

**UNDERSTANDING STRATEGIC PLANNING AND THE FORMULATION AND
IMPLEMENTATION OF STRATEGIC PLANS AS A WAY OF KNOWING:
THE CONTRIBUTIONS OF ACTOR-NETWORK THEORY**

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ABSTRACT

This paper has two purposes: *first*, to take seriously the notion of strategic planning as a way of knowing, and *second*, to argue that actor-network theory provides a particularly apposite method for understanding whether and how strategic planning works in particular circumstances. Pursuit of these purposes also helps illuminate possible contributions of strategic planning to inclusive, participative, and democratic public management. The paper is illustrated with examples from the 1995 and 2007 strategic planning and subsequent implementation efforts of MetroGIS, an organization created to foster widespread sharing of geospatial information primarily among public organizations serving the Twin Cities metropolitan area of Minnesota, USA, and further, to enhance their individual and collective effectiveness. The Metropolitan Council, the regional government, is the primary sponsor of MetroGIS, which is comprised of over 300 organizational partners across the region. Conclusions are offered about the importance of viewing and studying strategic planning as a way of knowing and as a potential vehicle for inclusive public management in a democratic society.

Key words: strategic planning, strategy mapping, strategy formulation, implementation, ways of knowing, inclusive management, actor-network theory.

INTRODUCTION¹

In the United States, the practice of strategic planning has become nearly ubiquitous among governments at all levels and in all types of nonprofit organizations (e.g., Berman and West 1998; Poister and Streib 2005). On the one hand, this ubiquity may be simply a consequence of faddishness (Pfeffer and Sutton 2006), coercion (Radin 2006), or normative mimesis (DiMaggio and Powell 1983). On the other hand, strategic planning may also be popular because in many circumstances it seems “to work” – in the sense of helping decision makers figure out what their organizations should be doing, how, and why. In other words, strategic planning in some circumstances may provide a *way of knowing* helpful to decision makers. By “way of knowing,” we mean in the first instance a *practice*, or customary way of doing something, that allows its users jointly to develop, show, or possess knowledge or understanding (adapted from *The American Heritage Dictionary* 2000 definitions of “way” and “knowing”; Schatzki, Knorr-Cetina, and Savigny 2001; Reckwitz 2002; and Jarzabkowski 2005). In a broader sense, a way of knowing may also mean “a dynamic network of heterogeneous objects” – including human *and* non-human actors and ideas – in which the actors may *transform* the objects and ideas, and not just *transport* them as they move through time and across space (Feldman et al. 2006, 90; see also Latour 2005, 37 – 42, 223). As Nicolini, Gherardi, and Yanow (2003, 19) assert, “Knowing is therefore another way to describe the successful alignment of human and nonhuman elements ... and the human capacity to produce an effect on the world.” Knowing in this sense is a product of what Law (1987) calls “heterogeneous engineering,” or what Innes and Booher (1996) describe as a kind of *bricolage*. As Nicolini, Gherardi, and Yanow (2003, 27) argue:

From a practice perspective, the world appears to be relationally constituted, a seamless web of heterogeneous elements kept together and perpetuated by active processes of ordering and sense making. Practices – including discursive practices – are a *bricolage* of material, mental, social, and cultural resources. Not only are people active *bricoleurs*, but the world is not docile or passive. To know is to keep all these elements in alignment, given that order is not given but is always an emergent process.

Strategic planning may “work,” but the question of whether and how it works, in what ways, for whom, when, and why is certainly open (e.g., Vila and Canales 2008; Giraudeau 2008). Answers to these questions are wrapped up in the definition, theory, and methodology used in the inquiry. Several business and public management scholars have argued that strategic planning does not work, or at least does not work very well (e.g., Mintzberg 1994). The critics’ conclusions appear to be based on: the way they define strategic planning; the methodology used to study its effectiveness; and the typical lack of attention to why the process was undertaken, what the circumstances were, who was involved, what associations developed among the actors, how the process was managed, what artifacts were produced and what their content was, what was learned, how that learning was acted upon, and what consequences ensued.

Planning’s harshest critics have defined it as consisting of no more than a fairly rigid, mechanistically applied sequence of prescribed steps often requiring huge amounts of information, power, and authority to complete; and typically divorced from processes, methods, and mechanisms of implementation, such as budgeting (e.g., Altshuler 1965; Wildavsky 1979; Mintzberg 1994, 36 – 66; Mintzberg, Ahlstrand and Lampel 1998, 48 - 79). The critics then reach the (foregone) conclusion that little learning or political support for the results is likely to occur as a result of following prescribed steps, especially when coupled with information, power, or authority deficiencies (Boyne et al. 2004), or because of the absent link to implementation. Concerning methodology, the belief in the ineffectiveness of planning is based in part on the results of a number of early quantitative studies in which business organizations were essentially asked whether they did strategic planning (yes or no), after which usually their financial results were examined to see whether strategic planning had any observable effect on results. Findings from these studies are inconsistent or contradictory, although many actually do find positive, often complex effects of strategic planning on results (e.g., Miller and Cardinal 1994). In Mohr’s (1982) terms, these are *variance* studies, not *process* studies (see also Van de Ven 2007).

Given the relatively simplistic theory and methodology guiding many of these studies, it is not surprising that few clear-cut effects one way or the other were found

across studies; indeed, it would have been quite surprising if any had been found. In particular, as noted earlier, the studies have paid little attention to the larger context within which the planning occurred, who was involved in the planning and how these actors were connected, how the planning was done, what was learned, and how the resulting learning was applied and to what effect. For the most part, the actual detailed content of strategies is ignored, although general categories of strategy (e.g., defender, prospector, analyzer) have been explored and appear to be significant predictors of performance (e.g., Miles and Snow 2003; Meier et al. 2007). The studies, in other words, do not take very seriously the essentially uniform view of strategic planning's proponents who say linking the process to context is foundational; specific steps are not particularly important and information needs vary; what matters is how the process is used to promote strategic thinking, acting, learning and knowing; getting the right actors involved and affecting stakeholders in the right way is critical; getting the right strategy content is crucial; and making the links to implementation is paramount (e.g., Bryson 2004a; Ackermann, Eden, and Brown 2005; Van der Heijden 2005; Johnson, Scholes and Whittington 2008).

Studies of strategic planning in government also report mixed results for many of the same reasons. Roberts and Wargo (1994) and Radin (2006) are among public management scholars who have questioned the effectiveness of strategic planning in government, particularly mandated strategic planning in the U. S. federal government. On the other hand, several variance studies of public strategic planning viewed broadly have found positive, though not necessarily large, effects (e.g., Bryson, Bromiley, and Jung 1990; Bryson and Bromiley 1993; Borins 1998; Boyne 2001; Boyne and Gould-Williams 2003; Hendrick 2003; Andrews, Boyne, and Walker 2006; Meier et al. 2007; Andrews et al. 2009).

These studies of strategic planning in business and government have essentially treated strategic planning as a routine that is a fixed object, not a generative system comprised of many interacting and changeable parts. Specifically, they have focused on what Feldman and Pentland call the *ostensive* aspects of the routine, which are the abstract patterns formed out of many performances of the routine. In other words, the ostensive aspects are the "routine in principle"; "they are what enable us to say we are

engaged in the ‘same’ performance from one iteration of the routine to another” (Feldman and Pentland 2008, 302 – 303). In contrast, the *performative* aspects are what we observe: “real actions, by real people, in specific times and places.” Of course, the ostensive and performative aspects are linked: The ostensive parts “are the embodied understandings of the routine that we act out in specific instances... [T]hey guide performances, and are used to account for and refer to performances.” The performative parts “create, maintain, and modify the ostensive aspects of the routine;” in other words, actual performances can change what we think of as the “routine in principle” (loc. cit.; see also Feldman and Pentland 2003, 2005)

As a fixed object, variance studies have treated strategic planning as essentially a black box, or at best a box with some standardized categories with their content operationalized as variables: specified process steps; strategic planners; communication processes; SWOT analyses; stakeholder analyses; strategic plans; mission, vision, goals, strategies, and actions; performance indicators; and so on. What they have *not* done is treat strategic planning as a highly variable and malleable process emerging from, and performed in, very specific circumstances and intended to change those circumstances in some way. The studies, in other words treat as a well-defined *noun* (the ostensive) what strategic planning’s proponents treat as a *verb* referring to multiple and varied performances by a multiplicity of actors (the performative).

Variance studies thus assume that strategic planning is an *intermediary*, to use Latour’s (2005, 58) term, meaning the planning itself is essentially invariant and merely the transporter of a cause from inputs to outputs. Inputs, in other words, are assumed to predict outputs fairly well as long as the “transporter” is transporting. In contrast to the variance studies, we assume that the key to understanding the effectiveness (or not) of strategic planning may lie in seeing it as a complex process approach to knowing, in which organizational (or multi-organizational) stakeholders engage with one another in a series of associations and performances over time to explore and ultimately agree on and implement answers to a series of Socratic questions. These include: What might or should we be doing? How might or should we do it? What purposes or goals would be served by doing it? And how can we be sure are doing what we agreed we ought to do, and that we are achieving the effects we want?

We are therefore assuming that strategic planning is a discursive practice – meaning “not only forms of saying but forms of doing” (Reckwitz 2002, 211) – and not a fixed intermediary; strategic planning is thus a highly changeable *mediator*. As Latour notes, “For mediators the situation is different: causes do not allow effects to be deduced as they are simply offering occasions, circumstances, precedents” for deliberation, action, and association (2005, 58). We assume, in other words, that effective strategic planning is actually a complex cognitive, behavioral, social and political practice in which thinking, acting, learning, and knowing matter, and in which some associations are reinforced, others are created, and still others are dropped in the process of formulating and implementing strategies and plans. We further assume that the more strategic planning is reduced to a rigid sequence of steps entailing essentially impossible-to-meet information, power, and authority demands, the more likely it is a foregone conclusion that studies will show it fails. We also assume, in keeping with Blackler (1993) and Blackler, Crump, and McDonald (2003), that studies that abstract strategic plans out of the context, associations, and tensions within which they are produced and must be implemented – that therefore view knowledge as codified, objectified, easily transportable, and dissociated from the subjects who produced it and must cope with it – will also show that the plans fail. To repeat a point made earlier, as intermediaries, strategic planning and strategic plans are narrowly proscribed nouns; as mediators, they are broadly inclusive verbs that open doors on knowing. As Weick (1995, 188) notes, “Verbs capture that action that lays down the path for sensemaking.” Finally, we assume that terms like process steps; planners; stakeholder analyses; strategic plans; mission, vision, goals, strategies, actions, and performance indicators; and so on, are all relevant to any study of strategic planning in practice, but not as rigidly defined terms. Instead, we seek to understand how they are *performed* and what that might mean for understanding strategic planning as a way of knowing that is consequential for organizational performance.

This is not to say that we assume strategic planning and strategic plans will be successful if a richer, more complex approach is taken. Indeed, we agree with Bryson and Roering (1989) that ordinarily one should expect that strategic planning efforts will fail, since so much has to be in place for them to succeed: supportive sponsors in positions of power and authority, skilled process champions, skilled strategic planning teams, a

driving need, viable strategies, and a coalition large enough and strong enough to adopt proposed changes and protect them during implementation. Without development of some reasonable amount of shared knowledge and understanding and some reasonably shared commitment to mission, goals, strategies, and actions among the network of actors – that is, without a way of knowing these things in some reasonably agreed way – it seems almost inconceivable that strategic planning could succeed. In addition, given that strategic planning typically is meant to change something – specifically, “associations” of some kind, to use Latour’s term (2005, 5, 8) – and given that resistance to change is frequent and often intense – what Tryggestad (2005, 41) calls “anti-plans” – the chances of failure likely will be substantial, as Machiavelli pointed out long ago. We are talking about *bricolage* on a substantial scale – and no one should assume it will be easy to construct the coalition needed to support and implement a reasonably shared and agreed-upon mission, goals, strategies, and actions. In other words – and at the risk of sounding tautological – strategic planning processes must be designed and assembled to cope with multiple possible sources of failure, or they are likely to fail.

To summarize, the paper thus has two purposes: first, to explore the idea of strategic planning as a way of knowing, and second, to argue that actor-network theory – or what Latour (2005) calls “the sociology of associations” – provides a particularly apposite method for understanding how and whether strategic planning works in particular circumstances. The rest of this paper is organized into the following sections: First, we present an overview of actor-network theory (ANT) and present the case for its suitability as a method for studying the formulation and implementation of strategies and strategic plans. The presentation builds on the above discussion of ways of knowing from a practice perspective. Second, we illustrate the applicability of ANT as a methodology for studying strategic planning as a way of knowing by using the example of MetroGIS, an award-winning collaborative, inclusive, participative network of over 300 governments, business, and nonprofit organizations in the Minneapolis – Saint Paul, MN, metropolitan area that has created a virtual geographic information systems initiative under the auspices of the Metropolitan Council, the regional government (www.metrogis.org). Finally, we offer a number of conclusions about the importance of

viewing and studying strategic planning as a way of knowing and as a potential vehicle for inclusive public management in a democratic society.

ACTOR-NETWORK THEORY

Methods should be equal to the task of helping answer the questions asked. We want to know what it might mean to view strategic planning and the formulation and implementation of strategic plans as a way of knowing involving various kinds of actors and materials and intended to improve performance. In other words, we want to know more about whether, how, and under what circumstances strategic planning is able to do what its proponents assert it is able to do, at least at its best – namely, promote strategic thinking, acting, and learning; improve decision making; and improve organizational performance (Bryson 2004a; Ackermann, Eden, and Brown 2005; Johnson, Scholes, and Whittington 2008).

In this section, we will explore the aptness of ANT to the study of strategic planning. Latour (2005) offers the best introduction to ANT and contrasts ANT, or the “sociology of associations,” with the “sociology of the social.” (Note: In this section all Latour references are to Latour 2005; see also Latour 1987; Law and Hasard 1999; Czarniawska and Hernes 2005; a relatively complete list of ANT references may be found at <http://www.lancs.ac.uk/fass/centres/css/ant/antres.htm>). Latour asserts that ANT takes as its challenge accounting for new associations – i.e., “the *tracing of associations*” (5, italics in original) – without *a priori* assuming any fixity to social aggregations, which he says the “sociology of the social” does. In other words, the “social” (e.g., existing and new networks, communication patterns, stakeholder relations, coalitions, client groupings) is what must be explained, not assumed. Further, tracing associations also means accounting for connections among “things that are not themselves social” (*loc. cit.*); for example, plans, decision-making approaches, computer networks, and worksites. While Latour (2005) actually is rather vague on what counts as an association, others (typically not writing from an ANT perspective) have explored the issue of the various meanings of what might count as an association – including a causal connection – in single cases (e.g., Barzelay and Campbell 2003; George and Bennett 2005; Van de Ven

2007). Thus “association” includes far more than, for example, a communication link between nodes in a network; associations may also embody shared understandings, affective responses, identity-based or -forming linkages, agreements, commitments, resource flows, and host of other possible connections, including causal connections. Note as well that associations may be stronger or weaker, and emergent, ongoing, or ending. In terms of methodology, ANT thus: (1) focuses on performances, (2) includes associations or connections with non-human elements or aspects of the situation, and (3) helps account for how the ostensive aspects of any set of associations are produced, become stabilized and legitimized, or change, through strengthening or weakening associations, respectively (Feldman and Pentland 2008, 306). ANT does this by providing a set of categories and a methodology for examining associations. In the next section we introduce the categories and methodology, and in the following one we consider the appropriateness of ANT for understanding and evaluating strategic planning as a way of knowing. We then illustrate the application of ANT’s categories and methodology to the MetroGIS case.

ANT’s Approach to Examining, Understanding, and Explaining Associations

In order to trace associations ANT lets the actors do the acting; that is, it lets them “re-associate and reassemble the social” (7). As Latour asserts, “The task of defining and ordering the social should be left to the actors themselves” (23). ANT therefore is a process methodology that assumes actors’ knowing is certainly implicit and often explicit.

More broadly, Latour asserts that sociology has three main tasks or duties when it comes to understanding, explaining, evaluating, and helping to inform how we humans might best live together (adapted from 16, 160). The first task is to address the full range of possible controversies involved in living together without restricting the controversies in advance. The second is showing how those controversies are or may be settled (or in Latour’s language, stabilized), and how those settlements are or may be maintained. The final task is to define the procedures for the composition (reassembly) of the collective by being interesting and useful to those who have been the object of study.

As a method, Latour (22) argues that an ANT study should focus on five (he believes exhaustive) categories of controversies. They include the nature of: groups and how they are defined; action and its manifold causes; agents, including human and non-human actors; facts versus “matters of concern”; and studies showing how the social sciences can be said to be empirical.

ANT looks at many different ways of identifying *groups*, because actors themselves identify groups in a variety of ways. ANT studies incorporate a wide range of actors, many, or even most of which, can be mediators, and not intermediaries. This means that in each course of *action* a great variety of agents may change, divert or displace the original intent; and the precise origin of any action may be unclear – hence, the term “actor-network” (46). Or as Latour (202) says, “Stretch any interaction and, sure enough, it becomes an actor-network.” One type of group is a “macro actor,” to use Czarniawska and Hernes’ (2005) language, that is built up of interacting actor-networks and is seen as an actor; any formal organization would be an example, but there are many others. ANT studies actually become enquiries into practical metaphysics – defining the basic structure of the actors’ world from their perspective (50).

In ANT *agents* can be both human and non-human; indeed, “any thing that does modify a state of affairs by making a difference is an actor” (71). Actors may be key individuals and groups, but may also include things or objects (such as the Internet or maps) that affect the course of action. ANT studies refer to the variety of human and non-human actors as “actants” (54 – 55).

An important ANT premise is that power is a process result, not an explanation. In other words, “Power is the final result of a process and not a reservoir, a stock, or a capital that will automatically provide an explanation. Power and domination have to be produced, made up, composed. Asymmetries exist, yes, but where do they come from and what are they made out of?” (64). This means that distributions of power on any issue can change as associations change. Actors can influence the flow of action in numerous ways and an ANT study would pay attention to this.

Another ANT focus is in what counts as a *matter of fact* and what is a *matter of concern*. Analysts tend to think that facts about the physical world are “hard” and not constructed or artificial; while social life is “soft” and often rather artificially and

arbitrarily constructed. On the other hand, ANT studies grew out of the sociology of science and have demonstrated rather conclusively that the physical sciences “offer the most extreme cases of complete *artificiality* and complete objectivity moving in parallel” (89, italics in original). In the “construction of facts... artificiality and reality march in step” (90). As Fleck (1983) asserts, “facts are about the least primitive, the most complex, the most elaborated, and the most collective makeup there is” (quoted on 112). This is clearly not to say that facts are “made up,” but instead to note the extensive associations of agents and actions wrapped up in discovering, determining, defining, or concluding that something is a fact. Official street maps, for example, which nearly everyone presumes to be factual, are a product of the manifold workings of government legislation, surveyors, cartographers, GPS technology, city planners, property law, lawyers, and so on. Matters of concern, on the other hand, are more open; they are not yet concluded or stabilized. (Latour would caution that both matters of fact and matters of concerns are “matters”; and that in the final analysis even matters of fact, at least in theory, should be recognized as matters of concern. In other words, what we generally think of as matters of fact are hardly ever wholly, permanently and irrevocably stabilized as facts.)

Finally, Latour argues that all sociological accounts are *risky accounts* and prone to fail because they cannot put aside either their artificiality or their claims to accuracy and truthfulness (133). A key point is that artificiality and accuracy are not contradictory; both are required. (124).

The Appropriateness of ANT for Understanding Strategic Planning as a Way of Knowing

ANT appears far more able to detect effects of strategic planning activities in relation to who and what is involved, how, why, and with what results than the blunt-instrument variance methods noted above. By allowing the actors to act and by focusing on the associations they trace, ANT appears to be particularly able to clarify in practice what it means to call strategic planning a way of knowing defined as “a network of heterogeneous objects” (Feldman et al. 2006, 90) that is “relationally constituted” and “kept together by active processes of ordering and sense making, [where] to know is to

keep all these elements in alignment, given that order is not given but is always an emergent process (Nicolini, Gherardi, and Yanov 2003, 27). At the same time, by focusing on actors and the associations they trace (or not) ANT is well-suited to the task of discerning how and to what extent strategic planning in practice is inclusive, participatory, and democratic.

In terms of the appropriateness of ANT as a method for studying strategic planning in practice, consider how strategic planning is described by one of its proponents (Bryson 2004a 27 – 28):

[Strategic planning] is meant to help public and nonprofit organizations (and communities) create public value through meeting their mandates and fulfilling their missions. In order to do so it must produce fundamental decisions and actions that shape and guide what the organization is, what it does, and why it does it. Producing those decisions requires an interconnected set of activities that organize participation, create ideas for strategic action, build a winning coalition, and implement strategies.

From an ANT perspective, this view of strategic planning implies it is a practice concerned with understanding, creating, sustaining, changing, or ending associations among aspects of the general and specific contexts for action, leaders and other stakeholders, various kinds of analyses and their results, artifacts (e.g., legislation, articles of incorporation, studies, strategy maps, strategic plans, resolutions, communication pieces, reports, etc.), “fundamental decisions,” “fundamental actions,” strategies-in-practice, resource flows, performance results, and so on. An ANT study would trace these associations to understand what exactly happened and what the results were. A carefully conducted ANT study could account for the associations that are formed (or not) to organize participation, create ideas for action, build a coalition, and implement strategies. It could assess what the effects of those associations are on inclusion and participation, and on the more general results. An ANT study would examine the specific performances of people involved in strategic planning, but would also attend to how the ostensive aspects of strategic planning, from the viewpoints of

various actors, affect the performance and, in turn, how the performance sustains or changes the actors' views of the ostensive aspects of strategic planning.

Said differently, the main tasks Latour ascribes to sociology are also the tasks of strategic planning, although in the case of strategic planning these tasks are more narrowly proscribed and usually referred to as: articulating and addressing strategic issues, figuring out how to address them effectively over time, and providing accounts along the way that help people identify, focus on, and act effectively on organizational mission, goals, strategies, and actions. ANT categories and methods are thus well situated to reveal how effective a strategic planning endeavor was in examining the relevant controversies, helping settle them, creating enduring solutions, and generating learning for the actors involved. Along the way, ANT methodology can also illuminate in what ways a strategic planning was or was not inclusive, participative, and/or democratic, and what the effects were. ANT studies ultimately could lead to generalizations about strategic planning in practice viewed ostensively that are more useful than most variance studies.

We now discuss briefly the five controversies and how an ANT study of strategic planning would examine them. Recall that the controversies include the nature of: groups and how they are defined; action and its manifold causes; agents, including human and non-human actors; facts versus “matters of concern”; and studies showing how the social sciences can be said to be empirical.

An ANT study would examine the variety of ways in which groups are identified, including through actors' use of stakeholder analyses in which groups are named and their relationships and powers explored (Bryson 2004b). Stakeholder analysis is typically an ongoing set of sometimes formal, but mostly informal, activities whose purpose is to understand who needs to be taken into account, what they want, what might be needed from them, and how best to work with them. Stakeholder groups are typically not taken as *given*, but as *performed*; that is, they are formed out of “an on-going process made up of uncertain, fragile, controversial, and ever-shifting ties” (Latour 2005, 28). County boards and city councils, for example, are often changing through elections. In addition, those involved in strategic planning typically are also aware of the difference between the ostensive – abstract, more generalized – features of stakeholder groups, such as county

boards, and the more specific, performative aspects of a particular county board. Stakeholders thus are likely not to be the object of an ostensive definition, but rather of a performative definition.

In terms of action and its manifold causes, an ANT study would locate anything specifically labeled as strategic planning within the broader actor-networks that contain it, while also attending to how the specific process actually unfolds. In terms of agents, an ANT study would examine the various human actors involved, such as process sponsors, champions, facilitators, strategic planning teams, and the variety of other stakeholders. An ANT study would also examine the role of non-human agents, such as mission and vision statements, strategic issue definitions, strategy maps, strategic plans, formal charters or articles of incorporation, and conceivably even such things as state constitutions, which affect state, regional and local government's formal powers and jurisdictions.

An ANT study would examine what actors involved in strategic planning take to be facts, and also would explore how they approach matters of concern that eventually may be translated essentially into matters of fact, e.g., work programs, adopted plans, policies, budgets, accountability systems, etc. Actually, matters of concern and how they are dealt with would appear to encompass much of any strategic planning process, and therefore would occupy a significant fraction of any ANT study. These matters of concern include: Who is a stakeholder? How inclusive, and in what ways, should the process be? How should the process be organized? What must be taken as given, and what is open to discussion? What are our real mandates? What should our mission be? What strategic issues do we face? What strategies should we pursue to address them? How should these strategies be implemented? How should performance be judged? At least some of these matters must become "stabilized" as essentially matters of fact for the people involved if the organization is to succeed. As Mintzberg (1994, 252) notes, "Organizations function on the basis of commitment and mindset; in other words, it is determined and inspired people who get things done." An ANT study of strategic planning in practice would identify the matters of concern in the case and explore what happened to them, and in particular would attend to what got stabilized as a matter of fact.

In the last of the controversies, we confront the notion that an ANT (or any other) study of strategic planning would be a risky account, in the sense that its claims to truthfulness and accuracy will always be open to question. The study inevitably will be somewhat artificial in a variety of senses: it will be man-made, obviously; but more importantly, of necessity it will be partly fictional, even as it strives to be non-fictional. In short, it will be a contrivance trying to be truthful and accurate, but that artificiality and accuracy are not contradictory; both are required. (Latour 2005, 124). In an intriguing parallel, the object of study will also include its own risky accounts: Strategic plans and all of the documents that go into their preparation (e.g. stakeholder analyses, situation analyses, scenarios, strategic issue statements, draft strategies, etc.) are also risky accounts. They are artificial, but also aspire to accuracy and truthfulness. An ANT study would need to explore how these various documents and plans were constructed and what their utility and truth status were from the standpoint of the various actors involved.

To summarize, an ANT study would examine how in a particular strategic planning case the controversies were settled (stabilized) or not – meaning which actors were identified and involved, how controversies (strategic issues) were articulated in such a way that they could be addressed effectively, whether ways were found to address them effectively over time, and whether accounts along the way were provided that helped people identify, focus on, and act effectively on organizational mission, goals, strategies, and actions. The presumption is that if the controversies are not stabilized appropriately – if treaties or settlements of some sort are not reached about mission, goals, strategies and implementing actions – things will fall apart, at least as far as the strategic planning endeavor is concerned (Bryson and Roering 1989). The “answers” (understandings, agreements, commitments) to the issues addressed must be “collectively stated, stabilized, and revised” (138) if the strategic planning performance is to have much effect in practice. An ANT study would explore in detail how and to what extent they were stabilized and to what effect.

We believe that ANT methodology offers a number of advantages for studying strategic planning and the formulation and implementation of strategic plans. First, ANT researchers are coached to follow the actors, which must be done to really understand what happens in strategic planning and what its consequences are. In other words, what

happens has to be accounted for step-by-step and association by association through the performances of actors, and not presumed based on reified (and perhaps quite wrong) presumptions about strategic planning viewed ostensibly. Second, following the actors also helps reveal how inclusive, participative, and/or democratic the process was. Third, ANT encourages researcher to treat as real the possible associations among ideas and their proposers, as when strategic options are being discussed; and also as real what is actually decided regarding which options to pursue. In other words, ANT treats as real both matters of concern (issues, possibilities) and matters of fact (agreed actions, decisions). Fourth, ANT is one of the only theories available that would allow the various artifacts produced during a strategic planning (e.g., stakeholder and SWOT analyses, issue papers, strategy maps, draft plans, adopted plans) to be taken seriously as mediators and actors. In other words, typically in any strategic planning process many artifacts are produced as a way of fostering deliberation, action, and association; and many of these artifacts can make a big difference, meaning, as Latour would argue, they become actors. Fifth, ANT helps reveal in great detail the extent to which strategies are both *emergent*, growing out of prior associations, and *deliberate*, resulting from new associations (Mintzberg 1994). Sixth, ANT alerts the researcher to just how much work can or does go into strategic planning and into creating and/or maintaining an organization it is meant to help, since the associations involved must be created and constantly maintained or they will dissolve. Seventh, and related, ANT methods help account for how the ostensive aspects of any set of associations are produced, become stabilized and legitimized, or change, through strengthening or weakening associations, respectively (Feldman and Pentland 2008, 306). Finally, Latour argues that ANT-inspired approaches should seek to define or help identify good procedures for assembling or composing the collective by rendering itself interesting to those who have been the object of study. Such studies thus have something very important to contribute to strategic planning *as a field*, as it, too, seeks to identify the best approaches for assembling or composing the collective by engaging those who are affected, involved, or have some partial responsibility to act effectively on organizational mission, goals, strategies, and actions.

MetroGIS AS AN EXAMPLE ¹

We illustrate the promise of ANT studies of strategic planning using the example of the creation and continued operation of MetroGIS, the regional geographic information system in the Twin Cities area of Minneapolis, Minnesota (<http://www.metrogis.org>). We hasten to add, however, that the illustration does not constitute a full study using ANT methods to trace the associations involved in forming and maintaining MetroGIS, nor does it show clearly what worked and what did not in building the complex collaboration. Instead, the illustration represents an after-the-fact account of the development of MetroGIS informed by an ANT perspective intended to demonstrate the potential usefulness of ANT as a methodology for examining, understanding and explaining what strategic planning might mean in practice as a way of knowing. The data on which this illustration is based come from several sources: archival research, including a review of materials on the MetroGIS website (www.metrogis.org); a brief, unpublished written history of MetroGIS (Delmont 2008); individual interviews with ten persons involved in MetroGIS's founding and subsequent development; one group interview with five knowledgeable MetroGIS actors; and participant observation by the lead author in the build-up to, facilitation of, and follow-up to both major MetroGIS strategic planning efforts. The example is presented first, followed by a more thorough discussion in a subsequent section of particular aspects of the MetroGIS case in light of ANT methodology, including the importance of strategy mapping, power as an effect as much as a cause, and the creation of "macro actors" (Czarniawska and Hernes 2005).

MetroGIS was initiated with conversations beginning in 1995 and has grown into an award-winning regional geographic information system (GIS) initiative serving the seven-county Minneapolis – Saint Paul, MN, metropolitan area. The Metropolitan Council (MC), the regional government serving the seven-county Minneapolis - Saint Paul metropolitan area and a primary beneficiary of MetroGIS' efforts, has accepted the role of primary sponsor. In this capacity, the MC has provided the majority of staff support and project funding for MetroGIS' efforts to foster collaboration. The MC also has assumed several leadership roles, along with other key stakeholders, in support of regional solutions to shared geospatial needs.

MetroGIS itself is perhaps most usefully viewed as a voluntary collaboration – and what interviewees call a “virtual organization” – involving over 300 local and regional governments, partners in the state and federal governments, and academic institutions, nonprofit organizations, and businesses. MetroGIS provides a regional forum to promote and facilitate widespread sharing of geospatial data. The associations that have built and maintained MetroGIS have created a “macro actor” (Czarniawska and Hernes 2005). The organization is a clear example of “collaborative planning” by multiple units of government, nonprofits, and businesses (Healey 2006) and of “inclusive management” (Feldman and Khademian 2000, 2007) that includes high levels of inclusion, democratic and consensus-based decision making processes, and varying levels of participation depending on the situation.

Important associations in the MetroGIS case are traced in three ways. First, Table 1 lists: (1) MetroGIS’s major accomplishments; (2) the controversies that were addressed and settled that led to the accomplishments; (3) who was involved in addressing and/or settling the controversies; (4) the process used to produce the accomplishment; (5) the role of technology as an actant; (5) important artifacts; and (6) outcomes of major consequences resulting from the accomplishment. Second, the associations between and among the accomplishments are traced in three figures, each corresponding to a different period in MetroGIS’s development, as identified in the official history of MetroGIS (<http://www.metrogis.org/about/history/index.shtml>). And third, in the next three subsections we present a brief explanation (Latour would say a “risky account”) of how MetroGIS came to be, the controversies that were faced over the course of its history that led to the accomplishments, and the accomplishments themselves. The narrative, in other words, represents an attempt to tell the story the traced associations have to tell. In the next major section we discuss further what viewing the MetroGIS example through an ANT lens has to contribute to understanding and explaining strategic planning and the formulation and implementation of strategic plans as a way of knowing.

Insert Table 1 About Here

**MetroGIS Phase 1 – Strategic Plan Formulation and Initial Implementation
– Early 1995 – April 1996**

The idea of establishing a regional GIS to serve the Twin Cities metropolitan area was suggested in 1995 by staffers working for the Metropolitan Council (MC), the regional government. The idea grew out of frustration local government leaders and planners were experiencing as a result of what they believed were faulty MC population, employment, and land use data and projections. See Figure 1 for a tracing of key associations among accomplishments during this period. (Note that the arrows in the figure and in Figures 2 and 3 to follow do not indicate causes, but instead represent often complex “occasions, circumstances, precedents” for deliberation, action, and association [Latour 2005 58] around controversies that lead from one accomplishment to the next.) The local governments were required to develop land use and other plans in accord with regional plans and based in part on making use of MC data. The difficulty was that the MC made use of a population and employment allocation model based on regional or macro-level data that did not take into account local land uses; in other words, the allocations took no account of local capacities to absorb the allocations. As early as 1994 the MC GIS Unit recognized the need for parcel-level data that would more accurately indicate local potential for population and employment growth, but had no way to acquire or produce it. Meanwhile, the potential of GIS technology and the relatively new Internet offered some promise of a fairly quick, accurate, and accessible metro-wide system of collating land use and other kinds of data.

Insert Figure 1 About Here

Rick Gelbmann, head of the MC GIS Unit, convinced Richard Johnson, the MC’s deputy regional administrator, that they should convince the Council members (the formal MC policy makers) that the MC should do two things: (1) authorize an exploration of what the MC should do about fostering creation of a regional GIS system that included parcel data, and (2) hire someone to help with the exploration. Randall Johnson (no relation), a planner with suburban Shoreview who had experience with unrealistic MC

data and projections, was hired. Since the counties had most of the necessary data, although not in standardized, normalized form, Johnson received permission from the MC to explore with the seven regional counties what incentives would be needed: (1) to establish a means by which the MC would have ongoing access to county-produced parcel data and (2) to gain county approval to participate in the development and use of standards to normalize parcel data across the seven counties. These discussions lead to a substantially more ambitious concept: broadening the stakeholders to include all local and other governmental units that served the metropolitan area and collaborating to address a host of shared geospatial information needs beyond parcel data. The MC was willing to put \$1.1 million on the table to gain access to data produced by others in a form it could readily use.

Randall Johnson took the lead on organizing a series of formal and informal discussions and two major forums of 75-plus stakeholders each to explore the issue of whether to pursue a regional GIS system and whether the MC should lead the initiative. Each forum involved creating and/or maintaining and reinforcing existing relationships among actors. A general consensus emerged from these discussions (Latour would say stabilized) for the idea that there should be a regional GIS system and the MC should take the lead in this case – although tension continues to exist between the MC and local governments on other issues, which is partly a consequence of the way regional and local government are organized constitutionally and legislatively in Minnesota.

The MC officially accepted responsibility for sponsoring the effort. What came to be called the “definition and design phase” – or Implementation Phase I, as they called it – began in December 1995 and ran through April 1996. The key event in this phase was a strategy mapping exercise called the Strategic Planning Forum, which was held December 14, 1995. The exercise involved an intentionally assembled group of 22 invited representatives of government, nonprofit, and business interests, including the National Spatial Data Infrastructure Framework coordinator. Strategy maps of the sort the group developed are word-and-arrow diagrams in which the arrows indicate that some activity may cause, lead to, or result in (in ANT terms, be associated with) something else. The specific methodology will be found in Bryson et al. 2004, including a set of sense making and ordering principles that help align people’s thinking about mission,

goals, strategy, and implementation. The maps typically involve 100 or more ideas linked by arrows; in this case, upwards of 250 ideas were created and linked by the group over the course of the day. The group then categorized specific ideas that they thought captured important elements of a possible mission, goals, strategic issues or themes, and some key actions. Participants ultimately agreed on statements of intent (including basic elements of the mission and goals), and strategic issues (matters of concern) to be addressed over the next four months. The event also resulted in creation of a Coordinating Committee to help guide subsequent efforts. Participants also discussed an initial set of “guiding principles” to foster successful collaboration.

Four advisory teams (data access, data content, policy, and data standards) were created by the Coordinating Committee in March and April 1996 to help it address the many issues and needs (matters of concern) identified at the Strategic Planning Retreat. These needs were consolidated by the Committee into five strategic projects and assigned to the advisory teams for recommended courses of actions. (These advisory teams are no longer active.)

In April 1996, a formal mission statement, goals, guiding principles, five strategic projects (called Strategic Initiatives), and an initial organizational structure were created and agreed by key stakeholders, including the Coordinating Committee and the MC. In other words, what had been several strategic matters of concern involving direction, organization, and governance evolved into matters of fact. The original, officially approved mission of MetroGIS grew directly out of (meaning much of the language was taken directly from) the strategy mapping exercise. The original mission was: “To provide an ongoing, stakeholder-governed, metro-wide mechanism through which participants easily and equitably share geographically referenced data that are accurate, current, secure, of common benefit and readily usable. The desired outcomes of MetroGIS include: improved participant operations; reduced costs; and support for cross-jurisdictional decision making” (www.metrogis.org/about/history/mission.shtml).

Many interviewees commented on the importance of the guiding principles for developing and sustaining the organization. Many noted the principles are frequently referred to, and are clearly – even *emphatically* – inclusive, participatory and democratic. They also emphasize the importance of tapping and creating shared knowledge and

understanding. The principles are as follows (slightly modified in recent years from the original) (<http://www.metrogis.org/about/index.shtml#principles>):

- Pursue collaborative, efficient solutions of greatest importance to the region when choosing among options.
- Ensure that actively involved policy makers set policy direction.
- Pursue comprehensive and sustainable solutions that coordinate and leverage resources: i.e., build once, make available for use by many.
 - Leverage the Internet and related technology capabilities.
 - Value knowledge sharing as highly as data sharing.
 - Seek cross-sector (public, non-profit, academic, utility and for-profit) solutions, including data enhancements from many sources to serve shared geographic information needs when in the public interest.
 - Pursue interoperability with jurisdictions which adjoin the Twin Cities metropolitan area, seeking consistency with standards endorsed by state and national authorities.
- Acknowledge that the term “stakeholder” has multiple participation characteristics: contributor of resources, consumer of the services, active knowledge sharer, potential future contributor, potential future user, continuous participant, and infrequent participant.
- Acknowledge that funding is not the only way to contribute: data, equipment and people are also valuable partnership assets.
- Rely upon voluntary compliance for all aspects of participation.
- Rely upon a consensus-based process for making decisions critical to sustainability.
- Ensure that all relevant and affected perspectives are involved in the exploration of needs and options.
- Enlist champions with diverse perspectives when implementing policies and carrying out activities.

The five Strategic Initiatives (SI) involved:

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- Obtaining formal endorsement from key stakeholder organizations of the MetroGIS principles and expectations (SI #1)
- Executing and administering data sharing agreements with key partners (SI #2)
- Identifying and addressing common priority information needs among the stakeholders (SI #3)
- Implementing an Internet-based data search and retrieval tool, now known as MetroGIS DataFinder (SI #4)
- Identifying a sustainable long-term financing and organizational structure (SI #5)

The original strategy maps may be accessed at http://www.metrogis.org/about/history/concept_mapping.pdf . According to the first and only MetroGIS director, Randall Johnson, these maps guided MetroGIS from their creation until the next strategy mapping exercise in February 2007. Johnson, for example, kept copies of the maps on his office wall throughout this period and referred to them frequently personally and in meetings (Randall Johnson 2006, 2007, personal communications). The maps, therefore, made a difference – they were actors.

MetroGIS Phase 2 – Sustained Strategic Plan Implementation – May 1996 – July 2001

Phase 2 began in May 1996 and was completed in June 2001 with the conclusion of the second-generation data sharing agreements (see Figure 2). The five Strategic Initiatives outlined above were completed and solutions to common information needs of key stakeholders were being developed. Achieving these results depended in part on Randall Johnson's diligent efforts to build intra-county user groups to foster awareness of, support for, and coordinated use of GIS. They also were helped by a survey of more than 150 stakeholders to determine the data they needed to perform their jobs and the data they needed from others, information that laid out the basis for sharing. Reaching agreement with The Lawrence Group to share its Regional Street Centerline Dataset (identifying digitally the exact location of streets and intersections) provided a crucial component for developing DataFinder, a web-based data search and retrieval tool.

Studies of MetroGIS financing, governance and organizational options affirmed the MC's role as the primary sponsor for fostering collaboration and stabilizing governance and organizational structures and processes.

Insert Figure 2 About Here

“Expansions of the object of work” (Engeström, Puonti and Seppänen 2003) – meaning typically taking the Strategic Initiatives further – also occurred in this phase, and included: the addition of new datasets, including detailed data on over one million land parcels from all seven counties; continued efforts to increase perceptions of the legitimacy and effectiveness of MetroGIS; adoption of the first formal business plan in April 2000; and in June 2000, MC approval of a statement of intent to continue support of MetroGIS's coordination functions. With this support, MetroGIS was able to move closer to a mature operational phase. Consequently, emphasis shifted to acquiring the agreements necessary to sustain long-term financing, data sharing, and congruence with geospatial policy for the rest of Minnesota and beyond. The phase ended with completion of the second-generation data sharing agreement. The agreement among data producers outlined the basis for sharing data and the precise mechanisms for doing so, including technological linkages among data producers and users. The new data sharing agreement reduced the number of licenses needed to access data from seven (one for each county) to two (one for six counties and another for the remaining county).

MetroGIS Phase 3 – Continuation of Strategic Plan Implementation and Development of the Next Strategic Plan – July 2001 – Present

Phase 3 began in July 2001 and continues (see Figure 3). The phase focused on: further implementation and “expansion of the object of work” of the strategies outlined in the 1995 strategy map, identifying additional needs for which MetroGIS might provide a solution, fostering institutional connectivity (associations) with the rest of Minnesota, enhancing the performance of MetroGIS's existing regional data solutions, enhancing MetroGIS Data Finder, and developing the next strategic plan. Several major initiatives

characterized this phase. The first, called the MetroGIS DataFinder Café, provided a state-of-the-art, Internet-enabled, GIS data distribution system. The second involved developing the 2003-2005 Business Plan, which led to new datasets being included, as well as development and implementation of the third-generation data sharing agreement involving a single license to access data from all seven counties. Third, a performance measurement program was instituted to ensure that MetroGIS is accomplishing its goals and meeting the needs of the MetroGIS community. In addition, MetroGIS emerged even stronger from a major challenge from within the MC to its continued existence via a program evaluation audit. According to MetroGIS Policy Board Chair Virginia Reinhardt, the organization had been called on to justify its existence as a public entity by MC decision makers; when a program audit found that MetroGIS produced benefits far in excess of its costs, the challenge disappeared (Virginia Reinhardt interview 2008). In June 2006 the MC endorsed MetroGIS and guaranteed its continued existence. That endorsement, along with a continuing series of awards and recognition, increased perceptions of MetroGIS's effectiveness and legitimacy.

Insert Figure 3 About Here

Dealing with the program evaluation audit postponed development of the 2004-2006 Business Plan, but surviving the audit in even stronger shape set the stage for the second round of strategic planning (http://www.metrogis.org/about/business_planning). After considerable background work in the form of numerous meetings with numerous stakeholders stretching over many months, the strategic planning effort was formally launched with a second strategy mapping exercise, using the same methodology as before, on February 8, 2007. The mapping process involved approximately 40 key stakeholders and directly resulted in a new mission, goals, and strategies for the organization that respond to the new circumstances it faces. Some revisions to the guiding principles were also suggested. Details of the mapping process, including photographs and the maps themselves, will be found via the following website and embedded links;

http://www.metrogis.org/about/business_planning/sdw/workshop_summary_07_0626.pdf

After further consultations and meetings, the new mission, goals and strategies were adopted by the policy board and incorporated into the new business plan. The new mission is: “The mission of MetroGIS is to expand stakeholders' capacity to address shared geographic information technology needs and maximize investments in existing resources through widespread collaboration of organizations that serve the Twin Cities Metropolitan Area” (www.metrogis.org). The new mission represents a significant change from the previous mission and helps MetroGIS “go to the next level” (Randall Johnson, personal communication 2007; Group interview 2008). Previously the purpose of the organization was to create a mechanism for sharing GIS information. The new mission states the purpose is to expand stakeholders’ capacities to address GIS needs, maximize investments in existing resources, and foster widespread collaboration of organizations – not just governments – that serve the metropolitan area. The interviewees agree that the mapping process helped clarify for key MetroGIS stakeholders that the organization had outgrown its previous mission (i.e., the object of work has expanded and new prospective associations should be traced). In other words, mapping again made a difference – it was an actor.

The mapping exercise also resulted in a focus on eight major activity areas for the next three to five years, beginning in 2008. The activities are as follows:

- Develop and maintain regional data solutions to shared information needs
- Expand endorsed regional solutions to include support and development of application services
- Facilitate better data sharing through making more data available, having more uses, and improving processes
- Promote a forum for knowledge sharing
- Build advocacy and awareness of the benefits of collaborative solutions to shared needs
- Expand MetroGIS stakeholders
- Maintain funding policies that get the most efficient and effective use out of available resources and revenue for system-wide benefit

MetroGIS did not list these major activity areas in priority order, as simultaneous work on some aspect of each will be important to successfully achieving the mission and desired outcomes.

Figure 3 also notes some additional controversies that have not yet been settled. Some MetroGIS founders have moved on; other may soon, so there is an ongoing issue around leadership transitions. In addition, cities are big users of data and applications, but are not major providers of them, so there is an issue around maintaining an equitable balance of benefits and contributions. And finally, one member county appears to be ambivalent about development of applications and participation by businesses.

FURTHER DISCUSSION

Recall that our purpose is to illuminate what it might mean to view strategic planning and the formulation and implementation of strategic plans as a way of knowing by using an ANT lens. By way of knowing we mean “a dynamic network of heterogeneous objects” – including human *and* non-human actors and ideas – in which the actors may *transform* the objects and ideas, and not just *transport* them as they move through time and across space (Feldman et al. 2006, 90; Latour 2005 37 – 42, 223). Beyond that, knowing means aligning the human and nonhuman elements via active processes of ordering and sense making in such a way that desirable effects are achieved (Nicolini, Gherardi, and Yanow (2003, 19, 27). We are saying that strategic planning represents a kind of discursive practice meant to help produce such an alignment via active *bricoleurs* in situations where almost always “that order is not given but is always an emergent process” (ibid. 27).

We hope Table 1 and Figure 1 – 3 help visibly demonstrate how the two major strategic planning efforts in the MetroGIS case helped actors order and make sense of their situations (Latour would say of their associations and actor-networks) for the purpose of responding to and changing their situations. In particular, both formal strategic planning exercises, the 1995 and 2007 Strategic Planning Forums, were embedded in these situations and simply cannot be understood separately from what preceded and followed them. These formal strategic planning exercises were part of a highly discursive practice involving many *mediators* – the actors – not *intermediaries* – to use Latour’s terms. Even when viewed more abstractly (ostensively), the strategic planning activities in this case must be seen as *mediators* and not a simple transporters of causes to effects.

The exercises actually were complex cognitive, behavioral, social and political endeavors in which thinking, acting, learning, and knowing mattered greatly, and in which some associations were reinforced, others were created, and still others were dropped in the process of formulating and implementing draft mission elements, goals, strategies, and actions. In the case of the first Forum, the exercise also resulted in: establishing guiding principles; creating the Coordinating Committee; and laying additional groundwork (associations) that resulted in an agreed MetroGIS governance and organizational structure; along with endorsement by the MC and all key stakeholders of the mission, goals, guiding principles, governance and organizational structure; and five strategic initiatives that were implemented and greatly expanded on in subsequent years. In the case of the second Forum, the exercise resulted in a changed mission and work on further broadening the network of stakeholders and uses of MetroGIS.

A central feature of both strategic planning forums was the use of strategy mapping, the creation of a word-and-arrow diagram linking scores of participant-produced statements into a network of mission-related ideas, goals, strategies, and actions (Bryson et al. 2004). All of the interviewees agree that the mapping exercises helped change their thinking and helped the groups involved in the exercises and in subsequent discussions by staff and policy makers reach agreement on mission, goals, strategies, actions. A crucial aspect of the creation of the maps was the interlinked creation of a reasonably shared understanding and agreement among a key group of stakeholders about purposes, goals, strategies and actions; guiding principles; and the basis for an emergent strong coalition of supporters. In other words, the mapping exercises appear to have helped establish or reinforce ideational, social, and political linkages (associations) among MetroGIS sponsors, champions, and other key stakeholders. The outcomes of these processes were both tangible (a strategy map and a resulting strategic plan) and intangible (relationships, understandings, knowledge, commitments, and political will) (Bryson 2004a, 78 – 80) – in short, a way of knowing. Regarding the 1995 strategy mapping effort, Johnson would go so far as to claim, “We would be in a different place – maybe dead – without the mapping exercise. It enabled us to lock in very quickly on vision, goals, strategies and actions, get four teams organized and working right away, get the Coordinating Committee... It really helped people [meaning it acted as an agent]

see the possibilities at a time when things easily could have fallen apart” (Randall Johnson 2008, personal communication). Other interviewees also commented on the importance of the strategy mapping session and the resulting map; they agree it was a “turning point” (Group interview 2008).

Regarding the 2007 mapping exercise, Johnson and the group interviewees agree that the mapping process and map (as an agent) led them to a new understanding that they had not started with; in other words, a new way of knowing among the network of participants resulted from the mapping exercise. Listen to the participants’ observations (Group interview 2008):

- “2007 broadened the idea of what MetroGIS is about; [it is] so much more than just the parcel layer.”
- “The 2007 mapping effort ‘discovered’ the stakeholder capacity-building mission concept, which was not part of the 1995 discussion.”
- “The 2007 session helped [us make a] major transition from focusing on data integration to how best to utilize the integrated data that we now have access to.”

Victoria Reinhardt, the policy board chair and a county commissioner, said:

The February 2007 mapping session was a true turning point for MetroGIS. The policy board members and coordinating committee members there (and it was a diverse group by design) were able to talk like we almost never had before. It was the time we really looked at the big picture. We had some history to inform it. It was a painful process for staff because in many ways policy makers speak a different language. But everyone walked out with a better understanding of not only where we had been but what the possibilities were. We didn’t have to limit ourselves (Virginia Reinhardt, 2008, interview).

In short, the mapping process produced maps that were an assembly created by the actors present that traced associations among the ideas and actors, not all of whom were present; and the maps themselves were actants that changed the minds of their producers and guided subsequent action across time and space. The maps themselves, as well as the strategic planning process, offered ways of knowing.

Attention also should be given to the way that MetroGIS survived the challenge to its existence in Phase 3. Recall that MetroGIS had been called on to justify its existence as a public entity by MC decision makers; when the ensuing program audit turned out highly favorable to MetroGIS, the challenge disappeared and the MC endorsed MetroGIS and guaranteed its continued existence. This turn of events would appear to be an example of what Latour means by power being a process result, not an explanation of action (Latour 2005, 64). It is – in the sense that MetroGIS power was increased as a result of the incident; it is not – in the sense that the actions of MetroGIS Policy Board Chair Virginia Reinhardt and other key leaders helped produce the results. In other words, the powers of agents helped produce the result, and the result increased MetroGIS’ power. Latour, in other words, seems to unwisely downplay the role that power plays in reproducing and increasing power.

Finally, some attention should be given to the creation of MetroGIS as a “macro actor” (Czarniawska and Hernes 2005). The table and figures go at least partway in delineating how MetroGIS was created step-by-step and association-by-association through the performances of actors and actants to become something of a single entity referred to by name and having a taken-for-granted quality. The performative has produced the ostensive, in that MetroGIS is now referred to in language as itself an actor; in other words, MetroGIS has become the subject of sentences in which their speakers see it is as the actor that produces the verbs that do or may produce subsequent effects. This is clearly a shorthand, but nonetheless the cumulative associations and stabilizations of various sorts have produced “the social” that has become part of the given-ness of Twin Cities governance and the national and international GIS scene.

CONCLUSIONS

The proponents of strategic planning have basically uniformly asserted that strategic planning is best viewed as, in effect, a way of knowing meant to promote strategic thinking, acting, and learning; improve decision making; and improve organizational performance. They argue that at its best strategic planning in practice is a way of pulling together a variety of actors and actants into “a network of heterogeneous

objects” (Feldman et al. 2006, 90) that show what may or should be done, with whom, how, where, when, and why in order to fashion and advance organizational purposes and goals. Strategic planning practices help provide some of the crucial ordering and sense making processes and artifacts needed to relationally constitute the web of heterogeneous elements, where knowing involves keeping them in alignment in a legitimate, viable, productive, and generative way (Nicolini, Gherardi, and Yanov 2003, 27).

In this paper we have sought to take seriously the idea of strategic planning as a way of knowing and to show how ANT is a particularly apt methodology for studying strategic planning as a way of knowing. While our examination of MetroGIS was not a full-blown ANT study, we hope that it does illustrate the likely merits of studying strategic planning from an ANT perspective. At the same time, by focusing on actors and the associations they trace (or not) ANT is well-suited to the task to discerning how and to what extent strategic planning in practice is inclusive, participative, and/or democratic.

Whether our arguments hold water depends very much on future empirical testing reliant on ANT methodology. Interestingly, ANT studies are in some ways *more* empirical, while also being generally less abstract, than variance studies, for they rely on rich descriptions in which “everything is data” (Latour 2005, 133). Latour recommends keeping at least four different kinds of written accounts (144): a log of events, a notebook to gather other relevant information, “writing trials” in which one attempts to “trace the associations,” and accounts of the effects of the accounts on the actors. An ANT study thus can become a kind of action research (Eden and Huxham 2006). Mapping networks and changes in networks is also important (e.g., Van de Ven et al. 1999; Cambrosio, Keating, and Mougoutov 2004). Richly detailed qualitative and quantitative approaches such as these have simply not been applied to public strategic planning processes, although some efforts go partway (e.g., Bryson and Roering 1989; Barzelay and Campbell 2003; Wheeland 2004; Johnson et al. 2007; Vila and Canales 2008; Giraudeau 2008).

ANT-informed studies of strategic planning as a way of knowing are likely to lead to very different understandings and findings than most variance studies, because variance studies are typically not about the “sociology of associations,” but about the

“sociology of the social.” Something can be learned from both types of studies, but not the same thing. As Latour (2005, 11) argues:

It’s true that in most situations resorting to the sociology of the social is not only reasonable but also indispensable, since it offers convenient shorthand to designate all the ingredients already *accepted* in the collective realm. It would be silly as well as pedantic to abstain from using notions like ‘IBM’, ‘France’, ‘social capital’, ‘individual agent’, ‘peer pressure’, etc. But in situations where innovations proliferate, where group boundaries are uncertain, when the range of entities to be taken into account fluctuates [as in strategic planning], the sociology of the social is no longer able to trace actors’ new associations. At this point, the last thing to do would be to limit in advance the shape, size, heterogeneity, and combination of associations.

Variance methods make a number of moves that from an ANT and a way of knowing perspective are highly suspect. Variance studies (1) posit as fixed or stabilized a *category of action* – strategic planning – that is in fact highly complex, variable, contested, and enmeshed in webs of associations; (2) posit as fixed or stabilized as a *standardized object* – strategic plans – that are also highly variable, contested, and enmeshed in webs of associations; (3) abstract both planning and plans out of the actor-networks within which they are enmeshed for study as simple variables that can be scaled; and then (4) measure statistical strengths of associations between precursors (as variables) of these actions and objects, with the actions and objects themselves (again as variables), and of precursors, actions, and objects with measures of performance (as variables) that are themselves suspect because of their constructed nature. Statistical associations among rather mythic entities are also likely to be rather mythical. These studies appear to be empirical, but in fact may have strayed quite far from real empiricism (Latour 2005, 111 – 112). They also certainly tell us virtually nothing about strategic planning as a way of knowing or about how to improve strategic planning as a way of knowing.

Viewing strategic planning as a way of knowing also highlights the importance of particular kinds of *objects* central to the process, including in MetroGIS’s case the 1995

and 2007 strategy maps and the 2000-2003, 2003-2005, and 2008-2011 Business Plans. These material artifacts have functioned as “boundary objects” (Carlisle 2002, 2004; Kellogg, Orlikowski, and Yates 2006), which are physical objects that help people understand each other across various kinds of boundaries (departmental, organizational, disciplinary, cultural, etc.) Interviewees indicated that in particular the maps and the process of creating them were crucial to developing shared understandings of mission, goals, strategies, and actions; guiding principles; and the coalition needed to move forward. In the process of developing the maps, each member of the group got to know and understand the content and linkages; got to know each other member’s views of the content and links; learned, discovered, and/or constructed what mission, goals, strategies, and actions are or might be; and could envision what pursuing the strategic plans might look like. Strategy mapping thus may be viewed first as a way of articulating matters of concern, e.g., possible missions, goals, strategies and actions, and then through dialogue and decision processes converting them into more stable matters of fact, e.g., agreed-upon mission, goals, strategies, and actions; and later, formal strategic plans. A strategy mapping exercise helps participants make sense of their world, what they may want to do with it, and why; and in doing so the exercise helps participants connect people, ideas, and other kinds of actors into a way forward. Strategy mapping and similar processes thus hold considerable promise for fostering inclusive, participative, and democratic public management.

Said differently, the strategy maps acted as a kind of “transitional object” (Winnicott 1953) or “facilitative device” (de Geus 1988) from here-and-now real possibilities (concerns) to the there-and-then actualities (facts). Both matters of fact and matters of concern are real – not just imagined or constructed out of nothing; only our way of knowing them differs. And constructing and implementing a map is an example of what Latour means by creating the social, which “is not a mysterious cognitive feat, but a very practical world-building enterprise that consists in connecting entities with other entities, that is, in tracing a network” (2005, 103). Said differently, “The common world has still to be collected and composed” (118). The issue is “... not reality versus fiction, but multiple realities that may lead to stability and unity” (119). That is precisely how MetroGIS used both of its mapping exercises: to move in an inclusive, participative,

and democratic way from real matters of concern to real facts on the ground, and to collect and compose “a common world” that is the trajectory of MetroGIS. By articulating linkages between thinking and acting, mapping and the maps provided a practical lay epistemology, or way of knowing (Weick 1995). The role of boundary objects, such as strategy maps and strategic plans, in strategic planning thus clearly merits further investigation, since they are crucial to viewing strategic planning as a practice (Schatzki, Knorr-Cetina, and Savigny 2001; Reckwitz 2002), particularly one that might foster inclusive public management.

Finally, we know strategic planning is now a very widespread practice among governments and nonprofit organizations in the United States, but why that should be so is unclear. Organizations may engage in strategic planning because everyone else does it; they are forced to do it; or because they think doing strategic planning helps mark their organization as professional and legitimate. But perhaps a more plausible argument is that organizations may engage in strategic planning because they find it useful as a way of knowing what they should do, how they should do it, with whom, where, when, and why. Clearly that was the case with MetroGIS, which presents a rather remarkable example of inclusive, participative, and also democratic planning and organizational growth and development with over 300 organizational partners, mostly units of government. We think viewing strategic planning *as practiced* as a *way of knowing* offers a very useful way of knowing what we do – and do not – know about strategic planning both ostensibly and performatively, and then of using that knowledge both to inform the study of strategic planning and its practice, especially in inclusive, participative, and democratic contexts.

ENDNOTES

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² Information in this section is drawn from a variety of sources: A history of MetroGIS written by Timothy Delmont (2008); archival records; the MetroGIS website; participant-

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observation; and especially from several interviews in 2006, 2007, and 2008 of Randall Johnson, MetroGIS staff coordinator for the Metropolitan Council; a lengthy, 2008 facilitated group interview of key actors over the course of MetroGIS's existence: Victoria Reinhardt, Ramsey County (MN) commissioner and chairperson of the MetroGIS Policy Board, MetroGIS; Terry Schneider, City of Minnetonka (MN) council member and member of the MetroGIS Policy Board; Nancy Read, technical coordinator of the Metropolitan Mosquito Control District and member and former chair of the Coordinating Committee; Jane Harper, principal planner for Washington County (MN) and member and former chair of the Coordinating Committee; and William Craig, associate director of the Center for Urban and Regional Affairs at the University of Minnesota and member and former chair of the Coordinating Committee; and individual 2008 interviews of Harper; Read; Reinhardt; Schneider; Craig; Rick Gelbmann, director of the Metropolitan Council GIS Unit; Tony Pistilli, Metropolitan Council member; Mark Kotz, former MetroGIS staff member; and Sally Wakefield, director of 1000 Friends of Minnesota.

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Figure 1. MetroGIS Phase 1 – Strategic Plan Formulation and Initial Implmentation – Early 1995 – April 1996 April

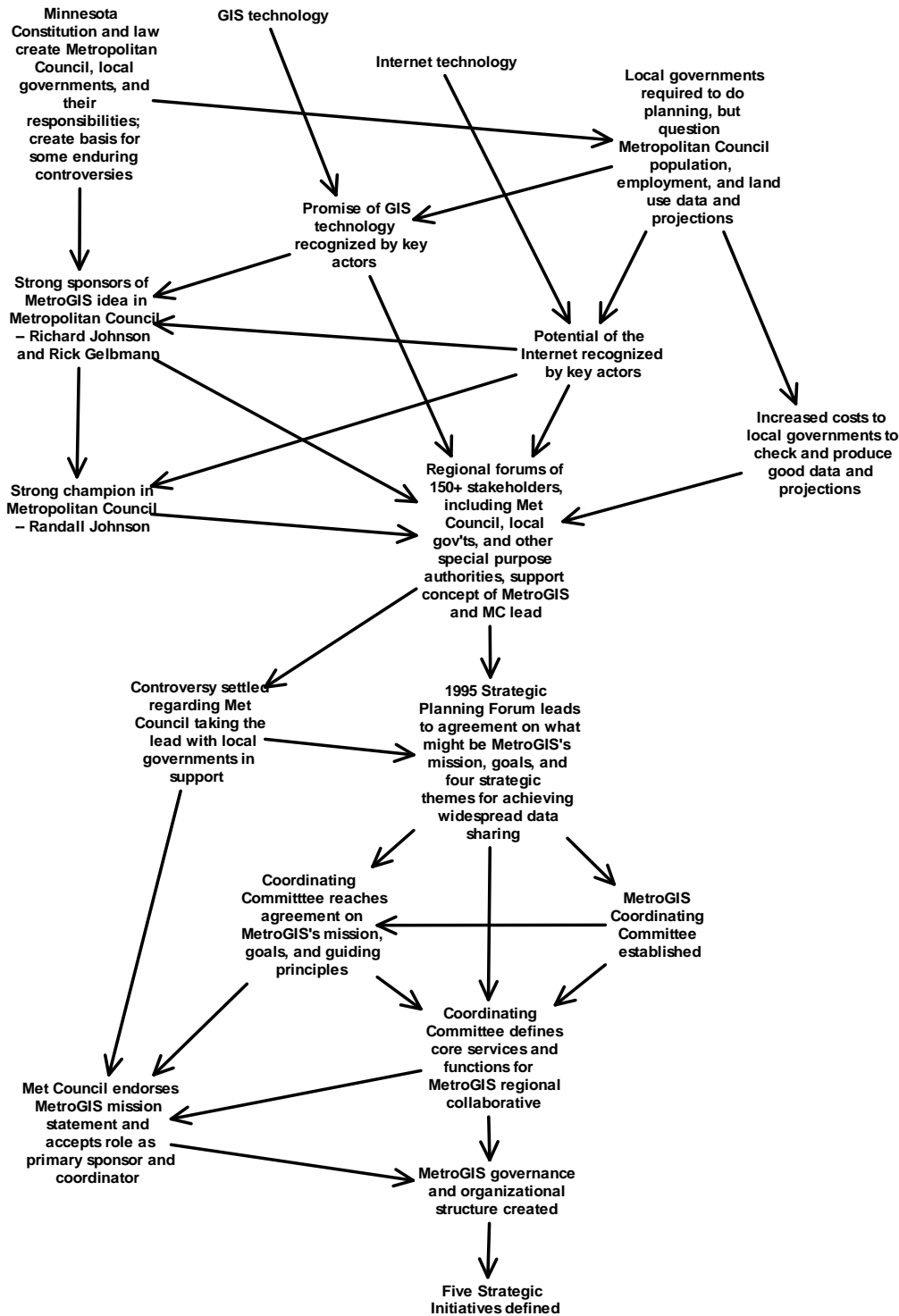


Figure 2. MetroGIS Phase 2 – Sustained Strategic Plan Implementation – May 1996 – July 2001

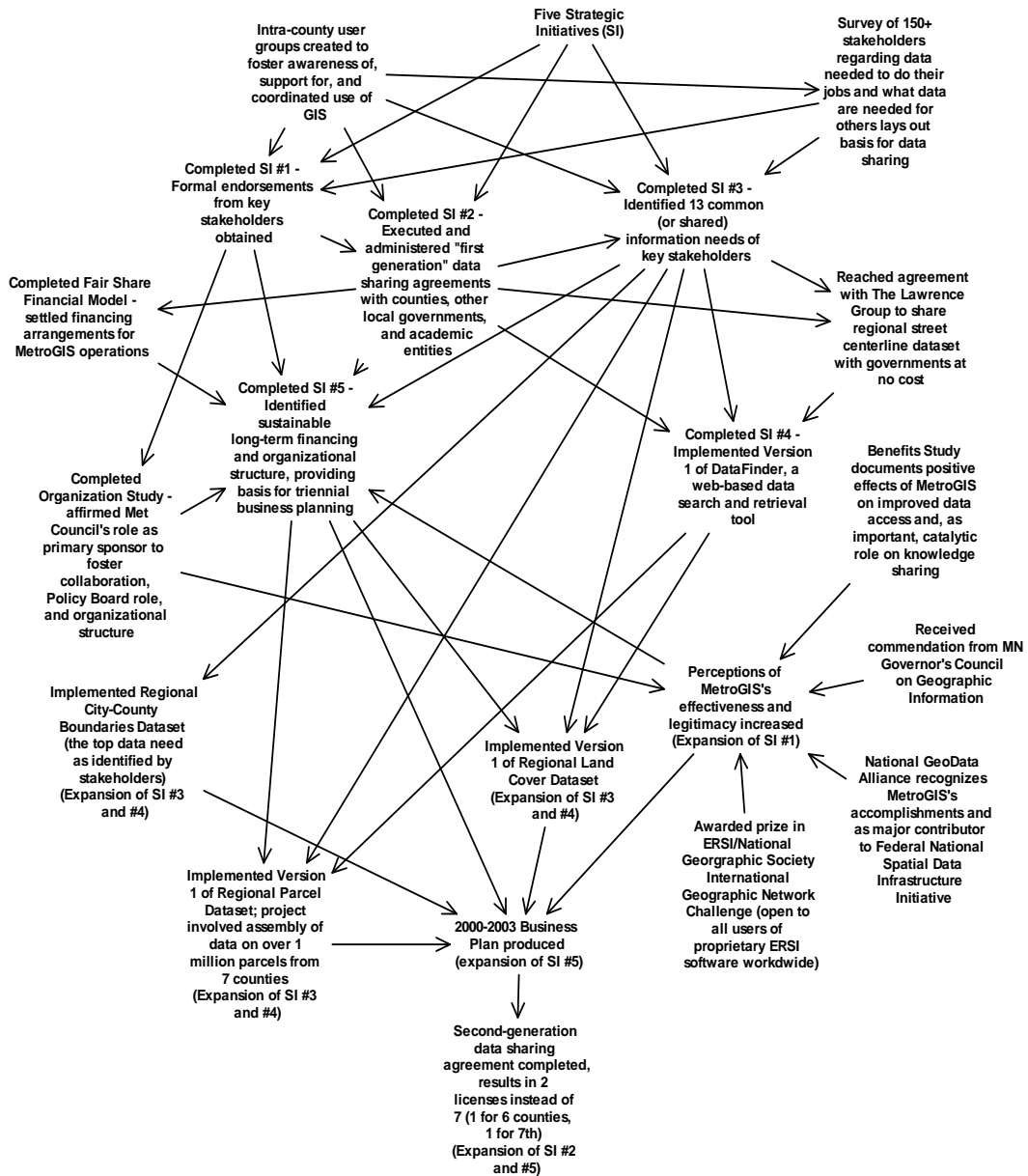


Table 1. Timeline of Major MetroGIS Accomplishments, 1995 – 2008

Major Accomplishments	What major controversies were involved?	Who was involved in addressing and/or settling the controversy?*	What process was used to produce the accomplishment?	What role did technology play, or how was it involved as an actant?	Were any "artifacts" important, e.g., maps, plans, policy drafts, etc.?	What outcomes or major consequences resulted from the accomplishment?
1995:						
<ul style="list-style-type: none"> Obtained endorsement from key stakeholders of idea of pursuing a regional GIS and acceptance for the Metropolitan Council to lead the initiative. MetroGIS created as a result. 	Should there be a regional GIS system? Should the Met Council coordinate and provide the base financing? At that time, tension existed between the Council and local governments; could not assume support for the Council to lead.	Met Council, State’s Land Management Information Center, and University of Minnesota’s Center for Urban and Regional Affairs served as sponsors. Two forums involving 150+ stakeholders in total.	Two presentations to 75+ stakeholders in each of two different locations and a survey of attendees following presentations	The capabilities of GIS technology were demonstrated to the group via “what if” examples. PowerPoint was not yet available, so transparencies with cardboard frames were used.	Paper surveys conducted to find out what data users needed and what data they needed from others (to understand the basis for sharing)	Mandate received from stakeholders, and especially local government, and from the Met Council for both the concept of MetroGIS and for the Council to lead. The legitimacy of the new organization and the Council’s role established.
<ul style="list-style-type: none"> Hosted Strategic Planning Forum - identified four key operational themes needed to achieve wide-spread data sharing : Data access, Data content, Data standards, and 	What <i>might be</i> MetroGIS’s mission, goals, strategies, and actions and important next steps?	Key stakeholders needed for credibility and successful implementation	Strategy mapping using the oval mapping technique (Bryson et al., 2004)	Telephones and faxes were used to set up the meeting. Email was not widely available yet. The original maps were constructed manually by the group. Maps subsequently	The final strategy map was reproduced electronically and distributed on 8-1/2 x 11” paper. A copy was posted above Randall Johnson’s desk for over 10 yrs.	General consensus achieved on mission, goals, general strategies, and next steps. The consensus would help guide MetroGIS through 2007, when significant revisions were made. Broad buy-in from all critical stakeholders.

Governance				reproduced in a smaller format, electronic version, using Decision Explorer software.	and referred to regularly. Original oval maps saved and shared at 2002 Participant Appreciation Event)	
<ul style="list-style-type: none"> Created Coordinating Committee to act on the vision for data sharing on a regional scale 	What group can help guide and coordinate the actions necessary to bring MetroGIS to life?	Participants in Strategic Planning Forum	Vote by show of hands at the Strategic Planning Forum; the vote was unanimous.	Oval maps showed substance of broad consensus on the way forward	Written meeting summary	Commitment and excitement to embarking on an ambitious cause
1996:						
<ul style="list-style-type: none"> Defined Regional Mission and Goals; Guiding Principles specify partnership values 	What <i>should be</i> MetroGIS's mission, goals, strategies, and guiding principles?	Newly formed Coordinating Committee members	Discussion among committee members and consultation with key stakeholder groups	Telephone and regular mail	Drafts of mission, goals and principles taken from or informed by the oval maps Written agreement	The consensus on mission, goals, and guiding principles shaped MetroGIS actions through 2007, when they were revised.

<ul style="list-style-type: none"> Defined Core Services / Functions for regional collaborative 	What should the core services and functions of MetroGIS be?	Policy Advisory Team took the lead	Mailed survey of 150+ individuals.	Two axis, 9-cell matrix analysis – visualization of the findings	Matrix called “Analysis of GIS Functions and Beneficiaries (See 2000-2003 Business Plan, Appendix A.)	Clear understanding of functions critical to maintaining relevance to stakeholder needs and appropriate for MetroGIS to pursue
<ul style="list-style-type: none"> Metropolitan Council endorsed MetroGIS mission statement and accepts role as primary sponsor. 	Will the Met Council accept the role of primary sponsor and funder?	Staff Coordinator & Associate Regional Administrator	Presentation to Committee and Council	PowerPoint slides	Draft and final Resolution	Secured financial, managerial, and political support needed to launch key initiatives (see below)
<ul style="list-style-type: none"> Created governance and organizational structure with advising, coordinating, and policy making functions among elected officials, managers and technologists 	What governance structure will be used to oversee MetroGIS and its operations?	Policy Advisory Team (PAT) led design effort; the result was endorsed by entire Coordinating Committee. (PAT members were managers with key stakeholders. PAT preceded establishment of Policy Board)	Investigated other models; none directly appropriate for MetroGIS needs. Ideas matured by Policy Team members	The Internet was barely operational. Communicated with other organizations primarily by phone and mail	High level organizational chart and matrix of roles and responsibilities for each component of chart.	Governance structure established, along with standardized processes for raising and resolving issues: <ul style="list-style-type: none"> Creation of the Policy Board institutionalized active involvement of elected officials Coordinating Committee of managers affirmed Technical Advisory Team created as complement to Policy Advisory Team Decision-making procedures established and operating guidelines implemented.
<ul style="list-style-type: none"> Defined five Strategic Initiatives (SI), with work on 	What are the big projects MetroGIS should work on to serve its mission and	Coordinating Committee in lead; Policy Board endorsement	Board and committee meetings with consultation and background work	Telephone and mail	Resolutions of Endorsement	

<p>two completed:</p> <ul style="list-style-type: none"> • SI #1 – Key stakeholder endorsements of MetroGIS purpose secured • SI #2 – Executed first-generation data sharing agreement with counties, a cost-sharing agreement to catalyze sharing of parcel data 	<p>achieve its goals?</p> <p>What incentives are needed to gain access to others’ data without fees by governments and academic entities serving the Twin Cities metro area?</p>	<p>Staff Coordinator</p> <p>Staff Coordinator and Met Council GIS Coordinator</p>	<p>by staff</p> <p>One on one meetings with policy bodies of key organizations</p> <p>One on one meetings with County management</p>	<p>Telephone and mail</p> <p>Telephone and mail</p>	<p>Draft and final Agreements</p>	<p>Agreements with counties and other key stakeholder groups provided means by which the Policy Board was populated with stakeholder representatives</p> <p>Government and academic entities no longer required to pay for access to parcel data produced by counties. Numerous GIS enhancement projects completed with \$720,000 in Met Council funding that accompanied the agreements.</p>
<ul style="list-style-type: none"> • Catalyzed formation of several county User Groups for intra-county coordination 	<p>How can the network be extended within each county to foster data sharing and development MetroGIS?</p>	<p>Staff Coordinator leveraging his earlier role in starting the Ramsey County User Group</p>	<p>One-on-one meetings with key individuals in each county</p>	<p>Telephone contact and auto travel to each county</p>	<p>Information packets on MetroGIS</p>	<p>Better coordination of GIS activities at the operational level within each county. More networking and awareness of MetroGIS, particularly among data consumers – cities, schools, watershed districts</p>
<p>1997:</p>						
<ul style="list-style-type: none"> • Completed third Strategic Initiative: • SI #3 – Defined and obtained 	<p>What are the specific common or shared information needs of key stakeholders, i.e.,</p>	<p>Advanced Strategies Inc., a consulting firm, worked with stakeholders to create Business</p>	<p>Working group of stakeholders and BOM using expert facilitation</p>	<p>Excel software used to document and sort over 800 individual needs and consolidate into 87 mutually</p>	<p>Business Object Model (aka wiring diagram for space shuttle).</p>	<p>Clear direction to proceed on top priority information needs and “fragments” from BOM; for many of the priority needs the process provided important information necessary for</p>

<p>unanimous Policy Board approval of thirteen common (or shared) information needs of key stakeholders</p>	<p>what information needs provide the basis for sharing information across stakeholders?</p>	<p>Object Model (BOM)</p> <p>150+ stakeholders representatives participated</p> <p>Several facilitators helped lead brainstorming of ideas</p>		<p>exclusive categories.</p> <p>Visio software used to document BOM.</p> <p>Excel used to analyze survey results to arrive at top 13</p>	<p>Excel files used to document information needs.</p> <p>Power point slides used to present results and final listing of 13 needs</p>	<p>defining the specific data characteristics necessary if the associated information need is to be met.</p>
<ul style="list-style-type: none"> Reached agreement with The Lawrence Group (TLG) to share their Regional Street Centerline Dataset with government and academic users at no cost. 	<p>How can MetroGIS gain access to privately owned street centerline data, a crucial technical starting point for building a coordinated, standardized regional dataset?</p>	<p>Staff Coordinator, Met Council GIS Coordinator and legal counsel, and TLG management</p>	<p>One on one negotiations with TLG management</p> <p>The Met Council paid \$100,000 for the lease which included the provision that the data be shared with all other governments and academic entities.</p>	<p>GIS technology used to visually demonstrate value of standardized street centerline data.</p> <p>Word processing for the agreement and standards development.</p> <p>Email to share drafts of the agreement</p>	<p>Agreement</p>	<p>The agreement provided a key component necessary to implement MetroGIS Endorsed Regional Street Centerline Dataset. The dataset was the first regional solution to address a shared information need</p> <p>MetroGIS became the go-to source across the seven-county metro area for standardized data required to support a number of applications (e.g., Metro Transit bus routing)</p>
<p>1998:</p>						
<ul style="list-style-type: none"> Completing fourth Strategic Initiative: SI #4 – Implemented Version 1 of DataFinder, a web-based data search and 	<p>How can we create Internet-based access to regional data not held centrally, instead residing with stakeholders?</p>	<p>Data Access Advisory Team</p> <p>Consultant specializing in Internet enabling technology</p> <p>Met Council GIS specialist</p>	<p>Surveying of stakeholders</p> <p>Small group processes, including and beta testing by selected users using a prototype design in a classroom setting</p>	<p>The Internet and GIS software were central elements</p> <p>Purpose of the tool was leverage the power of the Internet to search, discover, and</p>	<p>Design documents and process documentation; available at metrogis.org</p>	<p>Created a state-of-the-art Internet based data discovery and access tool. The tool was one of the first such tools implemented in the country, and probably the first for a multi-county area. The tool demonstrated both the practicality and benefits of cross-boundary, Internet-based</p>

retrieval tool,				make available existing data resources.		data sharing.
<ul style="list-style-type: none"> Completed Fair Share Financial Model (FSFM) and Organizational Structure Study. Both affirmed need for MetroGIS partnership services. FSFM included a subscription fee to foster the MetroGIS collaboration function was not viable, meaning it was up to the Met Council to foster collaboration Completed fifth Strategic Initiative: (5) Produced first comprehensive Business Plan (2000-2003); FSFM provided foundation for 	<p>How should we finance MetroGIS operations, and particularly, should subscription fees be charged to users?</p> <p>Is the Met Council, through its agent, MetroGIS, really the main sponsor for, and resource provider to, efforts to collaborate around data sharing?</p> <p>Should the governance and organizational structure be endorsed and institutionalized?</p> <p>What should the business plan be for 2000-2003?</p>	<p>Consultant team (GIS, financial and organizational policy experts)</p> <p>Policy Advisory Team</p> <p>Subgroup of Coordinating Committee members and consultant team developed draft</p>	<p>Small group processes to explore and evaluate options</p>	<p>Excel software used to support financial modeling (subscription fee)</p> <p>Internet used to research organizational structure options</p> <p>Telephone, email, word processing and Excel spreadsheets</p> <p>Telephone, email, word processing and Excel spreadsheets</p>	<p>Consultant Project Reports to MetroGIS</p> <p>Final Project Report to FGDC</p> <p>Draft and final 2000-2003 Business Plans</p>	<p>Awarded \$100,000 Federal Geographic Data Committee (FGDC) Grant to support financial modeling and study appropriate organizational structure. Without this funding, study would not have happened.</p> <p>These investigations lead to the Met Council affirming its role as primary sponsor of MetroGIS function to foster collaboration, and also affirm value of the Policy Board and what had been a somewhat ad hoc organizational structure up until this point.</p> <p>The studies also set the stage for development of 2000-2003 Business Plan and performance measurement plan, which guided and provided accountability for MetroGIS actions through that period.</p> <p>The business plan guided the operations of MetroGIS until the creation of the 2008-2011 Business Plan; a formal 2004-2006 Business plan was not created because of a serious</p>

plan		Business Plan Policy Board reviewed and adopted final version				political challenge to MetroGIS's existence that developed during that period.
<ul style="list-style-type: none"> Benefits Study documents that MetroGIS's collaborative efforts were having positive impacts both for improved data access and quality and, as important, catalyzing knowledge sharing 	How can we be sure the MetroGIS is really worth the effort, from the standpoint of the Met Council and other stakeholders?	Will Craig of the U of MN and David Bitner of Metro Airports Commission (both Coordinating Committee members) received \$48,000 Federal Geographic Data Committee (FGDC) Grant to study of MetroGIS benefits to stakeholders	Survey and interviews of stakeholders	Telephone and mail PowerPoint	Draft and final report; final report submitted to the FGDC PowerPoint Presentation made to the Policy Board	Independent study confirmed that MetroGIS's efforts were improving organizational efficiencies but, as important, resulted in a discovery that knowledge sharing was viewed by stakeholders as having equal value to data sharing. This discovery lead to policies supporting knowledge sharing in the 2000-2003 Business Plan
<ul style="list-style-type: none"> Commendation from the MN Governor's Council on Geographic Information (GCGI) for MetroGIS Endorsed Regional Street Centerline Dataset 	Is MetroGIS legitimate in the eyes of the State of Minnesota, and especially the Governor, who appoints the member of the Met Council?	GCGI members	GCGI solicited proposals	Word processing and email	Submitted proposal The actual Commendation	The commendation brought attention to the accomplishments of MetroGIS, the value of sharing resources (as opposed to requiring purchase), and stimulated interest in achieving additional regional solutions
<ul style="list-style-type: none"> Implemented 	Is it possible to	Met Council's	Small group	MS Excel and MS	Documents	The top data need as identified

<p>Regional City-County Boundaries Dataset</p>	<p>create a second regional dataset in which the Met Council assembles data produced by the counties?</p>	<p>GIS Unit led the effort</p>	<p>processes involving content experts in order to determine data schema and standards</p>	<p>Word used to document and analyze concept development and testing.</p> <p>Email to share information and Internet to research options</p> <p>GIS to help visualize concepts and to accomplish the actual aggregation of data from the seven counties</p>	<p>detailing data schema and standards</p>	<p>by stakeholders was successfully addressed: city and county boundary data are now fully aligned with regional street and parcel datasets.</p>
<p>1999:</p>						
<ul style="list-style-type: none"> Demonstrated it was possible to create a region-wide, parcel-level data set by implementing Version 1 of Regional Parcel Dataset; project involved assembly of data on 1 million-plus parcels from 7 counties 	<p>Is it technically and politically possible to create a region-wide dataset down to the parcel level – what Coordinating Committee members and others often referred to as the Holy Grail of data sharing?</p>	<p>Data Content Advisory Team was in the lead</p> <p>Dakota County GIS staff played a crucial role</p>	<p>Small and large group processes involving parcel data users and producers</p>	<p>MS Excel and MS Word used to document and analyze concept development and testing.</p> <p>Email to share information and Internet to research options</p> <p>GIS to help visualize concepts and to accomplish the actual aggregation of data from the</p>	<p>Document detailing initial specifications</p> <p>Draft and final Regional Policy Statement</p>	<p>This effort achieved what some believed was not possible.</p> <p>The parcel data set together with the regional street centerline database provided a catalyst to aggressively pursue further regional solutions and coordination beyond the metro area leading to further user efficiencies and enhanced user capacities to carry out business functions</p>

<ul style="list-style-type: none"> Implemented Version 1 of Regional Land Cover Dataset 	<p>How can we create a regional database indicating land cover (e.g., lakes, forests, open space, man-made physical structures, etc.?)</p>	<p>Lead staff support came from the MN Dept. of Natural Resources</p>	<p>Small group processes involving content experts in order to determine data schema and standards</p>	<p>seven counties MS Excel and MS Word used to document and analyze concept development and testing. Email to share information and Internet to research options GIS to help visualize concepts and to accomplish the actual aggregation of data from the seven counties</p>	<p>Documents data schema and standards</p>	<p>The solution demonstrated that establishment of a standard data model that is accepted by the user community can be a valuable means of catalyzing development of data. This outcome was recognized by the by a commendation from the GCGI in 2000.</p>
2000:						
<ul style="list-style-type: none"> National GeoData Alliance (GDA) recognizes MetroGIS's collaboration model as a valuable contribution to realizing the vision of the National Spatial Data Infrastructure (NSDI) Federal-level initiative 	<p>Is MetroGIS a worthy and legitimate effort from a national perspective? If the answer is yes, how can that legitimacy be used to further MetroGIS efforts?</p>	<p>GDA leadership</p>	<p>Process unclear, but MetroGIS staff assume the award resulted from personal knowledge gained through the Staff Coordinator's participation in NSDI forums</p>	<p>Unclear, except that the MetroGIS website probably was consulted extensively by GDA leadership</p>		<p>Recognition enhances MetroGIS's legitimacy and visibility within the broader GIS community</p>

<ul style="list-style-type: none"> GDA invites Hennepin Co. Commissioner Randy Johnson and Staff Coordinator Randall Johnson to participate in GDA initiative to define an organizational structure for the NSDI 						<p>Invitation provides and opportunity for Policy Board member and Staff Coordinator to meet 10+ times over the period of a year to share knowledge with colleagues from around the country, influence national program policy concerning the NSDI initiative, gain understanding valuable to furthering MetroGIS's efforts, and further enhance the visibility and legitimacy of MetroGIS.</p>
2001:						
<ul style="list-style-type: none"> Second-Generation Data Sharing Agreement executed; \$75,000 in incentives provided by Met Council 	<p>What incentives are needed to continue access to regional data without a fee for government and academic units?</p> <p>How can we move toward a single license and a single point of data access?</p>	<p>Staff Coordinator and managers with each county were the main participants</p>	<p>One on one negotiations</p>	<p>Email and using word processing to produce agreement revisions contract development</p>	<p>Draft and final Agreements</p>	<p>The second-generation agreement marked progress toward a common licensing document and a single access point for accessing parcel data produced by each of seven counties, saving time and effort to achieve licensing and achieve access by users. (Instead of 7 licenses, one for each county, there were 2, since 6 of 7 counties agreed to a single license.)</p> <p>County leadership in one county recognized that a single license and access point was good government, but was unwilling to forego at least some financial</p>

						incentives More organizations are using the data since it has been standardized.
Awarded prize grant in the ESRI/National Geographic Society International Geographic Network Challenge (open to all users of ESRI software worldwide)	Is MetroGIS worthy of recognition internationally?	Alison Slaats, MetroGIS Web Specialist, developed the transportation web service that won the award	Standard application development protocol for web mapping services	The Internet and GIS technology were both essential, as the point of the award was to leverage emerging technology	The Transportation Web Mapping Service won the award, but the service is no longer used because the technology has evolved since that time.	The award provided further recognition of advances made by MetroGIS to create institutional systems and methods designed to improve discovery and access to commonly used geospatial data.
2002:						
<ul style="list-style-type: none"> Added the Café functionality to DataFinder, providing web-based custom solutions to stakeholder data needs (meaning the ability to clip and bundle data for user-defined areas) 	How can the DataFinder tool be enhanced to better meet stakeholder needs?	Alison Slaats, MetroGIS DataFinder Manager; Staff Coordinator; and consultant team took the lead	<p>Small group processes and a user survey were used to define needs.</p> <p>Small group processes were used to define specifications and test prototypes</p>	<p>Technology was essential.</p> <p>A consultant team of experts in Internet-based GIS applications was retained to achieve state of the art functionality.</p>	<p>Design documents.</p> <p>The Café platform (The 2002 Café platform was replaced with a more robust platform in 2005.)</p>	<p>The Café provided a state-of-the-art data distribution mechanism; as a result, less time needed by users to acquire the data they needed in the form they needed.</p> <p>The project catalyzed advancements in the state's geospatial data clearinghouse</p>
<ul style="list-style-type: none"> Implemented MetroGIS Performance Measurement Plan 	<p>How can or should MetroGIS measure its performance?</p> <p>How does MetroGIS and its</p>	A performance measurement consultant was retained to guide the process	Small group processes were used to develop and discuss potential performance outcomes and	Word processing	Drafts and the final adopted Performance Measurement Plan	<p>The plan identifies key MetroGIS performance outcomes and measures</p> <p>The project marked the beginning of annual progress reporting</p>

	stakeholders want to hold it accountable?		measures			
<ul style="list-style-type: none"> Completed update of Business Plan for 2003-2005 period (a continuation of the fifth (5) Strategic Initiative 	What should the business plan be for 2003-2005?	<p>Subgroup of Coordinating Committee members and consultant team developed draft</p> <p>Policy Board reviewed and adopted final plan</p>	Small group processes to discuss issues and	Word processing and Excel spreadsheets	Draft and final 2003-2005 Business Plan	<p>The plan provided more clarity around data and knowledge sharing strategies, and around concerning support resources</p> <p>The Business Plan guided MetroGIS activities for the period.</p>
<ul style="list-style-type: none"> Implemented Version 1 of Regional Census Geography Dataset 	Can locally produced and more accurate local data replace Federally produced census data?	Met Council GIS Unit led effort and had \$80,000 in project funds	Small group processes involving content experts in order to determine data schema and standards	<p>MS Excel and MS Word used to document and analyze concept development and testing.</p> <p>Email to share information and Internet to research options</p> <p>GIS to help visualize concepts and to accomplish the actual aggregation of data from the seven counties</p>	Documents detailing data schema and standards	The means were developed to align US Census data with local street, parcel, and boundary data, greatly increasing the usefulness of Census data for local purposes. This lead to discussions and eventual agreement by the US Census to use locally produced street, parcel, and boundary data in its products beginning with the 2010 census.
<ul style="list-style-type: none"> Awarded URISA’s (urban and regional information systems 	Is MetroGIS worthy of recognition internationally?	Staff Coordinator drafted the required application to be considered for this	There was a competitive application process.	The existence of DataFinder and the MetroGIS website played major roles in	The application package and the award itself.	The award bestowed national and international recognition on MetroGIS as a model for regional collaboration.

association) ESIG Award (exemplary systems in government) for MetroGIS's one- stop data shop and other collaborative initiatives		award		making the case for the award		The award process and its aftermath also resulted in broadening the network of colleagues across the county and internationally for MetroGIS staff and leadership.
<ul style="list-style-type: none"> Implemented Version 2 of the Regional Parcel Dataset 	<p>How can we make the dataset more useful?</p> <p>How can we refine the data custodial responsibilities to improve efficiencies for both producers and users?</p>	A workgroup of parcel data producers and users took the lead.	Small group processes were used to define needs and to recommend refinements to the regional dataset.	<p>GIS technology was used to visualize impact of changes and to actually accomplish the refinements.</p> <p>Standard office softwares were used to facilitate and document the small group processes.</p>	The adopted policy statement	The effort expanded the data model to increase the number of attributes associated with each of the over 1 million parcels from under 20 to upwards of 50 and refined the custodial responsibilities to improve efficiencies for both producer and user.
<ul style="list-style-type: none"> Received Implementation Team (I-Team) Designation by Federal Office of Management and Budget recognizing MetroGIS use of organizational and financial incentives to achieve public 	<p>Is MetroGIS worthy of recognition on a national level? Will this increase credibility and legitimacy in the eyes of MN's Republican Governor and his appointee as Chair of the Met Council?</p>	Staff Coordinator, Policy Board and I-Team Coordinator were the main participants	<p>Approval was received from the Policy Board to proceed.</p> <p>A proposal was drafted proposal making the case for recognition.</p> <p>Negotiations with the I-Team leadership</p>	The existence of DataFinder and the MetroGIS website played major roles in making the case.	<p>Drafts of and the final proposal</p> <p>Letter acknowledging I-Team designation</p>	<p>The award broadened MetroGIS' credibility as an effective regional geospatial collaborative.</p> <p>The designation may help garner approval of MetroGIS from conservative elected and appointed officials.</p>

and private collaboration			occurred.			
<ul style="list-style-type: none"> Awarded Planning Merit Award from MN Chapter of the American Planning Association for the Regional Planned Land Use Dataset 	Can MetroGIS demonstrate its merit to urban and regional planners and others involved in community development?	Paul Hanson, project manager, drafted the application. (He also was the project manager who led development of the dataset.)	The project manager described the project per application requirements	The process involved word processing and a web-based application submission.	Drafts and the application The award	The award provided a significant opportunity to demonstrate value of MetroGIS's efforts and capabilities to the regional and state community development community.
2003:						
<ul style="list-style-type: none"> Adopted third-generation Data Sharing Agreements. The Met Council incentive payment was reduced to \$50,000, with the understanding that data quality and refinement would result. 	How can we expand the user domain beyond the current group of regional and state users? What incentives might be needed? Can we achieve a single license and access point for all seven metro counties?	The Staff Coordinator; Trudy Richter, a GIS consultant; and attorneys from the Met Council and Hennepin and Dakota Counties were the primary negotiators.	The process involved negotiations in a group setting.	Word processor versioning tools and email were used extensively.	Drafts and the final adopted Agreement	The agreement expanded the data user domain to all government and academic institutions in the U.S. in conjunction with the vision of the National Spatial Data Infrastructure (NSDI) and achieved a single license and access point to parcel data produced by all seven counties.
<ul style="list-style-type: none"> Implemented an Internet based Mailing Label Application that utilized regional parcel and street centerline datasets 	Can MetroGIS create, at least as a prototype, an application that shows how the regional dataset can be used to a common business	Allsion Slaats, MetroGIS DataFinder Manager, was the main participant.	The application was developed using a fast-track design-and-build process. There was no needs assessment. The designer built	GIS and other software technologies were essential. The purpose was to demonstrate sufficient technology	Design document outlining specifications. Application no longer operational, as it was not intended	Prototype application demonstrated the value of an application that runs on regionally endorsed datasets and works across jurisdictional boundaries. The exercise helped advance recognition of the importance of developing

	purpose?		based on presumed user needs.	existed and that users easily could use the tool	for sustained use.	applications as an important next step in MetroGIS's development.
<ul style="list-style-type: none"> Implemented Regional Socioeconomic Data Resources website 	How can we expand the regional database to include socioeconomic data as well as well as data for physical features?	A workgroup chaired by Will Craig of the U of MN lead the effort.	Small group processes were used to develop the website and links to data sources.	Web application development tools and Internet were crucial elements of the solution.	Design document outlining specifications. The site remains is operational.	The site provided a one-stop source for many kinds of socioeconomic data that pertain to the metro area.
2004:						
<ul style="list-style-type: none"> Designation by Open Geospatial Consortium (OGC) as top US example of local and regional data distribution 	Where does MetroGIS rank nationally in terms of local and regional cooperation?	MetroGIS leadership group members and OGC officials were the main participants. interviewed by OGC officials	An interview process was used involving MetroGIS leaders and OGC officials.	Technology was the focus of the recognition.	The OGC document in which MetroGIS is cited as the top U.S. example of local and regional data distribution.	The award advanced the credibility nationally and beyond of MetroGIS's collaborative data assembly and distribution methods.
<ul style="list-style-type: none"> Recognition by Ian Masser (an international authority) in a publication for ERSI (a world leader in providing GIS technology) as best North American example of regional data collaboration agency 	Is MetroGIS worth of recognition internationally?	The Staff Coordinator interviewed by Ian Masser	An interview process was used.	<p>The MetroGIS website was an important source of information.</p> <p>The publication relied on documentation of MetroGIS's demonstrated accomplishments involving collaboration and the extensive use of technology.</p> <p>Also noted was</p>	The publication written by Ian Masser	The publication advanced MetroGIS credibility nationally and internationally and conferred legitimacy on beyond of MetroGIS's collaborative data distribution methods.

				the importance of participating in NSDI activities		
2005:						
<ul style="list-style-type: none"> Initiated process to define partnership opportunities with non-government stakeholders 	How can MetroGIS partner with non-government stakeholders as a way of broadening its usefulness and support?	A small group facilitator provided lead support on a major exercise that included plenary sessions and small group exercises.	Small and large group processes were used to explore the issue.	<p>A PowerPoint presentation was used during the forum.</p> <p>Word processing used to document the process</p> <p>Internet and email used to communicate after the forum</p>	Forum summary document	<p>The forum was the proactive attempt to define opportunities to partner with non-government interests to address shared information needs.</p> <p>This was the first of two forums undertaken to explore issues before launching process to update the 2005-2008 Business Plan</p>
2006:						
<ul style="list-style-type: none"> Received affirmation from the Met Council that MetroGIS's existence benefits the Council 	Can MetroGIS continue to justify its existence to the Met Council, at a time when it was being seriously threatened from within the Council? Controversy resulted from serious internal challenge to the value of MetroGIS's continued existence through an internal program	The Staff Coordinator, Council management, and Policy Board leadership were the main participants.	The Council auditor produced an evaluation of the benefit received by the Council from its investment in MetroGIS. Process involved comparing MetroGIS with other collaboratives Other questions were addressed with small group methods	Internet-based research and standard office softwares were utilized.	<p>Drafts of and the final auditor's report</p> <p>June 28, 2006 Council Resolution endorsing MetroGIS</p>	<p>The process resulted in a strong affirmation that the Council's investment in MetroGIS was providing significant benefits to the Council and region.</p> <p>The resolution also resulted in an unexpected directive to Council management to make sure that state agencies were made aware of the principles that drive MetroGIS and suggest they emulate them.</p> <p>The challenge resulted in delays to the preparation of the 2006-2008 Business Plan, so MetroGIS relied on updates to the 2003-2005 Business Plan</p>

	evaluation audit.					until the 2008-2010 Business Plan was adopted
<ul style="list-style-type: none"> MetroGIS hosted Geospatial Technology Forum to identify emerging GIS technologies for next 3-5 year period 	<p>What emerging technologies should MetroGIS be considering?</p> <p>Can the forum be used to enhance MetroGIS usefulness and visibility?</p>	<p>The Staff Coordinator and a workgroup did most of the work.</p>	<p>The forum was presented in a theater and relied on lectures and discussion. Over 150 individuals attended.</p>	<p>Automated web-based registration software, MS Office suite, and email were used.</p>	<p>Advertising materials</p> <p>Forum summary document</p>	<p>The second forum undertaken to explore issues before launching process to update the 2005-2008 Business Plan</p> <p>The forum helped build understanding of emerging technologies that MetroGIS might pursue.</p> <p>The forum expanded the reach of MetroGIS as many people attended had not previously participated in a MetroGIS function.</p>
2007:						
<ul style="list-style-type: none"> Adopted 2008-2011 Business Plan 	<p>What should the content be for the 2008-2011 Business Plan?</p> <p>Should the mission and guiding principles be affirmed or changed?</p> <p>How can understanding and support for the next business plan be built?</p>	<p>The Staff Coordinator and a workgroup guided the process leading up to a Strategic Planning Forum and undertook necessary follow-up work.</p> <p>A facilitator from the U of MN led the Strategic Planning Forum and advised the Staff Coordinator and workgroup before and after.</p>	<p>Large and small group processes were used.</p> <p>Strategy mapping was the technique used at the Strategic Planning Forum (Bryson et al. 2004).</p>	<p>A variety of technologies were used, including Web-based survey tools, Decision Explorer strategy mapping software, MS Office software, email</p>	<p>Strategy map produced at Strategic Planning Forum and revised somewhat thereafter</p> <p>Strategic Planning Forum Summary Document</p> <p>Drafts of and adopted 2008-2011 Business Plan</p>	<p>The process resulted in unanimous agreement on strategic directions for next 3-5 years including three scope expansions and agreement on revised mission and guiding principles. The scope additions were:</p> <ul style="list-style-type: none"> Expand solutions to share needs beyond data to include applications Improve interoperability of geospatial resources with jurisdictions adjoining the Twin Cities metro area Seek opportunities to partner with non-governmental interest (businesses and nonprofits) to address shared

						<p>information needs</p> <p>The context involved a situation in which some MetroGIS founders have moved on and others may follow; cities are big users of data, but not major providers of data or applications; and one county is not enthusiastic about development of applications or participation in MetroGIS by businesses. The result is unanimity on strategic directions, but the strength and durability of the consensus is unclear.</p>
2008:						
<ul style="list-style-type: none"> Defined appropriate roles for MetroGIS regarding the fostering of solutions to shared application needs 	<p>What should MetroGIS roles be regarding development and sharing of applications needs that make use of the data sharing network now in place?</p>	<p>A consultant team working with a workgroup provided the lead.</p>	<p>Large and small group processes</p>	<p>GIS technology was used to demonstrate what was possible in terms of applications.</p> <p>Web-based survey tools used to explore what shared applications needs might be</p>	<p>Forum Drafts of and final Summary Document</p> <p>Drafts of and adopted policy statement</p>	<p>The process resulted in clear direction for next steps regarding MetroGIS top priority need – defining and implementing solutions to shared application needs</p>
<ul style="list-style-type: none"> Work begins on defining examples of specific shared applications in response to 	<p>What applications would be most useful for users and which should MetroGIS seek to develop?</p>	<p>A workgroup is in the lead on the project</p>	<p>Large and small group processes</p>	<p>GIS technology is used to explore possibilities, and web-based survey tools are being utilized</p>	<p>Draft documents which include design specifications</p>	

perceived user needs						
<ul style="list-style-type: none"> • Work begins in earnest to explore potential for partnering with private sector to address shared information needs 	How can we go about creating value by integrating private sector data and resources with existing MetroGIS offerings to address public problems?	A workgroup is in the lead on the project	Large and small group processes	GIS technology is used to possibilities, and web-based survey tools are being utilized.	Draft documents	

* The MetroGis Staff Coordinator was a key participant unless stated otherwise.