Hiring Locally

Hiring local people is a good way to bring the community's values and interests directly into your decisions and provides local economic benefits. Local benefits can help balance local concerns and negative impacts. Local employees also can identify key stakeholders and inform you of past history that can impact your operation.

Honoraria

Payment of honoraria compensates participants (e.g., on an advisory committee) for their time and services and places a value on the contribution of their time, expertise and knowledge. Payment of honoraria encourages the participation of those who do not have the financial resources to participate otherwise and provides the public with access to the decision-making process. Reimbursement of out-of-pocket expenses may also be appropriate.

Information Bulletins, Brochures and Fact Sheets

Information bulletins, brochures and fact sheets provide an excellent one-way information delivery approach. They usually offer a brief description of your project or livestock operation, the issues involved, proposed approaches for dealing with the issues, and the opportunities available for the public to participate in public involvement initiatives. An advisory committee should review these materials.

Information Centres

An information centre can be established in your community where your project or operation has potential for significant impact. This information centre is usually placed in a highly visible part of the community and can take the form of an information desk with a display in a visible location or building in the community. The information centre should encourage informal interaction with the community through displays, charts, maps, models, brochures and other materials. An information centre can be manned at specific times and provide a focal point for public involvement in your project or your operation.

Links with the Community

Formal links can be established between your livestock operation and businesses or local schools in the community and can be important in helping a community know and understand what you are doing. You can provide opportunities for teachers to learn about your livestock operation and your manure management practices through secondments and support of school and curriculum-based activities. Students can be given career information and can learn from site visits.

Media Briefings, News Releases and Press Conferences

Regular briefing of local and regional media about your public consultation initiatives is an important way of disseminating information and addressing public and community concerns. The local newspaper, radio and television are more likely to be supportive of your project and operation if you are open, honest and cooperative. Written news releases are often used to inform the press/media of newsworthy stories. A news release should be short (i.e., less than two pages) highlighting a particular development, issue, event, plan or result. It can include official statements from your livestock operation backed with facts, figures and contacts for further information. You may also consider holding a press conference to review the information in the release and to give reporters a chance to ask questions. Be careful that you don't release too many media releases or releases that are not newsworthy as it can undermine your credibility.

Newsletters

Newsletters are very similar to information bulletins, but are periodic reports to interested parties providing a continuing update on a project or operation. Newsletters are an effective way to keep the public and the community informed during all phases of a project in a highly visible manner. Ideally, newsletters should be jointly produced by your livestock operation and a local advisory committee.

Open Houses

Open houses are a good way to provide information to the public and the community and to interact directly with them. Many of the techniques discussed herein can be incorporated in the open house; e.g., displays, audio-visual presentations and information packages. You should have project personnel and representatives of your livestock enterprise available to discuss the project or operation and to answer questions. Tours of your project or livestock operation can be incorporated in the open house.

Public Hearings

Public hearings can be required by regulatory agencies (e.g., Natural Resources Conservation Board) or by local governments (e.g., a Planning Appeal Board) to review contentious issues relating to a project or a livestock operation. These hearings are usually structured with a public record being taken of the proceedings. Participants usually make formal public statements and written submissions and have limited opportunity for official interaction with other participants or presenters. Informal discussions during the breaks can provide opportunity to interact with others.

Public Opinion Polls

Public opinion polls are used to measure public attitudes, values and perceptions regarding a project and various issues that may surround a project or a livestock operation. Polls employ a rigorous methodology to ensure findings represent the sentiment of the public and the community. Specialists in public opinion polls should be contracted or employed to ensure that you receive useful results. Professional pollsters know how to phrase questions, collect and analyse the data and choose respondents

that will provide complete statistically significant results providing a complete picture of the public's and community's response to your project and your livestock operation.

Seminars and Workshops

Seminars and workshops are an effective means for achieving a specific public involvement, task or goal. This may include the definition of alternative actions, evaluating a set of alternatives, or identifying the impacts of the alternatives for your project or operation.

Site Visits and Tours

Site visits and tours give the public and the community the opportunity to see your project, facilities and operations. During the tour you can distribute information bulletins, brochures, or handouts, and give details about your project or operation. A well-organized site visit or tour helps visitors feel more at home with your project or operation and more willing to discuss and take part in your public involvement initiatives.

Surveys

Surveys involving interviews or questionnaires are very useful to gather factual information about people and the community and provide an indication of attitudes, behaviour, beliefs, feelings, motivation and plans. Someone with training and experience should be involved in effective questionnaire development, interviewing and data analysis. Attitudinal surveys are especially important if you are considering doing a social impact assessment. Population changes may alter the character and expectations of a community and region in a relatively short time. Regular monitoring of these changes, and their relationships to impacts caused by a livestock operation should be a key component of a community consultation and involvement process.

Telephone Hotlines

Telephone hotlines provide a direct line into your operation and should be included in information bulletins, brochures, handouts, and web pages. A toll-free 1-800 number should be considered. A changing recorded 24-hour message can be included and people can leave messages to register concerns or complaints. Alternatively, the telephone line may be manned. Communication skills are very important for the hotline operators. Hotline operators should be responsible for finding answers to questions and relay comments or complaints to the right person.

9.6 Advisory Committees

As noted previously, an advisory committee is usually a relatively small group of people you bring together to review and represent the ideas and attitudes of a community to your project or livestock operation. They are a very effective way to obtain public involvement and participation. Advisory committees provide you with a way to work directly with community leaders and various community members and groups.

"Effective Advisory Committees"

Following are general guidelines for an effective advisory committee:

- *Committee Terms of Reference:* Clarify the committee's purpose, objectives and boundaries. Define what you want committee members to do (very similar to a job description), when and how the group will meet, what it will discuss and how it will manage itself. While you are responsible for defining what you want the committee to do, you should present a draft of the terms of reference to the committee members for their input.
- *Committee Representation:* The committee should have representation from the key public and community stakeholders and groups affected by your project or operation as well as those that have knowledge about the technical and operational details. A balance of experts and opinion leaders is recommended.
- *Committee Size:* A committee with up to eight members is suggested for active participation. Committees with up to twelve members require skilled chairing and facilitation, while committees over twelve members tend to become divided.
- *Participant Roles:* Clarify the roles of participants through group discussions early in the process as part of developing the terms of reference. You may wish to consider assigning roles for a chair, a facilitator, a recorder, etc.

- *Resources:* Make sure that appropriate resources are available to members of the committee (e.g., facilities for meetings, full details on the projects or operation, presentation tools, reimbursement of out-of-pocket expenses, honoraria, communication tools, training).

"Ground rules for members"

Establish ground rules for how members will work together especially at meetings:

- How decisions will be made;
- How differences will be resolved and disagreements managed;
- How discussion time is shared so that everyone has a chance to state their views or raise concerns;
- How the group will change things if results are not being achieved;
- How communication (both inside and outside) will be handled; and
- How long and how often will the group meet.

9.7 Communication Organizations

Private non-profit communication organization(s) representing the livestock industry could be formed to create awareness and understanding of the livestock industry and the role of the industry in the daily lives of Albertans and Canadians (e.g. Growing Alberta). This organization(s) would provide balanced, factual, and timely information on the livestock industry and manure management to the public. Typically communication organizations in other industries do not lobby and do not comment to the media.

A communication organization must collaborate with all sectors of the livestock industry as well as stakeholder and community groups. Important industry issues would be identified in consultation with members of the industry, industry associations, governments, and community members and timely public communication and education programs would be implemented to heighten awareness. Consensus among all stakeholders is sought to provide credible, balanced information to the public and the community.

Community services offered could include publications, inquiry services, an information centre, illustrations and videos. Publications must be well researched, written in consultation with industry experts, and receive extensive review before publication. Review processes should involve representatives from stakeholder groups, government agencies, environmental groups, and community members.

9.8 Conflict Management and Resolution

Social and community conflicts relating to manure management may arise from a variety of environmental, economic and technological issues. Public and community concerns can get out of control very quickly and escalate into a full-scale conflict. Disagreements can turn bitter and end up in court. The cost of conflict is high, thereby decreasing the profitability of the livestock operation in question. While the preferred approach is to prevent conflict through a public consultation and involvement initiative, strategies are available to handle public conflict. The conflict management and resolution process can be an opportunity for relationship building and development of fair and enduring solutions.

What Is Conflict?

When people feel threatened, challenged, frustrated, stymied or in danger of losing something they value, they react. There are four principal factors that motivate people to oppose a project:

- perceived risk;
- perceived threat;
- perceived inequity or injustice; and,
- arbitrary decisions or lack of consultation.

Conflict Management and Resolution Techniques

When conflict occurs, the disagreements can only be resolved if people come together with the intent to resolve them. Participants will often take pre-established positions or pre-conceived solutions that conflict with those held by other participants. Each participant also has reasons for their positions and solutions. Negotiation is the best approach to build consensus through a shared step-by-step process. Mediation involving a neutral third party may need to be used in some cases where the parties cannot reach consensus.

Negotiation

Negotiation is a process in which parties in conflict deal directly with each other to reach a mutually agreeable decision. While negotiation can be a part of public involvement, it is usually used to resolve conflict after it has occurred and requires that the parties seek a common solution. Good faith negotiation implies that parties have the intention and the ability to implement their agreements. The following steps can be used to reach a mutually agreeable resolution:

- design the process – set goals and ground rules and write an agenda with a tentative timeline;
- present positions – each party tells their side of the story and what they want;
- define the problem – produce a short, simple written statement explaining the conflict;
- analysis and mutual education – determine and describe the cause of the conflict, share and explain perspectives;
- research -– obtain additional information or expert help and openly share and discuss it;
- develop resolution options – develop all possible options using visioning and brainstorming approaches;
- develop evaluation criteria – "must have" and "want" criteria that are environmentally responsible, economically feasible, technically possible, socially acceptable, and/or politically saleable;
- evaluate the options – explore the options and their implications using the evaluation criteria;
- make a decision – use consensus to find win-win solutions that satisfy all parties and the community and formalize it with a written agreement; and
- evaluate the agreement – see how it's working, make improvements – an on-going process.

Mediation

Mediation is a form of negotiation that involves a neutral third party mediator who is knowledgeable about negotiation. A mediator can help various parties resolve issues and reach agreement or minimize conflict. The parties involved in a conflict must agree to seek a common solution for mediation to be successful.

10 References and Basic Information

AFPA. 2002. ForestCare Codes and Standards. Alberta Forest Products Association, Edmonton, AB.

CAPP. 1998. Guide for Effective Public Involvement. Canadian Association of Petroleum Producers, Calgary, AB.

CSA. 2002. Environmental Management System Standard for Hog Operations: Information Guidance. Public Review Draft, Canadian Standards Association, Mississauga, ON.

CSA. 2002. Environmental Management System Standard for Hog Operations: Requirements. Public Review Draft, Canadian Standards Association, Mississauga, ON.

Carter, J and L. Owen. 2000. Farming with Neighbours, A Guide for Canadian Farmers on Preventing and Resolving Community Conflicts over Farming Practices. Canadian Farm Business Management Council, Ottawa, ON.

EPA. 1995. Community Consultation and Involvement - Best Practice Environmental Management in Mining. Environmental Protection Agency, Australian Federal Environment Department, Australia.

EUB. 2000. Guide 56: Energy Development Application Guide. Alberta Energy and Utilities Board, Calgary, Alberta.

EUB. 2000. Guide 62: Responding to Public Concerns About Oil and Gas in Alberta. Alberta Energy and Utilities Board, Calgary, Alberta.

ISO and SCC. 2002. ISO 14000. International Organization for Standardization, Standards Council of Canada, Ottawa, ON.

NRCB. 2002. Guide to the NRCB Process. Natural Resources Conservation Board, Edmonton, Alberta.

PCF. 2002. Personal Communication. Petroleum Communication Foundation, Calgary, AB.

SAF. 2001. Establishing and Managing Livestock Operations. Saskatchewan Agriculture and Food, Regina, Saskatchewan.

Author: *Alberta Cattle Feeders' Association and Alberta Agriculture, Food and Rural Development*

Other Authors:

Title: **BENEFICIAL MANAGEMENT PRACTICES: ENVIRONMENTAL MANUAL FOR FEEDLOT PRODUCERS IN ALBERTA**

Source:
This document is a farm practices guide developed for Alberta feedlot producers through the cooperation of industry, government and interested stakeholders. The purpose of the guide is to create greater awareness and understanding of beneficial management practices for the environment. Sections of the guide address environmental obligations and regulatory approvals, site selection and planning, manure storage and transportation, land application of manure, prevention and suppressing feedlot odour, feedlot dust, disposal of farm waste, preventing and resolving conflict, and greenhouse gas emissions.

Author: *Alberta Energy and Utilities Board*

Other Authors:

Title: **EUB GUIDE 56: ENERGY DEVELOPMENT APPLICATION GUIDE—EUB POLICY AND TECHNICAL GUIDELINES**

Source:
EUB Guide 56, Volume 2, Appendix 1, October 2000.

This EUB document provides guidelines for public involvement in carrying out public disclosure and consultation. The EUB information package for public consultation contains a letter from EUB Chief Operating Officer, and Guides # 62: Responding to Public Concerns About Oil and Gas in Alberta; 17-2: Well Site Selection and Surface Landowner; and 17-3: A Pipeline or Surface Facility on My Land?

Author: *Alberta Pork and Alberta Agriculture, Food and Rural Development*

Other Authors:

Title: **BENEFICIAL MANAGEMENT PRACTICES: ENVIRONMENTAL MANUAL FOR HOG PRODUCERS IN ALBERTA**

Source:
This document is a farm practices guide developed for Alberta pork producers through the cooperation of industry, government and interested stakeholders. The purpose of the guide is to create greater awareness and understanding of beneficial management practices for the environment. Sections of the guide address potential environmental risks and nuisance associated with hog production, environmental obligations and regulatory approvals, prevention and resolution of conflict, site selection and planning, housing and animal management, manure collection and treatment, land application of manure and disposal of farm waste.

Author: *Canadian Association of Petroleum Producers*

Other Authors:

Title: **GUIDE FOR EFFECTIVE PUBLIC INVOLVEMENT**

Source:
Campbell & Associates Ltd., 10, 2424-4 Street SW Calgary, T2S 2T4, January 1998.

This is a comprehensive how-to book developed by experts in public involvement. Its intent is to guide business to improve their understanding of public concerns, respond effectively to them and develop positive community relations. CAPP created this guide to capture the best public involvement practices of the Canadian oil and gas industry. The guide advocates involvement of public in decisions affecting their lives.

Author: *CETAC-West Saskatchewan*

Other Authors:

Title: **HOG MANURE MANAGEMENT STRATEGIC INITIATIVE**

Source:
The Western Canadian Hog Manure Management Strategic Initiative can help address the challenges

facing the hog industry and assist in the development of innovative solutions for hog manure management. This collaboration of WD and CETAC*WEST will:

- identify technologies at the demonstration stage
- match them with hog producers intent on applying these new technologies
- identify sources of financial assistance for technology demonstration sites
- update producers regularly on the latest trends in hog manure management

This program will help develop the technologies needed for hog production expansion, resulting in new jobs and value-added opportunities, especially in rural areas.

Author: *Connor, Desmond*

Other Authors:

Title: **WINNING PUBLIC INVESTMENT IN THE PORK INDUSTRY**

Source:
Paper presented at the 2000 Saskatchewan Pork Industry Symposium, November 14-16, 2000, Saskatoon, Saskatchewan.

The author provides basic strategies for gaining psychological investment of the public (suppliers, neighbours, consumers) into farming enterprises. Advocates taking time to understand the community, establish sound siting criteria, make personal contact with prospective neighbours, generate benefits for others in the community, disclose plans for additional future sites, and build trust.

Author: *Environmental Protection Agency*

Other Authors:

Title: **BEST PRACTICE ENVIRONMENTAL MANAGEMENT IN MINING: COMMUNITY CONSULTATION AND INVOLVEMENT**

Source:
Australian Federal Environment Department, Commonwealth of Australia, June 1995.

This publication was produced by representatives of the mining industry in Australia in partnership with the Environment Protection Agency of the Australian Department of the Environment. It is one of a series of modules aimed at assisting all sectors of the mining industry to protect the environment and to reduce the impacts of mining by following the principles of ecologically sustainable development. These best practice modules integrate environmental issues and community concerns through all phases of mining from exploration through construction, operation and eventual closure.

Author: *Koehler, Bob, Extension Educator, University of Minnesota Southwest Research and Outreach*

Other Authors:

Title: **COMMUNITY RELATIONS FOR LIVESTOCK PRODUCERS**

Source:
NPPC Community Relations Module

1. The public has more interest in and influence on livestock operations than was true in the past. Many see consumers as an integral part of the production system. This situation is driven by:
   - Increased livestock industry visibility, communications, and media attention.
   - Attention from activist and consumer movements.
   - Development of holistic philosophies.
   - Increased public hearing and notice requirements.
2. Urbanization is resulting in a public that has little or no tie to production agriculture. With no close up experience in production agriculture, many attitudes are developed from sources like movies and television where treatment of agriculture is seldom accurate and realistic. Producers face a significant challenge in helping the public understand modern pork production so public attitudes that shape policies and regulations will be realistic.
3. As population grows food demands will continue to increase. Continued urbanization has lead to more sophisticated and organized food delivery systems. As a result, production systems will be more systematic and likely larger, and therefore have more visibility and impact in specific locations. While the consuming public is driving these changes with their purchasing habits, they

may also find the resulting systems in conflict with some of their values about food production.

4. With continued population growth and current lifestyle choices, there will be greater demands for personal living space and basic resources like water and fresh air. This will increase the potential for conflict over land access and use and increase the likelihood of situations where livestock production might be perceived as a nuisance. The document discusses the importance of community relations; dealing with public outrage; strategies for making livestock operations compatible with neighbors and the community; projecting a positive visual image; and dealing with conflict.

Author: *Legault, Malcolm L.*

Other Authors: Murphy, Dennis J.

Title: **EVALUATION OF THE AGRICULTURAL SAFETY AND HEALTH BEST MANAGEMENT PRACTICES MANUAL**

Source:
Journal of Agricultural Safety and Health, 6(2):141-153, May 2000

The Agricultural Safety and Health Best Management Practices (ASHBMP) Manual was developed as an alternative intervention tool to help identify and correct farmwork hazards. A modified pretest-posttest control group experimental design was used to test the effectiveness of the manual with three intervention groups and a control. Testing consisted of conducting baseline and post-intervention audits on 150 farms in Pennsylvania. Significant differences were found among groups of farmers who were given the ASHBMP Manual and those who were not given the manual. The results of the data analysis also showed a positive significant difference among farmers who reduced their farm hazard levels through use of the ASHBMP Manual over farmers who received the Control (traditional safety fact sheets).

Author: *Manitoba Livestock Manure Management Initiative Inc.*

Other Authors:

Title: **MANITOBA LIVESTOCK MANURE MANAGEMENT INITIATIVE**

Source:
http://www.manure.mb.ca

Set up in 1998, the Manitoba Livestock Manure Management Initiative Inc. is a livestock industry-driven approach to address these concerns.

Mission: To foster sustainable development of the livestock industry in Manitoba in an environmentally sound and community friendly manner, through research and development and demonstration. A coordinated, pro-active public information campaign has been implemented to communicate our achievements, accomplishments and successes.

Author: *Manitoba Pork Council*

Other Authors:

Title: **LIVING IN HARMONY WITH NEIGHBOURS**

Source:
Manitoba Pork Council—guidebook, October, 1999

Provides farmers advice on gaining acceptance for new or expanded hog barns, including knowing and addressing public concerns such as disruption of quality of life, ground and surface water contamination, carcass disposal, assurance of meeting environmental guidelines, perception of wealthy and influential investors; bigger barns and, bigger worries; consulting with neighbours; communicating with community.

Title: **HOG PRODUCERS AS GOOD NEIGHBOURS**

Source:
Manitoba Pork Council—guidebook, October, 1999

Advises farmers on ways to maintain successful relationships with neighbours: 1) practice responsible farm management; 2) be active in the community; 3) communicate and consult—keep the dialogue going.

Author: *Mayer, Bernard*

Other Authors:

Title: **THE DYNAMICS OF CONFLICT RESOLUTION: A PRACTITIONER'S GUIDE**

Source: Jossey-Bass; ISBN: 078795019X; (May 15, 2000)

Mayer's volume explores the nature of conflict from several theoretical perspectives, and then proceeds to deal specifically with issues of impasse, advocacy, communication, and mediation. To understand conflict, attention needs to be paid to the differences in ways individuals approach it. The way people handle conflict is definition of who they are and how they relate to others.

Author: *McGuire, Kellie*

Other Authors:

Title: **NPPC'S ENVIRONMENTAL ASSURANCE PROGRAM**

Source:
The National Pork Producers Council (NPPC), a producer-funded organization with 85,000 members, launched a nationwide environmental initiative in 1991. The initiative focuses on creating environmental awareness among producers and fostering adoption of technologies and management practices that are environmentally sound. Its objective is to promote sustainability by seeking a balance between environmental and profitable management practices. Pork producers have the opportunity to participate in several NPPC environmental programs through the organization's local and state associations. Millions of dollars have been invested, directly through check-off dollars and through cooperative partnerships, to fund three primary components: research, education and information.

Program Objectives:

1. Inform producers of the economic, social, and political benefits of proper environmental management;
2. Teach producers how to objectively assess their own operations and diagnose potential environmental impairments;
3. Provide a systematized process for implementing management practices and recording those practices on a regular basis;
4. Provide a forum (via training meetings and/or newsletters) for the timely exchange of the environmentally-friendly management ideas between and among pork producers;
5. Serve as a clearinghouse of environmental resource material and technical information;
6. Provide recognition to those producers who complete the Environmental Assurance Program
7. Communicate to the public the positive, proactive approach pork producers are taking to ensure environmental quality."

Author: *Ontario Farm Animal Council*

Other Authors:

Title: **RESOURCES FOR FARMING AND AGRI-FOOD COMMUNITY**

Source:
The Ontario Farm Animal Council (OFAC) is a registered non-profit educational organization. OFAC represents Ontario's 40,000 livestock and poultry farmers, plus many other agri-food groups and businesses involved in animal agriculture and food production.

Practical guidance relative to: 1: how to deal with the media (understanding your relationship with the media, preparing for an interview, doing the interview and being pro-active); 2) how to communicate with the public and deal with sensitive issues;3) how to run a farm tour; 4) how to write a letter to the editor.

Author: *The Sustainable Management of the Livestock Industry in Alberta Committee*

Other Authors:

Title: **THE SUSTAINABLE MANAGEMENT OF THE LIVESTOCK INDUSTRY IN ALBERTA**

Source:
Report and Recommendations, April 30, 2001.

The document reports the recommendations from the Committee on provincial and municipal roles, approval processes, and ongoing monitoring and enforcement. Seven recommendations include:

1. new regulatory framework for a provincial approval process, ongoing monitoring, technical standards and decision making on land use;
2. appointment of a Board with authority for regulating ILOs;
3. consistency and transparency of approval process;
4. comprehensive monitoring activities and enforcement;
5. partnerships with municipalities in development of long-term land use plans;
6. strengthening of the right-to-farm legislation; and
7. agricultural assessment and tax review.

Author: *Abdalla, Charles W*

Other Authors: John C. Becker et al.

Title: **"COMMUNITY CONFLICTS OVER INTENSIVE LIVESTOCK OPERATIONS: HOW AND WHY DO SUCH CONFLICTS ESCALATE?**

Source:
The Drake Journal of Agricultural Law 7(1) 1-36 (2002).

This article examines the legal structures that shape community conflicts involving intensive livestock operations.

Author: *Alberta Agriculture, Food and Rural Development*

Other Authors:

Title: **NEW RULES, NEW ATTITUDE FOR ALBERTA'S LIVESTOCK INDUSTRY**

Source:
The Standard-Environmental Standards for Alberta's Livestock Industry, volume 1, Issue 1, April 2002.

This newsletter reports on the new regulations for CFOs and the respective roles of the Farmers' Advocate, NRCB, AAFRD and municipalities.

Author: *Clement, Douglas*

Other Authors:

Title: **KNEE DEEP IN FEEDLOT FEUDS**

Source:
Fedgazette, Minneapolis, July 2001.

Disputes over feedlots have taken center stage in the Minnesota legislature at the latest 3 sessions, leading one observer to call it "the most contentious issue in Minnesota agriculture." Elsewhere in the Ninth District, legislators, regulators, livestock owners and environmentalists are also at loggerheads over the issue, with court battles in South Dakota, zoning disputes in North Dakota, legislative initiatives in Montana and township tussles in Wisconsin. The conflict finds it heart in the increasing scale of the livestock business in the US. As it is true for many industries outside agriculture, the cattle, dairy, swine and poultry industries are consolidating rapidly. Small operations are fading away and midsize farms are expanding the increase profitability by lowering costs through economies of scale. But the increased scale means increases concentration of animal waste and no cheap, easy and safe means of disposing of it. "So the heart of the matter, from a broad economic standpoint, is determining how to provide society with the benefits of scale economies in livestock operations while still guaranteeing that producers pay the full costs of production. Or more explicitly, the challenge for policymakers is to ensure that as livestock producers grow larger and larger(a trend that seems likely to continue given the economies involved), they don't shift the burden of their pollution to their local community, county, state or beyond. Ultimately, then, policy would assure that the price of the final product —be it bacon, burger or broiler—reflects the cost of producers cleaning up.

Author: *Filson, Glen C.*

Other Authors: Robert M. Friendship

Title: **WATERLOO REGION AND PERTH COUNTY PERCEPTIONS OF HOG PRODUCTION**

Source:
October, 1999, University of Guelph.

This Ontario Pork and Ontario Ministry of Agriculture Food and Rural Affairs funded study of 520 roughly equal numbers of nonfarm rural people

and hog producers in Waterloo Region and Perth County enabled about 40% of a random sample of rural residents to comment on their perception of the changing nature of hog production. Of the hog producers, about 61% produced fewer than 1,000 hogs per year, 22% marketed between 1,000 and 2,000 pigs per year and another 16% marketed over 2,000 hogs per year though the latter produce an increasing percentage of all pigs. The following issues associated with pig production were perceived as most important by all residents, in order of importance:

- possible contamination of ground water due to inappropriate pig manure application, implications of the increased size of hog operations,
- odour from pork production,
- storage of pig manure,
- use of antibiotics in pig production.

Small pig producers were most concerned about the growth of large confinement swine production. Large producers tend to feel that pollution from pig production is minimal. Nonfarm residents were least interested in hog production but tended to be most worried about the possible contamination of water and, secondarily, odour. Most respondents felt that it is necessary to match herd size to acreage, limit the expansion of non-agricultural residences in active farming areas, make improvements in genetics, health, and management, research manure management, implement methods to reduce odours.

Author: *Heffernan, W.D.*

Other Authors:

Title: **SOCIETAL CONCERNS RAISED BY CAFOS**

Source:
Manure Management Conference February 10-12, 1998, in Ames, Iowa

Most current societal concerns about CAFOs are really issues raised about the food system and its agricultural sector that are increasingly following the industrialization model. A "simple technological solution" to narrowly defined water and air quality concerns is not going to reduce much of the opposition to CAFOs. the dominance of a few food firms in the U.S. food system. Their dominance can be seen in three ways. First, a few companies control the processing segment for each of the major agricultural commodities produced in the Midwest. The second point to be made from the table is that a few firms appear repeatedly on the list for several commodities. Firms like ConAgra, Cargill, Archer Daniels Midland, Bunge, and IBP (Iowa Beef Processors) appear on the list of several commodities. In many countries of the world the concentration is even greater. The third point to be made, which is only partly obvious from the table, is that a few of these firms exert major control over the food system from "seed to shelf." This vertical integration of the food system that has occurred relatively recently can best be understood by reviewing the annual report of such a firm. Drawing from the literature about the emerging structures of organizations in the "information age" led by persons like Alvin Toffler and Peter Drucker, many ask why the food system is continuing down the path of increased industrialization when many of the firms in the non-food sectors have moved away from the industrialization model?

Author: *Heffernan, W.D.*

Other Authors:

Title: **SOCIAL CONSEQUENCES OF FACTORY HOG PRODUCTION SYSTEMS.**

Source:
Unpublished paper prepared for the workshop Understanding the Impacts of Large-Scale Swine Production: An Interdisciplinary Scientific Workshop. Des Moines, Iowa.1995.

The author discusses the consequences of the transition from 'craft' system of family farms to a 'factory' system of industrial pork producers in America.

Author: *Hite-D*

Other Authors: Hudson-D; Parisi-D

Title: **PUBLIC PERCEPTION ABOUT AGRICULTURAL POLLUTION IN MISSISSIPPI.**

Source:
Bulletin -Mississippi-Agricultural-and-Forestry-Experiment-Station. 2001, No. 1100, 11 pp.; 15 ref

This paper provides an understanding of the public perception of agricultural pollution and its relation to technology. A telephone survey of 828 Mississippi residents was conducted to assess public concerns and to gauge support for a program to encourage the adoption of precision application technology. The results show that there is a high degree of awareness and concern for both agricultural pollution and its impacts. It also shown that there is broad-based public support for a stabilization in the adoption of variable rate technology and site-specific management practices. It is suggested that the public would also support and be willing to pay for technological solutions to pollution problems, provided the farmers are not harmed.

Author: *Hitzhusen, Dr. Fred*

Other Authors:

Title: **SOCIAL BENEFITS AND COSTS OF LIVESTOCK WASTE MANAGEMENT**

Source:
OCAMM Seminar Series, Presentation Summaries, Winter 2000

From an economist's perspective, social costs and benefits are a comprehensive measure of the willingness to pay and to accept compensation and they may or may not be expressed in current market prices. In analyzing social costs and benefits, impacts to natural life support systems are evaluated along with the more typical production and consumption considerations. These impacts include extraction of resources such as feed stocks or minerals and assimilation of residuals. Social costs and benefits are taken into account for longer periods of time and over larger geographic areas compared to private production costs and returns. Another factor that is important in evaluating social costs and benefits is the concept of property rights. These rights include simple ownership, state and open access rights and all have value, as individuals are willing to pay for them and to accept compensation for them.

The social costs of livestock production can be minimized through technical options that control pollution, such as recycling residuals or treating wastes. Alternatives to managing waste include regulations that allow or disallow specific practices as well as economic incentives and choices. An economist's goal is not a pristine environment, but an equilibrium where marginal pollution abatement costs equal marginal pollution abatement benefits. Current work indicates that the social costs of livestock production increase as the density and proximity of the non-farm population increases and as the density of livestock production increases. There is a need better determine the magnitude of these costs, then decide which regulations and/or incentives will achieve the best results.

Author: *Hudson, Karen*

Other Authors:

Title: **THE SOCIAL IMPACTS OF LIVESTOCK FACTORIES**

Source:
Paper presented at the conference: Animal Production Systems And The Environment, July 19-22, 1998, Convention Center, Des Moines, Iowa

This article advocates cultivating non-farmer trust and confidence is as important to our business as any other farming activities. In order to keep rural America prosperous we have to keep on the good side of urban residents. The author then proceeds to cite examples of abuse of trust and confidence by producer associations and corporate farming operations. "What is emerging is a Patchwork of Rural Injustice, eroding public trust that can only be remedied by a commitment to reforms that support family farms, reward stewardship, and promote balanced and sustainable agriculture. "My recommendation to agriculture is: Stop mismanaging manure because this mismanagement is manufacturing mistrust!"

Author: *Hudson, Karen*

Other Authors:

Title: **RURAL RESIDENTS' PERSPECTIVES ON INDUSTRIAL LIVESTOCK PRODUCTION: A PATCHWORK OF RURAL INJUSTICE**

Source:
Manure Management Conference February 10-12, 1998, in Ames, Iowa

The social impacts affecting rural America are disturbing, often splitting communities, friends, and even families. Core values such as honesty and reciprocity are threatened. When large CAFO's quietly infiltrate and allow no community input or communication, trust is destroyed. Countless rural citizens now live with choking odors, depleted and contaminated water supplies, increased traffic and road degradation, as well as stresses put on independent farmers within these communities. This degraded quality of life coupled with little or no chance for citizen recourse causes anger and frustration to escalate. A recent study assessing positive and negative trends in Eastern North Carolina clearly exhibits widespread citizen concern about CAFO's. Three out of four people were very concerned about increasing water pollution and the prospect of more hog farms in the region. It is surprising that water quality and hog farms were ranked as bigger threats to quality of life than escalating taxes or crime rates. Within F.A.R.M. the negative social impacts have become strikingly evident. Members of our organization have experienced verbal threats, trespassing, and vandalism of private property. In Knox County, Illinois, the State's Attorney, the County Zoning Board administrator, and fifty-seven citizens who exercised their First Amendment rights have been sued by the nation's largest pork producer in an arrogant attempt to silence them into submission.

Author: *Ikerd, John E.*

Title: **SUSTAINING AMERICA'S RURAL COMMUNITIES**

Source:
Future Farms: New Ideas for Family Farms and Rural Communities. Proceedings, February 8 & 9th, 2000, Metro-Tech, Oklahoma City, Oklahoma.

This presentation examines the industrialization of agriculture and ites impact on communities. It discusses the theory of universal cycles and ending of industrial cycle for agriculture.

Author: *Karpati, Adam*

Other Authors: Carol Rubin, W. Randolph Daley, and Enzo R. Campagnolo

Title: **CONFERENCE PROCEEDINGS: EFFECTS OF ANIMAL FEEDING OPERATIONS (AFOs) ON WATER RESOURCES AND THE ENVIRONMENT**

Source:
Fort Collins, Colorado August 30-September 1, 1999

The Centers for Disease Control and Prevention (CDC) is involved in evaluating the impact of concentrated animal feeding operations (CAFOs) and animal waste on public health. Increasing attention is being paid to these issues due to the growth and consolidation of the farming industry. This presentation reviews the human-health issues surrounding animal waste by focusing on specific pathogens, the problem of antibiotic resistance, recent CDC investigations, and implications for animal-waste management. Infectious agents found in animal waste include bacteria, protozoa, and viruses. Toxins associated with animal waste include nitrates and components of aerosols, as well as algal toxins. Sub-therapeutic antibiotic use in livestock has contributed to the development of antibiotic resistance among bacteria with domestic-animal reservoirs. These resistant bacteria pose a threat to human health. CDC has participated in studies of water quality and antimicrobial resistance in bacteria around CAFOs in Ohio and Iowa. Preliminary results indicate the presence of antibiotic-resistant bacteria in some surface-water samples from these sites. Future development of policies on manure management and antibiotic use in animals should include consideration of the public-health implications, with recommendations based on rigorously collected scientific data.

Federal and State agencies should work together with academic institutions and industry to set research agendas and conduct scientific studies that address these issues.

Author: *Kelley J. Donham*

Title: **OCCUPATIONAL HEALTH RISKS FOR SWINE PRODUCERS: INFERENCES FOR PUBLIC HEALTH RISKS OF PEOPLE LIVING IN THE VICINITY OF SWINE PRODUCTION UNITS**

Source:
Manure Management Conference February 10-12, 1998, in Ames, Iowa

A literature review of occupational health studies, work environment studies, outdoor air studies; health studies of area residents; and psychosocial factors in area resident health relative to intensive swine operations. In summary, we know exposures of gases and dusts inside swine buildings result in high levels of respiratory disease in workers. Regarding people living in the neighborhood of swine production facilities, they may experience symptoms similar to workers. However, levels of toxicants measured in the outdoor air are significantly less than what is associated with occupational illnesses. These concentrations are not apparently high enough to cause disease by themselves. One must believe however, that the neighbors' symptoms are real. I hypothesize that there is some very complex interaction between the psyche and physical symptoms seen. People feeling stressed, and out of control are vulnerable to even the suggestion of toxicants in their environment. Similar situations have been found in workers in "sick" buildings, and residents in the neighborhood of highly publicized environmental events such as Times Beach, Missouri, Three Mile Island, Pennsylvania, and Love Canal, New York. Further research is required to fully understand this phenomenon, coined by some as environmental stress syndrome.

Author: *Kendall M. Thu, Ph.D.*

Other Authors:

Title: **RURAL HEALTH AND LARGE-SCALE SWINE OPERATIONS**

Source:
Manure Management Conference February 10-12, 1998, in Ames, Iowa

The range of rural consequences of large-scale swine production to be assessed fall into six categories:

1. air quality;
2. water quality;
3. worker health;
4. community social health;
5. rural economic health; and
6. political health.

Social issues refer to personal, family, neighborhood, and community relationships and quality of life. Research in this area shows that measurable social problems result from absentee-owned large-scale agriculture (Thu et al. in Thu, 1996). Community divisions are created and frequently become acutely disruptive as the result of large-scale swine operations. More fundamental than any single issue is the deep-seated frustration that people feel from the lack of adequate local means of problem resolution. The lack of local control results in an escalating social pathology in many rural areas. A continual recurrence of discords and attempts to find an outlet has led to a pattern of community distrust that is at odds with core values of rural Iowans. This intense conflict acts as a pressure cooker and with no outlet attitudes and behaviors that resonate with extremism can and will develop. the political system, the system that should respond to these problems, has also been broken along the way. This is the fundamental problem. By unjustly and incorrectly dismissing the voices of rural Iowans and rural Americans as overly emotional, unscientific, antigrowth, or anti-agriculture, our political leaders have violated a fundamental democratic tenet of trust and faith in due process by exchanging human dignity for the hollow rhetoric of economic development. More fundamentally, trust lost is not easily regained. Loss of faith in our leaders, in our political system, in our academic institutions, and in our country is a heavy price to pay.

Author: *Kleiner, Anna*

Other Authors: Rikoon, J. Sanford; and Seipel, Michael

Title: **HOGS AND HUMANITY IN OUR HOMETOWN:THE IMPACTS OF LARGE-SCALE SWINE OPERATIONS ON COMMUNITY SATISFACTION**

Source:
64TH ANNUAL MEETING OF THE RURAL SOCIOLOGICAL SOCIETY, Hilton Hotel * Albuquerque, New Mexico * August 15-19, 2001

The proliferation of large-scale swine production facilities has generated extensive debate and social conflict throughout the rural United States over the past decade. Rural residents, elected officials, corporate representatives, and regulatory agencies have battled over the siting of industrialized pork production facilities in the wake of manure spills, fish kills, intense odor and other environmental effects accompanying these facilities. Communities in northern Missouri have experienced the impacts of this trend in industrial swine production in much the same way and have been the site of ongoing research on how corporate swine production impacts the quality of life of rural residents. This research examines how controversial land uses, n this case large-scale corporate swine operations, influence community satisfaction.

Author: *Liebl, David S.*

Other Authors:

Title: **SITING CAFOS IN WISCONSIN-PUBLIC PERCEPTION OF IMPACTS**

Source:
College of Engineering UW-Madison; Waste Reduction and Management Specialists.

This article discusses the impact of CAFOs upon the local economy, environment and community. Community impacts are cited as outside capital investment, with return on investment leaving community; new roads needed due to increased traffic; new low-wage job creation; competition for labor; new support services for outside labor force; new labor spending wages in and out of community; new housing requirements; loss of local farms; raise or lower property taxes; falling land values; cost of deregulated energy; threat to water quality.

Author: *MacArthur, Mary*

Other Authors:

Title: **ALBERTA GROUP FORMED TO OPPOSE ILOS**

Source:
Western Producer, April 26, 2002

An organization called Citizens Advocating Public and Environmental Responsibility has been formed to fight the development of intensive livestock operations in Alberta. A massive lobbying effort in the County of Forty Mile rejected Taiwan Sugar's proposal. People opposed to intensive hog or feedlot operations feel they haven't always had the ear of politicians. Small local groups scattered across the province feel powerless with the limited finances, time, energy and experience. In January, the government changed legislation to move control of siting and approving intensive livestock operations away from local municipalities to the quasi-judicial Natural Resources Conservation Board, in an attempt to unify rules across the province.

Author: *Miner-JR*

Other Authors: Humenik-FJ; Overcash-MR; Miner-JR (ed.); Humenik-FJ (ed.); Overcash-MR

Title: **MANAGING-LIVESTOCK-WASTES-TO-PRESERVE-ENVIRONMENTAL-QUALITY**

Source:
Managing-livestock-wastes-to-preserve-environmental-quality. 2000, vii + 318 pp. Iowa State University Press; Ames; USA

This book contains chapters on the following topics:

1. potential impact of unmanaged livestock waste on the environment;
2. public response to environmental quality impact of livestock production;
3. waste characterization relative to environmental quality impacts;
4. livestock and poultry production schemes;
5. solid-liquid separation;
6. anaerobic treatment;
7. aerobic treatment;

8. composting;
9. manure application to crop and pasture land;
10. alternatives to manure application to crop and pasture land; and
11. odour control.

Author: *National Farmers Union*

Other Authors:

Title: **THE EFFECTS OF HOG MEGA-BARNS ON COMMUNITIES, THE ENVIRONMENT, AND INDEPENDENT HOG PRODUCERS**

Source:
submitted by the National Farmers Union, Region 7 (Alberta), to the Flagstaff County Appeal Board for its consideration of the application of Taiwan Sugar Corporation. Hardisty, Alberta, October 6, 2000

"—Large corporate hog producers and attendant vertical integration threaten family farm hog production by pushing down prices, closing markets for family farmers, and obscuring price signals. In effect, the domination of the hog production and packing sectors by a handful of large, vertically integrated corporations destroys the open market in hogs.—Vertical integration and the transfer of hog production from family farms to large corporate packers/processors is a policy decision, not an inevitable result of economic forces. Governments, at all levels, can make choices that will either turn agriculture over to distant corporations or retain it in the hands of local families. — Although the corporate proponents of large hog barns promise jobs, economic development, and markets for feed grains, these corporate barns provide significantly fewer of these benefits than the family farm hog producers these corporations displace. Corporations employ fewer people per hog and spend less in their communities than family-farm hog producers. — While large hog barns do not deliver promised economic benefits, they do pose real environmental threats to surface and groundwater.

— Large hog barns also give off objectionable odours, increase fly populations, destroy the quality of life for surrounding residents, and lower property values.

— While it is natural for communities to want to attract jobs, wealth, and capital for investment, transferring hog production from local families to corporations such as Taiwan Sugar, Smithfield, and Maple Leaf facilitates and accelerates the extraction of wealth and capital from rural areas.

The National Farmers Union strongly recommends that Flagstaff County deny Taiwan Sugar Corporation permission to build its proposed hog barns."

Other Authors:

Title: **COMPLIANCE AND ENFORCEMENT PROGRAM SUMMARY FOR THE ` AGRICULTURAL OPERATION PRACTICES ACT, January 1 - September 30, 2002**

Source:
This document reports the number and nature of complaints and referrals from the public and/or other government agencies involving livestock operations for the first nine months of 2002.

Author: S*mith, Erin L*

Other Authors: Fahie, Chris R. , Gordon, Robert J.

Title: **AGRICULTURAL WASTES**

Source:
Water Environment Research Literature Review, September/October 2002, (24) Research Journal. The following review provides a summary of research activities related to characterization, treatment and management of Agricultural Wastes. The review has been divided up into four major sections:

i. Waste Characterization, Analytical Methods and Measurement,
ii. Agricultural Waste Treatment,
iii. Reuse and Recycling of Agricultural Wastes, and
iv. Pollution Prevention and Minimization of the Environmental Impact of Agricultural Wastes.

Author: *Taharnklaew, Rutjawate, BTG-Golder Company Ltd.,*

Other Authors:

Title: **SUSTAINABLE AGRICULTURE IN INDUSTRIALISED COUNTRIES: THE CONTINUING CHALLENGE OF SOCIAL RESPONSIBILITY**

Source:
Regional Workshop on Area-Wide Integration of Crop-Livestock Activities, 18-20 June, 1998, FAO Regional Office, Bangkok Thailand.

BTG-Golder Company recently conducted a study on the environmental and social impacts of intensive livestock operations in the Province of Alberta. The intent was to enable the Government of Alberta to formulate more effective agricultural policies that would allow significant expansion of the livestock industry to become a $20 billion processing (value-added) industry and a $10 billion production industry by 2005, without incurring unacceptable social costs. The experience in Alberta offers a number of object lessons about the difficulties of transforming ingrained beliefs about appropriate forms of agricultural production. The four key components required to ensure better transfer of knowledge are discussed as:

1. Identifying and Addressing Root Causes;
2. Identifying and Coordinating Flexible Policies and Program;
3. Enhancing Monitoring Capacity;
4. Public Participation in Environmental Reviews.

Author: *Thu, K.*

Other Authors: K. Donham, R. Ziegenhorn, S. Reynolds, P.S. Thorne, P. Subramanian, P. Whitten, J. Stookesberry

Title: **A CONTROL STUDY OF THE PHYSICAL AND MENTAL HEALTH OF RESIDENTS LIVING NEAR A LARGE-SCALE SWINE OPERATION**

Source:
This report was prepared for the North Carolina Department of Health and Human Services, Division of Public Health on May 9, 1999.

This article presents the results of a study assessing the physical and mental health of residents living in the vicinity of a large-scale swine confinement operation. Physical and mental health data were collected via personal interviews from a sample (n = 18) of all neighbors living within a two-mile radius of a 4,000-sow swine production facility. Results were compared to similar data collected from a random sample of demographically comparable rural residents (n = 18) living near minimal livestock production. Results indicate that neighbors of the large-scale operation reported experiencing significantly higher rates of four clusters of symptoms known to represent toxic or inflammatory effects on the respiratory tract. These clusters of symptoms have been well-documented among swine confinement workers. there was no evidence to suggest that neighbors of the large-scale swine operations suffered higher rates of psychological health problems manifested as anxiety or depression. A larger population-based study is needed to test the hypothesis that neighbors of large-scale swine operations experience elevated rates of physical health symptoms comparable to interior confinement workers. Permeating all the responses, regardless of whether respondents had specific health problems, was the underlying view that the owner was creating social and class divisions in the neighborhood and community. Most believed that the construction and presence of the facility violated core rural values of being a good "neighbor". For virtually all respondents, rural "neighborliness" embodies central cultural principles of egalitarian relationships, reciprocal exchange such as helping or sharing in times of need, mutual respect, and being kept informed. The facility's construction and continuing presence was viewed as eroding these cornerstones of agrarian life. Often discussed outside the strictures of he questionnaire, participants voiced concern about such issues as labor turn-over, social chasms emerging between neighbors and between children of neighbors, the influence of the facility's owner on local political and economic decision-making boards, and the ability of residents "to have control over their land, homes, families, and quality of life. Clearly the issues confronting rural residents in this study reflect an intertwining of personal, environmental, economic, and social health. Neighbors of large-scale swine operations had higher rates of respiratory related problems. These health related problems are the same reported in earlier research on swine confinement workers. No evidence to suggest increased psychological problems of neighbors of large-scale swine operations. Outside of questionnaire, many participants believed that these operations were having negative impacts on their community.

Author: *Thu, Kendall M.*

Other Authors: Durrenberger, E. Paul

Title: **PIGS, PROFITS, AND RURAL COMMUNITIES**

Source:
State University of New York Press – 1998

Using the pork production industry as an example, this book illuminates the processes and consequences of agricultural industrialization for the social, economic, human, environmental, and political health of the rural United States. Contributors come from widely divergent backgrounds including a former U.S. senator, farmers, a veterinarian, a medical psychologist, an agricultural economist, a biological ecologist, a farm organization president, and anthropologists. Set within the theoretical framework of Walter Goldschmidt's research on the community consequences of industrialized food production, these contributions show that the increasing divergence of ownership has real human costs that continue to be ignored by economic developers and policymakers.

Author: *Weida, Dr. William J.*

Other Authors:

Title: **COMMENTS ON THE PERMIT MATERIALS SUBMITTED BY DGH AND THE TAIWAN SUGAR CORPORATION CONCERNING ECONOMIC DEVELOPMENT AND A FARROW-TO-FINISH HOG OPERATION IN THE COUNTY OF FLAGSTAFF, ALBERTA, CANADA**

Source:
Department of Economics, The Colorado College, Colorado Springs, CO and The Global Resource Action Center for the Environment (GRACE)—Factory Farm Project

The document provide hard evidence based on peer-reviewed economic research that hog ILOs:

a. decrease local economic growth.

b. devalue local property.

c. create a moral hazard for the county that leads to higher costs to the residents of the county.

d. operate in such a way as to maximize their profits by shifting the costs of their waste to other residents of the region.

e. overcome the twin costs of diminishing returns to scale in diseconomies of scale by taking advantage of tax and subsidy policies that allow important costs of ILO operations to be either omitted or understated.

f. are structured so that they cannot aid or enhance regional economic development.

Author: *Wing, Steve Susanne Wolf*

Other Authors:

Title: **INTENSIVE LIVESTOCK OPERATIONS, HEALTH AND QUALITY OF LIFE AMONG EASTERN NORTH CAROLINA RESIDENTS**

Source:
This report was prepared for the North Carolina Department of Health and Human Services, Division of Public Health on May 9, 1999.

Households from three different communities were surveyed:

1. in the vicinity of an approximately 6000-head hog operation,

2. in the vicinity of two intensive cattle operations, and

3. ag area but not within two miles of livestock operations using liquid waste management.

Hog community residents reported more occurrences of headaches, runny noses, sore throat, excessive coughing, diarrhea, and burning eyes compared to the community with no intensive liquid waste management. Quality of life was greatly reduced for the hog community. Quality of life (such as the number of times residents could not open windows or go outside in nice weather) was similar for the cattle community and the ag area without intensive liquid waste management. Respiratory and mucous membrane effects in the hog community were consistent with results from confinement workers.

Author: *Aigner, Stephen M.*

Other Authors: Peter, Greg A.

Title: **THE EFFECTS OF CULTURAL CONTEXT ON THE COMMUNITY FIELD AND ITS CAPACITY FOR COLLECTIVE ACTION**

Source:
64TH ANNUAL MEETING OF THE RURAL SOCIOLOGICAL SOCIETY, Hilton Hotel. Albuquerque, New Mexico, August 15-19, 2001

The authors present two rural cultural contexts that shape the structure of social interactions and social relations that define the community field. Efforts to mobilize collective action, such as economic and sustainable community development are constrained or facilitated by the community field. Illustrated by a PowerPoint presentation we will examine the symbols and narratives from field studies that express local life styles and capture the balance between structure and agency in rural Appalachia and rural Northwest. The political economy of the two distinct cultures poses different challenges for economic and sustainable community development.

Author: *Bainbridge, Vanessa*

Other Authors: Stephanie Foerster , Katherine Pasteur, Michel Pimbert (Co-ordinator), Garett Pratt, Iliana Yaschine Arroyo

Title: **INSTITUTIONALISING PARTICIPATORY APPROACHES AND PEOPLE CENTRED PROCESSES IN NATURAL RESOURCE MANAGEMENT**

Source:
An Annotated bibliography. London, IIED, 2000.

The International Institute for Environment and Development (IIED) and the Institute of Development Studies (IDS) have initiated an action-oriented research project designed to examine the dynamics of institutionalizing people-centred processes and scaling up participatory approaches in large, public bureaucracies for natural resource management in a variety of social and ecological settings. Full involvement of primary stakeholders in this expanded sense involves a shift in the type and quality of participation from tokenism and consultation to real decision making and democratic control. Participatory methodologies and approaches for example need to build on multiple perspectives, systemic group learning processes, conflict resolution, sustained action through the strengthening local institutions and/or building new local institutions in the interest of gender equity and fair representation of different resource user groups. Full involvement of primary stakeholders in this expanded sense involves a shift in the type and quality of participation from tokenism and consultation to real decision making and democratic control. Participatory methodologies and approaches for example need to build on multiple perspectives, systemic group learning processes, conflict resolution, sustained action through the strengthening local institutions and/or building new local institutions in the interest of gender equity and fair representation of different resource user groups .Full involvement of primary stakeholders in this expanded sense involves a shift in the type and quality of participation from tokenism and consultation to real decision making and democratic control. Participatory methodologies and approaches for example need to build on multiple perspectives, systemic group learning processes, conflict resolution, sustained action through the strengthening local institutions and/or building new local institutions in the interest of gender equity and fair representation of different resource user groups. This annotated bibliography was developed primarily for the national research teams as a guide to the recent literature on organizational change and the institutionalization of participation in natural resource management.

Author: *Burdge, Rabel J.*

Other Authors:

Title: **OUR WAY OF LIFE: A SOCIAL ASSESSMENT OF ENDANGERED SPECIES LISTING ON FARMING COMMUNITIES.**

Source:
64TH ANNUAL MEETING OF THE RURAL SOCIOLOGICAL SOCIETY, Hilton Hotel, Albuquerque, New Mexico, August 15-19, 2001

The spring Chinook (Salmon)was listed on The National Marine Fisheries Service (NMFS)in January of 2001. Everson is a dairy and raspberry farming community astride the Nooksack River in Washington. The State of Washington salmon recovery plan calls for 75 to 150 foot stream buffers and grass corridors between berry crops, and reduced applications of fertilizers, pesticides and herbicides.

This plan may cause farms in the area to go under bringing an end to a century long way of life.

Author: *Connor, Desmond M.*

Other Authors:

Title: **PUBLIC PARTICIPATION: A MANUAL**

Source:
Connor Development Services, Ltd., 5096 Catalina Terrace, Victoria BC V8Y 2A5, Canada, 1997

The books begin with an overview of the need for prevention and resolution of public controversies and then turn to a case study of the use of the technique in herbicide treatment in Alberta (a brief summary of the process by a member of the Alberta Forest Service, who implemented it.) This is followed by a discussion of the techniques involved, an example of a display advertisement for the process, a discussion of some elements of program design, and some additional case studies. The brevity of these manuals makes me doubt whether they provide sufficient information about the process to allow one without other knowledge to implement it, but they provide a sufficient picture of the process to encourage the reader to explore further for additional assistance in putting the process in place.

Author: *Flora, Cornelia Butler*

Other Authors: Wynne Wright; Kathy Kremer; Willis Goudy; Clare Hinrichs; Paul Lasley; Ardith Maney; Margaret Kroma; Hamilton Brown; and Kenneth Pigg

Title: **TECHNICAL WORK PAPER ON SOCIAL AND COMMUNITY IMPACTS**

Source:
Technical Work Paper Prepared for the Generic Environmental Impact Statement on Animal Agriculture and the Minnesota Environmental Quality Board, June 2001.

This document presents the updated Social/Community literature summary identifying on-going research relevant to social and community impacts and a collection and qualitative assessment of data in the form of case studies on the social and community impacts of animal agriculture.

Author: *Francis, John A.*

Other Authors:

Title: **CREATING A SUSTAINABLE FUTURE: LEARNING TO CHANGE YOUR LIFE, THE COMMUNITY AND THE WORLD**

Source:
Kellogg/Washington State University Integrated Farming Systems Holistic Management Project, 1999

This book examines the progress of a project undertaken to help farmers, ranchers and others take charge of their lives, their work and their communities through the development of trust building, consensus, leadership and holistic management skills.

Author: *Kaner, Sam*

Other Authors:

Title: **FACILITATOR'S GUIDE TO PARTICIPATORY DECISION- MAKING**

Source:
New Society Publishers, PO Box 3064, Stony Creek, CT 06405 272pp, 1997

The book is an unusual combination of theoretical text and trainer's manual which, despite the apparent inconsistency of these two goals, works well. The concept of participatory decision making is a simple one that is, however, often difficult to implement effectively. Definitionally, it is any process which allows and encourages all members of a group to participate in a decision-making process. Its most common use is in large groups (anywhere over about 10 people) for determining policy issues, although it can be used to deal with any topic in which common decision making processes are needed. The basic concept which Kaner presents is one which begins the process by encouraging expanding the range of ideas (divergent thinking) and then drawing together the range of ideas (convergent thinking) to a decision point, encouraging inclusive solutions and full, or at least broad, participation in reaching sustainable conclusions.

Author: *Kehrig, Randall*

Other Authors:

Title: **AGRICULTURAL PRACTICES AND WATER QUALITY IN SASKATCHEWAN, CANADA: A SOCIOLOGICAL PERSPECTIVE**

Source:
Paper at the Land-Water Linkages in Rural Watersheds, Electronic Workshop, 18 September 27 October 2000

The purpose of this case study is to provide social insights into policy associated with rural water quality. People who live in rural areas, be they farmers or indigenous populations, have unique relationships with the natural environments around them. Although water is a basic requirement of human, livestock and crop life, the quality of rural water is often overlooked until it raises immediate human health concerns. The intensification of agriculture practices including livestock in controlled environments and the use of commercial fertilizer and farm chemicals has the potential to drastically alter rural water quality. However, water policies designed to ensure water quality are often compromised by the structural conditions of the economy and of the state. This case study examines agriculture practices and water quality in rural Saskatchewan, Canada. It presents exploratory data with a social analysis and several suggestions for more effective policy.

Author: *McCrostie Little, Heather*

Other Authors: Taylor, Nick

Title: **SOCIAL AND ECONOMIC IMPACTS ASSOCIATED WITH IRRIGATED LAND USE CHANGE**

Source:
Paper presented to the New Zealand Association for Agricultural and Resource Economics (NZAERS) Conference, Blenheim, July 2001

Irrigation creates social change. It can transform the land, be a critical asset in the development of economies, re-vitalise people and stabilise communities. The evolution of radical diversification of land production, and the subsequent emergence of different rural economies and changed social patterns following irrigation, are described with a model of three waves of ownership change.

Author: R*uby, Armand*

Other Authors: Brosseau, Geoff

Title: **A COMPREHENSIVE LONG-TERM MONITORING AND ASSESSMENT PLAN FOR THE SAN FRANCISQUITO CREEK WATERSHED**

Source:
February 2002, (30) Specialty Conf Paper

The San Francisquito Creek watershed is located on the broad peninsula south of San Francisco, California. The creek originates in relatively undeveloped hillsides, and flows through agricultural, low density residential, and then highly urbanized land uses before draining into the southerly portion of San Francisco Bay. Stakeholders within the watershed have undertaken a Coordinated Resource Management and Planning (CRMP) process, led by the Peninsula Conservation Center Foundation (PCCF). [Note: the CRMP group has recently morphed into the "San Francisquito Watershed Council", and the PCCF has joined with another local organization and reformed as Acterra". As part of their ongoing watershed management activities, the group has designed a comprehensive Long Term Monitoring and Assessment Plan (LTMAP). A CRMP subcommittee initially identified a broad range of issues and drivers affecting management of the San Francisquito watershed, and then developed a set of key questions pertaining to informational needs for effective watershed management. From these key questions, the subcommittee defined a guiding principle for the LTMAP, and developed a set of monitoring and assessment objectives. The objectives were placed into the following general categories: Physical – activities related to the physical habitat of the watershed (erosion, sedimentation, barriers, etc.) and land use impacts Hydrological – flooding potential, surface/groundwater interactions, low flow conditions (re: aquatic habitat), etc. Chemical – sources, distribution and impact of known and potential (suspected) chemical pollutants Biological – biological habitat and processes, as well as biodiversity and special status species Social – community interests and concerns (aesthetics, uses, property and water rights), social aspects and resources (demographics, complementary facilities, access), and direct impacts of human activities (litter, recreation, etc.) The LTMAP provides a framework for identifying informational needs, establishing priorities, coordinating and integrating the results of research within the

watershed, and disseminating the results of monitoring and assessment projects. The LTMAP is intended to be a living document that will be updated annually.

Author: *Scoones, Ian*

Other Authors: John Thompson

Title: **PARTICIPATORY PROCESSES FOR POLICY CHANGE**

Source:
Prajateerpu E-Forum on Participatory Processes for Policy Change, IIED-Sustainable Agriculture and Rural Livelihood, Conference, September 2002.

The E-Forum debate was convened around a series of four themes:

i. issues of evidence;

ii. issues of representation;

iii. issues of engagement and

iv. issues of accountability.

Author: *Basnet,-Badri-B*

Other Authors: Apan,-Armando-A; Raine,-Steven-R

Title: **GEOGRAPHIC INFORMATION SYSTEM BASED MANURE APPLICATION PLAN**

Source:
Journal of Environmental Management v 64 no2 Feb 2002. p. 99-113.

A geographic information system (GIS) based manure application plan has been developed for the site-specific application of animal waste to agricultural fields in the Westbrook sub-catchment of the Murray-Darling Basin, south-east Queensland, Australia. Sites suitable for animal waste application were identified using a GIS based weighted linear combination (WLC) model. The degree of land suitability for animal waste application was determined using a range of social, economic, environmental, and agricultural factors. As eutrophication and toxic blue-green algae blooms are a known problem in the catchment, the manure application rates were limited to the rate of crop phosphorus removal. Maximum manure application rate was calculated spatially by taking the crop nutrient (P_2O_5) and the manure nutrient (P_2O_5) content into account. The environmental suitability of the fields receiving animal waste was considered in prescribing the final application rate of solid and liquid manures generated by local animal production facilities. The degree of site suitability of the agricultural fields was also used to suggest manure management practices to minimise the socio-environmental risks and increase the nutrient use efficiency of the applied manure. The amount of ammonium nitrogen (NH_4-N) that would be added to the soil by satisfying the P_2O_5 requirement using manure sources was also calculated and an applied NH_4-N map was created. This map could be used to assist farmers identify additional nitrogen requirements after manure application.

Author: *Beierle, Thomas C.*

Other Authors:

Title: **PUBLIC PARTICIPATION IN ENVIRONMENTAL DECISION: AN EVALUATION FRAMEWORK USING SOCIAL GOALS**

Source:
Discussion Paper 99-06, November 1998. Resources for the Future, Washington, DC 20036

This paper presents a framework for evaluating mechanisms that involve the public in environmental decision-making. These include traditional participatory mechanisms —such as public hearings, notice and comment procedures, and advisory committees—as well as those considered more innovative—such as regulatory negotiations, mediations, and citizen juries. The framework is based on a set of "social goals", defined as those goals which are valued outcomes of a participatory process. The goals are: educating the public, incorporating public values and knowledge into decision-making, building trust, reducing conflict, and assuring cost-effective decision making.

Author: *Bellows, B*

Other Authors: J. Wright, T. Robertson, M. Edid

Title: **FARM-NEIGHBOR RELATIONSHIPS. GUIDELINES OF RESOLVING AND MEDIATING CONFLICTS**

Source:
Manure Management Conference February 10-12, 1998, in Ames, Iowa

The authors advocate the advantages of a First Responder Network as going beyond enhancing farm-neighbor understanding. This network may also enhance the credibility and visibility of agricultural and environmental agencies and facilitate the development of improved working relationships among agencies.

Author: *Bellows, Barbara C.*

Other Authors: Judy Wright; Lee Telega; and Carl Crispell

Title: **MANAGING GOOD FARM-NEIGHBOR-RELATIONS: AN ESSENTIAL COMPONENT OF MANURE MANAGEMENT**

Source:
Cornell Cooperative Extension Cornell University Department of Agricultural and Biological Engineering

As rural demographics and the structure of farming changes and as public awareness of environmental issues is enhanced, farm-neighbor conflicts are occurring with increasing frequency. Non-farm community members complain that their quality of life is detrimentally affected by odors and nutrient leaching associated with farming practices. Farmers are concerned about their ability to implement effective nutrient management practices, costs associated with potential environmental regulations, and the threat of lawsuits. Farmer outreach to community members in the form of newsletters, open houses, and neighborly assistance can help cultivate open communication and understanding between farm and non-farm community members. Agricultural, governmental and community organizations can facilitate the development of good farm-neighbor relationships through the establishment of a First Responder Network. Community dispute resolution or mediation centers can help resolve conflicts between farmers and neighbors while providing a less expensive and more rewarding alternative to litigation.

Author: *Bradley, Barbara R.*

Other Authors: Daigger, Glen T

Title: **A SUSTAINABLE DEVELOPMENT APPROACH TO WASTEWATER INFRASTRUCTURE**

Source:
October 2000, (17) WEFTEC Paper

Sustainable development is a decision making approach and management tool to aid leaders in the wastewater sector to plan and implement change toward a balanced future with environmental, social, and economic vitality. Sustainable development emerged in response to the combined effect of affluence, population growth, and technology. Accelerating depletion of natural resources and wildlife, inequitable benefits accruing to different social strata, and the bottom-line need for solutions that make economic sense all drive the push for sustainability. Changing social values and increased scientific understanding fuel the drive. As professionals in fields as diverse as manufacturing, architecture, and city planning discover ways to apply sustainability concepts, existing practices are modified and new, more sustainable practices emerge. To apply sustainable development to the wastewater sector, one must first understand how one's own organization and its charter fits within the larger social and environmental context now and in the future. This process involves identifying the diverse elements that either comprise the infrastructure or are affected by it, such as building materials, energy, site location, building systems, and solid wastes. Elements affected by it are water, human and biological communities, air quality, and transportation. The importance of the decision making process increases when one realizes the number of potentially conflicting elements. Whether applied to new or existing facilities, operations, or institutions, a sustainability approach can reveal options not otherwise seen. We briefly review the fundamentals of sustainable development and The Natural Step, and examine sustainable development policies and planning. We then examine tools used in other professions and how we can apply them in the wastewater sector, in particular an environmental management system using ISO 14001 and The Natural Step, and a rating system for green buildings. Lastly, some indicators of sustainability are proposed for the wastewater sector.

Author: *Caldwell, Wayne*

Other Authors: Ball, Jennifer

Title: **FARMER A VS B – CAN WE SETTLE DISPUTES LOCALLY?**

Source:
Integrated Solutions to Manure Management: Working Together on Challenges and Opportunities, National Conference and Exhibition, London Convention Centre, London, Ontario, September 12-13, 2002.

Conflict associated with the construction of new livestock facilities has become increasingly frequent and increasingly acrimonious. The conflict often continues as neighbours watch and monitor manure management looking for the slightest derivation from best management practices. In some instances these disputes have found their way into the courts or tribunals and in other instances they remain unresolved and have soured neighbourly relations. Across Ontario, there have been a number of initiatives to create local committees that attempt to mediate these local conflicts. Bill 81, The Nutrient Management Act, proposes to establish the framework for the creation of these committees across the province. These local initiatives in conflict resolution appear to have the potential to offer workable solutions at a lower cost, with potential for a win-win outcome. The continued viability of agriculture and indeed many other aspects of the rural community depends upon finding ways of positively resolving conflict related to the environment and rural land use. This article documents the number and location of committees that have been established in Ontario, their organization, process, issues and results. It also identifies opportunities and challenges that might accompany the application of this approach across the province as contemplated by Bill 81.

This presentation is drawn from a larger research project that is looking at various strategies related to conflict resolution and the intensification of agriculture. The presentation identifies opportunities for local strategies and approaches in responding to conflict. While it will focus on an Ontario example, it will also benefit conference participants from other provinces as they struggle to find ways to deal with the conflict that has been documented in many provinces.

Author: *Caldwell,-Wayne-J*

Other Authors:

Title: **LAND-USE PLANNING, THE ENVIRONMENT, AND SITING INTENSIVE LIVESTOCK FACILITIES IN THE 21ST CENTURY**

Source:
Journal of Soil and Water Conservation v 53 no2 1998. p. 102-6.

Land use planning can be used to settle differences between communities and livestock producers. The growth in the livestock industry and corresponding manure production has contributed to concerns over air and water quality. This trend has lead to significant conflict within many rural communities, potentially adversely affecting the relationship between livestock producers and communities. A fair and equitable resolution to the conflict could be achieved by a land-use planning approach that gives priority to agriculture but that is a public, regulated process based on research and quality information and guided by national and international standards.

Author: *Carruthers, Genevieve*

Other Authors:

Title: **ENVIRONMENTAL MANAGEMENT SYSTEMS AND ISO 14000 IN AUSTRALIA – ON AND OFF-FARM IMPLEMENTATION AND POLICY DEVELOPMENT.**

Source:
Adding Value through Environmental Marketing: Opportunities for Food Producers, Processors and Retailers Conference proceedings December 6-7, 1999 Edgewater Hotel, Madison, Wisconsin

Australian farmers appear to face numerous barriers when considering the adoption of environmental management systems (EMS). Foremost amongst these is the perceived cost of developing EMS, and the associated record keeping. Concurrent with this is the doubtful status of market advantage for 'environmentally sustainable' goods. Vertical marketing chains will need to be strengthened for farmers to take full advantage of any marketing benefits that accrue from adoption of EMS. Other issues inhibiting widespread adoption of EMS by the farming sector are uncertain regulatory implications,

lack of sound knowledge about EMS (both as a concept and implementation), concern about integration with other management systems (such as quality assurance), and lack of time and/or expertise for farmers to develop their own EMS approach. Despite these constraints, it is apparent the use of EMS in Australian is growing. Several of the approaches are based on existing farm management practices, but many also incorporate ISO 14001 principles.

Author: *Cayley, Julie*

Other Authors:

Title: **DEVELOPING SUCCESSFUL RURAL WATER QUALITY PROJECTS – THE HEALTHY FUTURES FOR ONTARIO AGRICULTURE MODEL**

Source:
Integrated Solutions to Manure Management: Working Together on Challenges and Opportunities, National Conference and Exhibition, London Convention Centre, London, Ontario, September 12-13, 2002.

After extensive consultation with the province's agri-food industry, in 1999 the Ontario Government introduced the Healthy Futures for Ontario Agriculture program (HFOA). Developed by the Ministry of Agriculture, Food and Rural Affairs, this 4 year $90 million program recognized the potential for community partnerships in the development and delivery of successful projects to improve rural water quality, food safety and marketing opportunities. The HFOA program was designed to ensure the competitiveness of Ontario's agri-food industry and to assist it in protecting rural Ontario's soil, water and air resources. The community based partnership approach brought together rural farm and non farm landowners, agri-food businesses, farm, commodity and food industry organizations, rural municipalities, conservation authorities and other rural community organizations to focus on a common goal of protecting and improving the quality of the rural environment. The partnerships forged ensure the projects and improvements to the environment will be sustained for years to come. This presentation highlights examples of the innovative partnerships and projects that have been developed. Program accomplishments to date will be summarized and some of the key components to developing a successful rural water quality project will be identified.

Author: *Christensen, Thomas W.*

Other Authors:

Title: **COMPREHENSIVE NUTRIENT MANAGEMENT PLANS: POLICY AND PROSPECTS**

Source:
Presentation at the Agriculture Outlook Forum 2001

A CNMP is a subset of a conservation plan that is unique to animal feeding operations. It is a grouping of conservation practices and management activities which, when combined into a system, will help to ensure that both agricultural production and natural resource conservation goals are achieved. The development of a CNMP needs to address the following six elements:

1. Manure and Wastewater Handling and Storage – This element addresses the components and activities associated with the production facility, feedlot, manure and wastewater storage and treatment structures and areas, and any areas or mechanisms used to facilitate transfer of manure and wastewater.
2. Land Treatment Practices – This element addresses evaluation and implementation of appropriate conservation practices on sites proposed for land application of manure and wastewater from an AFO.
3. Nutrient Management – This element addresses the requirements for land application of all nutrients and organic by-products (e.g., animal manure, wastewater, commercial fertilizers, crop residues, legume credits, irrigation water, etc.) that must be evaluated and documented for each Conservation Management Unit (CMU).
4. Record Keeping – It is important that good records are kept to effectively document and implementation activities associated with CNMPs. This element lists documentation requirements associated with developing and implementing a CNMP.
5. Feed Management – Feed management activities may be used to reduce the nutrient content of manure, resulting in less and being required to utilize the nutrient contents of the manure. This element addresses feed management activities as a possible opportunity for the AFO owner/operator in the CNMP development process.

6. Other Utilization Activities – This element addresses other environmentally-sound utilization options associated with animal manure and wastewater as alternatives to traditional operational and land application methods.

Author: *Cole, Terry*

Other Authors:

Title: **EDUCATING THE PUBLIC ABOUT WATERSHED MANAGEMENT**

Source:
October 2001, (1-7) WEFTEC Paper

Watershed protection and stormwater management offer unique opportunities for public involvement. Well-managed efforts can energize and involve local residents in protection of their watercourses, ensuring optimal implementation of the watershed plan by providing the local community with ownership in protection of area waterways. The benefit to governments and water/sewer agencies of this type of focused public involvement cannot be overstated as it encourages residents to acknowledge responsibility for the impact each individual has on area waterways while fostering voluntary participation in Watershed Management Plan recommendations. Additionally, governments and agencies earn credibility through the process, a value that spills over into all other programs the government or agency undertakes. This paper discusses the objectives of a well-managed public involvement plan for watershed management programs, including using a framework designed to stimulate the planning process, rather than to hinder or encumber it. Supporting this approach will be two case studies of successful watershed management public involvement programs.

Title: **COMMUNICATION PLAN DEVELOPMENT 101: MOVING BEYOND TWO CANS AND A STRING**

Source:
September 2002, (4) WEFTEC Paper

While water and wastewater utilities have undergone tremendous advances over the past 100 years in technology and science, the one area where most are still lagging behind is in communications, both within the organization and with external audiences. And while most utilities have a Master Plan to guide their operations and capital improvements over the coming years, few have developed a strategic Communication Plan to manage communication goals and expectations within the organization as it moves forward. Having such a plan provides much needed guidance on allocation of often-limited resources, clarification of the agency's message, and protection of its credibility within the community it serves. There are guidelines that can assist utilities with developing a basic, yet useful, Communication Plan to meet the unique needs of water and wastewater agencies. The components of this Plan are something no agency should be without – a recognition and thoughtful consideration of an agency's most valuable resource, communication.

Author: *Couture, Melanie, Peer Advisors Coordinator*

Other Authors:

Title: **PORK ADVISORY PROGRAM**

Source:
Program

The most effective way to deal with concerns between hog producers and their neighbours is to use fellow producers who are trained in conflict resolution to work with them. These producers understand the challenges of the industry and have established relationships in the farming community. Through conciliatory discussion, producers can often resolve conflicts quickly and effectively without the necessity for regulatory action. That's why Manitoba Pork Council established the Peer Advisors Program. Here's how Peer Advisors program works: A complaint is received, reviewed and assigned to a Peer Advisor by the Coordinator. The Peer Advisor will contact the Complainant and the farm in question to assess the situation. The Coordinator provides the Peer Advisor with technical support, and together the Peer Advisor and Coordinator can recommend corrective action if

necessary. The Coordinator will present a written report outlining the findings to the producer and the Complainant.

Author: *Eckert, Beth*

Other Authors: Shellenbarger, David

Title: **AN ISO 14001 CERTIFIED ENVIRONMENTAL MANAGEMENT SYSTEM BENEFITS THE PUBLIC SECTOR**

Source:
March 2002, (10) Specialty Conf Paper.

In an effort to become better environmental stewards and to become a more efficient and effective organization, the City of Gastonia's Wastewater Treatment Division (WWTD) voluntarily chose to develop and implement an ISO 14001 certified environmental management system (EMS). The Division, with aid from the North Carolina Division of Pollution Prevention and Environmental Assistance, began development of the WWTD's EMS in February 1999 and obtained certification on June 15, 2001. The WWTD has obtained many benefits from the implementation of this certified EMS. It has helped the Division improve communication and compliance while increasing organization and training of staff and has helped develop a more environmentally proactive culture. The collective benefits of the EMS and certification provide defense against privatization and third party lawsuits. Communication within the Division has been improved through several elements of the ISO 14001 standard. The WWTD now has an avenue for comments and recommendations from every level of the staff to be formally reviewed and answered. All external communication that relates to significant aspects, along with the City's responses, must be logged in central logbooks and reviewed by Management quarterly. With the introduction of documented procedures, the communication of job requirements and revisions to these requirements has significantly been improved by the EMS. Improved compliance has been achieved with the implementation of the EMS. Increased environmental awareness, review and tracking of legal requirements and the implementation of an internal compliance auditing system helps to ensure that all areas of environmental compliance are addressed, not just those which require reporting to regulatory agencies. The EMS has increased organization of documentation and legal requirements. The EMS requires a complete listing of legal and other requirements of the WWTD. Other organizational improvements include a formal process for tracking compliance, cost, and environmental impacts, which has increased awareness among staff of environmental compliance and cost trends. Organizational benefits from the document control process include increased staff and supervisor confidence in the documented procedures they are using to perform their job requirements and in locating records for reference internally or during external audits. An added benefit to the EMS is a better-trained and more environmentally aware staff. Training requirements, dates of occurrence and training evaluation are tracked on a training matrix. The process ensures that not only are staff members trained on the procedures but they are also trained on why it is important to the environment that they perform their jobs correctly. The framework of the EMS requires the division to take a proactive approach to problems. The corrective and preventative action program and internal audit programs identify areas for improvement and require follow through. Improved tracking of environmental issues allows for trends to be more readily identified. Having an ISO 14001 certified EMS helps improve public image and protect against privatization efforts and third party lawsuits. As mentioned above the EMS program requires an organization to be on top its management. Certification helps show this to outside groups and deter them from challenging the operation. In summary, Gastonia has already seen substantial benefits from the implementation of its ISO 14001 certified environmental management system. It has encouraged and required better organization, operation and management, which have resulted in a more effective, proactive, and defensible organization.

Author: *Forste, Jane B.*

Other Authors:

Title: **BRIDGING THE COMMUNICATIONS GAP— THE EMS APPROACH**

Source:
14th Annual Residuals and Biosolids Management Conference, February/March 2000, (1-4) Specialty Conf Paper

A comprehensive Environmental Management System (EMS) offers an effective means of establishing methods and processes to develop a well-managed biosolids management program. Many organizations throughout the U. S. have expressed interest in using the EMS approach to develop/improve their local biosolids recycling programs, and a significant number of these organizations have already begun to follow the steps that will lead to a fully implemented EMS program for their facilities and projects. As these efforts become more and more common, it is important for those wishing to develop an EMS to recognize how essential effective communication is to the overall program—both within their organizations and with the communities that are affected by their biosolids program. An EMS is the policy, programs and processes. It involves understanding the full range of the organization's activities and the associated environmental impacts and risks, the principal stakeholders and their needs, as well as current and projected performance. A successful EMS will drive improved performance throughout an organization, and become an integral part of that organization. Usually, an EMS involves organizational change, which also requires a diagnosis of the organizational culture.

Author: *Frankish, C. James*

Other Authors: Zamluk, Rita , Drake, Richard

Title: **COMMUNITY PARTICIPATION AND LIQUID WASTE MANAGEMENT: LESSONS FROM A PARTICIPATORY PLANNING PROCESS**

Source:
July 2000, (21) Specialty Conf Paper

To more adequately address pollution control objectives, legislation in British Columbia, Canada allows local governments to develop Liquid Waste Management Plans (LWMPs). Unfortunately, a local referendum defeat prevented the development of such a Plan for a rural area in the Comox Valley on Vancouver Island. Unable to fund a traditional planning process, direct solutions could not be found for the larger region. Within that region the unincorporated community of Union Bay developed a community-driven, "hands-on" public process. This article describes the molding of the "Made in Union Bay" planning process. We explore the work of a multifaceted community committee, where citizens and staff from local, provincial, and federal levels of government sit together at the table. We also describe building successful partnerships, using bureaucracies and consultants as resources ("on tap", not "on top"); garnering innovative funding sources; and accessing creative talents within the community. The "Made in Union Bay" LWM Plan is charting a course to use waste as a resource to create economic wealth and social capital by using "living machines" such as constructed wetlands and/or solar greenhouses to treat wastewater. The committee is convinced that enhancing the environment and treating sewage as an asset, not a liability, will be their legacy. This case study contributes to our understanding of the potential benefits and limitations of community-driven approaches to environmental issues.

Author: *Hadeed, Samuel J.*

Other Authors:

Title: **CHALLENGES AND OPPORTUNITIES FOR THE NATIONAL BIOSOLIDS PARTNERSHIP'S COMMUNICATIONS PROGRAM**

Source:
WEF 2002 Annual Biosolids Conference Austin, Texas, March 2002, (8) Specialty Conf PaperThe National Biosolids Partnership (NBP), an alliance of the Association of Metropolitan Sewerage Agencies, Water Environment Federation, and U.S. Environmental Protection Agency, has developed a Communications program that focuses on two major themes:

1. development of a National Clearing House for providing timely quality information on biosolids technical information and issues and
2. promotion of the Environmental Management System (EMS) for Biosolids program.

The biosolids clearing-house information is located at the NBP web site – www.biosolids.org. One of the challenges of the clearing-house is to keep track of information being developed by national organizations and agencies and ensuring that it is technically correct and timely. The intent of the web site is to assist local agencies in the management of their biosolids program and provide the general public with technically accurate information related to biosolids management. Information posted on the web site is routinely evaluated and discussed for any clarification with those external sources prior to posting to minimize any misperceptions and rumors about biosolids. The

web site uses navigational tools that are designed to facilitate information retrieval and includes individual web pages for posting news events in the 50 states, 10 EPA regions, and international community. Promotion of the NBP's EMS tools is another major activity to facilitate its use by local wastewater agencies. The NBP is developing a marketing program to assist the more than 16,000 wastewater agencies around the United States to sign up for the Code of Good Practice Club. Additionally, interim final drafts of the EMS Blueprint and profiles/contacts of the demonstration agencies participating in the pilot program are available for viewing and downloading at the www.biosolids.org web site. This paper will discuss the NBP's EMS marketing and communications program and how the web site is being used to serve as a central clearinghouse for biosolids-related information for the wastewater profession and other interested parties.

Author: *Haworth, Joe*

Other Authors: Lancaster, Chris

Title: **BROADEN PUBLIC OUTREACH WITH ADVERTISING**

Source:
October 2000, (8) WEFTEC Paper

In the old days, it was not considered to be in the best interest of public agencies to promote themselves through paid advertising. It was even thought to be a waste of taxpayer money. In today's media market and in the interest of good public relations, however, this opinion has changed. Newspapers today are willing to create "Special Sections" for the specific purpose of promoting our agencies and services. In many areas of the country the issues of water quality and wastewater treatment are extremely topical. Newspapers today are willing to create special sections like Earth Day, Water Awareness Month and Anti-Pollution Week to educate their readers and the citizens our agencies serve. By participant in special sections through paid advertising, your agency can promote itself without the influence of editorial. Special sections are a great way to describe agency activities and promote agency accomplishments. Remember, headlines never read "Treatment Plant Ran Swell Yesterday" unless it is your own headline in your own agency's advertisement. Wastewater treatment facilities are extremely important in the overall infrastructure and vital to good environmental and public health. Educating the public about what your agency does and what it does well is not only good public policy, it's necessary in today's media environment. Attend this seminar and learn how to use this new tool, the "Special Section," to effectively broaden public outreach.

Author: *Heath, P.E.*

Other Authors: Jeffrey, Marmen, Claude

Title: **AN INTEGRATED WASTE MANAGEMENT APPROACH TO BIOSOLIDS: A PUBLIC/PRIVATE PARTNERSHIP**

Source:
14th Annual Residuals and Biosolids Management Conference, February/March 2000, (1-17) Specialty Conf Paper.

As the challenges and cost for waste management have grown over the years, an interesting development has occurred – the separation and management of individual waste streams. In the wastewater treatment area, options for the disposal of biosolids are continually being assessed, offered and challenged. This assessment focuses on the direct cost associated with post-processing cost (lime stabilization, land spreading, compost application). Officials must also balance public acceptance for biosolids disposal under the growing guidance of watershed management strategies. In a parallel fashion, federal and state solid waste regulations call for the continued efforts to "Reduce, Reuse, and Recycle," particularly as it applies to public entities. Similarly, solid waste managers are also required to look at post-processing cost (recyclables), transportation cost (separate collection for waste and recyclables), and disposal cost (landfills, incineration, compost application). We now have a unique opportunity to integrate waste management strategies that will allow us to: effectively integrate planning to lower overall costs, create more opportunities for disposal through co-composting (even within watersheds), and simplify public participation. Through co-composting of municipal solid waste and biosolids, the integration of "post-processing," "transportation," and "disposal" can be addressed together. Groupe Conporec, of Tracy, Quebec, Canada, is a private solid waste management company that has partnered with a municipality to effectively manage both waste streams. The discussions focus on the following topics as they relate to co-composting with biosolids: ability to accept biosolids over a wide range of moisture contents; compost

quality with respect to metals concentrations, phosphorus loadings, and watershed management practices (case study – Delaware County, New York, permitting); and odor controls.

Author: *Honkonen, Karl W.*

Other Authors:

Title: **INTEGRATING WATERSHED PROTECTION, BIODIVERSITY, AND COMMUNITY PRESERVATION IN MASSACHUSETTS**

Source:
February 2002, (14) Specialty Conf Paper.

Environmental protection in Massachusetts is framed by three overarching programs: the highly successful Watershed Initiative, now entering its tenth year, and two relatively new programs that are similarly taking the state by storm, the Biodiversity Initiative and Community Preservation Initiative. While each of these initiatives, by themselves, is being applauded by diverse interests, it is the integration of these programs and the effectiveness of this integration in getting to the very root causes of environmental problems – human interception and abuses of the water cycle, loss of biodiversity and ecosystem integrity, and unbridled sprawl in our communities – that is noteworthy. The integration of these three initiatives involves all levels of government, an array of environmental nonprofits, a full range of private sector interests, and the general public in assessing problems, prioritizing solutions, and implementing the necessary sea changes to protect and restore our environment and sustain our economy.

Author: *Huber, Carl*

Other Authors: Thomas, Peter, Elmendorf, Holly

Title: **RECENT EXPERIENCES WITH ODOR CONTROL ISSUES IN THE CITY OF ATLANTA**

Source:
October 2001, (1-24) WEFTEC Paper

As urban areas expand and close in around once isolated wastewater treatment plants the impacts of its odors on the surrounding communities need to be mitigated. In 1995 the City of Atlanta (COA) embarked on a program to address the odors at its wastewater treatment facilities. This paper describes how the COA successfully solved the odor problems its wastewater plant and pumping systems inflicted on its neighbors. Odors emanated from four sources: RM Clayton Water Reclamation Center (RMC WRC), South River Water Reclamation Center (SR WRC), Utoy Creek Water Reclamation Center (Utoy WRC) and the Flint River force main. The City initiated a "Good Neighbor Program" with the goal of addressing odors originating from each of these sources as well as improving the appearance of grounds and adjacent City owned property at each WRC. After hiring a team of consultants it began with a study to investigate and identify odors generated at each treatment facility. The COA immediately implemented the study recommendations the most important of which required construction and operation of new odor control facilities at each WRC. The process included significant and important neighborhood participation along with the need to identify and implement odor control for plants that were also being expanded and upgraded. Waiting until the plants were expanded before addressing odor issues was not an option.

Author: *James Hunt, District Conservationist, USDA NRCS*

Other Authors: Kevin A. Erb, Nutrient and Pest Management Specialist, UW-Extension, Jim Rait, CED, USDA-FSA, Robin Shepard, Water Resources Education Coordinator, UW-Extension

Title: **PRIVATE SECTOR PARTNERSHIPS: THE KEY TO WATERSHED SUCCESS**

Source:
Manure Management Conference February 10-12, 1998, in Ames, Iowa

A priority of the USDA Water Quality Demonstration Project-East River (WQDP-ER) was to significantly increase farmer adoption of ICM. (ICM including both Integrated Pest Management and Nutrient Management). A 1990 survey of watershed farmers showed that farmers relied on consultants and sales representatives when making their fertilizer and pesticide decisions. Of the six firms in the watershed providing these services, one was totally ignoring manure and legume credits, three were giving only minimal credits and two (the independents) were giving farmers recommendations that included and

accounted for manure and legume credits. It was clear that without the support of these individuals, the chances for success are minimal. A marketing plan was developed to target both farmers and the ag support sector. Our efforts were aimed at:

- Keeping open communication between agencies and ag businesses to minimize the perceived threat to their livelihood posed by water quality programs.
- Proving that selling services, such as soil sampling, manure analysis, soil nitrate testing and nutrient management planning could replace some of the lost product sales (nutrient management usually means reduced fertilizer sales for these firms).
- Providing the educational and technical support for sales organizations as they added service products.

Author: *Kobayashi, Hirotoshi*

Other Authors:

Title: **PR STRATEGY FOR SEWAGE WORKS IN YOKOHAMA**

Source:
October 2001, (1-1) WEFTEC Paper.

On the threshold of raising its sewered population rate to 100 percent, the city of Yokohama is entering a phase of momentous transition in sewage works, to development oriented toward preservation and creation of a pleasant water environment. In the process, it is conducting public relations (PR) activities and public hearings on all aspects of sewage works, including their necessity, scheme, construction, and maintenance, with a view to awakening citizen interest in projects and awareness of the importance of environmental preservation. Because sewage works are managed on the basis of fees collected from the citizens as users, it is particularly important to publicize the financial situation and obtain citizen consent and understanding for scheduled sewage projects. This paper outlines the kind of PR programs conducted by Yokohama for sewage works thus far and its PR strategy for future projects. Citizen awareness of sewage works changes along with their diffusion, and it is vital for PR strategy to make a corresponding change in emphasis, from provision of the civil minimum service to a pleasant water environment. Now that the job of increasing the sewered population rate is almost finished, vigorous PR campaigns are being promoted in the following three areas to prevent citizen appreciation of sewage works from fading.

1. Augmentation of PR activities and public hearings Graduation from "facilities hidden underground" to "visible facilities" – Institution of the PR Committee - Preparation of a PR manual – Provision of various opportunities for PR and airing of opinions
2. Promotion of publicity about finances Full provision of information on the financial situation, including specific data, insofar as sewage works are funded by use fees collected from citizens (distribution of pamphlets describing the funding mechanism and disclosure of budget and financial statement data on the Internet)
3. Promotion of environmental education Preparation of a master plan for the water environment setting forth the orientation of development, and approach to PR programs directed at the next generation as well, including support for environmental learning Use of interactive capabilities of the website to furnish responses to citizen questions Establishment of "Kids' Page" on the website for child education about the environment.

Author: *Koelsch, Rick*

Other Authors: Larry Howard, and Paul Hay

Title: **IMPLEMENTATION OF A LIVESTOCK SYSTEMS ENVIRONMENTAL ASSESSMENT TOOL**

Source:
Journal of Extension, February 2000, Volume 38 Number 1

A "Livestock Systems Environmental Assessment" tool (LSEA) was developed to support Cooperative Extension programs addressing livestock environmental issues in Nebraska. The ability of the tool to assist in identifying environmental strengths, weaknesses, and solutions was pilot tested by 97 livestock producers in three counties. Close collaboration with local livestock commodity groups proved to be an extremely effective method for delivering LSEA. Involvement of the commodity groups' leadership in the initial release of this tool within a county provided critical support and validation of the environmental assessment process. LSEA resulted in significant changes of

practice. Just under half of the producers had made some changes within 6 to 9 months and 64% intended to make changes as a result, in part, due to their completion of LSEA. Better utilization of manure nutrients in crop production was the most commonly identified change.

Author: *Lacy, William B.*

Other Authors:

Title: **DEMOCRATIZING SCIENCE FOR COMMUNITY EMPOWERMENT: CITIZEN SCIENCE IN AN ERA OF EXPERT AND PRIVATE KNOWLEDGE**

Source:
64TH ANNUAL MEETING OF THE RURAL SOCIOLOGICAL SOCIETY, Hilton Hotel, Albuquerque, New Mexico, August 15-19, 2001

It has become increasingly difficult for the general public to play a significant role in the generation and application of knowledge. The first part of the paper examines the factors that have contributed to this privatization of knowledge. The second part of the paper addresses: How can knowledge generation be democratized? and What are the appropriate roles for lay citizens in the realm of science and technology? In recent years ,a wide array of mechanisms for involving citizens in science and technology decision-making have emerged. The forms taken for democratizing science and science policy include public hearings and forums, advisory and oversight panels and councils, public surveys, consensus conferences, participatory action research, science shops, and community-based research. The effectiveness of these mechanisms and forms to involve citizens in the process varies considerably.

Author: *McCartney, Rob*

Other Authors:

Title: **MEDIA RELATIONS SEMINAR PANEL OR "HOW TO HANDLE A MICROPHNE IN YOUR FACE"**

Source:
OCAMM Seminar Series, Presentation Summaries, Fall 1999

On November 2, 1999 Rob McCartney with Kurtz Brothers, Inc. hosted a panel of four speakers who provided valuable information in using the media as an effective tool for communicating with the general public.

Author: *McClellan, Don F*

Other Authors: Nero, Wendy, Brewer, Gerard

Title: **BENEFITS OF THE PUBLIC INVOLVEMENT PROCESS IN PERMITTING AN OUTFALL DISCAHRGE IN AN ENVIRONEMENTALLY SENSITVE COMMUNITY**

Source:
October 2000, (16) WEFTEC Paper

This paper is a case study that presents the benefits of using public involvement processes in the National Pollutant Discharge Elimination System (NPDES) permitting of the Sugar Creek Advanced Wastewater Treatment Plant (AWWTP) outfall relocation for the City of Alexander City, Alabama. The Sugar Creek AWWTP is an 8.5-million-gallon-per-day (mgd) publicly owned treatment works (POTW) that has discharged into Sugar Creek, a small wet weather stream with a 7Q10 flow of zero, since it was constructed in the 1960s. The POTW, which primarily treats industrial wastewater, has been upgraded from a primary treatment facility to an advanced treatment facility to satisfy increasingly stringent permitting requirements. Stricter permit requirements, the need to prepare for future economic growth, and the need to protect the environment forced the City to consider other treatment and discharge alternatives. Engineering evaluations revealed that relocating the discharge to Lake Martin, one of the state's most pristine lakes, was the City's most effective alternative. The City was aware that local public acceptance and regulatory permitting would be difficult and chose to implement a comprehensive public involvement program prior to the submittal of the permit application. The paper presents the public involvement steps implemented and how diverging and extreme stakeholder views were managed throughout the process. Public involvement efforts resulted in widespread support for the City's effort to relocate the outfall.

Author: *Mladinich, Carol*

Other Authors: Richard Zirbes

Title: **INTEGRATING PHYSICAL AND HUMAN-INDUCED CHARACTERISTICS IN THE DECISION-MAKING PROCESS**

Source:
CONFERENCE PROCEEDINGS: EFFECTS OF ANIMAL FEEDING OPERATIONS (AFOs) ON WATER RESOURCES AND THE ENVIRONMENT, Fort Collins, Colorado, August 30-September 1, 1999

Decisions regarding land and resources are complex and emotionally charged. Features on or below the land surface often are not taken into account nor clearly portrayed. By combining the physical characteristics of the land with the human settlement patterns, we can achieve a more accurate and comprehensive depiction of the landscape, which can help communities make decisions regarding growth and its impacts. The U.S. Geological Survey Front Range Infrastructure Resources project is developing a Group Spatial Decision Support System for integrating the scientific data characterizing an area; such integrated information will help people make decisions that can mitigate many of the consequences of growth.

Author: *Morris, Tony*

Other Authors:

Title: **COMMUNITY PERCEPTIONS, FARM REALITY – THE BRUCE COUNTY EXPERIENCE**

Source:
Integrated Solutions to Manure Management: Working Together on Challenges and Opportunities, National Conference and Exhibition, London Convention Centre, London, Ontario, September 12-13, 2002.

In partnership with the County of Bruce, Municipalities of Brockton and South Bruce, Bruce County Cattlemen, Hog and Dairy Farmers, Saugeen Valley Conservation and Bruce County Federation of Agriculture, application was made and approved for project funding under the Agriculture Environmental Stewardship Initiative. Objectives of the initiative include:

— Awareness building within the livestock sector to develop and implement controls on pathogen entry to surface and groundwater.

— Provide information as to benefits, economically and societal financial incentives for interventions to restrict access to waterways by livestock.

— To further assist in reducing the likelihood of pathogen entry to ground and surface water through implementation of BMP's.

— Raise public awareness of farmer's efforts with respect to environmental stewardship.

— An outline of specifics of this community initiative, together with practical solutions to are as identified by farmers as requiring remediation and/or intervention. Identifying the need for community involvement and challenges that are facing the farm community.

Author: *National Resource Defense Council*

Other Authors:

Title: **POLLUTION FROM GIANT LIVESTOCK FARMS THREATENS PUBLIC HEALTH WASTE LAGOONS AND MANURE SPRAY FIELDS — TWO WIDESPREAD AND ENVIRONMENTALLY HAZARDOUS TECHNOLOGIES — ARE POORLY REGULATED.**

Source:
Clean Water & Oceans: Water Pollution: In Brief: News. National Resource Defense Council, July 2001

Practical remedies to these problems do exist. But implementing them will require some important changes in factory farm practices and government oversight:

**Regulation and accountability. Factory farms are industrial facilities and should be regulated accordingly. They should be required to obtain permits, monitor water quality and pay for cleaning up and disposing of their wastes.

**Public awareness and participation. State governments and the U.S. EPA should implement a tracking system for fish-kill and manure-spill data. Local governments and residents must have a say in whether to allow factory farms in their communities, and they should be armed with this information.

**New technology. Factory-farm technology standards, unchanged since 1976, must be strengthened. The EPA's proposed new national standards must be made stricter and include bans on new manure lagoons and on aerial spraying.

**Alternative farming practices. States and the federal government should promote methods of raising livestock that reduce the concentration of animals and use manure safely. Many alternative methods exist; they rely on keeping animal waste drier, which limits problems with spills, runoff and air pollution.

**Pollution-reduction programs for small feedlots. Voluntary programs must be expanded to encourage smaller factory farms, which fall outside of the regulations for industrial facilities, to improve their management practices and take advantage of available technical assistance and other resources.

**Consumer pressure. Individuals can help stop factory farm pollution by supporting livestock farms that use sustainable practices. In the grocery store, this means checking meat labels for "free range," "antibiotic-free," or similar wording, which indicates meat raised in a more sustainable manner. Many sustainable livestock farms also sell directly to consumers or through local farmers' markets.

Author: *Natural Resources Conservation Board*

Other Authors:

Title: **APPLICATION NUMBER: RA 02001—DECISION REPORT**

Source:
The NRCB Decision Report denying the approval by AAA Cattle Co. Ltd. For approval to construct and operate a combined 2,000 beef finishing and 16,200 head beef feeder facility in Mountain View County.

Title: **APPLICATION LA 02002**

Source:
The granting and upholding of approval LA 02002, Goldcrest Farms Inc. application for approval to construct and operate a 3,000 sow Farrow-Wean operation in Vulcan County by a Review Panel.

Author: *Nieminski, Eva C.*

Other Authors: Haas Claveau, Clare

Title: **ACCREDITATION OF WATER & WASTEWATER UTILITIES AWWA ACCREDITATION PROGRAM**

Source:
March 2002, (7) Specialty Conf Paper

The Accreditation program is currently under development by AWWA. Accreditation will become a voluntary, nation-wide program for all utilities, regardless of size. It is a form of a verification of the application of standards of best practice to deliver high quality services and not an attempt to by-pass the regulatory compliance (it is "above & beyond"). It should result in less reporting requirements and less regulatory oversight, and an improvement of customer satisfaction with the water suppliers. It will provide a tool for primacy agencies to be used in evaluation of utilities with the real needs for oversight and assistance. It will result in a change of attitude from seeking compliance with existing regulations to seeking the best strategies to best protect the public health. Accreditation has been named a high priority effort of the AWWA. The Accreditation Policy Committee provides links to the Councils and Committees of AWWA, as well as the Government Affairs office of AWWA. Accreditation Program is set up independently of the existing quality improvement programs such as QualServe or Partnership for Safe Water. The existing utility quality improvement programs may be used by utilities in preparation for the accreditation as they contain the necessary tools, but these programs are not required for accreditation. Program components to be developed through individual efforts but will start at the same time:

1. Policy and Procedures – developed by a consultant to AWWA, experienced in accreditation in other branches of industry.
2. Accreditation Standards – to be developed by groups of AWWA volunteers, experts in respective fields, and edited by a Standards committee. The first components to be developed are: distribution system operation and management, source water management and protection, and water treatment plant operation and management. After piloting the implementation of these standards at both large and small systems, other areas of accreditation will be developed and will include: conservation, customer relations, business,

financing, and planning, as well as wastewater treatment, wastewater collection, biosolids handling and management, water reclamation.

3. Benefits and Incentives – to be developed by a consultant to AWWA: a. Financial incentives (lower interest rates on bonds/grants, lower insurance premiums) b. Regulatory benefits (less oversight from primacy agencies) c. Social and political benefits (public confidence, recognition, and credibility) Once the accreditation program components are proposed in a draft form and representatives of regulatory agencies and professional organizations are briefed about the process, a stakeholder process, facilitated by a professional firm, will be initiated. The stakeholders will provide feedback, express concerns, indicate individual issues, and participate in building the program.

Author: *North Carolina Department of Environment and Natural Resources*

Other Authors:

Title: **POLLUTION PREVENTION AGENCY AWARDS GRANTS TO ASSIST STATE PORK PRODUCERS IN MANAGING ENVIRONMENTAL ACTIVITIES**

Source:
Press Release Sept. 10, 2001

RALEIGH – Nine North Carolina pork producers will begin developing environmental management systems (EMSs) under grants awarded by the N.C. Division of Pollution Prevention and Environmental Assistance (DPPEA) to assist pork producers in the systematic management of their environmental activities.

Author: *NPPC*

Other Authors:

Title: **SMITHFIELD HIRES STATE ENVIRONMENTAL OFFICIAL**

Source:
NPPC Legislative Report, Dec. 2001

Dennis H. Treacy, director of the Virginia Department of Environmental Quality (DEQ), will become the vice president of environmental affairs and government relations at Smithfield Foods on Jan. 7. Treacy will play a key role in expanding Smithfield Foods' environmental affairs sector, said C. Larry Pope, president and chief operating officer. Treacy has served as the head of the DEQ since 1998 is investing $15 million in waste management research at North Carolina State University and has pledged $50 million to fund environmental enhancement programs in North Carolina. Recently, Murphy-Brown LLC, the livestock production subsidiary of Smithfield Foods, announced its subsidiaries Murphy Farms and Brown's of Carolina achieved the prestigious ISO 14001 certification of their Environmental Management System. The certifications make Murphy-Brown the first livestock operation in the world to have its livestock production subsidiaries achieve the ISO 14001 environment certification. To obtain ISO 14001 certification, an organization must meet a rigorous and comprehensive set of requirements and criteria developed by over 2,000 experts from all over the world. It also requires independent audits by accredited third parties.

Author: *Ogilvie, John R.*

Other Authors: Claude Laguë, Daniel Massé, Donald Hilborn,

Title: **ENVIRONMENTAL STANDARDS OR ENVIRONMENTAL MANAGEMENT SYSTEMS STANDARDS FOR LIVESTOCK. WHAT'S THE DIFFERENCE?**

Source:
Written for presentation at the AIC 2002 Meeting CSAE/SCGR Program, Saskatoon, Saskatchewan, July 14 - 17, 2002

An examination of and comparison between various criteria in environmental standards for livestock farms as promulgated by Canadian jurisdictions.

Author: *Proctor, Pamela S*

Other Authors: Eger, Jeffery A.

Title: **A PUBLIC EDUCATION PROJECT: CONVERTING A STORMWATER DETENTION BASIN INTO AN OUTDOOR LEARNING CENTER**

Source:
October 2000, (9) WEFTEC Paper

Sanitation District No. 1 has been charged by the state of Kentucky to create and manage a stormwater utility

for its three-county service. The District's management team determined that a strong public education campaign would help residents understand the relationship between stormwater and water quality. This paper describes and explains one of the stormwater education projects. Sanitation District No. 1 worked with a local elementary school to convert a badly eroding stormwater detention basin into an outdoor learning center for the school. The project also served as an object lesson to educate the community about the impact of stormwater on the quality of its waterways. A publicity plan kept students, teachers, parents, and the media informed during each phase of the project. Funding for the project came from grants, community donations, PTA fundraisers, and volunteer labor. The project was a cooperative effort from start to finish that offered positive results for everyone involved. The sewer district gained a corrected detention basin. The public gained an education in stormwater management, which laid the groundwork for a pending stormwater utility. The students learned about water pollution and the school gained an educational resource in the Outdoor Learning Center.

Author: *Reid, David*

Other Authors: Backhouse, Doug, Crawford, Aleta

Title: **COMMUNICATING STEWARDSHIP TO THE UNCONVERTED**

Source:
July 2000, (16) Specialty Conf Paper

At most watershed conferences, we hear the complaint: 'We are preaching to the converted! How do we get beyond talking among ourselves to change attitudes of the public?' The challenge, more specifically, is to create an understanding of stewardship attitudes and techniques in the agents of change – including the politicians, developers, landowners, farmers: and especially, the people who hold the levers of the machinery that changes our landscape. Communicating Stewardship to the Unconverted provides a stimulating oral and multimedia presentation demonstrating use of various forms of print, video, and internet media as well as direct contact to communicate watershed stewardship to politicians and the general public. The presentation draws from many examples of stewardship communication efforts by Lanarc Consultants Ltd. and their client agencies. These efforts have included all media, and have been at many levels: communicating stewardship problems & principles, policy & regulations, community and site planning, construction details and practices. The scope of topics includes leave areas, stormwater management, erosion control and instream works including habitat restoration. A stewardship communication program needs to draw from the experience of educators. It also includes ingredients of marketing. The presentation reviews education and marketing principles, and shows how they have been applied in various stewardship publications and projects.

Author: *Rozum, John S.*

Other Authors: Arnold, Chester , Nakashima, Steve

Title: **EMPOWERING LOCAL COMMUNITIES THROUGH LAND USE EDUCATION: THE NATIONAL NEMO NETWORK**

Source:
July 2000, (8) Specialty Conf Paper

There is growing national and international concern about the environmental impacts of sprawl and unsustainable urban growth. While much has been written about the impacts of these growth pressures on natural resources, a rational approach to land use planning remains a key element in addressing these issues. To affect land use decisions, land use official on the LOCAL level need to better understand basic land use planning principles and the connection between land use and natural resource protection. The University of Connecticut Nonpoint Education for Municipal Officials (NEMO) Project is an educational program targeted at land use decision-makers. The project emphasizes natural resource-based planning, a planning approach that prioritizes local natural resources and finds a rational balance between development and conservation. The NEMO educational model is being adapted by a number of states that have tailored the program to their specific geographic and topical needs. The Connecticut program has formed these state NEMO projects into the National NEMO Network, to provide a venue for the sharing of ideas and educational models with peers around the country. Four simple elements are shared by projects in the Network:

1. an educational approach,
2. an emphasis on land use education,
3. a focus on land use decision makers as the target audience, and
4. the use of geospatial technology in the service of education.

Author: *Rozum, Mary Ann*

Other Authors:

Title: **NATIONAL ANIMAL WASTE MANAGEMENT INTITIATIVE**

Source:
OCAMM Seminar Series, Presentation Summaries, Fall 1999

Key points made during Rozum's presentation that may affect Ohio:

1. Some states currently require state certification to apply animal manures.
2. The Federal EPA is developing guidelines for Comprehensive Nutrient Management Plans. While the guidelines are currently out for comment, they are expected to be in place for swine and poultry next year and will be followed by guidelines for beef and dairy.
3. Air quality appears to be next on the list for regulation.
4. Food safety issues related to the potential for livestock runoff to transmit pathogens to crops are gaining attention.
5. Because federal funding of animal waste issues has been heaviest in water quality, land application, and treatment/storage/collection, the greatest need for research is in mortalities, animal by-products, air quality, nutrition, pathogens, and social and economic effects.
6. Potential funding under the NRI requires manure management to be included in systems research or watershed impacts projects.

Author: *Segerlund, Lisbeth*

Other Authors:

Title: **THE RESPONSIBILITY OF CORPORATIONS FOR HUMAN RIGHTS AND SOCIAL ISSUES**

Source:
Paper prepared for the "Accountability for Human Rights Violations Committed by Non-State Actors", Conference at the Institute for Human Rights, Abo Akademi University, Turku, Finland, May 2002.

This paper discusses the transformation of the international system and changing roles and behaviour of states, multinational or transnational corporations and civil society.

Author: *W.T.(Bill) Henley P. Eng.*

Other Authors:

Title: **MANURE ODOUR CONTROL FIELD DAY FOR MEDIA AND REGULATORS**

Source:
Manure Management Conference February 10-12, 1998, in Ames, Iowa

Through funding provided by the Agri-Food Innovation Fund (AFIF) a demonstration tour was set for July 29/97. The purpose of the tour was to actively demonstrate cost effective methods of odour control in the storage, agitation and application of manure that can be used on commercial hog farms today. The organizers of the tour were the Prairie Agricultural Machinery Institute (PAMI), Saskatchewan Agriculture and Food (SAF) and the Prairie Swine Centre Inc (PSCI). This tour is part of a larger project, which has as its objectives the development of written information on odour control, the production of videos on odour control as well as the demonstration tour. It was decided that the tour would be targeted at media, municipal politicians and provincial employees. The media was targeted because of their impact on public opinion. Municipal politicians were chosen because of their involvement in site selection at the local level. Provincial regulatory employees were included because of their involvement in the approval process for the establishment of new facilities. All three of these groups can have a major impact on the growth of the industry. Personal invitations were sent to all participants and follow up was done with each invitation to ensure attendance at the event. Everyone

was asked to be part of the group who traveled from site to site on the tour bus. This helped to alleviate the concern of bio security as well as encouraged discussion with resource staff and comparison among the group as the bus traveled between sites. All participants except the television media were able to comply with this request. A meal was planned for the end of the event to illustrate how well odour can be controlled. The event itself was promoted with media releases prior to and on the day of the tour.

Author: *Waters, Robert*

Title: **MANURE MANAGEMENT AND OUR MUNICIPALITIES – CONFLICT, RESOLUTION, OPPORTUNITIES AND EDUCATION**

Source:
Integrated Solutions to Manure Management: Working Together on Challenges and Opportunities, National Conference and Exhibition, London Convention Centre, London, Ontario, September 12-13, 2002.

Opportunities /Education - With a lessening farm population, education and the continued proactive operations by farmers are the only way to prevent crippling regulation. Best management practices, due diligence in neighbourhood relations, appear to be the best solution for the Farmer. Farm organizations and Farmers will need to become a more effective lobby group in their own backyard.

Author: *White, David*

Title: **WHY LIVESTOCK AND POULTRY PRODUCERS SHOULD PARTICIPATE IN ENVIRONMENTAL ASSURANCE PROGRAMS**

Source:
OCAMM Seminar Series, Presentation Summaries, Spring 1999

The public perceives animal waste to be a major contaminant of water supplies. While this is not the current reality, as an expanding population increases the demand for livestock, the use and disposal of livestock manure will have a greater environmental impact and will lead to greater regulation. The Livestock Environmental Assurance Program (LEAP) was developed by the Ohio Livestock Coalition to help producers be better environmental stewards. Participation in LEAP provides livestock producers with a method of assessing the potential impacts of their manure management practices and a means of developing practices to minimize those impacts. By demonstrating their willingness to protect the environment, LEAP participants enjoy other benefits, including increased public awareness and confidence, increased profits, and decreased liability.

Author: *Witherspoon, Jay R*

Other Authors: Ong, Hsiao-Ting, Sidhu, Amar

Title: **CONTROLLING ODORS TO MEET GOOD NEIGHBOR CRITERIA – A MASTER PLANING APPROACH**

Source:
Odors and VOC Emissions 2000, April 2000, (1-11) Specialty Conf Paper.

This paper describes the detailed planning, technical, community relations, and project management techniques that were used successfully in preparing odor control plans for publicly owned treatment works (POTWs) to meet odor control criteria at sewage collection systems and wastewater treatment plants (WWTPs) fenceline. Experiences from several major POTWs in Northern California and Nevada will be presented including effective public outreach techniques used to interact with the surrounding neighbors in addressing their odor concerns. These Odor Control Master Plans called for an innovative technical approach that combines basic evaluation tools with rigorous analytical methods and state-of-the-art odor dispersion and emissions estimating models. Three distinct phases were implemented at the POTWs to manage odors in the surrounding communities:

Phase 1—Conducted site assessments, sampling, and modeling to identify and quantify odors.
Phase 2—Provided a list of prioritized odor sources with recommended odor-reducing solutions for the higher priority sources, while discussing odor concerns and issues with the communities.
Phase 3—Recommended an implementation schedule for controlling odor in a timely fashion that truly compares off-site odor impacts to odor control costs. The information obtained from this Phase of work was used for Capital Improvement Planning (CIP) activities.

Author: *Ament, Don*

Other Authors:

Title: **THE PAST, PRESENT, AND FUTURE OF ANIMAL FEEDING OPERATIONS**

Source:
CONFERENCE PROCEEDINGS: EFFECTS OF ANIMAL FEEDING OPERATIONS (AFOs) ON WATER RESOURCES AND THE ENVIRONMENT, Fort Collins, Colorado, August 30-September 1, 1999.

Recently, the animal feeding industry has come under attack by those who perceive it to be a major source of water or air pollution. Other critics of animal feeding operations include those who perceive them to be cruel and inhumane to animals or who are concerned over a perceived change in the structure of American agriculture. Regardless, critics are often less than fully informed as to the true nature of the operations, including environmental aspects. It is critical that America's environmental policy address the relevant issues involved from the standpoint of proper and appropriate scientific analysis. To manage these issues from the standpoint of perception is to cause unnecessary disruption throughout much of the Nation's agricultural system.

Author: *Blackie, Murray , Consultant, Agricultural Impacts, London, ON*

Other Authors:

Title: **REGULATORY RESPONSE TO MANURE MANAGEMENT IN ONTARIO - SUCCESSES AND FAILURES**

Source:
Integrated Solutions to Manure Management: Working Together on Challenges and Opportunities, National Conference and Exhibition, London Convention Centre, London, Ontario, September 12-13, 2002.

This paper is a synthesis of statistics and anecdotes regarding manure mismanagement in Ontario from the perspective of the author's 13 years reacting to specific environmental problems with voluntary abatement and enforcement tools, as warranted, and his following 14 years as the Ministry of the Environment's [MOE] technical lead on the impacts of manure mismanagement, due diligence and the overall MOE regulatory response to manure management. It is intended to not only summarize and analyze where we have been, where we are now and where we are going but also discuss the effectiveness of our efforts and the impact of the regulatory response of reaction not pro-action and our reliance on quasi-regulatory, guideline, best management practice type approaches. Where have we succeeded and where have we failed?

Author: *Caldwell, Wayne*

Other Authors: Ball, Jennifer

Title: **LESSON FROM MICHIGAN RIGHT TO FARM, MANURE MANAGEMENT AND THE ROLE OF THE STATE**

Source:
Integrated Solutions to Manure Management: Working Together on Challenges and Opportunities, National Conference and Exhibition, London Convention Centre, London, Ontario, September 12-13, 2002.

In Ontario, Bill 81, the Nutrient Management Act proposes to follow the recent lead of Alberta where much of the responsibility for approving livestock facilities was transferred from municipalities to the province. The State of Michigan has pursued a similar strategy through a set of standards that are implemented by the State and which are largely addressed through the use of Right to Farm legislation. In Michigan, local authority has largely been by-passed and if farmers build livestock barns according to State Standards they will receive protection under Right to Farm. While this has established a framework for expansion of the livestock industry, it has caused controversy amongst some municipalities and some public interest groups. This presentation is drawn from a larger research project that is looking at various strategies related to conflict resolution and the intensification of agriculture. The presentation will be of value to those who are interested in some of the strategies being pursued in the United States. Michigan's use of Right to Farm legislation is of particular interest.

Author: *Centner, Terence J.*

Other Authors:

Title: **ODORS, NUISANCE, AND THE RIGHT TO FARM**

Source:
CONFERENCE PROCEEDINGS: EFFECTS OF ANIMAL FEEDING OPERATIONS (AFOs) ON WATER RESOURCES AND THE ENVIRONMENT, Fort Collins, Colorado, August 30-September 1, 1999.

Production agriculture has previously faced problems of odors. In the late 1960s, concern about new neighbors using nuisance law led agricultural-interest groups to advance anti-nuisance legislation. This legislation acquired the name of "right to farm" laws. While each state adopted individual legislation, the basic model sought to protect the existing investments of farmers in their agricultural operations. It sought this protection by incorporating a "coming to the nuisance" exception whereby persons moving to an offensive activity could not use nuisance law to seek judicial termination of the activity. Right to farm laws gave a new life to many agricultural activities. While most of the laws were challenged, and provisions of the laws had to be interpreted by the judiciary, right to farm laws were fairly successful at discouraging nuisance lawsuits against farmers. At the same time, right to farm laws did not sanction offensive activities, negligent operations, or pollution. Because they only applied to nuisance actions, an incentive existed for farmers to be vigilant not to offend their neighbors or create problems. Zoning and local ordinances remained as vehicles for neighbors to seek redress against imprudent operations. Recently, however, courts have been asked to view right to farm laws under constitutional takings jurisprudence. Current decisions and pending cases present some startling prospects—some state right to farm laws are unconstitutional. The Iowa Supreme Court found that a right to farm provision violated the Iowa Constitution and the Fifth Amendment of the U.S. Constitution. In the absence of compensation, the Iowa right to farm provision resulted in the taking of an easement of neighboring property without compensation. A New York court is presented with a similar argument: does the N.Y. Agriculture and Markets law effect an unconstitutional taking of private property rights where it provides that agricultural practices will not constitute a private nuisance if the Commissioner of Agriculture has issued a Sound Agricultural Practice Opinion favorable to the farmer. This paper will address these legal cases and the question of how AFOs might approach nuisance actions if courts adjudicate the demise of right to farm laws. Will AFO operators shop for the state where the right-to-farm protection has been upheld as not offending state and federal constitutions? Will nuisance law spur AFOs to adopt additional technology? Will AFOs be limited to locating in sparsely populated areas or selecting rural areas where their activities do not offend nuisance law? By examining right to farm laws, takings jurisprudence, and technology, the paper will seek answers to these questions.

Author: *Cole, Terry*

Other Authors:

Title: **HERDING CATS: COORDINATING STAKEHOLDERS IN 15 JURISDICTIONS TO REACH ONE SUCCESSFUL OUTCOME**

Source:
September 2002, (7) WEFTEC Paper

Coordinating officials from 15 jurisdictions and four counties can be considered a daunting task, regardless of the scenario. When the effort is aimed at producing successful implementation strategies to protect a multi-jurisdictional river across a broad and diverse watershed, the challenge can seem even more discouraging. However, when the right approach is employed, a successful outcome can be reached as demonstrated by the Alcovy Watershed Protection Project conducted in north Georgia. Using an approach based on establishing credibility for the process with the area's stakeholders, the Northeast Georgia Regional Development Center and Brown and Caldwell overcame a variety of obstacles including logistics (what attracts an elected official to a meeting 40 miles away – free breakfast!), negative relationships (can the upstream "polluter" and his downstream "victim" share the same space?), and differing needs (will recommendations for a heavily developed community be the right fit for its rural and slowly changing neighbor?). This strategic initiative brought the major players to the table, and encouraged busy public officials to appoint lieutenants endowed with decision-making authority, to create a workable plan for managing protection of the watershed that also met regulatory requirements for compliance.

Author: *FitzGibbon, John*

Other Authors:

Title: **LARGE BARNS AND THE MOVE TO INTENSIVE OPERATIONS WITH LITTLE LANDBASE**

Source:
Integrated Solutions to Manure Management: Working Together on Challenges and Opportunities, National Conference and Exhibition, London Convention Centre, London, Ontario, September 12-13, 2002.

Over the past 50 years there has been a trend away from the subsistence diversified farm to a market oriented specialized farm. This trend to specialization has also been reflected in increased size of farms and increasing dependence on rental land for support of the animal production unit. This paper reviews the past trends in and the current patterns in animal agriculture. It focuses on the practices of nutrient management as related to the size of the operation and the degree to which the different types of animal production systems are prepared for nutrient management. It also discusses the potential impact of the costs of nutrient management on the structure of animal agriculture in Ontario.

Author: *Kadvany, John*

Other Authors: Clinton , Tracy

Title: **A DECISION ANALYSIS TOOLKIT FOR ENGINEERING AND SCIENCE-BASED STAKEHOLDER PROCESSES**

Source:
September 2002, (17) WEFTEC Paper

WHY A TOOLKIT APPROACH? Stakeholder involvement is now an important piece of many water and wastewater decisions. The movement of environmental regulation away from technology-based standards to waterbased outcomes, such as the development of local TMDL (Total Maximum Daily Load) standards is often accompanied by requirements that responsible agencies or districts consult or otherwise involve stakeholders in water management decisions. Ever increasing water demands plus declining supplies imply difficult tradeoffs among agricultural, urban, ecological, industrial, and recreational water uses. Tradeoffs depend both on what technologies can achieve for local or regional water quality and the relative importance of competing stakeholder interests. Stakeholder involvement does not mean public relations or even risk communication, both of which connote one-way processes in which information is mostly provided to the public or stakeholders. Stakeholder participation involves at the least getting useful information from interested groups and individuals, and using that information somehow in the official decision-making process. Many managers involved with water or wastewater decisions misinterpret that role to mean turning decision-making authority held by district boards, city councils, or regulatory agencies over to ad hoc stakeholder groups. But stakeholder involvement first means broadening dialogue and debate preceding decisions involving plant expansions, water treatment changes, watershed agreements, reuse or conservation implementation, or rate adjustments.

Author: *Kennedy, Simon*

Other Authors:

Title: **AGRICULTURAL POLICY FRAMEWORK AND ITS ENVIRONMENTAL IMPLICATIONS**

Source:
Integrated Solutions to Manure Management: Working Together on Challenges and

Opportunities, National Conference and Exhibition, London Convention Centre, London, Ontario, September 12-13, 2002.

Governments have an important role to play, together with industry, towards a comprehensive solution to the environmental challenge, and on June 27, 2002, ministers of agriculture signed the Federal-Provincial-Territorial Framework Agreement on Agriculture and Agri-food for the Twenty-First Century. This agreement represents a long-term commitment to the profitability of the sector by federal, provincial and territorial governments. It sets the stage for the implementation of the five-year Agricultural Policy Framework (APF), an architecture for agricultural policy for the 21st century, covering five key areas – food safety and quality, science and innovation, skills and renewal, the management of business risks on the farm, and the environment.

Author: *Mackenzie, Jody*

Other Authors: Naomi T. Krogman

Title: **PUBLIC INVOLVEMENT IN THE SITING OF LARGE SCALE HOG FACILITIES: LESSONS FOR PORK PRODUCERS FROM FOUR ALBERTA COMMUNITIES**

Source:
Advances in Pork Production (2001) Volume 12, pg. 129

The purpose of this project was to identify, through perceptions of the stakeholders and academic literature, how public involvement initiatives can reduce unnecessary community conflict, foster informed choices and make the process more effective for all interested parties.

Author: *McDonald, Steve*

Other Authors: Bhimani, Seema, Weintraub, Laura

Title: **A DECISION SUPPORT PROCESS FOR WATERSHED MANAGEMENT ON THE TRUCKEE RIVER**

Source:
October 2000, (9) WEFTEC Paper

This paper discusses the development of a decision support process and system, including implementation of stakeholder participation and governance issues to facilitate a watershed approach on the Truckee River. Consistent with EPA guidance, meaningful and well timed public involvement is the cornerstone of a successful watershed management process and should result in better supported, more cost effective and expeditiously implemented total maximum daily loads (TMDLs). A stakeholder and decision support process has been implemented on the Truckee River, in order to revise the existing TMDLs, identify potential load reduction scenarios and to develop a pollutant load trading program. With the development of the original TMDLs for nitrogen, phosphorous and TDS, in 1994, and associated waste load allocation for TMWRF, a constraint was placed on the discharge of treated wastewater to the river limiting the potential future growth of the region. As a result, the Agencies are interested in taking a watershed approach to identifying regional solutions to improve water quality without taking the water out of the river and at the same time to be able to accommodate for growth. Several key tools were identified as necessary in order to ensure the success of the TMDL revision and establishment of a trading program, including: a stakeholder process to ensure all concerns are recognized and addressed; a work-shopping process to gain consensus on the tools to be used and watershed program identified; a governance structure to facilitate meetings and activities; and the development of a watershed model to provide a regional decision support tool for planners, stakeholders and regulators.

Author: *Rohrer, William R.*

Other Authors:

Title: **A DIFFERENT APPROACH TO POLICY DEVELOPMENT**

Source:
November 2000, (1) Specialty Conf Paper

The Delaware Nutrient Management Program was established in June 1999 as a result of the Delaware Nutrient Management Law (title 3, Delaware Code chapter 22). The 15-member Delaware Nutrient Management Commission (DNMC) was established to direct the program and develop regulations pertaining to nutrient management, waste management for Animal Feeding Operations (AFOs), and National Pollutant Discharge Elimination System (NPDES) permits for Concentrated Animal Feeding Operations (CAFOs).

Author: *Becker, J. C.,*

Other Authors:

Title: **EXERCISING RIGHTS IN PROPERTY: FOR INDIVIDUAL OR COMMUNITY BENEFIT?**

Source:
Farm Economics (1996)

The author emphasizes that approaching controversy with a property rights perspective that emphasizes absolute protection of individual rights will most likely lead to confrontation rather than solution of troubling issues.

Author: *Caldwell, Wayne*

Other Authors:

Title: **A MUNICIPAL PERSPECTIVE ON RISK MANAGEMENT AND AGRICULTURE**

Source:
The Great Lakes Geographer, Vol. 8, No. 1, 2001

Intensive livestock operations pose a level of environmental risk that can raise concerns and antagonism within the community. Some of these concerns are justified while others are more perceptual in nature. Municipalities are often lobbied by ratepayers to take action and to manage the risks associated with a changing and sometimes growing livestock industry. People see an evolving livestock industry affecting their personal quality of life, including the air that they breathe and the water that they drink This paper reviews some of the key societal, demographic and agricultural trends which impact at the community level. These trends translate into certain environmental, economic and socio-political concerns for which this paper offers a range of regulatory, voluntary, educational (research) and community based tools that can be applied to help manage related risks. The challenge for municipalities is to strike an effective balance between these initiatives.

Author: *CIDA Forestry Advisory Network*

Other Authors:

Title: **COMMUNITY PARTICIPATION IN FOREST CONSERVATION**

Source:
CFAN, CIDA Forestry Advisory Network
— Forestry Issues

This FORESTRY ISSUES paper examines community participation and gender issues in the forestry and conservation sector and summarizes some of the lessons learned.

Author: *Pierce, John T.*

Other Authors: Mark Roseland, Sean Markey, Kelly Vodden and Stephen Ameyaw

Title: **PROMOTING CED FOR FOREST-BASED COMMUNITIES**

Source:
Research Paper, Simon Fraser University Community Economic Development Centre, 2000.

This paper discusses the Community Economic Development Centre iniatives in the communities of Nuxalk Nation in Bella Coola, Salmon Arm, the Lillooet Tribal Council and the South Cariboo. The Centre engaged the communities in a variety of capacity building workshops, assisted in the development of planning for each community, and documented the process of community learning and dissemination of project findings.

Author: *Poschen, Peter, ILO*

Other Authors:

Title: **FOREST INDUSTRY A "TEST CASE" IN GLOBALIZATION DEBATE**

Source:
International Labour Office, Geneva, 2001. ISBN 92-2-112518-1.

To rise to the challenge, the forest industry has pioneered a series of tools to put the concept of sustainability into industry practice. These include new approaches to managing forests for the interests of industry as well as of local communities and the general public. Independent certification of such good management has been expanding rapidly in recent years, jointly supported by buyers of forest products, environmental NGOs, trade unions and industry.

Author: *Renstrom, Margareta*

Other Authors: Margaret Rainey

Title: **SOCIAL ISSUES AND THE FORESTRY STEWARDSHIP COUNCIL**

Source:
World Wide Fund for Nature WWF, Sweden, Ulriksdals slott, 170 81 Solna, Sweden

Voluntary forest certification according to the Forest Stewardship Council (FSC) system is now widely

accepted as a useful tool for fighting illegal timber logging and trade as well as for improving forest management from an environmental perspective. What is not as well known is that the FSC's principles for responsible forest management have strong social implications as well. In the FSC Social Chamber a wide variety of social issues are addressed by representatives from trade unions, indigenous peoples' associations, local communities and social NGOs.

Author: *Roberts, Ralph W.*

Other Authors:

Title: **AN INTERNATIONAL FORESTRY ORGANIZATION: DO WE NEED ONE ?**

Source:
CFAN, CIDA Forestry Advisory Network

The author argues that there should be meaningful progress towards resolving the important global forest issues, there must be institutional reform. Forestry needs one institution that acts as its focal point and that provides leadership in global affairs. The health sector has the World Health Organization, agriculture sector has the FAO, trade has the World Trade Organization, but forestry has no such organization.

Author: *Wilmsen, Carl*

Other Authors: Danks, Cecilia; Harris, Eva; Krishnaswamy, Ajit K.; and, London, Jonathan

Title: **CHALLENGES AND OPPORTUNITIES IN COMMUNITY FORESTRY**

Source:
64TH ANNUAL MEETING OF THE RURAL SOCIOLOGICAL SOCIETY, Hilton Hotel, Albuquerque, New Mexico, August 15-19, 2001

Community forestry arose as a response to changing economic, social and environmental conditions in forest communities as well as a response to the many tensions and conflicts that these changes engendered. Drawing on their experiences as academic researchers, community practitioners, and staff of intermediary research institutions, the panelists will address four questions concerning community forestry as currently practiced in the western United States: What are the major changes in forest communities? How do these changes affect issues of control of the direction of economic, environmental and sociocultural change? What are the divisions and tensions produced by change? What is the promise of community forestry, and can it deliver? This interactive session will provide opportunities for participants to reflect on their own experiences in the arena of community forestry and to advance the collective understanding of this growing field of knowledge and practice.

Author:

Other Authors:

Title: **DRAFT—COMMUNITY RELATIONS PLAN FOR AIR FORCE PLANT 4**

Source:

U.S. Air Force Plant 4 is conducting an investigation and cleanup of former waste disposal and spill sites. Community involvement is an important part of the restoration program. Based on community interviews conducted with affected residents and community leaders, the Community Relations Plan describes community concerns and prescribes actions designed to keep the public informed. Community Relations Techniques have given consideration to: Timing, Community Relations Plan, Administrative Record, Information Repository, Technical Assistance Grant, Public Comment Period, Public Meetings, Responsiveness Summary, News Releases, News Conference, Fact Sheets, Progress Reports and Newsletters, briefings for Local Officials, Information Contact/Toll-free Telephone Number, Mailing Lists, Technical Review Committee, Open House, Presentations, Site Tours.

Author: *U.S. Army Corps of Engineers*

Other Authors:

Title: **FORMER FORT ORD ENVIRONMENTAL CLEANUP**

Source:
U.S. Army Corps of Engineers

Community involvement includes assessing community interest by conducting surveys, public meetings and information sessions, providing displays and tours, and facilitating boards and committees where community members can learn about the cleanup and share their ideas and concerns with cleanup officials. Addressing these concerns involves

providing information, developing alternatives, responding to comments, and monitoring results. Guidance for community involvement in environmental cleanup is established by the Department of the Army (the Department of Defense) and the United States Environmental Protection Agency (USEPA). With the closure of Fort Ord, responsibility for the remaining Army activities was transferred to the Commander, Presidio of Monterey. The Presidio of Monterey, Directorate of Environmental and Natural Resources, manages the cleanup of the former Fort Ord under contract with the U.S. Army Corps of Engineers. The Community Relations Plan (CRP) activities included community outreach, fact sheets, interviews and surveys, newsletters, notices and advertisements, points of contact, group presentations and tours, public meetings and other information events and a Technical Review Committee.

Author:

Other Authors:

Title:

Source:
BHP is an Australian-based global natural resources company with a regional steel business. BHP's community and social targets include:

** all BHP operations to have in place community relations management plans by December 2001;

** social impacts to be included in the feasibility stage of project approvals;

** no serious health or safety risks in local communities or breaches of legal requirements;

** compliance with the principles embodied in the United Nations Declaration on Human Rights as they relate to our sphere of influence (for example, performance against child labour standards and minimum wages).

Author: *Maxim Technologies, Inc.*

Other Authors:

Title: **PROJECT SUMMARY: NEW WORLD MINING DISTRICT, RESPONSE AND RESTORATION PROJECT**

Source:
USDA Forest Service, August 2001. Northern Region, Missoula, Montana

The New World Mining District (District) Response and Restoration Project officially began when the USDA Forest Service submitted an implementation plan to the State of Montana on January 22, 1999. This document summarizes the project's history, cleanup process, and legal issues, and presents the Forest Service's approach to completing the project.

Author: *Wilson, Lisa J.*

Other Authors:

Title: **THE RESOURCE ROLLER COASTER: A COMPARISON OF TWO COMMUNITIES ALONG FOR THE RIDE**

Source:
64TH ANNUAL MEETING OF THE RURAL SOCIOLOGICAL SOCIETY, Hilton Hotel, Albuquerque, New Mexico, August 15-19, 2001

The impact of mining on the social and economic well-being of the surrounding areas remains unclear. This paper argues that the impact of mining in part depends on the volatility of mineral prices which produces a resource roller coaster on which the surrounding communities ride. To illustrate this concept, the paper examines the experiences of two modern metal mining regions of the Midwest. While both areas rode resource roller coasters, the data suggest that one area experienced the volatility of the ride more fully than the other due to four factors: the geographic concentration of the workforce; the degree of flexibility of the companies and communities to respond to changes in the metal markets; labor, management, and parent-company relations; and economic development opportunities, efforts, and levels of success.

Author: *Winfield, Mark*

Other Authors: Joan Newman Kuyek and Amy Taylor

Title: **LOOKING BENEATH THE SURFACE: AIR ASSESSMENT OF THE VALUE OF PUBLIC SUPPORT FOR THE METAL MINING INDUSTRY IN CANADA**

Source:
Pembina Institute, October 2002.

A joint study with the Pembina Institute shows the cost to federal taxpayers for the care and feeding of the metal mining industry has increased to $383 million a year, while the industry is delivering in return fewer jobs and reduced economic activity. The study quantifies both the public costs to support the metal mining industry and the benefits generated by the industry in fiscal years 1994-95 and 2000-01.

Author: *Mitchell, Jol*

Other Authors: Jill Shackleman and Michael Warner

Title: **MEASURING THE 'ADDED VALUE' OF TRI-SECTOR PARTNERSHIPS**

Source:
Business Partners for Development, Natural Resource Cluster, Working Paper No. 14, October 2001

This paper sets out a methodology for measuring the impacts of a tri-sector partnership model of social management in the extractive industries.

Author: *Stedman, Richard*

Other Authors:

Title: **RESOURCE DEPENDENCE AND COMMUNITY WELL-BEING: WELL-BEING FOR WHOM? WHERE? WHAT KIND OF RESOURCES? WHAT KIND OF WELL-BEING?**

Source:
64TH ANNUAL MEETING OF THE RURAL SOCIOLOGICAL SOCIETY, Hilton Hotel, Albuquerque, New Mexico, August 15-19, 2001

It is nearly a truism in the natural resource sociology literature that resource-dependent communities face a host of potential social ills, such as high poverty rates and low educational attainment. Most of this research has taken place in the United States, using cutoff rates of 20%employment to indicate resource dependence. This paper examines the relationship between resource dependence and indicators of community well-being across Canada, where resource-dependent places are defined using much higher cutoff rates. National data organized at the Census Subdivision (CSD)reveals substantial differences across different sectors (e.g., forestry, oil and gas or mining),but also within sectors between different regions, and even within regions between males and females or between different indicators of community well-being. These results are interpreted in the context of classic theories on the relationship between resource dependence and community well-being.

Author: *Tucker Oil Refinery*

Other Authors:

Title: **COMMUNITY RELATIONS PLAN FOR TUCKER REFINERY PROPOSED STATE SUPERFUND SITE**

Source:
TNRCC Records Management Center, Austin, Texas, September 2000.

Community Relations Techniques include:

a. Project Status Briefings for community groups and concerned citizens (may include public meetings, if needed) – To periodically inform the general community of significant project developments and findings; to respond to inquiries accordingly and incorporate local concerns into the decision making process as appropriate.

b. Project Mailing List – To provide the means through which press releases, project status reports and other significant communications can be distributed to concerned groups and individuals.

c. Public Consultations – To conduct informal meetings (if needed) with residents. To provide an opportunity for affected residents to express any concerns and to make inquiries to insure effective two-way communication.

d. Program Document Repositories – To maintain easily accessible repositories through which the public may review project outputs. The public will be periodically informed of the availability of project documents and the location of repositories via techniques A through C.

e. TNRCC State Superfund Internet Homepage – provide current, timely information on state Superfund activities on the World Wide Web at the following web address: www.tnrcc.state.tx.us/permitting/remed/superfund.

f. Revise CRP – To reflect changes in site activities or local concerns. After the Proposed Remedial Action Document (PRAD) has been issued, the CRP will be revised to address implementation of the selected remedial

Author: *Warner, Michael*

Other Authors:

Title: **TRI-SECTOR PARTNERSHIPS FOR MANAGING SOCIAL ISSUES IN THE EXTRACTION INDUSTRIES**

Source:
Business Partners for Development, Natural Resource Cluster, Working Paper No. 6, March 2000

This note provides guidance on how to develop partnerships to manage social issues in the extractive industries. The guidance is targeted at environment and/or community affairs managers in oil, gas and mining operations around the world. A 'tri-sector' model of partnership is promoted, based on a pooling of complementary resources drawn from business, civil society and government.

Author: *Richards, Rebecca T*

Other Authors: Bradford, Kathryn

Title: **ELECTRIC DEREGULATION AND RURAL DEVELOPMENT IN MONTANA**

Source:
64TH ANNUAL MEETING OF THE RURAL SOCIOLOGICAL SOCIETY, Hilton Hotel, Albuquerque, New Mexico, August 15-19, 2001

Historically, electric utilities have been regulated monopolies. In Montana, private utilities were deregulated in 1999 and rural electric cooperatives were given the option of deregulating. This project determines the changes that rural electric cooperatives face in continuing or expanding, electric service in Montana, the opportunities and strategies that the cooperatives use to maintain or expand utility and telecommunications services, and the services that they provide, or fail to provide, in meeting rural development needs. The ability of rural electric cooperatives to continue to provide services will be a significant factor in how successfully communities can maintain their traditional industries and diversify by adding new ones. This exploratory project investigates these questions through qualitative archival research and key informant interviews.

Author: *Kiang, Don*

Other Authors: Yoloye, Jimi; Clark, Jim

Title: **NOT IN YOUR NEIGHBOR'S BACK YARD**

Source:
East Bay Municipal Utility District Installs State-of-the-Art Equipment to Solve Odor Problems, October 2001, (1-7) WEFTEC Paper

Odor emissions from the East Bay Municipal Utility District's Main Wastewater Treatment Plant (MWWTP) have become a concern to the increasing numbers of residents and businesses in the surrounding area of the MWWTP. In response to this concern, the District outlined a strategy for minimizing odor impacts from the MWWTP in their Odor Control Master Plan. This Master Plan outlined both short term and long term recommendations. The main task in this strategy was to address the control of odors from the MWWTP's 425-mgd capacity Influent Pump Station (IPS) which was identified as the primary source of odors. In order to mitigate neighbors' concerns and to improve air quality at the MWWTP, the District implemented the IPS Odor Control Project.

Author: *Schneider, Sue G.*

Other Authors:

Title: **PARTNERING FOR THE ENVIRONMENT**

Source:
AN INDUSTRIAL WASTEWATER COMMUNICATIONS NETWORK LINKS THE COMMUNITY AND UTILITY, March 2002, (5) Specialty Conf Paper

The Spartanburg Water System and Spartanburg Sanitary Sewer District (SWS/SSSD) are located in Spartanburg, South Carolina, on the I-85 corridor between Atlanta, Georgia, and Charlotte, North Carolina. SWS/SSSD is responsible for the day-to-day operation of two surface water treatment facilities

(combined capacity of 80 MGD), elevated and ground storage tanks and pumping stations, and over 1000 miles of distribution mains. In addition, SWS/SSSD operates 19 wastewater treatment facilities (combined capacity of 22 MGD), 54 wastewater pumping stations, and approximately 400 miles of wastewater mains. SWS/SSSD has 250 employees with an operating budget of $31 million. The Spartanburg Sanitary Sewer District's Industrial Wastewater Program issues permits or authorizations to approximately 80 industries in Spartanburg County to discharge to five wastewater plants. These industries combine to discharge approximately 2.5 MGD to be further treated at District facilities. All five wastewater plants that receive industrial wastes discharge into streams that have been identified as "impaired" by the South Carolina Department of Health and Environmental Control (SCDHEC). Because of the stream designation, the NPDES permits to those wastewater facilities have exceptionally restrictive compliance limits. As a result, the District has been compelled to rework the headworks limits and to further decrease permit or authorization limits to the 80 industries that discharge to the District's facilities. The regulatory changes in the past three years have led the District and its industrial community to forge a partnership to support compliance initiatives. The partnership is supported by a communications network that includes: 1. An industrial wastewater bulletin board to share technical information throughout the regulated community; 2. Regulatory newsletters on critical compliance issues; 3. Presentations on technical subjects of interest; 4. The formation of industrial work groups to work together on key compliance initiatives; 5. A speaker's bureau to provide District personnel for company training sessions or for function; and 6. An awards program to recognize the commitment of the community to maintaining compliance.

Author: *Lijklema-S*

Title: **MANAGING WATER AND COMMUNICATING. A STUDY OF PUBLIC SUPPORT FOR WATER MANAGEMENT IN THE NETHERLANDS.**

Source:
Water-beheren-en-communiceren:-een-studie-naar-het-publieke-draagvlak-voor-het-waterbeheer-in - Nederland. 2001, xi + 215 pp.; many ref.. PB: Wageningen Universiteit (Wageningen University); Wageningen; Netherlands

This thesis contains 10 chapters divided into four parts, which discusses various aspects of communications between authorities and the public, to strengthen public support for water management. The first part of the thesis (chapters 2 and 3) describes the historical development of the water authorities in the Netherlands and elaborates the theoretical meaning of public support. The second part (chapters 4, 5, 6 and 7) focuses on the support given by the citizens to water management and discusses the factors that influence the acceptance of the policy according to certain literature. Concepts on legitimacy, authority and image for the acceptance of the policy are described including the heuristic attitude formation that develops within many people regarding their involvement in water management. The factors influencing a reasoned judgment on water management are discussed by evaluating its pros and cons wherein most of the factors include individual disadvantages and collective advantages. The influence of these factors regarding the judgment on water management is operationalized as: the judgment of the performance of water management; and the attitude towards having to pay for water management. The third part of the thesis (chapters 8 and 9) provides a discussion on the insights of water authorities about public perception on water management, and examines the literature about orientation towards the public and the literature about self-referentiality.

Author: *Centre for Research, Evaluation and Social Assessment (CRESA)*

Other Authors:

Title: **INTEGRATED PLANNING AND MANAGING OF NATURAL AREAS FOR TOURISM-RELATED DEVELOPMENT**

Source:
This research programme is being carried out over a three-year period by the Centre for Research, Evaluation and Social Assessment (CRESA), in association with Taylor Baines and Associates and Boffa Miskell, Julie Warren, from CRESA, is the research programme leader. In the research we will evaluate existing approaches to planning and managing tourist related developments in natural areas, define an integrated model for application in multi-stakeholder management contexts (with a particular focus on Maori stakeholders), and pilot, evaluate and refine that model for specific cases. Although the case studies for evaluating and refining the model have not been selected, the research team have had preliminary discussions with key stakeholders about possible areas. The research will be carried out in collaboration with tourism industry operators and organizations, government agencies, professional associations and Iwi, in their role as tourism operators, host communities and managers of natural areas. A reference group will be established to inform the research at key stages. Research components include: identification and evaluation of relevant approaches and models (particularly whether they accommodate Maori world views and concerns); case history studies covering public land, Iwi land and/or other resources, urban natural areas and sensitive coastal areas; a survey of participants in planning and management in relevant multi-stakeholder contexts; and the establishment, piloting and refining of a new framework and methods for integrated management.

Author: *Michalski, Stefan, ECB Enviro Berlin AG, Berlin, Germany*

Other Authors:

Title: **INTEGRATED WASTE MANAGEMENT SOLUTION - A PROVEN CONCEPT. THE RUEGEN DEMONSTRATION PROJECT, GERMANY**

Source:
Integrated Solutions to Manure Management: Working Together on Challenges and Opportunities, National Conference and Exhibition, London Convention Centre, London, Ontario, September 12-13, 2002.

This session will provide an in-depth review of a proven integrated waste management solution that incorporates wastewater treatment and aerobic and anaerobic digester systems. A case study, based on a German state-of-the art biogas plant in Ruegen, will be used to demonstrate the various ecological, environmental, regional and economical advantages of this viable and proven solution.

Author: *Pellini,-Tiago*

Other Authors: Morris,-Joe

Title: **A FRAMEWORK FOR ASSESSING THE IMPACT OF THE IPPC DIRECTIVE ON THE PERFORMANCE OF THE PIG INDUSTRY**

Source:
Journal of Environmental Management v 63 no3 Nov 2001. p. 325-33

New European Union legislation on Integrated Pollution Prevention and Control (IPPC) is being implemented in the United Kingdom, enacted by the Pollution Prevention and Control Act 1999 and its statutory instruments, the Pollution Prevention and Control (England and Wales) Regulations 2000. This legislation incorporates previously unregulated installations in the food and intensive livestock sectors, such as pig installations above a given threshold size. IPPC requires that installations adopt Best Available Techniques and follow General Binding Rules of good practice in order to manage their environmental effects. IPPC has significant potential impacts for both the environmental and financial performance of the pig industry.

Author: *Robinson, Cindy, LLB*

Other Authors:

T*itle:* **SUSTAINABLE MANAGEMENT IN THE LAND OF MILK AND HONEY – MANURE MANAGEMENT PRACTICES IN NEW ZEALAND**

Source:
Integrated Solutions to Manure Management: Working Together on Challenges and Opportunities, National Conference and Exhibition, London Convention Centre, London, Ontario, September 12-13, 2002.

There is a building controversy within communities and between farmers and environmental agencies about management of these resources. The significant contribution of dairying exports to the NZ economy means there is a strong incentive for the farmers to continually strive to improve environmental outcomes. The NZ environmental regulatory regime plays an important role in providing the framework for continual improvement. The introduction of the Resource Management Act in 1991 saw the reform and restatement of NZ environmental law into a single Act with a single purpose of sustainable management of natural and physical resources. "Sustainable Management" means managing the use and development of our natural and physical resources in a way and at a rate that enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while achieving certain environmental outcomes. The Act enables both national and regional government to state policies and to implement them through both regulatory and non-regulatory means. Through the combination of economic realities and regulatory reform NZ stands on a strong foundation to sustain our "clean green" image, the challenge however, is putting it into practice.