

**BIBLIOGRAPHY OF SPONSORED RESEARCH
1984-2003**

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Table of Contents

	<u>Page</u>
Introduction	2
Economic/Demographic	4
Fiscal	5
Transportation	6
Emergency Management	7
Ethnography	9
Risk Management/Perception	9
Community Development	11
Tourism	12
Institutional	12
Impact Assessment	13

INTRODUCTION

Since 1984, Lincoln County and the City of Caliente have monitored activities of the U.S. Department of Energy to evaluate Yucca Mountain as a site for locating a high-level radioactive waste repository. Funding for joint County and City repository oversight initiatives was provided initially by the State of Nevada. Since 1987, County and City efforts to monitor DOE activities have been supported by grants and direct payments from the federal government. In implementing their joint repository oversight program, the County and City have sponsored a wide variety of studies. The results of these research endeavors have been used by the County and City in formulation of responses to DOE nuclear waste initiatives and in providing information to area residents. The ability of the County and City to provide DOE with the quality of input which has typified their joint oversight program has been the result of the lengthy involvement of concerned citizens making effective use of the independent research described within this document.

Lincoln County is one of ten units of local government which have been designated by the Secretary of Energy as an "affected unit of local government" pursuant to the Nuclear Waste Policy Act, as amended. The County is one of only three counties which the Secretary of Energy voluntarily designated as affected by repository activities. What was identified in the 1986 Yucca Mountain environmental assessment remains true today: Lincoln County is likely to serve as the gateway for most shipments of high-level radioactive wastes entering Nevada and destined for storage and disposal at the Nevada Test Site. More recently, it has become evident that mutual interests of the State of Nevada and DOE to minimize risks to the health and safety of a majority of Nevada's residents and economy of southern Nevada will likely shift said risks to residents and businesses of Lincoln and other rural counties. In response to efforts by the State of Nevada and DOE to defer risks away from Nevada's populated areas, the Board of Lincoln County Commissioners and the Caliente City Council have responded with recommendations focused at risk minimization and benefit maximization locally.

For the past twenty years, Lincoln County and the City of Caliente have conducted a joint repository oversight and impact alleviation planning program. Through a memorandum of understanding, the County and City have established the Joint City/County Impact Alleviation Committee (JCCIAC) to oversee repository oversight and independent impact assessment activities. During this period, the eight-member JCCIAC Committee has diligently sought to provide guidance to local repository programs. The Committee, representing both geographic and disciplinary diversity, has met no less than 85 times and has invested over 1,400 hours of largely volunteer time to understand the implications of the Nation's nuclear waste management program to Lincoln County.

Utilizing funding provided by the State of Nevada and DOE, the Committee has overseen the preparation of over 70 reports documenting repository system implications for Lincoln County. Topics addressed within these studies include emergency response, ethnography, transportation

routing, economic/demographic impact assessment, media amplification of risks, community development, transportation risk assessment, risk communication, tourism impact assessment, fiscal impact assessment, and risk perception, among others. The numerous studies sponsored by the County and City of Caliente have utilized teams of highly trained and competent researchers representing both academic and private entities. In addition, the State of Nevada Nuclear Waste Projects Office has conducted numerous studies which directly or indirectly address repository implications within Lincoln County and the City of Caliente. The County and City have developed a summary compilation of all findings of the State of Nevada with regard to repository system impacts locally. The extensive information base represented by these various studies has been thoroughly utilized by the County and City in responding to continuing activities by DOE to plan for the disposal of nuclear waste within Nevada.

This report provides an exhaustive list of references resulting from the joint County/City repository oversight program. Copies of documents described herein are available for review at the Lincoln County Courthouse. In addition, most of the reports listed within this bibliography have been placed within libraries located within Lincoln County.

The following list of joint County/City repository oversight program research products has been organized by general topic. It is important to note, that many of the documents address cross-cutting issues and as a result may be useful in considering multiple aspects of the nuclear waste management issue.

ECONOMIC/DEMOGRAPHIC

The development and operation of interim storage and permanent disposal and related

transportation systems for nuclear waste in Nevada may impact upon local economic and demographic conditions within Lincoln County and the City of Caliente. Consequences of DOE waste management activities may be both positive (or desirable) and negative (undesirable) in nature. Economic impacts include for example changes in employment, income and local industrial activity. Demographic changes might include local population growth or decline, alterations in the distribution of residents among County communities, and variances in the numbers of residents among various age, sex, and racial groupings. Economic/demographic research sponsored by the County and City has been conducted to enable better understandings of past, present, and potential characteristics of these parameters. In addition, these studies have assisted the County and City in designing and implementing strategies for alleviating potential repository system impacts.

FY 1986

Resource Concepts, Inc., *Preliminary Report: Characteristics of the Labor Supply and Commuting Patterns of Workers Within Alamo, Panaca, Caliente, Pioche and Lincoln County Areas*, August 1986.

FY 1988

Intertech Consultants, Inc. *Estimated Distribution of Materials, Equipment and Service Expenditures at the Proposed Repository Site*, August 1988.

FY 1990

RMA Research, *Characteristics of the Labor Supply in Lincoln County Communities*, November 1990.

FY 1991

Intertech Consultants, *1991 Lincoln County Overall Economic Development Plan*, February 1991.

Lincoln County Economic Development Task Force, *Business Directory*, January 1991.

FY 1994

Intertech Services Corporation, *the 1993 Lincoln County Labor Market Survey and Update*, October 1994.

University Center for Economic Development, *Retail Sales Analysis for Lincoln County, Nevada*, University of Nevada, Reno, UCED 93-12, July 1994.

University Center for Economic Development, *Economic Trends and Development Strategies for Lincoln County*, University of Nevada, Reno, UCED 93-09, July 1994.

FY 1995

Intertech Services Corporation, *Lincoln County Economic/Demographic Database*, January 1995.

FY 1996

Intertech Services Corporation, *Lincoln County Nuclear Waste Management Program: Impact Assessment and Alleviation Planning System Description and Status Report 1985-1996*. Prepared for the Board of Lincoln County Commissioners, 1996 June.

FY 1998

Intertech Services Corporation, *The 1998 Lincoln County Labor Market Survey and Update*. Prepared for the Nevada Test Site Development Corporation and the Board of Lincoln County Commissioners, September 1998.

FY 2000

Intertech Services Corporation, *Assessment of Capacity and Student Loads*. Prepared for the Lincoln County School District, September 2000.

FISCAL

Federal radioactive waste management activities in Nevada may result in changes to fiscal conditions within Lincoln County and the City of Caliente. Population out migration could reduce available tax revenues from which community services and infrastructure are funded. Alternatively, project related employment may stimulate local population growth and related increased spending. New residents will require community services and would contribute to increased revenue collections. To facilitate assessment of changes in local fiscal characteristics that might attend the federal waste management program, the County and City have undertaken a variety of studies focusing upon the costs and efficiency of local government.

FY 1987

Intertech Consultants, *Study of Methods to Value, Assess, and Distribute the Ad Valorem Component to the Grants Equal to Taxes Provisions of the Nuclear Waste Policy Act of 1982*, March 1987.

FY 1989

RMA Research, *City of Caliente Fiscal and Operational Assessment*, November 1989.

Intertech Consultants, Inc., *Lincoln County General Fund Fiscal and Operational Assessment*, July 1989.

FY 1990

RMA Research, *Fiscal Assessment and Capital Improvements Program: Caliente Public Utilities*, November 1990.

FY 1993

RMA Research, *Lincoln County Fiscal and Operational Assessment Update*, October 1993.

RMA Research, *Summary Findings and Recommendations For: Lincoln County Fiscal and Operation Assessment/Caliente Fiscal and Operational Assessment/Fiscal Assessment and Capital Improvements Program for Caliente Public Utilities*, April 1993.

FY 1994

RMA Research, *City of Caliente Fiscal and Operational Assessment*, December 1994.

FY1996

Intertech Services Corporation, *Industrial Fiscal Impact Model User's Manual for Lincoln County*. Prepared for the Board of Lincoln County Commissioners, February 1996.

TRANSPORTATION

Since the 1986 release by DOE of its first environmental assessment of the Yucca Mountain project, the mainline Union Pacific rail line through Lincoln County and the City of Caliente has been viewed by the federal government as a likely corridor along which shipments of nuclear waste would move through Nevada to the Nevada Test Site. More recently, DOE's Final Environmental Impact Statement for Yucca Mountain, identifies the UP mainline, a new branch line, a rail to truck cask transfer facility at Caliente, and a heavy-haul truck route across Lincoln County. Transportation studies sponsored by Lincoln County and the City of Caliente have been designed to assess and develop measures for reducing related impacts.

FY 1986

ETS Pacific, Inc., *Pilot Study and Analysis of 46 Mile Rail Corridor in Lincoln County, Nevada*, October 1986.

FY 1989

ETS Pacific, Inc., *Condition Update of 46 Mile Rail Corridor in Lincoln County, Nevada*, June

1989.

SEA, Inc., *City of Caliente, Nevada: Railroad Crossing Alternatives - Phase I*, December 1989.

ETS Pacific, Inc., *Evaluate Alternative Rail Corridor Routes Through Lincoln County, Nevada to Yucca Mountain, Nevada*, n.d.

FY 1991

SEA, Inc., *City of Caliente, Nevada Railroad Crossing Alternatives: Phase I Amended Report*, 1991.

FY 2003

A. K. Miller Consulting, *Conceptual Design Report: Issues Associated with Co-Location of Rail Siding to Serve the Department of Energy's Prospective Intermodal Facility and the Meadow Valley Industrial Park at Caliente*, November, 2003.

Intertech Services Corporation, *Review of Transportation Regulations and Fees Associated with the Transport of High-Level Nuclear Waste: Potential for Fee Assessment in Nevada*, December 2003.

Intertech Services Corporation, *Possibility of Transportation Incidents Occurring in Lincoln County During the Shipment of Spent Nuclear Fuel and High-Level Radioactive Waste to a Proposed Repository at Yucca Mountain*, December 2003.

Intertech Services Corporation, *Considerations in Locating Safe Parking Areas for Trucks Transporting Spent Nuclear Fuel and High-Level Radioactive Waste through Lincoln County*, December 2003.

EMERGENCY MANAGEMENT

The potential for the federal government to ship nuclear waste by rail and truck through Lincoln County and the City of Caliente, coupled with the volunteer nature of local emergency response services, raise the importance of emergency management as an issue. To enable the County and City to understand existing local capabilities and potential response requirements, a variety of studies focusing upon emergency management have been undertaken.

FY 1985

Resource Concepts, Inc., *Lincoln County/City of Caliente Emergency Preparedness Inventory and Analysis*, August 1985.

FY 1989

Intertech Consultants, Inc., *Radiological Emergency Response in Small Communities: A Report on*

Capabilities and Constraints, June 1989.

FY 1989

Intertech Consultants, *Lincoln County/City of Caliente Emergency Preparedness Inventory and Analysis*, November 1989.

FY 1992

Intertech Consultants, *Lincoln County/City of Caliente Emergency Preparedness Inventory and Analysis*, May 1992.

FY 2001

Intertech Services Corporation, *Response Procedure Plan Spent Nuclear Fuel and Other High-Level Radioactive Waste Panaca Volunteer Fire Department*. Prepared for the City of Caliente, April, 2001.

Intertech Services Corporation, *Response Procedure Plan Spent Nuclear Fuel and Other High-Level Radioactive Waste Caliente Volunteer Fire Department*. Prepared for the City of Caliente, April 2001.

Intertech Services Corporation, *Response Procedure Plan Spent Nuclear Fuel and Other High-Level Radioactive Waste Pioche Volunteer Fire Department*. Prepared for the City of Caliente, April 2001.

Intertech Services Corporation, *Response Procedure Plan Spent Nuclear Fuel and Other High-Level Radioactive Waste Pahrangat Valley Volunteer Fire Department*. Prepared for the City of Caliente, April 2001.

Intertech Services Corporation, *Lincoln County Medical Services Needs Assessment*. Prepared for the Grover C. Dils Medical Center, August 2001.

ETHNOGRAPHY

Like many rural areas, communities within Lincoln County have developed unique social fabrics. Construction and operation of nuclear waste management facilities by DOE in Lincoln County may serve to alter the social environment characterizing area communities. Such changes may occur as existing residents elect to outmigrate from the County. New residents may bring new perspectives on issues such as education, community service standards, community appearance, morality, and ethics, among others. As demographic transition occurs, certain characteristics of area

communities may be deemed desirable and worthy of preservation. The availability of ethnographic information is intended to afford insight into the establishment of community character. To allow the County and City to understand the factors contributing to current social conditions, several oral histories were developed. The availability of this ethnographic information can enable County and City leaders to understand those attributes of community evolution which must be preserved if changes to local social conditions are to minimize.

Oral histories developed for the Lincoln County Repository Oversight program were prepared by Dr. Robert D. McCracken between 1989 and 1994. The oral histories were based upon extensive personal interviews and supplemental research. Each oral history has been written and printed into a comprehensive, self-contained document. Selection of persons to be interviewed was based upon identifying elderly longtime residents at risk and geographical distribution among County community areas. Many of the 29 persons for whom oral histories were taken have since passed away. A listing of persons for whom oral histories have been documented follows.

Rachel and John Ballow	Merril Barnum	Lydia Bentley
D.C. and Fay Day	Ralph Denton	Veronica Devony Elliot
Franklin Ernst	Vera Hammond Flinspach	Emma Richard Foremaster
John J. Franks	Darrell H. Free	Mary Elizabeth Gemmill
James H. Gottfredson Jr.	Edith M. Grover	Helen Hackett
Robert Hammond	Joe and Evelyn Higbee	Buck Hollinger
George A. Jeffs	Ruth Lee	Freeland Wayne Lytle
Grayce McBride	Lorene W. Matthews	Mary and Louis Scott
Ralph Smeath	Daniel S. Stewart	Jay and Freda Wadsworth
Theresa Wadsworth	Gue Gim Wah	

RISK MANAGEMENT/PERCEPTION

The transportation of nuclear waste through Lincoln County and the City of Caliente will be attended by a certain degree of risk of exposure. Although scientific estimates of risk may be quite low and well below levels of risk typically accepted on a voluntary basis, area residents may perceive risks to be much greater. Failure on the part of federal, state and local emergency managers to implement effective hazard management techniques may exacerbate public perceptions of risk. Uncertainty of public reaction to incidents and accidents involving radioactive wastes may render ineffective local emergency response plans. The County and City have sponsored several assessments to better understand both risk characteristics and options for risk management.

FY 1990

Center for Technology, Environment and Development, *Risk Perceptions of the Yucca Mountain*

Repository: A Comparative Assessment of Caliente and Other Southern Nevada Communities, Clark University, October 1990.

FY 1991

Intertech Consultants, *Media Amplification of Risks: Implications for Hazardous Materials Transport*, May 1991.

FY 1992

Center for Technology, Environment and Development, *Information Content, Signals, and Sources Concerning the Proposed Repository at Yucca Mountain: An Analysis of Newspaper Coverage and Social-Group Activities in Lincoln County, Nevada*, Clark University, February 1992.

FY 1993

Intertech Services Corporation, *Public Opinion Polling and the Yucca Mountain Controversy: A Seven Year Inventory*, November 1993.

FY 1994

Center for Technology, Environment and Development, *Perspectives on Risks from the Nevada Test Site: Feasibility and Methods for Assessing Cumulative Radiological Exposure Risks Associated with Department of Energy Activities at the Nevada Test Site: Phase I Report*, George Perkins Marsh Institute on the Human Dimensions of Global Environmental Change, Clark University, June 1994.

FY 1995

Transportation Research Center, *Risk Analysis for Spent Nuclear Fuel Transportation through Lincoln County, Volume I: Rail Shipments, Volume II: Highway Shipments, Volume IIB: Technical Appendix*, Howard Hughes College of Engineering, University of Nevada Las Vegas, UNLV/TRC/RR-94/1, February 1995.

FY 2000

University of Nevada, Las Vegas, *Risk Assessment of Highway Transport and Inter-modal Operations and Identification of Measures to Mitigate Accident Risks*. Transportation Research Center, Howard R. Hughes College of Engineering. UNLV/TRC/99-04, January 2000.

FY 2002

Intertech Services Corporation, *Hazardous Material Transport via Rail: Bibliography of Recent Risk Assessment Literature*. Prepared For the Joint City/County Impact Alleviation Committee, June 2002.

COMMUNITY DEVELOPMENT

Characterized by a small population and narrow economic base, Lincoln County and the City of Caliente face significant barriers to provision of community services and facilities. Limitations in private land suitable for development further constrain local capabilities to assimilate new growth. Given these conditions and the propensity for federal nuclear waste management activities within Lincoln County to encourage population immigration, various studies were undertaken to evaluate community capacities to assimilate growth.

FY 1989

Intertech Consultants, *Rachel Resource Inventory*, February 1989.

Intertech Services Corporation, *Rachel Area Conceptual Development Plan*, April 1989.

The Earth Technology Corporation, *Evaluation of Big Spring as an Alternate Water Supply to the City of Caliente, Nevada*, December 1989.

FY 1990

Intertech Consultants, *Alamo Area Resource Inventory*, September 1990.

Intertech Consultants, *Alamo Land Use Plan*, September 1990.

RMA Research, *Lincoln County Regional Transportation Commission Capital Improvements Plan*, March 1990.

FY 1991

R.O. Anderson Engineering, *Water Supply and Demand Studies of Various Community Areas within Lincoln County, Nevada*, March 1991.

FY 1993

R.O. Anderson Engineering, *Capital Improvement Plan: Panaca Farmstead Association Sewer System*, February 1993.

Resource Concepts, Inc., *Wastewater Treatment Facilities Capital Improvement Plan: Alamo Sewer and Water General Improvement District*, December 1993.

FY 1995

Resource Concepts, Inc., *The Ash Springs Capital Improvement Plan: Alamo Sewer and Water General Improvement District*, June 1995.

TOURISM

With five state parks and abundant outdoor and historical resources, Lincoln County serves as a popular tourist destination. Any loss in tourist visitation could produce related economic and fiscal consequences. The County and City sponsored studies assessing area tourism resources and the implications of nuclear accidents upon tourist visitation.

FY 1993

Intertech Services Corporation, *Tourism Impacts of Three Mile Island Other Adverse Events: Implications for Lincoln County and Other Rural Counties Bisected by Radioactive Wastes Intended for Yucca Mountain*, October 1993.

FY 1994

Lincoln County Economic Development Task Force, *Baseline Inventory of Tourism Assets*, n.d.

INSTITUTIONAL

To assist the County and City in understanding how other governments have dealt with the prospects of hosting radioactive waste management facilities, County and City representatives have toured other nuclear facilities and met with host area representatives. The impressions of one such trip, involving tours of European nuclear waste sites and communities, were recorded by the Joint City/County Impact Alleviation Committee.

FY 1990

Joint City/County Impact Alleviation Committee, *A Nevada Local Government Perspective of European Nuclear Waste Management*, July 1990.

FY 1998

Intertech Services Corporation, *Overview of the Commission on Nuclear Projects*. Prepared for the Joint City/County Impact Alleviation Committee, July 1998.

FY 2002

Intertech Services Corporation, *An Overview of the Nuclear Regulatory Commission Licensing Process*. April 2002.

IMPACT ASSESSMENT

Virtually all of the previously listed studies have been performed to support assessment of the consequences of federal nuclear waste management activities in Lincoln County and the City of

Caliente. To enable the County and City to properly assess impacts, various frameworks and models have been developed. The models utilize computer spreadsheet technology and are easily useable by County and City staff. In addition, a compilation of observations and findings of State of Nevada Nuclear Waste Project Office studies concerning Lincoln County through 1990 was created.

FY 1991

Intertech Services Corporation, *Nevada Nuclear Waste Project Office Socioeconomic Studies for Lincoln County, Nevada: A Collection of Works*, May 1991.

FY 1994

Intertech Services Corporation, *The Yucca Mountain High-Level Radioactive Waste Repository and Lincoln County: Characterization of Socioeconomic Impacts and Framework for Assessment of Effects*, October 1994.

FY 1995

Center For Economic Development, *Economic Impact Model for Lincoln County*, University of Nevada, Reno, UCED 94-08, March 1995.

Intertech Services Corporation, *Repository EIS Scoping Report: Issues Identified by Lincoln County Needing to be Addressed Within the Repository EIS*, December 1995.

FY 1996

Center For Economic Development, *Industrial Fiscal Impact Model User's Manual for Lincoln County*, University of Nevada, Reno, UCED 95-04, February 1996.

FY 2001

Intertech Services Corporation, *In Search of Equity: A Preliminary Assessment of the Impacts of Developing and Operating the Yucca Mountain Repository on Lincoln County and the City of Caliente, Nevada*. Prepared for the Board of Lincoln County Commissioners and the Caliente City Council, December 2001.

FY 2002

Intertech Services Corporation, *Compilation of DOE Responses to Lincoln County/City of Caliente Comments to the Yucca Mountain Final Environmental Impact Statement*. Prepared for Board of Lincoln County Commissioners and Caliente City Council, June 2002