

Economic / Policy Research

Technical Appendices
Background Research
Trends and Observations

Growth - Interdependence - Cooperation

The City of Colorado Springs
and its
Surrounding Communities

Prepared by
David Bamberger & Associates

Prepared for
The Palmer Divide Water Group

October 18, 2006

Final Report

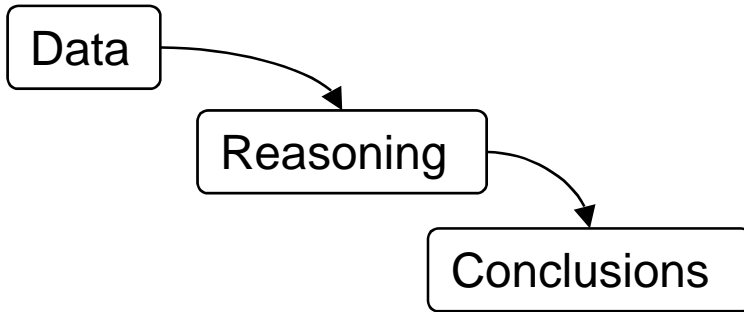
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INTRODUCTION

This report present data and resource material compiled in our research for the Palmer Divide Water Group.

The report is the third of three reports prepared by David Bamberger & Associates for the Water Group.

Report 1. The Fiscal Impact of Suburban El Paso County Residents on the City of Colorado Springs General Fund

Report 2. Growth - Interdependence – Cooperation, The City of Colorado Springs and its Surrounding Communities

Report 3. Technical Appendices, Background Research, Trends and Observations, Growth - Interdependence – Cooperation, The City of Colorado Springs and its Surrounding Communities

BACKGROUND DATA

POPULATION

ASSESSED VALUE

RETAIL SALES

RESIDENTIAL CONSTRUCTION

FOR THE

CENTRAL CITY AND SUBURBS

COLORADO SPRINGS METRO AREA

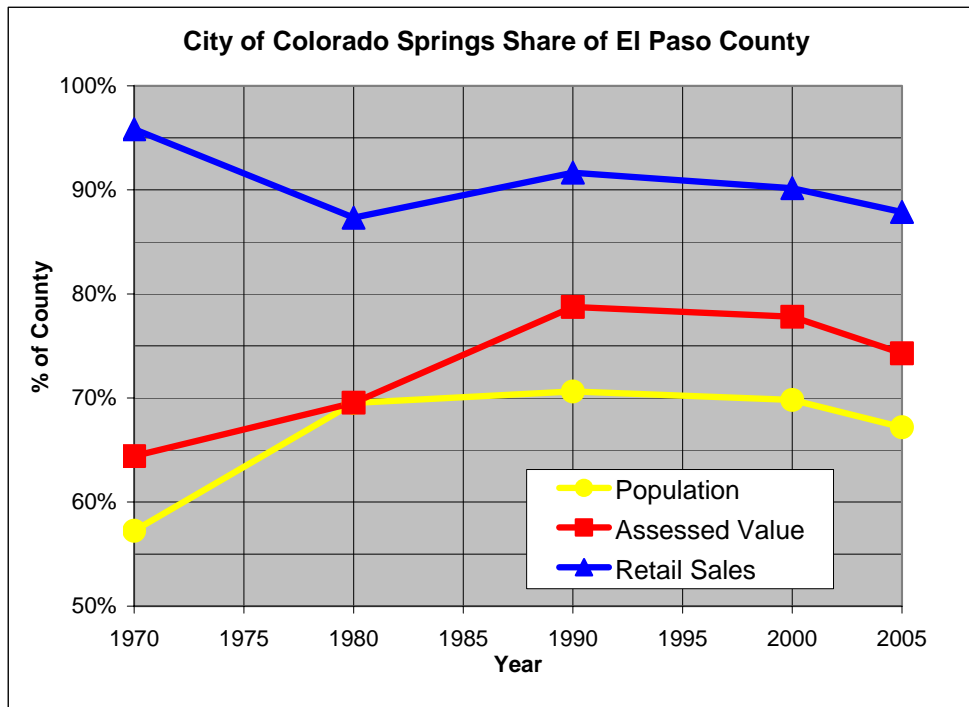
**Long Term Trends - Population, Assessed Value, Retail Sales
El Paso County, City of Colorado Springs, and Suburbs**

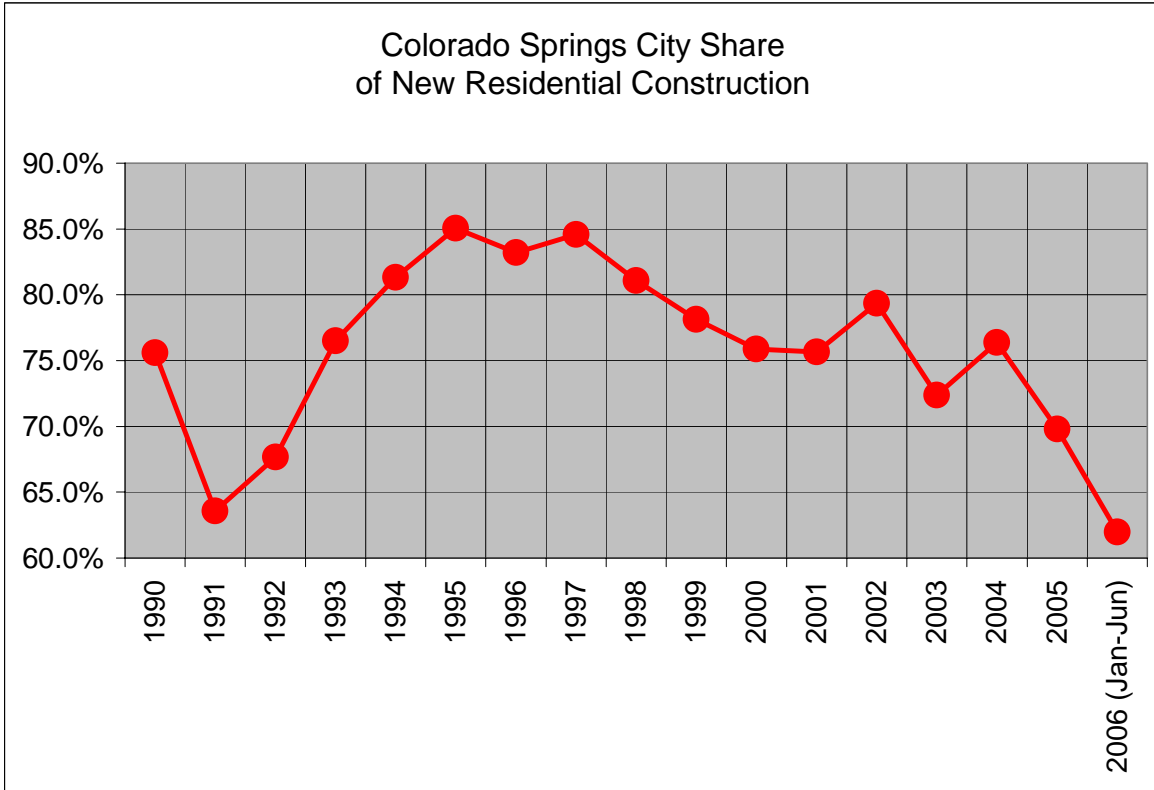
Population							
Year	El Paso County	City of Colorado Springs			Suburbs		
	Amount	Amount	Share	Change	Amount	Share	Change
1950	74,523	45,472	61%		29,051	39%	
1960	143,742	70,194	49%	24,722	73,548	51%	44,497
1970	235,972	135,060	57%	64,866	100,912	43%	27,364
1980	309,424	215,105	70%	80,045	94,319	30%	(6,593)
1990	397,014	280,430	71%	65,325	116,584	29%	22,265
2000	516,929	360,890	70%	80,460	156,039	30%	39,455
2005	565,582	380,000	67%	19,110	185,582	33%	29,543

Assessed Value							
Year	El Paso County	City of Colorado Springs			Suburbs		
	Amount (in Millions \$)	Amount (in Millions \$)	Share	Change	Amount (in Millions \$)	Share	Change
1970	\$422.1	\$271.9	64%		\$150	36%	
1980	\$1,073.8	\$746.8	70%	\$474.9	\$327	30%	\$176.9
1990	\$2,892.1	\$2,277.5	79%	\$1,530.7	\$615	21%	\$287.5
2000	\$4,270.3	\$3,322.5	78%	\$1,045.0	\$948	22%	\$333.3
2005	\$5,523.8	\$4,103.9	74%	\$781.4	\$1,420	26%	\$472.1

Retail Sales							
Year	El Paso County	City of Colorado Springs			Suburbs		
	Amount (in Millions \$)	Amount (in Millions \$)	Share	Change	Amount (in Millions \$)	Share	Change
1970	\$626.1	\$599.9	96%		\$26.1	4%	
1980	\$2,024.5	\$1,768.0	87%	\$1,168.1	\$256.5	13%	\$230.3
1990	\$4,038.9	\$3,701.9	92%	\$1,933.8	\$337.1	8%	\$80.6
2000	\$9,185.2	\$8,281.8	90%	\$4,580.0	\$903.4	10%	\$566.3
2005	\$11,830.9	\$10,395.8	88%	\$2,114.0	\$1,435.0	12%	\$531.7

Sources: Population - US Bureau of the Census and David Bamberger & Associates; Assessed Value El Paso County Assessor; Retail Sales - Colorado Department of Revenue.





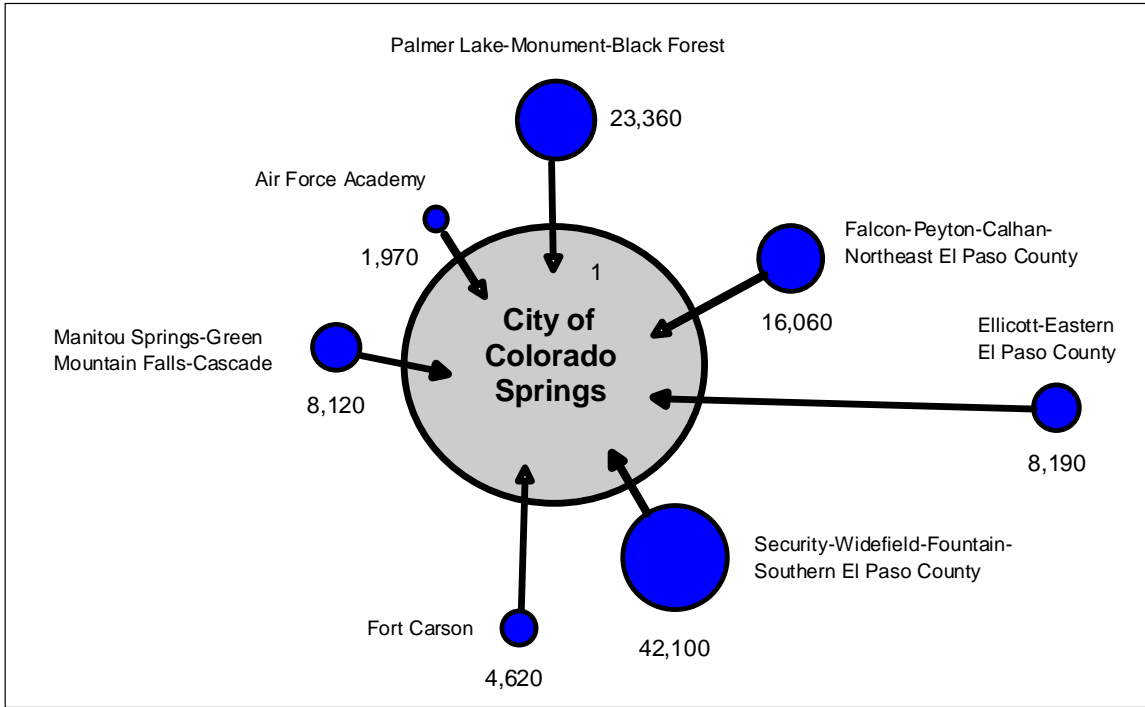
New Residential Construction (Units), 1990-2006 (Jan-Jun)

Year	Colorado Springs City		El Paso County Suburbs		El Paso County Total
	Units	Percent	Units	Percent	
1990	793	76%	256	24%	1,049
1991	783	64%	449	36%	1,232
1992	1,933	68%	924	32%	2,857
1993	2,838	77%	871	23%	3,709
1994	3,092	81%	710	19%	3,802
1995	3,963	85%	696	15%	4,659
1996	4,335	83%	876	17%	5,211
1997	3,947	85%	720	15%	4,667
1998	4,245	81%	990	19%	5,235
1999	4,643	78%	1,299	22%	5,942
2000	4,770	76%	1,516	24%	6,286
2001	5,381	76%	1,730	24%	7,111
2002	5,407	79%	1,406	21%	6,813
2003	3,859	72%	1,473	28%	5,332
2004	4,966	76%	1,535	24%	6,501
2005	4,715	70%	2,039	30%	6,754
2006 (Jan-Jun)	1,755	62%	1,077	38%	2,832
Total	61,425	77%	18,567	23%	79,992

Source: Regional Building Department

MEASURES OF INTERACTION
TRAVEL AND SHOPPING
CENTRAL CITY AND SUBURBS
COLORADO SPRINGS METRO AREA

**Daily Vehicle Trips from Suburbs to the City of Colorado Springs, 2006
(Work, Shopping and Recreation Trips)**

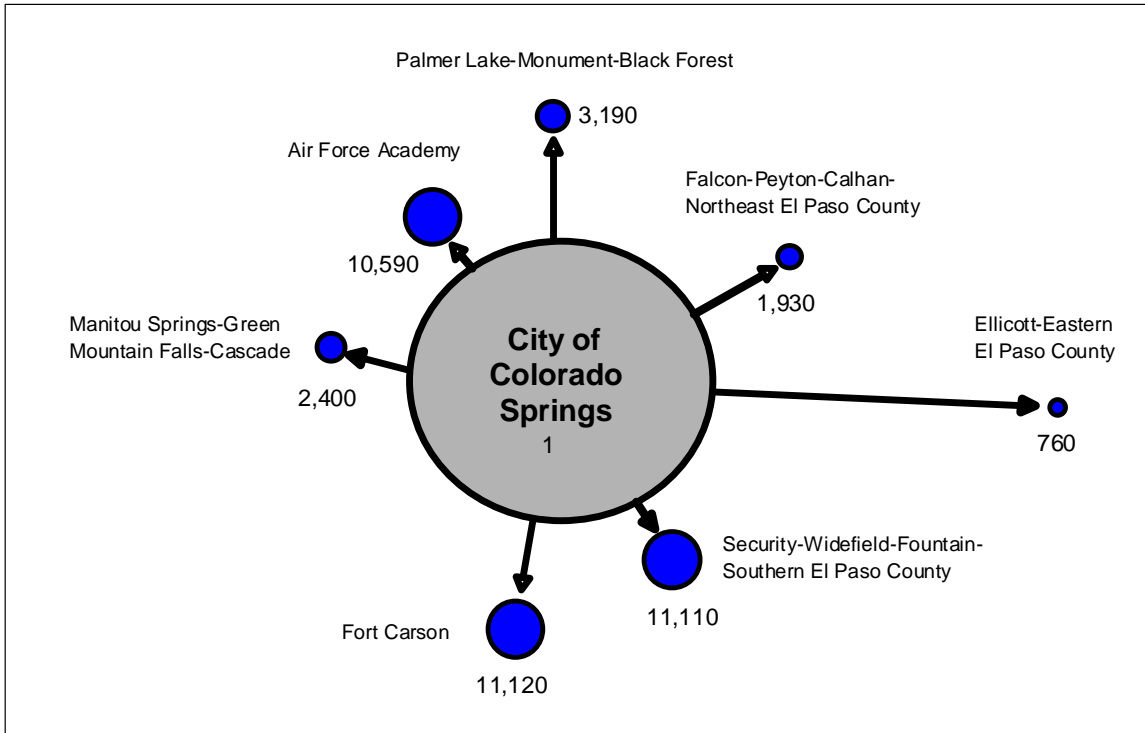


Daily Vehicle Trips - From the Suburbs to City of Colorado Springs, 2006

Suburb	Type of Trip			
	Recreation	Shopping	Working	Total
Palmer Lake-Monument-Black Forest	1,930	9,100	12,330	23,360
Air Force Academy	90	730	1,150	1,970
City of Colorado Springs	95,730	181,000	187,880	464,610
Manitou Springs-Green Mountain Falls-Cascade	1,230	2,730	4,160	8,120
Fort Carson	760	1,870	1,990	4,620
Security-Widefield-Fountain-Southern El Paso County	7,850	14,840	19,410	42,100
Ellicott-Eastern El Paso County	1,180	3,530	3,480	8,190
Falcon-Peyton-Calhan-Northeast El Paso County	2,320	6,480	7,260	16,060
Total	111,090	220,280	237,660	569,030

Source: PPACG

**Daily Vehicle Trips from the City of Colorado Springs to the Suburbs, 2006
(Work, Shopping and Recreation Trips)**

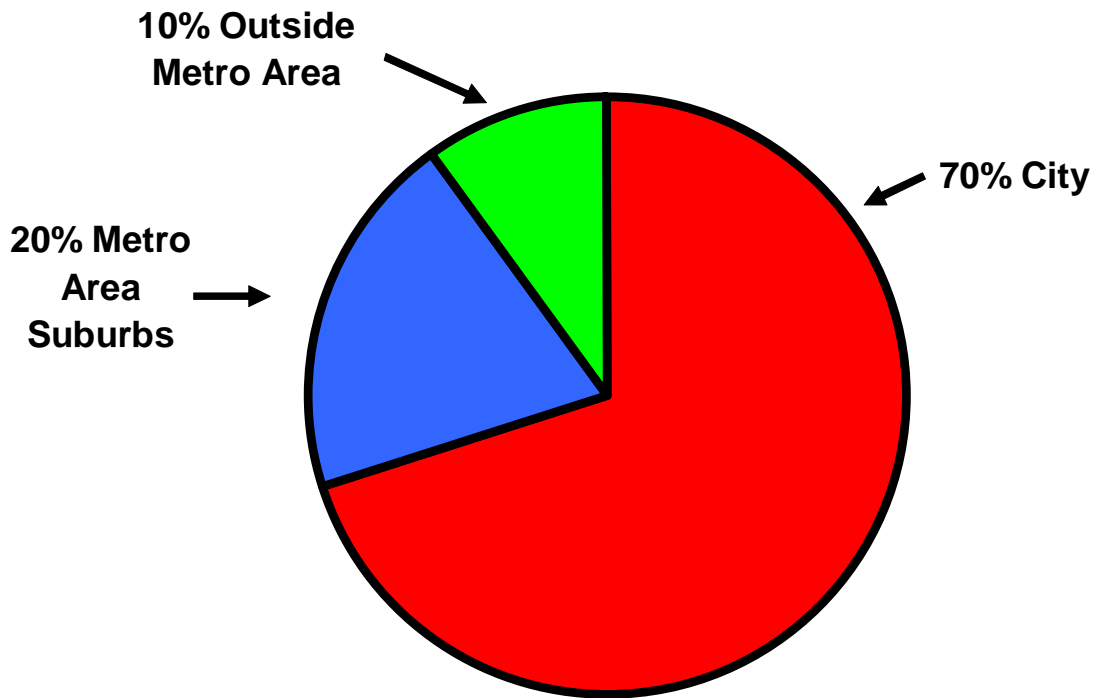


Daily Vehicle Trips - From the City of Colorado Springs to the Suburbs, 2006

Suburb	Type of Trip			
	Recreation	Shopping	Working	Total
Palmer Lake-Monument-Black Forest	350	100	2,740	3,190
Air Force Academy	3,740	100	6,750	10,590
City of Colorado Springs	95,730	181,000	187,880	464,610
Manitou Springs-Green Mountain Falls-Cascade	470	240	1,690	2,400
Fort Carson	490	140	10,490	11,120
Security-Widefield-Fountain-Southern El Paso County	1,610	920	8,580	11,110
Ellicott-Eastern El Paso County	60	10	690	760
Falcon-Peyton-Calhan-Northeast El Paso County	280	70	1,580	1,930
Total	102,730	182,570	220,400	505,700

Source: PPACG

Where Shoppers in Colorado Springs Come From



Source: Shopper intercept surveys.

Where Shoppers in Colorado Springs Come From Results of Shopper Intercept Surveys

Shopper's Place of Residence	Number Surveyed	Percent
Palmer Lake-Monument-Black Forest	367	7%
Air Force Academy	50	1%
City of Colorado Springs	3,872	70%
Manitou Springs-Green Mountain Falls-Cascade	75	1%
Fort Carson	111	2%
Security-Widefield-Fountain-Southern El Paso County	271	5%
Ellicott-Eastern El Paso County	22	0%
Falcon-Peyton-Calhan-Northeast El Paso County	131	2%
Woodland Park-Divide	100	2%
Outside of Metro Area	540	10%
Total	5,539	100%

Shopper Inflow - Metro Area Suburbs (not in city)	1,127	20.3%
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Source: David Bamberger & Associates and H. Blount Hunter Research.

Note: Surveys were conducted at First and Main Town Center (2004), Citadel Mall (1997 and 2004), Chapel Hills Mall (1997) and Downtown (1997)

INTERVIEW NOTES

Interview Notes – Paul Rochette (PR)

Interviews were conducted with officials and staff members at a sample of governmental and non-governmental agencies. The interviews covered a variety of topics concerning regional growth in general and the various roles the agencies could play in directing, promoting, or controlling that growth.

The objective of the interviews was to obtain a variety of viewpoints regarding the relevant issue at hand: that is, how growth within the Palmer Divide Water Group's constituent areas relates to the agendas and needs of other agencies.

A set of questions was prepared in advance, and each interview explored the territory of these defined questions. The sequence of topics covered was not the same in every instance, however. As the situation warranted, some planned questions were skipped and some new questions were added as each interview proceeded.

Excerpts from each interview are given below. They are presented in a question and answer format.

Wayne VanDerSchuere, Colorado Springs Utilities.

Wayne has served in a resource planning role since 2001. He is the CSU representative in the "Colorado Water for the 21st Century" initiative sponsored by the Colorado Department of Natural Resources.

PR: Wayne, what do you think are the most important issues driving water planning in El Paso County at this time?

WV: There are three key concerns:

1 - the rapid growth along the Front Range supported by ground water development,

2 - the increasingly stringent and demanding environmental regulations for water and wastewater, and

3 – the fact that some of the small water providers do not have either the technical or financial resources to address the above issues.

PR: After reading the El Paso County Water Report and CSU's White Paper of Possible Institutional Approaches for Water, Wastewater and Storm water, I see that water providers are required to bring two things to the table in order for CSU to consider providing them with access to CSU's delivery system. Those are water and money. Does this sound roughly accurate?

WV: Yes. When we are talking about the Northern Providers (much of the Palmer Divide Water Group), we see that they are reasonably affluent and skilled. They have the technical horsepower to obtain water rights, and what they are looking for is a way to move it. We are willing to work with them on this. However, as CSU goes through the NEPA process on the Southern Delivery System, we cannot enter into negotiations for something like participation in SDS or talking about an IGA without risking the success of the SDS permitting process. The northern providers must be patient.

PR: Are there limitations on the physical ability to work with the Northern Providers?

WV: No, most of the plumbing (distribution system) is either already there, or would be relatively easy to put in place. The most important issues are:

1 - City Council has a real concern over commercial growth outside the city taking away sales tax revenue, and

2 - the concerns about storm water have not been resolved. The Northern Providers must participate in storm water. EPA or the Bureau of Reclamation will step in and demand that storm water is addressed. On the other hand, NEPA does look very favorably on regional approaches.

PR: Any other issues or comments?

WV: 1 - If we don't move forward on regionalization, the regional issues aren't going to go away, and 2 - using economies of scale can be very beneficial for all concerned.

Mike Kazmierski, Colorado Springs Economic Development Council.

PR: Does the existence of outlying communities, including residential and commercial development, affect the growth of Colorado Springs either positively or negatively?

MK: It affects the ability of the area to attract employment. The EDC does look at surrounding communities. Our goal is to increase wealth for the residents of the entire metropolitan area.

PR: Does the existence of regional entities (RTA, Regional Planning agencies, etc) affect an area's attractiveness or confer a competitive advantage?

MK: Only to the point that they achieve regional outcomes. For example, the RTA addresses regional transportation needs.

PR: Do potential new or relocating businesses look at the surrounding communities of a specific city as part of their analysis, and if so; to what degree does that play a role in recruiting a new company?

MK: Essentially no, they don't usually drive around surrounding communities. Companies usually make a decision to relocate on the costs of doing business. Housing availability however is a different story.

PR: What impacts could you foresee to the City and to the region if an ongoing and severe water shortage were to occur in one or more of the rural or suburban water districts?

MK: Probably a minimal impact, more psychological than anything else. If the water shortage were to affect the availability of affordable housing, that affects a firm's ability to attract good workers. Overall, a water shortage may have a minimal to moderate effect.

PR: How do you define “Colorado Springs”?

MK: The definition will vary by who you ask. For the EDC, that is everyone in the Pikes Peak Area, including Woodland Park and El Paso County. For regional agencies or political leaders, the definition will be very structured, while citizens may define it by their neighborhoods.

PR: What are the most important community goals that you are aware of?

MK: Developing the region to create a positive synergy and a world class city.

PR: Other observations/comments?

MK: 1 - the city is too reliant upon sales tax revenue, and the internet will just make things worse, and 2 - what everyone wants to know is what is the reality of water in the region and when do we run out of it.

Bruce McCormick, Colorado Springs Utilities

PR: What are the primary concerns CSU has about the existence of the rural water service providers in El Paso County and what arguments are there for or against cooperation with those authorities?

BM: 1 - Loss of tax revenue. 2 - As CSU tries to work out regional relationships, Fountain Creek has become an area of concern. There is a sense from the Utilities Board that other providers need to participate in the storm water solution with money or other alternatives.

CSU has pushed regionalization, but bringing in more players at this time may cause difficulties with NEPA on Southern Delivery. Now is not the right time for some of the proposals, but later will be.

PR: What kinds of cooperation are there? Could you see possibilities of using CSU’s system to wheel non-CSU water on behalf of the other water service providers?

BM: From an operational perspective, CSU has good relations. We made a water loan to Monument, Manitou has an allocation from

SEWCD which uses CSU for delivery, and CSU is open to providing emergency assistance when needed.

PR: What has been the history between the districts and CSU?

BM: Woodmen Water was taken over successfully and there is talk of annexation of Cimarron Hills. CSU would probably be less opposed to that than would policy makers for the City.

PR: What benefits or liabilities to CSU owners and customers could you foresee through greater coordination, cooperation or assistance to the water authorities (financial, political, geographic, hydrologic, etc.)? Can you see any situation where you might be willing to enter into any kind of cooperative agreements with any rural water service provider?

BM: CSU might consider selling water to PDWG at a profit, but only if excess water were available, which won't be until after SDS is completed. Also, possibly there might be some hydrologic benefits of cooperating with the providers, such as joint well fields.

PR: Looking at the issue from the non-city resident perspective, would it be best to organize more formally into an Authority or Conservation/Conservancy District to be able to provide water as a larger entity?

BM: There might be some benefit if they could all come to a consensus. A larger entity might be able to work more effectively with CSU.

PR: Are there other regional issues to which the water service providers or surrounding communities could provide support or assistance to CSU?

BM: There is a lot of momentum being built around the Fountain Creek vision. It is a sandy stream, and development is changing the nature of the waterway. The key to more water supplies to northern El Paso County is through managing the creek. Water quality issues include wastewater spills and storm water control: volume, sediment, selenium, loss of land and sediment transfer. There are a lot of

different groups looking at this, including Salazar's office, Allard's office, etc.

PR: Would Colorado Springs and CSU be hurt by a significant water shortage in the outlying communities, if the shortage were severe enough to cause significant declines in home values and foreclosures?

BM: Many CSU employees live outside the city and I see impacts all over the place.

PR: Can increased cooperation (however you define it) with other El Paso County water providers in any way affect your dealings with Pueblo?

BM: CSU is looking for help anywhere it can find it when it comes to dealing with Pueblo. However, any agreement we can make up here can be spun negatively.

PR: Is there any value in the idea that if Lower Arkansas water users sell water to water providers in El Paso County, return flows stay in the basin, as opposed to selling out of basin, such as the PureCycle sale.

BM: Absolutely, it is better to keep the water in-basin.

Rich Muzzie, Pikes Peak Area Council of Governments

PR: How does your section of PPACG work?

RM: We are the lead water quality planning agency for Park, Teller and El Paso Counties. We developed the 208 Water Quality Plan, which includes a policy section for the participants. It presents a broad, conceptual approach to water quality planning, and addresses both point and non-point sources of pollution.

Its strength is that it allows for developing a regional approach to water quality to be developed. A weakness is that it has no regulatory teeth, only recommendations. Complete regionalization of this effort would require enforcement and decision-making language.

PR: What are some of the benefits at the center of the formation of your entity?

RM: Without the 208 Plan, there would be less success. The process serves to educate each other as to plans and opportunities for cooperation.

PR: Do you have examples of other regional approaches to similar issues?

RM: The Fountain Creek Watershed Authority has provided a forum for methodologies and approaches to solving the watershed issues along Fountain Creek. It consists of 3 counties and 8 cities, with all 11 entities having signed IGA's. The Authority was preceded by a Fountain Watershed Forum which had a policy development committee where participants constructed an initial consensus of ideas.

What works best with these organizations is to get elected officials involved. Without their involvement, it doesn't matter too much what staff says.

Other efforts to consider are CSU's Stormwater Authority, the Pueblo Stormwater Authority, and the El Paso Stormwater Authority.

PR: What were the intangibles that have come to light since your formation in regards to the pros and cons of regionalization?

RM: One reason some might oppose regionalization is the perceived dilution of power, and the second might be cost. The pressure that can be brought to bear by a regional approach can lead to a maximal outcome, but with a lot of pain.

El Paso County Planners

PR: What impacts could you foresee to the City, to the County and to the region if an ongoing and severe water shortage were to occur in one or more of the rural or suburban water districts?

Planners: A current example might be if home values drop in Cherokee. If more water shortages were to occur, home values would drop all over, pushing future development into the city. Property

values would fall, thereby reducing property tax revenues. Public confidence would also be negatively affected.

PR: Does the County have a position on rural utility service providers?

Planners: The County has a concern over the proliferation of special districts, other than conjunctive use. The financial and operational health of the service providers is also a concern to the County.

PR: Would greater cooperation between CSU and the water providers benefit the citizens of the county, and if so, in what ways?

Respondents: There has been a lot of cooperation between the County and various providers of services. Examples include transportation, ambulance service, and the sheriff's office. Intra-agency cooperation can be very beneficial. An example is how a regional storm water utility would bring financial and operational economies of scale.

PR: Does the County have any future plans or policies regarding regulation or operations of the water providers?

Planners: Generally, no. The County does have certain standards to approve their formation, but they then become independent entities from the County.

**EXAMPLES OF
INTERGOVERNMENTAL
COLLABORATION**

Regional and Collaborative Governmental and Quasi Governmental Efforts
In the Pikes Peak Region

Organization	Objective	Structure	Revenue Source	Membership
Pikes Peak Rural Transportation Authority	Provide regional transportation and highway infrastructure	Authority, with IGAs	1% sales tax revenue shared by members	Colorado Springs Manitou El Paso County Green Mnt Falls
Pikes Peak Area Council of Governments	Provide aging, environmental, transportation, water quality and air quality planning	Org. of local govts	Member dues	Municipal and county governments in El Paso, Teller and Park Counties
Fountain Valley Authority	Obtain and convey water from the Fry-Ark water project	Authority, with IGAs	Cost sharing between members	Colorado Springs Utilities, Fountain, Security Water & San, Stratmoor Hills Water Distr, Widefield Water Distr
Pikes Peak Library District	Provide library services	Special District	Property tax mill levy	All areas of El Paso County, excl. Manitou and areas within Widefield School District #3
Fountain Creek Watershed TAC	Collaborative forum and technical group to address Fountain Creek issues	Voluntary group under PPACG		El Paso, Pueblo & Teller Counties, municipalities, conservation districts and state & federal government agencies
El Paso County Water Authority	Collaborative forum to address El Paso County water issues	Authority		16 water providers in El Paso County
Palmer Divide Water Group	Collaborative forum to address water issues	Voluntary Group	NA	8 water providers, primarily in Northern El Paso County
Donala, Forest Lakes and Triview WWTF	Cooperative management and operations of wastewater treatment facility	IGA's	Cost sharing	Donala, Forest Lakes and Triview districts
Regional Wastewater Treatment Facility	Potential exists for development of IGAs or other structures to operate several WWTFs as regional facilities	Not yet known	Not yet determined	Various
Southern Delivery System	Efforts underway to plan, permit and construct SDS	Not yet final	Not yet determined	Fountain Valley Water Authority, CSU and potentially others
Monument and Palmer Lake WWTF	Cooperative management and operations of wastewater treatment facility	IGA's	Cost sharing	Cities of Monument and Palmer Lake
Other Regional Efforts or Potentials	The Osprey Rprt recommends that the Ftn Crk Watershed TAC be supplemented with a Policy Advisory Committee and an effort made to create a partnership	NA	Not yet determined	Likely all communities affected by Fountain Creek Watershed issues in El Paso and Pueblo Counties

SUMMARY OF LITERATURE
THE ECONOMICS OF
CITIES AND SUBURBS

Summary of
Do Suburbs Need Cities?

Journal of Regional Science, 1998

By Richard Voith, Federal Reserve Bank of Philadelphia

Richard Voith explores questions about the relationship between city and suburban growth in this paper which relies on an econometric model of urban dynamics. He uses data from 1960 through 1994 covering all U.S. metropolitan areas in which the central city had a population of at least 50,000.

He poses the question: Is city decline and suburban growth a zero-sum gain, or are there externalities associated with cities that yield increasing returns to growth at the metropolitan level?

In assessing population patterns, he finds a negative correlation between city and suburban growth in the 1960's. But this relationship turned positive in the following two decades. Voith attributes the initial negative correlation to the rapid pace of annexation in the 1960's. He asserts that the positive relationship observed in the 1970's and 1980's reflects the increasing costs of suburbanization. As land prices and congestion in outlying areas rose, central city locations became relatively more attractive.

His econometric findings generally support those of Rapport, in the sense that they reveal an empirical pattern of suburbs and cities either declining or prospering together. His policy recommendation encourages regional cooperation in order to strengthen the provision of public amenities for the metropolitan region.

Summary of
The Shared Fortunes of Cities and Suburbs
Jordan Rappaport

Link to article:

<http://www.kansascityfed.org/Publicat/Econrev/PDF/3q05rapp.pdf>

This paper puts forth very strong empirical evidence for the idea that cities and suburbs are tied together in terms of their prospects for

economic growth. Jordan Rappaport looks at U.S. data to determine whether there is any support for the commonly-held belief that suburbs grow at the expense of cities they surround. And, in fact, he finds that the opposite is true. In those metropolitan areas where suburbs thrived, the central cities were more likely to be thriving as well. Hence the title of his paper: The Shared Fortunes of Cities and Suburbs.

Rappaport presents research showing a strongly positive correlation between city and suburban growth in U.S. metropolitan areas throughout the 20th century. The relationship is statistically robust, holding up even after controlling for various metro-area attributes. He writes in the article:

City and suburban growth is positively correlated among metro areas in the same region of the country, among metro areas with similar industry compositions, and among those with similar weather. Indeed, the positive correlation between city and suburban growth remains even after statistically controlling for geographic region, industry structure, and weather simultaneously.

He also points out that the strength of the relationship holds so well that one can better predict the growth rate of a given municipality by knowing in which metro region it is located than by knowing whether it is a city or a suburb.

Rappaport interprets his findings to suggest the following:

The importance of shared characteristics in driving the growth of both cities and suburbs suggests that there may be considerable benefits to cooperation among a metropolitan area's many local governments. More specifically, it makes sense for a metro area's governments to cooperate in providing or subsidizing three types of public goods.

He outlines these types of goods as those that are characterized by increasing returns to scale, those for which the benefits to each user increase as the public good serves a larger population, and those (such as museums or performing arts centers) that provide a local amenity. He points out that special districts spanning several

municipalities are often created to provide these public goods on an efficient scale. The New York Port Authority is an example.

The article points out that cities and their surrounding suburbs inherently share a multitude of resources, such as airports, highways, entertainment venues, air quality, and potential employers. These shared resources define the metropolitan region, and the characteristics they offer together may overwhelm the differences between city and suburb in determining where people live and where jobs locate. Consequently, local leaders should have an incentive to cooperate across municipal boundaries to enhance the quality of residential life. Rappaport's research lends significant support to the idea that economic growth for a city can be sustained only if the quality and reliability of water supply is guaranteed for the entire metropolitan region.

Summary of
Shaping Suburbia:
How Political Institutions Organize Urban Development
Paul Lewis

Paul Lewis is a research fellow at the Public Policy Institute of California in San Francisco. In this 1996 book, he reports the findings of an econometric study about the relationship between the degree of political fragmentation and the dynamics of employment location within U.S. metropolitan areas.

Two of his findings are especially relevant for our inquiry. First, he finds that more politically fragmented metropolitan areas are more likely to lose employment from the central business district of their primary city than are regions characterized by a more unitary political authority. Secondly, political fragmentation is found to lead to more spatial disparities between jobs and housing. In other words, commuting times tend to be longer, and there is a greater prevalence of "edge cities" when there is a lack of unification among political entities within a region.

From reading the description of his research methods, I feel that his study is based on well-defined variables and careful economic analysis. His measure of political fragmentation is defined as follows:

The political fragmentation index is the probability that two randomly selected dollars of local public expenditure in a given metropolitan area were not spent by the same government.

This index was included as one of the independent variables in the system of equations that evaluated determinants of employment location and commuting patterns. In embarking on the study, Lewis hypothesized that political fragmentation would result in a landscape of dispersed employment and commercial activity. He asserted that

. . . political fragmentation gives suburbanites the institutional ammunition to preserve land-use advantages, and provides little incentive for local politicians to consider the externality costs of their land-use decisions. Fragmentation also provides a setting in which some jurisdictions may be overrun with growth, while others may be able to deflect development. Thus we might expect to find greater mismatches between jobs and housing areas in fragmented SMSA's.

To test his hypothesis, he gathered statistics on the urban ecology of office centralization and other land-use measures from metropolitan regions across the U.S. He was careful to measure the units of government decision-making as those that are related to land-use policies. For example, he included transportation districts, townships, and water and sewer districts in his count of political authorities. School districts and fire districts were not included, because they do not administer decisions that affect land use in the way that authorities providing infrastructure do.

After presenting his econometric results, Lewis provides two case studies of city and suburban growth. One is Portland, Oregon; the other is Denver. In the summary chapter of the book, he restates his empirical findings and concludes that divided governance within an urban area increases the likelihood that commerce will be drained away from the traditional central city and be dispersed in more of a patchwork fashion. He also suggests that Colorado would benefit from

removing constitutional provisions that serve as obstacles to greater political integration.

The academic standards of this research and the clarity with which it is presented make it a helpful resource that addresses the urgent issues related to political decision-making and urban growth patterns.

Summary of
The Creative Economy Initiative:
A Blueprint for Investment in New England's Creative Economy

This policy proposal was authored in 2001 by an alliance of arts organizations in conjunction with the New England Council. The goal of the proposal was to foster more public and private investment in the creative arts, with the idea that a flourishing artistic community enhances economic growth. The New England Council supports the idea that an economy has to establish a framework for addressing its own barriers to growth before it will be attractive to the creative class.

The authors identify these key components of the creative economy:

- 1) The creative workforce. These workers, with skills in design and expressive arts, may be employed in any sector of the economy, including finance, manufacturing, or sales. They interact closely with other industries and organizations to create or enhance their products.
- 2) Creative communities. Such cities, towns, and neighborhoods have concentrations of artists and nonprofit organizations that contribute to an enriched quality of life. The authors refer to a Carnegie-Mellon study that identified a "bohemian index" as the single best predictor of a community's ability to attract a workforce endowed with the high level of human capital that characterizes technology workers.
- 3) Creative clusters. These are the individual artists who are typically self-employed in their own ventures.

The report asserts that the least tangible but perhaps most valuable aspect of the creative economy is creative thinking itself. It puts forth the argument that business success derives from creative solutions.

In this vein, it makes an argument for supporting all three of the above groups.

While the content of the New England proposal is somewhat tangential to the subject of our investigation, it outlines the argument that we will draw on at some point. This is the argument that the interaction between the creative community and the business community is a two-way street.

Summary of
The Implications of Electronic Commerce for Fiscal Policy
(and Vice Versa)
Austan Goolsbee
Journal of Economic Perspectives, Winter 2001

Austan Goolsbee, an economist at the Chicago Business School, set out to examine whether there was any truth to the claim that “state and local government finances are becoming road kill on the information superhighway.” This claim had been made years earlier in a report published by the Center for Community Economic Research at the University of California, Berkeley.

In this paper, Goolsbee projects a nationwide loss of \$6.9 billion in sales tax revenue for the calendar year 2004 due to internet commerce. This is 2.6 percent of projected total annual sales tax revenue. His model concludes that the sales tax diminishment due to web-based commerce transactions could eventually reach 10 percent.

He also finds that consumer decisions about whether to purchase items online are significantly influenced by sales tax rates. Residents of jurisdictions with high sales tax rates are more likely to have made e-commerce purchases than are residents of other areas. And this relationship holds up even when controlling for measures of computer ownership and technological sophistication. Moreover, this difference between high-tax areas and low-tax areas disappears when one looks at products where sales tax doesn't apply, such as mutual funds and stocks. In addition, he cites two other studies that found internet purchases to be highly responsive to the presence or absence of sales

tax on the transaction. Goolsbee projects that a strict enforcement of sales tax collections on internet purchases would reduce the number of online buyers by as much as 24 percent.

Summary of
The Rise of the Creative Class
Washington Monthly, May 2002
Richard Florida

Link to article:

<http://www.washingtonmonthly.com/features/2001/0205.florida.html>

In this article, Richard Florida puts forth his trademark idea about the importance of the creative class in urban economic growth. The premise of the idea is that creativity is an increasingly valuable commodity in today's economy. And because rewards are paid to creativity, it is a growing segment of the economy. Therefore, he concludes, the cities that will experience the highest rates of growth in the near term are those that attract creative professionals.

Florida designed his Creativity Index as a mix of four equally weighted factors: the creative class share of the workforce; the amount of high-tech industry; the degree of innovation, measured as patents per capita; and diversity as measured by the Gay Index to assess an area's openness to different kinds of people and ideas. He asserts that this composite indicator measures the joint effects of the creative class concentration and of innovative economic outcomes.

Among medium-sized cities, Colorado Springs ranks 6th nationwide on the Creativity Index. (I am skeptical of the rankings for various reasons, not the least of which is that there appear to be some factual errors. For example, Chapel Hill, NC was included in the list of cities with over 1 million in population.)

This 3-paragraph excerpt from the article sums up Florida's view about the benefits of creative communities:

I think it's important for a place to have low entry barriers for people---that is, to be a place where newcomers are accepted quickly into all sorts of social and economic arrangements. All else being equal, they are likely to attract greater numbers of talented and creative people---the sort of people who power innovation and growth. Places that thrive in today's world tend to be plug-and-play communities where anyone can fit in quickly. These are places where people can find opportunity, build support structures, be themselves, and not get stuck in any one identity. The plug-and-play community is one that somebody can move into and put together a life---or at least a facsimile of a life---in a week.

Creative centers also tend to be places with thick labor markets that can fulfill the employment needs of members of the creative class, who, by and large, are not looking just for "a job" but for places that offer many employment opportunities.

Cities and regions that attract lots of creative talent are also those with greater diversity and higher levels of quality of place. That's because location choices of the creative class are based to a large degree on their lifestyle interests, and these go well beyond the standard "quality-of-life" amenities that most experts think are important.

Florida goes on to suggest that authentic and stimulating neighborhoods with a lot of street life and a variety of recreational opportunities will attract the creative class and host its dynamic economic energy.

This article is a good showcase for Florida's urban philosophy and his commitment to applying it even in cities that are struggling with their economic growth. It also illustrates, however, why academic economists tend to be dismissive of the poorly-defined variables that characterize his approach.

Summary of
Metropolitan Areas: Regional Differences
Janet Rothenberg Pack
Brookings Review, Fall 1998

This article written by a visiting fellow at the Brookings Economic Studies Program refines and extends the research of Richard Voith on the relationship between city and suburban growth. Janet Rothenberg Pack examined the patterns of metropolitan area growth as they manifest themselves in different regions of the country: the Northeast, Midwest, South, and West. The fact that correlations between city and suburban growth are not uniform across all four regions points to some underlying economic and social dynamics with important policy implications. The disparities between regions, as highlighted in the study, are identified below.

1. Pack confirms Voith's finding that population growth of a city tends to promote population growth of its surrounding suburbs as well. However, the correlation is statistically significant only in the Midwest and Northeast. In other words, we cannot be certain that the two variables (city population growth and suburban population growth) are tied together for cities in the South and West.
2. The gap between per capita income in a city and in its surrounding suburbs differs across the four regions. In the South, suburban incomes exceeded city incomes by 2 percent on average (in 1990). This figure was 5 percent in the West. By comparison, the suburb-city income gap was much larger for the other two regions: 16 percent in the Midwest and 33 percent in the Northeast.
3. There is a positive relationship between per capita income growth within a city and per capita income growth in suburban areas as well. This relationship is most pronounced in the Midwest and the West, where city income growth of 1 percent leads to suburban income growth of .66 percent, on average. The effect is weaker in the South, where the rate of suburban income growth is half of what is observed in the city. In the

Northeast, a 1 percent increase in city income results in only a .33 percent increase in suburban income.

4. During the time frame of the study (1960 – 1990), incomes in the South and West grew more rapidly than did those in the Midwest and the Northeast. However, the growth rate of income in all four regions was fairly close during the 1960's and the 1980's. It was only during the 1970's that the Midwest and Northeast did not participate in the prosperity experienced by other regions.

Pack concludes her article by pointing out that policies designed to promote, control, or subsidize urban growth should be tailored to each geographic region of the country. Both the welfare effects and the efficiency effects of population shifts between city and suburb will have distinct patterns influenced by the character of the metropolitan area. This research suggests that one of the key character traits for policy makers to consider is the geographic region and the economic environment in which it has evolved.

Summary of
Growth Management in the Western Suburbs: Planning for the Prairie
Parkway

Center for Governmental Studies; Northern Illinois University
Policy Profiles, January 2005

(Authored by a research group of economists, urban planners,
community developers)

Scholars at Northern Illinois University have examined the history of suburban development patterns in Chicago's surrounding communities in order to address questions that arise in conjunction with pressures for expanding the geographic frontiers of metropolitan growth. Their findings suggest that collaborative planning for infrastructure among different municipalities and across county borders can enhance the region's quality of life, as long as it responds to citizen input from the impacted area.

The experience of other cities throughout the Midwest reinforces their conclusions. One of the principles outlined in this report is that well-

functioning communities have always relied on some form of large-scale planning. For example, in the late nineteenth-century, manufacturing firms and railroads who owned large parcels of property would often design “company towns” as residences for their employees. The street layout, transportation hubs, housing styles, and retail centers all were incorporated into one community blueprint. The authors of this report conclude that the wide-angle scope of such planning can be a benefit, and they suggest that it be conducted in today’s environment with plenty of input from each of the affected localities. In short, they argue that the process of democracy can be applied to the concept of large-scale planning.

This quote from the article summarizes the policy stance of this research group:

Increasingly, competition for growth in the global economy occurs primarily between regions, not within them. As a result, both cities and their suburbs now need to present a coordinated portfolio of spaces, each of which is capable of supporting integrated patterns of residential, industrial, commercial, and retail activities. Some global investors prefer the density of development found in inner city areas. Others prefer the less dense pattern of suburban space. But both the urban and the suburban spaces are expected to offer residents and businesses a fully-integrated mix of uses.

When viewed from the perspective of global competition for regional growth, the stakes at risk in ensuring high quality comprehensive planning in growing suburbs are much higher today than they have been in the recent past. In order for regions to be competitive, they need to ensure an adequate supply of carefully planned suburban spaces as well as revitalized urban centers. Failure to do so can have negative impacts on growth throughout an entire region.

The article summarized here was the first of a two-part series. The second installment addressed ways in which local various municipal authorities can pool their influence, so as to have a voice in infrastructure decisions that involve economic and political tradeoffs among many stakeholders.

SUMMARY OF LITERATURE
COLLABORATION
CITIES AND SUBURBS

Summary of
Report on City Council Water Distribution Study
(Toledo, 1996)

In this research conducted for the Urban Affairs Center at the University of Toledo, economists Jim LeSage and Lawrence Connin created a model to simulate the long-term effects resulting from a proposed extension of City of Toledo water supplies to the Wood County Water District. Toledo is located in Lucas County, and Wood County is directly adjacent to the south. Wood County has traditionally been more of a rural area, but now is experiencing more housing and employment growth.

The study was conducted in response to a request from Toledo City Council. The Council was considering a proposal to provide city water supplies to support the development of a significant office and retail center just south of the county border in northern Wood County.

To develop assumptions for the simulation model, LeSage and Connin looked at an historical example with close parallels to the Wood County situation. This was the 1976 development of a suburban office park known as Arrowhead Park. It is located in Maumee, just southwest of the city of Toledo. Arrowhead Park is home to about 275 firms that employ a total of 15,000 workers. The park was constructed after the City of Toledo agreed to extend water supplies out to the Maumee area, allowing for sustained housing and employment growth.

The simulation looked at variables related to payroll and property taxes. It did not include sales tax data, because there is no retail activity in the Arrowhead Park area proper. The analysis focused on creating measures of two outcomes:

- 1) How much of the economic activity in Arrowhead Park is new to the Toledo metropolitan region?
- 2) How much of this activity was transferred from other locations in Toledo?

LeSage and Connin found that only a small percentage of the Arrowhead Park employment was new to northwestern Ohio. Most of

it resulted from a shift of workplace locations from downtown Toledo to this new suburban location.

We see a two-fold significance of this study for our topic of inquiry. First, the simulation model can suggest a framework for data collection. Secondly, it supports the idea that the natural organic unit of economic activity is the metropolitan region, not the geography contained by city boundaries.

Summary of
Association of Metropolitan Water Agencies
Federal Water Review
November – December 2003

This trade publication summarizes some instances of successful consolidation.

At the Greater Cincinnati Water Works, where the service area has expanded from 300 sq. mi. to 820 sq. mi. since 1993, the director explains that cooperation has been built among utility districts through efforts of sharing assistance and advice on laboratory, engineering, or billing questions.

The Cincinnati director explains that the impetus for consolidation is almost always economics. Often, a small local district will seek to combine with the larger municipal system when they find a source of contamination that would be costly to deal with.

When Cincinnati evaluates a potential consolidation, it starts by looking at the source of the request. The director is quoted:

We need to know that the elected body that is the ultimate decision maker is behind it. Then we look at utility records (which are typically poor) and state records to begin our planning and help determine how we would operate a system and what we would do to bring it up to our standards. Often systems have bond debt with covenants that need to be met.

Our contract terms would be set based on this research and planning, and we always take a long view of 15 to 30 years.

The publication emphasizes that consolidated water systems differ from regionalized ones. In a consolidated water system, there are autonomous water entities, and one commissioner represents each member. Each entity maintains ownership and operating responsibility for its distribution system. The commission does not take on any debt or ownership for the individual members, nor do the individual systems incur debts of the commission. Each system sets its own water rates.

This concept offers several advantages. A consolidated water system

- provides economies of scale for efficient construction and operation;
- eliminates the duplication of services and provides for the efficient use of resources;
- ensures that each entity pays the same wholesale rate for water regardless of size or location;
- lowers overall water costs in the future when compared to other alternatives; and
- offers benefits of regional cooperation that extend beyond areas besides water.

As with any plan, there are also disadvantages to consider.

- The commission relies on one large water source now instead of a collection of smaller sources as in the past.
- Each system has its unique issues to address, including how to retire remaining bond debt.
- Higher water costs in the short term are almost certain, as are political squabbles.

Consolidation typically arises in response to water shortages prompted by population growth. This model, which is an alternative to regionalization, allows for water to be provided to a larger area without loss of political control at the local level.

Summary of
Drought and Water Supply Assessment
Colorado Water Conservation Board
2003

Link to article:

http://cwcb.state.co.us/owc/Drought_Water/html/chapter01.html

In 2003, the Colorado Water Conservation Board published a report about the prospect of drought conditions in the state. The document also served to outline possible responses to water shortages. The authors of the report conducted an assessment of conservation and allocation plans among water users in Colorado.

Among the items of interest contained in the report are the results of in-depth interviews collected from a handful of individuals whose incomes are directly tied to water conditions; such as a nursery owner, a truck farmer, a rancher, and a raft-trip operator.

Chapter 16 of the document summarizes the findings of a more widely administered survey about the need for cooperative agreements during periods of drought. Some of the common arrangements practiced in Colorado are dry year leases, water banking, operating agreements, exchanges, transfers, interruptible supplies, and water conservation easement. The terms of these agreements are detailed on page 3 of the chapter.

The authors conclude that cooperative agreements allow for system flexibility within the prior appropriations doctrine of the state. As such, their use should be encouraged as a means of managing both supply and demand conditions during times of water shortage.

Summary of
The Regionalization of Water Utilities:
Perspectives, Literature Review, and Annotated Bibliography
Beecher et. al., 1996

In this paper written by researchers at the National Regulatory Research Institute of Ohio State University, the literature on the effects of regionalization is reviewed. A substantial bibliography of further references is also provided.

Below are the salient points that emerge from their literature review.

The analysis of efficiency gains through regionalization received much attention following passage of 1974 amendments to the Safe Drinking Water Act. The law itself encouraged regionalization, and arguments in the economics literature at the time suggested that regional organization would create economies of scale in operation and would allow regulators themselves to operate more efficiently.

The development of this literature has given rise to system modeling studies which create a statistical assessment of regionalization options. They are designed to find optimizing solutions to challenges with multiple objectives. The set of objectives might be, for example, to have a reliable water supply with a minimum amount of environmental impact and an equitable distribution among users of the system.

Another segment of the literature deals with the problems inherent in managing small-scale water systems. Compliance with regulatory standards is less successful among water utilities serving a small consumer base.

One area where additional guidance is emerging concerns how to involve citizens in water resource planning and restructuring. Citizen-stakeholders tend to view regionalization as a form of disenfranchisement. One study concluded that satisfaction with regional management can be enhanced if participants are informed about the positions of others within the system and about the problems that might be encountered if the regional effort is not successful.

The bibliography also encompasses studies reported in the public utility literature about integrated resource planning. The consensus seems to be that comprehensive planning is the key to regionalization, as well as to conservation, because of the need to overcome parochial thinking in both of these areas. An example of how this planning approach can be implemented is found in the state of Connecticut. Utilities are required to incorporate conservation objectives as part of their supply plans. Various interest groups are invited to contribute to the planning process, and a range of time horizons are targeted to deal with uncertainty. Already emerging from this approach are the measurable benefits of better defined service areas, a reduction in the number of small and nonviable water systems, identification of safe yield deficits, and implementation of a statewide resource conservation program.

The authors also cite literature about the benefits of regionalization in solid waste management, as issues surrounding landfill space become more troubling.

In summarizing their findings, the authors conclude that the trend in the literature (a multidisciplinary literature) is in favor of regional planning and management to promote economic efficiency and environmental values.

The extensive bibliography they have compiled includes a number of case studies on regionalization, as well as economic analyses of planning and water conservation issues. As we develop a more careful articulation of our research questions, the references included in this bibliography could likely be a source of answers.

Summary of
The Clock's Ticking for NPDES Permit Applications

William E. Spearman, Clarence H. Robbins, and John P. Lyons
Reprinted from the March 2001 issue of CE News

This article was posted on the website for Woolpert, a consulting firm that advises clients on questions of civil engineering and design. They deal with some public utility issues.

The authors summarize benefits of a regional approach to wastewater and storm water management. The relevance for our study is that this publication outlines political and community concerns that may need to be addressed in any effort to regionalize water supply infrastructure. The Woolpert consultants conclude that any successful regional effort should include these steps:

1. Don't create a bigger bureaucracy in the process. A regional entity must be organized, managed, and staffed properly so economic benefits and operational efficiencies can be realized. Creating a huge bureaucracy is not the goal.
2. Recognize that a one-on-one effort will be required. Advisors must communicate individually with municipal leaders about the benefits of a regionalized storm water effort to get them on board - one municipality at a time.
3. Recognize that success demands a strong public education and public involvement program. The first step is educating the public about what storm water is. Many people don't know, and many others view storm water as merely a flooding or water quantity issue and not a water quality issue.
4. Consider a citizen's focus group to foster ideas and discussion and champion the cause to stakeholders in the region. Some municipalities within the region may not want to join the regional entity, and that's OK. Look for win-win situations.
5. Take the storm water message to developers and the business community, which will be affected the most if programs are not enacted to control the region's storm water quantity and quality.
6. Find ways to make complex subjects understandable to a general audience. Public presentations and discussions about federal storm

water regulations, planning, programming, and funding can become complicated quickly. What does all this mean to the average homeowner? Cite real examples and stories rather than statistics.

7. Cultivate strong, credible relationships with one or more newspaper or TV reporters so they thoroughly understand storm water-related issues. Write plenty of news releases as the regional storm water effort progresses. Invite the media to public meetings.

8. Invite targeted community groups to help in the education process.

Summary of
Tennessee's Water Supply:
Toward a Long-Term Water Policy for Tennessee
Dan Cohen-Vogel and Greg Spradley, 2002

Cohen-Vogel and Spradley are research analysts writing on behalf of the comptroller of the state of Tennessee. This report, submitted to the state legislature, contains a few arguments pertinent to our investigation.

1. Public policy in general has been slow to recognize the connection between water supply and land use. The increasing demand on water resources requires that utilities exploit the efficiencies that arise from taking a regional approach to supply and allocation. A key component of the Tennessee's long-term water strategy is to make an explicit provision for the water resource infrastructure requirements as part of the state's comprehensive growth plan statute.
2. The Tennessee Department of Environment and Conservation views regionalization as a key step to effective planning. This agency regards the demand for water as a regional phenomenon. Yet, the supply is often constructed by fragmented utilities whose districts are far smaller than the regions they serve. TDEC is encouraging the development of geographic entities where the boundaries of the organic unit of demand are matched with the infrastructure for supply. The

paper suggests organizing regional water authorities along the lines of development districts or planning regions.

3. The authors find that a system of numerous and fragmented utility districts poses a challenge to regional planning. They point to the fact that the state General Assembly already recognized this when it passed legislation to encourage consolidation of water authorities across municipal boundaries.
4. The long-term vision expressed by the authors rests on the idea that utility districts must develop the means to share water supplies, to exchange information about patterns of demand, and to coordinate comprehensive planning efforts based on the idea of a regional resource matched to a regional demand for its use.

Summary of
Colorado Water Conservation Board
Statewide Water Supply Initiative
May 28, 2003

Link to document:

www.cwcb.state.co.us/SWSI/SWSI_SOW.pdf

The Colorado Water Conservation Board (CWCB) is the state agency charged with securing a long-term safe and reliable water supply. It has the authority to identify and recommend water development projects to the General Assembly.

The overall objective of the Statewide Water Supply Initiative (SWSI), administered by CWCB is to help Colorado maintain an adequate water supply for its citizens and the environment. It serves as a forum in which water users and water providers can develop strategies for balancing the conditions of resource supply and resource demand. The initiative aims to evaluate all of the geological, meteorological, economic, and demographic variables which have an important bearing on water resources and their use.

SWSI intends to identify water supply projects that may require coordination across several planning entities. In response, the CWCB will present possible solutions to achieve a collaborative plan.

As a further goal, SWSI will propose a course of action for better methods of water conservation and the rehabilitation of existing infrastructure for water supply.

Summary of
Research Needs for Protecting Tennessee's Water Supply:
A Baseline for Continued Policy Development

This 2003 paper was written by David Feldman, a senior research scientist at the Energy, Environment, and Resources Center of the University of Tennessee. It is part of a series about water policy challenges in the state of Tennessee. Its goal was to evaluate different avenues that might offer long-term resolutions for current conflicts.

The report begins by identifying the recent sea-change that has been observed with regard to water policy issues. Even in areas of the world where water is relatively abundant and the infrastructure for supplying it is sound, decisions regarding its allocation are increasingly contentious. The researchers point to a growing appreciation for the environmental, legal, and political challenges that arise in protecting water resources in the United States. They cite studies that reveal the level of distress policy makers experience when grappling with these issues. Some authors use words like "grave" or "intractable" to describe the contention that accompanies water policy decisions.

In responding to these challenges, the state of Tennessee has already ventured forth with some solutions, including these four summarized below.

- 1) Six independent water districts in Cumberland County committed themselves to a collaborative process, which led to

the establishment of a regional water compact --- the Cumberland Plateau Regional Water Authority. Similar efforts to encourage regionalization are happening in at least 3 other locations in the state. One key element of the Cumberland cooperative effort is that there is a legal structure in place to reach an equitable allocation of supply once new water resources are identified.

2) There is a new state law (passed in 2000) that gives Tennessee the authority to regulate the diversion of water from one river basin to another.

3) A water supply technical advisory committee was established to steer policy decisions in the direction of addressing environmental and conservation needs on the state level.

4) A state law was passed in 2002 to require licensing for any wells that would result in recurring withdrawals of water.

The report identifies three underlying causes of water disputes:

- 1) Growing competition by different users over the same surface and groundwater supplies is increasingly taking the form of upstream versus downstream use. These conflicts deepen as dependence on water supply sources extends over several jurisdictions and even across state boundaries.
- 2) Land use change, population growth, rapid urbanization, and regional climate variation are imposing new, largely unanticipated pressures on water resources. It is becoming increasingly obvious that the issue of water supply cannot be separated from the issue of water quality.
- 3) Ensuring the safety and reliability of local water supply and also promoting economic growth are proving to be difficult-to-reconcile goals in rapidly growing metropolitan areas and in smaller communities seeking to broaden their tax base.

This thorough report, which addresses the technical, legal, and environmental issues associated with water management, draws several conclusions. We have summarized below the two that seem most relevant to our investigation.

- 1) Regionalization tends to be most successful when the hurdles in developing new sources of supply are anticipated so that community interests see the advantage of collaborating in order to achieve economies of scale. Another factor that encourages cooperation is the possibility of outside funding as an enticement to work together.
- 2) The range of water dispute experiences worldwide shows that it is easier and cheaper to prevent problems than it is to resolve them afterwards.

Summary of
Water Supply Challenges Facing Tennessee:
Case Study Analyses and the Need for Long-Term Planning

This investigative report was authored in June of 2000 by David Feldman, a senior research scientist at the Energy, Environment, and Resources Center of the University of Tennessee. To address the objective of finding policy remedies for water conflicts in the state, he employed the methodology of looking at case studies which provide a context in which the physical, legal, and economic factors played out.

Below, we summarize the findings with most relevance to our inquiry.

1. Water markets arise in response to drought conditions. If they are imposed by state statute, they can be seen as a regulatory takings issue. There is a separate and extensive literature on the economics of regulatory takings.
2. In order to promote prudence in the use of natural resources, the State of Georgia now requires state involvement in any land-use planning issues in the 18-county Atlanta metropolitan area.

Atlanta therefore serves as a laboratory, generating observable data on the experiment of regionalization.

3. To assess the underlying conflicts in water usage, David Feldman surveyed an assortment of stakeholders; that is, those with an interest in the outcome of disputes. He spoke with representatives of agricultural interests, municipalities, utility districts, environmental groups, recreation associations, and so on, about their reaction to hypothetical policy actions. In his interviews, he was able to determine how patterns of water use had changed in response to the perception of drought conditions. It emerged from the survey that there was a division of opinion between groundwater users and surface water users regarding the selling of water rights. Groundwater users were uniformly opposed to markets; surface water users showed more openness to the concept. Among all groups interviewed, there was much more support for a statewide planning process than for a system of trading or selling water rights. Only among agricultural interests was there a willingness to admit that water markets could offer a solution to the emerging conflicts. His survey questionnaire, which was intended to reveal the patterns of alliance and discord among interest groups, is included as an appendix to the report.
4. The incentives for regionalization in water supply will be specific to each region, and will be closely tied to the perception policy makers have with regard to future population growth.

Summary of
Public Perceptions of Water Transfers and Markets:
Describing Differences in Water Use Communities
Sean Keenan, Richard Krannich, Michael Walker
Society and Natural Resources, 1999

A research team of three sociologists authored this paper which investigates public opinion regarding water markets. They studied the history of water transfers in two areas of the country: the Grand Valley in Colorado and the San Joaquin Valley area of Kern County, California. To assess public perceptions about regional water

transfers, they surveyed households in both areas to explore opinions regarding the equity, economic, and environmental outcomes of water markets.

Of the 200 surveys distributed in the Grand Valley, 147 were completed. In Kern County, 618 complete questionnaires were returned out of 1053 sent out.

Respondents in both areas expressed strong reservations about using markets as a way to allocate regional water supplies. The range of opinion across different occupational groups and according to length of residence in the region is reported in the article.

It is interesting to note that there was somewhat more acceptance for the idea of markets as a means of water allocation in Kern County than in the Grand Valley. Kern County is a net importer of water; whereas the Grand Valley is primarily an exporter. In Kern County, there was much more support for the idea that water-exporting areas can benefit economically from this activity than there was among the Colorado respondents.

Support for the idea of water marketing was strongest among the subsample of agricultural water users in Kern County. The authors of the paper assert that the national and multinational ownership of much of the very productive farmland in the San Joaquin Valley encourages those who are dependent on agriculture for their incomes to have less of a concern for community issues when it comes to resource allocation.

The authors go on to suggest that further research could help to identify “water use communities.” In other words, they would like to pinpoint the socioeconomic variables that define the stakeholders who have a disproportionate influence on water allocation decisions. Added insight into this issue might help determine the type of public education that would enhance the political acceptability of water transfers through the market mechanism.

Summary of
Pathways to Cooperation Among Public Agencies
Janet Weiss
Journal of Policy Analysis and Management
Autumn 1987

Janet Weiss, an expert on community outcomes, identifies the six most commonly observed reasons for cross-agency cooperation in this 1987 article.

1. Cooperation may be a voluntary transaction driven by cost-benefit calculation.
2. The professional values of the community leaders involved may encourage collaboration, as it becomes obvious that the larger region is better served by working together towards the same ends.
3. Collaboration can be seen as a way to reduce uncertainty about the future.
4. The pooling of knowledge and other resources may prove itself as the most effective means of solving the individual problems of each agency.
5. The political leverage of several affiliated agencies may be greater than the sum of the political strength of each individual agency.
6. Cooperation may be a response to a higher-level political mandate.