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*The University of Montana*

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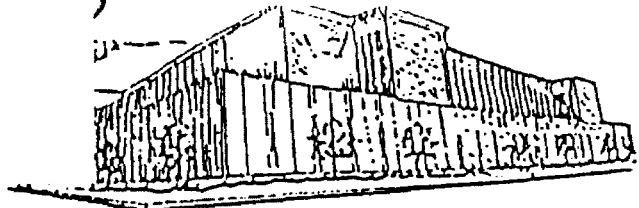
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PUBLIC-PRIVATE PARTNERSHIPS:  
STRATEGIES FOR ECONOMIC DEVELOPMENT

by

Randy T. Piper

B.S., The University of Montana, 1981

presented in partial fulfillment of the requirements


for the degree of

Master of Arts

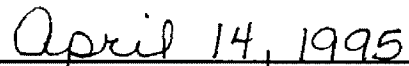
The University of Montana

1995

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Public-Private Partnerships: Strategies For Economic Development (86 pp.)

Director: Jeffrey D. Greene *JG*

During the early 1980s, the communities of Butte and Anaconda underwent a deindustrialization process. These communities lost a few thousand jobs and several thousand people. To counter the deindustrialization process, the communities utilized several public-private partnerships. This project examines two public-private partnerships and addresses the roles of these partnerships in Butte-Anaconda's economic development.

To understand the context of economic development, six perspectives are discussed. These perspectives are grounded in several social science disciplines: economics, organization theory, political science, public administration, and management.

The public-private partnership between Butte-Montana Technology Companies began as a non-profit venture in the 1980s and evolved into a for-profit venture during the 1990s. Montana Technology Companies made a transition from a fossil energy management company to an environmental technology management company. In the process of transition, Montana Technology Companies was able to maintain the job base of nearly 300 highly skilled employees in Butte.

The public-private partnership between Anaconda-Atlantic Richfield Company involved the transfer of 2,000 acres of Superfund sites to Anaconda-Deer Lodge County. Several parties were critical during transfer negotiations. These parties included the Environmental Protection Agency national and regional representatives, the state of Montana's Department of Health and Environmental Sciences, Montana's congressional delegation, and the Justice Department. The outcome was a national, precedent-setting transfer: Anaconda-Deer Lodge County became the owner of 2,000 acres of Superfund property and heir to a Jack Nicklaus-designed golf course.

The Butte-Montana Technology Companies partnership and the Anaconda-Atlantic Richfield Company partnership illustrate the complexities and dynamics of economic development. Butte-Anaconda will continue its emphasis on public-private partnerships as an economic development strategy because these partnerships have contributed significantly to Butte-Anaconda's recovery.

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## I. INTRODUCTION

Chapter 1 provides an overview of the thesis project. This chapter presents the genesis, evolution, and deindustrialization of Butte and Anaconda. The chapter also discusses the objective of the thesis project and posits the research question and highlights the contents of the remaining four chapters.

### The Genesis of Butte and Anaconda

"Gold made Butte a camp, silver made it a town, but copper made it a city," according to Steve Devitt.<sup>1</sup> By the time the Civil War had ended in 1865, Silver Bow Creek was completely staked out. Journals of that period noted Butte's population of twenty men and one woman. By 1870 Butte's population reached 241, but by 1880 the population had reached 3,363.<sup>2</sup>

The story about "The Rise of King Copper" from 1880 to 1910 is well documented as is the clash between Marcus Daly and William Andrews Clark, Montana's Copper Kings.<sup>3</sup> Butte miners, largely immigrant workers, began to mine and market the "red metal" as new technologies such as the electric light and telephone increased the value of copper.<sup>4</sup> In 1884 the construction of the large Washoe Smelter on Warm Springs Creek in Anaconda brought large-scale industry and the attention of eastern and foreign investors to Montana.<sup>5</sup>

By the 1890s Butte-Anaconda was the greatest metal-mining center in the United States. The Anaconda Copper Mining Company was the most extensive mining company in the world by the mid-1890s.<sup>6</sup> Michael Malone and Richard Etulain observed the following:

Western copper came to command U.S. and world markets during the 1890s in the wake of ascendancy over the formerly dominant Michigan mines. As the "red metal" expanded in usage with the rising electrical and telephone industries, first Montana, dominated by the Anaconda Copper Mining Company, and then Arizona, led by Phelps Dodge, boomed as copper provinces.<sup>7</sup>

Although Butte-Anaconda had become a copper province by the 1890s, this ascendancy was not without costs. In the 1870s copper ores in Butte were roasted in open pits that produced fumes of sulfur and arsenic and smoke so thick that street lamps burned on city streets at midday. Cows grazing in nearby areas had their teeth coated with fugitive copper fallen from the air.<sup>8</sup> Isaac Edinger, a nearby rancher of that time, stated:

I used to carry a few of those gold-colored teeth in my pocket all the time because no one would believe me, and I'd have to show 'em. When they were shown they always wanted to keep the evidence, and I'd have to get a new supply every time I went back to the slaughterhouse.<sup>9</sup>

### The Evolution of Butte and Anaconda

During the Modern Montana period, 1920 to 1990, Montana's economy underwent several changes. In agriculture 82,000 Montanans were employed in 1920. By 1988, only 35,500 were employed.<sup>10</sup> One reason for this employment

decline was the substitution of technology for labor. Farms and ranches became more productive with the use of tractors, combines, bailers, and irrigation technology.

The extractive industries such as metal mining also underwent several changes during the Modern Montana period. Beginning in the 1920s the Anaconda Company, formerly Anaconda Copper Mining Company and now the world's largest copper producer, began to further vertically diversify. The Company purchased control of Connecticut-based American Brass Company, the world's greatest producer of brass, a copper alloy in 1922. This purchase made the Anaconda Company the world's leading copper fabricator. Then Anaconda developed a fabricating subsidiary, the Anaconda Wire and Cable Company, with plants in Great Falls and outside the state.<sup>11</sup>

In 1923 the Anaconda Company paid \$77 million for the Chuquicamata mine in the Andes Mountains of Chile. This mine and other Latin America mines produced two-thirds of Anaconda's primary copper and three-fourth's of its earnings.<sup>12</sup> During the mid-1920s two of Anaconda's companies, Andes Copper and Chuquicamata, dominated the Chilean copper industry.<sup>13</sup> In 1928 Anaconda purchased the remaining properties of the late W.A. Clark and in 1929 it completed the acquisition of the Green Cananea Copper Company in northern Mexico.<sup>14</sup>

Whenever political discontent toward the Anaconda

Company arose during the 1930s and 1940s, rumors would circulate that the Company was planning to withdraw from Butte-Anaconda. However, these rumors subsided when the "Greater Butte Project" was announced in 1947. This Project was aimed at extracting low-grade ores by using a process of underground blasting called block-caving. This new process was not cost effective and was replaced with open-pit mining in the early 1950s.<sup>15</sup> In the 1950s open-pit mining replaced underground mining. Technology also became a substitute for labor: Trucks and cranes replaced hardrock miners. In 1955 the Anaconda Company made its only new commitment to the state since World War II with its aluminum operation at Columbia Falls and Great Falls.<sup>16</sup>

During the 1960s the Anaconda Company's influence began to decline from its zenith. The Company sold its newspapers. Moreover, it began to disassociate with the Montana Power Company.<sup>17</sup> According to Michael Malone, Richard Roeder, and William Lang, "[b]y the late 1960s, Anaconda bore little resemblance to the fiery dragon it had once been."<sup>18</sup>

The Anaconda Company's decline was enhanced by Latin American politics. The Company's Chilean assets were seized and nationalized by the government in 1971.<sup>19</sup> Felipe Larrain and Patricio Meller observed that "[t]he most important problem that the government encountered as a result of the copper nationalization was not inside Chile.

Rather, it was related to the issue of compensating the previous foreign owners, that is, the U.S. companies Anaconda and Kennecott."<sup>20</sup> The Anaconda Company declared a net loss of nearly \$358 million because of the nationalization.<sup>21</sup> The loss of Chilean assets forced the company to rely heavily on its domestic mines in Montana, Arizona, and Nevada. In 1972 the Anaconda Company sold its lumber operation, including 670,500 acres of Montana forestland, to Champion International for \$117 million.<sup>22</sup> Malone and Etulain described the decline of metal mining in the West in these terms:

Western copper-based mining crumbled during the 1970s and then crashed in the 1980s. A flood of cheap copper imports from South America and Africa, high labor costs, toughening environmental protection laws, and the loss of their communication markets to satellites and fiber-optic wire combined to undercut the region's miners. The coup de grace came during the 1970s when booming oil-energy conglomerates set out to buy up the devalued western metal companies. Sohio acquired Kennecott, Arco got Anaconda, Gulf Resources and Chemical bought Idaho's Bunker Hill works, and so forth. The oilmen dreamed of new riches in integrated resource conglomerates, but by the 1980s they faced only tightening markets and big losses. So in the early 1980s came the great unloading.<sup>23</sup>

### The Deindustrialization of Butte and Anaconda

Barry Bluestone and Bennett Harrison define deindustrialization as "a widespread, systematic disinvestment in the nation's basic productive capacity."<sup>24</sup> During the 1970s they estimate that "between 450,000 and 650,000 jobs in the private sector, in both manufacturing

and non-manufacturing, were wiped out somewhere in the United States by the movement of both large and small runaway shops."<sup>25</sup> Bluestone and Harrison also estimate that "[w]hen the employment lost as a direct result of plant, store, and office shutdowns during the 1970s is added to the job loss associated with runaway shops, it appears that more than 32 million jobs were destroyed."<sup>26</sup>

A similiar deindustrialization process occurred in the Butte-Anconda area during the 1970s. Between December 1974 and February 1975 the Anaconda Company announced the termination of one-third of its Montana workforce, nearly 2,200 employees. The Company began phasing out the last of the underground mines, the old ore concentrator and foundry at Anaconda, and the recently begun Continental-East open-pit mine at Butte.<sup>27</sup>

In 1977 Atlantic Richfield Company (ARCO), a California-based multinational, bought The Anaconda Copper Company, which became ARCO's Anaconda Minerals Division. Many Montanans welcomed the move because they thought ARCO would recapitalize the outdated technology of its new Minerals Division. However, on the supply-side Latin America and South African producers flooded the market and on the demand-side new communication technologies such satellites and fiber optics required no copper. These dramatic events caused ARCO to continue what The Anaconda Copper Company had begun.<sup>28</sup> In 1980 ARCO closed down and dismantled the old

Anaconda Washoe smelter. In 1983 ARCO terminated all its mining operation at Butte and fired the last 700 employees there. The result: the population of Butte and Anaconda fell from 50,600 in 1980 to 43,200.<sup>29</sup>

### Objective of Thesis

The objective of this project is to identify the roles of public-private partnerships in Butte-Anaconda's economic recovery. In 1980 Atlantic Richfield Company (ARCO) announced the closure of Anaconda's smelter and Butte's mine. The economic impact was devastating. Nearly 80 percent of the entire annual payroll of Anaconda's 12,000 people would be eliminated.<sup>30</sup> In Butte the final round of mine layoffs in 1983 prompted NBC news analyst Tom Brokaw to comment that the town was dead.<sup>31</sup>

Two public-private partnerships have assisted in Butte-Anaconda's economic recovery. In the first partnership, Butte has benefitted from the expanded role of Montana Technology Companies (MTC). MTC has evolved from a Department of Energy (DOE) project manager for generating electricity from fossil fuel to a project manager for commercializing environmental technology. DOE has recently designated MTC to manage its Western Environmental Technology Office.

In the second partnership, Anaconda has benefitted from ARCO's innovative solution. On a Superfund site ARCO will

build a golf course and transfer title to Anaconda. Instead of merely restoring a Superfund site to its original condition, ARCO will add value to the site by constructing an asset that should generate resources for the community. Thus, this project will address the following research question: **What roles have public-private partnerships played in Butte-Anaconda's economic development?**

### Overview of Thesis

Chapter 1, Introduction, offers an historical sketch of the beginning, evolution, and decline of the Butte-Anaconda area from 1865 to 1985. Chapter 2, The Theory Of Public-Private Partnerships, will review different partnership models. Several disciplines such as public administration, economic development, and organization theory provide the foundations for these models. Chapter 3, The Butte-Montana Technology Companies Partnership, will describe key community and corporate players responsible for creating a regional environmental technology center. The key players include the U.S. Department of Energy, Montana's Congressional delegation, and Montana Technology Companies. Chapter 4, The Anaconda-Atlantic Richfield Company Partnership, will describe key community and corporate players responsible for creating the first Superfund golf course. The key players include the Environmental Protection Agency, the U.S. Justice Department, the Montana



Health and Sciences Department, Anaconda-Deer Lodge County, and Atlantic Richfield Company. Chapter 5, Conclusion, will assess the observations, limitations, and conclusions of this project. The chapter will also discuss the implications of public-private partnerships for economic development.

Finally, for the purpose of this thesis, "Butte" refers to the Butte community at large. It does not denote any particular public or private organization in Butte.

"Anaconda" refers to the Anaconda community at large. However, the actual (legal) partnership occurs between Anaconda-Deer Lodge County and ARCO, although the partnership will affect the broader Anaconda community.

Footnotes

<sup>1</sup>Steve Devitt, Butte: The Town And The People (Helena: American Geographic Publishing, 1988), p. 27.

<sup>2</sup>Ibid., pp. 20-22.

<sup>3</sup>For a selected bibliography, see Michael Malone, Richard Roeder, and William Lang, Montana: A History Of Two Centuries, revised ed., (Seattle: University of Washington Press, 1991), pp. 426-428.

<sup>4</sup>Michael Malone, Richard Roeder, and William Lang, Montana: A History Of Two Centuries, revised ed., (Seattle: University of Washington Press, 1991), p. 201.

<sup>5</sup>Ibid., p. 203.

<sup>6</sup>Ibid., pp. 209-210.

<sup>7</sup>Michael Malone and Richard Etulain, The American West: A Twentieth-Century History (Lincoln: University of Nebraska Press, 1989), p. 24.

<sup>8</sup>C.B. Classcock, The War Of The Copper Kings: Builders Of Butte And Wolves Of Wall Street, (New York: Grosset & Dunlap, 1935), p. 85.

<sup>9</sup>Ibid., p. 86.

<sup>10</sup>Malone, Roeder, and Lang, p. 322.

<sup>11</sup>Ibid., p. 324.

<sup>12</sup>Ibid., p. 324.

<sup>13</sup>Thomas Skidmore and Peter Smith, Modern Latin America, 3rd ed., (New York: Oxford University Press, 1992), p. 115.

<sup>14</sup>Malone, Roeder, and Lang, p. 324.

<sup>15</sup>Ibid., p. 324.

<sup>16</sup>Ibid., p. 325.

<sup>17</sup>Ibid., p. 325.

<sup>18</sup>Ibid., p. 325.

<sup>19</sup>Ibid., p. 325.

<sup>20</sup>Felipe Larrain and Patricio Meller, "The Socialist-Populist Chilean Experience, 1970-1973," in The Macroeconomics Of Populism In Latin America, eds. Rudinger Dornbusch and Sebastian Edwards (Chicago: The University of Chicago Press, 1991), pp. 184-185.

<sup>21</sup>Malone, Roeder, and Lang, p. 325.

<sup>22</sup>Ibid., p. 325.

<sup>23</sup>Malone and Etulain, p. 245.

<sup>24</sup>Barry Bluestone and Bennett Harrison, The Deindustrialization Of America: Plant Closings, Community Abandonment, And The Dismantling Of Basic Industry (New York: Basic Books, 1982), p. 6. For a contrary position to the deindustrialization thesis, see Richard McKenzie, Plant Closings: Public Or Private Choices?, revised ed., (Washington, D.C.: Cato Institute, 1984) and Richard McKenzie, Fugitive Industry: The Economics And Politics Of Deindustrialization (Cambridge: Ballinger Publishing Company, 1984).

<sup>25</sup>Ibid., p. 25.

<sup>26</sup>Ibid., p. 26.

<sup>27</sup>Malone, Roeder, and Lang, p. 327.

<sup>28</sup>Ibid., p. 327.

<sup>29</sup>Ibid., p. 327.

<sup>30</sup>Bluestone and Harrison, p. 69.

<sup>31</sup>The Montana Standard, 29 November 1992.

## II. THE THEORY OF PUBLIC-PRIVATE PARTNERSHIPS

This chapter identifies six perspectives from which to view public-private partnerships. Economics provides the basis for the market failure perspective. Organization theory and political science provide the bases for the Perry and Rainey perspective. Economics and public administration provide the bases for both the Savas perspective and the Osborne and Gaebler perspective. Economics and management provide the bases for the technopolis perspective. Finally, management provides the basis for the Waddock perspective.

Oliver Williamson observes that "[c]omplex systems are usually studied from several points of view."<sup>1</sup> In part, Williamson's observation is a guide for selection of the six perspectives. Moreover, identification of these six perspectives does not imply that this chapter offers a comprehensive or exhaustive review of public-private partnerships. Finally, the word "perspective" is intentionally selected for two reasons. First, a perspective provides a way to view and sort complex information. Second, a perspective suggests that it is one way to view or sort information, but it is not the only way to view or sort information.

### The Market Failure Perspective

Political theorists employ "the state of nature" as a

theoretical construct for explaining the genesis of government.<sup>2</sup> Similarly, economic theorists employ "the general equilibrium" as a theoretical construct for explaining the role of government. In the context of allocation, Francis Bator defines market failure as "the failure of a more or less idealized system of price-market institutions to sustain 'desirable' activities or to stop 'undesirable' activities."<sup>3</sup> This idealized system is general equilibrium, or perfect competition in the long-run.

Under equilibrium conditions of perfectly competitive markets such as homogeneous products, no barriers to entry, and a large number of competitors, an ideal condition of efficiency is achieved.<sup>4</sup> James Gwartney and Richard Stroup offer this description of the Pareto-optimum solution:

Each good is produced as long as consumers value it more than the alternative goods that might be produced with the same resources. Conversely, no unit of the good is produced if a more valuable alternative must be forgone. Therefore, no allocation of resources toward production of different goods--could benefit any one person without simultaneously hurting someone else.<sup>5</sup>

Economists describe this ideal condition of allocative efficiency as Pareto-optimum.<sup>6</sup> That is, once this condition is achieved, it is impossible to make anyone better off without making someone else worse off.<sup>7</sup>

Economists generally identify two sources of market failure: (1) externalities, and (2) increasing returns.<sup>8</sup> Externalities arise when a non-consenting, second party is helped or hurt. Positive externalities such as a lighthouse

for ships benefit others; negative externalities such as pollution make others worse off.<sup>9</sup> Increasing returns arise under three conditions: production economies, transaction costs, and imperfect information. Production economies of scale occur when an increase in production volume leads to a decrease in average, per unit cost. Transactions costs create obstacles to exchanges such as the costs of finding parties with whom to trade and the costs of enforcing agreements. Imperfect information implies that consumers lack complete or accurate information about a product. These three conditions create entry barriers to markets, which limit the number of competitors and result in "above average" industry returns.<sup>10</sup>

In sum, the presumption is that market failures give rise to governments. Governments offer remedies for externalities and increasing returns. Stated differently, public organizations help private organizations overcome their shortcomings.

#### The Perry and Rainey Perspective

Perry and Rainey found the contemporary literature on the public-private distinction to be inadequate. As such, they devised a typology that was more comprehensive than previous typologies. As Table 2.1 illustrates, organizations may be classified based on ownership, funding, or mode of social control.<sup>11</sup>

**TABLE 2.1\***  
**TYPOLGY OF ORGANIZATIONS**

<b>Ownership</b>	<b>Funding</b>	<b>Mode of Social Control</b>	<b>Description</b>
1. Public	Public	Polyarchy	Bureau
2. Public	Private	Polyarchy	Government Corporation
3. Public	Public	Market	Government Enterprise
4. Public	Private	Market	State-Owned Enterprise
5. Private	Public	Polyarchy	Government-Sponsored Enterprise
6. Private	Private	Polyarchy	Regulated Enterprise
7. Private	Public	Market	Government Contractor
8. Private	Private	Market	Market

\*Adapted from Perry and Rainey (1988), p. 196.

The first category is a bureau such as the Bureau of Labor Statistics. The second category is a government corporation such as the Pension Benefit Guaranty Corporation. The third category is a government enterprise such as Amtrak. The fourth category is a state-owned enterprise such as Airbus. The fifth category is a government-sponsored enterprise such as the Corporation for Public Broadcasting. The sixth category is a regulated enterprise such as Montana Power Company. The seventh category is a government contractor such as Boeing. Finally, the eighth category is a market such as IBM.

Although previous typologies made a distinction between ownership patterns such as taxpayer versus stockholder and between funding sources such as public revenue or private sales, these typologies never incorporated the mode of social control, or structural contexts.<sup>12</sup> Perry and Rainey define the three ideal-typical forms of structural context:

In a **market context**, organizations must react to the choices of numerous buyers and sellers who have no organized intent to control the organization. In a **hierarchical context**, a central government directs the allocation of resources and enforces rules and procedures concerning the production of goods and services. In a **polyarchic context**, there is the bargaining and persuasion of groups of external organizations and individuals, who have some degree of control of the target organization.<sup>13</sup>

In short, the mode of social control is the extent to which an organization's domain is controlled by polyarchy or markets. Domain elements include rules for establishment and termination, goods and services, geographical sphere of



operations, clients, and major technologies. Moreover, the mode of social control is a continuum of structures and processes, not a dichotomy.

### The Savas Perspective

In his study of the intrinsic characteristics of goods and services, Savas identifies two important properties or dimensions for classifying goods (or services): exclusion or consumption. If a supplier can readily deny the acquisition or use of the good, then the good has the characteristic of exclusion. For example, a suit of clothes has this property; a fish in the ocean does not. If a good can be consumed individually, then it is an individual-consumption good such as eating a loaf of bread. If a good can be consumed jointly and simultaneously by many users, then it is a joint-consumption good such as viewing a television broadcast.<sup>14</sup>

The degree to which goods and services possess these two properties results in four idealized types: private goods, toll goods, common-pool goods, and collective goods. Private goods are characterized by exclusion and individual consumption. Toll goods are characterized by exclusion and joint consumption. Common-pool goods are characterized by nonexclusion and individual consumption. Collective goods are characterized by nonexclusion and joint consumption.<sup>15</sup>

An example of a private good is a fish in a creel;

however, a fish in the ocean is a common-pool good. An example of a toll good is a national park; national defense is a collective good. Toll goods, common-pool goods, and collective goods are frequently referred to as "public goods." Thus, it is the nature of the good or service that determines whether public or private organizations should provide the good or service.

Savas separates the provision of goods and services into three functional areas: ownership, management, and operations. Savas divides these three functional areas between public and private organizations in eight different categories. Table 2.2 provides an overview of the eight categories.<sup>16</sup>

The first category is a typical public system or government-owned enterprise such as the U.S. Postal Service. The second category is a management contract such as hiring a private firm to manage a public bus system where buses are publicly owned and workers are public employees. The third category is a management and operations contract such as a private firm to run a country hospital. The fourth category is an operations contract such as manpower leasing or hiring temporary clerical staff. The fifth category is equipment and facility leasing such as a public agency renting a building. The sixth category is a typical private system such as IBM. The seventh category is a government takeover such as nationalizing the steel industry in an emergency.

**TABLE 2.2\***  
**FUNCTIONAL DIVISION OF SERVICE ACTIVITIES**

Ownership	Function		Description
	Management	Operation	
1. Public	Public	Public	Typical public system or state-owned enterprise
2. Public	Private	Public	Management contract
3. Public	Private	Private	Management and operations contract
4. Public	Public	Private	Operations contract
5. Private	Public	Public	Equipment and facility leasing
6. Private	Private	Private	Typical private system
7. Private	Public	Private	Government takeover
8. Private	Private	Public	Government-paid workers assigned to a private firm

\*Adapted from Savas (1987), p. 87.

Finally, the eighth category is government-paid workers assigned to a private firm such as an employment training program.

### The Osborne and Gaebler Perspective

Using Savas' analytical framework as a baseline, Osborne and Gaebler introduce another organizational category: the third sector. The third sector is non-profit organizations such as religious organizations, community groups, and professional associations. As such, Osborne and Gaebler identify which sector -- public, private, or third -- is most effective at a given task. Table 2.3 summarizes their assessment.<sup>17</sup>

The public sector is most effective at tasks such as regulation and enforcement of equity, among others. The private sector is most effective at tasks such as investment and profit generation, among others. And the third sector is most effective at tasks such as volunteer labor and promotion of community, among others.

### The Smilor, Gibson, and Kozmetsky Perspective

Smilor, Gibson, and Kozmetsky's perspective is primarily empirically based. They derive their framework, the technopolis, from studying the dynamics of high-technology development and growth in Austin, Texas during the 1980s. The term "technopolis" reflects an emphasis on

TABLE 2.3\*

## TASKS BEST SUITED TO EACH SECTOR

(E = effective, I = ineffective, D = depends on context)

	Public	Private	Third
<b>Best Suited to Public Sector</b>			
Policy management	E	I	D
Regulation	E	I	D
Enforcement of equity	E	I	E
Prevention of discrimination	E	D	D
Prevention of exploitation	E	I	E
Promotion of social cohesion	E	I	E
<b>Best Suited to Private Sector</b>			
Economic tasks	I	E	D
Investment tasks	I	E	D
Profit generation	I	E	I
Promotion of self-sufficiency	I	E	D
<b>Best Suited to Third Sector</b>			
Social tasks	D	I	E
Volunteer labor tasks	D	I	E
Minimal profit tasks	D	I	E
Promotion of community	D	I	E
Commitment to others' welfare	D	I	E

\*Adapted from Osborne and Gaebler (1992), p. 348.

technology and the balance between public and private sectors.<sup>18</sup> They note that "[n]ew relationships between public and private sectors -- especially among business, government, and academia -- are having far reaching consequences on the way we think about and take action on economic development."<sup>19</sup>

Table 2.4 summarizes the technopolis, which consists of seven major partners: the research university, large technology companies, small technology companies, federal government, state government, local government, and support groups.<sup>20</sup> Smilor, Gibson, and Kozmetsky emphasize that key individuals, or influencers, are critical to linking the seven partners.<sup>21</sup>

#### The Waddock Perspective

Based on an empirical study of five public-private partnerships in the Boston, Massachusetts area, Waddock identifies six linking mechanisms. Table 2.5 describes these six mechanisms.<sup>22</sup> Mandates involve legislation which requires interaction between the public and private sectors. Networks involve connections between individuals or groups who generally work for unrelated organizations. Brokers are third party individuals or groups who bring together or maintain relationships. Common visions are shared goals which motivate people to work together. Crises are also shared goals which motivate people. Visionary leadership

TABLE 2.4\*

**THE TECHNOLIS PARTNERS**

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**University**

Engineering  
Business  
Natural science  
Research centers  
Other

**Large Corporations**

Fortune 500 Headquarter branches  
Major research & development and/or sales  
Major employer

**Emerging Companies**

University spin-off  
Large company spin-off  
New ventures

**Federal Government**

Sponsored research  
Defense spending

**State Government**

Education support  
Programs

**Local Government**

Infrastructure  
Competitive rates  
Quality of life

**Support Groups**

Community  
Chamber  
Business

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\*Adapted from Smilor, Gibon, and Kozmetsky (1989), p. 51.

**TABLE 2.5\***  
**THE LINKING MECHANISMS**

<b>Linking Mechanism</b>	<b>Description</b>
Mandates	Legislation requiring interaction between public and private sectors.
Networks	Existing relations among individuals who work for otherwise unrelated organizations. Types include personal-social, business-professional, political, and community-civic.
Brokers	Organizations that attempt to bring or keep otherwise unrelated organizations working together toward some common goal through structuring meetings, providing funding, or other activities.
Common Vision	A shared sense of the commonality, common purpose, or common problems faced within or by a region or group of organizations.
Crisis	A very difficult issue, concern, or problem around which much attention is focused so that it can be resolved.
Visionary Leadership	The leadership of a forward thinking individual who through personal or other characteristics is able to draw the attention of others to issues in which the leader is interested.

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\*Adapted from Waddock (1986), p. 279.



involves an individual who rallies others toward support of the vision.

As the descriptions indicate, the categories are not mutually exclusive. For example, a public-private partnership may exist because of a mandated network. That is, public-private organizations form a partnership owing to the mandated aspect, but the partnership necessitates the assistance of other, unrelated public or private organizations to implement the mandate. Moreover, one group's vision may be another group's crisis. For example, regarding the results of the 1994 General Election, the Democratic Party interprets the outcome as a crisis. In sharp contrast, the Republican Party interprets the outcome as Americans embracing its common vision or "Contract With America," an aggressive legislative agenda for the first 100 days in 1995. Part of this common vision arose from the "visionary leadership" of Newt Gingrich, the new Speaker of the House. Newt Gingrich, who describes himself as a "futurist conservative," integrates Thomas Jefferson's view of government, Arthur Laffer's view of economics, and Alvin Toffler's view of the information society. In short, Waddock observes that "[t]hese linking mechanisms, singly or in combination, provide a rich set of interorganizational linkages that can facilitate partnership if they are present or hinder its development if they are lacking."<sup>23</sup>

Waddock notes that public-private partnerships are a

function of the presence or absence of the linking mechanisms in their environments. Thus, Waddock argues for an "environmental analysis" to determine whether a partnership is feasible. Partnership feasibility improves under three conditions: (1) specific issues, (2) mutual benefits, and (3) true interdependency.<sup>24</sup>

### Summary

This chapter provided six perspectives from which to view public-private partnerships. The market failure perspective views the public sector as a remedy for the private sector's shortcomings. These shortcomings or failures arise from two sources: externalities and increasing returns. The Perry and Rainey perspective distinguishes public organizations from private organizations. This perspective classifies organizations based on ownership, funding, and mode of social control. The Savas perspective develops another classification scheme for public and private organizations. This perspective uses the inherent characteristics of goods and services to determine whether public or private organizations are the best suppliers. This perspective classifies public and private organizations based on ownership, management, and operation.

The Osborne and Gaebler perspective builds on the work of the Savas perspective. Osborne and Gaebler assign

various tasks to three sectors: public, private, and third. The tasks are "weighted" based on their degree of effectiveness. The Smilor, Gibson, and Kozmetsky perspective identifies eight partners for creating a "technopolis." Their perspective derives from observations of the emerging technopolis of Austin, Texas. Finally, the Waddock perspective provides insight to creating public-private partnerships. This perspective describes the various linking mechanisms necessary for initiating and maintaining partnerships.

### Footnotes

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<sup>2</sup>Robert Nozick, Anarchy, State, And Utopia (New York: Basic Books, 1974), p. 22.

<sup>3</sup>Francis Bator, "The Anatomy Of Market Failure," in The Theory Of Market Failure: A Critical Examination, ed. Tyler Cowen (Fairfax: George Mason University Press, 1988), p. 35. Also, see William Mitchell and Randy Simmons, Beyond Politics: Markets, Welfare, And The Failure Of Bureaucracy (Boulder: Westview Press, 1994), pp. 1-37.

<sup>4</sup>James Gwartney and Richard Stroup, Economics: Private And Public Choice, 6th ed., (New York: The Dryden Press, 1992), pp. 476-477.

<sup>5</sup>Ibid., pp. 494-495.

<sup>6</sup>Dominick Salvatore, Microeconomic Theory, 2nd ed., (New York: McGraw Book Company, 1983), p. 312.

<sup>7</sup>Bator, p. 7.

<sup>8</sup>Charles Wolf, Jr., Markets Or Governments: Choosing Between Imperfect Alternatives (Cambridge: The MIT Press, 1988), pp. 20-26.

<sup>9</sup>Tyler Cowen, "Introduction," in The Theory Of Market Failure: A Critical Examination, ed. Tyler Cowen (Fairfax: George Mason University Press, 1988), p. 2.

<sup>10</sup>Dennis Yao, "Beyond The Reach Of The Invisible Hand: Impediments To Economic Activity, Market Failures, And Profitability," Strategic Management Journal 9 (1988): 59-64.

<sup>11</sup>James Perry and Hal Rainey, "The Public-Private Distinction In Organization Theory: A Critique And Research Strategy," Academy of Management Review 13 (1988): 196.

<sup>12</sup>Ibid., p. 192.

<sup>13</sup>Ibid., p. 193.

<sup>14</sup>E.S. Savas, Privatization: The Key To Better Government (Chatham: Chatham House Publishers, 1987), p. 56.

<sup>15</sup>Ibid., p. 56.

<sup>16</sup>Ibid., p. 87.

<sup>17</sup>David Osborne and Ted Gaebler, Reinventing Government: How The Entrepreneurial Spirit Is Transforming The Public Sector (New York: Penguin Books, 1993), p. 347.

<sup>18</sup>Raymond Smilor, David Gibson, and George Kozmetsky, "Creating The Technopolis: High Technology Development In Austin Texas," Journal Of Business Venturing 1 (1989): 50.

<sup>19</sup>Ibid., p. 50.

<sup>20</sup>Ibid., p. 50.

<sup>21</sup>Raymond Smilor, George Kozmetsky, and David Gibson, "The Austin/San Antonio Corridor: The Dynamics Of A Developing Technopolis," in Creating The Technopolis: Linking Technology Commercialization And Economic Development, eds. Raymond Smilor, George Kozmetsky, and David Gibson (Cambridge: Ballinger Publishing Company, 1988), p. 145.

<sup>22</sup>Sandra Waddock, "Public-Private Partnership As Social Product And Process," in Research In Corporate Social Performance, ed. James Post (Greenwich: JAI Press, 1986), p. 279.

<sup>23</sup>Ibid., p. 279.

<sup>24</sup>Ibid., p. 293.

### III. The BUTTE-MONTANA TECHNOLOGY COMPANIES PARTNERSHIP

This chapter reviews the public-private partnership between Butte and Montana Technology Companies (MTC). Although MTC has a parent organization, Montana Energy Research and Development Institute (MERDI), this chapter focuses on MTC and its subsidiaries since MTC is the for-profit arm of the Montana Energy Research and Development Institute. This chapter examines the evolution of Montana Technology Companies in the context of dramatic changes during 1993 and 1994.

#### Montana Energy Research and Development Institute

The Montana Energy Research and Development Institute (MERDI) was formed in 1974 by a group of Montanans led by then-U.S. Senator Mike Mansfield. MERDI had three objectives: to create high technology jobs, to contribute to civic and community jobs, and to support education. From 1976 to 1980 MERDI operated the Component Development and Integration Facility (CDIF) for the U.S. Department of Energy.<sup>1</sup> In 1980 MERDI founded Mountain States Energy (MSE) to administer, manage, and develop its for-profit activities.<sup>2</sup>

Until April 1989 MERDI wholly owned two for-profit subsidiaries: The Center for Innovation and Mountain States Energy. In April 1989 MERDI created a new wholly owned

subsidiary, Montana Technology Companies (MTC). MERDI transferred The Center for Innovation's and Mountain States Energy's stock to Montana Technology Companies (MTC) in exchange for 100 percent of the outstanding stock of MTC.<sup>3</sup>

In sum, the Montana Energy Research and Development Institute (MERDI) now owns Montana Technology Companies (MTC). MTC now owns three subsidiaries: Mountain States Energy (MSE), The Center for Innovation (CFI), and Western Environmental Services and Technologies (WEST). However, CFI and WEST are currently inactive and neither provide services nor produce revenues.<sup>4</sup>

#### Component Development and Integration Facility

The Component Development and Integration Facility (CDIF) was built in 1977 on a 53-acre site and is owned by the U.S. Department of Energy. During 1980 Mountain States Energy (MSE) assumed MERDI's contract and has since managed the CDIF site and the Magnetohydrodynamics Program until termination of the project on September 30, 1993.<sup>5</sup> The objective of Magnetohydrodynamics (MHD) was to develop cleaner energy output from various raw material inputs. MHD uses magnets to improve coal's generating ability while burning it cleanly at the same time.<sup>6</sup> MHD has the potential to double energy output of conventional generating facilities with no increase in fuel consumption or air pollutants. The MHD process would reduce particle emissions

by about 90 percent, and sulfur dioxide emissions by 99 percent.<sup>7</sup>

During the 1980s the MHD Program achieved several research and development milestones. In April 1981, MHD electrical power was first generated using an oil-fire combustor. One year later electric power was successfully inverted and supplied to the local power grid. The Westinghouse-designed inverter, which converts the generated electricity from direct current to alternating current, was provided to CDIF by the Electric Power Research Institute (EPRI), a non-profit consortium of more than 630 electric utility companies.<sup>8</sup>

In September 1984 coal-fired combustor testing was initiated and electric power was produced and transmitted through the inverter the following year. During 1992 coal-fired combustor testing was completed, prototypic hardware was installed, and electric power was generated. During 1993 other technical accomplishments were achieved such as 700 hours of electrical and thermal testing.<sup>9</sup>

Since the MHD Project had demonstrated "proof-of-concept," the Project was ready to move from the lab to the field, where the technology would be test marketed. The proposed \$650 million Billings MHD Demonstration Project would test the commercial viability of MHD during the fifth round of the Department of Energy's Clean Coal Technology Demonstration program.<sup>10</sup> The test market selected was



Montana Power Company's J.E. Corette plant in Billings since the project was developed both by MTC and MPC. The Department of Energy would partially fund the refitting of MPC's plant.<sup>11</sup> However, during May 1993 the Department of Energy decided against naming MHD technology a recipient of a Clean Coal V award, which killed the hopes of transferring the technology to MPC's coal-fired, electrical generating plant in Billings.<sup>12</sup>

#### Montana Technology Companies' Diversification

Beginning in the 1990s, Montana Technology Companies began to diversify. The Department of Energy was funding MHD research at \$40 million in fiscal 1991 and fiscal 1992. MTC's share would be approximately \$12 million to \$15 million each year. But the Department of Energy budgeted MHD funds of only \$30 million for fiscal 1993 and no funds during fiscal 1994.<sup>13</sup> Consequently, MTC began to locate other sources of revenue.

In August 1990 Senators Max Baucus and Conrad Burns introduced legislation that would allocate \$3.5 million in fiscal 1991 toward creation of a mining waste technology center. The Baucus-Burns bill would make the Environmental Protection Agency the primary funding source.<sup>14</sup> As Senator Baucus stated, "[t]here's no place in the country better suited, with better qualified people and companies, than Butte."<sup>15</sup>

The Baucus-Burns bill became law and established the National Mine Waste Technology Center. The Center had several objectives: (1) to develop, test, and certify innovative technologies which can be used to remove, recover, and decontaminate mine wastes, (2) to train and educate mine waste personnel and managers on the use of innovative technologies, (3) to promote the transfer of mining and industrial waste technologies between and among government agencies, as well as private industry, and (4) to establish a national mine waste data base and serve as a clearinghouse for information on existing and developing technologies.<sup>16</sup>

In August 1991 MTC participated in the first National Mine Waste Technology Conference sponsored by the Department of Energy and the Environmental Protection Agency's National Mine Waste Technology Center. EPA distributed funds to the Center which would be located at DOE's CDIF site.<sup>17</sup> Although the federal government had pledged \$3.5 million annually and the state \$300,000, this nearly \$4 million would be less than one-third of the annual budget MTC had received for the MHD Program.<sup>18</sup>

Beginning in April 1993, Montana Technology Companies faced a potential budget crisis since 60 percent of MSE's \$25 million budget came from the MHD Program. The Department of Energy budgeted \$2 million for the CDIF site in fiscal 1994, far below its \$15 million budget for fiscal

1993. The funds were targeted for shutting down the MHD program at the CDIF site. As of April 1993, DOE had invested more than \$750 million nationally in MHD technology.<sup>19</sup> According to Don Peoples, MTC's CEO, "[t]he most serious ramification of this whole thing is the loss of technical ability we've developed at the CDIF."<sup>20</sup>

On May 5, 1993, the Department of Energy passed over the Billings MHD Demonstration Project. The DOE also proposed closing down the CDIF facility in Butte where MHD testing had taken place since 1977. In a letter to DOE Secretary O'Leary, Senator Burns expressed disappointment that none of the five projects funded during Clean Coal V were from western states. The five states selected were Kentucky, Ohio, New Jersey, Pennsylvania, and Maryland.<sup>21</sup>

During 1992 Montana's congressional delegation was able to secure a new funding source. The National Environmental Waste Technology and Testing Center (NEWTTEC) was created to investigate methods for mining, energy, defense, industrial and other wastes. Federal participants include these agencies: EPA, Agriculture, Energy, Interior, and Defense.<sup>22</sup> The Department of Defense promised to fund the National Environmental Waste Technology and Testing Center. However, by April 4, 1993 the Department of Defense had not released the \$10 million promised for NEWTTEC.<sup>23</sup> Given the May 5 announcement that the DOE had proposed to close the CDIF site, MTC would face a substantial reduction in revenue of

\$25 million. On May 28 Lee Aspin, Secretary of Defense, announced that DOD would spend \$10 million on NEWTTEC which had been promised in 1992. As Don Peoples noted, "[w]e've still got a \$15-million gap that we've got to make up."<sup>24</sup>

To make up the budget shortfall, MTC considered other uses such as air and space research for the CDIF site. The MHD Program had produced knowledge and technology that were directly applicable to air and space research. The high-temperature methods used on coal and waste projects have direct applications to ceramic plane and spaceshift components, which must withstand great pressure.<sup>25</sup>

One possible revenue source was NASA. NASA has been charged with helping the U.S. airline industry compete with the European consortium funding of Airbus. Consequently, NASA is working with Boeing, GE Aircraft Engines, McDonnell Douglas, and Pratt & Whitney to develop the "High Speed Civil Transport" by 2001.<sup>26</sup>

Senator Burns, the ranking Republican member of the Senate Science, Technology, and Space Subcommittee, arranged for NASA chief, Dan Goldin, to visit Butte in August 1993.<sup>27</sup> According to Senator Burns, "[a] decision by NASA to do high-speed civic transport and space plane research at the MHD facility would permit the facility to keep its scientists and engineers fully employed in light of the Department of Energy's decision to end MHD clean coal research."<sup>28</sup> Dan Goldin toured the CDIF site along with

Senator Burns in August. Following the tour Goldin stated that "there are some possibilities...."<sup>29</sup> Goldin noted that NASA is aware that the public wants to see less government spending. As such, NASA was looking to conduct research at existing facilities to keep costs down.<sup>30</sup>

MTC would eventually receive a \$1.5 million contract for fiscal 1995 related to NASA's interests. The funding would come from the Veterans Affairs, Housing and Urban Development, and Independent Agencies Appropriations bill. The \$1.5 million contract was for a hypersonic wind tunnel. The tunnel is the basic technology for testing and obtaining technical and design information for hypersonic and supersonic aircraft.<sup>31</sup>

Since NASA resources were more long-term than immediate, MTC continued to look elsewhere. In September Montana's congressional delegation was seeking \$11 million from the Department of Defense 1994 appropriation's bill to fund two current projects at the CDIF site. The two projects were spray casting technology and the plasma furnace centrifugal program.<sup>32</sup> The spray casting technology was being studied as a process for bonding corrosion-resistant coatings on metals. Unlike conventional electroplating, spray casting does not generate waste. The plasma centrifugal furnace was being studied for the disposal of smoke and flare devices as well as classified electronic circuits. The plasma furnace may be a non-

polluting method of disposal.<sup>33</sup>

On September 22, 1993 Representative Pat Williams noted that the House of Representatives' Committee of Appropriations approved \$9.3 million for the two CDIF projects. The House panel increased its funding for spray casting research, an Air Force project, from its present \$1.1 million to \$5 million for fiscal year 1994. The House panel also increased funding for plasma centrifugal furnace research, an Army project, from its current \$594,000 to \$6 million for fiscal year 1994.<sup>34</sup>

On October 4, 1993 Senators Baucus and Burns reported that \$11 million had been earmarked for the two CDIF projects. This was \$1.7 million more than the initial House panel budget. In a congressional joint meeting, however, the House members agreed to the \$1.7 million additional funding.<sup>35</sup>

The budget crisis that began in April 1993 was now partially solved. In response to the \$11 million Department of Defense allocation, Senator Burns commented that "[t]his funding means saving 40 to 50 jobs in Butte and continuing research in advanced environmental technology in Montana."<sup>36</sup> Don Peoples commended the Montana delegation for pushing the funding. However, Peoples noted that MTC may still have to terminate 40 to 50 workers if more funding was not found.<sup>37</sup>

On September 30, 1993 the MHD Program at the CDIF was officially concluded.<sup>38</sup> Over the next few months

approximately 50 workers were laid off.<sup>39</sup> During its 17-year history, the MHD program contributed \$240 million to the State and local economy by providing jobs and attracting a highly trained and educated workforce of engineers, professionals, and skilled technicians.<sup>40</sup> Of the 300 employees MTC Butte employess, at least 200 are highly trained. According to Don Peoples, Butte now has the highest concentration of such experts in the state.<sup>41</sup>

#### Montana Technology Companies' New Market

In March 1994 a 15-member team from the Department of Energy visited the CDIF site. Senator Baucus had requested that DOE undertake a fact-finding mission to determine whether the CDIF could be transferred from the DOE's Fossil Energy Division to another division.<sup>42</sup> Don Peoples noted that if a transfer does occur, "[m]ost likely it will be environmental management."<sup>43</sup> Senator Baucus commented that "I am confident that this facility is one of the Department of Energy's best in the country -- both in terms of the facility and the first rate staff -- and this review will confirm that."<sup>44</sup>

On April 7, 1994 Baucus' prediction came true. Thomas Grumbly, assistant secretary of the Department of Energy, announced that the Department had decided to place the CDIF site under the Environmental Restoration division, its environmental management office. Grumbly said he expected

the number of projects at CDIF to double under the environmental management division. The DOE has 135 sites in 28 states that need cleanup and Butte will be at the center of those efforts.<sup>45</sup>

Given that the CDIF had a new role, its annual \$25 million to \$29 million budget was expected to remain the same or grow. Don Peoples stated that "[i]t really does give us a sense of security."<sup>46</sup> Regarding CDIF's new role Secretary Grumbly noted that "[w]hile we are not going to bring nuclear wastes here, we are going to bring the future. And that future is environmental technology."<sup>47</sup>

The Department of Energy changed CDIF's mission from finding ways of burning coal more cleanly to cleaning up pollution. Toward this end, CDIF was renamed the Western Environmental Technology Office (WETO) in April.<sup>48</sup> Mel Shupe, the new manager of DOE's WETO, stated that he would like to see MSE and WETO "work in a partnership basis to bring renewed focus on environmental technology."<sup>49</sup>

On April 13, 1994 Montana Technology Companies received notice that the Department of Energy would retain MTC's subsidiary, MSE, as contractor of the former CDIF site, which was now WETO. Senator Baucus noted that MSE was given a contract worth \$15.7 million that would run through September 30, 1994. MSE was also given a second contract worth \$23.6 million that would run from October 1, 1994 through September 30, 1995.<sup>50</sup> Senator Baucus stated that



"[n]ot only does this contract extension support the environmental technology being developed at CDIF, but it will help cement the security of the over 240 jobs."<sup>51</sup>

On May 11, 1994 Senate Bill 978, which was sponsored by Senator Baucus, passed the U.S. Senate by a margin of 85 to 14.<sup>52</sup> Baucus' bill, called the National Environmental Technology Act, contained five key components. First, the federal government will develop a national strategy for environmental technology and coordinate agency spending on environmental technologies. Second, some funds now targeted for environmental cleanup will instead be allocated on research and development of new technologies. Third, the EPA will create a new office to help develop new technologies that have insufficient funding. Fourth, an outreach program will help small businesses find cleanup technologies that match their needs. Finally, EPA will voluntarily verify whether a new technology meets EPA standards.<sup>53</sup>

Don Peoples stated that the act would benefit MTC in several ways. MTC experienced difficulty getting money for research since numerous federal agencies had environmental cleanup divisions. These funding sources will now all be coordinated through the EPA, which should make getting funds easier.<sup>54</sup> However, the National Environmental Technology Act would not only benefit MTC. The Act would also benefit the 200 environmental technology companies in Montana.

These 200 companies employ over 1,000 people.<sup>55</sup>

In July MTC's subsidiary, MSE, won a \$3.5 million contract to remove storage tanks throughout Montana. MSE outbid 10 or 11 larger companies from Montana and elsewhere for the U.S. Army Corps of Engineers' contract. Previously, MSE had won large government contracts for investigating methods of cleaning up hazardous wastes generated by hard rock mining. Now MSE was diversifying into other environmental service areas. Under this two year contract, MSE would investigate and remove from federal property about 100 out-of-service storage tanks ranging in size from 500 to 50,000 gallons.<sup>56</sup>

On September 27, 1994, two days prior to MTC's fiscal year 1995, Dr. Clyde Frank, deputy assistant secretary of the Department of Energy's Office of Technology Development, held a press conference at the WETO site. Secretary Frank described WETO's role as a centralized source of information on environmental research. He also stated that the public would see MTC's subsidiary, MSE, move to an international focus. An Ukranian technology was currently being tested by MSE at WETO. If successful, the technology would clean up large land masses.<sup>57</sup>

In making the transition from fossil energy to environmental management, Don Peoples commented that MSE is "delighted to be able to accept the challenge...."<sup>58</sup> The Mining City has gone from heavy industrial to remedial

investigation and high-tech research, according to Jack Lynch, Butte's Chief Executive. As Lynch noted, "Butte's a town in transition."<sup>59</sup>

### Summary

This chapter reviewed the public-private partnership between Butte and Montana Technology Companies (MTC). Initially, the Montana Energy Research and Development Institute (MERDI) operated the DOE's Component Development and Integration Facility (CDIF) until 1980. Mountain States Energy (MSE), then-MERDI's for-profit arm, assumed management responsibility of CDIF from MERDI. In 1989 MERDI created a new for-profit organization, Montana Technology Companies (MTC). MERDI transferred MSE's stock to Montana Technology Companies (MTC) in exchange for 100 percent of the outstanding stock of MTC.

Montana Technology Companies operated the CDIF site and managed the Magneto hydrodynamics Program until September 30, 1993, when the program was terminated. During 1993 and 1994, Montana's congressional delegation convinced the Department of Energy to transfer the CDIF site from its fossil fuels division to its environmental restoration division. The Component Development and Integration Facility (CDIF) was renamed the Western Environmental Technology Office (WETO) in April 1994. Moreover, with the assistance of Montana's congressional delegation, Montana

Technology Companies received funding from several new sources during 1993 and 1994.

These new funding sources included the following: (1) the Environmental Protection Agency, which funds the National Mine Waste Program, (2) the Department of Defense, which funds the National Environmental Waste Technology and Testing Center (NEWTTEC), (3) NASA, which funds the hypersonic wind tunnel project, (4) the Air Force, which funds spray casting research, (5) the Army, which funds classified waste disposal, and (6) the Army Corp of Engineers, which funds removal of out-of-service tanks. As a result of these new funding sources, Montana Technology Companies was able to make the transition from a fossil energy management company to an environmental technology management company. In the process, Montana Technology Companies was able to maintain the job base of nearly 300 highly skilled employees in Butte.

### Footnotes

- <sup>1</sup>The Montana Standard, 10 October 1994.
- <sup>2</sup>Montana Technologies Companies Annual Report, 1993.
- <sup>3</sup>Montana Energy Research And Development Institute Annual Report, 1992.
- <sup>4</sup>Montana Technologies Companies Annual Report, 1993.
- <sup>5</sup>Montana Energy Research And Development Institute Annual Report, 1992.
- <sup>6</sup>The Montana Standard, 6 April 1993.
- <sup>7</sup>The Montana Standard, 19 April 1992.
- <sup>8</sup>The Montana Standard, 4 April 1991.
- <sup>9</sup>Montana Technologies Companies Annual Report, 1993.
- <sup>10</sup>Montana Technologies Companies Annual Report, 1993.
- <sup>11</sup>The Montana Standard, 19 April 1992.
- <sup>12</sup>The Montana Standard, 9 May 1993.
- <sup>13</sup>The Montana Standard, 23 December 1990.
- <sup>14</sup>The Montana Standard, 4 August 1990.
- <sup>15</sup>The Montana Standard, 4 August 1990.
- <sup>16</sup>The Montana Standard, 7 April 1991.
- <sup>17</sup>Montana Energy Research And Development Institute Annual Report, 1991.
- <sup>18</sup>The Montana Standard, 7 April 1991.
- <sup>19</sup>The Montana Standard, 6 April 1993.
- <sup>20</sup>The Montana Standard, 6 April 1993.
- <sup>21</sup>The Billings Gazette, 18 May 1993.
- <sup>22</sup>The Montana Standard, 29 May 1993.
- <sup>24</sup>The Montana Standard, 29 May 1993.

- <sup>25</sup>The Montana Standard, 29 July 1993.
- <sup>26</sup>The Montana Standard, 31 August 1993.
- <sup>27</sup>The Montana Standard, 29 July 1993.
- <sup>28</sup>The Montana Standard, 29 July 1993.
- <sup>29</sup>The Montana Standard, 31 August 1993.
- <sup>30</sup>The Montana Standard, 31 August 1993.
- <sup>31</sup>The Montana Standard, 28 September 1993.
- <sup>32</sup>The Montana Standard, 14 September 1993.
- <sup>33</sup>The Montana Standard, 23 September 1993.
- <sup>34</sup>The Montana Standard, 23 September 1993.
- <sup>35</sup>The Montana Standard, 5 October 1993.
- <sup>36</sup>The Montana Standard, 5 October 1993.
- <sup>37</sup>The Montana Standard, 5 October 1993.
- <sup>38</sup>Montana Technologies Companies Annual Report, 1993.
- <sup>39</sup>The Montana Standard, 14 April 1994.
- <sup>40</sup>Montana Technologies Companies Annual Report, 1993.
- <sup>41</sup>The Montana Standard, 6 April 1993.
- <sup>42</sup>The Montana Standard, 11 March 1994.
- <sup>43</sup>The Montana Standard, 11 March 1994.
- <sup>44</sup>The Montana Standard, 11 March 1994.
- <sup>45</sup>The Montana Standard, 7 April 1994.
- <sup>46</sup>The Montana Standard, 7 April 1994.
- <sup>47</sup>The Montana Standard, 7 April 1994.
- <sup>48</sup>The Montana Standard, 7 April 1994.
- <sup>49</sup>The Montana Standard, 28 September 1994.
- <sup>50</sup>The Montana Standard, 14 April 1994.

<sup>51</sup>The Montana Standard, 14 April 1994.

<sup>52</sup>The Missoulian, 12 May 1994.

<sup>53</sup>The Montana Standard, 12 May 1994.

<sup>54</sup>The Montana Standard, 12 May 1994.

<sup>55</sup>The Missoulian, 12 May 1994.

<sup>56</sup>The Montana Standard, 21 July 1994.

<sup>57</sup>The Montana Standard, 28 September 1994.

<sup>58</sup>The Montana Standard, 28 September 1994.

<sup>59</sup>The Montana Standard, 28 September 1994.

#### IV. THE ANACONDA-ATLANTIC RICHFIELD COMPANY PARTNERSHIP

This chapter reviews the public-private partnership between Anaconda and Atlantic Richfield Company (ARCO). It provides an overview of the Atlantic Richfield Company. The chapter also sets the context for the public-private partnership with a discussion of Superfund. Finally, the chapter focuses on only one of ARCO's partnerships: the creation of the Jack Nicklaus golf course.

##### The Atlantic Richfield Company

In 1977 the Atlantic Richfield Company (ARCO) purchased the Anaconda Company. ARCO's purchase of the Company created great expectations among Montanans. Michael Malone's commentary, "The Close Of The Copper Century," captures Montanans' view:

It would surely be only a matter of time until some conglomerate bought the depreciated Anaconda; and after a series of scares, many Montanans breathed a sigh of relief when the reputedly public-spirited ARCO bought the company in 1977 and made it into its Anaconda Minerals Division. They breathed too soon, for despite its promises to the contrary, ARCO soon began closing down the aging Anaconda facilities in Montana.<sup>1</sup>

The Atlantic Richfield Company does have a reputation for being public-spirited. ARCO was an industry leader before it became fashionable among corporations to demonstrate their commitment to "the environment." In 1989 ARCO introduced reformulated regular gasoline (EC-1), which



set it apart from other oil companies. ARCO utilized barges for the first-ever back haul of reusable scrap metal from Alaska's North Slope. ARCO's gift of 572 acres of environmentally-sensitive desert land to The Nature Conservancy prompted Secretary of the Interior Manuel Lujan to describe the donation as "the kind of creative public-private partnership that will make the preservation of our nation's wildlands possible."<sup>2</sup>

By 1989 the Atlantic Richfield Company was one of the largest integrated petroleum companies in the industry with world-wide sales of over \$16 billion and earnings of \$1.9 billion. ARCO subsidiaries included oil and gas exploration, production, refining, transportation, and marketing. Along with the oil and gas businesses the chemical, plastics, and coal operations constituted the core of ARCO's businesses.<sup>3</sup>

### Superfund

In 1980 Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which is commonly referred to as Superfund. The Superfund provides for the creation of a fund, which is financed through taxes on chemicals, feedstocks, motor fuels, and other products that contain hazardous substances. Congress significantly amended the act in 1986.<sup>4</sup>

Superfund, which is administered by EPA, gives the

federal government a mandate to deal with hazardous wastes that have been spilled, stored, or abandoned. Superfund requires the EPA to identify hazardous waste sites and rank these sites based on the severity of their risk. Today there are more than 25,000 sites.<sup>5</sup>

The EPA places the sites with the highest ranking on a National Priority List. Before cleanup can begin, EPA conducts studies to determine the best method for cleaning the site. To prevent fire, explosion, contamination of drinking water, or other imminent danger, the EPA can quickly authorize cleanup at either hazardous priority or nonpriority sites.<sup>6</sup> In ranking sites EPA considers five exposure pathways: (1) the population put at risk, (2) the hazard potential of substances, (3) the potential for contamination of drinking water, (4) the possibility of direct human contact, and (5) the potential for destruction of sensitive ecosystems. Superfund gives the EPA broad discretion in determining the appropriate remedial action to be taken in a specific instance.<sup>7</sup>

Superfund imposes liability on responsible parties for the costs of removal or remedial action, costs of response by other parties or entities, and for damage to, or destruction of, natural resources. The EPA can order a responsible party to clean up a hazardous waste site. If the responsible party fails to cleanup a site, the EPA can clean the site and recover the cleanup costs from the

responsible party.<sup>8</sup>

The Superfund imposes strict liability, which is liability without fault or negligence. The liability is also joint or several. That is, a single party may be held responsible for all cleanup costs even if other parties are involved. Joint or several liability might occur when other parties have disappeared or become insolvent, defunct, or bankrupt. In short, a person or entity who is responsible for only a fraction of the hazardous waste may be liable for all the cleanup costs.<sup>9</sup>

Under Superfund law, the government can hold any party found to have contributed to a waste site responsible for 100 percent of the cost. The responsible party then tracks down and sues other companies that may have contributed to the waste site. The result is that no one wants to acquire a designated Superfund site for fear of being held liable. This current process prohibits a market for the transfer of sites.

There are nearly 1,200 sites on the government's priority cleanup list. To date, fewer than 150 projects have been completed and dozens of new sites are added to the list each year. A Rand Corporation study on how 108 companies spend money at 18 toxic sites concluded that over a decade about 32 percent was spent on legal fees or other activities not related to cleanup.<sup>10</sup>

Following her tour of Anaconda on October 16, 1993,

Carol Browner, director of the EPA, stressed that liability is the key to pressuring the responsible party to pay for cleaning up sites. However, Browner stated that "doesn't mean we shouldn't make some changes in how we pay for cleanup."<sup>11</sup> Senator Max Baucus, chair of the Superfund, Recycling, and Solid Waste Committee, agreed with Director Browner that Superfund needs to shift resources from legal battles to actually cleaning sites.<sup>12</sup>

EPA is looking for a way to return reclaimed sites to communities. Browner said EPA is looking at changes to the law, which is scheduled for reauthorization in late 1994, that will give local communities a greater role. Browner agreed that the cleanup beginning at the Old Works site involves the very issues of economic development and community involvement that are soon to become part of the national debate.<sup>13</sup> As Browner noted, "[n]ow we need a mechanism to say to the communities, okay it's done, now you can get back and develop and get on with it."<sup>14</sup>

According to Anaconda resident Milo Manning, "[t]he key is getting community involvement."<sup>15</sup> William Menahan, a state representative, said that Deer Lodge County was being punished for this site. Menahan stated that "[e]ven though we're getting some development, businesses can't invest because they're afraid of becoming a PRP (potentially responsible party)."<sup>16</sup>

### The Partnership Evolution

The Atlantic Richfield Company plans to transfer 1,500 acres of Superfund land along with a proposed 500 acre, golf-course to Anaconda-Deer Lodge County. The transfer would include the proposed Nicklaus golf course site, the hillside ruins of the Old Works smelters, the red sands/Arbiter area, the east Anaconda yards at the foot of smelter hill, and the former Mill Creek townsite.<sup>17</sup>

Under the proposed contract ARCO would transfer the property to the county before the cleanup and course construction begins. Once all the work is done, Anaconda-Deer Lodge would be responsible for insuring that the reclamation stays in place. According to Sandy Stash, ARCO's Superfund manager, the idea is that the county will eventually be able to open the former Superfund land to development.<sup>18</sup>

Charlie Coleman, EPA project manager for the site, stated that EPA welcomes cleanup with an eye to future economic development. However, Coleman cautioned that the county should make provisions for a contingency fund in negotiating the land transfer. If the county takes on this responsibility, there could be hidden costs assigned to them.<sup>19</sup> Coleman stated that "[w]e just want to be sure if the county takes on the responsibility, that they are adequately funded."<sup>20</sup>

The EPA will play a minimal role in the negotiations

between ARCO and Anaconda over how the development is operated. But because the course and most other lands now under discussion fall under the Superfund law, EPA must sign off on the final agreement. IF ARCO incorporates some aspect of the County performing work and the County is not adequately qualified, then EPA will not approve the design.<sup>21</sup>

On October 26, 1993 negotiations began between ARCO and Anaconda-Deer Lodge County on the transfer of the proposed Jack Nicklaus Superfund golf course. ARCO wanted the negotiations to come to a close by January or February 1994. This meant that ARCO would need to reach a final agreement with Anaconda-Deer Lodge County and the EPA would have to sign off in a "record of decision." Moreover, EPA would need to produce a separate document which would protect the county from Superfund liability.<sup>22</sup>

Although the transfer contract was nearly 70 pages, the following eight points highlighted ARCO's initial position. First, Anaconda-Deer Lodge County will take title to the property before the course is built, granting ARCO right access to build the golf course, move material, and perform other cleanup work. Second, the county will become a potentially responsible party (PRP). However, EPA will offer protection in the form of a prospective purchaser agreement. Third, ARCO will pay for some basic equipment for the course but expects the county to finance the

clubhouse, pay start-up costs, and provide management before any revenues are generated. Fourth, the county must make monthly or quarterly reports on the sites to ARCO and the EPA. Fifth, the county will have unspecified obligations to the Jack Nicklaus company. Sixth, ARCO will reserve the right to audit the books and review management records. Seventh, the country will agree not to sue ARCO and ARCO will agree not to sue the county. Finally, the county will also take title to the Old Works trail system, the ball fields/industrial park, the red sands and Arbiter plant, the east Anaconda yards, the drag strip, and the former Mill Creek townsite.<sup>23</sup>

Anaconda-Deer Lodge County commissioners expressed several concerns regarding the initial ARCO proposal. Pete Smith was skeptical about taking title to the land before ARCO performed the cleanup since the county would become a potentially responsible party (PRP). ARCO wanted the county to become a potentially responsible party should the county create new problems. The county would be held responsible only to ensure that the remedy remained in place. The EPA would exempt the county from any past waste problems.<sup>24</sup>

Cheryl Beatty, Anaconda's Chief Executive, asked whether ARCO planned to establish a trust fund to cover unexpected costs. Beatty had promised the taxpayers that no local tax dollars would be spent in the transfer of Superfund sites to Anaconda-Deer Lodge County. ARCO

responded that it was looking at a fund for maintenance of the non-golf property. Other issues called for the creation of a Golf Course Authority, which would serve as a board of directors, apply for non-profit tax status, and interview management companies to operate the course.<sup>25</sup>

On November 8 Bill Lamont, an ARCO consultant, provided the Golf Course Authority with a list of eleven companies that expressed an interest in managing the course. Sandy Stash, ARCO's Superfund manager, stressed the importance of having a representative of the management company on site as construction begins in June 1994. ARCO wanted a final decision about the management company by February 4, 1994. Authority members thought that this timetable was too aggressive.<sup>26</sup> According to Stash, the reason for this aggressive schedule was due to ARCO's goals: "Our goal is to take care of our environmental commitment and get back to the business of producing oil and gas. And we don't produce oil and gas in Anaconda, Montana."<sup>27</sup>

On November 11 County Attorney Ed Beaudette told the county commissioners that while county tax dollars would not be used to fund the land, the county attorney, planning department, and county staff would need to participate in the process. The Golf Course Authority running the operation is an arm of the county.<sup>28</sup> Beaudette stated that "I have a responsibility to work on the Golf Course Authority at every level to see the people who elected you



and elected me are protected."<sup>29</sup>

On November 29 and 30, ARCO ran two full-page, public relations advertisements in The Montana Standard. The advertisements were part of ARCO's "A Perspective On Shared Duties." The November 29 advertisement began with the question: "How Much Was 'The Richest Hill On Earth' Worth To Montana? ARCO responded to the question, in part, with these statements:

**Government had a part in mining's growth.** Mining could never have prospered as it did without the help of the U.S. Government. Mining's role in the development of our country was established when the Mining Law of 1866 opened up public lands from coast to coast for mining exploration and development. Since the turn of the century, the State of Montana also encouraged the growth of mining by excluding it from environmental controls often placed on other industries of the day. In fact, lawmakers of that time even expanded the state's power of eminent domain to the mining industry. This allowed mining companies to build dumps, ditches, roads and working mines on public and private lands....

**Teaming up with government.** Now it's time to find solutions to the problems created by more than 100 years of mining and smelting in Montana. ARCO, because it purchased the holdings of The Anaconda Company in 1977, is involved in a massive Superfund effort. Over the past several years, ARCO has committed more than \$140 million to cleaning up the remnants of our mining history. We're making significant progress. And we plan to fulfill our obligations..... Since all of us -- communities, industry and the state -- supported and benefitted from the economic growth provided by mining, we all should work together to find these reasonable solutions. As partners, we can insure that our children have a clean, healthy place to live.<sup>30</sup>

The November 30 advertisement began with the question:

"Where Does Cleanup End And Innovation Begin?" ARCO

responded to the question, in part, with these statements:

**Let's leave behind lasting values.** Since beginning

work on the Clark Fork River Basin in the mid-1980s, it's been ARCO's desire to be creative with cleanup plans -- to do more than simply make an affected area safe. Wherever feasible, we join with communities in looking for solutions that enhance the natural beauty and economic stability of an area.

The site of the Old Works in Anaconda is an excellent example. To prevent the site's smelting waste from threatening human health or the environment, it will be cleaned up according to Environmental Protection Agency (EPA) and State of Montana standards. In addition, Anaconda's Old Works golf course is expected to be built at the site. It is scheduled to open in the spring of 1996 and begin attracting about 40,000 golfers a year. The course, designed by Jack Nicklaus, will blend with the area's natural environment -- wild grasslands will grow between the lush fairways which wrap along the bordering hillside and Warm Springs Creek. Also, an Historic Trail highlighting Anaconda's smelting heritage will skirt the hills, providing walkers with a good view of the course. ARCO is proud to be partners with Anaconda/Deer Lodge County local government and the community of Anaconda in making this project happen.<sup>31</sup>

On December 1 ARCO met with the Golf Course Authority (GCA). ARCO's position at the meeting was twofold. First, ARCO linked the gold course site of 500 acres to the other Superfund sites of 1,500 acres. Second, before ARCO would pass title of the golf course to Anaconda-Deer Lodge, the county must finance and construct a clubhouse, demonstrate financial backing, and provide a business plan.<sup>32</sup> In response to these positions, Ed Blume, a GCA board member, stated "[t]he thing of it is this 'either you do it or we'll fence it' has got to change. Nobody can threaten us and tell us what we've got to do."<sup>33</sup> Cheryl Beatty, Anaconda CEO, noted that parts of the transfer document remain sketchy. The county does not yet know what obligations

accompany the operations of the golf course and what reports EPA and ARCO will require.<sup>34</sup>

One week after the December 1 negotiations, ARCO ran the same two-page, public relations advertisements in The Montana Standard on December 6 and December 8 that it had run on November 29 and November 30. On December 8 The Montana Standard lead story and headlines read: **Coalition criticizes ARCO ads.** The Clark Fork-Pend Oreille Coalition, an environmental organization, asked ARCO to stop its "misleading" advertising campaign, which claims the state of Montana is partly to blame for the contamination caused by mining.<sup>35</sup> In a letter to Bill Williams, ARCO's Montana Operations Manager, C.B. Phearson, an officer of the environmental coalition, wrote this statement: "It is shameful for ARCO to mislead Montanans by attempting to pass along your cleanup responsibility and liability to government and its citizens."<sup>36</sup> Suzanne Lagoni, ARCO's Public Affairs Mananager, responded that "[w]e have a message. We're proud of what we're doing and that's the purpose of advertising."<sup>37</sup> ARCO said the advertisements were not misleading and planned to continue the advertising.<sup>38</sup>

On December 9, ARCO faced another public relations challenge. A report issued by the state of Montana's Natural Resource Damage Program estimated the environmental damage in the upper Clark Fork River Basin at between \$265

million to \$297 million.<sup>39</sup> On December 10, Bill Williams, ARCO's Montana Operations Manager, responded: "The state's \$265-million natural resources damages claim against ARCO is overblown and based on a faulty economic formula that unrealistically assesses the value of polluted areas.... We're not even in the same ball park."<sup>40</sup>

Two days later ARCO representatives and their lawyers met with all parties from EPA, the state of Montana's Department of Health and Environmental Science, and Anaconda-Deer Lodge County. Several observations came from this meeting. For ARCO the partnership provides a mechanism for its clean-up obligations and exit strategy from Anaconda. For EPA the partnership establishes a stable entity, Anaconda-Deer Lodge County, to maintain "institutional controls," which include county permits regarding how the land can be developed. For Anaconda-Deer Lodge County the partnership means revenue in the short-term from the proposed golf course and in the long-term from the 1,500 acres of developable land.<sup>41</sup>

Although ARCO will build the golf course, the county is responsible for building and financing the clubhouse. According to Bill Finnegan, president of the Golf Course Authority, financing would be next to impossible without pledging collateral. Under ARCO's current proposal, none of the property can be used as collateral for loans.<sup>42</sup>

A related issue was the operations and maintenance

costs of the 1,500 acres that are not part of the golf course. Andy Lensink, an attorney from EPA's regional Denver office, commented that the complex cleanup-transfer agreement between ARCO and Anaconda-Deer Lodge County is innovative. However, Lensink noted that EPA will hold Anaconda's local government legally responsible for the operations and maintenance costs established in the final agreement. Superfund is enforced by the U.S. Justice Department "in perpetuity," which means the county will be signing on forever.<sup>43</sup>

During February Bill Finnegan put together an innovative financial package. Revenue bonds could be used to finance the full \$500,000 needed for the clubhouse building. These revenue bonds could be sold to investors in increments of \$50,000. The interest would be paid from revenues generated from golf course operations. Local investors could support the project by buying bonds. Smaller local investors could participate by banding together to buy the bonds. However, actually issuing and selling the bonds would take several months, well beyond ARCO's March 31 deadline. As an interim solution, the Golf Authority will borrow \$100,000 for a modular building.<sup>44</sup>

On March 3 Sandy Stash, ARCO's Montana facilities manager, pushed the deadline from March 31 to April 15 for the land transfer. However, she noted that April 15 was the absolute deadline since groundbreaking for the golf course

was scheduled on May 1. If the deal was not signed by April 15, then ground-breaking would be postponed until 1995.<sup>45</sup>

On March 9, Bill Yellowtail, EPA regional administrator, and Robert Robinson, director of the state Department of Health and Environmental Sciences, signed the EPA "Record of Decision." This decision set a precedent for the EPA by incorporating the local government as an "institutional control" and allowing a luxury golf course as a cap over mine tailings and other wastes. It was the first time the state environmental agency signed off on an EPA Superfund cleanup order in Montana.<sup>46</sup> Charlie Coleman, EPA's project manager for the Old Works site, made these comments: "I think what makes this really different is the county's willingness to take a stake in their own future and take some of the responsibility. I think that risk will pay off in the future."<sup>47</sup>

On April 15 the Justice Department and the EPA signed a "prospective purchaser agreement," which Anaconda-Deer Lodge County and the Golf Course Authority had previously signed. Senator Max Baucus and Representative Pat Williams announced the Justice Department had cleared this agreement, which will protect Anaconda-Deer Lodge County from Superfund liability in the Jack Nicklaus golf course project.<sup>48</sup> As Senator Baucus noted, "[l]ast month I wrote the Justice Department asking that they put approval of this agreement on a fast track. I'm delighted to say they've come through.

And that is very good news for Anaconda and the surrounding area."<sup>49</sup>

On May 5 Anaconda-Deer Lodge County and ARCO signed about 100 pounds of documents which included 70 signature pages. When the signing was completed, Anaconda-Deer Lodge County became the owner of 2,000 acres of Superfund property and heir to a Jack Nicklaus-designed golf course.<sup>50</sup> Cheryl Beatty, Anaconda-Deer Lodge County CEO, commented that "[t]his is truly a great day for Anaconda."<sup>51</sup> Charlie Coleman, EPA's project manager, stated that "[t]he whole idea of turning Superfund land back to the community is gaining interest nationwide."<sup>52</sup> In his letter of congratulations Senator Baucus wrote that "[w]orking with ARCO, EPA, and the Department of Justice, you made it happen. You reached an agreement that serves as a national example of how the Superfund project should work."<sup>53</sup>

News of the story spread quickly across the state. On Sunday, May 8, The Great Falls Tribune published an extensive article in its "Marketplace" section. The headline was **Anaconda charts post-industrial course**. The first, three sentences read:

In 1980 the last vestiges of copper smelting here were closed, leaving behind a giant smokestack, thousands of workers and a century's worth of hazardous waste. But this company town without a company is not looking at mining or smelting to breathe life back into its languishing economy. It's looking at golf.<sup>54</sup>

The article concluded with a statement by the executive director of Montana Trout Unlimited, Bruce Farling. Farling

noted that "[i]t's sleight of hand. They [ARCO] don't have to do soil removal, they cap it. They don't have worry [sic] about cleaning groundwater. It's absurd."<sup>55</sup>

On May 26 the Golden Bear, Jack Nicklaus, visited the Smelter City, Anaconda, for the ground breaking. Jack Nicklaus said he could see this was not going to be an ordinary, golf course ground breaking. This was a community event in which elementary school kids provided a gauntlet to the ground breaking area.<sup>56</sup> At a press conference at the Old Works site, Nicklaus was asked about jeopardizing his reputation by associating with a Superfund site. Nicklaus offered this response:

If I'm risking my reputation by being here, I don't mind risking it every day. People will be coming from all over looking at it. Some people will say I lost my marbles...but I think when we're done, you'll be very proud of it and I'll be very proud of it.<sup>57</sup>

### Summary

This chapter reviewed the public-private partnership between Anaconda and Atlantic Richfield Company (ARCO). It provided an overview of the Atlantic Richfield Company. The chapter also presented the context of the public-private partnership. Superfund gave the federal government a mandate to deal with hazardous wastes. Superfund imposed liability on responsible parties for the costs of removal and remedial action.

The chapter focused on one of ARCO's partnerships: the



creation of the Jack Nicklaus golf course. The Atlantic Richfield Company wanted to transfer 2,000 acres of Superfund sites to Anaconda-Deer Lodge County. To make the transfer more appealing, ARCO offered to design and build a Jack Nicklaus golf course. However, the county would become responsible for operating the golf course. Moreover, the county would become legally liable for maintaining the reclamation process on the 1,500 acres once ARCO brought these acres into compliance with EPA standards.

To complete the transfer process, a number of parties became involved. Besides parties from Anaconda-Deer Lodge County and ARCO, other parties included EPA national and regional representatives, the state of Montana's Department of Health and Environmental Sciences, Montana's congressional delegation, the Justice Department, and the Jack Nicklaus' golf company. The outcome was a national, precedent-setting transfer: Anaconda-Deer Lodge County became the owner of 2,000 acres of Superfund property and heir to a Jack Nicklaus-designed golf course.

Footnotes

<sup>1</sup>Michael Malone, "The Close Of The Copper Century,"  
Montana: The Magazine Of Western History 35 (1985): 69.

<sup>2</sup>Atlantic Richfield Company Annual Report, 1989.

<sup>3</sup>Atlantic Richfield Company Annual Report, 1989.

<sup>4</sup>Henry Cheeseman, Contemporary Business Law (Englewood Cliffs: Prentice Hall, 1994), p. 761.

<sup>5</sup>Ibid., p. 764.

<sup>6</sup>Ibid., p. 764.

<sup>7</sup>Rogene Buchholz, Principles Of Environmental Management: The Greening Of Business (Englewood Cliffs: Prentice Hall, 1993), p. 294.

<sup>8</sup>Ibid., p. 294.

<sup>9</sup>Ibid., p. 294.

<sup>10</sup>The Montana Standard, 5 November 1993.

<sup>11</sup>The Montana Standard, 17 October 1993.

<sup>12</sup>The Montana Standard, 17 October 1993.

<sup>13</sup>The Montana Standard, 17 October 1993.

<sup>14</sup>The Montana Standard, 17 October 1993.

<sup>15</sup>The Montana Standard, 17 October 1993.

<sup>16</sup>The Montana Standard, 17 October 1993.

<sup>17</sup>The Montana Standard, 5 October 1993.

<sup>18</sup>The Montana Standard, 5 October 1993.

<sup>19</sup>The Montana Standard, 5 October 1993.

<sup>20</sup>The Montana Standard, 5 October 1993.

<sup>21</sup>The Montana Standard, 5 October 1993.

<sup>22</sup>The Montana Standard, 27 October 1993.

<sup>23</sup>The Montana Standard, 27 October 1993.

<sup>24</sup>The Montana Standard, 27 October 1993.

<sup>25</sup>The Montana Standard, 27 October 1993.

<sup>26</sup>The Montana Standard, 9 November 1993.

<sup>27</sup>The Montana Standard, 12 November 1993.

<sup>28</sup>The Montana Standard, 12 November 1993.

<sup>29</sup>The Montana Standard, 12 November 1993.

<sup>30</sup>The Montana Standard, 29 November 1993.

<sup>31</sup>The Montana Standard, 30 November 1993.

<sup>32</sup>The Montana Standard, 2 December 1993.

<sup>33</sup>The Montana Standard, 2 December 1993.

<sup>34</sup>The Montana Standard, 2 December 1993.

<sup>35</sup>The Montana Standard, 8 December 1993.

<sup>36</sup>The Montana Standard, 8 December 1993.

<sup>37</sup>The Montana Standard, 8 December 1993.

<sup>38</sup>The Montana Standard, 8 December 1993.

<sup>39</sup>The Montana Standard, 10 December 1993. For a detailed assessment of Atlantic Richfield Company's obligations, see State Of Montana, Natural Resource Damage Program, Restoration Report: Upper Clark Fork River NPL Sites, March 1994.

<sup>40</sup>The Montana Standard, 10 December 1993.

<sup>41</sup>The Montana Standard, 13 December 1993.

<sup>42</sup>The Montana Standard, 13 December 1993.

<sup>43</sup>The Montana Standard, 26 January 1994.

<sup>44</sup>The Montana Standard, 4 March 1994.

<sup>45</sup>The Montana Standard, 4 March 1994.

<sup>46</sup>The Montana Standard, 10 May 1994.

- <sup>47</sup>The Montana Standard, 10 May 1994.
- <sup>48</sup>The Montana Standard, 16 April 1994.
- <sup>49</sup>The Montana Standard, 16 April 1994.
- <sup>50</sup>The Montana Standard, 6 May 1994.
- <sup>51</sup>The Montana Standard, 6 May 1994.
- <sup>52</sup>The Montana Standard, 6 May 1994.
- <sup>53</sup>The Montana Standard, 6 May 1994.
- <sup>54</sup>The Great Falls Tribune, 8 May 1994.
- <sup>55</sup>The Great Falls Tribune, 8 May 1994.
- <sup>56</sup>The Montana Standard, 27 May 1994.
- <sup>57</sup>The Montana Standard, 27 May 1994.

## V. CONCLUSION

This chapter summarizes the material from the first four chapters. Moreover, this chapter examines observations, limitations, and conclusions of the thesis project.

### Summary

Chapter 1, Introduction, provided an historical sketch of the beginning, evolution, and decline of the Butte-Anaconda area from 1865 to 1985. The chapter also provided an overview of the thesis. The objective of the thesis was to investigate this research question: **What roles have public-private partnerships played in Butte-Anaconda's economic development?**

Chapter 2, The Theory Of Public-Private Partnerships, reviewed different partnership models. Several disciplines such as public administration, economic development, and organization theory provided the bases for these models. This chapter offered six perspectives from which to view public-private partnerships. The market failure perspective viewed the public sector as a remedy for the private sector's shortcomings. These shortcomings or failures arose from two sources: externalities and increasing returns. The Perry and Rainey perspective distinguished public organizations from private organizations. This perspective

classified organizations based on ownership, funding, and mode of social control. The Savas perspective developed another classification scheme for public and private organizations. This perspective used the inherent characteristics of goods and services to determine whether public or private organizations were the best suppliers. This perspective classified public and private organizations based on ownership, management, and operation.

The Osborne and Gaebler perspective drew from the work of the Savas perspective. Osborne and Gaebler assigned various tasks to three sectors: public, private, and third. The tasks were "weighted" based on their degree of effectiveness. The Smilor, Gibson, and Kozmetsky perspective identified eight partners for creating a "technopolis." Their perspective derived from observations of the emerging technopolis of Austin, Texas. Finally, the Waddock perspective provided insight to creating public-private partnerships. This perspective described the various linking mechanisms necessary for initiating and maintaining partnerships.

Chapter 3, The Butte-Montana Technology Companies Partnership, described key community and corporate players responsible for creating a regional environmental technology center. The key players included the U.S. Department of Energy, Montana's congressional delegation, and Montana Technology Companies.

This chapter reviewed the public-private partnership between Butte and Montana Technology Companies (MTC). Initially, the Montana Energy Research and Development Institute (MERDI) operated the DOE's Component Development and Integration Facility (CDIF) until 1980. Mountain States Energy (MSE), then-MERDI's for-profit arm, assumed management responsibility of CDIF from MERDI. In 1989 MERDI created a new for-profit organization, Montana Technology Companies (MTC). MERDI transferred MSE's stock to Montana Technology Companies (MTC) in exchange for 100 percent of the outstanding stock of MTC.

Montana Technology Companies operated the CDIF site and managed the Magneto hydrodynamics Program until September 30, 1993, when the program was terminated. During 1993 and 1994, Montana's congressional delegation convinced the Department of Energy to transfer the CDIF site from its fossil fuels division to its environmental restoration division. The Component Development and Integration Facility (CDIF) was renamed the Western Environmental Technology Office (WETO) in April 1994. Moreover, with the assistance of Montana's congressional delegation, Montana Technology Companies received funding from several new sources during 1993 and 1994.

These new funding sources included the following: (1) the Environmental Protection Agency, which funds the National Mine Waste Program, (2) the Department of Defense,

which funds the National Environmental Waste Technology and Testing Center (NEWTTEC), (3) NASA, which funds the hypersonic wind tunnel project, (4) the Air Force, which funds spray casting research, (5) the Army, which funds classified waste disposal, and (6) the Army Corp of Engineers, which funds removal of out-of-service tanks. As a result of these new funding sources, Montana Technology Companies was able to make the transition from a fossil energy management company to an environmental technology management company. In the process, Montana Technology Companies was able to maintain the job base of nearly 300 highly skilled employees in Butte.

Chapter 4, The Anaconda-Atlantic Richfield Company Partnership, described key community and corporate players responsible for creating the first Superfund golf course. This chapter reviewed the public-private partnership between Anaconda and Atlantic Richfield Company (ARCO). It provided an overview of the Atlantic Richfield Company.

The chapter also set the context for the public-private partnership with a discussion of Superfund. Superfund gave the federal government a mandate to deal with hazardous wastes. Superfund imposed liability on responsible parties for the costs of removal and remedial action.

Finally, the chapter focused on only one of ARCO's partnerships: the creation of the Jack Nicklaus golf course. The Atlantic Richfield Company wanted to transfer 2,000



acres of Superfund sites to Anaconda-Deer Lodge County. To make the transfer more appealing, ARCO offered to design and build a Jack Nicklaus golf course. However, the county would become responsible for operating the golf course. Moreover, the county would become legally liable for maintaining the reclamation process on the 1,500 acres once ARCO brought these acres into compliance with EPA standards.

To complete the transfer process, a number of parties became involved. Besides parties from Anaconda-Deer Lodge County and ARCO, other parties included EPA national and regional representatives, the state of Montana's Department of Health and Environmental Sciences, Montana's congressional delegation, the Justice Department, and Jack Nicklaus' golf company. The outcome was a national, precedent-setting transfer: Anaconda-Deer Lodge County became the owner of 2,000 acres of Superfund property and heir to a Jack Nicklaus-designed golf course.

### Observations

Six perspectives were identified from which to view public-private partnerships. Each perspective provides a limited understanding of the two partnerships. From a market failures perspective, the partnership between Butte-Montana Technology Companies is the result, in part, of a market failure that began several decades ago. The Anaconda Copper Company produced negative externalities by polluting

air, land, and water. With the assistance of federal and state governments, the Butte-MTC partnership provides a partial remedy for negative externalities.

From Perry and Rainey's perspective, one might classify Montana Technology Companies as (mostly) a "government contractor." MTC is privately owned by a non-profit, MERDI. MTC's primary funding source is public. However, MTC's mode of social control is a hybrid between market and polyarchic context.

Montana Technology Companies' mode of social control is "market" to a certain degree because there were no organized interests trying to influence its products. MTC is "polyarchic" to a certain degree because its funding sources relied on bargaining and persuasion of external groups. For example, Montana's congressional delegation probably had to "give" or promise other funding projects to different congressional committees and federal departments to secure funding for MTC. Using Savas' perspective, one might classify Montana Technology Companies as a "typical private system." MTC is privately owned; it is privately managed; it is privately operated.

From the technopolis perspective, one might identify several partners. Montana Technology Companies is an emerging company that was founded in 1989. It has several federal government partners, including EPA, DOE, and DOD. It has a partnership with Montana Tech of the University of

Montana. MTC funds graduate research projects as part of the Mine Waste Technology Pilot Program. MTC also has a number of support groups such as the Chamber of Commerce and the Butte Local Economic Development Corporation.

Using Waddock's perspective, one might identify Montana Technology Companies' connection to Butte as a broker and a common vision. Under the leadership of Don Peoples, former Butte CEO and now MTC's CEO, Peoples has managed an organization in transition from a fossil fuel-based company to an environmental technology-based company. Peoples has rallied both local and federal support around the imperative that Butte needs to diversify its economy.

One may also make a few observations about the second partnership, Anaconda-Atlantic Richfield Company. From a market failures perspective, the partnership between Anaconda-ARCO is the result, in part, of a market failure that began several decades ago. Since ARCO purchased the assets and liabilities of The Anaconda Copper Company in the 1980s, ARCO also assumed the responsibility for the negative externalities produced by The Anaconda Copper Company. With the assistance of federal, state, and local governments, the Anaconda-ARCO partnership provides a partial remedy for negative externalities.

In contrast to Montana Technology Companies (MTC), classification of Atlantic Richfield Company (ARCO) is more clearcut. From Perry and Rainey's perspective, one might

classify ARCO as a "market." ARCO's ownership is private; its funding is private; its mode of social control is private. Using Savas' perspective, one might classify ARCO as a "typical private system." ARCO's ownership is private; its management is private; its operation is private.

From the technopolis perspective, one might identify several partners such as the EPA, the Justice Department, the state of Montana's Department of Health and Environmental Sciences, and Montana's congressional delegation. However, the technopolis perspective is more applicable to a partnership setting that involves a technology-based company, either emerging or emerged, a research university, and federal agencies. The Anaconda-ARCO project involved the transfer of Superfund property using an innovative process, not the creation or the expansion of a new company.

Using Waddock's perspective, one might identify ARCO's connection to Anaconda as mandates, networks, and common vision. Superfund mandated interaction between ARCO, EPA, and Anaconda-Deer Lodge County. This mandated interaction created a network of relationships between otherwise unrelated organizations. The emerging network was a combination of business-professional, political, and community-civic ties. Finally, a common vision prompted the founding and growth of the network. ARCO wanted to transfer 2,000 acres and Anaconda wanted to receive these 2,000

acres. To facilitate the transfer and reception of the Superfund sites, the parties viewed a Jack Nicklaus golf course as a prime motivating factor.

In short, the six perspectives provide some insight into the two partnerships. The primary objective for highlighting the six perspectives was to indicate how social scientists view public-private partnerships. A secondary objective was to apply these perspectives to the two partnerships.

### Limitations

The limitations of this thesis project are informational limitations. This project relies on government documents, corporate documents, and newspaper accounts. However, critical information flows are absent.

These critical information flows include an "insider's perspective." The ideal insider's perspective is a social scientist who is an employee of the organization(s) under study. The social scientist is able to gather data via surveys and observations in real time. For example, the author of this thesis project gained critical insight from being a member of a public-private partnership between Digital Equipment Corporation and the Southeast Manufacturing Technology Center in South Carolina. As a partnership member, the author was able to gather information in real time about the dynamics of the

partnership. This insider's perspective gave the author invaluable insight that an outsider could not have perceived. In the context of this thesis project, the author's perspective misses critical information since the author was not present as real time decisions were addressed.

### Conclusions

This thesis project addressed the research question: What roles have public-private partnerships played in Butte-Anaconda's economic development? To answer this question, the thesis examined two public-private partnerships. The thesis gave a descriptive answer to a descriptive question.

The descriptive question and answer give rise to another question: What role should public-private partnerships play in the future economic development of the Butte-Anaconda area? This is a complex, prescriptive inquiry that merits both comprehensive and detailed answers, which are beyond the scope of this section. Moreover, the prescriptive question begs several questions regarding what constitutes economic development. For example, are "jobs" economic development? Are more manufacturing jobs than service jobs economic development? Are more "non-polluting," manufacturing jobs than "polluting," manufacturing jobs economic development? If organizations yield greater productivity output with fewer labor inputs,

then is the output economic development? As such, this section will not specifically address the initial prescriptive question raised at the beginning of this paragraph. Instead, this section will only sketch three considerations regarding economic development.

The first consideration is: Should Butte-Anaconda move away from a mining-smelting industry? The answer is "yes." Michael Malone and Richard Etulain write:

Clearly, this oldest of western industries has fallen for good. Low-cost southern-hemisphere mines command the markets of the world; Chilean miners earn only one-tenth of those in America; and flooded mines are in effect lost forever. The mining of precious and base metals will continue in the West and even surge, as it did in the late 1980s, but only on a reduced basis at places like Bingham Canyon or Butte and at smaller, shorter-term mines that use nonunion labor. Never again will metal mining buttress the economies of the entire subregions of the West as it did from 1850 until 1980.<sup>1</sup>

The second consideration is: Toward what industry should Butte-Anaconda move? The answer is "environmental technology." Currently, the U.S. market for environmental technology is \$80 billion. The global market for environmental technology is expected to more than double to \$600 billion by the year 2000.<sup>2</sup> Senator Baucus believes that "Montana companies are on the cutting edge of the development of environmental technology"<sup>3</sup>

The third consideration is: What mixture of public-private partnerships should Butte-Anaconda employ? The answer is "diversification." Butte-Anaconda should not rely on a single, federal funding source. Moreover, Butte-

Anaconda should avoid becoming a "company town."

If the Butte-Anaconda area wants to become an environmental technology center, then the area should let Roger Miller and Marcel Cote's observations about "Growing The Next Silicon Valley" serve as a guide. First, Miller and Cote note that while there are legitimate roles for government laboratories and universities, these organizations are poor incubators of entrepreneurs and high-tech products.<sup>4</sup> They state that "[p]roduct ideas generated in government laboratories and universities seldom meet marketplace standards, either technologically or in terms of cost."<sup>5</sup> Second, to support a high tech cluster, Miller and Cote identify four common characteristics: (1) several research-oriented universities and laboratories which are recognized as leaders in their fields, (2) a tradition of contract research in these institutions, (3) a few large corporations with advanced laboratories in the region, and (4) close relationships between these research-oriented universities and local high-tech companies.<sup>6</sup>

The Butte-Montana Technology Companies partnership and the Anaconda-Atlantic Richfield Company partnership illustrate the complexities and dynamics of economic development. To state that "Butte-Anaconda's recovery stems from the market or private sector institutions" would be misleading. Butte-Anaconda's recovery has included a mix of public-private partnerships.



Butte was selected as one of the thirteen finalist cities out of 300 that applied for the Micron Technology site. Butte was selected as a finalist for several reasons, including this reason:

A proven track record of economic development in the area since the demise of the Anaconda company. Butte is a dramatically different city than it was just 12 years ago, thanks to strong public-private partnerships.<sup>7</sup>

Butte-Anaconda will continue its emphasis on public-private partnerships as an economic development strategy because these partnerships have contributed significantly to Butte-Anaconda's recovery.

Footnotes

<sup>1</sup>Michael Malone and Richard Etulain, The American West: A Twentieth-Century History (Lincoln: University of Nebraska Press, 1989), p. 246.

<sup>2</sup>U.S. Congress, Office Of Technology Assessment, Development Assistance, Export Promotion, And Environmental Technology, 1993, p. 5. For a forecast of the market for environmental technologies, see George Heaton, Jr., Robert Repetto, and Rodney Sobin, Backs To The Future: U.S. Government Policy Toward Environmentally Critical Technology (Washington, D.C.: World Resources Institute, 1992).

<sup>3</sup>The Great Falls Tribune, 28 November 1993.

<sup>4</sup>Roger Miller and Carcel Cote, "Growing The Next Silicon Valley," Harvard Business Review 47 (1985): 116. For a review of state governments' roles in economic development, see R. Scott Fosler, ed., The New Economic Role Of American States: Strategies In A Competitive World Economy (New York: Oxford University Press, 1988) and Peter Eisinger, The Rise Of The Entrepreneurial State: State And Local Economic Development Policy In The United States (Madison: The University of Wisconsin Press, 1988).

<sup>5</sup>Ibid., p. 116.

<sup>6</sup>Ibid., p. 116.

<sup>7</sup>The Montana Standard, 1 January 1995.

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