7

A Conceptual Framework For SWM On Indian Reservations

A striking commonalty in adaptation among many ... reservation communities in recent years has been the forging of new general identities as a means of coping with limited resources and economic stresses upon social organization.   For example...among Sioux... [there exists].an attempt to halt assimilation policy, with its concomitant deterioration of the local economic base, and to gain more autonomy in accordance with traditional tribal values. In essence, this involves creating a contemporary Sioux culture that replaces normlessness and hopelessness with guides to effective action, a strengthening of personal social ties and sense of commitment among members of the Sioux community, and attainment of a feeling of control and influence over the environment in terms of their own perception of their problems....

The general goal of political autonomy, or self-determination, with its emphasis upon group rights, stands in opposition to the concept of individual rights embedded in Western law and institutions....This fundamental distinction will continue to define the separateness of Indians in North American society legally, socially and ideologically. These group rights are seen be most Indians as an integral part of their traditions, along with other cultural assets that are either absent or lost among the technologically acquisitive urban peoples of European tradition.

> *-- Robert Jarvenpa[1]*

A generally bleak picture of SWD on Indian Reservations was presented in Chapter 3. As described in the last three chapters, the circumstances for carrying out SWM on Indian Reservations are quite different from conventional communities, and present several non-conventional obstacles. Cultural, social, legal, and program infrastructural issues not only challenge tribes, they challenge conventional SWM. For reservations, how SWM generally is conceived, is inadequate. In a number of situations, conventional SWM does not describe the actions of tribal decision makers, nor the best strategies for them to take.

In this chapter, a descriptive framework characterizing tribal SWM programs that is based on broad tribal sovereignty issues is presented. Based on this new representation, the examples of CSWM limitations presented in Chapter 3 are re-introduced, and general strategies are suggested for tribal SWM and Federal Indian Policy in the future. The following topics are included.

(1)   Universal Model for SWM

(2)   Tribal SWM Framework: The Context of Tribal Sovereignty

(3)   Application of the Tribal Sovereignty Framework

(4)   Pursuit of Tribal Sovereignty : Factors in Tribal-Decision Making

(5)   Navigating a Direction for Federal-Indian Policy

(6)   Conclusions

7.1 UNIVERSAL MODEL FOR SWM

As described throughout the text, tribes do not have conventional government authority nor, generally, conventional resources and demographics, so that application of CSWM is not reliable. The unique socio-cultural, legal, and program organizational issues examined in the previous three chapters differentiate tribal SWM program practices and situations from that of conventional programs. Essentially, these issues place SWM situations for tribes beyond the parameters of conventional SWM description..

Tribal options are defined by unique legal factors; tribal decisions and community response are due to unique socio-cultural factors; and resources and program capability are defined by unique program organizational factors. These tribal circumstances, that are different from the conventional, make up the situation context, and are what necessitate a different SWM approach.

The fact that context is key in tribal SWM is not a singular circumstance. Context is really part of any community=s SWM. Humans carry out SWM; and culture-- or context-- pervades human activity. Recall that CSWM is implicitly contextual because attributes of a conventional community are assumed. But if that context is made explicit as in Figure 7-1, another perspective emerges. True, no activity can be separated from its context. But while merely a contrivance, the idea proposed in Figure 7-1 is a universal framework for SWM. The necessary components of SWM engineering are dealt with according to the culture and situation in question. Thus, such a representation should work for all types of communities, including tribal.

7.2 TRIBAL SWM FRAMEWORK: THE CONTEXT OF TRIBAL SOVEREIGNTY

In applying the above model to develop a framework for tribal SWM, the importance of tribal sovereignty, as described in Chapter 4, is recalled. Again, tribal sovereignty is used in this study as a catch-phrase for all issues confronting tribes in maintaining the integrity of their community. For tribes, the pursuit of tribal sovereignty includes guarding cultural, socio-economic, and political borders. In essence, it is the full Asense@ or Aimpression@ of tribal sovereignty that is being sought by tribes, not simply the legal.   Because cultural integrity and economic independence are crucial to tribes in retaining their sense of tribe, full tribal sovereignty includes these factors as well, and is not reliant solely on legal authority.

The role of this broad tribal sovereignty Aumbrella@ as the central consideration in tribal SWM problems has been examined repeatedly in this study. Pursuit of tribal sovereignty infiltrates, impacts, and is impacted by SWM activities. Broad tribal sovereignty accounts for the cultural, social, jurisdictional, and program infrastructural obstacles described in the past three chapters. While tribal loyalty within some tribes is to class, districts, or bands within the federally recognized Atribe@, the shared goal of tribal sovereignty rises above intra-tribal struggles[2]. Tribal sovereignty is the most fundamental aspect of being a tribe[3], and based on pursuit of its legal construct and broader socio-cultural scope used here, tribes appear to make their primary decisions[4].

The study contention is that tribal SWM decisions must be based on the goal of this encompassing concept of tribal sovereignty as well, so that how SWM decisions are made depends on how broad tribal sovereignty is affected, and what decisions strengthen it the most. The decision making is framed within tribal characteristics relevant to tribal sovereignty that have been examined in the previous three chapters, such as community demographics and nature, non-Indian presence and involvement, and level of program development. For reservation SWM, it is the goal of an encompassing tribal sovereignty--in essence, increasing the Asense@ or Aimpression@ of tribal sovereignty--that forms the community context of Figure 7-1. Note, because tribes use broad tribal sovereignty as the basis to make decisions, workable SWM solutions must also incorporate the goal of increasing, or minimizing the erosion of,. broad tribal sovereignty. As a number of considerations examined here support, adherence to tribal sovereignty goals influences the success of tribal SWM programs. Further, because tribal sovereignty is necessary for a tribe to function culturally, socially, and governmentally, its pursuit must be necessary to ensure a successful SWM program for the long-term.

Interestingly, for an economic development venture in general to be successful, it has been found that tribes must act according to their own historically derived cultural impositions on what type of venture might work well[5]. Tribal culture-- again, a crucial part of broad tribal sovereignty-- dictates the character of a successful development project[6]. Adherence to culture can promote the most effective tribal economic decision making[7]. Why should SWM program development and decision making be immune to the principle? What degrades tribal sovereignty in the long run reduces tribal SWM capability because it weakens community integrity, practical jurisdiction, and/or tribal infrastructure[8].·

Socio-Cultural Issues

Consider how tribal sovereignty encompasses the socio-cultural obstacles examined in Chapter 4. Cultural differences that impact waste management issues exist because the tribes have managed to stay tribes. Without keeping assimilation and/or acculturation forces at bay through tribal sovereignty, tribal culture slowly diffuses into the conventional[9]. The world view of separatism would replace holism. Perceptions of what wastes are and where they belong would become "conventional". Tribal community disposal behavior would eventually result from conventional culture mores. The most effective education and enforcement strategies, therefore, would be conventional. Tribal reception to outsider education or punitive disposal fines, for example, would be improved.

Similarly, social SWM issues facing tribes exist because the tribe is a community unto itself. Thus, social divisions result. Purposeful non-Indian waste dumping and non-Indian unwillingness to participate in tribal SWM plans are due precisely to tribal sovereignty issues. Absence of non-Indian voting rights, limits on county government authority, special Indian privileges, tribal diplomatic and social distancing, court jurisdiction battles all result from tribal sovereignty, its historic rationale, or attempts at furthering it. Socially-driven waste dumping by Indians is likewise due to tribal sovereignty issues. Antagonistic, wary, and/or victimized thinking emanates from historical persecution, current jurisdiction battles, and socio-economic inequality arising from tribal sovereignty

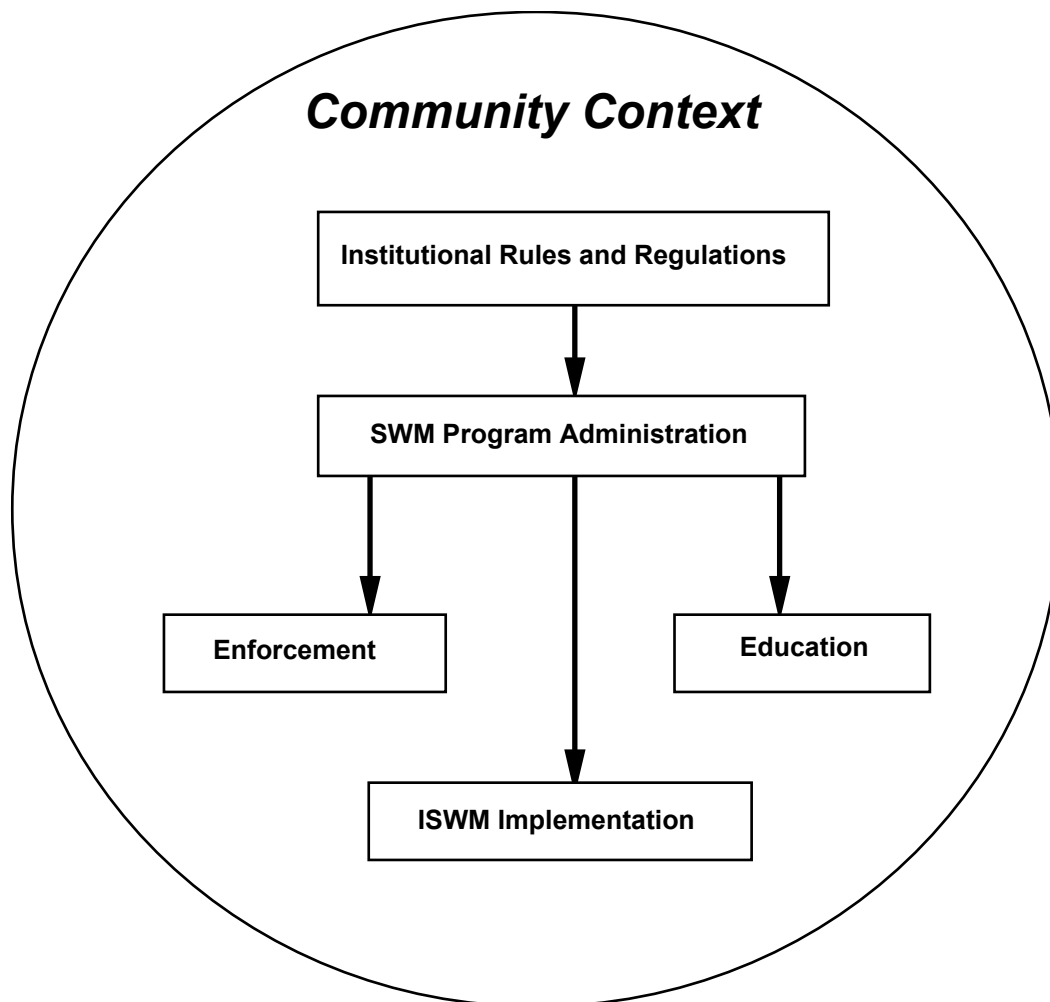issues as well as the associated geo-[10], politico-, and socio-economic isolation of tribes.

Figure 7-1
Universal framework for solid waste management program.

Jurisdictional Issues

Without land and the authority over that land and its people, tribal identity is at serious risk[11]. Tribal jurisdiction-- the authority to maintain tribal political, geographical, and socio-cultural borders-- is the primary facet of sovereignty. So, for example, wariness of going to court, or exercising tribal authority is a tribal sovereignty issue, as are limits on, and protection of, tribal authority. The uncertainty on fee lands about whose responsibility SWM is, and whether the county provides waste services to non-Indian residents are tribal sovereignty issues as well.

Program Infrastructure

Program infrastructural obstacles that tribes face in carrying out SWM can be related broadly to tribal sovereignty and/or its fallout. A strong, effective government and its programs are needed to carry out SWM. But a government can not be strong without tribal sovereignty. Consider funding issues. Tribes are in the financial position they are in because they were treated as municipalities under RCRA, and ignored. So their programs are new and their staff inexperienced. State funding is practically unavailable because of conflicting sovereignty. Taxing non-Indian residents is not possible because of limits on sovereignty. Funding from members is difficult due to poverty brought about by Federal Indian Policies of the past[12]. Restrictions on use of tribal land, an unfavorable business climate, an entrenched federal bureaucracy, and the need to remain a tribe culturally and socially, all link to tribal sovereignty goals or policy results and contribute to tribal poverty.

Enforcement is linked directly and indirectly with tribal sovereignty issues such as culture, jurisdictional boundaries, etc. Scale logistics result from demographics of the tribe and reservation, such as numbers and degree of checkerboard distribution of tribal members and non-Indians -- considerations central to broad tribal sovereignty concerns. How best to enforce against tribal members is decided in the context of what traditional discipline is, and whether that might be more effective. Structural problems result from the persistence of tribes in retaining traditional tribal authority in the face of practically-forced bureaucracies. Problems with local government relationships are also due to protecting sovereignty. Institutional obstacles exist because tribes are sovereign, and require separate treatment as governments, and the federal trust must be carried out. Individual relationships are affected by cultural differences and direct sovereignty concerns.

A Conceptual Framework for Tribal SWM Programs

Features of the conventional SWM program are combined with the goal of tribal sovereignty and depicted in Figure 7-2. As shown in Figure 7-2, the primary driving force behind SWM decisions is the goal of broad tribal sovereignty. Its consideration is supreme. There are several points to consider before discussing in detail how and why such a framework can work.

Generality

Like the conventional SWM program representation on which it is based, the framework proposed here is quite general. While some studies have described individual tribal leadership behavior in detail[13], modeling a SWM decision process that works for all tribes necessitates a broad and simple conception. Further, the purpose here is to provide a better way to think about tribal SWM programs, not step-by-step guidance. In essence, tribal SWM works differently because tribes strive for, and their circumstances differ due to, tribal sovereignty issues. When tribal sovereignty is of no concern, this framework collapses to its conventional counterpart, and conventional SWM engineering becomes appropriate.

Use

The suggested framework can be viewed from two different perspectives. First, it can be used to describe tribal SWM decision making, so that diverse institutions and agencies involved with tribal SWM can understand tribal actions. Second, it can be used to define what is in the best interests of the tribe-- the SWM decision that maximizes tribal sovereignty in the long-term, with SWM objectives acting essentially as constraints. Such a perspective is useful on several accounts. It provides a means for non-tribal policy makers to understand the approach taken by tribes in dealing

with their SWM matters. It serves tribes as a policy justification to federal agencies and state and local governmental interests. And because the goal of tribal sovereignty coincides with federal government dictates and policy, this conception of how tribal SWM programs work can be used as a guide in determining
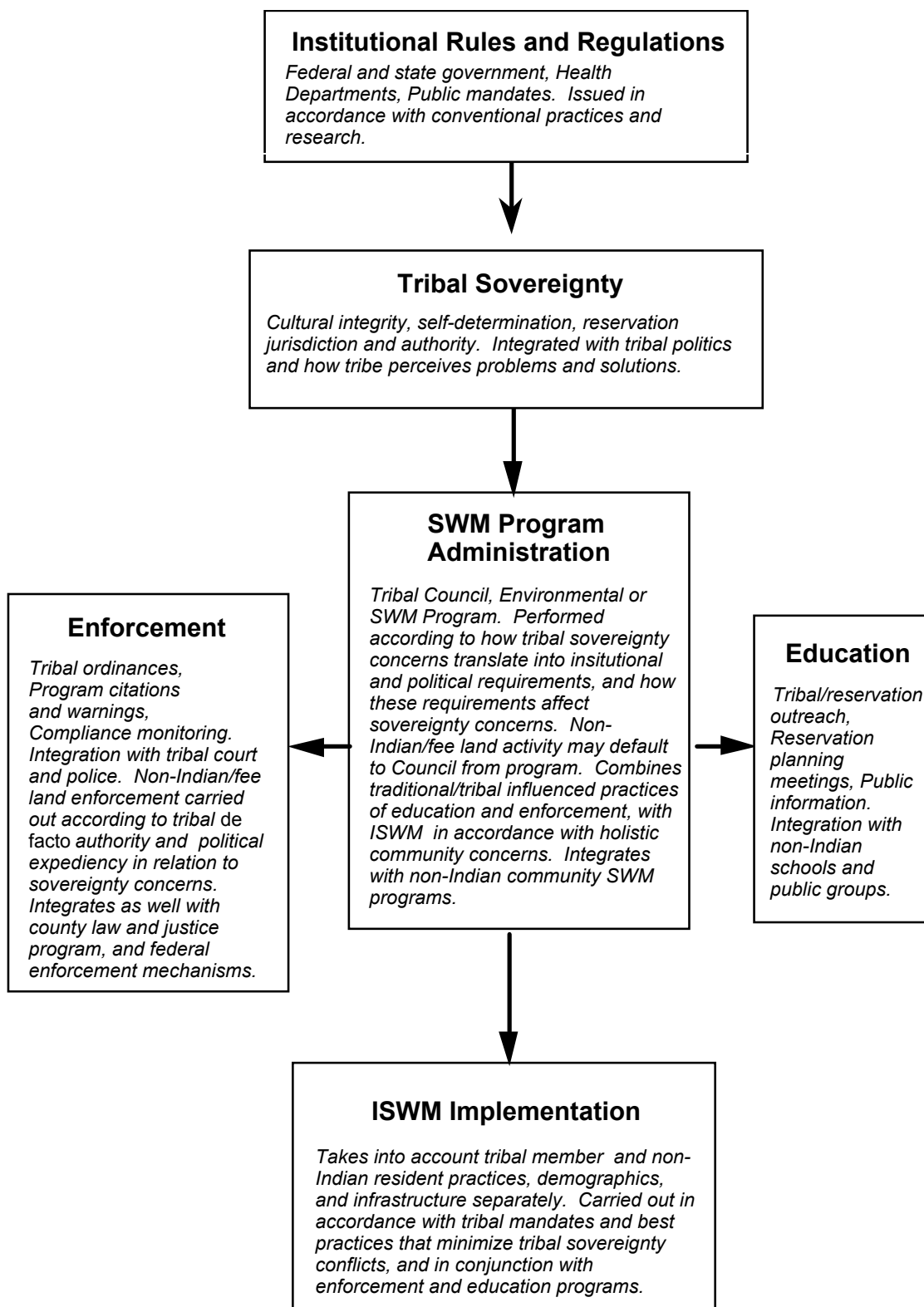
Institutional Rules and Regulations

Federal and state government, Health Departments, Public mandates. Issued in accordance with conventional practices and research.

Tribal Sovereignty

Cultural integrity, self-determination, reservation jurisdiction and authority. Integrated with tribal politics and how tribe perceives problems and solutions.

SWM Program Administration

Tribal Council, Environmental or SWM Program. Performed according to how tribal sovereignty concerns translate into insitutional and political requirements, and how these requirements affect sovereignty concerns. Non-Indian/fee land activity may default to Council from program. Combines traditional/tribal influenced practices of education and enforcement, with ISWM in accordance with holistic community concerns. Integrates with non-Indian community SWM programs.

Enforcement

Tribal ordinances, Program citations and warnings, Compliance monitoring. Integration with tribal court and police. Non-Indian/fee land enforcement carried out according to tribal de facto authority and political expediency in relation to sovereignty concerns. Integrates as well with county law and justice program, and federal enforcement mechanisms.

Education

Tribal/reservation outreach, Reservation planning meetings, Public information. Integration with non-Indian schools and public groups.

ISWM Implementation

Takes into account tribal member and non-Indian resident practices, demographics, and infrastructure separately. Carried out in accordance with tribal mandates and best practices that minimize tribal sovereignty conflicts, and in conjunction with enforcement and education programs.

Figure 7-2
A framework for a tribal solid waste management program.

7.3 APPLICATION OF THE TRIBAL SOVEREIGNTY FRAMEWORK

Consider how the framework might be applied to explain the puzzles of Chapter 3. Take first the case of the Uneconomical Choice of a Landfill. With a conventional community, the central question might be what option meets environmental regulations at a minimum cost. With tribal SWM, the question becomes framed in terms of what option will address tribal SWM problems (or meet regulations) as much as possible while strengthening, or at least not negatively impacting tribal sovereignty. Using this perspective, several possible ensuing scenarios can be predicted.

Rules and Regulations

With the central question revolving around tribal sovereignty, SWM rules and regulations are considered in the context of tribal sovereignty. So, for example, from the standpoint of the tribe, the 2-3 million dollars required to construct a compliant landfill for its poor rural community of 5,000 may not seem exorbitant. Thus, the tribe has forged ahead with geohydological surveys to choose the best location. Similarly, a much smaller tribe has been conducting preliminary financial and siting studies to choose between citing an incinerator or landfill, with life cycle costs per ton of $202 and $229, respectively, rather than use the nearest non-Indian landfill, an option with life cycle costs that are 30 and 40 percent less[14]. As described in Chapter 4, substantial sovereignty benefits are gained by having a tribal landfill. Autonomy is fostered and the ⌐outside⌐ is kept out.

Program Administration

How the tribe decides to administer the landfill depends on its program infrastructure, and how tribal sovereignty might be affected. So for example, building a landfill in accordance with federal regulations would likely involve outside help from federal agencies and/or local equipment and waste hauling businesses. Because tribal sovereignty issues are involved, the project may be placed away from SWM program influence, and into Tribal Council control

Funding might be examined by the tribe in terms of how tribal sovereignty is impacted by the project as well. Outside influence is attached when securing and outside loan, and dependency is fostered. In fact, at this stage, the tribe may decide a compliant landfill is not desirable[15]. But the additional dependency might be seen as a better choice than the more overt dependency instilled using county disposal facilities.

Enforcement

Looking at enforcement issues also revolves around how tribal sovereignty is impacted and impacts the situation. For example, any increased enforcement associated with the landfill (e.g. against dumping outside of closed gates) was expected to be mostly with tribal members, so sovereignty would not be seen as threatened. Non-Indians might attempt to use the landfill, but the tribe could require identification, and turn them away. Thus, in terms of enforcement, sovereignty would be strengthened and not risked with a tribal landfill.

Education

In terms of education, a tribal landfill would be seen as beneficial as well. The process of public education (i.e. proper use and benefits of a landfill) could strengthen tribal sovereignty by employing traditional teaching, and thus increasing cultural integrity. Increased cultural integrity strengthens tribal pride and hinders social disintegrative processes such as alcoholism, mental depression, and high school dropout.[16] The addition of relatively technical positions to the reservation would provide additional Indian role modeling for reservation children..

Tribal ISWM Choice

What does the tribe choose? Other disposal options are wanting in terms of tribal sovereignty. A county landfill requires dealing with the county as a government. Tribal insulation would suffer and the
tribe would be beholden to regional local government SWM plans. Use of a transfer station would not solve that problem; more outside contracting is required. With household collection, even if its members could afford it, the tribe would still be beholden to county SWM plans. Recycling, reuse, and composting programs would reduce dependency on the county only, not stop it. Thus, given all of the above considerations, the tribe=s choice of a tribal landfill could be predicted with the new framework..

It is worth noting that the choice of a landfill is made given the information available to the tribe. A non-compliant landfill or existing waste site might be chosen by a tribe that was oblivious to potentially serious health and environmental risks. Here, the "best choice" may not be made. Degradation of land or community health impacts tribal sovereignty a great deal, given the importance of both to the continuance of the tribe. Resultant health and environmental problems could precipitate lawsuits from the outside (i.e. non-Indian RCRA citizen=s suits), as well as EPA action. Cleanup and legal costs could decimate tribal funds, and social priorities might need postponing. Contamination problems might seriously impact traditional tribal fishing and hunting activities.

Thus, based on the proposed framework, it can be argued that, were tribes to possess the necessary technical information, they would not choose a disposal option that posed *serious* environmental risks. Note such an argument does not mean that tribes given the information would comply with RCRA fully, but rather that they would choose to modify their disposal site or disposal methods to lessen negative environmental consequences so that the above impacts would be unlikely to occur. In such an action, RCRA requirements may or may not be met, depending on such factors as whether the tribe views RCRA compliance as a benefit, and whether compliance is considered economically feasible.

Discussion

The puzzles in Chapter 3 have been explained previously in terms of cultural, social, jurisdictional, and program infrastructural obstacles. They might be predicted by the goal of tribal sovereignty as well.

For example, the Unused Transfer Station could have been predicted by noting how

entrenched culture is in community life, waste disposal practices included. Because of tribal sovereignty, the traditional, holistic way of doing things is adhered to intrinsically. The community does not respond to conventional enforcement and education, but it responds to tribally-based endeavors. Tribally appropriate education is needed to show transfer station use as supporting the community, and thus tribal sovereignty. Otherwise, a new Acontraption@ from the outside will not be used. Granted, education might be needed for a conventional community as well. But here, education on how the transfer station positively affects tribal sovereignty is needed-- not on whether the station is "more effective" than open dumping. Conventional teaching methods negatively impact tribal sovereignty, as well by invalidating traditional methods and teachers.

The Non-Enforced Enforcement Program is due basically to tribal sovereignty concerns about challenges to tribal authority, as well as infrastructure problems that would not exist if the tribe were not a "tribe". The Fight Against the Corporate Landfill occurred because, economic windfall notwithstanding, the tribe as "tribe " was threatened. County SWM Services were Refused, even though the tribe couldn=t provide them, due to perceived risks to tribal authority and wariness of outside influence.

Holistic Nature of Reservation SWM

Note the choice of a tribal landfill detailed above is not just a cultural one; it is societal, legal, and program infrastructural as well. As discussed in Chapter 4, each obstacle is connected to the other because culture permeates a community's life. And the life culture of Indian Reservations is to live for and by what is defined broadly here as tribal sovereignty. So all obstacles associated with sovereignty, or the tribe as "tribe", crop up in SWM. Separating them simply provides a convenient, conventional way to analyze them.

Lumping together all the factors unique to tribes is more complicated, but it mirrors the tribal situation. Everything needs to be considered; all things relate to each other. Note this is precisely the way holism works; everything is a process. Nothing is unequivocal because everything is affected. There is no reason to expect that a linear model *can* describe holistic decision making-- hence, another reason for the framework's generality. The goal is broad tribal sovereignty. The process is broad protection of cultural, societal, legal, and political borders. How that process is played out depends on the situation and tribe. In other words, because the process is holistic, it depends on the situation context.

7.4 PURSUIT OF TRIBAL SOVEREIGNTY : MECHANISM AND FACTORS IN TRIBAL-DECISION MAKING

Determining how a tribe might interpret a given SWM situation in terms of its tribal sovereignty goals involves two primary considerations. First, as described implicitly in the past three chapters, often unpredictable tradeoffs exist between the three main aspects of broad tribal sovereignty, i.e., cultural integrity, self-determination (primarily economic and resource power), and legal authority. Second, each tribe owns a unique set of socio-economic demographics, history, culture, politics and geography influencing its decisions, as well as the eventual outcomes of those decisions.

Relationship between Culture, Economic Power, and Legal Authority of Tribal Sovereignty

Making a policy decision that improves tribal sovereignty can be complex for a tribe because the decision to strengthen a cultural, legal, or economic border can result sometimes in the weakening of another border. Each of the three aspects of broad sovereignty can affect the other two positively or negatively depending on the situation and tribe. Thus, the goal of tribal sovereignty can lead to different choices by different tribes for seemingly similar SWM problems. The issues involved have been described in the past three chapters, and examples are provided in Table 7-1.

For example, recall the Rosebud Sioux Tribe rejected the corporate landfill in the name of tribal sovereignty. Ignoring the details of the decision process for now, the end result was that the positive impact on self-determination (i.e. economic and resource independence resulting from financial gain and an on-site, free-of-charge, landfill) was canceled out by the negative threat seen to cultural integrity and future legal authority. But the Campo Band of Kumeyaay Indians fought *for* a corporate landfill because they believed it would *enhance* their tribal sovereignty[17]. To this tribe, developing a landfill primarily confers economic freedom and provides a way to keep members on its reservation. It also provides a means to develop a strong environmental program. From its perspective, an overall positive impact on its cultural integrity and legal authority was predicted, so tribal sovereignty would be strengthened.

Note the outcome of a policy decision is more complex than is belied in Table 7-1. There are several dimensions each to cultural, economic, and legal integrity that may be negatively or positively affected for a given policy choice. In the above example, the choice of a corporate landfill can reduce cultural integrity by increasing assimilation, and increase cultural integrity by retaining members. Underlying factors in how a tribe might view the combination of the two effects are discussed below. Perhaps a more complicated dynamic is a decision "cascade" effect inherent in such dependent variables. Each decision outcome can spawn a new outcome for each component, which in turn can affect the original decision outcome, and the succession is theoretically infinite. A glance at Table 7-1 demonstrates the problem. Assume an increase in self-determination increases both cultural integrity and tribal authority, as in the first example row. But as seen from the rows underneath, the increased cultural integrity and/or increased tribal authority can in turn decrease self-determination, which in turn either can decrease or increase cultural integrity and tribal authority, etc., etc.

Modeling the Tribal Decision Making Mechanism

In making a policy choice of maximizing their sovereignty, tribes must predict (implicitly or explicitly) the final relationship between culture, economy and authority outcomes. The relationship's effect on sovereignty, based on individual tribal perceptions of what sovereignty is, must be evaluated as well. The actual mechanism by which tribes predict and evaluate the tradeoffs between culture, economy, and authority to reach a ⌐maximal sovereignty@ decision is unclear, but a cursory discussion of the problems involved adds insight to the use of the general framework of Figure 7-1.

Table 7-1
Sample interactions between the three primary aspects of tribal sovereignty.

Primary Factor Increased	Policy Outcome	Sample Basis for Outcome	Sample Basis for Outcome
Self-determination (e.g. increased economic investment)	*may increase*	**Cultural integrity** by allowing members to stay on reservation and financially supporting cultural programs	*and* **Tribal authority** by funding programs to meet TAS delegation, and gain non-Indian resident and local government confidence in tribal SWM abilities
	but may decrease	**Cultural integrity** through increased outside influence and non-Indian residency	*and* **Tribal authority** due to increased federal and state interests in taxation and "protecting" non-Indians and their businesses
Cultural Integrity (e.g. return to traditional decision making)	*may increase*	**Self-determination** through added tourism income or streamlined chains-of-command	*and* **Tribal authority** through improved practical jurisdiction over, and/or allegiance or participation from, members
	but may decrease	**Self-determination** through increased isolation and barriers to outside business, grants, and loans	*and* **Tribal authority** through potentially inadequate SWM program structure to deal with conventionally imposed RCRA regulations and funding deadlines and procedures, and non-Indian related problems.
Tribal Authority (e.g. TAS delegated program)	*may increase*	**Cultural integrity** by minimizing non-Indian influence	*and* **Self-determination** through forcing local communities and states to deal with tribe and thus increasing political influence
	but may decrease	**Cultural integrity** through invalidating traditional band/clan allegiances and bringing in responsibility over non-Indians	*and* **Self-determination** through creating outside investment fears

A Return to the ꞮGreater Whole@

Interestingly, essentially the same three facets of tribal sovereignty have been employed by McGuire [18] to model *federal* decision making in tribal affairs. Based on modern actions and policies by the federal government, he concludes each facet has been a consistent federal objective in meeting its trust obligation[19]. For a given policy choice, he models decision making as the sum of the predicted cultural, economic, and legal authority outcomes. Policy effects on each objective can be positive or negative, and the policy that maximizes the sum of all three becomes the federal choice.

However, applying McGuire=s linear summation model to tribal decision making is problematic, and underscores the necessity of modeling broad tribal sovereignty, and not its separate components, as the driving force behind tribal decisions. As an example, McGuire cites a federal decision concerning a large development project proposed on San Xavier' reservation land in 1986. Until recently, 99-year land leases were standard issue by the BIA, ostensibly to assure businesses that sufficient stability existed. In this instance, however, acting according to the summation model,

BIA opted for middle ground by issuing short-term leases. A sizably positive economic impact, together with a smaller negative impact on legal authority and cultural identity was the goal. Regardless, that policy choice was turned down by the tribe because the impact on its broad sovereignty, as a whole, was viewed as negative.

The mechanism here is pulled from Chapter 4. Again, for tribes, the whole is not equal to, but greater than, the sum of its parts. The summation model fails because cultural, economic, and legal integrity are viewed only in the context of tribal sovereignty; they are not separable, but dependent. For a particular decision, the outcome of each can affect the outcomes of the others, because each affects broad tribal sovereignty, which in turn affects each component issue. Thus, as illustrated by the first two rows and columns of Table 7-1, cultural integrity depends on economic self-determination, and economic self-determination depends on cultural integrity.

> This is not about casinos and money; this is about how the state of California is going to treat us. If we let them get away with this, it's going to set the tone for how they deal with us for years to come.

> -- Mary Ann Martin Andreas, chairwoman, Morongo Band of Mission Indians[20]

As another example, California gaming tribes in 1998 risked losing their casinos, rather than submit to the state's negotiated gaming compact[21]. No legal ramifications to their inherent sovereignty status were presented, only practical impacts on tribal authority specific to casino operation. Given the enormous economic benefits derived from the casinos[22], a summation model likely would predict maximum benefit for tribes by signing the compact. But the federally required compact was considered an affront to their sense of sovereignty[23]; most tribes vowed to close their casinos instead. The goal of starting a casino in the first place was not to improve their economic situation, but to strengthen broad tribal sovereignty through improving their economic situation[24].

A Mire of Context

Use of weights together with constraints on negative impacts might result in reasonable summation approximation for simplistic cases, where decision outcomes were clear and their ramifications finite[25]. But a reliable decision making model would require dependence of the three variables such as:

$$\text{Maximize } \mathbf{T} (C^a S^b L^c) \qquad\qquad (7\text{-}1)$$

$\mathbf{T}$ = tribal sovereignty

C= predicted final and total policy outcome on tribal perception of cultural integrity

S = predicted final and total policy outcome on tribal perception of economic and resource self-determination

L = predicted final and total policy outcome on tribal perception of legal authority

a = weight tribe places on cultural integrity

b = weight tribe places on self determination

c = weight tribe places on legal authority

Where C, S, L , $a, b,$ and c are functions of individual tribal circumstances that determine how sovereignty is affected and perceived. Essentially, C, S, and L are how tribes predict and perceive the various outcomes, and the weights a, b, and c are how tribes evaluate these outcomes in relation to sovereignty. Perhaps viewed qualitatively, the model described in Equation 7-1 might be useful to outsiders searching for a better descriptive understanding of tribal decision making. But,

obviously, such a model does little to move the prediction of tribal decision making forward. Quantifying cultural integrity and legal authority for a comparative measure to economic self-determination presents the moral dilemma and professional challenge of most environmental policy "common currency@ conversions, with the added disadvantage that such a procedure is alien and perhaps anathema to Indian tribes. Among other problems, the variable functions differ for each tribe,and as mentioned above, the final predicted outcomes depend on a cascade effect. It should be noted also that consideration of time and uncertainty is necessitated in setting the weights, as preferences should vary depending on the perceived probability of the outcome actually occurring, and possibly when it is predicted for, as well.

A flow chart incorporating the considerations provided below, would serve better. Still, accurately capturing the holistic dependency of the decision will prove difficult. Thus, the tribal decision making process for determining its sovereignty concerns is enthusiastically left to future researchers to contend with. And tribal sovereignty is left as the general Ablack box@ illustrated in Figure 7-2.

Underlying Tribal Considerations in Predicting Tribal Sovereignty Decisions: A ABehind the Scenes@ Preview

Obviously, a tribal SWM decision will depend on the given problem characteristics, such as number of jobs created, income produced or spent, specific authority affected, seriousness of SWM problem addressed, and expected efficacy of proposed solution. But what are the underlying considerations for predicting how tribes will view their sovereignty within the problem specifics, and thus make their policy choices? While it is beyond the scope of this study to provide a comprehensive and systematic guide, based on the issues examined here, the considerations listed in Table 7-2 are almost certainly involved, likely to a primary extent.

For example, a number of the above listed elements can be argued to have played a part in the Campo Band decision to site a corporate landfill. The Band is located near the San Diego metropolitan area,where both affluent non-Indian communities and gaming tribes exist so that greater opportunities and higher living standards were relatively visible and perhaps perceived as accessible and desired. Thus, providing members a means to stay on the reservation was a great concern. The idea of operating an outside investment venture might coincide with the tribal culture[26], or may have Aleaked@ into tribal consciousness via the nearby Ainnovation@ of successful tribal gaming ventures[27]. Finally, a central factor in the tribe deciding a landfill would increase its sovereignty was that the tribe envisioned the landfill as funding a strengthened environmental program. Unlike the Sioux, the readiness of Campo tribal personnel resources and/or tribal organizational structure[28], together with a "cultural receptivity" to outside investment[29], disposed the tribe to perceiving such a program as a means to increase sovereignty through heavy oversight of landfill activities, and to attain desired "treatment as a state" status.

It should be underscored that two tribes may decide different courses of action either because they weigh cultural, economic, and legal strength differently, or because they perceive the three sovereignty components,as well as their relationship to each other, differently. Thus, while it might appear the Campo Band has assimilated more than the Lakota Sioux, or is less "traditional@, it may be that the Campo culture is more receptive to outsiders, or that cultural integrity is not viewed as dependent on maintaining traditional livelihood.

Table 7-2
Some underlying factors in predicting tribal SWM decision making.

Factor	Possible considerations	Possible effect
External Demographic Factors:		
Population and trend	Are members moving out? Are tribal numbers a concern? Will any increased outside presence be comparatively large or small?	Value of economic gain, acceptability of project specifics
Standard of living	How is standard compared with surrounding non-reservation communities? Are members using traditional subsistence living, and is this a "choice"? Do members want the type of jobs created?	Value of economic gain
Reservation size	Will development overwhelm reservation? Does tribe have alternatives available?	Acceptability of project specifics
Non-member demographics	What is relationship with non-members? How much fee land is present?	Acceptability of risks to authority
Internal Tribal Factors:		
Tribal cultural history	How does tribe view outside? Is avoidance or adaptability part of tribal culture? Is there cultural acceptance of hierarchical relationships in created jobs? Are benefits or project specifics considered acceptable or valuable? Is there receptivity to considering outside solutions?	Compatibility of project/decision to tribe, acceptability of outside influence, value of economic gain, perception of problem
Attachment to land	Is reservation ancestral homeland? Is it considered sacred?	Acceptability of project specifics
Current politics	Is allegiance to Council, bands, or families? Is Council progressive? Do they have agenda? Is there factionalism? Who holds real decision making power?	Workability of project/decision, tribal tendency to choose authority, culture, or economy-dominate policies
Degree of traditionalism/assimilation	What degree of traditionalism/conventionalism is acceptable or desired? Is tribe prone to use conventional solutions?	Acceptability of outside influence, value of economic gain, value of cultural integrity
Tribal Infrastructure	Identified need for a benefit that the policy choice can provide and desire/ability to procure/ensure it?	Compatibility of project/decision to tribe, tribal ability to make project/decision compatible
Intertribal interaction	Does tribe make use of solutions that other tribes have used? Is there innovation in dealing with a problem that is dispersing through Indian Country?	Acceptability of project specifics and solution

7.5 SOVEREIGNTY-BASED SOLUTIONS TO TRIBAL SWM

The primary purpose of this study is to define systematically underlying causes of tribal SWM problems, and a general approach that can be taken in addressing them. Each tribal SWM situation results from a unique combination of the problems described in the previous three chapters. Refining a single tribal sovereignty-based solution applicable to each, or even most, situation(s) is not within the scope of this first exploratory study. However, a tribal-sovereignty based approach leads to several general suggestions below. Suggested changes to Federal Policy are included in the next section.

Tribally-Based Solutions

Again, tribal sovereignty will not be strengthened, and thus SWM solutions will not work, unless tribes make decisions and carry out plans as tribes. When tribes act as "tribes", their borders and authority are more secure, their infrastructure is stronger and more effective, and their community more responsive. So jurisdiction worries are lessened, programs are more effective, and sound disposal behavior more prevalent. Again, tribal development, in general, offers corroboration of the advantages of a strong tribal presence. Those tribes with assertive stances with their sovereignty, backed up with capable institutions and rules, are observed to be most successful[30]. The following approaches meet a goal of tribal sovereignty and address SWM through tribally-based action.

Use of Community Education, Involvement, and Cohesion

The logic of using traditional education approaches and traditional involvement of the entire community was described in Chapter 4. When materials designed specifically for tribal situations, and framed in terms of holistic ideas, are used, education is made more effective[31]. Community involvement in SWM planning aligns with traditional ideas about decision making. Thus, public meetings have been used successfully to convince tribal communities to change disposal habits[32].

Also where possible, community cohesiveness might be taken advantage of in designing SWD options. For example, the problem with waste collection services for many tribes is affordability. But because of extended family ties, sharing waste receptacles between several homes may be feasible. Such a solution might not work in conventional communities, where families tend to move more often, and co-ownership, or sharing beyond the nuclear family, is not a cultural value.

The idea of community participation spirals upwards. Starting a traditional program improves tribal pride and cohesiveness[33]. Apathy is reduced, and that in turn might improve community SWD habits[34].

Building Local Government Relationships

The benefits of a working state and/or local government relationship were pointed out in the last chapter. A relationship might be considered where tribal security is not threatened[35]. For example, the Campo Band of Kumeyaay Indians forged a cooperative agreement with the state of California that allows the state to inspect Campo SWM facilities[36]. But in turn, the tribe can inspect any facilities generating wastes brought to the reservation. The agreement is a professional one developed due to mutual interests. Tribal obligation is not inferred so that diplomatic problems are largely avoided, and no state "foothold" into tribal authority is provided.

The concept should also work with local governments. Tribes could work on a professional level and find common advantages[37]. For example, in one program with the Swinomish Tribe, local government officials were educated successfully about tribal culture and Federal-Indian law[38]. An awareness was fostered among County officials of inherent sovereignty, the tribe's rights, and the reasons those rights were desired. They were more willing to cooperate in jurisdictional problem areas while being more wary of treading on tribal authority. Tribal officials were also required to learn about county issues from the county perspective. The tribe gained a better understanding of what was important to the county, so more informed and better received decisions were possible

Developing waste programs as good as, or superior to, those of the county could also be advantageous to the tribal position. Counties might be placated because their interests in county health and environment are met or exceeded. Tribes become able to assist counties, so the relationship forged supports tribal authority, not county influence.

Staff Training

Training tribal staff is of primary importance in addressing the general tribal SWM situation, and tribal sovereignty should be strengthened through the process. A strong and well trained environmental manager is able to understand the technical problems while viewing them in the context of tribal issues. Their understanding might be conferred to the Tribal Council and/or other elders, and community. Thus, the tribe could make decisions in a traditional manner while being informed of the necessary issues[39]. Note, tribes might realize that too much management by traditional leaders and/or the Tribal Council can weaken tribal sovereignty because, as was pointed out in the last chapter, funding and resources can be lost, and poor and unsafe disposal patterns can continue.

Formal Incorporation of Traditional Authority

Structural problems such as loss of time, and unclear planning resulting from either the absence of a designated SWM person, or from the existence of traditional and bureaucratic SWM authority might be addressed in light of the problems they pose for tribal sovereignty. The SWM program could be (re-)structured formally to take into account traditional decision making[40]. Staff demands and community services could be structured to align with cultural modes of thought, where appropriate. For example, flexible time schedules might be initiated for staff office hours and Awill-call@ collection services might be tried for tribes where Aactivity-over-time@ values predominate[41]. A mechanism for expedient decisions might be decided beforehand through a traditional consensual process.

Use of Federal Agency Assistance

To address institutional problems, tribes might try initiating a strong, proactive role with EPA, IHS, BIA, and HUD. As mentioned in the last chapter, an active, involved role should result in additional technical and funding assistance. Tribal sovereignty is furthered because tribal needs are more likely to be met, and mutual respect garnered.

RCRA Compliance

Tribal sovereignty issues prevent some tribes from complying with RCRA. But tribes might consider that tribal sovereignty overall can be furthered when facilities meet or exceed federal

requirements[42]. Tribes would not be bothered by agencies or the public seeking further safeguards, and respect is garnered for tribal capabilities in other arenas. Exceeding requirements demonstrates the tribe is acting independently, and not out of obligation. Further, the environment, integral to tribal cultural survival, is protected.

Economic Development and SWM Funding

Tribes might improve their SWM situation through economic development, where possible. Economic development can stave the flow of talented members off the reservation, and keep the tribe intact. The new wealth also confers power within the region, and increases SWM autonomy. Increased economic clout may earn respect from state and local governments[43], decreasing jurisdictional concerns.

Increased revenue might be used to pay for SWM services and program development. For example, the Omaha Tribe used its gaming profits to clean up reservation open dumps[44]

Inter-Tribal Cooperative Solutions

Inter-tribal cooperation might be used to benefit tribal SWM in many ways. Successful improvements in tribal SWM programs are associated already with the networking and Indian-led education taking place at tribal conferences[45]. Tribal sovereignty is bolstered by tribes working together, minimizing outside interaction. Individual sovereignty can be kept intact with proper safeguards[46].

For example, the vast majority of tribes do not have the resources for their own environmental laboratories or SWM consultants[47]. To carry out testing or plan sound SWM, either tribal autonomy must be decreased by employing outside help, or technical requirements are not met. The latter could result in degradation of the environment, again indirectly impacting sovereignty. But if the few, but growing, number of facilities and expertise owned by other tribes are used, neither impact is felt.

Another way that inter-tribal association could help is funding SWM programs. Obtaining money from other tribes can assist tribes without affecting their sovereignty. The commonality felt among tribes has led resource-rich and gaming tribes to pool money for financial assistance to poorer tribes in several instances[48].

Tribal assistance could take the form of joint SWD ventures as well. By increasing the economy of scale, programs such as recycling and waste collection services might be made feasible. For example, several geographically close tribes in Southern California successfully operate a joint inter-tribal waste collection service[49].

Finally, together, tribes can exert more influence in obtaining assistance or change Federal-Indian Policy. That one tribe is a nation is the legal truth. But that all tribes comprise a single nation is the prevalent notion. The concept of tribes as hegemonic symbol suggested by some scholars[50], Athe American Indian@, can be taken advantage of when tribes lobby as a group[51].

7.6 A RATIONAL DIRECTION FOR FEDERAL INDIAN POLICY

The pursuit of tribal sovereignty may not always result in the soundest SWM policy, but it is the only way that sound SWM will be practiced. Again, in the name of tribal sovereignty, tribes may choose to continue use of their old landfill, not partake in available county services, or not use outside expertise when needed. But when tribal sovereignty is considered fully in cases like these, sound SWM for the long-term is more likely to result. The weakening of tribal sovereignty from potential environmental degradation theoretically would outweigh considerations like autonomy, authority, and influence. Without a healthy land and people, there is no tribe to exercise sovereignty over.

But when these considerations outweigh environmental concerns, the tribe and its land might still win. Because without tribal sovereignty, the tribe itself unravels. The land may be protected in the short-term, but the kind of government that results will be less effective at solving future SWM problems.

As discussed in Chapter 5, tribal nationhood is entrenched in Federal Law. The existence of tribal reservations is even part of American cultural lore[52]. Termination will not be re-attempted[53]. So regardless of the ebbs and flows placed on tribal authority by courts and Congress, reservations will always exist, and tribes will always be the preeminent governments on them[54]. Tribal sovereignty concerns are supreme in how tribes manage reservation solid wastes. SWM engineering on reservations must be planned with tribal sovereignty as a goal, or predicting tribal SWM decision-making and designing workable solutions will continue to fail. Thus, the rational direction for Federal Indian Policy is clear; full, explicit, and legally binding tribal authority over reservation SWM, including all lands and peoples, must be phased in.

State and Local Government Control of Reservation SWM

In support of such comprehensive tribal authority, consider that if states or local governments, rather than tribes, were given greater SWM jurisdiction on reservations, questions about jurisdiction would persist because a tribal presence and legal claim would persist. And states will never have authority over Indians on reservations. So two sets of SWM rules would be required for the same land. Further, because of the logistical and diplomatic difficulties, reservation areas under legal or ostensible state jurisdiction likely would continue to receive less service and attention than outside communities. Thus, SWM on reservations can not be as effective under state control as under full tribal management.

Comprehensive Tribal SWM Authority

If tribes were granted explicit SWM authority over fee lands and non-Indians, jurisdiction would be clear. What is on the reservation is tribal. Congress can bestow on tribes clear civil authority over non-Indians, so one set of SWM rules is possible With increased tribal authority, areas under question are likely to receive more, not less, attention than they do now. Tribes would no longer be placing their sovereignty at risk by attending to SWM matters there.

If tribal sovereignty is increased, a more consistent federal environmental policy emerges as well. EPA treatment of tribes as the governments responsible for their reservations would be backed by tribal ability to exercise that responsibility. And with both clear ability and responsibility, an explicit and consistent environmental charge would be placed on tribes. As a result, sound SWM programs would be more likely implemented.

Recommended Courses of Action

For full authority to be carried out by tribes effectively, tribal program management capacity must be developed, requiring in turn the resolution of the problems described in this study. The following courses of action are recommended.

(1)   Tribal SWM authority over non-Indians and non-trust lands should be defined by Congress. Eligibility for RCRA delegation should be granted. Where tribal authority is not clear, readily available federal authority should be in place so that tribes have a simple mechanism to deal with illegal non-Indian waste disposal.

(2)   Funding for program staffing, resources, and SWM facilities should be increased so that tribal capacity is built.

(3)Tribally appropriate and specific training materials should be developed for staff and community distribution. Basic and comprehensive training workshops, geared towards tribes with little technical background, should be offered.

(5)   Reconstruction of tribal programs to incorporate traditional leadership should be funded.

(6)   Workshops, meetings, and training for local community-tribal relationship development should be funded.

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[1]   In Jarvenpa, R., "The political economy and political ethnicity of American Indian adaptations and identities", *Ethnic and Racial Studies*, Vol. 8-1, 29-48, Jan 1985.

[2]   Cornell, S., and J. Kalt, "Reloading the dice: Improving the chances for economic development on American Indian reservations", in *What can tribes do? Strategies and institutions in American Indian economic development*, Cornell, S., and J. Kalt (ed.), American Indian Studies Center, Univ. Calif., LA, 1993.

[3]   Berkey, C., ΑIndian nations under legal assault: New restrictions in Native American sovereignty: Are they constitutional? Are they moral?@ in Wells, R. (ed.), *Native American resurgence and renewal: a reader and bibliography*, The Scarecrow Press, Inc. Metuchen, N.J. 1994.

[4]   McGuire, R., and M. Worden, "Operations on the concept of sovereignty: A case study of Indian decision-making", *Urban Anthropology*, Vol. 17, 75-86, 1988; Bee, R., "To get something for the people: The predicament of the American Indian leader", *Human Organization*, Vol. 38-3, 239-247, 1979; Trosper, R., ΑMulticriterion decision-making in a tribal context@, *Policy Studies Journal,* vol. 16-4, 1988.

[5]   For example, tribes with a high outsider or hierarchical structure aversion do not do well with outside-invested and -managed reservation projects and ventures. See Cornell, S., and J. Kalt, *Reloading the dice*, *supra* note 2 See also Jarvenpa, R., The political economy and political ethnicity of American Indian adaptations and identities, *supra* note 1.

[6]   As stated in Cornell, S., and J. Kalt, *Reloading the dice*, *supra* note 2,Α...the available evidence clearly demonstrates that tribal sovereignty is a necessary prerequisite of reservation economic development. Each present instance of substantial and sustained economic development in Indian Country is accompanied by a transfer of primary decision-making control to tribal hands and away from federal and state authorities. Sovereignty brings accountability and allows Αsuccess@ to be properly defined to include Indians= goals of

political and social well-being along with economic well-being.

[7]   For example, see Merculieff, L., AThe key to conflict resolution: Reconnection to the sacred@, a case study of a Pribilof Aleut community decision to return to traditional decision making@, *Cultural Survival*, vol. 19-3, 61-1995.

[8]   Again, the phenomenon has been observed in reservation development projects in general. See in general Cornell, S., and J. Kalt (ed.),*What can tribes do? Strategies and institutions in American Indian economic development*, American Indian Studies Center, Univ. Calif., Los Angeles, CA, 1993.

[9]   See Ragsdale, J., Jr., "Indian reservations and the preservation of tribal culture: Beyond wardship to stewardship", *UMKC Law Review*, Vol. 59-8, 503 - 554, 1991.

[10]   Geo-isolation of many tribes is due to past Federal-Indian policy of forced removal onto remote reservation lands, inhospitable to white settlers.

[11]   Ragsdale, J, Jr., *Indian reservations and the preservation of tribal culture, supra* note 9.

[12]   See for example, Pommersheim, F., "Economic development in Indian Country: What are the questions?", *American Indian Law Review*, Vol. 12, 1984.

[13]   For example, Bee, R., *To get something for the people* , *supra* note 4 and Bee, R., "The predicament of the Native American leader: a second look", *Human Organization*, Vol. 49-1, 56-63, 1990.

[14]   Assumes a life cycle of 20 yr and a return rate of 5 percent. Initial construction and capital costs for the incinerator and landfill amount to $207 and $1,200 per resident, respectively. Yearly operation and maintenances costs are $149 and $91 per resident. Field research for Zender, L., and G. Tchobanoglous, *Manual on open dumping assessment: Site closure and management*, Bureau of Indian Affairs Report, Portland Area Branch, December 1996.

[15]   Another way the decision might unfold is that the tribe *would* see the cost as too high. To defray costs, building a landfill that does not comply with federal regulations might be considered-- or perhaps maintaining, or allowing the continuance of, the present tribal waste disposal site(s). Such a scenario could explain a large number of the non-compliant tribal disposal sites on reservations. Here, the idea is that the tribe might see the benefit to tribal sovereignty as outweighing some sacrifice in design. Any ignored regulation(s) might be considered unnecessary to protect health. Due to program problems described in Chapter 6, technical knowledge to the contrary might be lacking, and tribal sovereignty concerns might make outside consultation undesirable. Too, the tribe may not wish to comply with federal regulations due to sovereignty concerns, regardless of cost feasibility. For example, monitoring and testing stipulations require the tribe to depend on outside expertise. Submitting reports can be viewed as confirming their lesser "dependent nation" legal status.

[16]   Anders, G., ASocial and economic consequences of Federal Indian Policy@, in Wells, R. (ed.), *Native American resurgence and renewal: a reader and bibliography*, The Scarecrow Press, Inc. Metuchen, N.J. 1994.

[17]   McGovern, D., *The Campo Indian landfill war: The fight for gold in California's garbage*, Univ. of Oklahoma Press, 1995.

[18]   McGuire, T., "Federal Indian policy: A framework for evaluation", *Human Organization* , Vol. 49-3, 1990. The terms Atribal sovereignty@, Aeconomic self-sufficiency@, and @cultural self-determination@, are employed by McGuire, roughly corresponding in this text to the terms tribal authority, self-determination, and cultural integrity. The primary conceptual

difference is that McGuire=s Atribal sovereignty@ refers strictly to legal authority, and tribal authority here refers both to the legal and practical authority of tribes.

19 Ibid. McGuire sees Court, Congressional, and Executive actions contrary to these objectives resulting from either attempts at balancing the three, or from exceptions necessitated by political expediency.

20 In Vellinga, M., "Many Indian casinos targeted for closure", *Sacramento Bee*, A4, May 14, 1998.

21 Ibid.

22 The 30 gaming tribes in California have combined revenues of over $1 billion dollars per year. Magagnini, S., AFor some tribes, casinos fulfill american dream@, *Sacramento Bee*, A1, A10-12, Jul 2, 1997.

23 The compact was viewed as affecting sovereignty because it required a cap on the number of slot machines, local government input, assurance of non-Indian worker compensation benefits, and allowed some non-Indian workers to unionize.

24 Vellinga, M., *Many Indian casinos targeted for closure, supra* note 20.

25 For example, the loss of explicit legal authority might be constrained at, or near, zero. But one could imagine a case where lost legal authority was specific (so that it could not affect authority elsewhere), and the gains to cultural integrity and/or economic independence enormous, so broad tribal sovereignty would increase. For example, the Makah Nation chose to resume whale hunting after many decades absence. The move was seen as strengthening tribal sovereignty as a whole because it would revive cultural heritage. But there was some loss of perceived tribal authority because, while the tribe presented its case to the International Whaling Commission, it was unable to negotiate as an independent nation, but had to receive its whale quota indirectly through dealings with the federal government. See for example, Sanchez, R., "As tribe pursues whales, protestors pursue tribe; to Indians hunt is a matter of identity, to foes, a bad precedent", Washington Post, Oct 17, 1998, A1.

26 Cornell, S., and J. Kalt, *Reloading the dice*, *supra* note 2; Trosper, R., "Mind sets and economic development on Indian reservations", in *What can tribes do? Strategies and institutions in American Indian economic development*, Cornell, S., and J. Kalt (ed.), American Indian Studies Center, Univ. Calif., LA, 1993.

27 The groundbreaking work for innovation theory is Schumpeter, J., *The theory of economic development*, Oxford University Press, New York, 1961 (first published in 1911). See also, Drandakis, E., and E. Phelps, AA model of induced inverion, growth, and distribution@, *Economic Journal*, 823-840, Dec 1966; Samuelson, P., AA theory of induced innovation on Kennedy-von Weizsäcker lines, *Review of Economics and Statistics*, 1965; Atkinson, A., and Stiglitz, J., AA new view of tecnological change@, *Economic Journal,* 573-578, Sep 1969.

28 McGovern, D., *The Campo Indian landfill war, supra* note 17.

29 Cornell, S., and J. Kalt, *Reloading the dice*, *supra* note 2.

30 Ibid.

31 For example, the most effective education tools to gain participation for the Zuni Pueblo recycling program were a videotape and school curriculum designed specifically for tribes. Tribal Solid Waste Training Needs Assessment Forum, Third National Tribal Conference on Environmental Management, Polson, Montana, May 21-23, 1996.

32 For example, the Gila River Indian Community convinced tribal members to subsidize its new collection service by initiating community discussions at several public meetings, and

allowing traditional decision making to work. The previous waste disposal practice had been open dumping at over 200 reservation sites. Ibid.

[33] Ibid., see also generally for example, Jarvenpa, R., *The political economy and political ethnicity of American Indian adaptations and identities., supra* note 1.

[34] Ibid.

[35] Gover, Stetson, and Williams, P.C., *Survey of tribal actions to protect water quality and the implementation of the tribal amendments to the Clean Water Act ,* National Indian Policy Center (NIPC), The George Washington Univ., Wash,. D.C., 1995.

[36] Tribal Solid Waste Training Needs Assessment Forum, Third National Tribal Conference on Environmental Management, Polson, Montana, May 21-23, 1996.

[37] Gover, Stetson, and Williams, P.C., *Survey of tribal actions*., *supra* note 35.

[38] Solomon, S., "Tribal/county cooperation: Making it work at the local level" *Cultural Survival Quarterly*, Fall, 56- 60 1995.

[39] For example, the Quechan Tribe closed its open dump sites upon being apprised by the SWM manager that tribal sovereignty could be negatively impacted otherwise. Tribal Solid Waste Training Needs Assessment Forum, Third National Tribal Conference on Environmental Management, Polson, Montana, May 21-23, 1996.

[40] For example, see Merculieff, L., *The key to conflict resolution: Reconnection to the sacred, supra* note 7.

[41] See for example, Bigart, R., ΑIndian culture and industrialization@, *American Anthropologist*, vol. 74, 1180-1188, 1972. The study documents a successful electronics plant on the Yankton Sioux Reservation. Through offering schedule flexibility and piecework, tribal values were accommodated, while western values of efficiency were still met.

[42] For example, while not required because of facility size, the Hopi Tribe included monitoring wells, liners, and a leachate collection system in its newly constructed landfill. Tribal Solid Waste Training Needs Assessment Forum, Third National Tribal Conference on Environmental Management, Polson, Montana, May 21-23, 1996.

[43] See for example, Cornell, S., and J. Kalt (ed.), *What can tribes do?, supra* note 26.

[44] Environmental Protection Agency, *Native American Network*, Spr 1994.

[45] Discussion notes, Indian Health Service, *Workshop on assessment of open dumping and solid waste management planning on Indian Lands*,, Red Lion Inn, Redding, Sacramento IHS Office, Sacramento, Double Tree Highland Resort, Rancho Bernardo, CA, Oct 10-11, 16-17, 22-23, 1996.

[46] Native American Environmental Protection Coalition ,*Panel presentation*, Annual Tribal Environmental Conference, EPA Region IX, Nov, 1996.

[47] Tribal Solid Waste Training Needs Assessment Forum, Third National Tribal Conference on Environmental Management, Polson, Montana, May 21-23, 1996.

[48] For example, the Intertribal Council of Arizona association has funded Arizona tribes in wastestream assessment, SWM planning, and SWM education. Southern California gaming tribes donate $75,000 per month to poorer regional tribes.

[49] Notes, *Workshop on assessment of open dumping and solid waste management planning on Indian Lands*, Indian Health Service, Rancho Bernardo, CA, Oct 22-23, 1996.

[50] For example, Castile, G., "Hegemony and Symbolism in Indian Policy", in *State and*

reservation: New perspectives on federal Indian policy, Castile, G. and R. Bee (eds.), Univ. of Arizona Press, AZ, 1992.

[51] For example, in regards to an Indian gaming bill, Council heads of several tribes were turned down for a requested meeting with the U.S. Attorney. Some weeks later, representatives from some 100 tribes came to Washington, and were granted a well-publicized meeting. Sample, H., ΑBoxer tells Indian officials she backs their stand on gambling@, *Sacramento Bee,* A5, Jun 10, 1998.

[52] Castile, G., *Hegemony and Symbolism in Indian Policy, supra* note 50.

[53] Bee, R., "Riding the paper tiger", in *State and reservation: New perspectives on federal Indian policy*, Castile, G. and R. Bee (eds.), Univ. of Arizona Press, AZ, 1992.

[54] Ibid.