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Two Octopuses Making Love: An Analysis of Institutional Management Behaviors Across Four Brownfield Remediation and Redevelopment Project Networks in Rochester and Buffalo, NY

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ABSTRACT

With intensifying pressure to not only solve public problems by collaborating with actors situated outside the confines of city hall but also to address complex, long-term challenges like climate change adaptation and sustainability, local government public managers find themselves working in increasingly difficult public management environments. Currently, public management theory fails to fully prescribe management strategies and behaviors that enable managers to best achieve their goals in these situations. This dissertation addresses this gap between theory and practice by tracing the public management processes that lead to outcomes in a set of municipality-led brownfield remediation and redevelopment projects.

Utilizing an integration of public management, policy tool, and network theories, this research compares four project-level case studies in Rochester and Buffalo, New York, to address two primary questions. First, in what ways do brownfield projects function as public management networks? Second, to what extent do network management behaviors by city-level public managers impact project outcomes?

Contrary to prior research, my findings revealed that neither relationship management nor policy tool strategies alone sufficiently explained project outcomes. Instead, effective public management occurred when high levels of political legitimacy were coupled with an integration of policy tool and relationship management strategies, either through network-centric public managers themselves or through the actions of political champions operating in partnership with them. These findings imply that public management researchers focusing solely upon relationship management or policy tool explanations separate from political influences are not fully capturing the true public management story.

TWO OCTOPUSES MAKING LOVE: AN ANALYSIS OF INSTITUTIONAL MANAGEMENT BEHAVIORS ACROSS FOUR BROWNFIELD REMEDIATION AND REDEVELOPMENT PROJECT NETWORKS IN ROCHESTER AND BUFFALO, NY

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Thanks Mom and Dad . . .

And Chip, here's to our next steps.

CHAPTER ONE INTRODUCTION

> I moved in in 97 and I moved in knowing about the contaminated property. The mess that was back there. I walked around the neighborhood with the dogs and got to meet some of the neighbors and they talked about how it was this catastrophe back there . . . You'd be sitting here and next thing you know a stick of dynamite would go off or somebody would be out back at 2 or 3 in the morning and you'd see a backhoe start up and they are digging and burying and hiding stuff and illegally bringing trucks in from main street down through the street that was there and dump in the middle of the night and we'd call 911 and say "look! Somebody is back there and they are dumping or whatever" and nobody would ever come and investigate it. – Neighbor, Rochester, NY

This story is one of many involving the problems put upon communities by the presence of environmentally contaminated properties, or brownfields, in their neighborhoods and downtown districts. Symbols of neglect, brownfields create health hazards and serve as magnets for illicit activities by both property owners and trespassers alike. As implied by the quote above, brownfield problems involve multiple stakeholders competing over limited resources to address a diverse array of environmental, social, and public policy problems. Addressing a brownfield problem requires more resources than any single government agency is able to put together and more expertise than any single government agency is able to maintain.

In the early 1970's Rittel and Webber (1973) described such public policy problems that defied traditional bureaucratic solutions as "wicked" problems (Rittel and Webber 1973). Grounded in the planning profession, the authors wrote that wicked problems could not be addressed by one entity accumulating all of the necessary knowledge to determine, and then implement, the best solution. "We shall want to suggest that the social professions were misled somewhere along the line into assuming they could be applied scientists – that they could solve problems in the ways scientists can solve their sorts of problems." (160) Instead these problems require multiple iterations of imperfect policy solutions generated through interactions of

multiple actors and organizations acting as a network – a complex and messy process for public managers to untangle.

In recent years, research suggests that addressing complex problems with cross-sector networks is more efficient and effective than the alternative of internalizing the problem within a government bureaucracy (Andrews and Entwistle 2010). However, many questions remain unanswered as to the mechanisms that increase the efficiency and effectiveness of these networks, including the impacts of public policy tools and the extent to which the strategic use of these tools by public managers shapes network actor behaviors (Mandell and Keast 2007; Hicklin, O'Toole Jr., and Meier 2007; O'Toole Jr. and Meier 2006). To what extent can a single public manager steer multiple organizations towards a common goal? Is it more effective to influence network actors through policy incentives or by appealing to relational trust and reciprocity? What factors moderate the effectiveness of these strategies? One school of thought suggests that public managers operating in task-specific networks should focus their attention on the former, shaping the rules and norms, or institutions, which guide network actor behaviors (Edelenbos and Klijn 2006; Klijn and Koppenjan 2004). This dissertation adds to this knowledge base by examining network management practice within a new context – that of brownfield remediation and redevelopment.

The Brownfield Problem. In the face of today's economic crisis, many municipalities in the United States with industrial pasts face difficult challenges in maintaining the delivery of government services and ensuring the quality of life expected by their citizens. Once heralded as prominent centers of production and manufacturing up through the 1950s, these municipalities carry the burdens of decaying water, sewer, and street infrastructures, aging housing stock, and inadequate space for new commercial and industrial employers (Vey 2007; Goldman 2007).

Embedded within the economic struggle of these cities is extensive soil and water contamination resulting from decades of underregulated commercial and production activity. From steel milling to chemical refining to food processing, companies large and small polluted the air and water around them, often directly impacting the very neighborhoods in which their employees resided (Yount 2003; Heberle and Wernstedt 2006). As property owners left for greener areas and local governments tried to resell what they acquired through tax foreclosure, the extent of this contamination became known. Yet, while environmental clean up costs posed new barriers to redevelopment, these properties presented new opportunities for new construction amongst limited land supply (Greenberg et al. 2001; Nijkamp, Rodenburg, and Wagtendonk 2002).

Formally, brownfields are real properties lying underused because of fears, real or perceived, that they are contaminated with pollutants[1]. Some brownfields exist in highly marketable locations where private investors willingly acquire and transform them into more productive spaces. Others qualify for state and federal hazardous waste cleanup programs such as Superfund due to the extent of their contamination. A third category of properties exists in a sort of "twilight zone" where market forces alone do not compel their cleanup but the regulatory hammers of Superfund laws do not apply. It is these properties that brownfield public policy programs primarily target.

Over the past fifteen years, federal, state, and local governments have innovated a wide array of brownfield policy programs, or policy tool packages, intended to incentivize the assessment and remediation of contaminated properties by shaping the rules and norms

[1] http://www.epa.gov/brownfields accessed December 13, 2010

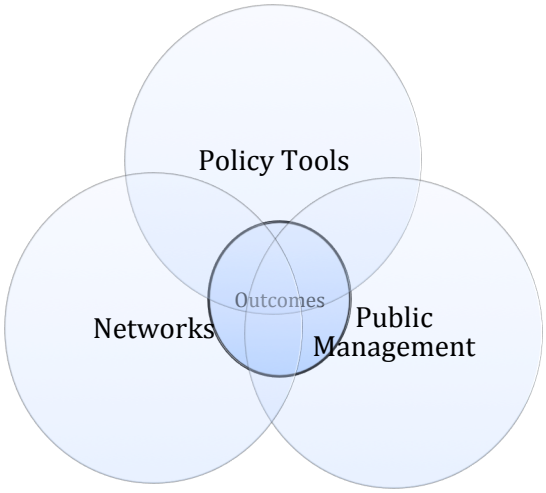
governing the interactions of public and private actors engaged in brownfield processes[2]. Examples of these tools include liability waivers, tax credits, planning and remediation grants, revolving loan funds, and technical assistance. Most of these tools exist at the state and local levels, creating a wide variation in tool availability across state and local contexts (DeSousa 2005). However, simply remediating a brownfield property only addresses half of the problem. To be considered successful, projects also need to improve property usage by addressing housing, employment, aesthetic, and infrastructure challenges (Lange and McNeil 2004).

Because brownfield remediation and redevelopment projects link the environmental, economic, and social policy arenas and bring together three distinct expert areas (environmental science and engineering, planning, and construction) and groups of stakeholders, the effectiveness of brownfield policy tools relies upon adequate integration of environmental, economic and social domains over the life of the project (Meyer 2003; Greenberg et al. 2001; Heberle and Wernstedt 2006; Hula 2001; Lafferty and Hovden 2003). Achieving this integration requires a great deal of information diffusion to a range of stakeholders operating within and around the project network (Thomas 2003; O'Toole Jr. 2004). Private investors need to understand project risks and uncertainties, local government officials need to be aware of available policy tools, and elected officials, regulators, interest groups, and citizens need to understand remediation and redevelopment processes to create a political process for moving the project forward (Thomas 2003; Simons and El Jaouhari 2001; DeSousa 2006). Together, these characteristics of brownfield projects require that understanding the extent to which public

[2] For a more detailed discussion of policy tools, see Chapter Three, p.46. However, throughout this dissertation, the term "policy tools" and "policy instruments" are used based upon the definition presented by Salamon (2002) in which he writes that a policy tool is a mechanism used by government actors to address public problems. While this is a broad definition, it encompasses the range of policy mechanisms commonly used in brownfield projects.

managers play a role in shaping outcomes involve an examination of network, policy tool, and public management processes and how, when overlapping, outcomes occur (Figure 1-1).

Figure 1-1: Theories for Explaining Brownfield Project Outcomes



Research Questions. This study therefore addresses two primary research questions.

1. How do brownfield projects function as networks?
2. To what extent do management behaviors by city-level public managers within these networks impact project outcomes?

This first question requires an exploration of the multi-actor nature of brownfield remediation and redevelopment projects to determine the extent to which these projects conform to existing public management network theory. The second question subsequently requires the deductive use of theories about interorganizational networks, the selection and implementation of policy tools, and public management to explain why different brownfield project outcomes occur across multiple projects.

Two motivations drive this research. First, local governments play a key role in brownfield remediation and redevelopment processes (Simons and El Jaouhari 2001; DeSousa 2006) but research has primarily focused upon the policy tools employed during implementation

processes rather than actual management practice. Practitioners need a greater understanding of the organizational and managerial capacities behind successful project implementation. The second motivation is to fill in existing gaps between network, public management, and policy tool theories by examining the interactions of network structures, public managers, and policy tools over time. Existing literature fails to account for the complete context in which public managers influencing network outcomes operate. If theory is to inform practice, it is important to examine the details of these network functions over time.

Theoretical Implications. This dissertation carries theoretical implications for brownfield researchers and public management theorists alike. First, for brownfield researchers, the study describes brownfield projects in a manner not yet seen in the brownfield literature. By viewing these projects through a network lens, the study produces insights into the nature of multiple relationships occurring simultaneously, not just the relationship between local government and a private developer. Second, in their original discussion of problem "wickedness", Rittel and Webber (1973) describe how natural science problems "are definable and separable and may have solutions that are findable" while social problems "are ill-defined and they rely upon elusive political judgment for resolution" (160). Analyzing network structures and management strategies within the brownfield remediation and redevelopment arena provides a window through which the convergence of natural and social science knowledge areas in public management practice may be further understood.

For public management theorists, current research lacks focus on how networks evolve during their life spans (Provan, Huang, and Milward 2009), particularly in the area of short-term, temporary networks. The application of social network analysis to brownfield projects helps to fill this gap. In addition, as described above, the study builds theory regarding the interactions

between network structures, policy tools, and public management when explaining outcomes of management activity. Simultaneously integrating these theories better matches the complex management environments they are intended to explain.

Practical Implications. By contributing to theory, this dissertation simultaneously contributes to practice. The findings provide practical insights to public managers engaged in projects spanning the arenas of environmental regulation and economic development. A stronger understanding of which actors occupy what network positions across multiple project phases enhances the abilities of public managers to identify and target project actors at the appropriate times. In addition, this research informs policy makers at the state and federal levels about how different sets of policy tools become used at the project level. As many brownfield policies face reauthorization at these levels, smart redesign relies upon more a complete understanding of how tools impact processes. Finally, this work explains the inner workings of local governments during brownfield projects for private firms engaged or interested in engaging with their governments on these projects. A greater understanding of the constraints and opportunities facing their public counterparts enables private partners to make more informed decisions about project selection and public-private partnership development.

Summary. As more municipalities struggle with increasingly complex wicked policy problems like brownfields, the need to understand cross-disciplinary, cross-sector public management networks becomes imperative. Public managers must understand how to leverage policy tools in order to leverage project partners, policy makers must understand the extent to which public policies constrain or enhance public managers, and researchers must fully comprehend the dynamic nature of networks unfolding over time. Without these understandings, the prospect of governments solving wicked problems diminishes, for, as one public manager

interviewed for this study commented, addressing a brownfield problem "was like two octopuses making love, it was hard to figure out where the beginning of one was and the end of the other was." Through careful study, we may be able to untangle the tentacles of network management and organize our cross-sector public management networks with greater efficiency, ultimately realizing greater effectiveness.

Organization of Dissertation. The dissertation contains five substantive chapters in addition to this introduction and the conclusion. Chapter Two provides a thorough background of the size and scope of the brownfield problem and the policies put in place to address the problem in the United States today as well as the state of New York. Chapter Three provides an overview of network, public management, and policy tool theories and constructs a theoretical framework for explaining brownfield project outcomes. Chapter Four describes the research design and methodologies used to select project level cases, to collect necessary data, and to perform data analysis. Chapters Five, Six, and Seven present analytical case studies that examine how network characteristics and policy tool use interact with public management behaviors to shape individual project outcomes. Chapter Eight summarizes the extent to which key findings across these cases address the propositions and Chapter Nine summarizes the theoretical and practical contributions of the study. As a special addendum, Chapter Ten presents an example of how complex network research may be used to train practitioners.

CHAPTER TWO BACKGROUND ON BROWNFIELD PROPERTIES AND THEIR REMEDIATION AND REDEVELOPMENT

Overview. When the first federal legislation addressing the brownfield problem occurred in 1995, policy makers and academics viewed it as a remediation challenge for environmental engineers. This point of view quickly shifted when policymakers realized the potential for private redevelopment investment to help pay for remediation costs. This integrated the environmental aspects of brownfield properties with existing local community and economic development strategies (Hula 2001). Over the past twenty-five years, the brownfield arena has evolved to produce a rich public management phenomenon about which research has just started to scratch the surface.

This chapter presents an overview of the brownfield problem in the United States and, more specifically, the state of New York, as well as a summary of brownfield research. The first part of the chapter covers the history of the term "brownfield", the scope of the problem, the causes and contaminants, phases of brownfield remediation and redevelopment processes, types of property reuse, and theories about project stakeholders. The second section examines the barriers to remediation and redevelopment, particularly as they relate to the issue of marketability, and describes the evolution of federal and state brownfield policy tools designed to address these barriers. The final section overviews the measurement of brownfield remediation and redevelopment success.

Definition and Policy Background. Contaminated properties reached the national consciousness in the late 1970s when numerous toxic waste fires occurred and the extent of contamination at Love Canal in New York and Times Beach in Missouri became known. These events and the resulting public outcry led President Carter and the U.S. Congress to pass the

Comprehensive Environmental Response Compensation and Liability Act (CERCLA), funding remediation of the most contaminated sites and setting liability rules regarding responsibility for past, present and future damages. However, while this legislation addressed a serious environmental problem, it also erected significant liability barriers for those who might voluntarily redevelop properties containing far less severe contamination (Yount 2003; Heberle and Wernstedt 2006; Page and Rabinowitz 1994). By erecting elaborate joint and several liability structures to hold multiple parties responsible for remediation, policy makers effectively created disincentives for the transfer of titles of contaminated properties to those who might willingly clean them up (McGregor 2003).

Recognizing this negative side-effect of CERCLA, the United States Environmental Protection Agency (USEPA) enacted its Brownfields Action Agenda in 1995 to clarify liability issues and to support efforts underway in various states that incentivized voluntary clean up of brownfield properties (Yount 2003; Heberle and Wernstedt 2006). The resulting revisions of federal laws freed states to innovate policy instruments intended to lessen market constraints on brownfield redevelopment for private firms. These laws had the additional effect of empowering local governments to pool existing resources and proactively address their own brownfield problems in anticipation of attracting private investment. It is at this point that "brownfield remediation and redevelopment" emerged first as a subsector of the environmental engineering profession and then as part of the economic development sector.

The official definition for "brownfield" in the United States comes from Public Law 107-118 and states that "brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance,

pollutant, or contaminant[3]." The law excludes properties whose contamination is so extensive that they qualify for the National Priorities List of hazardous waste sites and properties that have binding legal agreements regarding their remediation. Key components of this definition are the phrases "presence or potential presence" and "may be complicated", signifying that the brownfield status of a property is based both on perceptions of contamination as well as actual contamination (Schoenbaum 2002). This ambiguity led to the development of a diversity of brownfield policy tools as well as multiple calls for more specific definitions (Yount 2003).

Extent and Nature of Problem. The lack of a clear definition and the diversity of public policiy at the state level make it difficult to nail down the extent of the brownfield problem in the United States (Coffin and Meyer 2002; Yount 2003). For example, the USEPA estimates that 450,000 brownfield properties sit underused in the United States[4]. Yet, in a series of surveys conducted by the U.S. Conference of Mayors, city managers from over 500 of the nation's largest municipalities estimated only 40,000 brownfield properties in their communities (Table 2-1) (Mayors 2001, 2003, 2006, 2008, 2010).

[3] http://www.epa.gov/brownfields/ accessed August 1, 2010
[4] http://www.epa.gov/brownfields/about.htm accessed August 1, 2010

Table 2-1: Brownfields Data – U.S. Conference of Mayors

City Population	Less than 100,000	100,000 to 249,999	250,000 to 499,999	500,000+
# Respondents	351	97	31	25
Total # Sites	9397	9586	8961	11314
Total # Acres	54921	44261	29584	450227
Ave Acres	5.84	4.62	3.30	4.44
Est Tax Revenue	$241,758,110	$59,336,000	$69,170,556	$260,010,000
Sites Redeveloped*	868	603	282	575

Data compiled from responses across 2001, 2003, 2006, 2008 and 2010 U.S. Conference of Mayors brownfield surveys using most recent year containing total # sites and total # acres data for each unique case. Survey questions and format differ for each year. All responses are estimates made by the respondent. Not all responses complete.
* Excludes cities whose only data comes from 2000 survey.

At the same time, it is difficult to designate and count privately owned brownfield properties as brownfield designation lowers the value of the property and adjacent parcels, particularly in commercial and residential areas and property owners lack reporting incentives (Ihlanfeldt and Taylor 2004; Leigh and Coffin 2005; Longo and Alberini 2006; Meyer 2003). Therefore, public inventories that do exist usually only contain those properties that are likely to be or become owned by the local government through foreclosure or purchase.

Strong evidence exists linking brownfield properties to economically struggling communities. A report by the Brookings Institution (2006) empirically identifies 139 cities in 24 states with populations of at least 30,000 that have been underperforming economically the past ten years and highlights how most of these cities are those with industrial pasts and have left “a tremendous environmental legacy” (Vey 2007). Superimposing these data on the Conference of Mayors data shows how properties in Brookings' “Weak Market” communities in the American northeast and midwest report a disproportion of Conference of Mayors brownfield properties (Table 2-2), a relationship confirmed by existing research (XLEnvironmental 2002; Heberle and Wernstedt 2006; Page and Berger 2005).

Table 2-2: Older Industrial Cities and Brownfields

	All Cities in U.S. Conference of Mayors (COM) Data	Brookings Older Industrial Cities in COM Data	Proportion of Brookings Data to COM Data
cities	430	40	9%
est # brownfield sites	34,819	7,101	20%
est # brownfield acres	214,477	30,484	14%
est average acres	33.88	5.61	-

Derived from Brookings (2006) and U.S. Conference of Mayors (2001, 2003, 2006, 2008, 2010)

Causes and Contaminants. Brownfield properties occur due to a wide range of land uses across urban, suburban and rural landscapes. However, research indicates a majority of brownfields derive from industrial and commercial activity in areas of high population densities (Bjelland 2004) and persist due to liability, uncertainty, and the availability of uncontaminated land, or "greenfields", in suburban areas drawing development activity away from brownfield properties (Brachman 2004).

Brownfield contamination comes from a variety of sources through a variety of means and includes a wide range of contaminants. Many of the large industrial site contaminations in the northeast and midwest stem from the manufacturing and processing of glass, chemicals, plastic, paint and construction materials (Bjelland 2004; Gorman 2003; Page and Berger 2005). A host of smaller businesses such as dry cleaners and fuel service stations also contribute to the problem, particularly in smaller communities (Page and Berger 2005). Contamination may occur through intentional or accidental waste dumping, surface runoff, and contaminant migration by means of both groundwater and air (Greenberg et al. 2001; Howland 2003). Contaminants are hazardous substances posing health risks via air, soil, and water pathways and include substances such as petroleum derivatives, PCBs, lead, and dioxins (DeSousa 2001; NADO 2006).

Brownfield Remediation and Redevelopment Processes. Individual brownfield projects vary along multiple characteristics including time to completion, size, extent of contamination, number of project partners, and political support for the project (Yousefi et al. 2007; Lange and McNeil 2004; Meyer and Lyons 2000). However, remediation and redevelopment processes remain largely the same across the board (Schilling and Logan 2008; Sagalyn 2007; Mayors 2007; Dixon 2007; NADO 2006; Heberle and Wernstedt 2006; DeSousa 2006; NADO 2004; Davis 2002; Wood 2000, 1998; Blair, Govan, and Atkinson 1995; Dennison 1998). This suggests a reliable theory-based model of brownfield project processes (Table 2-3).

The process generally begins with site selection and assembly and a Phase I assessment for contamination. Site selection occurs via a mix of political and economic development priorities, land use planning, citizen preferences, end use, and voluntary action. Phase I assessments provide a quick overview of contamination. Concurrently, project initiators use Phase I data to determine the economic feasibility of site redevelopment and select the best end use for a remediated property. If the Phase I assessment reveals levels of contamination requiring remediation, property owners conduct a much more detailed Phase II assessment to determine contamination details, quantify contamination concentrations, and evaluate the surface and subsurface conditions. Remediation soon follows and redevelopment occurs.

Table 2-3: Phases of Brownfield Remediation and Redevelopment

Phase	*Stage*	*Description*
Remediation	Site Identification and Assembly	Potential developers (public and private) identify contaminated sties of interest with assistance from public brownfield directories or through marketing by current property owners.
	Initial Site Assessment – Phase I Investigation	Assessing to determine whether contamination is present through historical records and examination of neighboring sites.
	Detailed Site Assessment – Phase II Investigation Remedial Assessment	Environmental engineers sample and analyze chemical parameters of site if Phase I Investigation suggests potential for contamination.
	Economic Assessment and Planning	Assessing for potential economic return vs. cost of restoring site to productive use. Sites categorized into viable, threshold, and nonviable groups according to this potential/cost ratio. End use plans generated.
Redevelopment (Overlap) Remediation	Project Development and Financing	Assuming financial feasibility studies are complete, developers arrange financing for clean up and redevelopment. This is a likely stage for meetings between multiple stakeholders.
	Remediation Planning and Execution	Selecting and implementing a clean up plan in compliance with regulations.
Redevelopment	Redevelopment of Site	Altering the site for suitability to its new use.

Derived from Dennison (1998, pp. 142-147)

For the most part, property owners initiate and drive project processes. In situations where private owners do not voluntarily begin assessment, municipalities will occasionally acquire the properties through tax foreclosure, direct purchase agreements and eminent domain and initiate assessment and remediation processes (Brachman 2003; Wernstedt and Hersh 2003). When local governments are the property owners, redevelopment phases often occur through a public-private partnership where both partners strive to leverage financial resources from the other (Sagalyn 2007; Bartsch 2006; ICMA 2005). In certain instances, municipalities themselves serve as both the remediation facilitator and the redeveloper.

End Use. The end uses of brownfield properties range across the industrial, commercial, and residential spectrum of economic and community development. Once project drivers select end uses, the stakeholders likely to be involved in remediation and redevelopment processes become clear. In addition, the levels to which remediation must occur under the appropriate regulatory framework becomes known. For example, residential end uses typically engage more citizens in planning processes and require higher standards of remediation (Kirkwood 2001).

The location of the brownfield and the enthusiasm for its proposed end use can drastically shape the marketability and demand for the property (Lange and McNeil 2004). For example, properties on waterfronts, near downtown areas, and lying at key intersections of urban infrastructure often "rise to the top" of project priority lists. Meanwhile, properties lying in areas outside the public interest often remain unaddressed for long periods of time. Studies of end use indicate that industrial and commercial reuse prevail when private firms drive project processes while parks, public buildings and housing projects dominate municipality-led projects (DeSousa 2004; Page and Berger 2005; Silverstein 2003).

Stakeholders. Stakeholders and actors in brownfield remediation and redevelopment projects (Table 2-4) range across environmental, economic development, and urban planning professions and include elected representatives, public and private developers, landowners, investors, citizens, activists, regulators, and clients of developers (Dair and Williams 2006; Greenberg et al. 2001; Silverstein 2003; Alker et al. 2000).

Table 2-4: Brownfield Stakeholders

Stakeholder Group	Stakeholder Type	Example
Those involved in land-use planning and regulation	Regulators, service providers, elected officials	Environmental regulators, zoning and planning regulators, city council members, city officials, health and safety regulators
	Interest groups, private consultants, individuals	Business interests, community activists, individual citizens
Those involved in development and construction	Property developers and developer interests	Public and private developers, investors, landowners, shareholders, construction workers, suppliers
	Professional advisors	Lawyers, architects, engineers, surveyors, conservationists, archaeologists, insurers
Those involved in end use	Consumers	Clients of developers, residents of new homes, proprietors of commercial business, manufacturers, adjacent landowners

Derived from Dair & Williams (2006)

Actor composition varies by project based upon property ownership, remediation requirements, the policy tools used, and the proposed end use (Dair and Williams 2006). The degree to which actors engage in the project also varies across project phases and the tasks at hand. For example, remediation largely occurs through a set of contracted and sub-contracted relationships where the property owner, or a private consultant acting on behalf of the property owner, formally contracts with firms that specialize in different pieces of the site-specific remediation plan. Table 2-5 provides an illustration of how stakeholder composition may vary over the course of the project.

Table 2-5: Public and Private Actors in Remediation and Redevelopment Processes

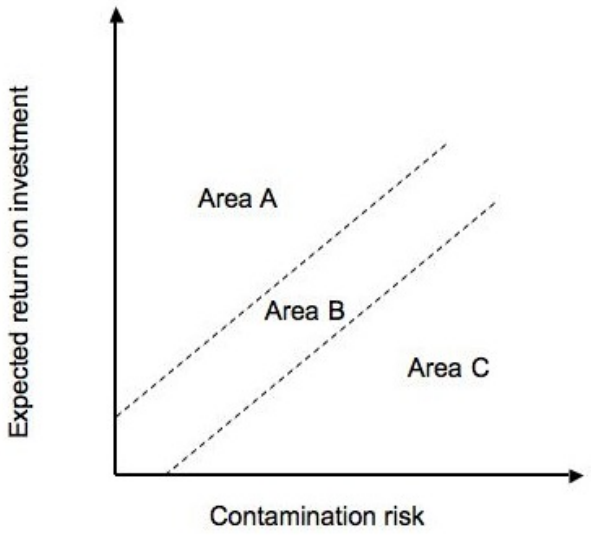
Phase	Stage	Stakeholders
Remediation	Site Identification	citizens elected officials public managers (planners, engineers) private property owners insurers
	Initial Site Assessment – Phase I Investigation	public managers environmental engineers
	Detailed Site Assessment – Phase II Investigation	environmental engineers public managers
	Economic Assessment and Planning	citizens elected officials economic development officials developers lawyers public managers insurers
Redevelopment	Project Development and Financing	lenders developers clients
Remediation	Remediation Planning and Execution	environmental engineers consultants and contractors
Redevelopment	Redevelopment of Site	developers consultants and contractors clients public managers

Barriers to Brownfield Remediation and Remediation. The challenges facing successful implementation of an individual brownfield project largely depend upon the marketability of the property and the extent to which public or private leaders are willing to incur financial risks (McCarthy 2002). Public and private actors have different needs, goals, motivations, and accountability structures and have varying perceptions in these situations. Private sector actors seek positive returns on investment and list remediation uncertainty, liability concerns, the time required for regulatory compliance, and funding availability for

remediation as primary reasons for avoiding brownfield properties (Meyer and Lyons 2000). On the other hand, political forces drive public actors to pursue public health, economic development, and sustainability goals through brownfield redevelopment (Greenberg and Schneider 1995). However, the cost of these efforts provide strong incentives for local governments to focus their efforts on diminishing barriers to potential private investors (Page and Rabinowitz 1994).

Marketability. Like the "brownfield" concept itself, "marketability" is perceptual and influences the extent to which public subsidy plays a role in remediation (Howland 2003). However, there is debate as to whether or not environmental liabilities challenge brownfield redevelopment more than fundamental real estate problems (Wernstedt et al. 2004). Since many contaminated properties exist in already struggling real estate markets, discerning between the two factors is difficult. Figure 2-1 exhibits how this function impacts drivers of brownfield processes. Area A contains viable sites where sufficient market demand drives voluntary remediation and redevelopment by private investors. Area B contains threshold sites where, with public subsidization, private investment occurs. Area C contains unviable sites where private actors not invest no matter how extensive the public subsidies (Davis 2002; Howland 2003; Silverstein 2003). This study focuses upon those properties in Area B, which receive a moderate to high levels of public subsidy.

Figure 2-1: Property Marketability and Brownfield Redevelopment



Surveys of developers indicate that many factors shape private actor interest in brownfield properties. Property acreage, proximity to existing infrastructure, availability of government funding and liability protections, access to insurance products, and potential return on investment all impact private actor behavior (Alberini et al. 2005; Alberini, Meyer, and Wernstedt 2004; Wernstedt et al. 2006). Large properties tend to attract large investors (Meyer and Lyons 2000) and, as perceived marketability increases, it becomes more likely a private property owner will initiate remediation (Alberini, Meyer, and Wernstedt 2004). While the study of public actors initiating brownfield projects remains limited, the literature suggests that costs, liability, time, information, and political support are factors mediating the involvement of both public and private actors.

Costs. Remediation costs pose the greatest barrier to actors from both sectors (Page and Rabinowitz 1994; Stephenson 2005; Alberini et al. 2005; Wernstedt and Hersh 2003; Davis 2002). For some properties, remediation costs may be greater than the redevelopment costs. While uncertainty regarding the extent of contamination amplifies the financial risks to private

investors, public actors face financial barriers made more complex by the public accountability issues tied to using tax dollars.

Liability. Private actors acquiring brownfield properties also weigh the threat of liability for future contamination problems brought on by property ownership (McGregor 2003; Alberini et al. 2005; Wernstedt et al. 2006). This liability was the original barrier created by CERCLA that federal and state brownfield laws subsequently addressed by exempting remediation initiators from lawsuits if they fulfilled remediation due diligence (Sigman 2005; Wernstedt et al. 2006).

Time. Another major barrier to private investment is the time required for the implementation of public policy instruments, particularly when interest groups intervene to pursue additional agendas (Sigman 2001). Not only does regulatory compliance add time to the redevelopment project, but so do requirements for citizen engagement and collaborative planning (Wernstedt et al. 2006). As the old adage goes, "time is money", especially for private actors operating within a competitive market. Therefore, the anticipated time between Phase I assessments and completed redevelopment of the site factors into project initiation decisions (Lange and McNeil 2004).

Information. The contamination component of brownfield remediation and redevelopment projects creates greater demand for information by public managers, citizens, elected officials from developers, environmental engineers, and lawyers (Thomas 2003). The uncertainty surrounding actual contamination and the potential for lawsuits if remediation is not carried out sufficiently places the burden for generating accurate information on the property developer themselves (Wernstedt et al. 2006). Another information barrier creating uncertainty is

the lack of sophisticated or consistent data collection techniques by governments (Coffin and Meyer 2002; Thomas 2003).

Political Support. Finally, many brownfields remain underused and unaddressed because the political will and leadership required for remediation and redevelopment remains insufficient (Brachman 2004). Many threshold properties that prevailing market forces do not address require individuals with political power willing to champion them and push them through political and bureaucratic processes.

Brownfield Remediation and Redevelopment Policies. The primary means by which governments address these barriers is through the development and application of public policies that, over the past fifteen years, have successfully created artificial brownfield markets (Wernstedt et al. 2006; Meyer and Lyons 2000). At the federal level, the USEPA serves as the primary agency administering brownfield policy programs with the Department of Housing and Urban Development (HUD) playing a role for those projects with residential end uses. The primary incentives and programs currently offered by these agencies for local-level brownfield redevelopment include assessment and remediation grants, revolving loans, technical assistance, temporary assignment of federal employees with states and municipalities, and designation of areas with large densities of contaminated properties as brownfield showcase communities that qualify them for additional support.

At the state level, most governments provide what are known as voluntary cleanup programs (VCPs) which offer an array of policy tools designed to meet private property owner needs (Alberini, Meyer, and Wernstedt 2004; Blair et al. 1995). These tools address property-specific issues of liability, uncertainty, and risk in order to lower remediation costs and increase potential investment returns. In addition, many states have additional programs tailored to public

and nonprofit developers that reimburse assessment and remediation costs. Table 2-6 lists the major categories of state level policy tools used in brownfield redevelopment.

Table 2-6: Common Brownfields Policy Tools

Tools	Barrier Addressed	Target Actor	Mechanism
Environmental insurance	Risk of future liability	Public, private, nonprofit developers	Protect developers from third party liability and provide cost cap protection
Tax relief Tax increment financing	Cost of assessment, remediation and redevelopment	Private developers	Financial incentive to commit to specific property
Low-interest loans	Cost of assessment, remediation and redevelopment	Private, nonprofit developers	Revolving loan fund enabling more affordable clean up
Technical assistance	Cost of assessment and remediation Citizen outreach	Public, private, nonprofit developers	Provide information enabling more efficient processes
Liability waiver	Risk of future liability	Public, private, nonprofit developers	Statutory protection
Assessment and remediation grants	Cost of assessment and remediation	Public, nonprofit developers	Project-specific block grant
Redevelopment authority	Timeliness of government service delivery	Public, private, nonprofit developers	Administrative entity with greater flexibility

Studies of brownfield tools primarily examine the effectiveness of individual tools. For example, Carroll and Eger (2006) investigate the performance of tax-increment financing (TIF) and determine that, when applied on an area-wide basis, aggressive TIF increases brownfield property marketability (Carroll and Eger III 2006). However, this tool-by-tool approach to performance measurement does not fully capture the reality of how public managers apply packages of instruments to meet developer needs (Wernstedt et al. 2006).

Brownfield Remediation and Redevelopment Policy in the State of New York. Brownfield policy development in the State of New York has followed a path unique to all other states in the U.S. due to the impact of its most famous contaminated property, Love Canal. This

case involved the siting of a neighborhood and elementary school on top of a poorly designed hazardous waste dump in North Tonawanda, NY just south of the city of Buffalo, NY. When toxic mud began bubbling up around playgrounds and backyards during a particularly rainy spring, the news took the media by storm, placing the environmental regulatory schemes in the state of New York under intense political scrutiny[5]. Ultimately leading to a federal policy change regarding hazardous waste clean up with the U.S. Congress approving the Superfund program in 1980, Love Canal also triggered New York policy makers to establish high levels of redundancy in the contamination and redevelopment rules for local governments to prevent such an incident from occurring again. As a result, New York State, according to one brownfield expert, maintains a regulatory framework and bureaucracy more extensive than the remaining forty-nine states[6]. It is therefore important to consider this regulatory context for New York-based brownfield projects when applying findings from their analysis to governmental jurisdictions outside New York State.

The three brownfield policy programs currently offered in New York State are the New York State Department of Environmental Conservation (NYSDEC) Brownfield Remediation Program (BCP), the Environmental Restoration Program (ERP), and the Brownfield Opportunity Area (BOA) Program. Originally established as the Voluntary Remediation Program (VCP) in 1994, the BCP supports private developers. The NYSDEC subsequently established the ERP in 1996 to assist in remediation activities initiated by municipalities and the BOA program appeared in 2003 to encourage municipalities to develop area-wide plans with the input of various community-based actors. The NYSDEC initially operated the BOA program in

[5] http://www.justice.gov/enrd/Anniversary/2412.htm
[6] Conversation with Preston Gilbert, SUNY-ESF, April 26, 2011

partnership with the New York State Department of State (DOS) but the DOS now implements the entire program. Together, these programs offer a mix of policy tools that address remediation and redevelopment barriers. These tools include a Certificate of Completion limiting owner liability, tax credits, planning and remediation grants, a revolving loan fund, status in economic development zones, and technical assistance (Table 2-7). Participation in the VCP/BCP and ERP occurs on a site-by-site basis and certain projects do not qualify if the contamination is too high and there is pending litigation. In addition, the BCP and the ERP require certain types of citizen participation such as public notices, comment periods, and public forums.

Table 2-7: New York State Brownfield-related Policy Tools and Participation Requirements, by Program

Tool	BCP	ERP	BOA
Liability Relief to Innocent Parties	x	x	
Environmental Liability Limitation	x	x	
Covenant Not to Sue	x		
Tax Credits[1]	x		
Technical Assistance Grants ($50,000)	x		
Remediation Grants (90% onsite; 100% offsite)	x		
Revolving Loan Fund	x	x	x
Empire Zone/Environmental Zone Designation[2]	x	x	x
Planning Grants (90%)			x
Citizen Participation Required at Various Milestones	x	x	x

[1] Tax credits offset costs associated with real property taxes, site preparation, groundwater remediation, property improvements, environmental insurance premiums.
[2] Enhances existing tax credits if property lies in designated zone.

In addition, fifty-three municipalities have entered the BOA program, which takes an area-wide approach that is different than the site-based approaches of the VCP, BCP, and ERP. Table 2-8 summarizes total program participation.

Table 2-8: New York State Brownfield Program Participation (August, 2010)

	VCP (1994-2003)	BCP (2003-present)	ERP (1996-present)	**TOTAL PROPERTIES**	BOA (2003-present)
Total properties	414	287	185	**886**	Total municipalities: 53
Properties accepted (A-Class)	237	218	141	**596**	Step 1 (33) Step 2 (15) Step 3 (5)
Properties cleaned up (C-Class)	177	69	44	**290**	

Additional NYSDEC programs available for addressing contaminated properties include the Inactive Hazardous Waste Disposal Site Program, the Corrective Action Program for Hazardous Waste Facilities, the Bulk Storage Program for chemicals and petroleum with its Spill Response Program, and the New York Environmental Protection and Spill Compensation and Leaking Underground Storage Tank Funds. Together, these programs utilize reporting requirements, liability tools, certification, technical support, and compensation payments (when responsible parties are not identifiable) to achieve remediation goals[7]. The New York State Departments of Education, Health, Agriculture, and the Division of Housing all offer various grant programs that, while not directly related to property assessment or remediation, may be applied to specific aspects of contaminated property redevelopment.

Measuring and Explaining Brownfield Remediation and Redevelopment Success. Measuring brownfield project outcomes and assessing the success of these outcomes is a complex affair. Outcomes range from the municipality to the microscopic levels of analysis and

[7] http://www.dec.ny.gov/25.html (accessed June 8, 2010)

consideration of each outcome for a measure of success depends upon stakeholder preferences. As a result, brownfield project performances and successes become measured in multiple ways.

Brownfield Project Outcomes. Brownfield outcomes and their relative importance generally fall into two categories; those related to remediation and those related to redevelopment. Remediation outcomes include the reduction in liability for future property owners, the diminishing of health risks, and the removal of unusable structures. Redevelopment outcomes include increased property values, the addition of new jobs, and the triggering of additional private development (Wernstedt, Meyer, and Alberini 2006; Wedding and Crawford-Brown 2007; Bacot and O'Dell 2006). Additional measures include the actual time required from initial assessment to reuse, total remediation and development costs, community and political support and satisfaction, and ratio of private to public investment (Lange and McNeil 2004; DeSousa 2005; Bacot and O'Dell 2006). However few of these are easily reducible to quantifiable terms, creating performance measurement challenges (Bacot and O'Dell 2007). For example, simply recording changes in property values, as many municipalities are prone to do, does not necessarily measure the full impacts of the project nor does it isolate brownfield project effects from changes in broader market forces (Alberini 2007; Meyer 1998).

Wedding and Crawford-Brown (2007) provide the most extensive tool for assessing brownfield project performance. Adopting an "indicator" strategy used to measure advances in sustainable development, they list forty measurable outcomes broken down between environment and health, financial, social and economic, and livability categories. They then transform these individual outcomes into measures of success by assigning weights derived from stakeholder surveys about indicator preferences. Table 2-9 lists the indicator categories and the top two indicators for each category.

Table 2-9: Brownfield Project Outcome Indicators

Categories and Indicators		Weights (1-10)	Categories and Indicators		Weights (1-10)
Environment and health indicators			Social and economic indicators		
1	Probability of health risks*	8.56	1	Increase in tax revenue for the site*	7.78
2	Reduction in energy use	8.55	2	Net jobs created per acre*	7.11
Financial indicators			Livability indicators		
1	Reduction in liability*	8.89	1	Improved community*	8.56
2	Internal rate of return	8.78	2	Reduction in crime rate	8.33

From Wedding and Crawford-Brown (2008).
* Also determined to be "very important" or "important" by DeSousa (2005).

Brownfield Project Success. The key challenge to accurately measuring brownfield project success is capturing stakeholder perceptions and goals (Wedding and Crawford-Brown 2007). As a result, empirical work examining brownfield project outcomes and success must include both tangible outcomes such as time required or money spent as well as perceptual ones such as satisfaction with outcomes and processes. Even if this level of data collection is feasible, the researcher must also be able to aggregate these measures into a meaningful score enabling project comparisons. The measurement of brownfield success requires more thought and development (DeSousa 2005; Lange and McNeil 2004; Wedding and Crawford-Brown 2007).

Determinants of Outcomes and Success. Existing research clearly indicates that multiple factors influence the project outcomes summarized above. In general, these factors fall into environmental, economic, and managerial categories (Table 2-10). Environmental variables affecting outcomes include the type and extent of contamination, the technology available for proposed remedies, and the flexibility of regulatory agencies (Wernstedt and Hersh 2003). Economic variables shaping outcomes range from prevailing market strengths to the ability of

policy instruments to impact marketability and provide financial resources (DeSousa 2005; Wernstedt et al. 2006). The most cited managerial variables are the effective use of partnerships (Wernstedt 2001; Silverstein 2003; Bartsch 2006; Dair and Williams 2006), the entrepreneurial abilities of public and private actors to leverage marketability factors, the capacity of municipal governments to compete for public grants (Greenberg and Issa 2005), and the abilities of managers to effectively communicate data to appropriate stakeholders (Nijkamp, Rodenburg, and Wagtendonk 2002).

Table 2-10: Major Determinants of Brownfield Project Outcomes

Environmental	**Economic**	**Managerial**
Degree of contamination	Market strength	Strength of partnership
Available technology	Policy instrument availability	Entrepreneurial capacity
Regulatory flexibility	Financial resource availability	Intergovernmental relations

The fact that multiple factors may explain each outcome measure and that these factors are, in turn, explained by a second level of variables further complicates the explanations for brownfield project success. As exemplified in Table 2-11, the ratio of private to public investment depends upon the degree and extent of environmental contamination, the availability of public and private resources (financial, informational, technical), the level of liability protection for the end-use owner, and the comparative difference of project costs and benefits all drive private investment (Silverstein 2003; Alberini et al. 2005; McCarthy 2002).

Table 2-11: Layers of Causal Variables

Outcome:	Public-private investment ratio		
Primary Causal Factors:	Environmental contamination	Resource availability	Liability protection
Underlying Causal Factors:	Past property use Soil, groundwater flow Climate	Tax policies Real estate market Negotiation behaviors	Policy tools selected Remediation processes End use

Public Management of Brownfield Projects. Public managers seeking to steer brownfield project processes need to diffuse a great deal of interdisciplinary information across the project network (Thomas 2003). Private investors need to understand project risks and uncertainties, local government officials need to be aware of available policy tools, and elected officials, regulators, interest groups, and citizens need to understand remediation and redevelopment processes to create a political process for moving the project forward (Thomas 2003; Simons and El Jaouhari 2001; DeSousa 2006). Evidence of the interdisciplinary nature of brownfield projects may be seen in the placement of brownfield managers in economic development, planning, community development, and environmental quality departments, as well as within quasi-independent development corporations[8]. However, while these managers may carry the title "brownfield coordinator", few local governments employ managers for whom steering brownfield project processes is their only job and few local governments contain single agencies whose mission is to address brownfield problem.

True to the title of "coordinator", the professional best practice literature overwhelmingly suggests that developing public-private partnerships, engaging with citizens and organizations at the community level, and maintaining positive relationships with a wide variety of stakeholders may all help overcome remediation and redevelopment challenges (Mayors 2007; NADO 2004; Simons and El Jaouhari 2001; Elliott and Bourne 2005). However, other than an examination of negotiation strategies in forming cooperative partnerships (Yousefi et al. 2007), very little systematic research has focused on actual management practice, particularly as it applies to managing interorganizational relationships and coordinating networks of actors.

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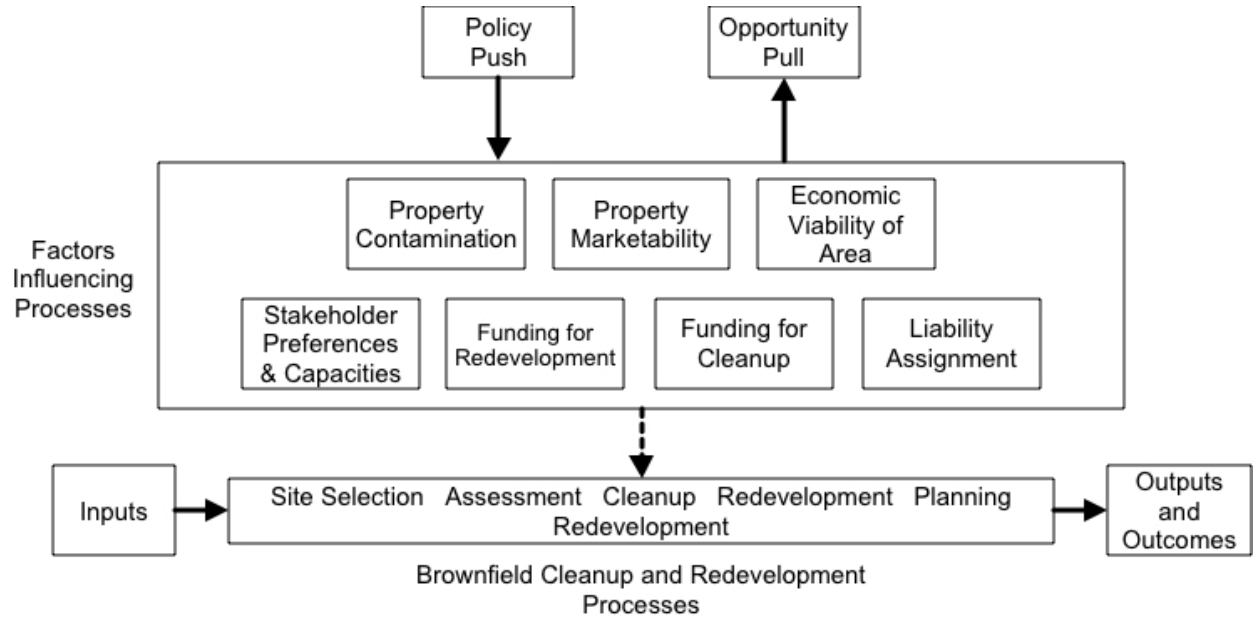
[8] Evidence gathered from extensive internet searches of municipality websites for brownfield programs (2009).

Modeling Brownfield Project Processes. Currently, the literature presents two primary models of brownfield remediation and redevelopment projects. The first is normative and describes brownfield processes as rational and linear (refer back to Table 2 in this chapter). This model assumes rational behaviors by project actors, near perfect information, and is most often found in practitioner reports and best practice guides (Mayors 2000; Davis 2002; Brachman 2004). The second model draws more heavily upon existing brownfield theory and articulates a dynamic system of multiple forces acting upon a continuum of outcomes. This model depicts complex systems whose outcomes result from arrays of stakeholders impacting key variables at different decision points in the process (Dixon 2007; Nijkamp, Rodenburg, and Wagtendonk 2002; BenDor and Metcalf 2003; Healey 1992). Variables common to this model include property marketability, area-wide economic conditions, liability assignment, redevelopment demand, uncertainties surrounding information and financial resources, extent of contamination, the push of available policy instruments, and the pull of developer preferences (Figure 2-2).

Figure 2-2: Forces Influencing Brownfield Outcomes



Derived from Dixon 2007; Nijkamp et al 2002; BenDor and Metcalf 2003

While both the rational linear and dynamic system models contribute to understanding the context in which brownfield remediation and redevelopment occurs, neither one directly addresses the need for theory-based guidance for public managers. How should public managers tasked with steering brownfield projects utilize policy tools to activate the involvement of key project actors? The next chapter mends this gap by reviewing the literatures addressing cross-sector public management networks, the strategic management of these networks, and the policy tools used by network managers in order to develop propositions regarding the extent to which these three qualities of brownfield projects interact to shape project outcomes and, ultimately, project success.

CHAPTER THREE LITERATURE REVIEW AND PROPOSITIONS

Introduction. Understanding how brownfield projects function as cross-sector public management networks and how public managers influence these networks to produce outcomes requires a careful understanding of how public policy tools, network structures, and the interpersonal behaviors of network actors interact over time. Fortunately, the increase in the reliance on non-governmental actors for government service delivery over the past thirty years has led to increased analytical focus on these networks (Rittel and Webber 1973; Agranoff and McGuire 2001; Lowndes and Skelcher 1998; Weber and Khademian 2008). At the same time, studies of how policy tools aid managers in leveraging these networks have also increased (Clingermayer and Feiock 1990; Peters 2002; Salamon 2002; Howlett 2005; Feiock, Jeong, and Kim 2003; Sandfort, Selden, and Sowa 2008), as has research examining network management strategies at the individual and interpersonal levels (Ansell and Gash 2008; McGuire 2006; Agranoff and McGuire 2003).

Woven together, these theories suggest that policy outcomes in brownfield networks stem from neither the proper arrangement of network actors nor the correct design of policy tools nor the appropriate application of management strategies. Rather, outcomes are best explained by a combination of all three. But what does this combination look like at the project level? Are the structures of policy tools more influential than public management behaviors, or vice versa? How do evolving structures at the network level impact public management behaviors at the individual level? How can this combination be used to explain varying levels of brownfield project success across multiple projects?

Integrating these literatures with the brownfield research summarized in Chapter Two provides the basis for five propositions about the influence of public managers on the outcomes

of municipality-initiated brownfield projects. First, all brownfield projects, as networks of actors, will display different network characteristics and will exhibit the use of different policy tools across project phases. Second, successful projects will distinguish themselves with high levels of network stability and consistent occupation of network centers by skilled public managers across project phases. These public managers will, in turn, obtain influence over network actors by using policy tools to secure network actor commitments. Finally, relationship management will augment these strategies when new uncertainties present themselves.

Telling management stories embedded in a context of network structures and rules requires navigation of the tensions between the primacy of agency (the strategic actions of individuals) and structure (broader institutional and market forces) in explaining outcomes. Therefore, the first section of this review overviews these tensions and addresses why they matter when examining cross-sector public management network performance. The second section describes what is known about network structures, network management, and their relationships to network outcomes. The following section describes how the introduction of policy tool research has influenced institutional theories of network management. The final section summarizes these research strands and restates the propositions described above regarding the successful public management of brownfield projects.

Bridging the Structure-Agency Divide. Existing research that addresses questions like "does management matter in public management networks?" tends to assume either that outcomes are best explained by "structure" or "agency". In public administration research, structuralists view government action as the result of a range of norms, rules, and patterns shaping human action and would therefore suggest that outcomes and policy success or failure is due to success or failure in policy design (Borgatti and Foster 2003). On the other hand, agency-

oriented researchers see network outcomes as a result of individuals exercising the opportunity to act freely in decision-making (Hitlin and Elder 2007). Under this assumption, policy success or failure subsequently occurs due to strong or weak decision-making on behalf of leaders and managers. Most public management research suggests a strong agency perspective, or at least an assumption that, in certain situations, individual actors weigh heavily on organizational performance. However when explaining network outcomes it is important to not over determine agency over structure because structure and agency are not mutually exclusive and, instead, impact one another (Giddens 1979). Therefore, viewing structure as either the mechanism for *or* the outcome of action only tells one piece of the story. Instead, theoretical frameworks that model network processes should allow for simultaneous relationships between agency and structure (Healey and Barrett 1990; Guy and Henneberry 2000; Doak and Karadimitriou 2007; Koppenjan and Klijn 2004; Kickert, Klijn, and Koppenjan 1997). Failure to do so would misrepresent network realities. Koppenjan and Klijn (2004) underscore the challenge of doing so in these processes . . .

> . . . where many factors and actors influence each other, and actors consciously respond to events in their environment, causal relations are highly complex, dynamic and reciprocal. They can hardly be captured in causal schemes that create a static idea of the relation between dependent and independent variables. In reality, the relations are constantly in flux, and we can see a continuous interchange between factors and process. (Koppenjan and Klijn, 2004: 12)

It is for these reasons that this review examines both the structuralist and the agency-focused public management literatures to formulate the research propositions.

Cross-Sector Public Management Networks. Much research over the past ten years examines the phenomena of government agencies working with private, non-profit, and citizen partners. These cross-sector public management networks occur in issue areas such as watersheds and natural resources (Imperial 2005; Clark, Burkardt, and King 2005), health and

human services (Sowa 2008; Bardach and Lesser 1996; Provan, Huang, and Milward 2009) and economic development (McGuire 2000; Agranoff and McGuire 2003, 1998; Teisman and Klijn 2002). Aggregated together, this research spans multiple levels of analysis while addressing a variety of questions. It also consists of four perspectives defined by the core questions; how organizational characteristics impact a single organization's ability to work with a partner, how network structures impact the performance of individual organizations, how an individual organization impacts network structures, and how multi-level actions and structures shape network level outcomes (Provan, Fish, and Sydow 2007; Galaskiewicz 2007). With a state interest in management impacts on brownfield outcomes, this dissertation concentrates upon this last perspective in the literature.

Network Structures. In organizational networks, "structure" refers to the ties between a defined set of actors (Tichy, Tushman, and Fombrun 1979; Wasserman and Faust 1994). These relationships are normally measured as information and resource exchanges but may also represent other linkages such as memberships, affiliations, and personal commitments (Milward and Provan 1998). Generally, different patterns of network ties correlate with different patterns of information dissemination and resource exchange which, in turn, impact decision making and network outcomes (Dawes, Cresswell, and Pardo 2009; Droege, Anderson, and Bowler 2003). Network ties may be quantified to produce measurements of centrality, density, multiplexity, brokers, and cliques. These measures may, in turn, be viewed as variables that differentiate networks and their relative performances (Provan, Fish, and Sydow 2007; Wasserman and Faust 1994; Tichy, Tushman, and Fombrun 1979).

Centrality refers to the number of direct links an organization or an actor maintains with all other members of the network. The greater the number of these direct links, the more the

actor is positioned to influence information and resource exchanges (Berardo 2008; Schalk, Torenvlied, and Allen 2010; Provan and Milward 1995). For example, high degrees of centrality exhibited by an actor have been shown to be related to the actor's trustworthiness, reputation, and influence in mental health service networks (Provan, Huang, and Milward 2009).

Density is the degree to which the entire network experiences interconnectivity. Research indicates that the greater the density, the more the network experiences communication saturation and group cohesion (Pryke 2005; Rowley, Behrens, and Krackhardt 2000). While this may seem like a positive network attribute for performance, high network densities are also associated with high coordination costs for managing these integrated ties (Milward et al. 2010). Therefore, higher performing networks likely maintain enough density to ensure adequate cross-actor communication but not so much that the network becomes bogged down with the costs of maintaining those ties.

Multiplexity is the strength of ties in a network measured by the number of different kinds of relationships, or roles, between two actors (LeRoux, Brandenburger, and Pandey 2010). Should one type of relationship be discontinued, additional ties still remain between those actors (Tichy, Tushman, and Fombrun 1979). Multiplexity tends to increase over time as actors learn which relationships provide the greatest benefits to them in the network and form multiple layers in the relationships. Relationships characterized by actors with high values of multiplexity, or relationship strength, indicate greater maturity and are more likely to endure exogenous shocks to the network (Provan and Milward 1991, 2001).

Gaps between network actors, or "structural holes", also provide opportunities for network actors to gain influence by acting as brokers filling these holes, or gaps, between sub-groups, or cliques, in a network (Tichy, Tushman, and Fombrun 1979; Rowley, Behrens, and

Krackhardt 2000). By occupying these positions, brokers control information and resource flows between cliques (Provan, Fish, and Sydow 2007). Brokers maximize their position by negotiating with actors within their home organization to gain appropriate authority for managing actors outside their organization (Balogun et al. 2005; Honig 2006). Generally, central actors and brokers maintain network influence by gathering large amounts of information and/or resources to create dependencies in other network actors (Tsai 2001). Networks experiencing high levels of network stability over long periods of time may therefore develop similar structural attributes to that of a hierarchy with the centralized actor enjoying the control benefits afforded by hierarchal rules and norms (Lowndes and Skelcher 1998; Tenbensel 2005).

Recent research indicates that, in public management situations, these measurements of network structure are not static and instead evolve over time. Comparing two social service provision networks, Provan et al (2009) found that actor-level characteristics like trust, reputation, and influence, mature over time the more the actor becomes embedded in the network, particularly in terms of their central positioning for information diffusion. It is important to note, however, that different networks have different life spans based upon their stated purposes and goals. They may be open-ended and long-term, as in the case of natural resource management networks (Lubell and Fulton 2008; Thomas 2003) or health and human service networks (Isett and Provan 2005; Milward et al. 2010; Provan and Milward 1995), or they may be short-term and focused on specific outcomes, as in the case of infrastructure construction projects (Teisman and Klijn 2002).

While few studies examine the significance of time frame differences on network processes, projects exhibiting clear goals and a short life span likely produce loosely coupled networks relying less upon maturing trust-based relationships and more upon arms-length linking

mechanisms (Mandell and Steelman 2003; Pryke 2005) to coordinate "linear" sets of tasks that clearly follow one another (McGuire 2002). Therefore, the importance of formal agreements made between actors early on in the project in maintaining likely increases with decreasing network life spans where the network is more susceptible to changes in the organizational environment (Pryke 2004, 2005).

Integrating the brownfield research from Chapter 2 with these network structure theories produces the following propositions about brownfield projects as cross-sector networks where structures evolve over time.

1. Brownfield project performance will increase with increasing network centrality, network stability, and multiplexity.

Network theory suggests that successful brownfield project networks, with their short life spans, clear project goals, and multiple expert domains, require highly central and stable formal structures to achieve successful outcomes. However, the entry and exit of project actors to and from the network across project phases challenges stability, suggesting that successful brownfield networks also exhibit high levels of multiplexity, or layers of ties between network actors. These ties ensure that, while project actors may exit the network after they have completed their primary task, ties remain to highly central actors enabling the transfer of relevant information.

2. As short-term, goal-specific networks characterized by distinct task phases, brownfield project network characteristics, such as centrality and composition, will change according to the expert-orientation of each phase.

Actor composition, and the structural ties between actors, will shift over the course of a brownfield project due to the environmental and construction domain orientations and planning

and implementation characteristics of each project phase. Contamination assessment and remediation tasks will require actors knowledgeable of chemistry, geology, and engineering. End use design and sales will require actors knowledgeable of marketing, economics, real estate, and architecture. In essence, this proposition states that, despite the project network being comprised of individuals from multiple organizations both inside and outside city government, more successful projects will assume managerial structures similar to a hierarchy.

Institutions and Network Ties. The extent to which public managers arrive at highly central positions in project networks depends largely upon prevailing rules and norms (Kickert, Klijn, and Koppenjan 1997; Skelcher, Mathur, and Smith 2005; Klijn and Koppenjan 2004). Theory about rules and norms, or "institutional" theory, stems from work in both economics and sociology examining how institutions in an organization's environment impact organizational behavior (Williamson 1998).

Institutions, as rules, derive from cultural norms, the preferences of legitimacy-granting actors, formal governance agreements, and laws and mandates (Marchington and Vincent 2004; Frumkin and Galaskiewicz 2004; Provan and Milward 1991; Koppenjan and Klijn 2004) that both enable and prevent ties between network actors as they interact with one another to find shared meanings, manage conflicts, and make resource allocation decisions. In brownfield remediation and redevelopment projects, policy tools serve as an important source of institutions, particularly regarding ways in which public managers may influence project partners by shaping institutions. In the words of Lascoumes and Gales (2007), policy tools:

> . . . partly determine the way in which the actors are going to behave; they create uncertainties about the effects of the balance of power; they will eventually privilege certain actors and interests and exclude others; they constrain the actors while offering them possibilities; they drive forward a certain representation of problems.(9)

Therefore, integrating policy tool theory into ideas about network structures provides a

mechanism for linking theories about network structure to theories describing network management.

Policy Tools. A resurgence in policy tool research has accompanied the recent rise in networked approaches for addressing policy problems (Lascoumes and Le Gales 2007). In this research, Hood (2007) identifies three distinct streams of analysis that have asked three distinct sets of questions. First, the "politics-of-instrumentality" approach emphasizes how policy tools come to be created and selected. Researchers adopting this perspective ask why certain decision makers prefer some instruments to others (Peters 2002; Hood 2007; Linder and Peters 1989). Second, the "institutions-as-tools" approach asks questions about the nature of particular service delivery forms. This approach considers whole organizations to be tools, a unique approach that does not separate organizational forms from laws, rules, and guidelines. The third analytical stream encompasses a range of approaches that sort policy tools into broad, generic categories. Coined "carrots, sticks, and sermons" to reflect the incentives and means of delivering those incentives behind them, these approaches ask questions about how characteristics endemic to the tools themselves impact targeted actors (Hood 2007). When considering the strategic application of policy tools to management situations, this third analytical stream provides the most insights.

In describing categories of policy tool characteristics, Salamon (2002) proposes that policy tools consist of products and activities, delivery vehicles, and delivery systems. Products and activities may include in-kind payments, restrictions, information, etc. Delivery vehicles and systems refer to the structures through which products and activities occur, such as a grant, loan, or direct service. Delivery vehicles and systems may be further classified by degree of coerciveness, directness, automaticity, and visibility, allowing public managers to assemble tool sets that match the management situation (Salamon 2002). For example, a public manager may

perceive reluctance on behalf of private developers to commit to investing in a politically charged redevelopment and may select a tool that is both coercive and less visible.

Hood (2007) challenges Salamon's (2002) inclusion of organizations/institutions, arguing that, because an organization may use a tool, they are empirically distinct from also being a tool. He points to work by Lascoumes and Gales (2007) as an alternate typology that not only distinguishes between organizations and tools but also provides more precise language about them. Their scheme includes five tool types associated with five different types of relationships (Lascoumes and Le Gales 2007). Legislative and regulatory tools direct social behaviors, economic and fiscal tools promote resource distribution, agreement and incentive-based tools appeal to specific interest of the tool target, information and community-based tools indirectly impact decisions through regulation of information, and best practices provide venues in which free choice behaviors may occur. Each type subsequently suggests a particular form of structure between the implementing actor and their target.

Combining Lascoumes and LeGales' typology with Salamon's tool list creates a general framework linking tools to management behaviors (Table 3-1). Despite Hood's argument, this framework includes "direct action", or direct activities taken on by the implementing actor, as a legislatve means for achieving outcomes. For example, in brownfield projects, local government may utilize internal resources and personnel to assess properties, providing the necessary information for potential private partners to make decisions about risk. This is consistent with ideas of ways in which local government influence economic development (Blair 2002). Throughout the rest of this paper, policy tool discussions will occur with "direct action" listed as a legislative tool, understanding that it is not a tool in the theoretical sense but is a relative measure for tool use and will be in bold font to indicate its conceptual difference.

Table 3-1: Policy Tool Typology

Type of Tool	**Type of Relations**	**Examples (Salamon, 2002)**
Legislative/Regulatory	Social Guardian State - Government directs actor behaviors	Economic and Social Regulation Tort Liability **Direct Action**
Economic and Fiscal	Wealth Producer/Redistributive State - Government influences actor behavior by appealing to resource dependencies	Taxes Grants Loans Insurance
Agreement/Incentive-Based	Mobilizing State - Government negotiates actor behavior	Contracts
Information/ Community-Based	Audience Democracy - Government shapes actor behavior by providing or withholding relevant information	Public Information
Best Practices	Civil Society Adjustments and Competitive Mechanisms - Government creates venues for actor behavior	Tradable Permits Vouchers Government Corporations

Derived from Salamon, 2002 and Lascoumes and Le Gales, 2007

Applying this policy tool typology to existing brownfield research suggests that brownfield policy tool programs mostly offer economic/fiscal, legislative/regulatory, and agreement-based tool types (Table 3-2).

Table 3-2: Brownfield-related Policy Tools

Tool	Type of Tool	Type of Relations	Implementer→Target
Liability Relief to Innocent Parties	Legislative/Regulatory	Social Guardian State	State→Municipality → Developer
Environmental Liability Limitation	Legislative/Regulatory	Social Guardian State	State→Municipality → Developer
Covenant Not to Sue	Agreement-Based	Mobilizing State	Municipality→Developer
Tax Credits[1]	Economic and Fiscal	Redistributive State	Municipality→Developer
Technical Assistance Grants ($50,000)	Economic and Fiscal	Redistributive State	State→Municipality
Cleanup Grants (90% onsite; 100% offsite)	Economic and Fiscal	Redistributive State	State→Municipality
Revolving Loan Fund	Economic and Fiscal	Redistributive State	State→Developer
Empire Zone/Environmental Zone[2]	Economic and Fiscal	Redistributive State	State→Developer
Planning Grants (90%)	Economic and Fiscal	Redistributive State	State→Municipality
Citizen Participation Required at Various Milestones	Community-Based	Audience Democracy	State→Municipality → Developer
Quasi-governmental Agencies	Best Practices	Civil Society Adjustments	N/A

[1] Tax credits offset costs associated with real property taxes, site preparation, groundwater remediation, property improvements, environmental insurance premiums.
[2] Enhances existing tax credits if property lies in designated zone.

Breaking down tool use by project phase suggests a strong task-specificity to which policy tools become used in any brownfield project where the pull of phase-specific project tasks plays a prominent role in the selection and use of policy tools in brownfield projects (Table 3-3).

Table 3-3: Phases of Brownfield Remediation and redevelopment and Tools Likely Applied

Phase	Stage	Tools Likely Applied	Primary Tool Types
Remediation	Site Identification and Assembly	*Direct Action*, Quasi-Governmental Agencies, Citizen Participation	Community-Based, Legislative/Regulatory
	Initial Site Assessment – Phase I Investigation	Grants, Contracts	Agreement-Based, Economic and Fiscal
	Detailed Site Assessment – Phase II Investigation Remedial Assessment	Grants, Contracts, Tax Credits	Agreement-Based, Economic and Fiscal
	Economic Assessment and Planning	Strategic Plans, Citizen Participation	Community-Based, Legislative/Regulatory
Redevelopment (Overlap) *Remediation*	Project Development and Financing	Loans, Contracts, Tax Credits	Agreement-Based, Economic and Fiscal
	Cleanup Planning and Execution	Liability Release, Contracts, Technical Assistance	Community-Based, Legislative/Regulatory
Redevelopment	Redevelopment of Site	Contracts	Agreement-Based

Adapted from Dennison (1998, pp. 142-147)

The following proposition emerges from this integration of policy tool and brownfield theories:

3. Policy tool use in brownfield projects will vary by project phase. Planning phases will emphasize community-based information and legislative/regulatory tools and create network structures with highly directive qualities while implementation phases will emphasize agreement-based and economic and fiscal tools, creating network structures with highly redistributive properties.

This proposition infers that these selection patterns subsequently shape the links between project actors by prescribing the nature of actor relationships. However, as the next section reviews, tool use and the subsequent impacts on network structures and actor behaviors also occur through strategic management behaviors.

Network Management. Network management research examines individual-level strategic behaviors that target the decision-making processes of network partners as well as react to the uncertainties multi-actor processes generate (Kickert and Koppenjan 1997; Mandell 1990; McGuire 2002; Agranoff and McGuire 2001; Rethemeyer and Hatmaker 2008). One branch of this research focuses on collaborative management and the skills associated with negotiation partner commitment (Agranoff 2005, 2006; Cooper, Bryer, and Meek 2006; Koontz and Thomas 2006; Leach 2006; McGuire 2006). McGuire (2002) identifies four skill sets fundamental to collaborative management; activation, framing, mobilizing, and synthesizing that roughly correlate with the network's evolutionary stage (McGuire 2002). Activation entails identifying and selecting network actors. Framing seeks mutual agreement on the problem to be addressed, the roles to be filled, and the rules that should govern those roles. Mobilizing involves creating incentives for and negotiating with network actors. Synthesizing creates a favorable network management environment by facilitating trust and social capital. Together, these skills enable managers to shape network actor behaviors when hierarchal authority is not an option. Using this framework, McGuire predicts that, in networks characterized by shared goals and clear operating objectives such as infrastructure projects, network management strategies flow from activation to mobilizing to framing to synthesizing to produce outcomes (McGuire 2002).

A second branch of network management research examines how managers react to the substantive, strategic, and institutional uncertainties associated with multiple organizations

interacting to address a common problem (Koppenjan and Klijn 2004). Substantive uncertainty derives from both a lack of information about the problem as well as divergent problem perceptions. Strategic uncertainty happens when network actors lack understanding of each other's goals. Institutional uncertainty stems from the fact that network actors bring their own rules and norms from both their own organizational and network memberships (Koppenjan and Klijn 2004). Effective network management in response to these uncertainties varies in relation to their relative mix. For example, a public manager operating under substantive uncertainties will likely initiate a variety of information seeking and sharing behaviors. Conversely, a public manager facing high levels of institutional uncertainties will likely try to negotiate a common set of rules and norms with network partners. Given the likelihood that all three uncertainties exist at various levels throughout the network lifespan suggests that, not only does effective management require multiple strategies simultaneously, it also requires high levels of collaboration and coordination within the network (Koppenjan and Klijn 2004).

Whether strategically seeking collaboration or reacting to network uncertainties, effective network management practice falls into one of two categories. First, network managers may focus upon the interpersonal relationships between network actors, appealing to the psychological need for reciprocity by taking steps to generate trust and build social capital (Jeffries and Reed 2000; Jones and George 1998; Berardo 2008). Second, network managers may shape the rules and norms governing behaviors in the network informally by regulating information and formally by adopting specific tools that alter the institutional environment (Oliver 1991; Koppenjan and Klijn 2004).

Managing Relationships. The primary mechanism through which network managers shape interpersonal relationships is the generation and sustenance of trust (Fernandez 1991;

Edelenbos and Klijn 2006; Mehra et al. 2006). Management behaviors most associated with building trust include reciprocity, interest-based negotiation, and information transparency (Oliver 1990; Weber and Khademian 2008; Ansell and Gash 2008; Waugh and Streib 2006; Droege, Anderson, and Bowler 2003; McGuire 2002). Trust facilitates ongoing exchanges of information and resources throughout the life span of the network and provides greater opportunity for actors to achieve goal congruence (Edelenbos and Klijn 2007). As a mechanism, trust is problematic to measure but research consistently indicates that perceived trust in a relationship and perceived trustworthiness of a network partner is associated with greater cooperation even when different interests exist (Lambright, Mischen, and Laramee 2009; Edelenbos and Klijn 2007). Levels of trust across networks increases with network density, frequency of interactions, and relates to the perceived trustworthiness of actors occupying key network positions (Berardo 2008; Milward et al. 2010).

Management with Institutions. The second set of network management behaviors involves identifying and manipulating the rules and norms that shape behaviors within a network (Klijn and Teisman 2003; Marchington and Vincent 2004; Lodge and Wegrich 2005; Feiock 2008). Also termed "game management", this approach entails self-interested actors establishing rules of exchange with other actors with whom they have overlapping interests (Ostrom 1990; Klijn and Koppenjan 2004). Actors manage their games by changing the rules of the network to alter the behavioral patterns of others towards their own goals (Fung 2006; Skelcher, Mathur, and Smith 2005). Institutional management skills include controlling network membership, adjusting the rules shaping how members engage and make decisions, imposing deadlines, crafting transparency, and altering the network's environment to create a perception that the network creates advantage to the actor (Agranoff and McGuire 2001; Kickert, Klijn, and

Koppenjan 1997; Ansell and Gash 2008). Controlling the generation and dissemination of information underlies institutional management (Dunleavy et al. 2006; Kumar and van Dissel 1996) as information needs change with changing task complexities (Nonaka 1994). Network managers take advantage of these information needs by controlling information flows, shaping the understanding of appropriate decision making rules, and directing decision-making processes (Koppenjan and Klijn 2004; Byström and Järvelin 1995; Bressers and O'Toole 2005).

Network managers manage relationships and institutions interchangeably (Marchington and Vincent 2004; Willem and Buelens 2007). Much of the reciprocity required for trust building occurs when network partners agree upon a new rule or complete a successful information exchange. Likewise, some rules or norms will refuse adjustment unless sufficient social capital exists between actors. While managing relationships and managing institutions may occur independently, network process models should reflect the integrated use of both. Table 3-4 summarizes the primary network management behaviors captured in the literature, categorized by whether they are institutional or relationship-oriented.

Table 3-4: Network Management Strategies

Strategy Type	**Behaviors**	**Measure**
Relationship	Negotiation	Making offers and counteroffers in search of mutually agreeable allocation
	Trust development	Risk sharing Social interaction outside of partnership
Institutional	Persuasion	Offering incentives to encourage participation
	Coercion	Leveraging authority to direct behavior
	Accommodation	Requesting or granting regulatory relief
	Arranging	Seek/provide third party to mediate differences Seek financial resources Establish contract
	Framing	Seek/provide information regarding brownfield property characteristics
		Seek/provide information and technical assistance

(adapted from Agranoff and McGuire 2003)

Capacities for Network Management. Effective network management is often discussed in terms of its potential, or the organizational and individual capacities required beyond behavioral skill (Moulton and Wise 2010). At the organizational level, capacity refers to the human, financial, infrastructure, and external resources maintained by the organization (Christensen and Gazley 2008; Ingraham, Joyce, and Donahue 2003). Resources within these four dimensions provide the means for organizations and their members to perform network management tasks. Organizational size, monetary resources, structure, and management culture all impact the organization's potential to perform (Table 3-5). Organizations lacking sufficient structures for information exchange (Agranoff and McGuire 2001; Provan and Milward 1995) and deficient of leadership that encourages and promotes boundary spanning behaviors (Ingraham, Joyce, and Donahue 2003) will therefore exhibit low capacities for supporting network management.

Table 3-5: Dimensions of Organizational Capacity and Key Parameters of Each Dimension

Dimensions	**Parameters**
Human Resources	individual motivation, knowledge base, experience, personnel quality and quantity, leadership/management qualities
Infrastructure	organizational culture, size and structure, production system
Financial	revenues, assets, financial management system
External	relationships, trust, contract management, information

Derived from Christensen and Gazley (2008)

At the individual level, management capacity refers to the knowledge and abilities of individuals to achieve organizational goals (Van Slyke and Alexander 2006; Crosby and Bryson 2005; Hou, Moynihan, and Ingraham 2003; Agranoff and McGuire 1999; Brown and Potoski 2003). After key knowledge and skill areas include managing human resource systems (Donahue, Selden, and Ingraham 2000), financial resources (Hou, Moynihan, and Ingraham

2003), and contracts (Brown and Potoski 2003). Without training and experience in these areas, individual managers lack capacity for practicing effective network management.

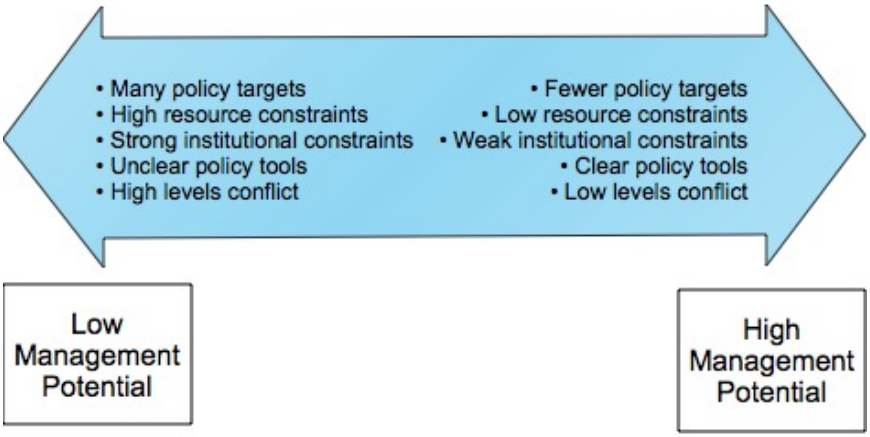
Public Management, Networks, and Policy Tools. Integrating theories of public management, networks, and policy tools requires an ability to capture many simultaneously moving parts. Managers with the authority to introduce a policy tool to a network have the opportunity to introduce the rules that accompany those policy tools but also experience constraints. As Bressers and O'Toole (2005) note, "although the managerial function can be exercised by actors within networks, and although this function can help shape what happens, managers themselves cannot be considered definitive shapers of what transpires when instruments are implemented in networks." (141). Managers utilizing policy tools in network management strategies must consider the impacts the tools will have upon their own actions as well.

One example of this phenomenon particularly germane to the brownfield arena is the use of contracts in building public-private partnerships (Koppenjan and Enserink 2009; Sagalyn 2007; Wettenhall 2003). In these relationships, formal contracts address transaction cost concerns of private partners while minimizing government concerns of service delivery. At the same time, the process of contract negotiation and its resulting implementation may build trust and improve actor relations (Brown, Potoski, and Van Slyke 2006; Jeffries and Reed 2000; Van Slyke 2009). However, while well-written contracts effectively transfer risks, they also introduce new uncertainties regarding whether or not the contracted partner will behave as prescribed in the contract. Therefore, contracts also require relationship management to address potential principal-agent problems (Hodge 2004; Klijn and Teisman 2003; Fischbacher and Beaumont 2003). Despite the additional management required to ensure contract performance,

contracts facilitate the public-private actor service provision relationship more efficiently and effectively than other policy tools such as grants or tax incentives (Agranoff and McGuire 2003).

Two frameworks in the policy tool literature attempt to capture this integration of theories to prescribe public management strategies in networked, policy tool heavy situations. In the first, the potential for public managers to successfully move network actor behaviors in the desired direction depends upon available resources, degrees of actor conflicts, the relative ambiguity of network goals, network resource constraints, and the complexity of network compositions (Howlett 2005; Matland 1995). Public managers facing high levels of resource constraints and large numbers of project actors tend to rely upon economic and fiscal tools to leverage the resource dependencies faced by network partners. As network actor numbers decrease, managers more frequently select regulatory tools to compel behaviors and, as resource constraints decrease, public managers increase use of information tools to appeal to the pursuit of mutual goals (Figure 3-1).

Figure 3-1: Potential for Network Management Effectiveness When Using Policy Tools



(Howlett 2005; Matland 1995)

In the second framework, when management potential is high, policy tool strategies work best when network managers are the tool implementers, have sufficient information about the problem, and maintain power over their policy tool targets (O'Toole Jr. 2004; Bressers and O'Toole Jr. 1998). These three core circumstances shape the interactions between network actors hereby shaping how decisions occur and norms develop. All other variables are secondary, impacting outcomes by altering one or more of these core circumstances. This "contextual interaction" model also predicts positive outcomes when network actors mutually agree upon the problem, are motivated to address it, and share an understanding of the resources available (Bressers and O'Toole 2005; Bressers, Klok, and O'Toole Jr. 2000; Bressers 2004).

Applying these frameworks and related public management theories to brownfield projects suggests expectations regarding certain patterns of public management behaviors under particularly circumstances. Under the relatively short time spans and goal specificities of brownfield projects, public managers steering project processes face pressures to produce outcomes quickly. The theories and frameworks discussed in this chapter suggest that the best means to achieve this is by consolidating influence over other network actors through the strategic selection and use of policy tools. Therefore:

4. Public managers effectively steering brownfield projects from highly central network positions will focus management behaviors on the selection and application of policy tools to manage network actor behaviors. Public managers operating in organizations with high levels of resource capacities will achieve this more successfully than those operating in organizations with lower capacities.

However, policy tools also create new uncertainties within which network actors must operate. Network management research suggests that public managers utilizing policy tool strategies

overcome new uncertainties by generating trust between network actors through information and resource exchanges (Rethemeyer 2007). The ability to do so increases when the public manager enjoys previous positive relationships with project actors and receives sufficient support from their home agency and government. Therefore:

5. As uncertainties increase, public managers effectively steering brownfield projects from highly central network positions will increase their use of relationship management strategies relative to policy tool strategies.

Together, the propositions presented in this review posit that, in brownfield projects, network composition and network centrality will change according to the expert information orientation of each project phase (remediation vs. redevelopment) as well as the implementation and planning orientation of each phase. At the same time, public managers operating out of highly central network positions will increase their emphasis on trust-based relationship strategies as uncertainties increase. Project success will hinge upon the stability of network actors across project phases and on the capacities for public managers to obtain sufficient information regarding those actors in order to select policy tools that maintain their commitments.

The next chapter in this dissertation lays out the research design and methodological and analytical approaches to collecting and analyzing data in response to these propositions.

CHAPTER FOUR RESEARCH DESIGN AND METHODS

Introduction. Applying a network lens to brownfield remediation and redevelopment projects prompted two research questions in this dissertation. First, in what ways do brownfield projects function as public management networks? Second, to what extent do network management behaviors by city-level public managers impact project outcomes? Utilizing the propositions developed in the previous chapter as guidelines, this chapter describes how a comparative case research design combined with case study and social network analysis methodologies best addressed these questions. The chapter begins by discussing the research design and the steps taken to identify project level cases. The next section details the methods of data collection and the final section discusses the analytical strategies applied to these data.

Research Design. The goals of a study determine the best research design. For example, developing concepts, testing theory, describing processes, predicting outcomes, and determining causality all suggest different approaches. Because the primary goal of this study was to understand the mechanisms and processes that link management practices to project outcomes, a comparative case approach was selected (Mahoney and Goertz 2006; Bennett and Elman 2006).

Case selection utilized a "most similar" case selection strategy (Seawright and Gerring 2008), selecting cases that varied on both the dependent (project success) and explanatory (network management capacity[9]) variables of interest in order to discern the effects of public management amongst all other impacts. Because this strategy relied upon careful matching of

[9] Operationalizing "network management behaviors" posed several measurement problems. Therefore, "network management capacity" was used to capture the potential for network management behaviors. It is important to note that "management capacity" is not meant as a substitute for "management behavior" but rather as an intermediate predictor for the range of possible behaviors.

additional explanatory variables, case selection utilized highly specific decision rules to narrowly define a small population of cases that shared multiple similarities. Despite constraining the ability to generalize findings to a broader population of brownfield properties, these decision rules generated the highest degree of case matching, increasing the likelihood that analysis captured explanatory effects that otherwise would have been missed (Collier and Mahoney 1996)[10].

Variables Important to Case Selection. Applying this logic of inference to case selection provided a schematic for specifying the desired cases. In Table 4-1, Y_1 refers to the dependent variable of brownfield project success, X_1 refers to the explanatory variable of network management capacity, and X_2 captures all additional explanatory variables from the model that could theoretically impact values of Y_1. The result is four cases varying along capacity and success dimensions.

[10] It is important to distinguish between this use of the logic of inference and statistical theory as it applies to the potential problem of selection bias when selecting cases based upon the dependent variable. When applying statistical theory to large-N studies, selecting cases on the dependent variable truncates the data, underestimating the parameters. The effect can be opposite for small-N comparative studies where selection bias is not as much of a concern (Collier and Mahoney 1996). In small-N comparative studies, the goal is not to estimate *average* effects of causal variables but to articulate the details of causal relationships across a few, carefully selected cases. What subsequently matters in case selection is not so much where in the universe of cases the case studies exist but that there is a strong theoretical rationale for the cases selected. The outcome of such research is subsequently not a set of generalizable statements relating to brownfield projects as a case population, but rather a set of propositions informing future study of the broader case population.

Table 4-1: Most Similar Case Matching Scenario

	Variables		
Case	X_1 (Capacities)	X_2 (Context)	Y_1 (Success)
1	+	+	+
2	-	+	-
3	+	+	-
4	-	+	+

Derived from Seawright and Gerring (2008). X_1 refers to variables of theoretical interest, X_2 refers to vector of additional explanatory variables, Y refers to the outcome, and (+/-) specifies variable score if coded dichotomously.

The ambiguity of defining project "success" posed several conceptual challenges. Therefore, taking cues from the brownfield literature suggesting that success measures derive primarily from locally held qualitative perceptions (Bacot and O'Dell 2006; Wedding and Crawford-Brown 2007; Ganser 2008), this study utilized an online survey, a series of stakeholder interviews, and project-level data collected from the New York State Remediation Database to develop an aggregated success measure. This measure is described in greater detail later in this chapter.

Variables in the X_2 vector derived from the brownfield project and network management research literatures and included measures of the project resource environment, relative property market strengths, municipal policy tool use experiences, political support, and degree of intergovernmental ties. Table 4-2 summarizes the case selection variables.

Table 4-2: Case Selection Variables

Outcomes to Vary in Case Selection (Y)	
Project-level remediation and redevelopment success	
Causal Explanation to Vary in Case Selection (X_1)	
Network management capacity (municipal-level)	
Additional Explanatory Variables to Match in Case Selection (X_2)	
Municipal-Level Variables	
Potential public sector resource environment	Community development plan presence
Potential private sector resource environment	County level involvement in brownfield redevelopment
Real estate market strength	Federal (EPA) involvement in brownfield redevelopment
Municipal experience with state-level policy tools	Degree of project initiation by municipality
Project-Level Variables	
Property marketability	Familiarity of city officials with policy tools
Political support	Project end use

Data Sources for Case Selection. Case selection involved a range of online, survey, and interview sources. Online databases accessed included ones from the Environmental Protection Agency (EPA), the New York State Department of Environmental Conservation (NYSDEC), the New York State Office of the State Comptroller, the New York State Department of Labor, and the New York Department of State (NYDOS) as well as various websites for New York municipalities. Data from these sources provided information about municipal economic indicators and the municipal use of federal and state policy tools for specific properties located at the municipal level. In addition, case selection data were collected through an online survey targeting 368 individuals and agencies in the State of New York likely involved with brownfield processes and telephone interviews with key actors.

Selecting Cases for Variation in Managerial Capacity. Selecting cases that varied by managerial capacity but matched along other causal variables required a theoretically driven

decision process starting at the broadest definition of brownfield projects and ending at the specific municipality level. Table 4-3 lists the steps taken in this process with each step described in detail below.

Table 4-3: Case Selection Process – Narrowing Down the Scope of Cases

Selection Pool Level	**Variable Matched to Narrow Pool**
1) All brownfield properties	
2) All brownfields in the state of New York	All brownfields in this pool have access to the same set of state policy programs
3) All brownfields in NY municipalities with sufficient and recent brownfield cleanup experience.	All brownfields in this pool are from similar management experience contexts
4) All brownfields in cities in state of New York	All brownfields in this pool are from the same set of governance contexts
5) All brownfields in economically depressed New York State cities with municipality-initiated brownfield experience.	All brownfields in this pool are from similar market and management contexts
6) All brownfields in cities that match along similar resource characteristics and industrial histories but vary by management capacities.	All brownfields in this pool are from cities with similar industrial and resource environments that also vary by management capacities
7) All brownfields in Buffalo and Rochester, NY, with housing as the designated end use	

All brownfield properties. The broad definition of "brownfield" opened up the universe of cases to any piece of land thought to contain soil and water contamination. However, the interest in examining municipality-led brownfield projects led to the elimination of properties contaminated at such a high level that federal and state actors assume project management responsibilities.

All brownfield properties in the state of New York (NY). Brownfield project outcomes vary based upon the mix of policy tools selected by project actors (DeSousa 2005; Alberini et al. 2005). Cases were limited to the state of New York to ensure that project managers across

individual cases operated at the same state-level policy context. New York proved to be a particularly rich state for brownfield projects due to its strong industrial past, the predominance of older industrial communities, and the likelihood that these municipalities have experience brownfield remediation and redevelopment processes[11].

All brownfields in NY municipalities with sufficient and recent brownfield cleanup experience. Starting with a sampling frame that included all common "administrative units" in the State of New York (counties, cities, towns, villages), the pool narrowed to include those administrative units within which brownfield remediation and redevelopment had occurred. Preliminary case selection interview and survey data confirmed that nearly all successful brownfield projects utilized state and federal financial programs. Therefore, municipalities were selected based upon their presence in the New York State Department of Environmental Conservation (NYSDEC) Remediation Database. This database includes all New York brownfield projects applied to and accepted in a state policy program. At the same time, municipalities were dropped if their most recent active project in this database were older than five years. This ensured interview data collected for each case would be within a reasonable scope of personal memory and organizational records collections (Yan and Gray 1994). As mentioned in Chapter Two, New York's Voluntary Cleanup Program (VCP) incentivized private sector project investment from 1994 to 2003, when the current Brownfield Cleanup Program (BCP) took its place. Therefore, all municipalities whose projects were only listed in the VCP were eliminated. Finally, administrative units with less than four projects listed in the database dropped out as well based upon the assumption that a municipality with less than four known

[11] http://www.epa.gov/brownfields/pubs/st_res_prog_report.htm (accessed May 6, 2009)

brownfield properties did not have sufficient brownfield management experience for the purposes of this study.

All brownfields in New York cities. The selection pool was next narrowed down to all cities listed in the Remediation Database. This decision was made based upon the fact that cities in New York contain a larger concentration of properties listed in the database compared to the other municipalities (Table 4-4). In addition, cities differ from towns, villages, and counties in that they have the highest degree of taxation power and are highly autonomous regarding planning, environmental services, and economic development. If local-level policy tools exist for brownfield remediation and redevelopment, they would most likely occur at the city level.

Table 4-4: Known Brownfield Projects by New York Administrative Unit

Administrative Unit (AU)	Total Number of AUs in New York State	Brownfield Properties in DEC Remediation Database Associated with that AU
County	62	Approximately 45*
City	62	453
Town	932	207
Village	553	186

*While several counties have received EPA cleanup grants and are part of the NY Brownfield Opportunities Area Program, it is not evident how many properties listed in the VCP, BCP, and ERP programs are county administered.

All brownfields in economically depressed New York State cities with sufficient numbers of projects initiated by the city. The interest in understanding public management strategies in weakly marketable brownfield properties led to a focus on "municipality-initiated" projects. Interview data collected during case selection defined these projects as those where the municipality holds title to the land at the start of project processes, and the resource and legal liabilities that accompany this ownership compel public officials to engage with external partners in order to implement project processes.

Brownfield theory suggests that properties with higher marketability tend to be private sector-led while those with lower marketability rely upon public sector initiation (McCarthy 2002). In the Remediation Database, brownfield properties accepted into the New York State Environmental Restoration Program (ERP) were, by law, municipality-led but properties in the BCP may or may not involve municipality involvement, based upon the project's level of marketability. Therefore, state remediation data were matched with data about real estate market and economic conditions across New York cities to determine which cities likely contained high numbers of low marketability projects.

First, data from the Brookings Institution (Furdell and Wolman 2006) on the relative market strength of unique (not part of a larger metropolitan area[12]) U.S. cities with populations over 50,000 were collected to identify cities with weak market conditions. New York cities appearing in the bottom third of economic rankings included Syracuse, Albany, Schenectady, Utica, Binghamton, Buffalo, and Rochester. Pairing these data with information regarding enrollment in the ERP created a pool of twenty-six weak market cities with sufficient brownfield experience and high probabilities that the municipality initiated these brownfield projects (Table 4-5).

[12] Cities that were part of larger metropolitan areas were excluded to control for the market effects of being proximate to a larger, economically stronger real estate market.

Table 4-5: Pool Of Weakly Marketable Cities With Sufficient Brownfield Project Experience

City	Total Properties	ERP	VCP	BCP	City	Total Properties	ERP	VCP	BCP
Rochester*	36	6	15	15	**Beacon**	7	1	3	3
Buffalo*	31	8	10	13	**Fulton**	7	3	4	0
Yonkers	26	6	9	11	**Binghamton***	6	0	2	4
Syracuse*	15	4	4	7	**Elmira**	6	3	3	0
Poughkeepsie	14	5	2	7	**Geneva**	6	3	3	0
Rome	12	9	3	0	**Lockport**	6	5	0	1
Albany*	11	7	3	1	**Newburgh**	6	4	2	0
Lackawanna	11	2	1	8	**Troy**	6	2	4	0
Schenectady*	11	7	2	2	**New Rochelle**	5	1	3	1
Watertown	9	2	7	0	**Peekskill**	5	1	3	1
Niagara Falls	8	2	2	4	**Gloversville**	4	3	1	0
Utica*	8	6	2	0	**Ogdensburg**	4	1	3	0
Amsterdam	7	4	2	1	**Watervliet**	4	1	3	0

* Also listed as a weak market city by Brookings (2004)

All brownfields in cities that match along similar resource characteristics and industrial histories but vary by management capacities. The next step in case selection required data collection for variables in the X_1 and X_2 vectors. The contextual variables of X_2 were measured with data about per capita municipal expenditures, presence of economic development and planning departments, presence of community and industrial development agencies, and the number of brownfield-related grants obtained from both state and federal governments. Data were then collected for "network management capacity", capturing the number of Full Time Equivalency (FTE) employees assigned to brownfield project work, their degrees of expertise, and per capita city revenues. Table 4-6 presents variable measures.

Table 4-6: Case Selection Variables for Case Selection - City Level

City Selection Parameter	Measure Used
X_2 Variables (to be matched)	
Potential public sector resource environment	Market value of taxable property, 2006
Potential private sector resource environment	Presence of business councils and development associations. (Gordon, 1997)
Real estate market strength	Brookings Weak Market City data
Management experience with state-level policy tools	Total number of brownfield projects entered into NYDEC Remediation Database, by program, 1994-2008
Community development plan presence	Presence of city strategic plan Designation of state Brownfield Opportunity Area
County level involvement in brownfield redevelopment.	EPA grants given to county Designation of state Brownfield Opportunity Area
Federal (EPA) involvement in brownfield redevelopment	Number of EPA grants given to city
Degree of project initiation by municipality	Proportion of properties in ERP vs. VCP and BCP combined
X_1 Variables (to vary)	
Network management capacity – Personnel Capacity	Number of FTE personnel committed to brownfield projects and average time on job
Network management capacity – Expert Capacity	Degree of environmental expertise
Network management capacity – Resource Capacity	Per capita city revenue

Comparing each city for similarities between X_2 variables and variation in the X_1 variable revealed that the cities of Buffalo and Rochester presented the best match. Of all cities within the case selection pool at this stage of the process, Buffalo and Rochester exhibited similar property tax bases, population sizes, city government expenditures, degree of experience with NYSDEC brownfield programs, proportion of municipally-led brownfield cleanups, and strategic plan presences while varying in terms of in-house brownfield expertise and per capita city revenue. While the cities did not match exactly in terms of EPA brownfield grants, city populations, and total land area, the measures for the other parameters were closer than all other possible pairings of cities in the selection pool. Table 4-7 shows a side-by-side comparison of

these data. Subsequent data collected through interviews and historical research confirm differences in residential end-use brownfield management capacities of these cities.

Table 4-7: Matching the Cities of Buffalo and Rochester

Parameter	**Buffalo**	**Rochester**	**Parameter**	**Buffalo**	**Rochester**
Number of FTE Brownfield Managers (2008)	0.5	2.5	Primary City Agency Managing Brownfield Projects (2011)	Office of Strategic Planning	Division of Env Quality
Average tenure of FTE brownfield managers (2008)	3 years	8 years	Development Associations (2011)	yes	yes
Total DEC Brownfields (2011)	31	36	DEC Region	9	8
ERP properties	8	6	City Population (2000)	292,648	219,773
VCP properties	10	15	City Taxable Property Market Value (2006)	$5,495,591,958	$5,057,647,759
BCP properties	13	15	City Property Taxes Collected (2006)	$86,403,221	$52,226,210
A Class (cleanup incomplete)	24	27	City Total Expenses (2006)	$450,376,958	$452,757,523
C Class (cleanup complete)	7	9	Per Capita Expenditures (2006)	$1,539/person	$2,060/person
Percentage ERP	0.26	0.17	City Land Area (sq mi) (2006)	40.6	35.8
Brownfield Opportunity Areas (2011)	1	1	County	Erie	Monroe
EPA Brownfield Grants (2011)	3	8	County EPA Grant and DEC BOA Experience	none	DEC BOA
Presence of City Strategic	yes	yes	County Population	950,265	735,343

Plan			(2000)		
Quasi-Government Agencies	multiple	1	County Taxable Property Market Value (2006)	$38,102,215,587	$33,528,442,883
			Total Expenses County (2006)	1,241,002,509	1,398,136,090

Data derived from the websites for the New York State Environmental Site Remediation Database, New York State Department of State, and the Local Government Information pages of New York State Government

Industrial Pasts of Rochester and Buffalo, NY. The City of Rochester, like many upstate New York communities in the early 19th century, had its economic origins in mill processing, utilizing the energy of the Genesee River on which it sits. The city of blossomed as an industrial center immediately after the 1825 completion of the Erie Canal. This transportation route linking the Great Lakes to the Atlantic Coast enabled the city to transform from the Flour City to the Flower City, exporting not only milled grains but also fruits and flowers.

During the Civil War, Rochester became an important provider of supplies, receiving a boost to its growing manufacturing sector. In 1881, Rochester's most famous industrialist, George Eastman, began what soon became known as Eastman-Kodak and was quickly becoming the world's largest producer of film. By 1950, taking advantage of the post-war boom in demand for chemicals, Rochester had firmly established itself as an industrial center with such companies as Bausch and Lomb and Xerox basing their production facilities there. Additional industry included numerous offshoots of the petroleum and steel industries (Buttino and Hare 1984; McKelvey 1984).

By the 1970s, after several cycles of economic contraction affecting both regional and national markets, many of these companies downsized or left the city, leaving behind a legacy of polluted properties. Several key environmental cases during this era raised civic awareness of these environmental problems but inadequate public policy and declining financial resources

made it difficult for the city to address them. In 2007, the Brookings Institution classified Rochester as a "weak market" community in their economic survey of older industrial cities in the United States (Vey 2007).

Similarly, Buffalo, NY has gone through extremes of economic boom and bust. Rising at the same time as Rochester due to the opening of the Erie Canal, Buffalo served as the major port and railroad city of western New York, becoming the eighth largest city in the country by the early 20th century. Situated at the edge of the Great Lakes, Buffalo was the most important crossroads for raw materials and goods to be transferred between the east coast and the ever-expanding frontier to the west, eventually becoming home to some of the largest steel mills and manufacturing facilities in the nation by the 1940s. Part of this prominence has been attributed to both local government and the press embracing industry and being very flexible to attract major employers such as Lackawanna Iron and Steel (Goldman 2007). Because of the industry boom during this time period, Buffalo became a mecca for the unemployed and the industries themselves built acres of "company housing" right next to manufacturing facilities to house them. These arrangements led to much of the contamination of these neighborhoods. However, by 1982 most of the major auto manufacturing facilities and steel mills were no longer in operation and the city was left with not only large tracts of formerly industrial land, but also vacant neighborhoods left by fleeing former employees prompting several interview respondents in this study to declare that Buffalo "is essentially one giant brownfield."

Network Management Capacities in Rochester and Buffalo, NY. From the abolitionist debates of the Civil War era through the 21st century, Rochester maintained a high level of civic engagement and focus on local governance (McKelvey 1984). Like many mid-sized cities in the industrial northeastern United States, conflict over economic disparities and race relations reared

its head in the 1960s and 1970s leading to a surge in neighborhood organizing and place-based mediation practice. By the 1980s, Rochester was recognized as having some of the best organized neighborhoods in the country (Buttino and Hare 1984), with neighborhood groups gaining significant voice in city planning processes. This voice was institutionalized in city government through a series of neighborhood-based offices that enabled citizens to have influence on city planning decisions. On the governance side, Rochester fielded a council-manager government through the early 1970s when a group of civic leaders began exploring a move to a strong mayor system. Opposition groups were wary of consolidating power into an executive but in 1985, the citizens voted to change the charter to return to a strong mayor. Up through 2010, only three mayors have served under this system. Several individuals interviewed for this study linked this fact to the sense that Rochester city government operates under fewer political influences than comparable regional cities.

Conversely, Buffalo was a town driven by the industrialists who brought it its employment and wealth. City politics reflected this exclusivity by operating as a "machine town" where political decisions often matched the desires of the factory owners (Goldman 2007). Perceptions of individuals interviewed for this study indicate that this political culture of patronage and opaque political maneuvering carried forward to the present day. As industry declined and the concentration of urban poor increased into the 1960s, Buffalo experienced a series of race and class conflicts. However, unlike Rochester, these conflicts did not necessarily lead to a closer intertwining of neighborhoods and city government. Instead, the increasing flight of city residents continued to decrease the resource capacity of city government. Buffalo operated under this fiscal stress for many years until 2003 when the New York state legislature passed the Buffalo Fiscal Stability Authority Act. This Act established an accountability board

to oversee the fiscal responsibilities of the city. Since 2001, the city has experienced a 30% decrease in city personnel[13] and continues to be reliant on funding from state and federal government to remain in operation.

These historical factors contributed to different government capacities between Buffalo and Rochester for complex project management in the present day. Data collection and analysis for this project subsequently revealed further capacity differences specific to brownfield projects that are discussed in Appendix B.

Selecting Cases: Variation in the Project-Level Outcome Variable (Y_1). At this point in the case selection process, projects remaining in the selection pool within Rochester and Buffalo were narrowed to those with market-rate residential end uses. Selecting this common end use ensured both common sets of actors and policy tools across projects as well as a narrow variance in property marketability. In addition, while market-rate housing represent a minority of brownfield end uses, they are more likely to be municipality-led in pursuing urban planning goals (Page and Berger 2005).

Final case selection required variation in project outcomes and, therefore, the development of a New York-specific measure for project success that incorporated numerous project outcomes measured through a series of social, economic, and environmental indicators weighted by stakeholder preferences (Wedding and Crawford-Brown 2007; DeSousa 2005; Bacot and O'Dell 2006). To achieve this, a purposive sample of 368 email addresses were compiled for individuals and organizations likely engaged with brownfield redevelopment activity in the State of New York. These addresses included local, state, and federal government

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13 http://www.ci.buffalo.ny.us/Home/Mayor/Archive_Press_Releases/Leadership/2007Archives/June2007/BFSA VoteToLiftCityEmployeeWageFreeze

officials, New York-based private developers and lenders, real estate professionals, directors of environmental advocacy nonprofit organizations, environmental lawyers, and environmental engineers (Dair and Williams 2006). The survey asked participants to identify brownfield redevelopment projects they perceived as both successful and unsuccessful, why they thought so, the criteria they applied, and the type of agency or organization that they represented (Appendix A). The survey also asked participants to forward the survey link to colleagues they felt would have the ability to answer the questions. Due to this approach, the total number of actual survey recipients is unknown.

Survey design required that survey respondents answered each question for survey completion. Therefore, respondents without project-specific knowledge could not complete the survey. Respondents were sent the survey invitation twice and, after removing incomplete responses, a total of 28 fully completed surveys remained (Table 4-8). While this was a low response rate (8%), the purpose of the survey was to develop a measure for brownfield "success" in a New York context comparable to the ones described in the brownfield literature.

Table 4-8: Survey respondents

Agency Type	**# of Respondents**
TOTAL	**28**
County Government	6
Brownfield-specialized Private Developer	4
NY Dept. of Environmental Conservation	4
Economic Development Agency – Local Gov't	4
Planning Agency – Local Gov't	3
Community Development Agency – Local Gov't.	2
Consulting Firm	1
Economic Development Agency – Federal Gov't	1
Law Firm	1
Citizens-focused Nonprofit Organization	1
University	1

The survey asked respondents to first list as many success criteria as possible and then to rank the top five criteria in order of importance. For example, twenty respondents listed "the property is strategically located", with five respondents ranking it as the most important criteria for success, three as second most, two as third and fourth, and one as fifth. Assigning a value of "5" for "most important" and "1" for the fifth most important, a score was calculated against which to compare different criteria. Table 4-9 lists the top six success criteria identified by at least half of the respondents as important.

Table 4-9: Success Criteria

Criteria	Count	Percent of Respondents	Scored Importance
The project adequately remediated existing environmental contaminations.	24	88.89%	58
The project impacts on community revitalization are area-wide.	21	77.78%	34
The property is strategically located.	20	74.07%	48
The project resulted in higher property values for itself and neighboring properties.	19	70.37%	31
The project is/was supported by local elected officials.	18	66.67%	28
The level of citizen support for the project is/was high.	14	51.85%	25

These data suggested that perceived success of brownfield remediation and redevelopment projects entails the following three criteria in order of importance:

1) Existing contaminations were addressed;

2) The project was strategically located to maximize impacts; and,

3) The project had high political support from elected officials and citizens.

To confirm success perceptions, respondents were also asked to identify "unsuccessful" projects. Table 4-10 provides survey results regarding how respondents applied "unsuccessful" criteria.

Table 4-10: Non-success Criteria

Option	Count	Percent of respondents	Scored Importance
Existing environmental contaminations were not adequately remediated.	8	61.54%	23
The time between assessment and cleanup is/was inefficient.	8	61.54%	15
The time between cleanup and reuse is/was inefficient.	8	61.54%	9
The total cleanup costs are/were over budget.	7	53.85%	14
The project did not result in higher property values for itself and neighboring properties.	7	53.85%	7

These data suggested that stakeholders apply the following three criteria, in order of importance, when identifying brownfield projects as "unsuccessful":

1) Existing contaminations were not addressed;

2) The time and resource efficiencies of the project were low; and,

3) The project was not strategically located for maximum community impact.

Comparing these findings to the literature indicates reasonable validity (Table 4-11).

Table 4-11: Outcome Indicators and Brownfield Project Success (alphabetical)

Indicator	Definition for "Success"
Area-wide impacts	Positive social, economic, and environmental impacts on broader community
Citizen support	Degree of citizen support for the project
Cleanup costs	Real costs for remediating property to levels appropriate for end use
Development costs	Real costs for constructing end use on remediated property
Funding	Perceived satisfaction of levels of public and private financial support
Impact of location	Perceived importance of property as economic development
New job creation	Number of Full Time Employees hired for the project
Planned end use	Perceived satisfaction with end use
Political support	Degree of elected official support at multiple levels of government
Property value impacts	Real positive change in adjacent property values
Return on investment	Real income generated per cost over predetermined time period
Use of time	Perceived efficiency of time between start and end of project

Derived from Wedding and Crawford-Brown 2007; DeSousa 2005; Bacot and O'Dell 2006.

These survey data were combined to produce five variables that, together, formed the success measure used for case selection (Table 4-12). Data were collected for each variable from project documents, interviews with city environmental engineers in Rochester and Buffalo, and the principal brownfield engineers at the state level in the Buffalo and Rochester regions. Projects were ranked within each city based upon their outcome measure scores, producing four project-level cases (Table 4-13).

Table 4-12: Operationalizing the Dependent Variable: Brownfield Project Success

Outcome Measures	**Operationalization as Success**	**Ranking Scales**	**Mechanisms of Data Collection**
Time to completion (TIME)	Stakeholder satisfaction with time from initial site investigation to development or present	High satisfaction Low satisfaction	Phone interviews, actual time measured
Cleanup costs (COST)	Actual cleanup costs per acre	Most expensive Least expensive	Phone interviews, actual costs
Implementation processes (PROCESS)	Stakeholder satisfaction with implementation processes	High satisfaction Low satisfaction	Phone interviews
Contamination abatement (CLEAN)	Certificate of Completion or approved remediation	CoC obtained CoC not obtained	NYS DEC records
Area-wide impact (IMPACT)	Reported increase in values of neighboring properties	High % increase Low % increase	Phone interviews

In Rochester, two discrete market-rate residential end use projects satisfied the case selection criteria while in Buffalo, the case satisfying selection criteria for low success shared the same property with the best case for high success. This is due to an initial attempt at addressing the property failing in the eyes of key stakeholders but a subsequent attempt succeeding. Despite the path dependency from Phase 1 to Phase 2 of this property and the shared environmental characteristics, sufficient network actor turnover between the phases created two different

management scenarios that could be treated as unique projects for this dissertation. Therefore, for analysis purposes, Buffalo Phase 1 and Phase 2 were treated as two separate cases.

Table 4-13: Comparison of Selected Cases

Variable	Buffalo Phase 1	Buffalo Phase 2	Rochester B	Rochester A
City	Buffalo	Buffalo	Rochester	Rochester
Relative success rank	Low Success	High success	Low success	High success
CLEAN	incomplete	complete	partially complete	complete
TIME	2002-2003	2006-2009	2003-present	1996-2004
CLEANUP COST	$1.2 million		$605,000	$4.05 million
PROCESS SATISFACTION	low	high	low	high
IMPACT	none	high	none	high
Property ownership during remediation	City of Buffalo	City of Buffalo	City of Rochester	City of Rochester
Phase of redevelopment	Cleanup complete, redevelopment complete	Cleanup complete, redevelopment near complete	Cleanup complete, redevelopment stalled	Cleanup complete, redevelopment complete
Brownfield property size	4 acres		1 acre	6.85 acres
Proposed end use	Mixed Market-Rate Residential/Affordable Housing		Market-Rate Residential	Market-Rate Residential

Data Collection. Following best practices for comparative case analysis (King and Powell 2008), interviews, follow-up surveys, public records obtained through Freedom of Information Law (FOIL) requests, and media reports from newspapers, blogs, and professional journals provided data for each case.

Semi-structured interviews served multiple data collection roles including filling gaps in historical timelines, finding omitted variables, and uncovering explanatory processes (George and Bennett 2005). Interview participants were selected based upon their real and perceived centralities to project processes and were identified through project documents as well as through a snowball sampling technique (Provan and Milward 1995; Imperial 2005). Each contact was approached by both telephone and email over a period of several weeks. Contacts were removed

from the list if they did not consent to an interview or if no reply was received after five attempts. Interview subjects for each case ultimately included elected officials, city public managers, private developers, investors, state regulators, and citizens (Table 4-14).

Table 4-14: Project Actors Interviewed By Case

Actor Category	Rochester A	Rochester B	Buffalo 1 and 2
elected officials	X	X	
planning managers	X	X	X
city environmental managers	X	X	X
state environmental regulators	X	X	X
community activists	X		X
lenders			X
developers	X	X	X
county health manager	X	X	
state health manager			X
environmental and engineering consultant	X	X	X

Interview questions emerged from the theoretical frameworks used to develop the study propositions (Appendix A). Process-oriented questions included open-ended statements like "describe when you became involved with this project and why" while questions about key moments assessed actor motivations, perceived balances of power between actors, and general awareness of the project environment (Bressers, Klok, and O'Toole Jr. 2000). Network questions measured social ties, strategic management behaviors, and institutional forces guiding behaviors (Provan and Milward 1995). A municipal brownfield manager and a brownfield consultant outside the study reviewed the interview protocol and their suggestions were incorporated into the final version.

Interviews occurred in-person or over the phone when in-person interviews were not feasible. Interview subjects were asked for consent (Appendix A) and, upon consent, were read questions directly from the protocol. Clarifying questions were asked only if the interview subject was not clear in their answer. All interviews were conducted in accordance with the

Institutional Review Board of Syracuse University regarding the treatment of human subjects to minimize risk to respondents. Interviews were transcribed both by this researcher using the Transcriva software package as well as by a contracted transcriber.

While interview data were used to assess communication networks at the case level, an online survey targeting members of project networks collected more precise data measuring these ties. This survey asked respondents to identify the project phases in which they participated, the individuals and organizations with whom they interacted during those phases, the frequency of those interactions, and the types of information exchanged (Appendix A). The survey software sent three invitations for recipients to participate over the course of four weeks. If a recipient did not respond, three phone calls were made to offer to collect the information by hand. If a recipient still did not respond, they were dropped from the survey list.

For both project stories and network data, documents such as emails, contracts, media reports, and meeting minutes filled in missing data gaps. Public records were obtained through FOIL requests from municipal agencies involved with each project. Permissions were also obtained from private project actors to access a variety of project-specific internal documents such as photographs, project summaries, and internal communications. In addition, newspaper articles, blog entries, meeting minutes and agency reports were collected to round out triangulation efforts. These data were utilized to confirm, or refute, the findings generated by interview data, a particularly important task for addressing the limitations of retrospective data (Golden 1992). Table 4-15 summarizes data collected for each case.

Table 4-15: Data Collection by Case

Collection Method	Buffalo Phase 1 and 2	Rochester A	Rochester B
Interviews	21 individuals 26 interviews	14 individuals 15 interviews	13 individuals 14 interviews
Follow-Up Network Surveys	28 invitations 8 responses	17 invitations 8 responses	23 invitations 8 responses
City Government Project Documents	RFPs, contracts, fax communication, email communication, phone communication, citizen surveys, environmental reports, design narratives, financial reports, budgets		
	~ 1000 pages	~ 3000 pages	~ 750 pages
City Council Minutes	6 years	5 years	5 years
Private Documents	Annual reports, newsletters, design mark-ups, blueprints, evaluations		
Organizational Websites	Websites for each key government agency, private contractor, consultants, and citizens groups, when accessible		
Newspaper Accounts	~30 articles	~30 articles	~10 articles
Academic/Professional Journals	Master's Thesis, prior research on Buffalo urban policy	none	none
Other Government Documents	Sources: USEPA, NYSDEC, NYSDOH Types: annual reports, project summaries, budgets		
	~600 pages		
Blogs	Buffalo Rising Fix Buffalo Buffalo Pundit	none	none

Data Analysis. The ability to assert causal processes during case analysis requires careful accounting of evidence to enable capture of alternative explanations (Bennett 2008). Therefore, several analytical techniques were applied. First, project contexts were constructed out of interview and document data to establish a backdrop upon which to explain what happened and why (Yin 2003). The broader resource, market and political backgrounds of each case (Appendix B) as well as the key events leading to project outcomes (Chapter 5) were described using evidence from both primary (survey, interview) and secondary data (past research, journalism, texts).

Second, process tracing techniques were used to produce in-case analyses explaining how project outcomes came to be. Process tracing is often used to both build and test theories about

phenomena containing multiple interaction effects, such as explaining management outcomes of project networks (Bennett and Elman 2006). Key decisions and actions within the broader project contexts were identified within the general brownfield project phase framework articulated in Chapter 2. Anchoring case narratives around these phases provided structure in which multiple within-case observations could be made without clouding the analysis (George and Bennett 2005). Interview respondents central to each case then reviewed the case stories to verify accuracy.

Third, the interview and document data were coded using the TAMS Analyzer qualitative software package to capture institutional management strategies utilizing policy tools across project phases. Data were first coded for the key decision phase described and then for the policy tools used in each phase (Table 4-16). Once these codes were in place, data were recoded to capture management behaviors associated with the use of each policy tool.

Table 4-16: Codebook for Policy Tools and Project Phases

Code Type	**Code Category**	**Code Sub-Category**	
Policy Tools	Local, State, and Federal levels	Liability Relief	Regulation
		Tax Credits	Deregulation
		Grants	Strategic Plan
		Revolving Loans	*Direct Action*
		Economic Zones	Permit
		Contracts	Technical Assistance
		Quasi-Governmental Corporations	
Project Phases	Property Assembly	Design	
	Economic Assessment	Construction Planning	
	Environmental Assessment	Construction	
	Remediation Planning	Sales	
	Remediation		

The retrospective nature of the data prevented measurement of actual management behaviors enabled in direct observation. Therefore, data surrounding mentions of policy tools were examined for cues indicating management intent behind tool selection as well as perceptions of behavioral impacts resulting from tool use. Interview data were also scanned for descriptions of interpersonal interactions matching the institutional and relationship management behaviors found in Table 4-18 below.

Table 4-17: Management Behaviors

Strategy Type	**Behaviors**	**Measure**
Relationship	Negotiation	Making offers and counteroffers in search of mutually agreeable allocation
	Trust development	Risk sharing Social interaction outside of partnership
Institutional	Persuasion	Offering incentives to encourage participation
	Coercion	Leveraging authority to direct behavior
	Accommodation	Requesting or granting regulatory relief
	Arranging	Seek/provide third party to mediate differences Seek financial resources Establish contract
	Framing	Seek/provide information regarding brownfield property characteristics
		Seek/provide information and technical assistance

(adapted from Agranoff and McGuire 2003)

Finally, social network structures within each project were measured by applying social network analysis (SNA) techniques to the data (Tichy, Tushman, and Fombrun 1979; Milward and Provan 1998). These techniques used relational information between individual and organizational actors to define structural properties of each project network over time, particularly as they related to information exchanges (Wasserman and Faust 1994). Sociometric matrices indicating who exchanged information with whom were constructed using data from interviews, the post-interview survey, and documents. If respondents reported a single dyadic information exchange with an individual or organization within the network during a particular

project phase, the exchange was assigned the value of 1. Otherwise, the cell linking the two actors was assigned a 0. Additional exchanges indicated in interview and document data were then added to the matrices to fill in gaps created by survey non-responses. Links were considered binary, symmetric, non-directional, and non-weighted, allowing for only basic description of network structures utilizing the SNA software AGNA.

First, the data were coded by project phase to count active relationships between actors within each phase as well as to provide a measure for the network relationships across the entire project. Because of the focus of this research on local government actors, actor types were broken down between sectors and then between different government agencies and offices. Individual-level network actors were categorized by primary expert area, regardless of sector affiliation. Primary expert areas pertained to the tasks implied by specific job titles and agency missions affiliated with each actor, verified by interview and document data.

Actor-level centrality measures identified which actors were most central to both the whole network as well as during each network phase. A common way to conceive of this involvement is to examine an actor's "betweenness", or the extent to which an actor lies between all other actors based upon their geodesics, or the shortest path between the actor and all other actors (Wasserman and Faust 1994). The Bavelas-Leavitt (BL) Centrality index as calculated by AGNA suited this purpose (Bavelas 1947; Wasserman and Faust 1994; van der Aalst and Song 2004). This Index measures the ratio of the sum of geodesic distances for all nodes by the sum of geodesic distances to the node in question. The shorter the distances between the node and all other nodes, the index score increases. Subsequent analysis of public management behaviors within the network focused upon public managers exhibiting high BL Centrality Index scores. For example, if a municipal-level manager exhibited high centrality compared to all other

network actors, it is likely that that manager had the best structural position from which to influence the behavior of other network actors and should be the initial focus of analysis.

AGNA also used the BL Centrality Index scores for each project and project phase to generate a measure for group-level centrality called the Freeman Centrality Index. This index summed the differences between the largest value for single actor centrality and the rest of the actor centralities and divided it by the maximum theoretically possible sum for that sized network. This produced a score between 0 and 1 for each network. A score of 0 indicated a network where all actors have the same centrality and 1 indicated a network where all shortest paths lead to the same actor; the higher the score, the closer the network was to a perfectly central network (Faust and Wasserman 1992). However, this index assumes that only one network exists within a matrix. More than one unique network will skew this measure above 1, requiring separate measures for unique networks operating within the same arena. One advantage to using the Freeman Centrality Index measure was that the standardization of scores in the index across networks enabled cross-case comparisons between networks of different sizes. Therefore, actors not active in a particular phase of a project could be removed from the network data for that phase without removing the ability to compare phase centralities.

Network density was measured in AGNA by dividing the total number of edges, or unique links between actors, by the total number of possible edges for that network. This produced an index between 0 and 1 where low values indicated fewer links and higher values indicated more comprehensive connections within the network (Pryke 2005; Wasserman and Faust 1994). Because isolate actors were removed, density index values measured the density of active network participants only.

Together, these four analytical strategies enabled a rich description of the critical factors impacting project outcomes and the relative influence of public management behaviors within project networks on these outcomes.

Threats to Research Validity. The primary limitation of comparative case analysis using qualitative data and a small number of cases is the ability to generalize findings to a broader population of cases. However, as explained at the start of this chapter, research designs spring directly from research goals and, with the aim of this study to trace causal processes and identifying the mechanisms enabling these processes, small-N comparative case analysis remained the best research design (Gerring 2004; Kaarbo and Beasley 1999; Dion 1998).

A challenge to this design, however, was the ability to adequately capture rival explanations in the data collection. This ability first relied upon sufficient knowledge at the start of the study of what potential rival explanations might be and then later upon the ability to collect sufficient data to fully capture the extent to which these explanations occurred. The potential for omitted variable bias increased the more key data sources were missed. While the data triangulation, interview selection, and respondent verification methods addressed this limitation to the greatest extent possible, data gathered for the Buffalo Phase One project constrained findings for that case.

A second challenge specific to this study was the use of retrospective interview data in constructing story narratives. As more time passes after events occur, the ability of individuals to accurately depict events diminishes (Bernard et al. 1984). To address this, this study selected projects with active processes within five years of the study dates, implemented the same semi-structured interview protocol with exhaustive lists of interview subjects, and verified interview data with multiple secondary data sources.

A third challenge pertained to the data used for social network analysis. Social network data from interviews relied upon recall and the abilities of interviewees to remember their primary partners when making key decisions. The network survey did not elicit a full set of respondents, limiting its ability to verify exchanges of information and resources between those actors (Wasserman and Faust 1994; Tichy, Tushman, and Fombrun 1979). Document data, while filling in many of the gaps left by interview and survey sources, may also be biased towards relationships requiring formal documentation and away from the informal exchanges that may have been central to decision making processes. Despite these limitations, the extensive triangulation of these three sources enabled the best possible saturation of network data (Dyer and Nobeoka 2000). Subsequent analysis proceeded cautiously, recognizing where data gaps existed.

Presenting Findings. Through careful case selection and data collection, the research design for this study enabled the construction of a dataset sufficient for analyzing the extent to which public managers influenced brownfield remediation and redevelopment project outcomes. By tracing processes in a set of comparative case studies and conducting social network analysis, the research propositions regarding the use of institutional management strategies were examined. Despite careful matching of case-level data, findings reveal four complex brownfield remediation and redevelopment projects with four distinct stories. The next three chapters present these findings, carefully producing an analysis addressing the theoretical propositions. Starting with the Assembly phase (Table 4-19), Chapters Five, Six and Seven alternate between examining the critical factors shaping key decisions and identifying the prevailing patterns of network structures, policy tool use, and network management behaviors surrounding these decisions. The end of each case story then aggregates phase-specific critical factors to the project

level in order to illustrate the link between these factors and the multiple outcome measures utilized to assess relative project success. Chapter Eight continues the analysis by examining these findings across the case stories to determine the extent to which public managers operating towards the center of brownfield project networks impacted partner behaviors and, subsequently, project outcomes through the strategic selection and use of policy tools.

Table 4-18: Brownfield Remediation and Redevelopment Framework

Phase	*Stage*	***Decision-Making Path***
Cleanup	Site Identification	**1. Assembly**
	Initial Site Assessment – Phase I Investigation	**2. Environmental assessment**
	Detailed Site Assessment – Phase II Investigation Remedial Assessment	**3. Remediation planning**
	Economic Assessment and Planning	**4. Economic assessment**
Redevelopment (Overlap) *Cleanup*	Project Development and Financing	**5. Redevelopment planning** **6. End use design**
	Cleanup Planning and Execution	**7. Remediation process**
Redevelopment	Redevelopment of Site	**8. Construction process** **9. End use sales**

Bold font indicates phases around which the case narratives are organized.

CHAPTER FIVE ROCHESTER HIGH SUCCESS: RIDING A POLITICAL WAVE

Introduction. The first project examined in this research was the high success case in the high capacity city, Rochester, NY. As the case story revealed, this project achieved its success through a combination of strong political support, timely policy tool availability, thorough remediation, and effective institutional and relationship management on behalf of key public managers operating towards the center of project networks. This chapter lays the foundation for identifying how these critical factors influenced one another to enable the emergence of successful outcomes. Each section of the chapter describes how the interaction of key factors occurred at the phase level before culminating with a general discussion of critical factors at the project level.

Background. Rochester Project A (RPA) is a market-rate single-family home residential development that occurred between 1996 and 2004 and is characterized by high levels of citizen engagement and large amounts of money spent on remediation and redevelopment. The property assembled for RPA lies in the southeast quadrant of the city of Rochester at the boundary between an established, stable neighborhood and one experiencing more of the challenges associated with lower-income, transient areas. Demographically, the neighborhood around RPA had been predominantly working class Caucasian families with, at the start of the project, low levels of organized neighborhood association activity.

The property itself originally hosted two active construction companies, one providing general contracting services and the other performing asphalt services for road and infrastructure construction. These two commercial properties had been grandfathered into what eventually became a single-family home urban neighborhood. This unusual integration of commercial and residential persisted largely because, at the time that RPA began, the city had an ongoing policy of not foreclosing or otherwise acquiring environmental properties that might pose undue

liability and financial risk for the city. Therefore, as long as political pressure remained low, there was little incentive for the city to invest time and money into property acquisition.

Property Assembly and Economic Assessment. Starting in the early 1990s, individual neighbors living adjacent to what eventually became RPA began complaining to city officials about strange odors, late night digging activity, and suspicious looking run off originating from the contractor yards sitting in their midst.

> You'd be sitting here and next thing you know a stick of dynamite would go off or somebody would be out back at 2 or 3 in the morning and you'd see a backhoe start up and they are digging and burying and hiding stuff and illegally bringing trucks in from main street down through the street that was there and dump in the middle of the night. – RPA Neighbor, 2008

While neighbors logged complaints with the City, the County Health Department, and the New York State Department of Environmental Conservation (NYSDEC), they felt that nothing significant was being done about this public nuisance. Sensing that part of the problem was their lack of organization, the neighbors formed a neighborhood group (given the pseudonym "BANG" here) to coordinate complaints. This effort to organize caused city council to recognize the neighbors as a substantial political force. The council president, who also represented their district, met with key public managers in the environmental quality and community development departments to see what could be done. However, despite this growing political momentum to address the nuisance, there was not a strong precedent for direct city action. While the potential liability risks played a role in this informal policy, the greater barrier was a lack of funding for potential remediation costs.

At around the time that the political pressure from the neighborhood on city council increased, the lead manager at the city's Division of Environmental Services (DES) heard from NYSDEC headquarters that a new policy program was in the works in New York State to aid

municipality-led remediation of contaminated properties. Termed the Environmental Restoration Program (ERP) under the 1996 New York Clean Water/Clean Air Bond Act, the program contained a set of policy tools for use by municipalities specific to brownfield properties with the most attractive tool being state reimbursement grants for up to 75% of total remediation costs. In addition, upon completing remediation to the satisfaction of the New York State Department of Environmental Conservation (NYSDEC), any future property owners would receive indemnification from the state for future issues pertaining to its past contamination. Recognizing that this program would likely be approved, the DES manager proposed that the city move forward on property acquisition in anticipation that the money for remediation reimbursement would be there. With increasing political pressure from the community and likely financial assistance from the state, city council gave the green light and the city real estate, housing, and DES offices made room on their agendas for addressing the nuisance properties and city council approved that property acquisition activity commence.

As a first step, with approval from city council, the city real estate office acquired the nuisance property through a combination of tax foreclosure and direct purchase, compelling the owners to sell the property at market rate while the city paid for their move to a site in a more industrial area. Then, when surveyors contracted by the city reported back to the real estate office that additional property segments might be needed for a usable final product, the city purchased an entire property from the second contractor who owned a smaller, adjacent piece of land in addition to slices of properties from surrounding residential neighbors. The sum effect of this assembly approach provided enough space for potential development that might include building a new street with adequate access for emergency vehicles. However, city officials at

this point did not have a clear end use in mind because the initial motivation was to address a neighborhood nuisance, not to fulfill broader community or economic development goals.

RPA Assembly and Economic Assessment: Network Characteristics, Policy Tool Use, and Public Management. Network data for this first phase reveal that the DES manager occupied the most central space of the project network (Table 5-1). Initially, it was this individual who reported on the up and coming funding source for remediation. Once the project was given the go-ahead, and with support by his department commissioner, this manager assumed the role of liaison with BANG, pouring many hours into communicating what was happening at City Hall regarding the acquisition process, even when it involved information that may have been outside of the environmental arena. It is important to note that, despite not exhibiting as high a centrality, the director of the city real estate office performed much of the negotiation with property owners and facilitated property acquisition procedures. These tasks did not require that he occupy a central network position due to delegation of authority to him by city council to work directly with the property owners.

Table 5-1: Top Three Individuals by B-L Centrality Values

	1	**2**	**3**
Assembly	Citizen	Sr. Env Mngr	City Council
Economic Assessment	Sr. Env Mngr	City Council	Citizen

The policy tools exhibiting influence on project processes during these phases were largely legislative/regulatory by nature and were primarily used to facilitate the real estate transactions away from the center of the project network (Table 5-2). For example, the real estate and housing development managers applied the direct actions of condemnation and purchase to the nuisance property owners. While purchasing required some negotiation, the ability to use condemnation and threaten eminent domain as a potential action forced compliance

by the owners. Additional use of direct action included the use of money from a bond sale by city council to pay for land and the leveraging of zoning laws by community development managers to aggregate the properties under city ownership.

While not directly implementing any specific tool, the senior DES manager was able to leverage the potential for the state ERP fiscal tools to convince political leadership to commence property assembly processes, and to convene key actors within city government. The impact of this anticipation impact indicates that policy tools influence actor behaviors prior to their actual implementation and, in the case of policy tools as threats (i.e. eminent domain), may be used to compel behaviors of network actors.

Table 5-2: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Assembly	3	1	1	0	**5**
Economic Assessment	0	0	0	0	**0**

During property assembly, public management activity largely occurred through the efforts made by the environmental and real estate managers to accomplish two very different tasks. The DES manager, through his central network position, focused on building positive relationships between city council and neighborhood residents to address immediate conflicts and lay the groundwork for a longer term working relationship. The real estate and housing managers on the other hand primarily targeted property owners over the short term using several direct action tools as authorized by city council. As a result, the DES manager found himself utilizing high levels of relationship building strategies through a large amount of information exchange with multiple city and citizen actors while the real estate manager achieved his task through the routine use of legislative and regulatory policy tools made available to him by city council to target a specific subset of property owners.

Environmental Assessment and Remediation Planning. By acquiring the properties, the city committed to lead remediation processes so the DES manager retained a private engineering and environmental consulting group to conduct an initial Phase I assessment prior to purchase and, once the properties legally belonged to the city, a more comprehensive Phase II assessment. The manager selected the firm from a pool of consultants pre-approved for assessment work on behalf of the city. The contract ultimately drawn up with the consultant was done so in accordance to pre-established contract management rules at the city.

The Phase I investigation involved a visual inspection of both buildings and open space for pipe vents or other indication that underground contaminations might exist. After witnessing various instances of poorly stored pesticides, a buried truck, and other chemicals, the consulting firm sunk a series of boring holes, monitoring wells, and test pits to provide data for the Phase II assessment. The Phase II assessment revealed that:

> The site contained construction and demolition debris, municipal solid waste, drums and smaller containers, scrap metal, and mercury, polycyclic aromatic hydrocarbon (PAH) and pesticide-contaminated soils that needed to be removed. In addition, two separate petroleum-contaminated soil/groundwater plumes, originating from the two sets of underground storage tanks, extended onto the neighboring residential properties." (Consulting Firm Report, 2002, p.3)

At this point in the RPA project, a conversation tool place between the area homebuilders association and the mayor's office that had an impact on remediation planning as it pertained to potential land uses. During the previous few years, leaders at the regional homebuilders association had been talking with the city's deputy mayor regarding possibilities to construct new market-rate housing within the city of Rochester, the absence of which the mayor believed drove much of the suburban sprawl around the city. While the mayor's office frequently sought homebuilder association commitment to building city housing, association members could not find sufficient property sizes that would allow for projects within their desired profit margins.

However, when the RPA property appeared on the city's policy agenda, interest spiked within the homebuilders association and an association executive became involved with the effort to find funding for property remediation, working through the mayor's office to connect with the DES manager. Simultaneously, the DES manager and the association executive worked with state-level officials to stress the importance of the RPA project receiving entry into the ERP.

These strategies worked and RPA earned the first entry into the new ERP, garnering approval from the central office of the NYSDEC in Albany as well as significant political attention from the Governor. With this green light, the consulting firm hired to perform the assessments put together a set of possible remediation strategies and submitted them to the NYSDEC for approval. In accordance with the new ERP requirements, the NYSDEC consulted with the state and county health departments and received citizen input to produce a record of decision formally designating their preferred plan.

After receiving the project bids produced by the consulting firm, the DES manager realized the 75% ERP cleanup cost commitment would be problematic for the city. So, city council, the mayor's office, and the environmental commissioner made an appeal to officials at the NYSDEC that ultimately led to a change to a more manageable 90%/10% split. Even so, 10% of overall remediation costs were quite large but the central role of the city council president in this project enabled smooth passage of each spending vote that council encountered.

RPA Environmental Assessment and Remediation Planning: Network Characteristics, Policy Tool Use, and Public Management. With the strong environmental nature of these phases, the senior environmental manager maintained his position as the most network-centric public manager. He worked closely with city council in pursuing the ERP funding as well as continued to work with the citizen's group in keeping them up to date on how the contamination would be

addressed. He also found himself working more closely with the consulting firm to generate the environmental information required for this communication as well as for state and county regulators whose remediation plan approval was necessitated by the ERP (Table 5-3). While the conversation with the homebuilders proved to be significant in setting the standards of remediation goals, this conversation occurred primarily between political leaders and the homebuilders, not at the center of total project processes.

Table 5-3: Top Three Individuals by B-L Centrality Values

	1	**2**	**3**
Environmental Assessment	Sr. Env Mngr	City Council	Consult1
Remediation Plan	City Council	Sr. Env Mngr	Citizen

The number of policy tools mentioned as impacting decisions during environmental assessment and remediation planning decreased relative to the previous project phase and derived primarily from the fiscal and information tools made available from the NYSDEC by the ERP program (Table 5-4). These tools included ones that the city could apply to incentivize the behaviors of others as well as tools to which they had to respond as the tool target. Tools city managers could apply included technical assistance and the promise of the remediation reimbursements and liability releases. Tools to which city managers had to respond included NYSDEC regulations regarding the assessment and remediation planning processes. These regulations were the basis of many of the relationships between the city's DES, the consulting firm, the County Health Department and the NYSDEC. An additional policy tool playing a prominent role during these phases was the use of a contract by the DES manager to steer behaviors of the consulting firm through information gathering and remediation planning tasks.

Table 5-4: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Environmental Assessment	1	0	1	1	**3**
Remediation Plan	1	0	1	1	**3**

As the most central public manager to project processes, the DES manager applied both institutional and relationship management strategies. Institutional strategies utilizing contracts directed the behaviors of the consulting firm while relationship strategies using reciprocity and transparency built trust with BANG. By asking the consultant to participate in BANG meetings early in the process, the DES manager successfully wove these strategies together to create strong ties between employees of the firm and BANG members.

The DES manager continued to operate at the center of the project network during these phases and utilized a contract and the ERP grant to implement the environmental assessment and develop the remediation plan. In addition, the DES manager continued his information dissemination behaviors with BANG leaders and neighborhood residents. On the other hand, the mayor's office led the political negotiations with the homebuilders association and handed the ensuing relationship to the DES manager and his colleagues for follow up coordination.

Construction Planning and Design. As project processes approached the formal designation of property end use, conflict arose within the neighborhood. Because of where the neighborhood lay, factions of two adjacent neighborhoods who felt they had a stake in the property attended early BANG meetings to assert their opinions regarding what should be built on the property. BANG leaders quickly realized that these factions only clouded the conversation, causing combative meetings in which city officials likely missed hearing the values of the most proximate neighbors. Therefore, BANG leaders decided to exclude outside groups and rebuild their own capacities for engagement from within. They formalized their

group and made numerous door-to-door visits to build neighborhood trust and commitment. As a result, a core group of members began attending meetings regularly.

The city council president, DES manager, and engineering consultant spent a great deal of time with BANG members from this point forward, meeting frequently at their community library to provide updates and to hear concerns. Aware that city council, the mayor's office, and the homebuilders association wanted suburban style single-family homes, the environmental manager took great care to elicit ideas from BANG to minimize dissatisfaction with the city-led process. The BANG leader described the process:

> Every individual brought back . . what they wanted to see in that property and then we sat here and we took all of the solutions and came up with common denominators and out of all of that, we as a neighborhood went back to the city and said "we have five proposals that as a neighborhood we will accept". And the city came back and said "well we have four proposals that we'll accept if you guys decide to agree upon them" and what (RPA) ended up being was a combination of the two most popular ones for us as a neighborhood and one of the most popular ones for the city as a compromise for all of us and it was amazing. – BANG leader, 2008

Initially, the neighbors generated many ideas for end use including a public park, but city council was not interested in spending a large amount of money for something that would subsequently require additional resources to maintain. Through careful facilitation on behalf of both BANG leaders and the environmental manager as well as information generated from a city-led tax-impact analysis, neighbors agreed on market-rate homes as long as they fit to a design standard approved by the neighborhood.

After end use selection, conversations at the neighborhood meetings turned towards design standards for the new homes. Treading a balance between what they believed would sell and meeting the interests of the neighbors, the city DES and community development managers brokered design solutions that, while not perfect for any single party, enabled the project to move

forward with minimal friction. It was at this point that city managers earned the trust and support of the once angry neighbors.

> When (the city) says "well we are going to supply you as an architect as a neighborhood group" and that architect represents you and we have your own architects and at first we were like "yeah, right, well that's a sort of squirrelly group" but she did . . she took our drawings and she did what we needed her to do and did it as our representation and represented us correctly and as we wanted to be represented. – BANG leader, 2008

The houses themselves reflected what project stakeholders felt were the best of both urban and suburban home designs. While the houses appeared suburban in their use of materials and distance from the sidewalk, they also exhibited the pitched roofs, front porches and hidden garages found in the city.

With design ideas in hand, the city's community development project manager assigned to construction processes negotiated with the regional homebuilders association to obtain their commitment, meeting more times than was normal for city projects, until mutual trust existed. In these negotiations, the city, through city council, ultimately agreed to remediate the property, obtain liability releases, produce design standards and build the new street and landscaping. Homebuilders, in turn, committed to building demo homes, sponsoring a marketing home show, and constructing houses for each buyer. Buyers would finance homes with individual mortgages while homebuilders would front the construction costs. In addition, per the requirements of the county health department, builders agreed to halt construction with discovery of any new contaminations. These agreements met multiple interests. City officials were eager to draw new homeowners into the city while homebuilders were attracted to the prospect of a small profit combined with positive public relations to be found by cutting a ribbon on what was once city blight rather than unveiling a new development on what was once farmland.

RPA Construction Planning and Design: Network Characteristics, Policy Tool Use, and Public Management. Despite increased involvement of the homebuilders association and the new community development project manager, the relative centrality of project actors did not shift during these phases (Table 5-5). The DES manager maintained his highly central position with the BANG leader, indicating the extent to which, regardless of task orientations of each phase, communication between city government and the neighbors remained prominent throughout the project. The consulting firm liaison became more important during construction planning as specifics about the remediation schedule, land surveys, and street layouts had to be communicated to the homebuilders, the city community development staff, the neighbors, and the subcontractors. While his role working with the homebuilders intensified, the community development manager primarily communicated his efforts to his supervisor, city council and the DES manager who, in turn, broadcast that information to the broader network as needed.

Table 5-5: Top Three Individuals by B-L Centrality Values

	1	**2**	**3**
Construction Plan	Sr. Env Mngr	Consult2	Citizen
Design	Sr. Env Mngr	Citizen	City Council

Formal tool use in construction planning centered on actions taken by the community development manager to secure construction financing and develop contracts with homebuilders (Table 5-6). This manager worked with city council and the zoning board to access bond funding for street development, to rezone and survey the property to create construction plans, and to purchase remaining slices of adjacent properties that would enable street construction in accordance with city and county codes. In addition, this manager established contracts with the homeowners association and the engineering consulting firm regarding who will do what in the construction of new homes. The homebuilders contract formalized agreements developed

through careful discussion while the engineering contract derived from a formal template previously applied to other construction projects.

For the DES manager, facilitating end use design selection, however, did not entail the use of any formal policy tools. Instead, the DES manager continued his role of information gatherer and disseminator through various meetings and memos and actors reached agreement through trust-building behaviors such as interest-based negotiation and practicing reciprocity. To augment this, this manager initiated a regular meeting between key city officials involved with this project for the purpose of exchanging information and anticipating process problems.

Table 5-6: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Construction Plan	4	2	1	0	**7**
Design	0	0	0	0	**0**

Remediation. As construction planning and design unfolded, the DES manager, his staff members, and the consultant implemented the remediation plan. As evidenced by the large amount of remediation paperwork exchanged between the consultant, the city of Rochester, the county and state health departments, and the NYSDEC the ERP subjected the city to a rule-bound process under high scrutiny, enhanced by its status as the "first ERP project". However, the ERP was so new that residential end use standards had not yet been developed. Therefore, the county health department liaison acted outside his normal responsibilities for brownfield remediation and established intermediate residential standards until the NYSDEC rule-making process caught up. At the same time, the members of the city legal office navigated the evolving ERP language to ensure appropriate compliance. Commenting upon the difficulties of implementing the first ERP project, the NYSDEC point person for RPA stated "the fact that the

city was very capable and had very capable staff dealing with procurement requirements for contracting helped immensely."

Remediation processes ultimately involved:

> . . .vector control for wildlife; site clearing; excavation, sorting screening and disposal of 26,000 tons of non-reusable construction and demolition debris, contaminated soils and asbestos-containing materials; excavation and staging of petroleum impacted soils; and removal and disposal of 300,000 gallons of impacted water. Salvageable materials such as scrap steel were sorted out and recycled. Concrete was crushed and re-used on site as backfill. (Consulting Firm Report, 2002, p. 3)

In order to verify the achievement of remediation goals, the consultant obtained 525 samples from across the property at 24-foot intervals and dug test pits where future basements might be. In addition, they installed oxygen injection systems to treat petroleum-contaminated plumes present in the soils, an innovative approach at the time.

Actors frequently on site during remediation processes included the private consultant, multiple DES employees, the NYSDEC project manager, and the county health department liaison. These latter two actors held the authority to set and monitor target levels of contamination. These roles were important because ERP reimbursements and legal indemnifications were contingent on the approvals of these two individuals.

Throughout remediation, the DES manager and the consultant maintained frequent communication exchanges with other project actors, particularly the neighbors and the city council president. In turn, BANG leaders served as proxies for the DES program manager, educating other neighbors about the unfolding of events and any new information. One leader ended up with a full set of remediation files in her basement equal to that sent by the DES to the NYSDEC. Members of the city real estate office were also very active during remediation to assist with obtaining access permissions for neighboring private properties for environmental

testing and machinery access. This entailed lots of knocking on doors and phone calling to explain in detail the purpose of the request and to allow citizens to modify access requirements. In the end, every neighbor approached granted permissions and remediation occurred successfully.

RPA Remediation: Network Characteristics, Policy Tool Use, and Public Management. Consistent with the preceding project phases, the DES manager again maintained his central position during remediation, particularly because the primary tasks of this phase addressed the politically contentious issue of the environmental contamination (Table 5-7). The greatest intensity of communication between this manager, the consultant, and BANG occurred during this phase as evidenced by the quantity of shared paperwork. The state-level political focus of remediation processes drew the city council president closer to the center of the network as well as she hosted site visits by the governor while continuing her communication with neighbors.

Table 5-7: Top Three Individuals by B-L Centrality Values

	1	**2**	**3**
Remediation	Sr. Env Mngr	City Council	Citizen

The prominent policy tools activated during this phase were contracts, the city regulations governing contracts, and technical assistance from the state and county. Contracts dominated actor relationships primarily because the consultant used multiple sub-contracts for tasks like debris hauling, soil dewatering, fencing, and site surveying. Table 5-8 represents these contracts as a single contract between the city and the main consulting firm because the consultant managed the subcontracts after the city approved them. The remaining tools derived from the ERP including state and county regulations that shaped the extent of remediation, technical assistance that enhanced information transfers and grant money for process reimbursements. It is important to note that the promise of liability indemnification increased

commitment of the homebuilders at this point despite the fact that the NYSDEC did not formalize this indemnification until after remediation was complete.

Table 5-8: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Remediation	2	1	1	1	**5**

In a shift from previous phases, public management behaviors by the DES manager during this phase were largely institutional and centered upon contract management, ensuring that the consultant and the sub-contractors fulfilled their responsibilities. Accompanying these strategies was an increased application of information dissemination in response to regulatory requirements. For example, because city council had to approve transfers of large amounts of money, the DES manager needed to communicate remediation progress to them in detail.

Other public managers at the state and county levels were also key to the implementation of remediation activities such as the NYSDEC liaison negotiating with his superiors to allow for the county health liaison to establish intermediary regulations to allow remediation to proceed. However, centrality remained with the DES manager as his role in project coordination increased.

Construction and Sales. As remediation completed, construction process began to unfold. These processes included the solicitation, review and selection of proposals from homebuilders, sale of subdivided land to homebuilders, construction of the roadway, linking home sites with utilities, and planning a suburban-style home show exhibiting model homes. The city community development manager worked with the engineering consultant to coordinate the efforts of homebuilders to keep the project on a schedule satisfactory to both the neighbors as well as to city council. However, construction of the streetscape faced multiple delays. First, miscalculations by one of the sub-contractors led the city project manager to request more

funding and time to replace a drainage pipe under the roadway. Second, the project timeline ran into the winter season in which rain and snow prevented work from proceeding.

As stated in their contract with the city, the homebuilder association and the participating builders led RPA home construction and sales processes. Individual builders became engaged, not through a standard request for proposal process, but rather as a result of targeted recruitment by the homebuilder association on behalf of the city. Working with one of his member/board members, an association executive framed the project to builders as an innovation that would provide positive publicity for the suburban homebuilding industry as well as a service to the city. Many of the builders involved expressed that these values contributed to their commitment but that the minimization of financial risk still played a prominent role.

To ensure that the return on investment existed prior to the actual investment, builders constructed a set of model homes on the site for a home show event. In this show, the city charged visitors a limited fee to preview homes and to make initial bids. Despite being pushed back on the calendar due to the delays mentioned above, the home show drew an unprecedented 10,000 visitors over eight days and the lots sold quickly.

Having multiple homebuilders construct houses as opposed to one single developer also added to the distribution of financial risks across multiple actors. During sales, the city sold lots to individual builders and the individual builders sold to the property owner. The DES manager provided the final site assessments to homebuyers to ensure transparency regarding environmental processes, but the thoroughness of remediation minimized any environmental concerns.

The successful sales created the immediate economic impact on the surrounding neighborhood. Total assessed value of the new homes in 2009 was $4,227,000 with the average

assessed value at $176,125. This led to a significant jump in tax revenues for the city. Property assessments in the surrounding neighborhood went from $155,133,700 to $197,620,700 for a 27% increase (Private Consultant Report, 2009). While some of these increases derived from the high quality design of the new houses, most were the result of property improvement on the fringe of a larger, stable city neighborhood.

RPA Construction and Sales: Network Characteristics, Policy Tool Use, and Public Management. The onset of coordinating a range of city offices, subcontractors, and the homebuilders association brought the community development project manager into a more central position of the project network during home construction and sales (Table 5-9). Yet, the DES manager continued to be the most central actor due to his ongoing role as a central communicator between key political actors as well as a new role of facilitating existing relationship for the community development manager.

Table 5-9: Top Three Individuals by B-L Centrality Values

	1	**2**	**3**
Construction	Sr. Env Mngr	Comm Dev Mngr	City Council
Sales	Sr. Env Mngr	Citizen	Comm Dev Mngr

Policy tools shaping construction and sales emphasized regulation and formal agreements (Table 5-10). City law required permits on behalf of builders and contractors and the ERP agreement required builders to report any new concerns. In addition, the city passed the ERP liability release to builders, following through on a strong incentive used to engage the builders in the first place. All policy tools during these phases reflected standard best practices of city-led construction management and public management behaviors were largely institutional, targeting contractors and sub-contractors involved with construction, marketing, and sales.

Table 5-10: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Construction	3	1	0	0	**4**
Sales	0	1	1	0	**2**

Dominant public management behaviors centered on the information exchanges and permit coordination required for the builders to initiate and complete home construction. The DES manager reverted back to his relationship management behaviors while the community development took on the institutional management of homebuilders and subcontractors using policy tools as the construction coordinator.

Explaining Project Outcomes. In RPA, several contextual factors shaped the five outcome measures used in case selection (Table 5-11), including the political influence of the neighborhood group on city council, the timely creation of the New York state ERP brownfield program, the stability of the real estate market, and the preexisting relationship between the mayor's office and the area homebuilders association regarding the construction of market-rate homes in the city. Accounting for these factors, critical moments emerging in the public management process included the identification of the ERP program as a means for achieving remediation successes, the high degree of information sharing facilitated by the DES manager to political stakeholders across all project phases, and the use of policy tools to coordinate property acquisition, remediation, and construction processes by the real estate, DES, and community development managers respectively. The use of policy tools in this manner conformed to expectations, particularly during both remediation and redevelopment implementation phases while the relationship management strategies applied by the DES manager served to smooth political relationships, making it easier to subsequently obtain external resources.

Table 5-11: RPA Project Success

Outcome Measures	**RPA Outcomes**
Time to completion (TIME)	1996 – 2004
Cleanup costs (COST)	$4.05 million
Implementation processes (PROCESS)	High satisfaction levels across multiple project actors
Contamination abatement (CLEAN)	Earned Certificate of Completion from NYSDEC ERP
Area-wide impact (IMPACT)	1254% increase in assessed values of property 27% increase in assessed values of neighboring homes

For example, project prioritization occurred when news of the ERP and the voices of the property neighbors converged, lowering the financial and liability risks to the city for property engagement and jumping RPA to the top of the city council agenda. Therefore, the ability of the DES manager to identify and then quickly communicate the prospect of the ERP policy tool package to citizens and city council proved to be the spark for allocating initial resources towards early project phases. This decision to apply to the ERP resulted in acceptance into the program and enabled the broader project network to move past remediation concerns and consider property end use. However, the success of the relationships relied upon the fact that the individuals participating in them maintained their roles throughout the projects. The city council president in whose district RPA lay attributed project success to not only to these relationships:

> . . but also the continuity of them because this was such a long project and we know that these kinds of projects take so long to finally accomplish that without the continuity of . . the political continuity as well as the appointed staff, I don't know if it would have happened. – City Council President, 2008

Non-city actors also noted the extent to which the city listened to their concerns and adapted their processes in order to address them. The homebuilders association executive involved with RPA reported that, traditionally:

> In the City of Rochester you go from department to department to department. You had to get an electrical permit, then you had to get a plumbing permit, then you had to get zoning and you had to go through all these different permits. . and the city was so good about

> communicating information down to each and every one of those levels that it made the job all that much easier. – Home Builders Association Executive, 2008

Utilizing multiple meetings, the city and the homebuilders developed an agreement unique to this project, enabling what the city's community development manager described as a "a paradigm shift for the builders to say well 'gee I'll have to look at myself a little differently. Maybe I will go into the city and build a home.'"

Once these commitments were made between the city and BANG, the city and the NYSDEC, and the city and the homebuilders association, policy tools played a much more instrumental role in coordinating project tasks. Contracts with the consulting firm and their various subcontractors spelled out implementation tasks for each firm, city council authorized a series of fiscal tools to pay for up front project costs, and a range of standard permits required by the city for new home construction and city ordinances shaping who to hire and how for subcontract work impacted time, cost, and process satisfaction measures.

It is tempting to explain RPA success purely as a result of timing. Several project stakeholders pointed to a coming together of multiple factors to create a perfect implementation scenario.

> This project is probably a once in a life type of deal. Everything fell together at once. Timing wise, partnership wise, funding wise, all the way through, everything just meshed together. – Homebuilder Association Executive, 2008

However, sufficient evidence exists pointing to the role relationship management strategies played in selecting and producing policy tools that solidified sufficient commitment for successful project outcomes.

CHAPTER SIX LOW SUCCESS IN ROCHESTER: MANAGING INCREASING UNCERTAINTIES

Introduction. Moving next to the low success project in the city of Rochester, data reveal a different style of market-rate housing constrained by a different set of environmental, political, and market-based forces than RPA. In this project, a complicated off-site contamination scenario, a lack of neighborhood-based political push, and rapidly diminishing lending and real estate markets all challenged public management efforts to achieve positive project outcomes. Similar to the previous chapter, this one begins with a brief background of how the project occurred in the broader flow of city housing efforts before stepping through key decisions made within each project phase. The concluding section summarizes the extent to which public management activities influenced project outcomes within these contexts.

Background. Rochester Project B (RPB) was a city-led brownfield project targeting new downtown home-ownership that did not achieved full redevelopment. Initiated in 2003, the RBP property lies within the boundaries of downtown Rochester on the city's east side, bordered to the west by a mix of new condominium rental residential and light commercial buildings constructed on another former brownfield, to the north and east by historic commercial buildings and a few single family homes, and to the south by a downtown highway. The entire property sits a few blocks from a major university performing arts center and several popular restaurants. Prior to property acquisition, the RPB land hosted a variety of industrial, commercial, and residential uses including auto body shops, a dry cleaning business, and an electrical contracting company.

The impetus for RPB project originated from a broader strategic plan to introduce owner-occupancy in the downtown Rochester area. An early portion of this area-wide plan involved converting the brownfield property located to the west of RPB into rental housing. This property

formerly hosted an auto dealership and was immediately adjacent to both a growing entertainment district and one of the city's downtown university campuses, leading city officials and their private developer partner to believe in the property's potential. The city therefore remediated the property through the NYSDEC ERP and developers constructed condominiums, successfully renting all units by 2000.

Property Assembly and Economic Assessment. The success of the rental redevelopment led two senior managers in the city's real estate and development services office to see a stepping-stone for the city to promote downtown home ownership and decided to seek permission to push development momentum onto adjacent properties just to the north and east. Holding a design charette for the neighborhood surrounding the RPB properties to present their ideas for owner-occupancy and to obtain feedback. The low numbers of residents and related levels of political activity within this neighborhood resulted in minimal feedback so the city managers proceeded to promote their own ideas for higher density town home units on this site to city council. Despite the lack of citizen involvement city council members agreed with the opportunity to capture redevelopment momentum and gave a green light to proceed with property acquisition for RPB, once initial environmental information had been obtained.

Working with an environmental manager from DES and a consulting firm hired from firms on retainer, the two community development managers acquired the necessary parcels by utilizing a land-banking approach, purchasing lots from existing owners with money authorized by city council and foreclosing on others where owners were behind in payments. Two lots arrived through a donation when the property owner agreed that the tax write off was worth more than the market value of the property. After acquiring seven distinct parcels, the managers worked to rezone the properties, creating a continuous lot suitable for development. The city

managers then retained private contractors to demolish all existing structures and prepare the site for environmental review.

At this point, the managers examined a second lot bordering the first located to the south that hosted a viable electrical contractor, motor repair, and warehouse business. Initially, the business owner did not consider selling, but as the city moved forward with demolition on the other properties, the business owner changed his mind and the real estate manager received city council permission to move forward with a purchase. After acquiring this final property, the city owned a development footprint covering an entire city block.

RPB Assembly and Economic Assessment: Network Characteristics, Policy Tool Use, and Public Management**.** Despite the important roles filled by the real estate and housing managers initiating project processes and implementing property assembly transactions, network data indicate that a member of the city's DES (working under the more senior DES manager prevalent in RPA), his environmental consultant, and the city legal office operated at the center of the project network during this first phase (Table 6-1). This occurred primarily because of city council's need to understand the environmental conditions of the property before authorizing resources for purchase. Therefore, the DES manager and his contractor worked as communication hubs between city council, the city lawyer, and the community development managers. The community development managers primarily communicated with property owners and city council to fulfill acquisition responsibilities, necessitating their temporary position at the center of the project network during economic assessment where the total network size was small.

Table 6-1: Top Three Individuals by B-L Centrality Values

	1	2	3
Assembly	Consultant	Env Manager	City Lawyer
Economic Assessment	Comm Dev Mngr 1	Comm Dev Mngr 2	Mayor

Public management during these phases centered on institutional management approaches where network actors acted in response to a set of policy tools. The tools utilized during these initial phases focused upon property acquisition and enabled such actions as direct purchase, foreclosure, and the adjustment of zoning (Table 6-2). In receiving permission to implement these tools from city council, the community development managers followed standard transactional procedures. In addition, the DES manager implemented a contract to establish a formal agreement with the consulting firm.

Table 6-2: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Assembly	3	2	0	1	6
Economic Assessment	0	0	0	0	0

Environmental Assessment and Remediation Planning. Once the city formally acquired the properties, the consulting firm and the DES manager commenced with the Phase I and Phase II assessments. The Phase I assessment revealed several petroleum underground storage tanks on the northern properties and a petroleum plume in groundwater in the southern property. With this initial information painting a seemingly manageable picture, the community development managers then asked the DES manager to find a way to sufficiently remediate for residential end use in as little as time as possible. This meant taking a different approach than the strategy of submitting the property in RPA. The senior environmental project manager described the situation:

> Ok, here are our choices - chase ERP funds, wait a year before you know or before you have a work plan. The Brownfield Cleanup Program, 3-6 month application process. Petroleum spills, I can get a work plan approved in 6 weeks. Well, you know, even though the discussion is more involved than that, the response is that "we don't want to wait" . . . we want to get this out to developers. - Senior Environmental Manager, 2008

With the decision to pursue redevelopment expediency and with the determination that the property contamination was largely petroleum in nature, the environmental managers submitted the property to the state Petroleum Spills Program. The Petroleum Spills Program process involved state review of the proposed remediation plans, state environmental and health oversight of remediation processes, and, if the NYSDEC felt compliance occurred, a letter of no further action that would provide evidence for potential investors and developers that the city had remediated the property to the greatest extent possible. While utilizing the Petroleum Spills Program meant relatively fast approval of the remediation plan, it did not come with the promise of state-level liability protections associated with the ERP. In addition, the Petroleum Spills Program treated the properties not as one contiguous cleanup but as a set of spills discovered on different parts of the property, raising the risk that remediation processes might reveal problems not previously revealed. Finally, the Petroleum Spills Program did not offer remediation funding. Therefore, the environmental and community development managers had to seek city council approval to secure additional funds for remediation. These funds ultimately came from an EPA brownfield remediation grant as well as internal city sources.

Interested in minimizing costs incurred by time delays, the community development managers immediately sought proposals for a condominium complex from the private development community, requiring in the initial request for proposals (RFP) that developers assume responsibility for remediation. After being selected as the winner by a team of city managers across economic development, community development, environmental quality and

zoning divisions, the initial developer tried to renegotiate this remediation requirement as well as acquire indemnification. The RFP review team stood firm and the developer subsequently backed away from the project, providing a setback for project momentum. Recognizing the barriers to finding a willing developer created by the remediation requirement, community development officials removed that requirement and approached the DES managers to discuss options for city-led remediation. According to one of the community development managers:

> We did get a proposal. We actually got one that we liked but they wanted us to indemnify the site and they backed out. We made it very clear in the RFP that we would not indemnify the site and they backed out of the deal. We then decided that we had to resolve the groundwater issue ourselves. – Community Development Manager, 2008

From the developer perspective:

> The basic premise is that don't buy anything unless the seller cleans the land. Don't take on that risk. Number two, if there's any future issues with the closure report, get an indemnity from somewhere or other for the seller. I think those are two critical points. Otherwise, I don't see any reason to take the risk. There's plenty of other projects to do. – Developer, 2008

However, as the Phase II assessment unfolded, it became evident that the contamination picture was more complex than originally thought. In addition to contamination derived from surface use, the RPB property also experienced off-site pollution migrating through the groundwater into the northeastern portion of RPB. This discovery not only complicated how the environmental management team conceived of possible remediation strategies, it also began to shape how the community development managers conceived of end use design. Under county and state health codes, residential end uses required near complete removal or containment of contaminations. However, in the case of RPB, complete remediation was not feasible as long as the offsite contamination source continued to exist.

RPB Environmental Assessment and Remediation Planning: Network Characteristics, Policy Tool Use, and Public Management. A flurry of construction planning activity occurred

during the environmental assessment phase, brought on by the interest of the community development managers in finding a developer willing to take on the costs of remediation. Simultaneously moving forward in both these areas raised the risk of decisions being made without complete information exchanged between environmental and community development managers. However, the inclusion of the DES manager on the RFP selection committee decreased the probability that such communication gaps would not occur. Subsequently, the project actors most central to assessment and remediation planning included the senior environmental manager and his staff member as well as the consultant they retained to perform assessment work (Table 6-3). This arrangement suggests that environmental assessment and remediation of RPB did not require extensive interaction with individuals outside the environmental expert domain and supports interview and document data suggesting that the focus of these phases was on completing environmental due diligence in the most efficient manner possible.

Table 6-3: Top Three Individuals by B-L Centrality Values

	1	**2**	**3**
Environmental Assessment	Env Mngr	Sr. Env Mngr	Consultant
Remediation Plan	Env Mngr	Consultant	Sr. Env Mngr

A small number of policy tools both shaped and were shaped by management behaviors during these phases (Table 6-4). First, the DES manager contracted out assessment processes to the consulting firm, utilizing a standard contract template frequently used for this purpose. Second, entering the property into the state Petroleum Spills Program subjugated the environmental manager and the consulting firm to a set of regulations that required communication with state and local health departments and the NYSDEC in order to receive approval for the remediation plan. At the same time, the Petroleum Spills Program authorized

the NYSDEC to provide technical support regarding appropriate remediation processes. Third, the potential EPA remediation funding motivated the environmental managers to allocate staff time towards submitting an EPA proposal during the remediation planning phase. Finally, although it was not successful, the community development managers conducted a proposal solicitation and review process that utilized existing city regulations for how proposals were to be developed. While never formalized, these managers also tried, and failed, to negotiate a contract with the selected developer.

Table 6-4: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Environmental Assessment	0	1	0	0	1
Remediation Plan	2	0	1	1	4

Dominant public management behaviors during these phases were split between the environmental and community development managers. The environmental managers focused upon managing the consulting firm contract while the community development managers focused their management behaviors on negotiating with both the selected developer regarding remediation responsibilities as well as with colleagues inside city hall to pursue the more expedient Petroleum Spills Program as the remediation tool program. The focus on remediation required the environmental manager to communicate to a broader number of network partners while the community development managers limited primary communication to the initial developer.

Remediation. Remediation processes ultimately occurred over two phases. City council approved funds for remediating the first acquired properties while an EPA grant paid for the remediation of the former electrical contractor's property. City council had to agree to enter into the grant agreement with the EPA, but no one questioned the decision to do so given the

consensus around the potential benefits of new downtown residential development. However, the EPA grant did impose a transaction cost by requiring that the city submit a formal RFP for a consulting engineer as opposed to selecting one from a pre-approved list. The city environmental management team ultimately rehired the firm that performed assessment work, enabling continuity of strong information flows between the city, the NYSDEC, and the county and state health departments. Remediation processes proceeded smoothly until, while digging test pits, the consulting firm and their subcontractors discovered an additional underground storage tank and a hydraulic lift not identified during the Phase I and Phase II assessments that required removal. Addressing these items ultimately required extra time and money. Ultimately, the southern portion of the property was dewatered and spills were addressed. Overall, the environmental consultant and their subcontractors removed 12,000 gallons of groundwater and 1,250 tons of impacted soils from the southern portion and 2,000 tons of soils plus seven underground tanks and pumps from the northern portion. Then, they buried 700 pounds of oxygen release compounds across both portions to aid in ongoing decomposition of residual petroleum products. Finally, the consultant sunk a series of permanent test wells to facilitate ongoing assessment of environmental conditions (Private Consultant Report, 2004). However, the off site contamination impacting the northern property could not be accessed

After completing these processes, the city received a closure report from the county health department that they could present to development partners as evidence of "best remedial effort." In addition, the city received two "no further action" letters from the NYSDEC indicating that due remediation diligence occurred. The NYSDEC project manager assigned to the project noted that city environmental managers and their consultant took far less time to achieve the no further action letter than most spill projects.

RPB Remediation: Network Characteristics, Policy Tool Use, and Public Management. Similar to assessment and remediation planning, environmental experts remained most central to the project network during the RPB remediation phase (Table 6-5). Implementing the Petroleum Spills Program and issues associated with the offsite contamination generated greater scrutiny by the county health manager, bringing this official closer to the center of the project network. Involvement of the community development managers decreased during remediation as they waited to see if there were to be design controls on potential development due to unresolved contamination.

Table 6-5: Top Three Individuals by B-L Centrality Values

	1	**2**	**3**
Remediation	Env Mngr	County Health Mngr	Sr. Env Mngr

Key policy tools implemented included the NYSDEC Petroleum Spills Program, the EPA grant, and the consulting firm contract as well as direct funding mechanisms approved by city council (Table 6-6). While the environmental managers selected the Petroleum Spills Program, the policy tools accompanying that program largely targeted the city itself, requiring specific involvement of county and state agencies. As a means to an end, completing remediation processes under the Petroleum Spills Program made the letters of no further action from the NYSDEC available to the city for use in negotiating with potential developers. In addition, given the environmental complexities of the property, technical support from the NYSDEC and the county health department provided through the Petroleum Spills Program proved important to the development of the next development RFP.

Table 6-6: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Remediation	3	1	2	1	7

Public management behaviors on behalf of the DES managers primarily focused upon coordinating remediation processes, both by directing the consulting firm how to proceed as well as by complying with regulatory processes brought on by the EPA grant and the NYSDEC spill program. In addition, the environmental manager continued to practice information sharing behaviors on a voluntary basis as new information arose during remediation in order for the project to enter the redevelopment phases. He described:

> When an RFPis sent out, we (DES) usually have some input into the actual scope of the RFP and we want to make sure in the RFP that we identify the existing environmental and somewhat more recently, subsurface geotechnical conditions that exist on the site so that the developers understand some of the project limitations and redevelopment issues that may face them so that we don't get back an unrealistic proposal or a proposal which does not take into account the environmental and the geotechnical issues. – Environmental Manager, 2008

Once this information solidified and the community development managers understood the design requirements, they moved forward in designing the second RFP process.

Construction Planning and Design. The ongoing environmental concern of offsite contamination compelled the county health department and, subsequently, the NYSDEC to require that any residential development on the site have the means to ventilate underneath units to prevent volatile organic compounds (VOCs) from entering living spaces. The community development managers therefore inserted the requirement for these controls into the RFP. While this additional requirement had the potential of scaring off potential proposals, the environmental and community development teams' effort at communicating both the remedial steps taken by

the city as well as the vetting of the design standard by the health department and the NYSDEC built trust with a few developers, including the one who ultimately won the second RFP round.

> There was a lot of due diligence going on at my behalf to make certain that I'm comfortable . . . Everyone felt very strongly that, again, as I've said a number of times, it's probably the best site in the city, or the county. It's been cleaned up so well – the corrective action plan, the future for potential remedies for potential infiltration. With all of those comforts, we felt good. – Rochester Developer

At this point in project processes, a significant turnover of personnel occurred within city hall. Citizens elected a new mayor and, as this new administration came in, a number of long-term community development managers, including the community development managers who initiated this project, retired. At the same time, the new mayoral administration redesigned city development services, laying the groundwork to merge the community development department with the economic development department. In doing so, the city replaced the retiring managers with two new managers more closely identified with the economic development arena. Simultaneously, the region began to feel the impact of a nationwide downturn in development lending incurred by the global financial crisis that incurred more risk averse behaviors by lending institutions and, subsequently, private firms relying upon lending institution resources for new project development.

During these changes, the selected developer sought to streamline the development contract regarding the city's preference for higher density town homes and city rules about utilizing union labor. With single-family homes, builders could build a model home and then sell individual lots as buyers appeared. Town homes, however, required simultaneous construction as each unit shares walls, water, sewer and electric infrastructures. Therefore, with the town home designation of RPB, the winning developer could not build a showcase unit to market to potential buyers therefore limiting his ability to comply with his lenders who required

that 50% of the units be pre-sold in order to qualify for construction loans. As the city wouldn't budge regarding the town home designation, largely due to the environmental restrictions, lenders pulled away from the project. At the same time, union labor requirements, despite being the norm for city projects, hindered the developer from cutting potential construction costs.

The developer therefore proposed a unique idea for project financing. Attempting to cut risks, he convened the new city economic development project manager and union representatives and proposed that the unions invest their pension funds into the project given that the developer could pre-sell 60% of the proposed units. The city was on board right away:

> RPB involves negotiation with a collection of unions who are interested in financing this project in exchange for union contracts to do the work. The city has incentive to do this because of finding financing in tough times and that it hits economic development objectives of creating stable, high paying jobs in the city. The developer and the Department of Economic Development came up with this idea. – Economic Development Manager

However, the ongoing environmental concerns from the off-site pollution and the potential liabilities they carried slowed these negotiation processes. In an attempt to prevent a second failed RFP process, the city environmental management team, the economic development manager, city council, and city lawyers innovated several new policy tools to help sway the unions and the developers. First, the city put together a limited liability policy tool that released the developer and the unions from liability as long as specific barriers and environmental controls placed on the property were not broken through or damaged. Second, the city agreed to pay for the costs of the vapor venting systems necessitated for the town home design by the environmental situation. Third, the city linked RPB to a pre-existing city-level tax abatement program put in place through a partnership with the county industrial development agency that incentivized downtown residential owner-occupancy. Finally, the city developed an insurance policy tool designed to protect homebuyers from property devaluation linked to ongoing

contamination. City council felt comfortable approving these city-based tools based upon the trust established between the city DEQ and the state NYSDEC regarding the extent of completed remediation. However, the developer felt that these new tools added more time to the legal side of contract development.

Despite the availability of policy tools designed to address ongoing project concerns, construction processes never commenced due to the inability for the developer and the unions to agree upon the details of project financing and the subsequent reprioritization of projects within the developer's portfolio away from RPB as Rochester market characteristics continued to evolve in the deepening financial crises.

RPB Design and Construction Plan: Network Characteristics, Policy Tool Use, and Public Management. The fact that the environmental characteristics of the RPB property complicated the design parameters for future residential units required that the environmental and community development managers exhibit high levels of communication during these phases. However, the turnover in the community development managers also meant that institutional memory of the project remained within the DES managers. Network centrality data for the design and construction planning phases support these findings, showing how the senior environmental manager stepped in during construction planning to support the communication efforts of the economic development manager new to the project (Table 6-7). In addition, network data reflect the leadership role played by the developer himself as he proposed the idea to tap union pension funds for construction loans.

Table 6-7: Top Three Individuals by B-L Centrality Values

	1	**2**	**3**
Design	Env Mngr	Sr. Env Mngr	Comm Dev Mngr 1
Construction Plan	Sr. Env Mngr	Developer	Econ Dev Mngr

The primary policy tools influencing design processes were the design control regulations required within the letter of no further action provided by the NYSDEC to the city. As noted previously, this requirement was a consequence of the city seeking remediation expediency at the cost of remediation completeness. Then, in the construction planning phase, the city innovated multiple financial and liability tools of their own to address union and developer concern over these design controls and the lack of indemnification from the NYSDEC (Table 6-8).

Table 6-8: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Design	1	0	0	1	2
Construction Plan	4	1	3	0	8

The uses of these tools at this stage were much less about implementing a preset plan, as in RPA, but about securing commitment and appealing to the relationship values of reciprocity in the developer. For this reason, a significant shift in project framing on behalf of the city occurred during these phases when the community development managers retired and the economic development manager took their place. Moving from the original idea that RPB was about creating market-rate housing opportunity to a new frame that painted the project as being about job creation, and using the newly innovated policy tools as leverage, this manager negotiated with union representatives and the developer for eighteen months. However, the time delay, increasing lending and real estate market instabilities, and other opportunities motivated the developer to prioritize other projects over RPB and project processes ground to a halt. For their part, the environmental managers played a back up role to the economic development manager in this negotiation despite the ongoing centrality of the senior environmental manager, suggesting that network centrality for communication purposes does not always signify network leadership in key negotiations.

Explaining Project Outcomes. The lower success of RPB (Table 6-9) compared to RPA largely stems from a set of external factors that created a project context in which key decisions made by city actors led to certain project failures. These external factors included the off site contamination problem that led to restrictive project design requirements by state and county environmental and health officials, the rapidly changing real estate and lending markets towards the end of the study time period that influenced the developer and the unions to back out of the project, and the personnel turnover within the project management team incurred by a new mayoral administration that interrupted project negotiations. Together, these factors introduced high levels of uncertainty after project processes had already commenced that proved too difficult for the key public managers to overcome.

Table 6-9: RPB Project Success

Outcome Measures	**RPB Outcomes**
Time to completion (TIME)	2003 – present
Cleanup costs (COST)	$605,000
Implementation processes (PROCESS)	High satisfaction with environmental processes, low satisfaction with redevelopment processes
Contamination abatement (CLEAN)	Earned no further action letter through NYSDEC petroleum spills. Adopted institutional controls preventing contamination problems.
Area-wide impact (IMPACT)	Site ready for construction. No resulting property value impact.

A key decision laying the groundwork for RPB susceptibility to these contextual factors was the decision by the community development managers to value development speed over remediation completeness. This subsequently led to selection of the NYSDEC Petroleum Spills Program as the regulatory program for obtaining state and county redevelopment permissions. While this gamble may have worked in a stable market with a property amenable to complete remediation, the environmental and financial uncertainties cropping up throughout project

processes required project managers to continually react and adapt. One consequence of selecting the Petroleum Spills Program was that the city was not reimbursed by the state for remediation activity nor did the city obtain liability releases that they could pass on to developers. Therefore, the environmental manager had to search for additional remediation funding options and, in construction planning, the community development and, later, economic development managers had to work with city council and city lawyers to devise a city-based indemnification tool.

The increasing uncertainty surrounding RPB also led to a shift in the strategic orientation of public management behaviors over time. Initially, the community development managers strategically gained city council approvals to apply property acquisition policy tools for building the property footprint. However, as uncertainties grew, public management behaviors became more reactive, ultimately shifting the power to move the project from the city to the private developer.

Across RPB phases, the key public managers largely relied upon institutional approaches to network management when trying to shape behaviors of non-city actors, particularly as uncertainties increased. With contracts, design controls, tax incentives, insurance products, and liability waivers, the community and economic development managers worked to steer unions and developer towards project completion. However, these institutional management efforts occurred in conjunction with an effort to appeal to reciprocity values through relationship management strategies with the idea being that the efforts made by the city to address developer concerns would create a willingness on behalf of the developer to make comparable efforts to move the project forward. It is important to note that these management behaviors came not

from the most central public manager but from the managers most directly connected with the developers and unions.

A key absence in the critical factors shaping project outcomes was strong political impetus in the form of a project champion or citizen advocacy. While city council was compliant in approving financing for RPB, there was little additional involvement. The council member whose district includes RPB noted "it is my district, too, and they knew that I would be supportive but I didn't quite have the human cry of neighbors."

Despite a flurry of management strategies integrating institutional and relationship management strategies, public managers were unable to compel construction processes to begin and RPB failed to achieve redevelopment success.

CHAPTER SEVEN GROWING SUCCESS FROM FAILURE IN BUFFALO

Introduction. Shifting to the low management capacity city in the case selection, this chapter describes the context in which the Buffalo projects Phases One and Two (BP1 and BP2) occurred and the extent to which interactions between project networks, policy tools, and public management explain the low success of BP1 and the high success of BP2. While there is much overlap between these two phases and evidence that BP1 greatly influenced BP2 processes, the two phases exhibited sufficient differences in network actor composition and construction planning, end use design, construction implementation and sales processes to merit separate descriptions of each project's network structures, policy tools, and management practices. However, the strong path dependency of BP2 on decisions made during BP1 requires that both projects be discussed together.

Background. The BP1 and BP2 projects are a pair of mixed market-rate single-family home residential developments characterized by their embeddedness within a larger federal housing initiative, a backdrop of previous brownfield-to-residential stumbles, and low city resource capacities brought on by years of declining tax bases and increasing service demands. These two projects occurred one after the other on the same property located in the southeast portion of the city, an area that had experienced a great deal of deterioration and resident flight since the 1950s. Multiple mayoral administrations had targeted most of this area with state and federal assistance to try to revitalize the once active neighborhoods and, in 1990, the city applied for and received federal Housing and Urban Development (HUD) funds to build affordable housing developments within this blighted region.

Between 1990 and the start of BP1, the city had initiated a few experiments acting as a developer for market-rate residential projects within other parts of the city. On one of them, investigators discovered that contaminated soils still remained even after housing units were sold

and homeowners had moved in. In addition to this public relations nightmare, the city faced a series of lawsuits from the homeowners. This project, and the proximity of Buffalo to the infamous Love Canal neighborhood, created much skepticism for city-led residential development as evidenced by writings found in local blogs and the independent media.

Property Assembly and Economic Assessment – BP1. Because of these broader efforts targeting this neighborhood, property assembly for BP1 occurred indirectly in 1997 through the acceptance of the broader neighborhood into HUD's Home Ownership Zone program (HOZ), a HUD demonstration program initiated in 1996 to expand homeownership in blighted neighborhoods within a subset of struggling U.S. cities. City community development and planning officials applied to this program at the urging of the city's mayor and a local private developer with national-level ties to HUD officials. Both the mayor and developer believed that the city would greatly benefit from an infusion of federal dollars targeting the renewal of downtown housing. City public managers working in the housing and real estate offices of the permits and inspection services department provided the data collection and grant writing work, but it was the developer and mayor who championed the HOZ application resulting in its acceptance. The HOZ program ultimately provided the City of Buffalo a $3.5 million grant and a $7.7 million dollar loan to develop 344 units of new homeownership housing in a 70 square block area east of downtown.

As was the norm in Buffalo, the Buffalo Urban Renewal Agency (BURA) administered these funds[14]. However, as the HOZ program unfolded, it became quickly apparent to HUD

[14] Traditionally, the city of Buffalo utilized several quasi-governmental organizations such as BURA to accomplish economic and community development goals because of their legal abilities to receive and spend grant dollars more efficiently than a traditional government agency. The state legislature authorized BURA in 1966 and created a governance board consisting of the

officials that BURA was not on track to build the number of income-qualified homes originally promised. One problem was that the city was using HOZ funds to pay for basic administrative functions for which traditional income sources were not available. This drew down the funds available for homebuilding activity and relationships between HUD officials and city community development managers subsequently soured as the city simultaneously tried to renegotiate its HOZ contract while jumpstarting housing construction efforts. One parcel within the HOZ was a property owned by the city formally hosting a forge and, later, a soda bottling facility that had been torn down, leaving a sizable vacant lot with questionable environmental histories. With pressure to fulfill their HOZ obligations, housing officials in the city's Office of Strategic Planning (OSP) prioritized this property for new home construction and an environmental manager assigned to the project retained a private consulting firm to prepare a broad Phase I environmental assessment.

BP1 Property Assembly and Economic Assessment: Network Characteristics, Policy Tool Use, and Public Management. Network data reveal that, during property assembly, a communication gap existed between community development and environmental actors during project (Figure 7-1).[15] As depicted in Figure 7-1, one group of city real estate and housing officials (MT, DA, BasS, MaT, PD, QL) interacted with the local HUD manager and related private development partners while in the second group, the NYSDEC regional manager linked

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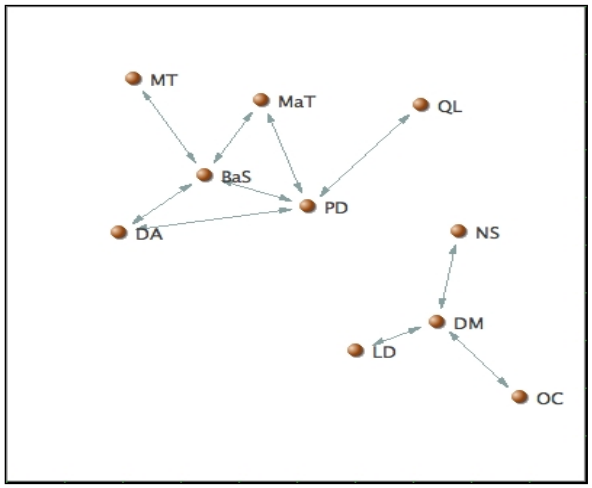
mayor and a mix of city council, city lawyers, and city commissioners. Organizationally, BURA operates as a separate financial entity from the city. However, BURA staff technically work within the bureaucratic structure of city hall.

[15] Interview data show engagement of a slightly broader array of city actors during these early phases. A discrepancy between interview and network data is likely due to interview subjects discussing engagement in a particular phase but not mentioning interaction with specific actors. Based upon the methods of analysis used, these individuals appear in data coded by phase but not in network data.

together one of his staff members, the state health official assigned to the Buffalo region, and the environmental lawyer at the city (LD, DM, NS, OC) for discussion of the property's environmental aspects. The centrality of the private developer and state environmental officials within these two sub-groups indicates the extent to which non-city actors played highly central roles early on in project evolution.

Figure 7-1: Property Acquisition Phase Sub-Networks



Much of the policy tool influence at this stage in the project derived from the HOZ program that provided grants and loans towards general property acquisition in which BP1 acquisition occurred (Table 7-1). Utilizing these tools, the city, through actions taken by the OSP, acquired many properties through foreclosure and then land banked them in anticipation of future development. By using HUD fiscal tools for this purpose, the city agreed to be subject to HUD regulations regarding paperwork and process that accompanied the tools.

Table 7-1: Policy Tool Types by Phase

Phase One	**Leg/Reg**	**Agreement**	**Econ/Fisc**	**Information**	**TOTAL**
Assembly	4	0	2	0	6
Economic Assessment	0	0	1	0	1

Public management behaviors at this point of the project were limited to managers operating within the two sub-networks. In one group, the real estate and housing officials negotiated with the developer and the HUD manager to enroll the neighborhood into the HOZ program. In the other, the environmental manager worked with the NYSDEC managers and, initiated Phase I assessments through a private consultant. There is no evidence in the interview or document data that these two groups had any extensive information exchanges at this point.

Environmental Assessment, Remediation Planning, Construction Planning, and Construction – BP1. Because the OSP director and the developer targeted the broader neighborhood for housing development, Phase I assessments occurred across all properties in the zone, funded by a 1995 EPA assessment grant that the environmental manager renewed with approval from city council. The Phase I investigation indicated that legitimate environmental concerns existed for the area, prompting the environmental manager to keep the private consultant on board to perform a more detailed Phase II assessment for the section of the neighborhood being targeted for BP1. However, in a manner detrimental to BP1 outcomes, construction processes proceeded before Phase II assessments could reveal the extent of existing contamination.

> So they did Phase One environmental and when it got onto Phase Two . . . we started to construct and build model houses. Then somebody decided they would do a Phase Two, we were already into construction. – Buffalo Environmental Manager, 2009

While Phase I assessment processes unfolded, the OSP housing manager assigned to manage the project proceeded to form a construction contract with the firm owned by the developer who initiated the HOZ proposal and collaborated with the city real estate manager to market the developer's suburban style homes to potential buyers. Once they identified sufficient numbers of income-qualified homeowners interested in the project, the housing manager gave the green light

for construction to begin without seeking out or waiting for the Phase II assessment results[16]. At this point in time, turnover occurred in OSP leadership.

After the builder completed three houses, the environmental manager received the Phase II results and alerted the BURA lawyer who then raised concerns with the newly appointed OSP director that if houses were sold, new lawsuits could arise against the city regarding a lack of due environmental diligence when constructing housing units. This assessment, submitted to the NYSDEC office in Buffalo per standard operating procedures, revealed elevated heavy metal contamination throughout the property down to bedrock, four feet below the surface. While the NYSDEC project manager, the city environmental manager, and lawyers for both the city and the construction company met to discuss this realization. The new OSP director immediately made the decision to halt all processes until the consulting firm could perform a more thorough assessment. Ultimately, these data revealed the extent of contamination and the developer, not willing to wait for remediation processes to unfold, left the project. At the same time, the housing manager whose decision-making led to premature construction left city employment. The environmental manager's account of that time period indicates the nature of communication and conflict between his team and that of the housing project manager's:

> I went down to the housing manager and I said that you have to stop work. You can't allow it to go forward. We've got an environmental concern here and I don't know why you've let these people go ahead as it is. Out of my department, I had no authority over that. It was not my ballywick to tell this man how he should do his work although he was aware that there were environmental concerns on the property before he gave his contractor the go ahead. – Buffalo Environmental Manager, 2009

[16] This housing manager could not be located for this study, so it is unknown as to the motivation behind these decisions. However, several interview respondents speculated political pressures on this individual to implement the contracts in addition to poor communication occurring between city officials.

After seeing Phase II completed, the city environmental manager submitted a full assessment of the property prepared by the consultant to the state health department and the NYSDEC. When regional manager of the state health department determined that new construction would not be able to proceed without soil remediation, the OSP director decided to restart the project and instructed the city environmental manager to apply for NYSDEC Environmental Restoration Program (ERP) remediation funding. It was during this wait for acceptance into the ERP that a new administration entered city hall, effectively ending BP1 and starting the processes for BP2.

BP1: Environmental Assessment, Remediation Planning, Construction Planning, and Construction Network Characteristics, Policy Tool Use, and Public Management. Interview and document data indicate that the timing between environmental assessment and construction occurred in a manner inconsistent with the brownfield process framework presented in Chapter Two of this paper, largely as a result of the lack of communication between environmental and redevelopment actors. Environmental actors at the city and state levels primarily communicated with one another during the assessment and remediation phases while construction planning and construction implementation networks consisted of city housing officials and the private developer.

Policy tool data for BP1 exhibit the lack of adequate assessment and remediation performed before construction planning and implementation occurred (Table 7-2). The assessment phase incorporated grant dollars from the EPA but by not allowing sufficient time Phase II assessment processes, it was not possible to move very far with securing additional tools during remediation planning (shaded row in table). Policy tool use in construction planning and implementation phases arose from both the promise of HUD grants and loans as well as their

actual implementation. For example, the builder moved forward in construction, anticipating that HUD loans and funds were guaranteed for prospective homebuyers.

Table 7-2: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Environmental Assessment	1	0	1	0	2
Remediation Plan	0	1	1	0	2
Construction Plan	2	1	4	0	7
Design	1	0	1	0	2
Remediation	0	0	0	0	0
Construction	2	1	2	0	5
Sales	0	0	4	0	4

The large turnover of city officials between BP1 and data collection activities for this study in addition to the lack of BP1-specific documents at the City of Buffalo archives limited data available to assess public management for this project. However, interview data with remaining project actors and journalism accounts of the time period indicate that no single public manager within the city dominated management activity during BP1 and, perhaps more significantly, non-city actors such as the NYSDEC manager and the developer appeared to steer several project phases themselves. Those city officials that were active included the environmental manager, the environmental lawyer, the housing manager and, to a lesser extent, the lead engineer for public works and the city council member in whose district BP fell. However, the ties between these actors did not cross expert area boundaries, a phenomena extending to interactions with non-city actors as well. The public management behaviors captured in the data indicate that city officials active in BP1 either focused on coordinating partners to implement tasks, such as the environmental manager working with his consultant, or responding to directives from project decision makers.

It is important to highlight how decreasing resources for effective project management and the constant cycling of both personnel as well as positions at city hall contributed to the poor public management performance in BP1. For example, the environmental manager assigned to the project eventually performed all environmental work for both OSP and as a member of BURA. He described:

> When I started here, there was a small environmental department with a supervisor, myself, and environmental planner, secretarial help and another man that would attend or staff the city's environmental management commission. I'm the only person left. – Buffalo Environmental Manager, 2009

Due to this ongoing loss of support staff, he limited his involvement to environmental assessment unless instructed by city council themselves to proceed with formal remediation processes. In addition, political pressures to show progress in complying with HUD construction requirements contributed to these communication problems by compelling construction action over thorough environmental information diffusion.

Environmental Assessment, Remediation Planning and Remediation – BP2. After the OSP director halted construction processes, a time lapse occurred between active property processes while the original builder, their subcontractors and the city worked out contractual disputes and the ERP funding application moved through NYSDEC channels. Once these disputes were mostly resolved, the OSP director approved further assessment processes, initiating what this research identifies as the BP2 project. The initial steps for BP2 entailed completion of the Phase II assessment and the planning and implementing of remediation strategies through the ERP.

In the initial ERP application, the environmental manager proposed leaving two of the houses and simply remediating the soil around them. However, weather damage and looting as well as evolving design ideas made this impractical to the OSP director. Therefore, he asked the

environmental manager to amend the ERP application to include full remediation of the site after eliminating the existing structures and approached city council for a bond issuance to pay for demolition and remediation costs.

The NYSDEC and the state health department ultimately approved a remediation plan for the property that required the removal of all soils on the site four feet down to the bedrock and the filling in of certified clean soils from an off-site source. The environmental manager rehired the consulting firm that had performed the BP1 assessment work to implement this plan through a set of subcontractors. When the firm completed these actions, the NYSDEC did not actually issue a Certificate of Completion (COC) because the remedy effectively removed all contamination, deeming a COC unnecessary. However, the state did provide the city full liability release they could pass on to developers.

BP2: Environmental Assessment, Remediation Planning and Remediation Network Characteristics, Policy Tool Use, and Public Management**.** Network data reflect the transition in personnel as well as management focus that occurred between BP1 and BP2. The city environmental manager moved to a highly central role after the OSP director and mayor recognized the near miss of building homes on contaminated land again and focused their attention on remediation (Table 7-3). The environmental manager maintained this most central position throughout the rest of the environmental phases but the high centralities of the NYSDEC managers during this portion of BP2 affirms interview and document data that show the city manager received much technical support and attention from the NYSDEC. While this high degree of involvement by state officials stemmed from motivations and abilities on behalf of the lead NYSDEC manager, it also indicates the extent to which the NYSDEC regional office helped the environmental manager to compensate for diminished capacities within city hall.

Table 7-3: Top Three Individuals by B-L Centrality Values

	1	2	3
Environmental Assessment	Env Mngr	Sr State Env Mngr	State Health Mngr
Remediation Plan	Env Mngr	Sr State Env Mngr	OSP director
Remediation	Env Mngr	Sr State Env Mngr	State Env Mngr

The OSP director and the environmental manager selected a range of policy tools to achieve full remediation of the BP property (Table 7-4). The EPA grant provided assessment funding, the ERP provided a reimbursement grant and a liability release as well as imposed regulations impacting remediation processes, city council provided bond dollars to fill in expense gaps and approved contracts with the environmental consulting firm and their subcontractors, and the NYSDEC and state health department provided technical support. Each of these tools provided the necessary resources but also incurred additional layers of responsibilities on behalf of city managers regarding paperwork, project performance, and other regulatory requirements.

Table 7-4: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Environmental Assessment	2	1	1	0	4
Remediation Plan	3	1	1	1	6
Remediation	5	1	3	1	10

The OSP director had the greatest impact during this phase by directing OSP and BURA staff members to restart the environmental phases of the project and appealing to city council for additional funding approvals. However, it was the coordinating behaviors of the environmental manager that caused the EPA and ERP policy tools to impact the project and management process. These two tool packages both empowered and constrained the environmental manager to link to federal and state environmental and health officials in order to access the funding and technical support provided through them. City lawyers supported these efforts by settling

lingering conflicts related to BP1 and enabling processes to move forward. From the start, public management of BP2 occurred at two levels; top-down directing by the OSP director and centralized coordination by the project manager.

Construction Planning and Design – BP2. When the new OSP director arrived at the city, he brought with him a set of new ideas on how the city should organize and implement planning and development activities. Because one of his first tasks involved halting the construction of BP1, addressing this property jumped to the top of his agenda. Public pressures to complete the HOZ obligations and eliminate the bad publicity of the abandoned houses further compelled this prioritization, even though it was not, according to members of the community development community, a high priority vacant property relative to all others. Nevertheless, the OSP director assigned a new project manager from within his housing staff to coordinate city efforts for BP2, despite the fact that this manager had not worked on such a project before. He did have experience within the OSP prior to BP2 conducting design and construction of infill housing but had not yet worked on a project the scale of BP. While several project actors viewed this housing manager's work as very positive, they recognized that his own experience combined with general city capacity challenges constrained his efforts.

In adopting BP2 as his "pet project", the OSP director took a sharp turn away from the original design ideas generated for BP1. He strongly believed that the growing interest in downtown living by suburban residents made market-rate homes feasible for the BP2 property. Therefore, he instructed the housing manager to create a New Urbanism[17] design for the development to appeal to traditionally suburban homebuyers. This shift away from the BP1

[17] A design genre for urban areas involving placing houses close together and against the sidewalk as in traditional urban design, but with home features such as carports, front lawns, and small porches found in suburban style homes.

design increased construction costs, making the need to sell homes at market rate in order to for the city to recoup costs more imperative. However, a fully market-rate neighborhood was not in compliance with the HUD HOZ program, hereby exempting the project from HOZ dollars and potentially complicating the already stretched relationship with HUD. Yet, the OSP director received approval from the mayor who desired a high profile project in the city to promote his revitalization credentials to political stakeholders. However, in order to build market-rate homes, the project required a different source of home ownership loans.

Initially, the OSP director had formed an agreement with a local nonprofit community lending organization to supply these loans. However, he dropped that lender when it appeared that Fannie Mae could provide a better deal. When, in the construction phase, home construction costs went above budget, the OSP director returned to the nonprofit lender and made an appeal for a quick infusion of capital to cover the overrun. The lender recognized the immediacy of need and followed through, but expressed dissatisfaction for having to "bail out" the city in this matter, particularly in response to the OSP director's directive management approach.

> To be blunt about it, the (BP2) project was a specific plan that (the OSP director) wanted done. Period. End of story. He wanted to bring a neighborhood market-rate product into the city. Period! And there was not going to be anyone that was going to tell him to the contrary. How it got done, how it got financed, were all our issues, but it was his desire to do this project. – Buffalo Community Development Corporation Executive, 2009

These shifts in sources of loans subsequently shifted financial responsibilities from city council to the BURA board and the Department of Budget, providing the OSP director with more control over the project through his position on the BURA board.

Moving forward, the housing manager rehired the engineering consulting firm that participated in the construction processes for BP1 to manage the same process for BP2, but only

after working through the OSP director and his agency lawyer to resolve lingering and negotiating pro bono work. The city public works engineer observed:

> They were trying to blame (the consultant) for some of the mistakes, and (the consultant) bent over backwards, like I said. They did a lot of pro bono work. They should have been kissing their ass to pay them, get it done and get out of there. But people like (the new housing manager), he hadn't been around contracts, and he got a new lawyer there, and they're all like "Oh, my God"...they got in trouble before with this testing, so they were being extremely careful about what they were doing, but (the consultant) ended up paying the price for that. – Buffalo City Engineer, 2009

Ultimately, the consulting firm absorbed past costs, and site preparation began.

During pre-construction processes, the housing manager acted as the designated project manager but the private consulting firm ended up working for the City Engineer whose public works department held much of the actual responsibility for preparing the site for home construction. This difference between the planned and actual management arrangement reflected the uniqueness of this project for the city. Typically for housing projects community development corporations normally held project management responsibilities within the HOZ program, not city managers. The fact that the new mayor and the OSP director believed the city needed a "win" partly influenced the decision to manage the project in-house, but the perception in the community development corporation community was that the city had to be the primary developer for liability reasons. The nonprofit lender observed:

> One of the big reasons, I think, is that (BP2) was done on a tract of land that was brownfield, and that because of the City running into problems with environmental issues on housing projects in the past, I think that they pretty much knew that nobody was going to come in there and develop housing on that lot. – Community Development Corporation Executive, 2009

BP2: Construction Planning and Design Network Characteristics, Policy Tool Use, and Public Management. Network data indicate unified project networks during BP2's design and construction planning phases with the new housing manager and OSP director playing highly

central roles (Table 7-5). The high centrality of the environmental manager during the design phase suggests greater communication across expert domains than what had occurred during BP1. However, the fact that zero lingering pollutants remained on the property after remediation minimizes the importance of this finding because the property did not require continued involvement of environmental actors[18]. Despite the high centrality of the community development project manager during these phases, total network composition continued to evolve as the OSP director pulled in new partners, such as the community lender, to shore up project financing.

Table 7-5: Top Three Individuals by B-L Centrality Values

	1	**2**	**3**
Construction Plan	Comm Dev Mngr	OSP director	Community Lender
Design	Comm Dev Mngr	Env Mngr	OSP director

Policy tool use during design and construction planning phases spanned multiple tool types (Table 7-6) as the OSP director and his project manager engaged with several different network partners, particularly regarding financing for home construction. The OSP director convinced city council to approve a bond sale and supplemented money from this sale with assistance from the community lender. In addition, the project manager used a contract to formalize a work agreement between the city and the consulting firm, but only after significant negotiation between city lawyers and the consulting firm regarding disputes from BP1.

[18] The high centrality of the environmental manager in the design phase contradicts interview data suggesting that design decisions were primarily between the OSP director and his staff. Closer examination of the data reveals a discrepancy between how the environmental manager completed his network survey and how respondents he reported interacting with completed theirs. Future research utilizing social network analysis should include multiple means of confirming network ties (Vehovar et al. 2008). Further review of data for this study indicated that these discrepancies in data were limited to the BP2 design phase.

Table 7-6: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Construction Plan	3	1	4	0	8
Design	2	0	2	0	4

Public management continued to occur at two levels with the OSP director leading negotiations for many of the policy tools while the project manager coordinated the resulting agreements. Together, they leveraged the formal agreements formed with project partners and the symbolic significance of building homes in a blighted neighborhood to compel continued participation by these partners even when circumstance led partners to question the balance of costs to project benefits.

Construction and Sales – BP2. Once construction plans were in place, the OSP director delegated responsibility for project construction and sales to the housing manager and abruptly left the city for another job. In the wake of this departure, the housing manager struggled through multiple challenges and network partners felt pressured by political leaders to contribute more than they had intended for the project to achieve redevelopment success.

The first challenge involved project funding. The decision to adopt a mostly New Urbanist approach meant placing houses close together, against the sidewalk, but with affectations found in suburban style homes. This increased the cost burden on the city for site preparation, particular with the more intricate design and the construction of a unique serpentine street planned to run between the houses. These factors required the housing manager to plead with his counterparts in the public works, water, and sewer offices to ensure appropriate infrastructures. Originally, the OSP director, with support from the mayor and approval from city council, expected separate departments to fund their own portion of the work out of departmental budgets.

> Basically the mayor told me, get this done. Drop everything, it was a big deal with them and (the OSP director) to make this thing turn out positive. Like I said, when it came through as part of the capital budget, we were like, "Well, we didn't approve that on our request". "Well, we did, you're building it, so get to work". – Buffalo Public Works Engineer, 2009

However, the design called for work above and beyond what these budgets would allow and, despite not being the designated project manager, the city engineer in public works filled in the leadership vacuum and spent time convincing city council to issue another set of bonds to supplement his budget for the project. Similarly, the community development organization providing loans stepped up in the absence of the OSP director to steer the financial processes for the project director.

On the construction side, miscommunication between the company contracted to provide blasting services for basements and the consulting firm led to the basements being blasted too deep. The city had to pay for reconfiguration of the foundations and finger pointing occurred between the city public works department, the blasting company, and the engineering consulting firm. The need to blast the bedrock in the first place caused one public works employee to state, "if you were a private developer, you wouldn't have picked this site for housing" (Interview, 2008).

The project also faced initial challenges regarding housing sales. As early as when the OSP director first drafted home designs, the housing manager played the role of real estate agent, setting up a home design show for prospective buyers and advertising the homes in local real estate publications. As interest grew and sales responsibilities ballooned, the mayor assigned his marketing director to assist. However, the responsibilities were still too much for the limited capacities of the city and the marketing director successfully argued for funding from the mayor's office to contract a real estate consultant to take over real estate duties full time.

Ultimately, the development included twenty market-rate houses and four subsidized homes that sold at prices agreeable to the builder but not sufficient to cover costs to the city. Market-rate homebuyers received a tax rebate under a state program where full property tax rates were gradually phased in over ten years and the city itself underwrote second mortgages for homebuyers. While deemed a success by the mayor's office, the OSP, and the neighborhood, the city newspaper and multiple local blogs questioned the overall expenditure of city money towards construction given the reality of declining property tax values[19].

BP2: Construction and Sales Network Characteristics, Policy Tool Use, and Public Management. The construction and sales phases of BP2 were marked by a big push initially by the OSP director and then by his project manager to engage both city and community partners to complete the project. In order to do so the housing manager to work closely with the private firms contracted to manage construction and sales processes especially after the OSP director left. Centrality data confirm the central positions each of these actors played at this point in the project (Table 7-7).

Table 7-7: Top Three Individuals by B-L Centrality Values

	1	**2**	**3**
Construction	Comm Dev Mngr	OSP director	Private Engineering Consultant
Sales	Comm Dev Mngr	City Mrkting Director	Private Real Estate Consultant

The city implemented a range of policy tools securing during construction planning in their push to complete construction processes and sell the homes, particularly those enabling direct city action. Where city capacities fell short, agreements were developed for others to take

[19] Schulman, Susan. "Housing upgrades — at any cost." *The Buffalo Daily News*, August 21, 2010. http://www.buffalonews.com/city/special-reports/article37726.ece.

direct action (Table 7-8). During construction, city council approved bond money for constructing the streetscape and second mortgages for homebuyers while the OSP director incentivized sales through an existing city grant program providing home buying dollars for certain service-sector professionals moving into the neighborhood. Then, the OSP director established contracts with the community lender to obtain their lending tools and the project manager contracted with a real estate professional to simplify the workload for the project manager. The sales phase entailed implementing these lending tools and, when the work became too much for the housing manager, forming a contract with a real estate consultant to take over sales tasks.

Table 7-8: Policy Tool Types by Phase

Phase	Leg/Reg	Agreement	Econ/Fisc	Information	TOTAL
Construction	4	3	3	0	10
Sales	2	1	4	0	7

The departure of the OSP director in the middle of these phases incurred a shift in public management responsibilities for city actors. At the tail end of this tenure, much of the public management behavior on behalf of the OSP director involved using his political power to compel and coerce project partners both inside and outside city hall, to implement construction regardless of cost while the project manager coordinated the resulting agreements. After the OSP director departed, the housing manager had to find ways to fill the vacuum left by this project champion and did so by securing support from the mayor's marketing director. Together, they completed the project by contracting out sales responsibilities and continuing to motivate partners by appealing to their desire to help the neighborhood and an interest in maintaining positive relationships with the city.

Explaining Project Outcomes. BP1 and BP2 exhibited two tiers of project outcomes with the results of BP1 rating lower than those of BP2 (Table 7-9). The primary critical factor causing low success in BP1 was a lack of project network cohesion that led to miscommunication of environmental information to redevelopment actors. As a result, construction occurred before remediation, causing project leaders to cease activities and ultimately tear down already built houses. BP2, on the other hand, experienced full remediation and successful sales of New Urbanist-style homes. The ability of the OSP director to identify and access a range of policy tools relevant to project implementation and to champion the project with his political power to secure partner commitment proved to be the primary factor leading to these outcomes. However, even best efforts at coordinating project networks by the city project manager towards successful outcomes encountered challenges incurred by low management capacities.

Table 7-9: BP Project Success – Phases One and Two

Outcome Measures	**BP1 Outcomes**	**BP2 Outcomes**
Time to completion (TIME)	2002-2003 (incomplete)	2006-2009
Cleanup costs (COST)	$1.2 million	
Implementation processes (PROCESS)	Low satisfaction levels across multiple project actors	Community partners expressed overextension of commitments
Contamination abatement (CLEAN)	No abatement occurred	Complete abatement occurred
Area-wide impact (IMPACT)	No immediate impact	Average house sale $203,000 but houses sold for less than construction costs. No information on proximate impacts due to lack of real market. Increase in neighborhood pride.

One impact of these low capacities stemmed from not enough staff inside the city to cover project management responsibilities. As the city struggled with an entrenched fiscal crisis

spanning decades, city personnel dwindled causing those remaining to wear multiple hats even when those hats were outside of their personal professional trainings. For example:

> Prior to the housing division I was in the design and construction division as supervisor of construction, and prior to that position I was still in the same division of design and construction as a project manager; and now, as of November of last year, I was promoted to BURA Architect under the Department of Public Works and Streets. – City Project Manager, 2009

This practice of shuffling staff between offices hampered the abilities for city actors to coordinate their own resources around project tasks, therefore impacting their abilities to engage in network management in the broader project context. This shuffling and reorganization also occurred at the organizational level. The same manager described,

> Because OSP is the Office of Strategic Planning . . . and although I'm still with BURA, I'm now working under the Department of Public Works. Departments change, BURA stays the consistent agency, and then the divisions may change. – City Housing Manager, 2009

Evidence for this organizational reshuffling exists within the city's annual financial report to the state fiscal authority oversight board. Between BP1 and BP2, offices relevant to housing redevelopment shifted from the mayor's executive department to the economic development department. Yet, zoning and environmental affairs remained within the strategic planning office. One state office official involved with the project confirmed the impacts created by these changes in organizational design. "I think some of the frustrating things about working with the city of Buffalo is that there are so many different authorities and agencies that you never have one-stop shopping." (Interview, 2009). As a result, multiple phases required that non-city actors play a central role in project processes.

Notably absent from BP1 and BP2 project networks were citizens and neighbors. Interview data and site visits revealed low levels of organized neighborhood activity centered on this project, primarily due to the large number of additional vacant properties in the area and the

general acceptance by all that the project would bring positive benefits when completed. As a result, the entire project experienced minimal bottom-up, neighborhood-based political influence.

Evidence also exists indicating a historical lack of support for environmental processes within city development projects. This culture derived from the anticipation that discovery of environmental concerns meant additional cost expenditures and delay in project processes. The senior environmental manager for the city described the culture in saying "I'll be the first to admit that there have been times in my career because I have feared for my job because I've been the messenger of bad news." (Interview, 2009)

The challenges posed by these organizational capacities exacerbated the public management missteps of BP1. Network data for BP1 indicate that environmental actors remained largely in the environmental phases and community development actors remained largely in the design and construction phases, creating a critical information vacuum between actors. These findings illustrate the importance of maintaining whole-network ties that link actors from divergent expert orientations and provide clear evidence that structural gaps in the project network, particularly between environmental and community development actors, lead to communication breakdowns and poor public management decision making, regardless of the policy tools selected and implemented in the project.

The reversal of success with BP2 experienced by the city indicates that these gaps may be overcome through assertive behaviors on behalf of a project champion possessing sufficient political authority to compel partner commitments with the assistance of carefully selected policy tools. Essentially, the OSP director who arrived at the city towards the end of BP1 served as a project champion, using his authority to direct to action city departments whose resources he needed and leveraging his position as a BURA board member and confidant of the mayor to

direct community partners to engage in what he framed as a development opportunity crucial for that part of the city. The ongoing fallout in the news media and the blogging world of the brownfield-turned-housing project prior to BP1 that ended in litigation produced strong incentives for mayor and, subsequently, the OSP director create a winnig project. He therefore pressured the public works department and the private engineering consultant to build the subdivision as quickly as possible. A member of the project management team remembers the new mayor's interest in erasing BP1 and creating a success story.

> Not to bring politics into it but when we were campaigning, we were going to an event and the mayor said we've gotta get this going because there were these sad little Tyvek houses . . . three houses that were sitting there he goes 'we gotta get (BP2) going.' – City Marketing Manager, 2009

Having support from the mayor's office and BURA as well as the backing of city council enhanced the OSP director's ability to champion project processes to city staff and push them along more forcibly than they might have otherwise.

After the OSP director left the city, follow-up implementation by his housing manager relied upon increased density of project network ties and the abilities of the housing project manager to maintain these ties by appealing to partners' senses of obligation and commitment articulated in the formal agreements binding them to the project. Ultimately, both city and non-city network actors committed time and resources above and beyond what they normally would have. For example, the community lender brought in to fill financing gaps during construction processes spent more time on this project than on any other previous city-led project. In addition, the consulting engineer spanning BP1 and BP2 provided some services pro bono. The role these particular actors played caused the community lender state "I think the uniqueness of (BP2) was the expertise on the outside and the lack of expertise on the inside" (Interview, 2009).

Between the political authority and persuasive management efforts of the OSP director, the resulting formal agreements with a range of internal and external actors, the availability of key policy tools funding remediation, and the persistent coordination activity of the project manager, BP2 achieved successes where BP1 had failed.

CHAPTER EIGHT NETWORKS, POLICY TOOLS, AND PUBLIC MANAGEMENT IN BROWNFIELD PROJECT SUCCESS

Introduction. The previous three chapters identify the critical factors that shaped outcomes for the individual cases explored in this study. Evidence exists in each story that the paths to brownfield project outcomes entail multiple combinations of network structures, policy tools, and public management strategies contingent upon the broader political, economic, social and environmental contexts in which the project exists. However, examining the cases as individual stories alone does not fully address the research questions presented at the onset of this study, particularly regarding the extent to which network characteristics and specific public management behaviors within these networks, particularly those involving the selection and use of policy tools link to positive project outcomes. This chapter strives to answer these questions by presenting a cross-case analysis comparing network, policy tool, and public management patterns as they link to the varying project outcomes that were fundamental to case selection.

In general, this analysis validates several aspects of the propositions. First, changes in network characteristics and policy tool use over the course of each project linked closely, as expected, to changes in task and expert information orientation albeit in slightly different ways. Second, evidence exists supporting the proposition that overall network centrality and stability correlate with project success. However, the relationship between public managers operating towards the center of project networks, the policy tools activated to steer project actor behaviors, and the selection of public management strategies did not conform to expectations. Political power and its presence in the public management network emerged as the key factor influencing how these project components interacted to influence outcomes. In addition, findings show that, while capacity for network management at the city level shapes management strategies, neither sufficient capacity nor a lack of it predicts the ability to achieve success.

This chapter begins by examining patterns of network characteristics at both the full project and within-phase levels. The next section presents patterns of policy tools aggregated across all projects to identify correlations between tool use and the task orientation of project phases. Integrating the findings from these two analyses sets up the final section that describes patterns regarding the impact of public management behaviors by network-centric actors on the various project outcomes.

Network Structures and Project Outcomes. Network data for each entire project exhibit differences between successful and unsuccessful projects in measures of overall network centralities, the most central actors, and total actor numbers (Table 8-1).

Table 8-1: Total Network Statistics, By Case

	Network Statistics			**Most Central Actors**		
	Primary Actors	*Freeman Centrality*	*Density*	*First*	*Second*	*Third*
RPA (High)	56	0.599	0.109	**City** Senior Environmental Manager	Citizen Leader	**City** Housing Manager
BP2 (High)	40	0.530	0.145	**City** OSP Director	**City** Housing Manager	**City** Environmental Manager
RPB (Low)	27	0.493	0.179	**City** Senior Environmental Manager	**City** Environmental Manager	Environmental Consultant
BP1 (Low)	27	0.443	0.128	Environmental Consultant	**City** OSP Deputy Director	Community Lender

These findings affirm previous research that found higher overall network centralities and relatively low project densities correlated to more positive network performances (Provan and Milward 1995; Provan, Huang, and Milward 2009).[20] In the RPA case, the high network

[20] Recognizing the possibility for endogeneity between the number of phases completed for a project and centrality scores due to greater opportunity for relationships to form, network

centrality enabled the efficient communication between political actors, citizens, private partners, environmental regulators, and community development managers that characterized the public management context of that project. Interview data indicate that the number of direct ties between the senior environmental manager and all other individuals in the project network greatly enhanced information exchange and expediting project processes. As stated by the city council president, "(The senior environmental manager) was terrific. He would always keep people up to date on what was happening" (Interview, 2008). The high overall centrality of the BP2 project network also enabled communication facilitation by the OSP Director and then, when he left his position, the city housing office project manager. In this case, however, the ties were less about information exchange and reciprocity as much as it was about directing project partners internal to the city, framing the project as a "win" for the community to non-city project partners, and negotiating with financial gatekeepers for resource allocations addressing last minute resource needs.

Data about the relationship between the number of primary actors involved with project networks and degrees of project success appears to indicate a pattern, but a closer look warns against drawing immediate conclusions. The low number of actors for RPB and BP1 primarily reflect that these projects did not achieve full phase implementation, thus limiting the total

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statistics for RPA were calculated up through the remediation phase to compare with the number of phases completed for RPB. The Freeman Centrality Score and density increased to 0.696 and 0.131 respectively, suggesting that the construction and sales phases actually incurred *less* centralized behaviors across the entire project, likely due to the centralized coordination required by construction activity and the resulting decrease in cohesion of the whole project network when total relationships between all actors were included. The top two most central actors remained the same, but the third highest centrality belonged to the environmental consultant. Because these differences went in the opposite direction than expected, the measures in Table 1 were left as is, reflecting the total number of actors engaged in each project at any point in time and their resulting relationships.

number of individuals engaged in project processes. However, RPA, the most successful project of the group, included more numbers of primary actors[21] than the other high success project, BP2. This largely stemmed from the greater involvement of citizens and higher numbers of building contractors engaged through RPA's unique redevelopment plan that included multiple builders rather than a single firm. Despite research indicating that greater numbers of network members impose an additional transaction cost for network managers in disseminating information and coordinating actions (Provan and Milward 1991, 1995), the larger numbers in RPA did not appear to curtail project successes. Exploration of the impact of network size should be addressed in future brownfield research.

Examining centrality data across phases provides a different picture regarding the relationship between network stability and project outcomes. While project centrality measures at the whole project level for RPA are greater than BP2 and RPB (Table 8-1), measurements by phase reflect the opposite (Table 8-2). However, these data speak more to the role of network stability in facilitating project outcomes than to the role of network centrality. For example, interview data suggest that the higher centralities for each individual phase in BP2 and RPB resulted from the need for highly centric actors to transmit information directly to members new to the project. In BP2, the OSP Director practiced highly directive behaviors by working directly with project actors to compel their cooperation. His housing manager described the process of bringing in new partners:

> It was aggressive. It was aggressive, but we moved forward and we got to this point where we are today. It was aggressive, and that was another maybe obstacle that we had to get folks to buy in, is they didn't want to do this by when? At first, there was

[21] Primary actors do not include individuals or organizations subcontracted by first-level contracting agencies.

> resistance, but they were all at the table and we were trying to tell them, we've gotta get this done. – Buffalo Housing Manager, 2009

Table 8-2: Freeman Centrality Measures by Project Across Each Phase

	RPA	**BP2**	**RPB**	**BP1**[22]
Assembly	0.708	N/A	0.533	**1.766**
EconAssess[23]	0.683	insufficient information	0.000	insufficient information
EnvAssess	0.675	0.964	0.803	**6.251**
CleanPlan	0.696	0.714	0.894	1.008*
ConstPlan	0.662	0.866	0.580	**1.817**
Design	0.645	0.807	0.615	1.124*
Cleanup	0.585	0.934	0.861	0.639
Const	0.587	0.742	N/A	0.790
Sales	0.854	0.670	N/A	N/A

* Networks characterized by low actor numbers and high degrees of centrality.
Bold font indicates phases in which more than one distinct network occurred.
N/A refers to project phases not reached or achieved during a prior project.

Further complicating network stability effects, both BP2 and RPB experienced turnover in terms of who operated from highly central project positions (Table 8-3). In RPB, project managers formerly central to project processes left the entire project part way through due to a new mayoral administration and resulting staff retirements. This complicated the ability of the environmental managers handling the environmental complexities of the property to adequately support the economic development manager operating at the center of the network during redevelopment phases. The senior environmental manager described these effects:

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[22] BP1 exhibited the lowest overall centrality and the most disparate centralities across phases of the cases due to the structurally separate sub-networks that formed during project processes. As a result, it is difficult to compare BP1 network statistics to the other projects.

[23] Across cases, including RPA, project participants did not express and document data did not indicate direct discussion of the economic implications of the intended project. These discussions, as in the case of RPB and the Buffalo projects had occurred prior to property assembly activities. Economic assessment in RPA occurred "after the fact" due to the need for city political leaders to respond to increasing citizen activism.

> The administration changed . . . and the director of real estate and the director of technical services which is sort of a combination of getting things demolished and organizing sites, um, both of those people changed and the Departments of Economic Development and Community Development, the commissioners changed . . . So there might have been some continuity issues there. – Rochester Senior Environmental Manager, 2009

Table 8-3: Number of Phases Individual Actors Occupied Network-Centric Positions

RPA (9 total phases)		BP2 (7 total phases)		RPB (7 total phases)	
Actor	**# Phases in Top 3**	**Actor**	**# Phases in Top 3**	**Actor**	**# Phases in Top 3**
Senior Environmental Manager	9	Environmental Manager	4	Senior Environmental Manager	5
Citizen Leader	7	Community Development Manager	4	Environmental Manager	5
City Council President	7	OSP Director	4	Engineering Consultant	3
Community Development Manager	2	Senior State Environmental Manager	3	Community Development Manager 1	2
Engineering Consultant	2	Six different actors	1	Five different actors	1

* BP1 exhibits multiple sub-networks for the phases completed, preventing generation of whole-network centrality data for each phase. Therefore, BP1 does not appear in this table.

An additional pattern that emerged in both the interview and network data, particularly for RPA, was that strong network relationships across all project phases mattered not only between the city and non-city actors, but also between actors within the city itself (Table 8-4). Hearkening back to the community development manager involved with RPA and the start of RPB who described the projects as "two octopuses making love", these observations strongly support the idea that cities must have their "ducks in a row" internally in order to effectively form resource exchange relationships with external partners (Agranoff and McGuire 2001, 2003). The data in Table 8-4, however, indicates that high centrality within city actors alone is not sufficient for successful project outcomes, as indicated by the lower centrality for BP2 than

for RPB. The following section on public management strategies within these networks addresses this discrepancy.

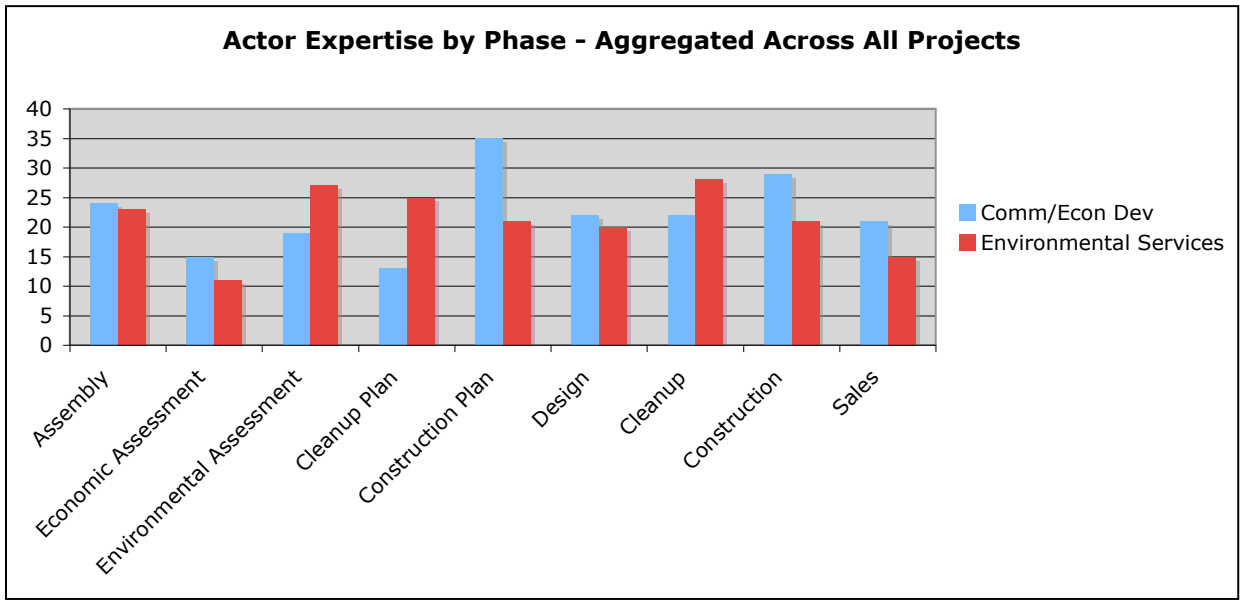
Table 8-4: City-Only Network Statistics

	Actors	**Freeman Centrality**	**Density**	**Most Central Actor**
RPA	20	0.713	0.226	Senior Environmental Manager
RPB	17	0.513	0.235	Environmental Manager
BP2	17	0.471	0.265	OSP Director
BP1	7	N/A*	N/A	N/A

* Network data for BP1 indicates separate sub-networks for city actors.

Finally, examining network characteristics across project phases provides support for the proposition that the task-orientation of a project phase influences general network membership within a specific phase. Environmental experts dominated environmental assessment, remediation planning, and remediation phases and community and economic development actors were more prevalent in economic assessment, construction planning, construction, and sales phases (Figure 8-3). These patterns amplify the public management finding that communicating cross-disciplinary information between phases, particularly when key network actors leave the project, is important. In BP1, complete separation between these phase-specific actors incurred project failure. In RPB, the departure of the community development managers and their comprehensive knowledge of the environmental characteristics of the property hampered subsequent efforts on behalf of the city.

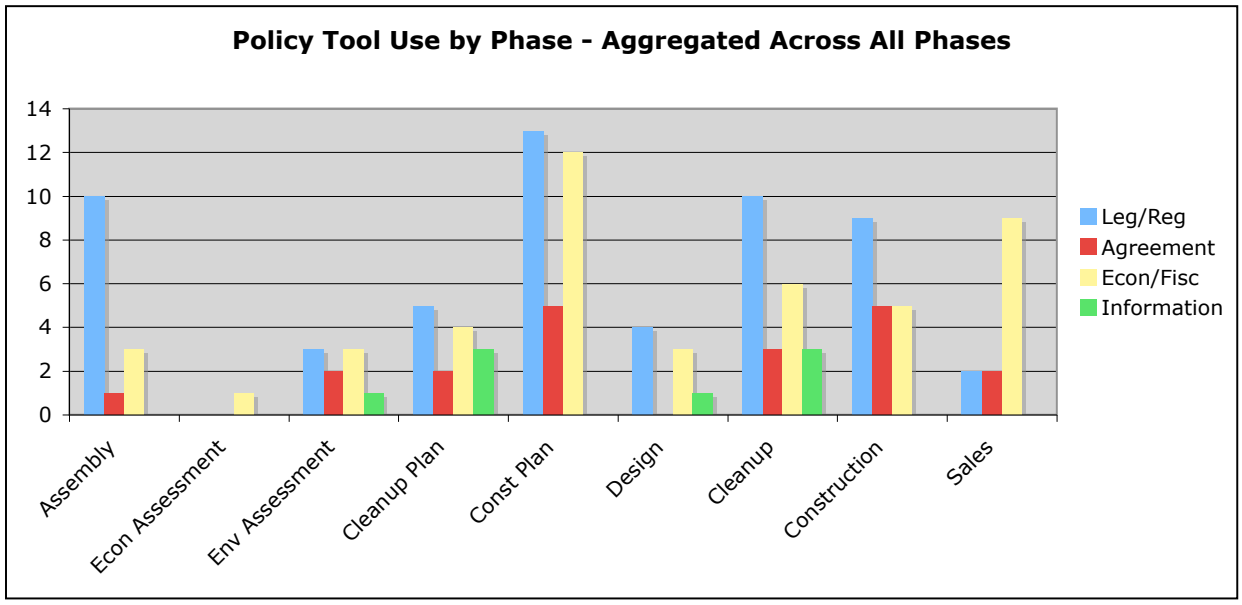
Figure 8-1



Policy Tools and Project Outcomes. Across the cases, patterns of policy tool use also changed over project phases, but not in the anticipated manner. Propositions stated that planning phases would emphasize information, legislative, and regulatory tools while implementation phases would feature use of agreement-based, economic, and fiscal tools. However, the data from this study show that the projects did not incorporate as many information tools as anticipated and that legislative, regulatory, economic and fiscal tool use spanned planning and implementation phases, particularly if the task-orientation focused on property assembly and redevelopment. Figure 8-2 presents an aggregation of tool types across all projects for each project phase[24].

[24] Each case exhibited similar proportions of tools used for each phase, making it feasible to sum total tools used across all projects. It is also important to remember that the numbers for legislative tools include direct actions taken by city decision makers to accomplish tasks for property acquisition processes.

Figure 8-2



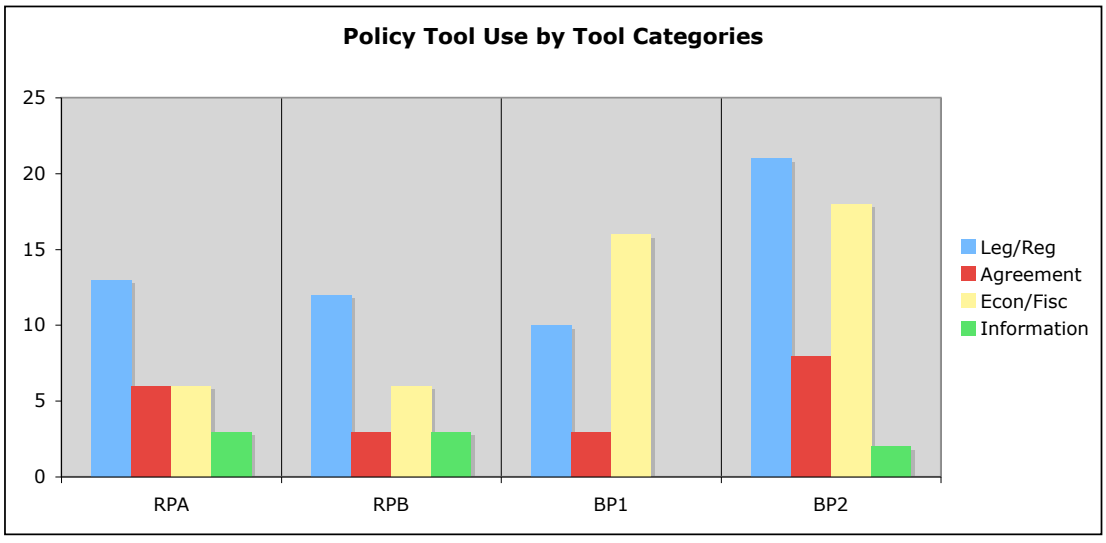
One explanation for these findings is that it is during implementation phases that public managers had the greatest need for asserting authority over non-governmental partners in order to achieve desired outcomes (Bressers and O'Toole 2005; Bressers and O'Toole Jr. 1998). In addition, resource needs increased in implementation phases and the number of total actors required to complete implementation tasks rose. This is congruent with previous work indicating that resource dependencies facilitate tool usage (Howlett 2005). For example, the RPA and BP2, agreements between the home builders, the cities, mortgage lenders, and future homeowners required multiple layers of tools to ensure that new home and site preparation construction complied with preexisting codes and rules and addressed potential liabilities of lenders and buyers alike.

A closer examination of tool data reveals that, while most policy tools enabled the city to shape relationships with project partners, some policy tools put cities in the role of the policy target as well. Regulatory tools imposed by county, state, and federal actors that shaped city behaviors accompanied some of the tools selected by project leaders. Prominent amongst these

tools were paperwork requirements, permits, and environmental regulations regarding pollution levels allowed for residential end use on the properties.

While the ratios of tool types used varied across individual projects, some similarities existed for projects within the same management contexts (Figure 8-3). For example, the Rochester projects emphasized legislative/regulatory tools and direct action over other tool types but the Buffalo projects emphasized economic/fiscal tools. These patterns across projects within the same management context likely resulted from decision makers selecting tool types with which they have familiarity through previous experience (Peters 2002). However, closer examination indicates that, while projects within the same city showed similar uses of tool types, specific tool use varied to a greater extent based upon specific project characteristics. For example, RPA project leaders selected the NYSDEC ERP tool package to reimburse what they anticipated to be significant remediation costs while RPB project leaders selected the NYSDEC Petroleum Spills Program to enable a quick turn around for remediation to take advantage of property momentum.

Figure 8-3



It is important to consider two data characteristics when interpreting these findings. First, it is likely that these data underestimate the prevalence of agreement-based tools (contracts), particularly within remediation, construction, and sales phases. However, many of these contracts were used to delineate relationships between the private consultants retained by each city to oversee implementation phases and the sub-contractors these consultants secured. Research data excluded these sub-contractors because the relationships were not considered central to core project planning and implementation processes. A second consideration is the manner by which the influence of a tool on decision-making was measured in a particular phase. For example, in BP2 and RPA, the anticipation of remediation funding through the ERP shaped property assembly and remediation planning phases even though the process of utilizing that funding did not occur until the remediation phases. Therefore, the funding mechanism of the ERP was counted as being part of each of these phases.

Data across each project support existing policy tool theories that link the extent to which policy tools become used in networked situations to the desired outcomes attached to specific tasks (Blair 2002; Bressers and O'Toole 2005; Salamon 2002; Peters 2002). However, the types of tools used conformed more to presumed managerial preferences and network partner interests.

Public Management Behaviors and Project Outcomes. Capturing public management behaviors proved to be more difficult than measuring network structures and policy tool use due to the retrospective nature of the data collected for this study. However, analysis of the available data reveals management patterns across projects and project phases that tie network structures and policy tool use to a fourth factor; that of political power and influence. Together, these factors help contextualize the extent to which management influenced project outcomes.

Recalling the typology of network management strategies summarized in Chapter 3 (Table 8-5), interview data reveal different public management strategies implemented by key public managers across each project (Table 8-6).

Table 8-5: Network Management Strategies

Strategy Type	Behaviors	Measure
Relationship	**Negotiation**	Making offers and counteroffers in search of mutually agreeable allocation
	Trust development	Risk sharing Social interaction outside of partnership
Institutional	**Persuasion**	Offering incentives to encourage participation
	Coercion	Leveraging authority to direct behavior
	Accommodation	Requesting or granting regulatory relief
	Arranging	Seek/provide third party to mediate differences Seek financial resources Establish contract
	Framing	Seek/provide information regarding brownfield property characteristics
		Seek/provide information and technical assistance

(adapted from Agranoff and McGuire 2003)

Several key differences between projects emerge from these findings. First, RPA and RPB reflect relatively higher emphasis on trust development behaviors than the Buffalo projects. This is in congruence with expectations regarding differences between high and low capacity management environments but is also attributable to the individual management styles of the senior environmental manager who operated at the center of both project networks. Second, each project, with the exception of BP1, presented wide use of institutional management behaviors utilizing policy tools. However, data indicate that both the economic development manager in RPA and the OSP director in BP2 used policy tool strategies towards the end of project processes as a means to appeal to values of reciprocity on behalf of project partners. By providing a flurry

of incentives, these managers hoped that project partners would recognize city efforts to meet their needs and would agree to sacrifice some needs in order to achieve project outcomes.

Table 8-6: Emphasis of Network-Centric Public Management Strategies by Project

Strategy Type	Behaviors	RPA	RPB	BP1*	BP2
Relationship	**Negotiation**	Medium	High	High/Low	High
	Trust development	High	Medium	Low/Low	Low
Institutional	**Persuasion**	Medium	High	Medium/Low	High
	Coercion	Low	Low	Low/Low	High
	Accommodation	Medium	High	Low/Low	Low
	Arranging	High	High	High/High	High
	Framing	High	High	Low/Medium	High

* Findings for BP1 represent data for the housing manager/environmental manager due to the two-subnetwork nature of BP1 processes.

The story of the environmental manager in RPA supports theory asserting that public managers operating at the center of project networks obtain significant network influence from their position (Tsai 2001; Provan, Fish, and Sydow 2007; Balogun et al. 2005; Honig 2006). However, evidence in this study indicates that political forces also shape public management strategies and their impacts and that, because of this influence, key decisions directly impacting project outcomes can occur away from actors operating at network centers as well. In these situations, power to influence network processes becomes decoupled from network position and highly central managers operate largely as coordinators than initiators.

For example, the OSP director combined his authority as a BURA board member and confidant of the mayor with his role as a senior public manager to coerce city and non-city project partners into compliance with his project implementation vision. Evidence from interviews cited above reveal the extent to which this leveraging of political power compelled redevelopment to occur. On the other hand, the community development managers in RPB who

initiated and championed project processes lacked this political legitimacy and were unable to overcome increasing project uncertainties with political power. Even the environmental manager in RPA who enjoyed a highly central coordinating position benefitted from political power through his strong positive relationship with BANG and, subsequently, his strong support from both the mayor's office and the city council president. This legitimacy enhanced his and his community development counterpart's abilities to collaborate with the homebuilders association.

The influence of political power outside the power of network position in these projects also became known when project processes required intense negotiations regarding property acquisition and project financing. Across each project, these negotiations occurred in dyads consisting of community or economic actors acting on behalf of city council and individual property owners, lenders or developers. It is evident in each case that the agreements achieved through these negotiations are necessary for successful project outcomes but do not necessarily occur at the broader network level. To some extent, the effort to meet the interests of neighbors, the city, and homebuilders in RPA is an exception to this finding, but even in this case, key decisions entailed mutual decisions made between the environmental manager and citizens or the mayor's office and home builders.

These management findings provide partial confirmation of the propositions presented in this study. The review of public management research suggested that public managers operating towards the center of successful brownfield project networks, particularly those embedded in local governments with higher management capacities, would emphasize policy tool use, or institutional management strategies, in managing project partners and would only emphasizing relationship management strategies when project uncertainties increased. While both strategies

influenced outcomes in different ways, the influence of political power on management efficacy shaped the extent to which these strategies ultimately impacted project outcomes.

CHAPTER NINE SUMMARY, SIGNIFICANCE AND IMPLICATIONS

It's probably been one of the nicest success stories I have been involved in. You know I stand at that kitchen window and I can look out and see six nice houses . . . I have a friend that bought a house and lives there and she is very happy being there. She lived out in the suburbs and moved into the city . . . and she said that she couldn't have asked for a better neighborhood to be involved in and when I hear that I think 'Ok. That's it. Did good. We did good.' – BANG Leader, Rochester, NY, 2008

Introduction. Using theories of institutional management of public sector networks, this study examined how project network structures, policy tools, and public management behaviors interacted to produce remediation and redevelopment outcomes in a set of carefully selected brownfield projects. With intent to inform both public management theory as well as brownfield project practice, two questions were asked. First, in what ways do brownfield projects function as public management networks? And, second, to what extent do network management behaviors by city-level public managers impact project outcomes?

This chapter summarizes the theoretical contributions and practical lessons derived from my findings. The first section describes the significance of these findings to public management theory, particularly as scholars in this area continue attempts to account for increasingly complex public management processes and environments. The second section highlights findings specific to the research on brownfield projects themselves. The third section then discusses the manner by which these theoretical contributions translate into practical lessons for policy makers, public managers, and public administration educators focusing on addressing brownfield and related policy problems. Finally, the chapter concludes with a proposal for future research directions. Then, in a twist on the traditional dissertation format, a tenth chapter follows that presents a tangible way in which these theoretical and practical lessons may be translated into the public administration classroom.

Contributions to Public Management Theory. The research propositions specific to public management predicted that highly central public managers would effectively utilize policy tools to shape network rules in achieving project goals, particularly when overall management capacities were high (Howlett 2005; Matland 1995) and that relationship management strategies would likely serve to augment these institutional management strategies as project uncertainties increased (Klijn and Teisman 2003; Koppenjan and Klijn 2004).

My findings revealed that effective public management in the two successful projects occurred when high levels of political legitimacy accompanied management efforts, either through these central managers themselves as in the case of the strong relationship with citizens and city council enjoyed by the environmental manager in RPA or through the actions of political champions separate from the public manager such as the OSP director in BP2. This political power in both of these cases enhanced the ability of the public managers working a the center of project networks to more effectively coordinate information diffusion processes by increasing the priority of this information for network partners. In each case, the potential consequences of network partners not doing so included exclusion from the project or diminished relationships with key political stakeholders. For example, in RPA, the city council president realized the importance of maintaining positive relations with BANG and the citizens BANG represented and made sure that the environmental manager had access to all the information required to do so. This included access to public works information, to environmental engineering information, and to the homebuilders themselves. In BP2, the OSP director specifically championed the project to a range of network actors by using his political influence to alter internal budgets to force cooperation of other agencies with the project manager and to coerce non-city partners to comply by threatening their standing in the eyes of

the mayor office for future projects. In RPB, the negative case compared to these two positive cases, the community development managers largely drove the project and, although they received approval from city council to do so, the city council president herself observed that one reason for project failure was the lack of assertive political support on behalf of the mayor, city council, or any visible citizens group. The effects of this were seen towards the end of RPB project processes when last minute city efforts to retain commitment of the developer failed. It is possible that a concerted political push to keep the developer engaged may have increased chances for success.

Accounting for the influence of political power in enabling the efforts of highly central public managers to success, integrating findings about project network structures, policy tool use, and network management behaviors across the case studies revealed key differences in how policy tools were used in public management practice by highly central public managers (identified in Table 9-1) as they related to project outcomes.

Table 9-1: Highly Central City-Level Public Managers by Project

RPA	**BP2**	**RPB**
Senior Environmental Manager	OSP Director	Environmental Manager
Community Development Manager	Housing Project Manager	Economic Development Manager
	Environmental Manager	Community Development Managers

First, policy tool selection by these managers and the resulting institutional management impacts mattered. Tool selection impacted actor behaviors both directly and indirectly with the anticipation of policy tools being implemented incurring ripple effects, both positive and negative, experienced further downstream in project processes. In RPA, an important critical decision shaping project outcomes was the environmental manager's selection of the state ERP

policy tool package as the means by which the property would become remediated. The anticipation of the fiscal and regulatory tools captured in the ERP enabled the central public managers to leverage early commitment by key project partners that spanned both the remediation and redevelopment expert domains. The probability that remediation funding would occur and liability releases obtained convinced city council to allocate up front costs and the homebuilders association to commence discussions about participating.

This decision to obtain ERP funding for RPA also reinforced the network-centric position that the senior environmental manager maintained throughout the entire project. With NYSDEC and county health regulations requiring that he act as the go between for the city, state, county, and private consultant, and city council compelling him to link directly with the neighbors, this manager accumulated the project knowledge and relationship ties the community development manager subsequently needed to pursue the redevelopment portion of the project. Conversely, influences of policy tools early in project processes may also have negative impacts on project outcomes. The selection of the Petroleum Spills program in RPB as the regulatory tool addressing remediation ultimately led to a less than satisfactory situation for potential developers regarding liability and design restrictions. In addition, the short turn-around of NYSDEC approvals that accompanied the Spills Program did not allow sufficient time for city officials to fully comprehend the environmental situation and prepare for the impacts that would have on developer interests. This policy tool package failed to effectively bridge the gap between remediation and redevelopment.

However, my findings indicated that, while policy tools are necessary for public managers to secure resources and address network partner concerns, they are not, by themselves, sufficient for creating positive brownfield project outcomes. This is clearly evident in the RPB

case where the developer, the city economic development manager, and the union pension fund directors engaged in intense negotiations to identify and innovate a number of city-level liability, insurance, and financial tools to bridge differences. Despite these efforts, the policy tools could not address the growing project uncertainties and the redevelopment fell through.

The insufficiency of policy tool strategies to achieve project goals suggests that public managers generally face uncertain prospects for achieving brownfield outcomes but the data in my cases also revealed the extent to which relationship management strategies can catalyze the effectiveness of policy tool approaches. For example, the public management team in RPA achieved outcomes by integrating relationship management strategies into the use of policy tools, leading to a graduate decrease in tools required at the tail end of project processes. The trust developed between BANG and the city and, subsequently, the city and the homebuilders, heightened stakeholder satisfaction with project processes and enabled collaborative decision making about multiple aspects of the project including end use designation, end use design, policy tool selection for funding construction processes, and the marketing and sales of the newly constructed homes. While two important factors assisting the development of this trust were the preexisting relationships between the development community and the mayor's office as well as amongst the public managers from the environmental and community development agencies within the city, multiple new relationships occurred unique to this project that further enhanced the ability of the core public managers to access the information needed to drive processes forward. Even the consulting engineers hired by the environmental manager contributed to positive relationship building through their constant presence at BANG meetings and their ability to communicate technical information regarding remediation and engineering to non-expert audiences.

While RPA showed that trust between network actors positively impacts policy tools selection, RPB contained evidence that policy tool selection can be used to generate trust, even if the overall strategy fails to deliver the desired project outcomes. In this case, the economic development manager operating at the center of the network during the Construction Planning phase worked through the city legal counsel's office to innovate a large number of policy tools in a short amount of time in an attempt to address an increasing number of lender and developer concerns. While the strategy ultimately failed, the show of effort and reciprocity on behalf of the city improved the developer's perception of the city's public management integrity, subsequently increasing his trust in their abilities.

Yet, my findings show that relationship management does not need to be the primary emphasis of public management behaviors, as indicated in BP2. The success of a more assertive use of policy tools in BP2 by the OSP director to compel redevelopment amidst financial and market uncertainties only succeeded when accompanied by his ability to use political power to to push project partners into allocating resources and participating in redevelopment processes. While he did successfully frame the project as a must-win situation for the surrounding neighborhood to appeal to a sense of common good, he still needed to coerce specific actors into compliance with his goals.

Based upon these findings, it is very important that public management scholars examining networked governance of complex policy problems not advocate for policy tool or public management-only explanations for policy outcomes but that they support an integration of the two approaches. In addition, these researchers must incorporate political influence into their network mapping techniques in order to discern the extent to which institutional and relationship management strategies influence network performance and project outcomes. Understanding the

ways in which this influence can be both integrated into and decoupled from public management activity will enhance the explanatory power of models of public management as they relate to networked governance. It is important to keep in mind that the generalizability of this contribution must be couched in the fact that my findings derived from data from a limited set of cases based in only two cities. However, future study not paying closer attention to the relationship of politics and management at the local level will miss an important potential part of the management puzzle.

Contributions to Brownfield Remediation and Redevelopment Theory. My findings also provide theoretical contributions to scholars embedded in the study of brownfield projects and processes, particularly regarding the extent to which brownfield projects consist of a dynamic set of networked relationships that evolve over time. This brownfield project model runs counter to prevailing notions these processes occur primarily through dyadic relationships between cities and developers commonly known as "public-private partnerships". While degree of engagement of private lenders, investors and developers is necessary for the types of projects I examined, each case provided clear evidence that relationships in these projects actually occur between city environmental, community development, public works, and economic development officials, federal and state environmental and health regulators, mayors, city council members, governors, citizens, consultants, subcontractors, lenders, developers, and future redevelopment users – all of whom play a role in shaping project processes and outcomes.

Looking at these projects through a network lens across sequential project phases highlighted the usefulness of social network analysis techniques for measuring degrees of embeddedness of different brownfield project actors and their influence on project outcomes. Identifying who was most consistently active at the center of project processes across phases

provided information about the locus of project knowledge and the nature of project decision-making. It also allowed for analysis of other influences on policy use and project outcomes such as political pressures, resource exchanges, information sharing, and the entry and exit of project actors to and from the project network.

In addition, social network analysis showed the extent to which positive, productive relationships between project actors internal to the city mattered for when the city engaged in negotiations with external actors – the Rochester community development manager's "two octopuses." For example, the ability of city managers across departments during RPA to coordinate their actions internally led to positive perceptions of city performance from both citizens and home builders, increasing the willingness of these actors to collaborate with the city. In contrast, the disjointedness of actors across city agencies in BP2 incurred by poor communication structures and low citywide management capacities diminished lending and development partner confidence in city abilities to follow through despite the fact that these partners expressed support for individual efforts. This lowered confidence contributed to a management environment where non-city actors were reluctant to participate, requiring that the OSP director had to leverage his political authority to compel processes forward.

Examining brownfield project network structures over time also revealed the extent to which project actor turnover impacted knowledge sharing across project phases. The absence of consistent information diffusion from the center of the network across project phases diminished the abilities to achieve remediation and redevelopment outcomes, particularly in projects characterized by high degrees of environmental uncertainty such as BP1 and RPB. My findings also suggest that brownfield scholars explore the role of private consulting firms and multi-disciplinary public managers in enhancing project management efforts. The environmental

manager in RPA showed a unique ability to retain his network-centric position across all project phases regardless of the expert orientation of that phase, providing a high level of information consistency and network stability. His ability appeared to be enhanced by efforts made by the environmental consultant he retained to manage remediation and, subsequently, redevelopment processes.

Brownfield researchers should follow the lead of this research and examine brownfield projects through a social network lens. Doing so will reveal key phenomena that would otherwise be missed, such as the role of city-level internal coordination, the range of stakeholder influences on project outcomes, and the extent to which actors entering and exiting the project impact management processes.

Lessons for Public Administrators and Policy Makers. Several lessons for practitioners arise from these contributions to theory. First, public managers tasked with leading networks comparable to those found in brownfield projects should be able to identify the presence of political power in the network. This power may be found in diverse places such as elected officials, citizens, and coalitions of actors who control key political resources. Then, these public managers should find ways to tap into these power sources to provide greater political legitimacy for their strategies and actions.

Second, efforts should be made by city leaders to preserve institutional memory of network processes should turnover in central network actors occurs. Doing so is particularly important for maintaining the internal and external relationships necessary to facilitate access to key resources and policy tools. Maintaining this memory and momentum of relationships will minimize the disruptions observed when highly central public managers exited the project networks in BP2 and RPB.

Third, policy makers at the state and federal levels should consider the importance of sufficiently funded policy tool programs for enhancing local-level public management efforts. Neither of the municipalities examined in this study would have initiated these projects if it weren't for some form of financial assistance, or at least promise of financial assistance, for the environmental portions of the project. Accessing these policy tools, in turn, enabled the municipalities in this study to leverage investment from private redevelopment partners. For example, the developer in RPB mentioned several times in his interview that, if the city had not completed the environmental assessment and remediation themselves, his firm would not have been interested in the property. This sort of response is significant given the challenges municipalities face in converting marginally marketable brownfield properties into something more useful. In addition, the study revealed that the influence of policy tools extends beyond their direct application to the task at hand. Depending on the opportunities and constraints they create, the anticipation of policy tool selection and the ripple effect for downstream project decisions can prove to be significant for project outcomes. Policy makers should consider both of these ideas when creating future policy tools.

Finally, upper-level administrators in municipal governments that actively pursue municipality-led brownfield projects should build the capacities of their project managers to be equally adept with both the environmental and construction engineering portions of these projects. My findings support this suggestion by revealing the extent to which network stability and information consistency mattered, particularly regarding stakeholder satisfaction with project processes. In RPA, project actors frequently commented on the efficiency and effectiveness of information sharing by city actors while in BP2, where process satisfaction was low, non-city actors lamented the absence of such well-informed, centralized public managers.

Public administration educators may further enhance their pedagogical efforts by considering the network management findings presented in this study. I encourage all faculty members and skills trainers to explore the teaching case included in the next chapter of this dissertation as one means by which to convey the complexity, and importance, of influencing network actors with an integrated relationship and institutional management approach.

Implications for Future Research. While my research contributes to public management theory regarding the integrated use of policy tool and relationship management strategies in network situations, much work remains to be done and many questions remain. For example, if the location of political power relative to the public managers occupying network-centric positions matters when determining the efficacy of management efforts by these managers, is it wise to continue to decouple political power from management practice in public management research? In what ways should the political variable be incorporated into the modeling efforts undertaken by network scholars seeking to generalize network management findings to large population of cases? If changes in network structures and composition over time shaped how outcomes occurred in brownfield projects, do they also shape outcomes in other types of public management networks? Finally, if multi-disciplinary knowledge sharing matters in the relatively short-term management environments of brownfield projects, what happens to its important when the time horizon expands to the generation level as in the case of climate action planning and sustainable community development?

Multiple avenues exist for addressing these questions. First, new cases should be added to this research from across different policy, market and management contexts to assess the transferability of findings. The more frequently the critical factors identified in these projects apply in explaining outcomes, the greater the external validity. Second, the theoretical

framework integrating policy tools, public management, and networks should be applied to different network contexts such as those occurring in the more frequently studied social services domain. Doing so will enable further exploration of how evolutionary processes impact management efforts to achieve outcomes. Third, and of great interest to my own immediate research agenda, researchers should examine the role of multi-disciplinary individuals in current municipal efforts to develop climate adaptation plans and obtain sustainable community funding to determine the extent to which these types of individuals, and they means by which they enter the project network, matter. With increasing attention paid to local government action on wicked problems that combine the environmental, social, and economic domains as climate change and sustainability, such multi-disciplinary individuals may be key to planning and implementation successes.

Concluding Thoughts. Brownfield cleanup and redevelopment projects provide an important arena for examining how public managers leverage policy tools and network relationships to achieve project goals that span environmental, economic, and development domains. The ability to understand these interactions becomes extremely important as more and more local governments begin to tackle complex policy problems. Hearkening back to the real estate manager from the city of Rochester who likened work on such projects as "two octopuses making love," we can begin to hope that, by simultaneously focusing on networks, policy tools, and public management, we will learn to better organize the multiple arms supporting these complex project processes in a manner that truly serves the public interest.

CHAPTER TEN APPLYING RESEARCH TO TEACHING PRACTICE

The following chapter serves as an example of how the findings generated by this research contribute to public administration education practice. The teaching case and role play simulation that follows was developed for the E-PARCC Third Annual Teaching Case and Simulation Competition of the Program for the Advancement of Research on Conflict and Collaboration at the Maxwell School at Syracuse University. Entitled "Addressing ELCA", this teaching tool was loosely based upon the RPA case study and provides the educator the means to teach stakeholder meeting design and facilitation, interest-based negotiation, and skill sets associated with effective relationship building management behaviors.

Addressing ELCA: An Exercise in Designing and Facilitating Stakeholder Processes

Summary

The ELCA street contracting company and their property in the middle of a working class neighborhood of the mid-sized older industrial city of Lansdale have become more than an out of place neighbor – they have become a noise nuisance, an environmental health hazard . . . as well as a political headache for city officials. The City Council president asks two mid-level public managers to convene stakeholders for a brainstorming/relationship-building meeting to determine the best use of this property assuming that both the resources and the authority will be found to obtain, remediate, and redevelop the property. These two managers decide to host the first of what they hope to be a series of stakeholder meetings that will guide the project.

This simulation provides students with the experience of designing and facilitating a citizen/stakeholder meeting that occurs in the early stages of a long-term collaborative project process in which economic, environmental, and social interests converge.

The activity is set up so that each student learns elements of stakeholder meeting design and implementation through readings, lecture, practice, and reflection. Part A presents the stakeholder situation and instructs students to plan out their own process for facilitating the first stakeholder meeting. Part B then contains role sheets to be used when pairs of students implement the process design they developed. Part C includes the second half of the case study, telling how the collaborative network in the real life case evolved and produced a successful outcome. Part D contains the general instructions for the instructor as well as content and resources about stakeholder processes, meeting design, facilitation, and brainstorming to be used in a pre-exercise lecture.

After completing the activity, students will have a better understanding of the complexities behind stakeholder engagement in multi-actor environmental and land use planning processes.

Part A: Case Scenario and Process Design Instructions

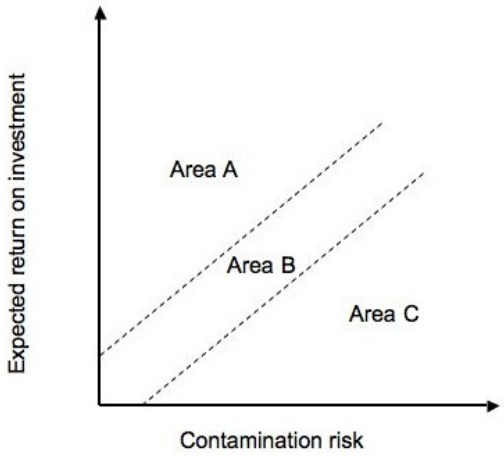
ELCA – A Brownfield in Our Midst

"Brownfields" as barriers to community sustainability

In the face of today's economic crisis, many municipalities in the United States with strongly industrial pasts face difficult challenges in maintaining delivery of government services and ensuring the quality of life expected by taxpaying residents. Once heralded as prominent centers of production and manufacturing up through the 1950s, these municipalities carry the burdens of decaying water, sewer, and street infrastructures, aging housing stock, and inadequate space for new commercial and industrial employers (Vey 2007; Goldman 2007).

Embedded within the economic struggle of older industrial cities is the extensive soil and water contamination resulting from decades of unregulated commercial and production activity. Termed brownfields, properties containing this contamination lie underused because of fears, real or perceived, that they are contaminated with environmental pollutants[25]. Some of these properties exist in prime locations where private investors willingly acquire and transform them into more productive spaces while others are contaminated enough to qualify for state and federal hazardous waste cleanup programs such as Superfund. In between lies a third category (Area B in Figure 1) of weakly marketable properties for which market forces alone do not compel their cleanup but the regulatory hammers of Superfund laws do not reach (Davis 2002; Howland 2003; Silverstein 2003). Brownfield public policy programs target these target properties by diminishing barriers for private and public investment in cleanup and redevelopment.

Figure 1: Property Marketability and Brownfield Redevelopment (derived from Davis 2002, and Howland 2003)



[25] http://www.epa.gov/brownfields accessed May 13, 2009

The following exercise is based upon a real story of such a brownfield cleanup and redevelopment project located in a mid-sized northeastern U.S. city. The identities of the city and the individuals involved have been altered to uphold confidentiality agreements and a few details have been adjusted to raise the pedgogical usefulness of the case.

A Neighborhood Unsettled

In 1996, a group of neighbors in the city of Lansburg had had it. For the past fifteen years, they had put up with a growing nuisance based in their backyard. In the middle of their 1940's working class neighborhood was a six-acre property owned and operated by two brothers as a staging site for their asphalt and construction contracting business. Grandfathered into the neighborhood when the city first zoned the area residential, the property had a long history of light industrial and large vehicle use, but the neighbors had reached their limits.

Roy Lagin, whose backyard ran right up to the fence surrounding the overgrown property noted an increase in what sounds like digging with a backhoe at around 3 o'clock in the morning, leading to suspicions that something illicit was being buried there. Michelle Huggins, located on the other side of the property has been increasingly concerned about gunshots emanating from the middle of the ELCA property as well as the heavy petroleum smell that seems to fill her kitchen on warm summer days. Several neighbors on the down slope, including Troy Schultz, started documenting shimmery run-off every time there was a substantial downpour. After initial phone calls to the city did not elicit any response, neighbors brought their complaints to the property owner, only to be laughed at and, in some instances, threatened. Small acts of vandalism started to occur on the properties of these most vocal residents. Candace Jones, who had only recently moved to the neighborhood two years ago, was one such neighbor and she decided it was time to get organized.

> I got really involved with the two women sounding the call to action. We called the committee neighborhood together and started meeting down at the library every month to review what little bit of information we had. We wanted to figure out our next approach in going after the city to clean up the property and realized that we had to be recognized as a formal representation for the neighborhood. We knew that once Councilwoman Suffolk started recognizing us as a formal neighborhood committee, we would get a little headway.

Armed with photos, audio recordings, and petitions from neighbors about the various nuisances, Candace Jones and her increasingly organized Oceanic Neighborhood Association colleagues caught the attention of (City Council President, and, consequently, their representative) Dawn Suffolk, and brought her to witness things first hand. Shocked at the conditions and concerned for political fall out, Suffolk was immediately convinced that the city had to address what was quickly becoming a politically explosive issue. Suffolk, in consultation with Mayor Byron Jordan, enlisted City Environmental Manager Dmitri Brown and City Real Estate Manager Paula Rodriguez to look into possible options for acquiring this property and finding a better use for it.

An untested challenge

In the past, Rodriguez's office had always avoided acquiring properties with potential environmental contamination because of the possible liability headache, the politically sensitive issue of city land ownership and, last but not least, the unknown but likely large costs of remediating soil and groundwater contamination. When properties were acquired for this purpose, either the property was determined to be so highly contaminated that it qualified for state and federal hazardous waste dollars or there was a private partner for whom the property held enough potential return on investment once redeveloped that they were willing to assume the cleanup and its costs. However, with relatively moderate contamination likely and the location of the property amongst $40,000 single-family homes, the property in this case did not fall in either of these two categories. Where, then, would money be found for remediation if the city went forward with some sort of property acquisition strategy?

Fortunately, help appeared at the state level. At around this time, Brown had been carefully watching a new policy program at the state level, the Municipal Brownfield Cleanup (MBC) program. This program proposed to provide money for municipalities to clean up environmentally polluted properties they acquire that have potential positive reuses. If this legislation were to pass, there would be a program available through which municipalities could be reimbursed for up to 75% of total cleanup costs. While this was promising, it still relied upon City Council to agree to the up front financial and political costs of acquiring the property. If anything, it was worth a shot . . .

Acquiring and assessing the property

Having pitched the idea of applying to the new MBC to Councilwoman Suffolk and Mayor Jordan for covering cleanup costs, Brown and Rodriguez obtained the go-ahead to acquire the property and investigate the application further. Coordinating with the city Real Estate office, the Mayor's office, and the city police, Rodriguez began the process of buying out the brothers and relocating their asphalt business to a new location outside the city limits. This freed up Brown and the environmental engineering consultant retained to run initial soil and water tests, Ted Pomeroy, to enter the property and create an initial assessment of the contamination (for extent of eventual materials removed, see Appendix). Drawn from their report:

> "There were two dilapidated buildings in the central portion of the Site which were used for office space, warehouse storage and equipment repair and maintenance. There were also various above and below ground petroleum storage tanks and a construction and demolition debris landfill. In addition, various metal drums lay exposed throughout."

There was clearly work to be done.

An invitation to meet

In reviewing the requirements and making an initial consultation with State Environmental management Department (EMD) representative, Dan Simmons, Brown and Rodriguez discerned that a required element of the application was as follows:

III. Contemplated Use

> The Municipality represents that the Site will be used for: _____ (the Contemplated Use), and Municipality agrees for itself and for its lessees and successors in title that any proposed change to the Contemplated Use shall be governed by the provisions of EML 35-3992 and any implementing regulations thereto.

This stipulation, in combination with a requirement for public participation (see Appendix) in the grant application, meant that a proposed end use must be in place as part of the application process and that engaging the neighbors to be part of it would be an important next step. Knowing that the state would be looking for a slam-dunk application to kick off the new MBC reimbursement program, Brown and Rodriguez realize that a gathering of stakeholders would potentially help with application development and, if granted, subsequent remediation and redevelopment implementation. This was not to be a standard public meeting the two public managers had become accustomed to where any and all attendees were brought together to provide data and input as part of a regulatory requirement . . . this was to be the start of what could be a long working relationship with a variety of actors on what could be an award-winning project for the City. Therefore, determining who should attend was a key first step.

The first list came from Councilwoman Suffolk who felt strongly that Candace Jones, three of her Oceanic Neighborhood Association leaders, and a representative from the Southwest Lansburg Neighborhood Association (SLNA) be there. In addition to Jones, Suffolk's list included Michelle Huggins, Troy Schultz, and Roy Lagin as well as Harry Frederickson from SLNA.

From the city, and in addition to themselves and Councilwoman Suffolk, Brown and Rodriguez decide to invite their colleague from the City Housing office, Chen Kim. Kim had been instrumental in the property acquisition process and would likely be helpful in thinking through the permitting issues of possible end uses. Brown knew that Ted Pomeroy, whose environmental engineering consulting firm had been retained by the city for the remainder of this project, would need to be there as a contracted agent of the city. Brown knew full well that he, as the environmental manager, would need an outside person like Pomeroy to help explain what would likely be complex technical data as remediation moved forward and to think through what the remediation plan might look like based upon the selected end use.

Brown and Rodriguez also decided to invite Dan Simmons from the State EMD as the person who would likely be reviewing the initial application in hopes that he would have some ideas for the project and that he would be impressed by the extent to which the City was engaging with citizens so early in the application process.

Finally, at the last minute, Maria Echevarria from Mayor Jordan's office called saying that the Mayor would like Jeremy Baffin of the area Homebuilders Association to sit in. Thinking that the Mayor's office might already have some ideas for what to do with this property, Brown and Rodriguez send Baffin, as well as Echevarria, an invitation.

<u>Preparing for the meeting</u>

Pushing back from his desk, Brown stretched and looked out the window towards the part of the city he knew contained the ELCA property. This upcoming stakeholder meeting was both exciting and daunting. Exciting in that it could be the beginning of a new set of tools and processes the city could use to address it's significant contaminated property problem. Daunting in that he knew that each individual invited, including himself, had a strong interest in a wide array of outcomes. Paula Rodriguez and he agreed to facilitate the meeting together, knowing that sharing responsibility for the meeting would enhance their efforts. However, now that the meeting neared, Brown realized that they should have asked Councilwoman Suffolk for approval to hire an outside facilitator, but it was now too late to do so. How, then, was he going to handle the meeting? How could he insure that all voices would be heard in such a way that they would be willing and interested in working together in the long-run, assuming that the financial resources came through? How would he balance the broader city and state level political interests with the narrow neighborhood interests? In less than two days, he would know the answers to these questions.

- -

Your task is to design and facilitate an initial stakeholders meeting regarding the question "what should be done the ELCA property after it has been remediated?" The purposes of this meeting are threefold:

- To allow stakeholders to meet each other;
- To generate a list of ideas for property use and their subsequent pros and cons from the perspective of each stakeholder; and
- To earn their commitment to attend a follow-up meeting.

Using what you know about facilitation and incorporating what you understand about this case, design a meeting process that a facilitator may implement with stakeholders in order to arrive at the other end with the desired deliverables listed above. This meeting process must include the following components:

a) An ice breaker
b) The establishment of ground rules
c) A structured process wherein participants have the opportunity to generate ideas for uses of the ELCA property while being consistent with the ground rules.
d) A structured process wherein participants have the opportunity to list the pros and cons of each idea while being consistent with the ground rules.
e) <u>For advanced groups</u>: A structured process wherein participants have the opportunity to brainstorm, evaluate, and decide the next steps in the collaborative process.

Remember that this is the first meeting of potentially many for this group of stakeholders, so starting out on the right foot with minimal conflict will be very desirable. Write out this process design in a scripted manner that a professional facilitator could pick up and use with minimal coaching. Upon completing your process design, write up a rationale for the components you include and the order in which you include them. Show how your process design meets both the short-term goals of the meeting and the longer-term goals of building trust and strengthening stakeholder relationships.

Part B: Roles and Role Play Instructions

Notes to Instructor: The following thirteen characters represent the array of stakeholders most relevant to our case of remediating and redeveloping brownfields for residential end use. While every role may be used, the intent of providing thirteen is to allow flexibility to meet your course needs. If the primary focus of your course is on citizen engagement, then most role-play participants should assume one of the citizen roles. If your primary focus is on interorganizational power dynamics or the complexities of political conflict, then more of the public agency, elected official, and private firm stakeholders should be incorporated. Table D suggests two combinations of roles and possible processing questions that may accompany them. **Caution: Role sheets are written to include interpersonal relationship histories.** It is important to address inconsistencies that will occur when certain roles are removed or added to the role play exercise.

Table D: Two possible role combinations

Roles Characters	Affiliations	Citizen-focused	IOR-focused
Dmitri Brown	City Department of Environmental Quality	X	X
Dawn Suffolk	City Council	X	X
Candace Jones	Oceanic Neighborhood Association	X	X
Chen Kim	City Department of Housing	X	X
Paula Rodriguez	City Office of Real Estate	X	X
Maria Echevarria	Mayor's Office	X	X
Roy Lagin	Oceanic neighborhood	X	
Troy Shultz	Oceanic neighborhood	X	
Michelle Huggins	Oceanic neighborhood	X	
Harry Frederickson	Southwest Lansdale Neighborhood Association	X	X
Dan Simmons	State Environmental Management Department		X
Ted Pomeroy	Private Consulting Firm		X
Jeremy Baffin	Homebuilders Association		X

Role-play activity*:* The purpose of having students take on the roles as described in this section is to create a case-context in which two of your students can implement their meeting process design. Since the focus of the activity is on the act of facilitating, it is important that students taking on stakeholder roles do not hijack the activity. Depending upon the maturity level of the students, it is possible for charismatic students to overwhelm quieter students, for students to not "let go" of their role when it is time to end the activity and begin processing, for role stereotyping to occur, and for students to be distracted by character conflicts and forget to respond to the facilitators actions[26]. To avoid these events, **it is important to instruct students**

[26] http://serc.carleton.edu/introgeo/roleplaying/challeng.html (accessed 2/24/10)

to not only incorporate their character's positions and interests in their actions but to also respond to the actions of the facilitators. As help towards this goal, none of the character descriptions include information about direct conflict with the facilitators.

Role-play alternate activity*:* In the primary version of this activity, two of the project stakeholders, Dmitri Brown and Paula Rodriguez, serve as the meeting facilitators. If you have the time and interest in rotating facilitation duties amongst multiple pairs of students, you may assign students to act as facilitators without having an additional role to play. In this instance, inform the students that, instead of assuming facilitation responsibilities themselves, Brown and Rodriguez obtained permission and funding from City Council to hire outside facilitators. In this situation, multiple iterations of the meeting may occur by having students rotate characters.

Non-role-play alternate activity*:* The roles may also be used as a case study without actually playing out the meeting. Instead, you may have students read through a subset of roles and identify potential conflicts and issues that may exist between stakeholder positions and interests. Then, tell students to review their meeting process design and analyze how their design may or may not minimize, address, or ignore these conflicts.

Role descriptions*:* Role descriptions are organized in alphabetical order. Each role sheet contains:

- A description of the personal positions and interests for each character;
- The organizational positions and interests influencing them (if relevant);
- Information about the project that that character may only know themselves; and,
- Any relevant interpersonal relationship information.

Role-Play Instructions for All Participants

Your role-play character sheets are confidential and should only be viewed by yourself. Please take your time in reading through it and pay attention to your personal positions and interests, your organizational positions and interests, any project information you bring to the table, and the history of relationships you share with other stakeholders who will be attending.

It is extremely important that, in performing your role, you enact these characteristics while you simultaneously respond to those around you, especially the facilitators. The more realistically you respond to their efforts, the deeper and richer the post-activity conversation will be.

YOU ARE INVITED!
ELCA PROPERTY COMMUNITY STAKEHOLDER MEETING
7PM – OCEANIC COMMUNITY LIBRARY

Dear Stakeholder:

We are enthusiastic for you to participate in our upcoming stakeholder meeting addressing the future use of the property formerly occupied by the ELCA Corporation. As you well know, this property has been acquired by the City of Lansdale for the purpose of environmental cleanup and redevelopment. While action has already taken place regarding assessment of environmental contamination, no decisions have been made regarding how this property will be used.

With your input and assistance, we hope to generate some concrete ideas that meet all of our interests. To achieve this, have asked two facilitators to assist and have provided additional information that may help you think through the best use of this property embedded in the Oceanic Neighborhood.

We look forward to seeing you at the Community Library.

Sincerely,

Dawn Suffolk
President, City Council

ELCA PROPERTY COMMUNITY STAKEHOLDER MEETING
SUPPLEMENTAL INFORMATION

City of Lansdale Standard Brownfield Project Processes

Phase	*Stage*	*Description*
Cleanup	Site Identification	Potential developers (public and private) identify contaminated sties of interest with assistance from public brownfield directories or through marketing by current property owners.
	Initial Site Assessment – Phase I Investigation	Assessing to determine whether contamination is present through historical records and examination of neighboring sites.
	Detailed Site Assessment – Phase II Investigation Remedial Assessment	Environmental engineers sample and analyze chemical parameters of site if Phase I Investigation suggests potential for contamination.
	Economic Assessment and Planning	**Assessing for potential economic return vs. cost of restoring site to productive use. Sites categorized into viable, threshold, and nonviable groups according to this potential/cost ratio. End use plans generated.**
Redevelopment (Overlap) *Cleanup*	Project Development and Financing	Assuming financial feasibility studies are complete, developers arrange financing for clean up and redevelopment. This is a likely stage for meetings between multiple stakeholders.
	Cleanup Planning and Execution	Selecting and implementing a clean up plan in compliance with regulations.
Redevelopment	Redevelopment of Site	Altering the site for suitability to its new use.

State Contamination Limits for Residential Use of Property

Total Polycyclic Aromatic Hydrocarbons	5 ppm in soil
Mercury	1 ppm in soil
Benzene	60 ppb in soil
Benzene	1 ppb in groundwater
Toluene, ethylbenzene and xylene	5 ppb in groundwater

LANSDALE HOUSING MARKET INFORMATION

The following table summarizes the market potential for housing development within the City of Lansdale. The capture rate is an estimate of the percentage of new units the market is likely to support each year. The number of new units is the raw number based on this percentage.

Annual Capture of Market Potential

Housing Type	Income Target	Number of Households	Capture Rate	Number of New Units
Rental Multi-Family (lofts/apartments, leaseholder)	Below Market	3,670	5-10%	184-367
Rental Multi-Family (lofts/apartments, leaseholder)	Market Rate	4,620	5-10%	231-462
For Sale Multi-Family (lofts/apartments, condo/co-op ownership)	All Ranges	2,380	5-10%	119-238
For Sale Single-Family Attached (townhouses/rowhouses, fee-simple/condominium ownership)	All Ranges	1,650	5-10%	83-165
For Sale Single-Family Detached (urban houses, fee-simple ownership)	Below Market	1,410	5-10%	71-141
For Sale Single-Family Detached (urban houses, fee-simple ownership)	Market Rate	3,520	5-10%	176-352
Total		**17,250**		**863-1,725 units**

Source: Zimmerman/Volk Associates, Inc., 2007.

The following table describes the strategies utilized by the City of Lansdale Division of Community Development in assisting its neighborhoods. The Oceanic Neighborhood is considered to be on the boundary of Transitional Low and Transitional High. The Southwest Lansdale Neighborhood is considered to be on the boundary of Stable and Exceptional.

	Neighborhood Type					
Type of Activity	Exceptional	Stable	Transitional High	Transitional Low	Depreciated	Distressed
Community Organizing	X	X	X	X	X	X
Public Improvements	X	X	X	X	X	X
Vacant Land Management				X	X	X
Open Space Planning				X	X	X
Expanded Housing Services			X	X	X	X
Focused Rehabilitation		X	X	X	X	
Land Banking					X	X
Mixed-Income Development			X	X		
Economic Development			X	X	X	X
Mixed-Use Development		X	X	X		

Source: Interface Studio

THE ELCA PROPERTY IN THE CITY OF LANSDALE

Exhibit A: The Neighborhood Brownfield

Dmitri Brown (City Environmental Manager)

Male, Age 45

How did you get so involved in this project so quickly? Part of the reason is that you always saw your position at the city as more than the environmental "cog" in the wheel that addresses past and present environmental problems. Instead, you have always felt that your department should be more proactive in seeing the larger picture of environmental projects, extending services to the social and economic aspects of property remediation. Therefore, you are happy to have the opportunity to engage with this stakeholder group so that you can use your interdisciplinary knowledge and skills to communicate across interests.

Personal Background: You have spent your entire career working for the city of Lansdale in its Department of Environmental Quality (DEQ) as both a budget analyst and an environmental project manager. Your commitment to quality of service has grown over time and you have developed a reputation for fairness and thoroughness in your work. While you are not specifically trained in negotiation or facilitation, you enjoy working with citizens and representatives of business and social interests and have many strong relationships built up over time, particularly with state EMD officials involved with funding contaminated property remediation.

Organizational Background: The DEQ has positioned itself over the years as central in economic and community development efforts but would like to showcase their ability to play on a bigger stage. The size of the ELCA property provides a great opportunity to do so, particularly with the introduction of the new EMD brownfield program. Knowing that many eyes at the state level would be on them as the first project in this program, the DEQ would like to maximize cleanup efforts depending upon the selected end use. Residential cleanup would require the greatest extent of cleanup with recreational a close second. Commercial or industrial uses would require less extensive cleanup.

Project Information: At this point in time, most of the environmental information you have about the property comes from the private consultant the DEQ contracted to conduct the Phase I and Phase II Assessments, Ted Pomeroy.

Interpersonal Relationship Information: Through extensive project work within the city of Lansdale, you have developed strong relationships with Paula Rodriguez in the Office of Real Estate, Dan Simmons of the State EMD, and Ted Pomeroy with the private consulting firm you have retained.

Dawn Suffolk (City Council President)

Female, Age 58

Personal Background: With the ELCA property sitting smack in the middle of your district, you are very interested in seeing what is currently an eyesore and a popular joke in the media turn into a very successful project pleasing to all involved. After twenty years serving on City Council, you plan to step down at the end of your current term (unknown to all but family). Therefore, you are more willing than usual to take political risks in moving this project forward. This means that you are more willing to back the citizen neighbors, in this process as much as possible, even if it will rule out ideas that may be more lucrative for the city. These individuals had suffered long enough next to this property under your watch so you are more than willing to go to bat for them. If it turns out that the Oceanic Neighborhood Association has no clear ideas, you would like to see housing for seniors in this neighborhood.

You welcome the fact that the meeting will be facilitated and look forward to seeing how the facilitator has planned their meeting process. If asked, you are interested in seeing strict ground rules set down that creates formal guidelines for who speaks when and how. When you run your City Council meetings, you require all members to first ask you for permission to speak. To you, this maintains order and respect.

Organizational Background: City Council, as the budget watchdogs for the city, would like to see potential end uses include options that are low-cost to the city. City Council trusts the abilities of city staff members to apply for and receive state and federal grants but would like to see more investment from the private sector in redevelopment projects. At the same time, City Council would like to see some sort of end use that would benefit the city in the long run, preferably by generating new tax revenue.

Project Information: City Council relies upon Dmitri Brown and Paula Rodriguez for project-level information.

Interpersonal Relationship Information: You are aware that members of the Oceanic Neighborhood Association do not have favorable views of you. While politically, this is not as relevant to you, you have a personal desire to leave your office on a positive note. In the past, you have butted heads with Candace Jones but are interested in making amends.

Jeremy Baffin (Home Builders Association Executive Vice-President)

Male, Age 42

Personal Background: Having caught wind of the ELCA property and the opportunities it presents from your friend the Deputy Mayor, you are attending this meeting to see if there is any hope that the city would be willing to figure out some way to turn it into market-rate housing. Personally, you think that there might be interesting ways to put suburban-style housing in the middle of a traditional, single family home city neighborhood.

You hear that the meeting will be facilitated and are unsure as to what that means. In your office, meetings seem to work best when the conversation guides itself without much formality or rules, but you are open to new experiences.

Organizational Background: The Association has been exasperated in the past by Mayor Jordan making several off-hand public comments that the environmental problems of urban sprawl around his city are largely due to home builders building too much new housing stock on cheap land further and further from city limits. No matter how many times it has been explained, the Association still could seem to get through to the Mayor homebuilders members largely do not work on projects within the city because ever single home building opportunity in the past fifteen years has been for single "in-fill" homes located in already existing neighborhoods – projects that do not attract most mid- to large-sized building firms. The ELCA property may be an opportunity to prove the Mayor wrong.

Project Information: Association members who have built infill housing in this neighborhood are familiar with the property values in the area of the ELCA property. As a result, they would only get involved if it seemed like there was to be a return-on-investment for houses sold. Based upon what you know about the neighborhood it is unlikely that, if homes were constructed on the ELCA property, they would fetch the prices necessary to turn a profit for Association members, especially if they were also responsible for street and sidewalk construction, as is the case in suburban developments.

Interpersonal Relationship Information: As inferred above, you have a good relationship with the Deputy Mayor but not so much with the Mayor and his assistant, Maria Echevarria. Echevarria has been known to lead the criticism of homebuilding as the cause of sprawl and you and she have sparred in the editorial section of the Lansdale Times. While you have never met her, you are interested in introducing yourself and seeing if you can push a few of her buttons, just for fun. In the big picture, you want to be on the Mayor's good side in case the ELCA property provides profit opportunities for your members.

Candace Jones (Oceanic Neighborhood Association Leader)

Female, Age 48

You are looking forward to the upcoming meeting because you see the project as an opportunity to finally have the city put its money where its mouth is and do something significant with this property. Having gotten to know neighbors who have fought with the city about this property for over fifteen years, you look forward to seeing some pay out.

Personal Background: You are vaguely aware of the situation at the state level where potential funding for property remediation may come down the line to help move this project forward. Your job as a management consultant has shown you that state grant programs across the board like to see active citizen engagement in the applications that come to them. When wearing your "neighbor" hat, you have a strong interest in seeing something quiet like a park or a senior living facility built on the property.

In your profession as a project manager, you are familiar with facilitation practice and don't like to experience what you consider to be "bad facilitation." If you feel that a facilitator is losing control of the group, you have no qualms about stepping in and taking over the process.

Organizational Background: Your new position as the de facto leader of the Oceanic Neighborhood Association puts you in the position of representing overall neighborhood interests. When wearing the "ONA" hat, you are compelled to put aside your personal interests.

ONA's interests are 1) to remove all contamination and potential health risks, 2) compensate any neighbors whose property has been compromised by the ELCA property, 3) find a non-nuisance use for the property once it is cleaned up, 4) find a use for the property that will stabilize property values, decrease crime, and enhance neighborhood aesthetics and, 5) obtain an apology from the City of Lansdale regarding the years of inaction prior to the meeting.

Project Information: You have no project information beyond a laundry list of past grievances of the ELCA owners compiled by neighbors that include:

- Backhoe digging at 3AM
- Mailbox sabotage of five neighbors who had called the police regarding disturbances
- Yard damage from illegal dynamite blasting
- Guard dogs barking all night long and escaping and terrorizing neighborhood pets
- Loud parties on the property
- Foul smelling run off killing flowerbeds

Interpersonal Relationship Information: Needless to say, you do not fully trust City Councilwoman Suffolk or any city employee to do the right thing for the neighborhood based on past performance. However, you are open to seeing what happens at this meeting. Your instinct is to resist participation so that you can observe until you are certain that the city is, indeed, serious about their intent to make a difference.

Ted Pomeroy (Consulting Engineer)

Male, Age 52

Personal Background: Having worked on a few projects before with Dmitri Brown and the City of Lansburg, you are familiar with the type of environmental assessment and remediation processes associated with city-owned properties and the technical nature of the data that ends up being generated and disseminated. However, you are unsure as to the extent to which you think non-experts should be involved in project implementation. While you have presented data at public meetings before it seems to you that anything beyond that setting would require a great deal of time and effort to keep citizens up to speed, especially on your behalf. If at all possible, you would like limited neighbor involvement, especially during environmental processes.

You are very familiar with what a facilitated meeting looks like and are appreciative that a facilitator will arrive with a meeting agenda.

Organizational Background: Your consulting firm has worked with the city on a number of environmental remediation projects and has built up good rapport by doing so. It is firm policy that field consultants show a good faith effort in working with citizens, but only as far as giving them information appeases them and quiets their complaints.

Being a large firm whose expertise extends to construction project management, there is a broader interest in seeing an expensive project selected for the ELCA property. The firm partners are certain that, if the field consultants do a good job on the environmentals, the firm would be in strong contention to pick up the lucrative construction sub-contract.

Project Information: Being the consultant for the Phase I and Phase II Assessments, you have all of the environmental information about the property. Based upon your work, you estimate that cleanup costs will approach $4 million based upon the findings in the table below:

Environmental Problem	**Amount**
Impacted Soils	18,200 tons
Construction and Demolition Debris	4,500 tons
Asphalt	375 tons
Asbestos Wastes	220 tons
Scrap Metal	70 tons
Municipal Solid Waste	27 tons
Tires	230 cu. yds.
Impacted Water	280,000 Gallons

Assuming that this project will be accepted into the State MBC program, the state would reimburse 75%, or $3million of these costs, requiring the City of Lansdale to locate $1 million in cleanup funding.

Interpersonal Relationship Information: You like working with Dmitri Brown and, as he is your client, you are prepared to do anything to support his efforts at the meeting.

Chen Kim (City Housing Manager)

Female, Age 33

Personal Background: You are pleased to have been invited to this meeting, knowing that the probability a property this large would open up in a residential area is a once in many years event. However, you are unsure how it might look to the public at large to be putting housing on top of what sounds like quite the environmental nightmare. Yet, you trust the skills of Dmitri Brown in handling environmental situations and envision a good space for filling crucial city housing needs once he and his consultant complete their work. Your personal interest is in filling what you see as a great need for livable senior housing in the city. This neighborhood is perfect for this housing type based upon its walkability to a range of services including a drug store, a diner, two churches, and a social services office.

You have attended several facilitated citizen engagement meetings before and have not been impressed with the ability of facilitators to contain rowdy attendees. You hope this meeting will be different.

Organizational Background: For several months now, the Lansdale Housing Department has been trying to keep up with the demands of a recent U.S. Housing and Urban Development grant requiring that a certain number of affordable housing units be constructed within the city by the end of the year. This property sounds like an ideal place to put up some of the newer condominium-style subsidized housing units preferred by HUD. With the increasing role HUD has been playing in the shrinking economy, pleasing HUD would be in your department's best interest. You are aware that this would likely mean that the City would remain owner and your office would help manage these properties, but the pressure of maintaining good graces with HUD is quite strong.

Project Information: You do not have any addition information about the property or project to bring to the meeting.

Interpersonal Relationship Information: While you are aware that your office has been in conflict with the city Real Estate Office over the proper allocation of resources for housing or for economic development, you hold no ill will towards the representative from Real Estate you know will attend the upcoming ELCA property meeting, Paula Rodriguez. However, you are not against arguing in opposition to her ideas of what the proper use of the property is.

Dan Simmons (State Environmental Management Department)

Male, Age 38

Personal Background: With 15 years of experience working at the EMD, you have become quite competent at working with local partners interested in remediating their contaminated properties. However, you have never been in charge of piloting a new program before and want to make a mark with the opportunity to find the first project for the new Municipal Brownfield Cleanup (MBC). For the upcoming meeting, you are very interested in listening and learning to see if this project might qualify.

In your mind, a high quality project is one where the municipality has the resources and capacity for environmental remediation project management, a positive relationship with the private development community in its jurisdiction, and skills to reach out to affected citizens. You have worked with the City of Lansburg before and have had positive experiences so are curious to see how they handle this brainstorming meeting. If asked for input during the meeting, your interest is to see this property cleaned up in a manner appropriate to the designated end use. If the end use is to be residential, the cleanup must be extensive and expensive. If the end use is to be light industrial, the cleanup will be less extensive and will require less up front money from the city.

Your only stipulation regarding end use is that the end use be agreeable to as many stakeholders as possible.

You take it as a good sign that a facilitator will be running this meeting and look forward to the information you anticipate will become revealed in the facilitated process.

Organizational Background: The EMD is traditionally neutral regarding local projects once projects have been accepted into an EMD policy program. Due to relations with the state assembly and the governor, the EMD feels pressure to accept projects likely to succeed and to provide maximum benefits to the community.

Project Information: The EMD relies upon local applicants for project information so you do not bring anything new to the meeting.

Interpersonal Relationship Information: You have a strong working relationship with Dmitri Brown but have not met any of the other stakeholders invited to the meeting. While you will be friendly, your primary goal is to observe the group in action.

Paula Rodriguez (City Real Estate Manager)

Female, Age 28

Your work with the city of Lansdale over the past four years has been interesting at best as your office has struggled to keep pace with increasing foreclosures and pressure for the city to acquire and maintain a range of newly vacant properties. Each day brings a new challenge that makes you feel like you are still learning your job as if starting anew.

Personal Background: The ELCA property presents a different challenge that you welcome. Given the size of the property and what you perceive to be high political stakes, you know that the city will take a team approach, not leaving you in the lurch for handling the property yourself. When you have the opportunity to work on a team for this kind of project, you feel good about providing a service to neighbors who might be otherwise put upon by criminal, environmental, or other undesirable behaviors that seem to congregate around such derelict properties.

However, from this point forward, you are skeptical about the ability to do anything with this property other than keeping it light industrial. It is an odd shape, is still zoned industrial, and would require extensive street infrastructure if it were to be designated residential or retail-commercial. It is important to you that people who might promote those kinds of projects understand that road construction is no laughing matter and often comprises upwards of 40% of site preparation costs.

You have had some exposure to facilitation and facilitation practice and feel confident that the meeting will go well.

Organizational Background: In recent years, the Lansdale Real Estate department has been at odds with their counterparts in Housing in terms of best use for vacant properties. Members of the Real Estate department feel that the challenges facing downtown Lansdale result from a loss of jobs, so emphasis on newly vacant properties should be on small to medium sized businesses. The Housing office, on the other hand, seems to think that the primary challenge is loss of workers living downtown and therefore key properties should be used for housing.

Project Information: City real estate statistics indicate that the ELCA property lies in a transition zone between small single family homes in the Oceanic neighborhood assessed on an average of $40,000 and large single family homes in the

Interpersonal Relationship Information: You have enjoyed working with your colleague, Dmitri Brown, on smaller properties in the past where you handle acquisition processes and he tackles the environmental impact requirements. While this is new territory, you will rely upon this past goodwill to feel comfortable that your needs will become met.

Maria Echevarria (Aide to Mayor Jordan)

Female, Age 30

Personal Background: You have been working for Mayor Jordan for seven years as his primary aide on urban development issues, an issue that strikes you close to home. Growing up in center city Lansdale, you see much potential in revitalizing cities from the urban core out. As a citizen and urban development expert, you think the ELCA property is a great opportunity to do something special like a commercial/cultural marketplace. However, your role as representative of the Mayor is a bit more complicated (see below).

You understand that the meeting will be facilitated. While you are fine with facilitated processes, you are wary of how power dynamics happen within them, particularly the tendency for men to dominate the process and to marginalize women. If you feel this begins to happen, you will assert yourself and reveal what you think is a power imbalance.

Organizational Background: Your presence at this meeting is to represent Mayor Jordan's interest in establishing better relationships with area homebuilders with whom the Mayor had been arguing for several years regarding the cause of urban sprawl. In the Mayor's mind, the use of this property would coincide with the interests of Jeremy Baffin. However, the project must also generate increased property taxes, so, while the Mayor does not want to be seen as visibly opposed to what the neighbors might want, if there is an opening to steer the conversation away from turning the property into a park, you should take it.

Project Information: Like City Council, the Mayor's office relies upon the work of city employees in the housing, real estate, and environmental divisions as to the characteristics of the property. However, sources close to the Mayor in the state capital indicate that the state EDM is *very* interested in funding a cleanup for this property.

Interpersonal Relationship Information: In the past, you have experienced conflict with Jeremy Baffin of the Homebuilders Association in the pages of the local newspaper over the causes of urban sprawl in the region – you believe it is the result of short-sighted developers while he pins the cause on decaying inner city cores causing residents to flee. While you have never met him in person, you know it will be tough for you to find common ground and shared interests as directed by the Mayor. Your strategy is to cautiously observe him before making attempts to work with him.

Roy Lagin (Neighbor)

Male, Age 62

Personal Background: You are so sick and tired of complaining to the city about the smells and peculiar run-off from the ELCA property entering your own that you were almost dumbstruck when you got the Oceanic Neighborhood Association email that the city had acquired the property and now wanted to obtain neighborhood input on the next use of the property. As an owner of property immediately adjacent to ELCA, you would love to see the land divided such that existing neighbors have the opportunity to extend their current lots further back. You think this would be a great way to enhance your property and ensure that you maintain privacy, peace, and maybe even a little bit of wildlife. The remaining property should then be turned into a park.

One of your primary concerns, and one that you are certain is shared by a number of your neighbors, is that the ELCA property may be turned into an expensive redevelopment that will rapidly increase your property value to a level you cannot afford. As a retired plumber, you receive a pension, but not one significant enough to pay a significant increase in property taxes. You have no interest in leaving the neighborhood as your house was the one in which you and your wife raised your family.

Someone told you that a "facilitator" will be running the meeting. You are not sure what that means but hope that they won't make you talk about "what you feel" and stuff like that. If they do, your strategy is to sit back and pass on the activity.

Organizational Background: While a member of the ONA, you have not been particularly active except when you see an upcoming event that directly pertains to you and your own property. However, if push comes to shove, you will defend ONA interests against all others.

Project Information: You really don't have any additional information about the property, but plenty of opinions.

Interpersonal Relationship Information: While you grudgingly respect the work that ONA de facto president Candace Jones has been doing as a liaison to the city, you are uncomfortable with being represented by a woman. That is part of the reason that you do not attend ONA meetings regularly. You are wary of Jones and need to test the waters to see if you trust she is open to your interests and ideas.

Troy Schultz (Neighbor)

Male, Age 28

Personal Background: Having been active in Oceanic Neighborhood Association meetings since they really got going the past few months, you are very enthusiastic not so much about what the ELCA property *should* become, but more about what it *shouldn't*. Based on conversations you have had with friends after Association meetings at the local dive bar, you are confident that most neighbors do not want to see anything that would attract loud kids or provide space for teenagers to congregate and get into trouble. In addition, you are against anything that would increase traffic and parking problems on already congested streets. This includes high-rise apartment and condominium buildings regardless of who would live there. You are especially against subsidized housing because your experience growing up near the north side of Chicago had led you to believe that public housing only generates crime and litter, especially when government is the landlord.

To be honest, you really don't care what goes on the ELCA property as long as it is not anything previously mentioned.

You know what facilitation is due to team meetings you sit through at work and, in general, are OK with it. However, if you feel there is a lull in the conversation, you fill the gaps with your own ideas and opinions.

Organizational Background: As an avid supporter of ONA, you stand by the interests the group developed at your last meeting in preparation for this upcoming stakeholder meeting. ONA's interests are 1) to remove all contamination and potential health risks, 2) compensate any neighbors whose property has been compromised by the ELCA property, 3) find a non-nuisance use for the property once it is cleaned up, 4) find a use for the property that will stabilize property values, decrease crime, and enhance neighborhood aesthetics and, 5) obtain an apology from the City of Lansdale regarding the years of inaction prior to the meeting.

Project Information: You do not possess any information regarding the property that others do not know.

Interpersonal Relationship Information: You generally like your own neighbors who you know will be attending the meeting but you are not too happy that Harry Frederickson from the Southwest Lansdale Neighborhood Association has been invited. You have met Harry at other city events and think he is an elitist know-it-all who likes to hear the sound of his own voice. You don't trust that he has the best interests of the Oceanic Neighborhood in mind and intend to challenge his ideas for use of the ELCA property.

Michelle Huggins (Neighbor)

Female, Age 55

Personal Background: Having grown up in this neighborhood and living in the house once occupied by your parents, you have great pride and connection to the Oceanic area. In addition, your work volunteering at your son's school has gotten you involved with various environmental and beautification projects in and around the neighborhood. As a result, you are very upset that the city has allowed such a significant property as the ELCA property become so polluted, or so you are led to think.

It is extremely important to you that, regardless of what happens to the ELCA property, the city remains as transparent as possible with its environmental assessment data and redevelopment data. At the same time, you want the future of the ELCA property to somehow acknowledge it's dirty environmental past. If the use is to be industrial, it should be for a company involved with alternative energy. If the use is to be a public park, then it should include a public educational display about brownfields. If the use is to be residential, then the houses should be LEED (Leadership in Energy and Environmental Design) certified for green building standards.

Organizational Background: You belong to numerous environmental and community development groups around the city, but find ONA to be the most useful regarding this property. Attending this last meeting, you learn that the group has prioritized a list of interests of which you care about only two: 1) to remove all contamination and potential health risks, and, 2) obtain an apology from the City of Lansdale regarding the years of inaction prior to the meeting.

Project Information: You do not possess any additional information about the property.

Interpersonal Relationship Information: While you have no strong opinion about anyone who will be present at this meeting, you are generally suspicious of city employees, especially elected officials like City Councilwoman Dawn Suffolk.

Harry Frederickson (Southwest Lansburg Neighborhood Association - SLNA)

Male, Age 60

Personal Background: Being a city resident whose house straddles two neighborhoods, you have been very interested in tracking the ongoing saga of the ELCA property, primarily because a high-investment development project would likely increase and stabilize the weakest side of the Southwest Lansburg (SL) neighborhood – the one closest to the Oceanic neighborhood in which your house sits. Therefore, you think that the Oceanic neighborhood should conform to the street design plans of the more affluent Southwest Lansburg neighborhood. In addition, you know that the best use of the property is for an upscale grocery store, something you feel the SL neighborhood needs to make it the best neighborhood in the region.

In addition, as a longtime board member of SLNA, you feel that you have a lot to offer the "newbies" when it comes to organizing and working with the city and would love to give lots of unsolicited advice.

Organizational Background: SLNA has a long tradition of pushing the city to provide added value projects in their neighborhood, considered the wealthiest of all the city neighborhoods and the area with the best schools. While the area has never had to deal with environmental contamination on the scale of what the ELCA property presents, SLNA has a strong record of advocating for better recycling services and more efficient storm water systems. Proud of your status as a city neighborhood, SLNA has often been quite vocal about their disdain for the more suburban-style housing pressing up against the western edge of the neighborhood.

Project Information: While direct information regarding the ELCA property is not something you have had access to, you are able to testify to the increasing property values of the strip bordering the Southwest Lansburg Neighborhood and the Oceanic Neighborhood. Based on estimates put together by a member of the SLNA board who works in the real estate industry, you are convinced that property values in ONA, with the introduction of the grocery store, will double.

Interpersonal Relationship Information: You are aware that there might be individuals present who might not be as passionate about the SL neighborhood as you, but you are confident that everyone will be welcoming to your advice.

Part C: Case Outcomes: From ELCA to Ontario Oaks

In the real-life case upon which this exercise was based, the initial meetings between city managers, citizen stakeholders, and private homebuilders proved to be crucial in building positive relationships that contributed to an award-winning "new urbanism" market-rate housing development. Key to this success was the role played by the environmental manager and the president of city council who took the time in the early stages to meet with neighborhood residents on multiple occasions prior to property acquisition just to listen.

Involvement by the citizens of the neighborhood, however, was not an automatic occurrence. As one leader of "ONA" revealed, once the city acquired the properties and began looking at possible uses, much chaos ensued. Because of where the neighborhood lay, factions of two adjacent neighborhood associations who felt they had a stake in the property development attended initial meetings and asserted their opinions. What "ONA" leaders quickly realized was that these factions only clouded the conversation and neighborhood meetings took on a combative tone with no one really listening to each other and city officials not able to fully understand neighborhood needs. So, the de facto "ONA" leaders took stock of the situation and made the decision to exclude outside groups and rebuild their own capacity for engagement from within. This entailed a formalization of the group and a lot of door-to-door visits by group leadership to build internal trust and commitment. As a result, a core group of members began attending meetings regularly, committed to participate until the development was complete. When that happened, the group decided that they would disband, enabling them to focus on a single purpose.

The first meeting between the city environmental manager and "ONA" representatives revealed a cultural divide. On one hand was a city manager dressed in a coat and tie and on the other were blue-collar homeowners upset over city inaction to their complaints. Told to "loosen your tie and take off the jacket", the environmental manager quickly adapted and recognized that his early role was to provide complete transparency regarding any and all environmental information about the property. With help from the environmental consultant retained by the city, this proved easy to do.

What was more difficult was discerning the best use for the property once it was revealed that it would be cleaned up as the first municipally led brownfield funded under the state "MBC". The first neighborhood meeting on this topic revealed that there were many ideas on what could be done with the contaminated property, including cleaning up the site and turning it into a public park, but city council members were not interested in spending a large amount of money for something that they already had challenges maintaining. So, the ideas quickly transformed into ones that would generate funding either from state and federal grants or from private investment. Although market-rate housing was far from the norm for city-owned properties, several city government stakeholders saw the opportunity to pursue it and, given the probable addition to city tax rolls, the idea took off. This was especially of interest to certain more affluent neighbors of the property who were not keen on having subsidized, low income housing appearing so close by. "ONA" neighbors themselves were slower to jump on this idea mainly that they were concerned with increased traffic, the construction process itself, potential impact on property values, and the style of homes that were to be built. Again, the city environmental manager, this time with the city housing manager, assuaged their concerns by including "ONA" leadership in all internal communications and decision-making regarding development design.

During this phase of the project, "ONA" leaders served as proxies for the city, educating other neighbors about the unfolding of events, disseminating any new data that appeared, and helping convince neighbors to allow city employees to inspect their properties for ongoing concerns. Proof of this role was found in the basement of one "ONA" leader who revealed that she had a more complete set of files about the project than what was subsequently made available to the general public. To help integrate neighborhood leadership into the role of information disseminator, the city, in turn, invested in their capacities, sending one leader to a brownfield-related conference in Colorado to talk about what became known as the Ontario Oaks development.

While these meetings ensued, members of the city housing manager began conversations with the regional homebuilders association about the possibility of building market-rate suburban-style homes on the properties assembled. With the pre-existing interests of the association in getting involved with new housing in the city to show that it could be done, the groups soon generated a vision that brought several homebuilders on board. This vision involved the city cleaning up the properties, obtaining liability releases, producing design standards and building up the surrounding infrastructure while the homebuilders committed to building demo homes, sponsoring a home show, and building houses for each buyer. Homes were to be financed through individual mortgages acquired by the homebuyers and homebuilders were fronting the construction costs.

In retrospect, each stakeholder interviewed in this study felt that the Ontario Oaks project was very successful and that part of the success was due to the amount of time spent talking to each other, working through conflicts, asserting interests, and engaging in collaborative decision-making. Today, an innovative single family home subdivision exists in the center of the Oceanic Neighborhood that has added property taxes for the city, addressed environmental threats to neighbors, and provided profit, albeit small, to developers. An additional legacy is the set of lessons learned by all involved:

- Capacities and management cultures matter. The first neighborhood meeting sponsored by the city was patterned after the typical "citizen engagement" meeting city managers were used to sponsoring. This meeting had a typical agenda that was heavy on information provision and time for citizens to volunteer comments, but light on structured process. While fulfilling state MBC requirements, these meetings did not produce much forward progress until the ONA leadership became organized. At this point, one of these leaders stepped forward as an individual familiar with facilitated process design. She, in conjunction with the environmental manager, proceeded to transform these meetings into more productive and efficient affairs and the collaboration took off.
- Framing of initial problem matters. The first meetings where neighborhood activists and homebuilders were present together were successful due to the a common framing of the problem at hand – what designs best blend the suburban expertise with the neighborhood style and interest in moderate property value increases. Framing the problem in this manner enabled citizens and homebuilders to quickly get to the idea generation stage.
- TIME is needed. The city environmental manager spent a disproportionately large amount of time with neighborhood leaders compared to other projects of similar size and scope – a factor that contributed heavily to the amount of trust the neighborhood had in the city at the end of the project. It is important to note that this investment in citizen relationships would not have occurred without support from the environmental manager's boss, the Environmental Commissioner.

- Stability of collaboration membership matters. Another key attribute mentioned by several project participants was the consistency of representation across city, homebuilder, and citizen actors. By not having to restart relationships with a new set of city officials or new neighborhood leadership, the bonds between actors deepened to a point where, after meetings at the neighborhood library, the group would go across the street for a beer and socializing.
- Collaborations exist in broader social contexts. It is important to note that stakeholder collaborations are embedded within broader social, legal, market, and environmental contexts. In this case, the project would not have happened if it were not for a strong market environment supporting the profit needs of both the homebuilders and the city. This condition was necessary for project success. Without it, the strongest collaborative team possible likely would not have reached the same levels of success.

Part D: Teaching Note – Process Design, Collaboration, and Facilitation

Introduction

Much attention is placed upon collaborative processes as they pertain to citizen and stakeholder engagement but most experiential activities focus on conflict management *during* the process. This exercise encourages students to consider how process design and *before* the process begins by requiring students to design an initial meeting with stakeholders of what could be a high-conflict brownfield cleanup and remediation project. In addition, the exercise provides facilitation practice for two students at a time to implement and facilitate their meeting design while other students take on the stakeholder roles, enacting behaviors that may challenge, or enhance, the designed process.

Intended Use

This activity is intended for use with both undergraduate and graduate level public management and policy analysis courses, particularly as they pertain to stakeholder meeting design and process. It complements coursework on neighborhood politics, economic development, and environmental issues and can easily be plugged into existing activities teaching conflict management and negotiation practice. There are multiple ways in which to present this activity, depending upon the goals and time availability of the course. Table A below compares the options:

Time Frame	Activity Components	Take Home Assignments
1 class session (1 hour)	Lecture – Process Design and Facilitation	Process Design
2 class sessions (1 hour each)	Lecture – Process Design and Facilitation Role Play and Role Play Discussion	Process Design Role Play Reflection Paper
3 class sessions (1 hour each)	Lecture – Process Design and Facilitation Role Play and Role Play Discussion Case Discussion	Process Design Role Play Reflection Paper Case Analysis

Due to the situational nature of "effective facilitative practice", instructors are encouraged to tap into resources on their campus and in their community to present the background content on process design and facilitation if their personal capacity to teach this topic is limited. For example, many communities contain community mediation centers and private consulting groups that provide facilitation services and may provide educational outreach services. In addition, the human resource departments of many large organizations, church groups, and local governments may have professionals trained in facilitative practice.

The following sections provide the minimal content and resources needed to present the three activity components listed in Table A.

Component #1: Lecture – Process Design and Facilitation

Background

As public sector leaders and managers increasingly turn to interorganizational collaborations to solve complex problems, more attention has been paid to the mechanisms

through which these collaborations succeed. Management research has determined the importance of building the trust, interdependence, and network governance mechanisms needed for effective collaborative function (Lundin 2007; Edelenbos and Klijn 2007; McKnight, Cummings, and Chervany 1998; Jones and George 1998). However, establishing the social relations and structural ties necessary for successful collaboration does not happen automatically. Instead, collaborative leaders must strategically build relationships over time to build group cohesion and then develop group capacities to perform at the highest levels. One skill that is essential in building these relationships and capacities is group facilitation.

"Facilitation" is the application of experiential techniques to empower groups to move through problem solving processes (Heron 1999). A "facilitator" is therefore an individual trained to help move a group through a preset arrangement of experiential activities towards the group goals, ostensibly improving group decision-making effectiveness (Schwarz 2002). Facilitators exhibit skills that have been associated with positive interpersonal relationships such as conflict management, reflective listening, assertion, negotiation, and mediation (Elliott 1999).

An integral part of facilitation is "process design", or the strategic planning of group meetings towards a concrete set of goals. In public sector stakeholder situations, process design often means laying out a sequence of activities that, when implemented, build social capital, gather data, elicit interests, and generate ideas. Recent studies of the impact of process planning on levels of stakeholder conflict and collaboration productivity indicate that effective process design and implementation directly relates to positive outcomes (Edelenbos and Klijn 2006; Thomas and Poister 2009). This brief review examines what is known about group effectiveness, the role group facilitators play in enhancing it, and specific process design strategies facilitators use when playing this role.

Basic Facilitation Theory

Understanding effective facilitation requires an understanding of effective groups and a brief tour through theories of group psychology and workgroup function. Integrating past research, Schwarz (2002) offers a comprehensive group effectiveness model that has, at its core, group structure and group process when a group functions in a stable context. Group structure is comprised of a clear group mission and shared vision, clear goals, a motivating task, clearly defined roles, and sufficient time. Group process pertains to problem solving, decision-making, conflict management, communication, and boundary management. Theory suggests that a proper balance between these components enhances group effectiveness (Elliott 1999). When individuals in a group represent different organizations, as in the case of public sector stakeholder groups, these core elements of group function apply but are made more complex by the influence of the group cultures of each home organization, changing the group context component of effectiveness (Schwarz 2002).

In order to empower groups within their own problem-solving processes, facilitators must understand how to mobilize without leading, how to control a process without controlling the outputs generated by process participants. While complete neutrality is difficult to achieve and verify, facilitators can maintain this value by designing a process that ensures representation and participation, clarifies how decisions will be made, and is accountable and fair (Elliott 1999).

Heron (1999) writes that facilitation occurs across six dimensions, summarized below in Table B. In each of these dimensions, the key questions may be dealt with in a hierarchal mode where the facilitator directs the group by exercising power and controlling the process, a cooperative mode where power over the process is shared with the group, and an autonomous

mode where the facilitator allows the group to experience full self-determination. In any given facilitative process at any given stage for any given group, facilitators must find a balance between these three modes to maximize effectiveness but, for newly formed groups, it is common that the early stages require that the facilitator operate in the hierarchal mode, the middle stages require a cooperative mode, and the latter stages the autonomous mode. The rate in which a group incurs these facilitative shifts varies widely (Heron 1999). Within group experiences, it is important to discern between content and process. The content refers to the stated task or activity confronting the group at the moment while the process is the social phenomena that occur during implementation of that task (Schwarz 2002).

Table B: Dimensions of Facilitation (Heron, 1999)

Dimension	**Key Question**
The Planning Dimension	How will the group determine its objectives?
The Meaning Dimension	How will meaning be found in group behaviors?
The Confronting Dimension	How will the group address barriers and difficult situations?
The Feeling Dimension	How will group emotions be handled?
The Structuring Dimension	How will group learning be structured?
The Valuing Dimension	How will a climate of respect be generated?

Topics relevant to this role-play underlined.

Facilitating a Problem-Solving Model

Many group processes center upon problem solving (Table D). Group problem solving processes follow a general model that starts with group members agreeing to work together and has the end goal of implementing agreed upon solutions. The first step is defining the problem they have agreed to address. Then, they develop the criteria for decision-making and the process by which decisions will be made. After that, group members share information about positions and interests so that they can begin brainstorming possible solutions to the problem. Next, the group applies decision criteria to the list of options to determine the course of action and seek agreement on a package of solutions. Upon reaching this agreement, the group then proceeds to the implementation phase (Carpenter 1999; Schwarz 2002). In reality, group problem solving processes are rarely as linear as this model makes them seem, with many instances of moving back and forth between phases as new information arises and interpersonal relationships evolve. Nevertheless, the use of a trained, skilled facilitator streamlines this process, particularly when defining the problem, establishing evaluation criteria, and brainstorming options.

Table D: A Problem Solving Model (Schwarz, 2002)

Problem Solving Steps	5. Evaluate alternative solutions
1. Define the problem	6. Select the best solutions
2. Establish evaluation criteria	7. Develop an action plan
3. Identify root causes	8. Implement the action plan
4. Generate alternative solutions (brainstorm)	9. Evaluate outcomes and the process

Developing Activities for a Facilitated Problem Solving Process

In Heron's (1999) framework, facilitators face two planning considerations. First, they must consider the objectives of the group. What will the group learn as a result of participating in the group process? Then, the must determine the program within which objectives are to be

reached. Program elements include the activities planned, their time allowance, the teaching methods involved, resources needed, and how they will be assessed (Heron 1999).

The structural dimension encompasses activity creation. Heron (1999) suggests that activities developed for a process incorporate the experiential learning cycle. In this cycle, facilitators first model the desired behavior and while providing activity instructions. Then, participants practice the activity, obtain feedback, and engage in the activity again. Once the activity is complete, participants reflect individually and then review their reflections as a group (Kolb 1984). In designing a group activity, it is also important to pay attention to the space in which the activity is conducted and the composition of the group in terms of existing interpersonal dynamics or special needs. A group sitting in a circle of chairs responds and reacts differently than a mix of people sitting and standing in rows. Likewise, group attributes such as gender, age, race, and cultural background may all play a role in how a room is set up for a facilitated activity.

Similarly, an important piece of the structural dimension for facilitators is the establishment of ground rules. These rules should be reasonable, fair, and relevant to the purpose of the meeting. Common ground rules include paying attention to time, taking breaks by group agreement, paying full attention to others when they are speaking, eliminating distractions, respect for people and property, etc. (Heron 1999). Schwarz (2002) writes that ground rules must, at the minimum, address issues of attendance, how decisions will be made, and confidentiality. Ground rules may be determined ahead of the meeting and presented to the group or generated by the group itself as an activity, depending on the composition and purpose of the group. Regardless, buy-in for these ground rules is important.

A common subset of activities includes icebreakers, which are activities serving to initiate relationship building by facilitating knowledge sharing. These activities are often implemented at the start of group processes and designed to segue into more substantial activities at the core of a meeting. For example, a facilitator may ask a group to introduce themselves by stating their name, their affiliated organization, and one goal they hope to accomplish by being at the meeting. This information can then be used in a follow-up activity asking participants to develop a group mission.

Due to the wide variety of exercises that could be incorporated into a facilitated stakeholder meeting, it is often easier to state what exercises should NOT be. Schwarts (2002) considers it inappropriate to use an exercise that requires withholding information or relying on deception, that has outcomes predetermined by the facilitator, that demands a level of risk not agreed to by the group, that requires more time for processing than is allowed, that is inconsistent with group objectives, and the outcomes of which the facilitator is not confident they can handle (p. 374.)

Brainstorming and Evaluation

Brainstorming is a creative process in which groups generate unedited ideas about an answer to a question, the definition to a problem, or possible solutions (Schwarz 2002). Schwarz (2002) lists four rules for conducting a brainstorm: do not evaluate ideas generated, include the wildest ideas possible, generate as many ideas as possible, and combine and build upon ideas already generated (p. 227). Brainstorming may be conducted numerous ways, from group members stating ideas as they come to their head to giving each group member equal turn until no more ideas come forth, to working in small groups to create lists of ideas that are then combined as a whole group. It is important that the ideas generated be presented visually to the entire group so that the next step, evaluation, may occur (see visual facilitation below). Many resources exist that provide specific ways in which brainstorming can occur[27].

Evaluating ideas generated relies upon the prior generation of decision-making criteria. Common criteria include efficiency, effectiveness, feasibility, and cost, but can vary based upon the group objectives and goals. Once a list of options has been generated, the criteria may be applied to narrow down the list to a manageable number for decision-making. Similar to brainstorming, there are many ways in which to apply criteria for evaluating a list. One common way is to write the options in a single column, create subsequent columns with headings of the criteria to be used, and then to have each group member rate each option based on each criteria. Once this is complete, a visual list will remain that indicates which options are more popular than others. For more information and ideas, see the Consensus Building Institute (www.cbuilding.org), the International Association of Facilitators (www.iaf-world.org), and the Policy Consensus Initiative (www.policyconsensus.org) in addition to a range of private consulting firms found on the internet.

Visual Facilitation

Often times, and in the instructions for the role play presented above, facilitators work in teams of two, enabling one facilitator to work directly with the group while the other "scribes" or keeps track of group progress on charts visible to all group members. Scribing, or visual facilitation, enables groups to see progress, obtain bearings on group process, and evaluate ideas. In specific activities, such as brainstorming, effective visual facilitation is essential for activity success. An effective visual facilitator is able to listen to and summarize ideas, ask clarifying questions when unsure about idea summaries, and write clearly and efficiently. Strong communication between the primary facilitator and the visual facilitator is also very important.

Putting it All Together

For the purpose of this role-play simulation, it is important to make sure that students understand these basics of facilitation technique and the role facilitation can play in moving a stakeholder group towards positive collaboration. It is also important to provide students with concrete ideas about creating activities for their process design as instructed in Part A. If you are not comfortable with class comprehension of either of these components, consider the non-role-play alternative for utilizing this activity.

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[27] Many web and paper resources exist from commercial, academic, and non-profit resources. For example, http://www.mycoted.com/Brainstorming and www.tacoma.washington.edu/tlc/docs/Brainstorming%20Exercises.pdf (accessed 2/24/10)

Component #2 – Possible Role Play Processing Questions

Questions for facilitators

- What happened? Describe the evolution of events.
- As a facilitator, what were your greatest challenges? How did you address them? What would you do differently next time?

Questions for stakeholders

- From your stakeholder perspective, what did you hope to gain from the meeting? Were your stakeholder goals met?
- From your stakeholder perspective, evaluate the meeting using the following criteria:
    - Fairness
    - Inclusiveness
    - Order
    - Productivity
    - Effectiveness at achieving intended goals

Questions for all about the activity

- In what ways did the following barriers to positive collaboration development manifest during the role-play?
    - Power imbalances
    - Conflicting positions and interests
    - Personal biases (gender, age, race)
    - Pre-existing relationship problems
- How did facilitator actions address/not address the following barriers to positive collaboration development? (see The Consensus Building Handbook, 1999, for additional content on this topic)
    - Power imbalances
    - Conflicting positions and interests
    - Personal biases (gender, age, race)
    - Pre-existing relationship problems
- How did components of the process design address/not address the following barriers to positive collaboration development?
    - Power imbalances
    - Conflicting positions and interests
    - Personal biases (gender, age, race)
    - Pre-existing relationship problems
- Based upon this meeting, do you think this collection of stakeholders could form a strong collaboration over time? Why or why not?

Questions for all about the use of facilitated processes in building collaborations

- In what ways did the process design meet/not meet the objectives of the meeting?
- Group development theory suggests that, early in a collaborative arrangement, facilitators need to take a more directive role and that, later in the collaboration, facilitators should step back and allow groups to guide themselves. Based on this meeting experience, do you agree or disagree with this proposition?

Component #3 – Possible Case Analysis Questions

These questions pertain to the use Parts A, B, and C as a case study rather than an experiential role-play.

Part A: Students generate a meeting process design as if they will be facilitating

- In what ways does your process design meet the following goals?
  - Stakeholder introductions
  - Generating a list of ideas for future property use
  - Generating commitment to meet again
- Why might ground rules be important at the start of a collaborative problem solving process? How do you propose establishing ground rules?
- Given the prospect that the stakeholders attending this meeting will need to work together for a period of years, what are ways in which this first meeting might impact future ones?
- What challenges do you think your process design might face if it were implemented?

Part B: Students read through the stakeholder role sheets

- What potential conflicts do you see between stakeholders? Are these conflicts due to pre-existing interpersonal relationships, individual personalities, or organizational missions?
- Based upon these role sheets, what dynamic might you anticipate between elected officials and citizens at this meeting? Elected officials and public managers? Public managers and citizens? Explain.
- Are there any power imbalances inherent to this group? What are they? How might they impact the meeting process and outcomes?
- Thinking about your process design and using the information in the role sheets, which activities do you think will work well? Which activities will possibly fail? Why?
- Thinking about how a first meeting of this group might unfold, what are some generalizations you might make regarding the initial steps of forming any problem solving collaboration?

Part C: Students read the "Case Outcomes: From ELCA to Ontario Oaks" follow-up

- What constraints might local government managers face when engaging with citizens for long-term collaborative projects?
- If you were the city environmental manager, how might you have approached initial meetings with citizen stakeholders differently?
- Do you think that the amount of time invested by city officials in this project was realistic? Why or why not? Why do you think city officials made the investment?
- Do you think strong collaborative relationships between the stakeholders in this case could overcome a downturn in the real estate market? Why or why not?
- What are management strategies that could be used in a collaboration to address turnover in collaboration membership?

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APPENDIX A

Interview Protocol – Organized by Framework and Key Concepts

Question Order	Key Concept Addressed	Question	Framework
1	Cognition - process	When did (PROJECT NAME) begin and what key decisions were made over time?	Contextual Interaction
2	Cognition - goals	Who initiated (PROJECT NAME) and why?	Contextual Interaction
3	Motivation	At what point did you become involved with (PROJECT NAME) and why?	Contextual Interaction
4	Actors	With whom did you interact over the course of (PROJECT NAME), why, and how?	Network Structure
5	Actors	Of these key actors, with whom do you interact the most and why?	Network Structure
6	Management behaviors	Describe the process of: • Establishing a contract? • Obtaining approvals? • What was your strategy to accomplish (SPECIFIC TASK)?	Strategic Management
7	Cognition - problem	What are/were the biggest challenges to the remediation and redevelopment of (PROJECT NAME)?	Contextual Interaction
8	Policy tools	What key incentives and arrangements were used to produce participation by other agencies and firms in (PROJECT NAME)?	Institutional
9	Cognition - problem	What role does the brownfield status of the property play in redevelopment strategies?	Contextual Interaction
9	Motivation	In hindsight, would you have done anything differently?	Contextual Interaction
9	Power	Which of these key actors influenced project outcomes the most? Without whom the project would not have happened?	Contextual Interaction
9	Power	Where did money come from along the course of (PROJECT NAME)?	Contextual Interaction
9	Power	Was there any change in the project over mayoral transitions?	Contextual Interaction
9	Alternate explanations	What ultimately affected project outcomes?	Institutional
9	Resource allocation	How has the city allocated resources for brownfield remediation and redevelopment?	Institutional
9	Resource allocation	In what ways is (CITY NAME) organized to address brownfields?	Institutional

9	Resource allocation	What proportion of your time is dedicated to brownfield remediation and redevelopment compared to all other duties of your job?	Institutional
9	Success	What are the biggest challenges to brownfield remediation and redevelopment in the city?	Institutional
9	Success	How do you measure performance of brownfield redevelopment projects?	Strategic Management

Post-Interview Survey: Main Questions

1) **Based on data collected for this project so far, I have divided the APCO/Newcroft project into nine distinct project phases. Please indicate below all of the phases in which you were actively involved.**

Property identification and assembly
Economic assessment
Environmental assessment
Cleanup financial planning
Construction financial planning
End use design
Cleanup process
Construction process
End user sales

2) **For each individual that you worked with on APCO/Newcroft during the Property Identification and Assembly phase, please fill in the information to the right of their name. Please do not answer for your own name. Definitions of information types are listed below:**

Cleanup financing = grant, loan information regarding environmental cleanup
Cleanup assessment = technical environmental information about property
Cleanup action = cleanup process information
Construction financing = lending, loan, grant, investment information regarding construction
Construction action = construction processes information
End use design = city planning and architectural design information
Legal information = legal information - any type
Political information = electoral politics, citizen engagement information
Social/relationship building = personal information, "getting to know you" information

a. What dominant information type was transferred with this person?
b. What secondary information type was transferred with this person during this phase?
c. How frequent were your information exchanges with this person during this project phase?

3) **Using the list below, please verify which agencies and organizations your agency or organization worked with during this phase.**

Brownfield Redevelopment Networks in the State of New York: Four Case Studies

Dear _____.

I am a doctoral student under the direction of Professor Rosemary O'Leary in the Department of Public Administration in the **Maxwell School of Syracuse University**. I am conducting a research study to understand the **implementation processes of brownfield redevelopment** in the state of New York.

Your participation will involve answering questions regarding your and your organization's role in brownfield redevelopment processes. These questions will be asked in the setting of either an in person or telephone interview and, if you agree, will be recorded for purposes of transcription and data analysis. Your recording will be assigned a code for which only I will have a key. All recordings will be destroyed after completion of the research study. If you do not wish to be recorded, your responses will be recorded by hand. Depending upon your role in the redevelopment project, you may be asked for a follow-up interview. Each interview may last up to an hour in length. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, that decision will be kept confidential by the researcher.

Your personal name will not be used in any of the writings stemming from this research and references to your agency and organization will be made generically. Because of the case study format of this research, please be aware that it is possible for readers of the research who have detailed knowledge of the particular cases used may be able to infer your identity. This risk will be minimized by the use of generic language when referring to interview subjects and their relationships. The research will be published as a doctoral dissertation in addition to research articles in public administration and environmental management journals.

Although there may be no direct benefit to you, your participation may benefit a greater understanding of brownfield redevelopment processes in the state of New York, potentially aiding future policy development.

If you have any questions concerning this research study, please contact me at rwalexan@syr.edu or 303-818-0418 or Professor Rosemary O'Leary at roleary@syr.edu.

Sincerely,

Rob Alexander

* * * * * * *

___ I agree to be audio taped.
___ I do not agree to be audio taped.
___ I confirm that I am over 18 years of age.

_____	_____	_____
Signature of participant	Date	Print name of participant

_____ _____

Signature of researcher (or witness) Date

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Syracuse University Institutional Review Board at 315-443-3013.

APPENDIX B

Historical Backgrounds to Management Capacities

A key component to the research design for this study was the selection of two cities that matched along various economic and environmental variables but exhibited different levels of management capacities. The logic behind this selection was to enable comparison of successful and less than successful brownfield projects under different management circumstances. This comparison provided insight not only into the relevance of management capacities but also the ways in which management capacities related to project outcomes. The measures used in city case selection are repeated in Table 1 below.

Table 1: Network Management Capacity Variables for City Case Selection

		Rochester	Buffalo
Network management capacity – Personnel Capacity	Number of FTE personnel committed to brownfield projects and average time on job	**2.5**	**0.5**
Network management capacity – Expert Capacity	Type of agency housing brownfield operations	**Environmental project management office**	**Planning office**
Network management capacity – Resource Capacity	Per capita city expenditures	**$2,060/person**	**$1,539/person**

While these initial measures were deemed sufficient for the selection of case cities, subsequent capacity data were collected as part of the explanatory model for project success. These data relate to key capacities for network management including interpersonal skills, structures for information exchange, and qualities of the political and resource environment. This section describes the broader story of these capacities as they pertain to both brownfield and residential development, laying the groundwork for integrating capacity data in the explanation of case outcomes.

Capacities for Brownfield Management. The City of Rochester became involved in contaminated property redevelopment before any significant brownfield-specific legislation existed at either the federal or state levels. The nearby example of Love Canal and an examination of contamination on city-owned properties compelled the city to engage in a few small projects in the mid-1980s. However, it was not until a hazardous waste problem on 18 acres at the regional fire-training academy reached the agenda in 1993 that the city of Rochester began to build its capacity to address brownfield problems. During this project, a team of city managers obtained $27 million of local, state and federal funding to remediate the property for a new, multi-government public safety aircraft rescue fire-fighting project. The success of this project laid the foundation for steady development of the Division of Environmental Quality (DEQ) in the city's Department of Environmental Services (DES).

As assessments of city properties began to reveal the extent to which environmental problems constrained development, the DEQ quickly built upon this initial capacity for project management. The DEQ's original role focused on city compliance with state and federal

environmental regulations across its functions, but managing brownfield projects required more complex abilities. Initially, the city contracted out much of the early project management work to private consulting firms, leading to hefty contract payments. Drawing from his budget analyst roots when he began work with the city in 1986, the lead DEQ manager successfully argued to city leadership and the budget office that the city would save money in the long run by hiring in the technical capacity for contaminated property project management. By 2010, seven environmental scientists, engineers, and geologists were employed as project managers with an average tenure in the Division of 10 years. Together, this team developed strong working relationships with regulatory counterparts in the Monroe County Department of Health (MCDOH) and the New York State Department of Environmental Conservation (NYSDEC) regarding brownfield projects, building a database of potential and real brownfield sites and developing a local revolving loan program for private firms to remediate properties supported by a grant from the Environmental Protection Agency (EPA).

Contrary to Rochester's experience and while the City of Buffalo had more than enough brownfield properties within its jurisdiction, the capacities for managing them grew outside of City Hall. One interview respondent described that there is "more expertise on the outside than on the inside". This lack of internal capacity can be attributed largely to an ongoing fiscal crisis within the city compounded by decades of diminishing tax revenues, decreasing numbers of city personnel and rigid unions battling contract changes. By 2003, after multiple annual bailouts from the State Legislature, the Governor created the Buffalo Fiscal Stability Authority (BFSA). The BFSA, governed by five gubernatorial appointees, the mayor, the county executive, and an appointee from both the state comptroller and the legislature, held the authority to approve or deny the city's annual four-year financial plan. In exchange, the city receives the ability to acquire loans from the state during its road to recovery (Staba 2003).

Instead, much of the initial clean up and redevelopment activity occurred through federal, state, county, and regional government efforts. For example, the Erie County Industrial Development Agency (ECIDA), a county-level quasi-governmental organization and its Buffalo Urban Development Corporation (BUDC) emerged as key facilitators for these larger, commercial and industrial development opportunities through an EPA pilot grant. Meeting some success at turning these properties into viable sites for new industries and warehouse facilities, BUDC became the lead agency for the larger brownfield properties around the city.

Internally, the City of Buffalo maintained few employees trained specifically in an environmental or earth science field. Those that had some environmental knowledge worked mainly within the Public Works Department and the Buffalo Water Authority, assessing and implementing infrastructure projects around the city. When city-owned properties were determined to have environmental concerns, the City Engineer handled the regulated procedures, but he did not have a strong environmental background. Additional, but limited, environmental governance was provided by the Buffalo Environmental Management Commission, an advisory board comprised of appointed members serving two-year terms.

The first specific environmental project manager was originally brought to the city through an EPA Brownfield Pilot Grant in 1996 to assess the extent of brownfield properties around the city. When he arrived on the job, he quickly realized that the complex regulatory path dictated by the NYSDEC and the EPA would have to be learned on the job, as there was little institutional knowledge easily accessible. This began what was a slow cultural shift within City Hall regarding the need for environmental professionals, or at least an infrastructure that can support the work of environmental professionals on brownfield projects. However, a department

devoted to environmental services, as in Rochester, did not emerge. In fact, what had existed as a four-person environmental management department working with the City Environmental Management Commission dwindled down to a single project manager. As a result, brownfield projects with residential end uses became addressed by a set of ad hoc working teams comprised primarily of public managers in the Buffalo Urban Renewal Agency (BURA), its Office of Strategic Planning (OSP) and the Department of Public Works. To a lesser extent, the Planning, Real Estate, Law, and Economic Development Departments have participated as well.

While data suggest that both the cities of Rochester and Buffalo show signs of certain capacities for assessing, remediating, and redeveloping brownfields into residential end-use projects, these capacities manifest in different ways. The City of Rochester has greater internal capacity for project management with its large environmental services staff and pre-existing structures for internal information exchange with other city agencies. On the other hand, the City of Buffalo's capacities rely upon a single environmental manager and his ability to work with the state DEC office and the ECIDA, a county-level quasi-governmental organization.

Capacities of Key Governmental Partners. With local government action towards brownfield redevelopment contingent upon compliance with local, state, and federal environmental and health-related regulation, it is relevant to briefly describe the capacities of these agencies in whose jurisdictions the cities of Rochester and Buffalo fall. For the City of Rochester, the Monroe County Department of Health (MCDOH) and NYSDEC Region 8 are unique regulatory partners while the City of Buffalo relies upon the Erie County Department of Health (ECDOH) and NYSDEC Region 9. Both Rochester and Buffalo fall into the Western Region of the NY State Department of health (NYSDOH), the auspices of the Central Office of the NYSDEC, and Region 2 of the EPA.

In Rochester, a regular meeting of a Waste Site Advisory Committee occurs approximately seven or eight times a year to exchange information regarding targeted properties. Meeting attendees include the MCDOH Director, the Rochester office member of the NY State Department of Health, the brownfield manager from Region 8 NYSDEC, a State University geologist, and the lead manager at the city DEQ and one of his staff members. At each meeting, the NYSDEC shares information about new sites in their programs, the health departments share decisions made by the NYSDEC central office that may not have been known by the regional offices, and the city shares information regarding on the ground and citizen-oriented events. Through this Committee and the work it developed, a relationship solidified between the city of Rochester, the NYSDEC, and the County Health Department the streamlined the regulatory processes associated with brownfield projects.

Managers in both Rochester and Buffalo reported positive and consistent relationships with their regional counterparts in the NYSDEC. These relationships were enhanced by long tenures of NYSDEC staff and the resulting accumulated knowledge. In addition, the regional NYSDEC managers interviewed for this research exhibited strong interpersonal skills and high motivation for the mission of their agency. However, both city and NYSDEC regional officials reported frustration with the NYSDEC central office. All parties found the central office highly bureaucratic and more susceptible to the political influence of the Governor's office, leading to slow response rates during key decision-making points.

Finally, at the federal level, both Rochester and Buffalo lie in Region 2 of the Environmental Protection Agency (EPA) whose brownfield office has a history of staff turnover. While both cities have received several brownfield assessment and cleanup grants from the EPA since the mid-1990s, individuals in both cities report that EPA technical support has waned with

increasing local experience. Key local managers confirm that the EPA currently plays a minimal role in brownfield project implementation.

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