

**Appendix N: Lower Minnesota River Watershed District Governance Study**



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# Lower Minnesota River Watershed District Governance Study



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## **Abstract**

The Lower Minnesota River Watershed District (LMRWD) commissioned this study to examine alternatives to its current role in water governance on the Lower Minnesota River. This report provides insights to guide the LMRWD Board of Managers in making strategic decisions related to its role in water governance, funding for both water quality and dredge material management related activities, and the organization's identity.

Our team evaluated four water governance options by utilizing an extensive qualitative analysis of stakeholder interviews, as well as a thorough review of relevant literature. Stakeholders were selected from the following three groups involved directly or indirectly in water management on the Lower Minnesota River: State/federal agencies, local units of government and private/other entities.

We provide key considerations related to each governance alternative examined, recommend that the Minnesota Department of Transportation (MNDOT) alternative be ruled out, and make recommendations on how the viable options should be pursued. Our overarching recommendation is that increasing the ability to cooperate and partner should be a top priority for the local sponsor of the 9-foot channel and for LMRWD.

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## Introduction

The Lower Minnesota River Watershed District (LMRWD) was established to act as the local government sponsor to the US Army Corps of Engineers (COE) in maintaining a 9-foot navigation channel on the Lower Minnesota River between its confluence with the Mississippi and river mile 14.7 upstream. Local sponsors work collaboratively with the federal government by taking on key responsibilities related to the construction and maintenance of COE projects. This often includes cost sharing, providing technical expertise in the planning and implementation of projects, providing essential easements and rights of way, and other responsibilities as dictated by sponsorship agreements (USCOE, Report of The Secretary of The Army on Civil Works Activities For FY 2009, 2010). LMRWD's primary responsibility as local sponsor of the 9-foot navigation channel is the acquisition and management of sites onto which material removed from the riverbed ("dredge material" for the purposes of this report) can be relocated. It also provides all easements, leases and rights of way necessary to access those sites.

According to the 2011 LMRWD Management Plan, dredge material management "is the cornerstone of the District's history and continues to persist as a main responsibility today". Though local sponsorship of the navigation channel is an integral piece of LMRWD's identity, this specific responsibility exists alongside the following more traditional Watershed District objectives stated in the 2011 LMRWD Management Plan: to preserve, protect and restore surface water quality; to protect and promote groundwater quality and quantity; to manage unique resources, wetlands, floodplains, flooding, erosion and sediment control; and to increase public participation and awareness of unique natural resources and the Minnesota River (LMRWD, Watershed Management Plan 2-1, 2011).

The LMRWD faces a number of challenges that hinder its ability to effectively fulfill its role in water

governance, which has prompted the Board of Managers to reconsider some key components of its management strategy, its portfolio of responsibilities, and the role that it plays in water governance in the Twin Cities Metropolitan area. This report provides insights from an analysis of stakeholder interviews, as well as a review of relevant literature to inform the LMRWD Board of Managers in considering four alternative options for water governance in the Lower Minnesota River. For the purposes of this paper, stakeholders include experts on the Technical Advisory Committee to LMRWD, other experts in the field of water management, private companies that may be affected by a shift in the role of the LMRWD in water governance, and other concerned or interested parties such as citizens and non-profit organizations.

### **Water Governance in Minnesota**

The following section provides an overview of changing environmental standards in Minnesota as they relate to water resources. This background is pivotal in understanding how LMRWD's role in water governance has changed as a result of major paradigm shifts in environmental management, and the implications of these shifts on the district's management strategy from its creation to present.

#### **Early History: Soil and Water Conservation Districts**

One of the earliest initiatives to manage water resources in Minnesota was the creation of Soil and Water Conservation Districts (SWCD) in 1938. According to the Minnesota Association of Soil and Water Conservation Districts (MASWCD), "intensive farming during a time of drought allowed high winds to erode the landscape and carry clouds of dust from the Great Plains all the way to Washington, D.C." Thus, Soil and Water Conservation Districts were established to "encourage landowners to alter

their farming techniques in order to more wisely use our soil and water resources” (MASWCD, 2011).

It soon became apparent that there was a significant nexus between managing and conserving quality soil for the promotion of agriculture and managing water. Abnormally high levels of rainfall in the late 1940s resulted in widespread problems with oversaturated soils that could not be cultivated and planted. SWCDs were key players in implementing drainage systems, which were “considered important to landowners and to [the Soil and Water Conservation Districts]”, and in Minnesota were pivotal in increasing yields and decreasing the risks associated with flooded or oversaturated fields (Ruhland, 2005). Though SWCD staff and farmers were beginning to grasp conservation tillage techniques and new ways to reduce erosion, their primary motivation concerning water management was confined for the most part to effective drainage.

#### Establishment of Watershed Districts

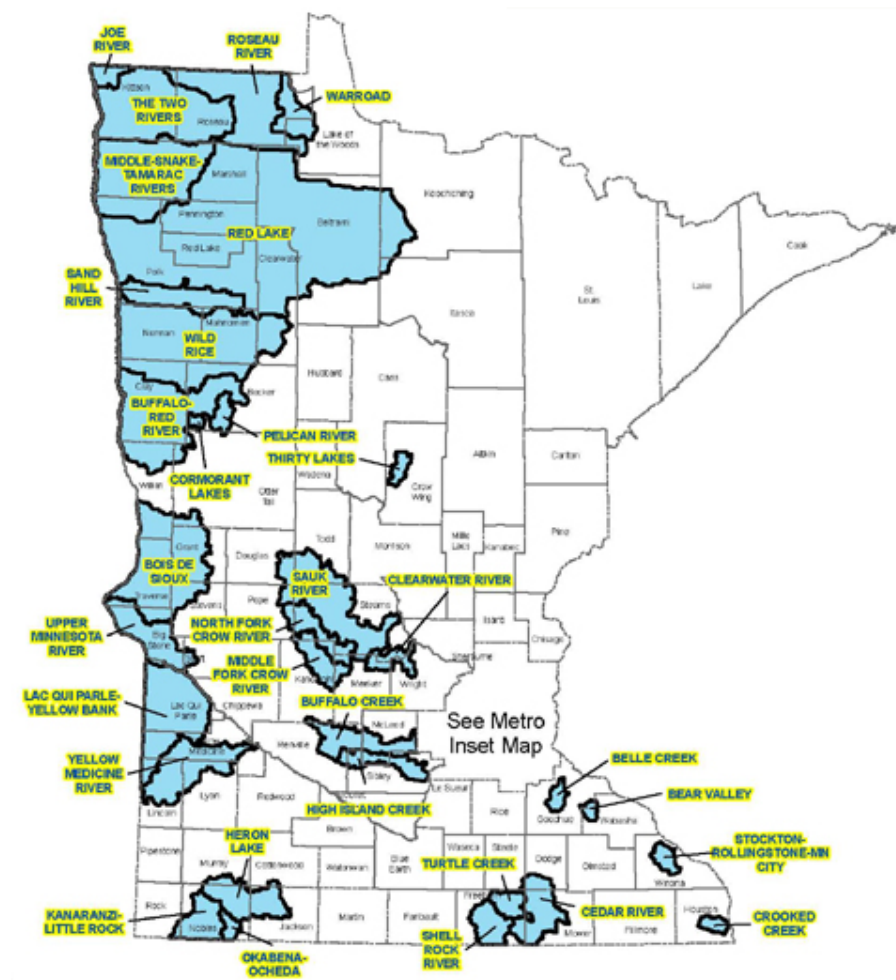
According to the Natural Resource Conservation Service (NRCS), interest in flood control and prevention led Congress to appropriate funds for 60 pilot watershed projects in 1953, two of which were established in Minnesota. These predecessors to Watershed Districts garnered a great deal of attention from natural resource managers, and by the end of 1954, Minnesota had 6 applications for similar watershed projects. In recognition of the efficacy of this new hydrologic approach, the Minnesota state legislature took up the issue, passing legislation that acted as the framework for Minnesota’s water management system as we experience it today (Ruhland, 2005).

This new law, entitled the Watershed District Act of 1955, established special-purpose local units of government called Watershed Districts to solve and prevent water-related problems (MAWD, 2012).



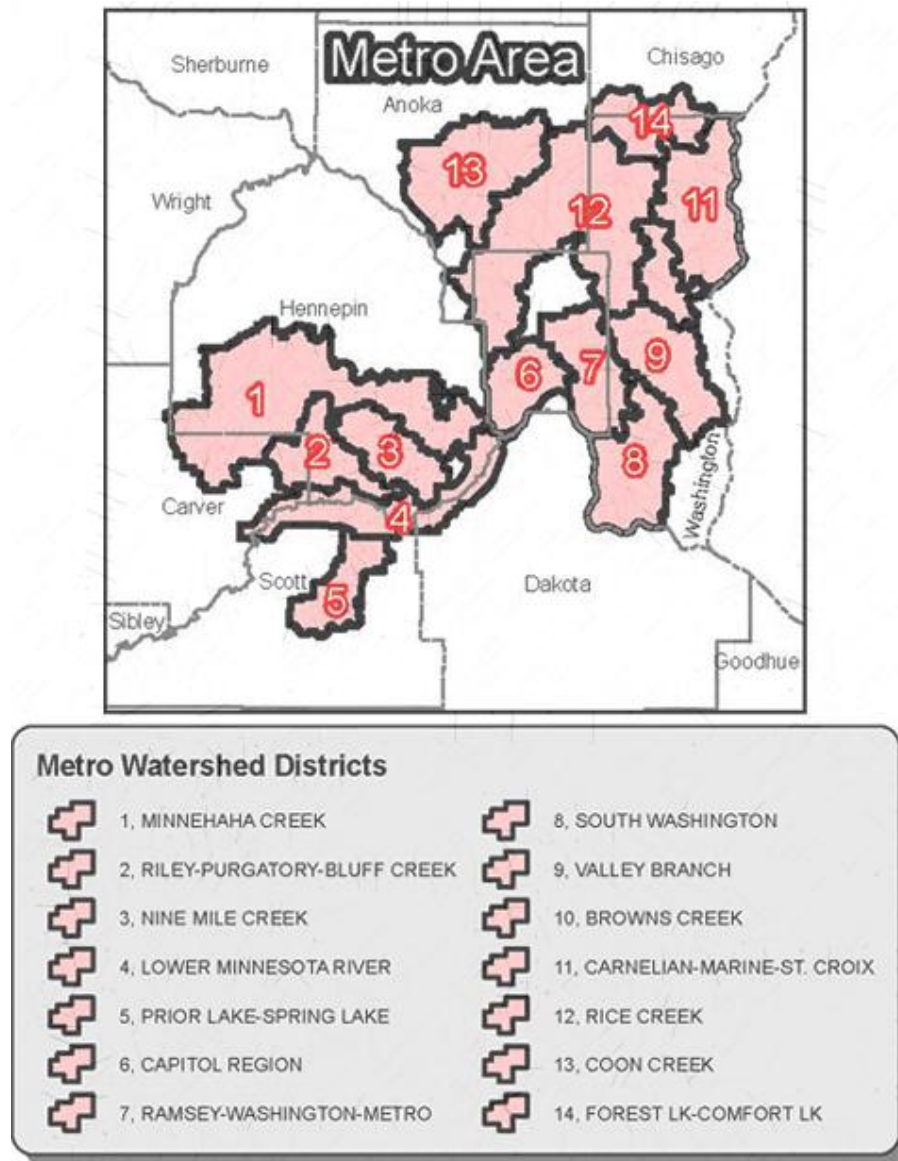
While water management issues may vary a great deal, ranging from flood control to urban runoff prevention, one overarching principle unites effective management approaches: a focus on how water flows across the landscape. Watershed Districts are unique among local government units in that their boundaries are normally drawn to correspond with the hydrology of the landscape rather than adhering to traditional political boundaries. The following maps show the geographic extent of the 46 Watershed Districts in Minnesota.

Figure 1: Watershed Districts in Minnesota



(MAWD, 2012)

Figure 2: Watershed Districts in the Metropolitan Area



(MAWD, 2012)

### New Environmental Management Paradigm

Minnesota's environmental management structure and value system has been continuously changing since its initial narrow focus on agricultural productivity. Open ditch and tile drainage were and continue

to be important agricultural practices, but by the early 1960s the nature of farming in the US was beginning to change (Ruhland, 2005). Food surpluses rather than shortages had become the norm, easing the pressure to maintain high productivity at all costs. This, along with growing concern among the public that wildlife habitat was being destroyed by wetland drainage, challenged the role of SWCDs in drainage activities (Ruhland, 2005).

SWCDs continued to be instrumental players in soil conservation at the state level, but new state and national environmental policies emerged in the 1950s, 1960s and 1970s as a result of shifting societal environmental values that brought with them a whole suite of new natural resource management agencies and tools that were better suited to address specific environmental problems. In 1967 the Minnesota Pollution Control Agency was established to “examine the quality of the state’s environment, develop rules that protect the public health and environment, and help local government, industry and individuals meet their environmental responsibilities” (Ruhland, 2005). In 1969, the National Environmental Policy Act was passed which “called for evaluations and impact analysis of all planned actions by disclosing the decision making process and the measures to be taken to mitigate adverse environmental impacts” (Ruhland, 2005). Amended in 1972, the Clean Water Act (CWA) established the basic structure for regulating pollutant discharge into waterways, and set quality standards for surface waters (EPA, 2012). This new legislation laid the groundwork for Total Maximum Daily Load (TMDL) studies and implementation plans, which directly impact the Minnesota River as it is considered “impaired” under CWA guidelines.

#### Conservation and the Farm Bill

The Food and Security Act of 1985 provides further evidence of the changing environmental paradigm.

The Food and Security Act (or the omnibus Farm Bill as it is often described) greatly expanded the role of

conservation practices on the farm in Minnesota. The conservation compliance provision of the act required landowners to have conservation plans and “adequate conservation systems applied by 1995 in order to remain eligible for other USDA programs” (Ruhland, 2005). The swampbuster provision of this same act required that any wetland converted after December of 1985, “for the purpose of producing annually sown commodity crops resulted in the land user becoming ineligible for USDA program benefits” (Ruhland, 2005). The 1996 Farm Bill reauthorized these and other provisions, while adding two new conservation programs, the Environmental Quality Incentives Program and the Wetland Reserve Program.

As the focus on environmental issues in Minnesota moved towards protection and restoration based efforts, water and soil conservation efforts became more complex and expansive, giving managers more tools to address environmental management issues, but also complicating the system of government agencies that administered the implementation of these new approaches.

#### Creation of LMRWD

The proposed creation of the LMRWD was based on a need for a local unit of government to partner with the US Army Corps of Engineers to oversee dredging operations in the Lower Minnesota River. This purpose differed from the environmental paradigm shift in that the intention was not conservation focused, but rather based on the need for reliable navigation channel. The initial petition for the formation of the LMRWD failed as the result of a legal challenge. However, the US Congress soon took actions that revived interest in creating a new water management entity on the Lower Minnesota River. The Rivers and Harbors Act of 1958 mandated that the US Army Corps of Engineers (COE) construct and maintain a shipping channel on the Minnesota River between its confluence with the Mississippi River upstream, to Minnesota River Mile 14.7 in Savage. It also mandated that the COE partner with a local

regulatory body to serve as a sponsor to the dredging project. In 1960, the LMRWD was established to fill the sponsorship role, making it the second Watershed District in Minnesota (LMRWD, Watershed Management Plan 2-1, 2011).

The Rivers and Harbors Act requires that the local sponsor of the 9-foot channel provide “without cost to the United States all lands, easements, and rights-of-way necessary for the construction of the project and subsequent maintenance when and as required”. It is important to note that the LMRWD is required to provide dredge placement sites for the life of the project, and that providing the real estate for the initial dredge siting does not fulfill its mandate. COE maintains that once a site has been filled to capacity, it is the responsibility of LMRWD to either provide a new site or dispose of dredge material from a current site to free up capacity (USCOE, Dredged Material Management Plan/Environmental Assessment: Minnesota River above I-35W Bridge, 2007).

#### New Watershed District Roles and Responsibilities

Since the establishment of LMRWD, water management has evolved into a set of complex, multifaceted, multi-agency processes, compelling the need for LMRWD to adapt to this new environmental management paradigm. New requirements for planning and reporting by Watershed Districts are indicative of this shift. According to Minnesota Statute Chapter 8410, Watershed Districts in the metropolitan area must submit a Watershed Management Plan that includes an “inventory of water resources and physical factors affecting the water resources based on existing records and publications,” as well as an assessment of the problems within the district’s jurisdiction (Minnesota, 2012). These plans are required to include, at a minimum, goals and policies related to water quantity and quality, recreation and fish and wildlife, enhancement of public participation, public ditch systems,

groundwater, wetlands and erosion. Regardless of its original, narrowly defined role as local sponsor of the 9-foot channel, its designation as a Watershed District means that LMRWD must consider and plan for a comprehensive range of water-related issues.

This transition has not been as smooth as the LMRWD Board of Managers, and the water management community in the state of Minnesota, expected. According to the LMRWD's Water Management Plan, over 50 years after its establishment and nearly 40 years after the flurry of environmental legislation of the 1970s, one of the District's greatest challenges remains defining a clear role for itself in water management, a role that recognizes its mandate as local sponsor to the 9-foot channel as well as its responsibilities as a more broadly defined water management entity (LMRWD, Watershed Management Plan 2-1, 2011). Specifically, the LMRWD's Water Management Plan states that:

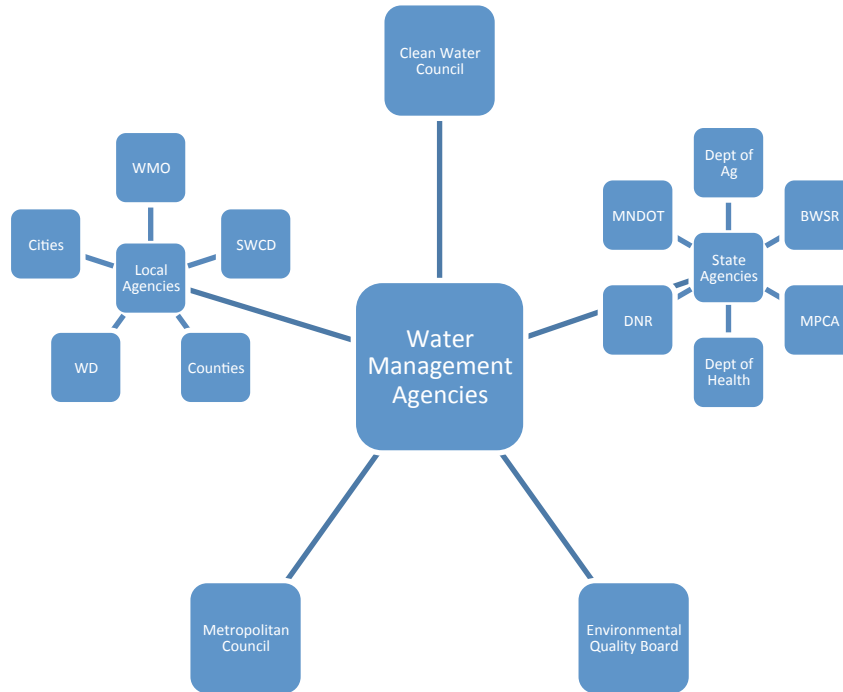
“The role of the District has changed notably during the 39-year period from its formation in 1960 through the completion of the last plan in 1999. The focus of the District transitioned from its founding goal: of assisting the COE in improving navigation of the Minnesota River channel, to one that includes the protection, preservation, and maintenance of surface, groundwater, and unique natural resources. This change reflects a shift in the value of resource protection and the expectations of watershed districts. With the introduction of new technology and improved methods to manage and protect resources, (such as adaptive management, sustainability approach, etc.), the District is again expected to change.” (LMRWD, Watershed Management Plan 2-1, 2011)

Due to these changing environmental standards and resulting lack of clarity regarding the role of the District, an important consideration throughout this report is the establishment a clear sense of purpose for the LMRWD.

### Water Management Agencies

The growing complexity regarding water resource management in Minnesota is reflected in the diversity of agencies that have a role in water management. Currently, there are at least 15 units of government in Minnesota that have a hand in water management and some direct or indirect relationship with the LMRWD. These agencies range from the Department of Transportation to Watershed Districts and Watershed Management Organizations focused specifically on local water issues. While each has an important role in water management as a whole, some have a more direct relationship with the LMRWD than others. The following graphic represents each of the units of government involved in water-management, with a discussion to follow of those most directly in contact with the LMRWD.

Figure 3: Water Management Agencies



(WRC, 2011)

Though each of these organizations has some direct or indirect relationship with the LMRWD, only a few interact with the LMRWD on a regular basis. The following agencies interact most frequently with the LMRWD:

- **The Board of Soil and Water Resources (BWSR):** This agency works with Watershed Districts and other local units of government to promote “water stewardship by utilizing technical and financial assistance” (Helland & Enzler, 2011). Additionally, the Board is responsible for approving Water Management Plans and plan amendments. Though the Board has no



enforcement mechanisms (i.e. means to punish or reward), it does act as an oversight agency providing performance review and additional assistance (BWSR, 2012).

- **Counties and Cities:** Counties are the other local government units besides WDs with major water management responsibilities. Their land use planning authority puts them in a unique position to integrate land use and water planning, and ensure that local needs are met. Cities and counties frequently work in tandem on water planning, and both often act as the local government unit responsible for administration of the Wetlands Conservation Act (BWSR, Local Government Units and Partner Agencies, 2012). Watershed Districts (WDs) and Watershed Management Organizations (WMOs), whose boundaries overlap with cities and counties, are also required to adopt a Watershed Management Plan. Because of these overlapping water management responsibilities, Watershed Districts work with cities and counties on erosion control projects, water infiltration projects, and other water related infrastructure projects.
- **The Metropolitan Council:** Met Council assists watershed districts in the metropolitan area, including the LMRWD, in the planning process acting as a review and comment authority on all Water Management Plans. Staff of the Metropolitan Council serve on the LMRWD's Technical Advisory Committee and assist in providing data, technical assistance, and knowledge of other Watershed Districts for oversight purposes (MetCouncil, 2012).

### **Current Activities**

As indicated earlier in this report, LMRWD's primary responsibilities are broken down into two major categories: dredge material management and water quality management. Before looking more closely at the challenges faced by district staff and managers, it is important to understand the actions being

taken by LMRWD to manage dredge material and water quality.

### Water Quality

According to the LMRWD's 2010 Annual Report, a number of projects and programs were planned and implemented in 2010, which directly addressed erosion or some other water quality issue, or increased the District's understanding of water quality problems in the Lower Minnesota River and the need for future projects to address them. These programs also aim to increase awareness of water quality issues among the surrounding communities. The following description of these projects comes directly from LMRWD's 2010 Annual Report (LMRWD, Annual Report, 2010):

- Minnesota River Bank and Bluff Stabilization: The LMRWD hired a consulting firm to perform an analysis of the Minnesota River bank erosion problem in Eden Prairie. This analysis was completed with a report of possible alternatives to correct this problem.
- Metro Blooms Rainwater Garden Workshops: The LMRWD is working in cooperation with Metro Blooms by providing financial assistance to conduct environmental education workshops in the surrounding cities.
- Metro Watershed Partners: The LMRWD joined the Metro Watershed Partners, requesting that funds be appropriated towards the Clean Water Minnesota advertising program.
- Blue Thumb Planting for Clean Water: The District continues its membership with Blue Thumb, promoting web site organization and participating in volunteer activities.
- 2010 Carver County Environmental Children's Water Festival: The district provided funds to assist with bus transportation from Carver County to this educational event in an effort to increase participation with environmental organizations.

- Seminary Fen/Assumption Creek: The District has continued to work with surrounding property owners to purchase easements so restoration can take place.
- Carver County Environmental Services: The LMRWD partnered with Carver County WMO and the City of Chaska to conduct a shoreline restoration on Brickyard-Clayhole Lake in Chaska.
- Carver County WMO: The District provided financial contributions towards the completion of the Carver County Geologic Atlas.
- Monitoring: The LMRWD does regular monitoring projects to assess the Lower Minnesota River. The District has partnered with USGS, Scott County, Carver County and Dakota County on monitoring projects.

Though the LMRWD has had a hand in numerous projects in 2010, the District's limited capacity to control sediments and pollutants outside of its jurisdiction has left the Minnesota River continuously impaired (LMRWD, Watershed Management Plan 2-1, 2011). This issue of jurisdiction will be discussed in greater detail in the Challenges section of this paper.

### Dredging

Dredge material management is the second major responsibility of LMRWD. The 9-foot channel provides comparatively low cost access to domestic and foreign markets for grain and other commodity producers. According to the Upper Mississippi River-Illinois River Navigation Study, when compared to other viable shipping routes, rate savings for users of the Lower Minnesota River terminals averaged \$12/ton for grain and \$9/ton for other commodities. By applying these savings to 3.5 million tons of annual grain tonnage from the Lower Minnesota River terminals, the result is a benefit of \$42 million per year (USCOE, Dredged Material Management Plan/Environmental Assessment: Minnesota River

above I-35W Bridge, 2007) .

In order to ensure that barges are able to safely navigate the Lower Minnesota River to reach shipping terminals, dredging of the 9-foot channel takes place at 5 locations, not including private slips. Figure 4 outlines the location of each river feature that must be dredged, the average amount of sediment that is removed from each during a single dredging event (dredging is not executed on a yearly basis, but rather as needed to maintain the channel), the projected amount of material that will need to be removed between 1999 and 2025, and the projected number of dredging events that will be required over that period.

Figure 4: COE Dredging Sites and Frequency (USCOE, Dredged Material Management Plan/Environmental Assessment: Minnesota River above I-35W Bridge, 2007)

Location	Ave/Job (Tons)	27 Year Projection	# of Events Over the Next 27 Years
Mouth of MN River	18,000	54,000	3
4-Mile Cutoff	9,000	27,000	3
Peterson's Bar	27,000	405,000	15
Cargill	7,200	21,600	3
Savage Bar	20,250	162,000	8

Dredge material is relocated to 3 sites which have been purchased or leased by LMRWD (USCOE, Dredged Material Management Plan/Environmental Assessment: Minnesota River above I-35W Bridge, 2007). In 1978, the LMRWD commissioned an engineering report that outlined the necessary characteristics of dredge material placement sites. The 3 sites currently in use meet those criteria,

though all are at or close to full capacity. In order to meet the capacity needs of COE, LMRWD has in the past paid to have dredge material removed from one of the sites. The COE DMMP has identified 6 additional sites that would be appropriate for dredge material placement, which LMRWD is considering in order to fulfill its obligation, although significant obstacles inhibit the potential use of many of those sites. LMRWD lobbied the State Legislature in 2006 to modify the state statute, allowing the District “to receive material from private river dredging and charge a fee for this service,” currently, private industry is required to dredge and find sites for their own sediment (LMRWD, Watershed Management Plan 2-1, 2011).

LMRWD has not formally adopted its own DMMP, but takes steps to address dredge material management as the need arises (LMRWD, Annual Report, 2010). As a result, LMRWD does not have an official, long term strategy for locating and acquiring access to sites for dredge material. Further, COE explicitly states that predictions on dredging frequency can be highly variable, and that sedimentation rates could increase at a rate higher than their models predict. This is a major management consideration for LMRWD as siting of dredge material could conceivably become more difficult if sedimentation rates, and therefore dredging frequency, increases.

### **Current Challenges**

As the LMRWD moves forward with its dual role of sponsorship of the 9-foot channel and broader responsibilities as a Watershed District, it must address a number of challenges that hinder its management efforts. For the purposes of this report, the primary challenges hindering LMRWD’s management capabilities are identity, jurisdiction, and funding. This section provides basic facts and observations on these challenges, while the analysis section will add more depth to each.

## Identity

As addressed previously in this report, the focus of water resource management in Minnesota has shifted from a primary focus on drainage to promote agricultural productivity towards environmental protection and conservation. As a result of the unique nature of its roles and responsibilities, the process of the LMRWD evolving along with this prominent trend has not been an easy road. The District still lacks a clear sense of direction, and remains uncertain about what is expected by the water management community at large. According to the LMRWD Management Plan, “there existed a disconnection between how the Managers saw their role in the District and how stakeholders viewed their role” (LMRWD, Watershed Management Plan 2-1, 2011). Thus, the LMRWD found that in order to be successful in the implementation of their goals and strategies, “it is important for all parties [to be] on the same page” (LMRWD, Watershed Management Plan 2-1, 2011).

## Funding

The second major challenge faced by LMRWD is funding. Watershed Districts have the authority to levy taxes to finance their activities, which is the primary means by which they raise capital. Chapter 103D of Minnesota Statutes (sections 901-925) specifies the conditions and stipulations under which a Watershed District’s funds can be spent, and how each type of fund can be replenished.

LMRWD has a special fund called the 9-Foot Channel Fund that can only be spent on projects related to commercial navigation and maintenance of the 9-foot channel. This fund is on the verge of being depleted. Therefore, LMRWD must raise capital in order to fulfill its mandated responsibilities to COE. The need for timely action is evidenced by the lack of capacity at current sites. The Board of Managers

sees the decision of how to replenish this fund as the most pressing consideration for the district, and is interested in an all-inclusive examination of options for long term funding of dredge material management activities

This 9-Foot Channel Fund was initially created through a one-time special assessment on industry in the early 1960s, and was replenished in the early 1980s through a district wide ad valorem levy (LMRWD, Watershed Management Plan 2-1, 2011). Moving forward, LMRWD is considering a number of alternatives for funding.

First, as it has in the past, LMRWD has the option to levy an ad valorem property tax across its entire jurisdiction to fund dredge material management. This would assess all residents and commercial entities at the same rate, based upon the taxable value of their property.

Second, LMRWD could levy a special assessment on those who are legally determined to be beneficiaries of the 9 foot channel. Special assessments are used by many local government units to cover the costs associated with projects that directly benefit property owners, or adjoining property owners. A special assessment can be initiated by 2 courses of action. First, a simple majority of the members of the board of managers can approve a project costing no more than a total of \$750,000, with no more than half of that cost being covered through collecting funds from benefiting properties (defined by MS 103D.725). Or, a project can be approved by a petition, by unanimous resolution of the managers, or by some other method prescribed in statute (LMRWD, Watershed Management Plan 4-15, 2011). The most significant challenge to this approach would be the determination of who the beneficiaries of the 9 foot channel are, along with the administrative and legal costs associated with making the decision.

Third, the board of managers has initiated conversations with its representatives in the Minnesota Legislature on the possibility of receiving state appropriations to pay for dredge material management. The timing of this inquiry did not appropriately coincide with state funding cycles, and will be re-examined in the next legislative bonding session.

Finally, federal funding may be available to finance dredge material management, though this option has not yet been thoroughly explored by the Board of Managers.

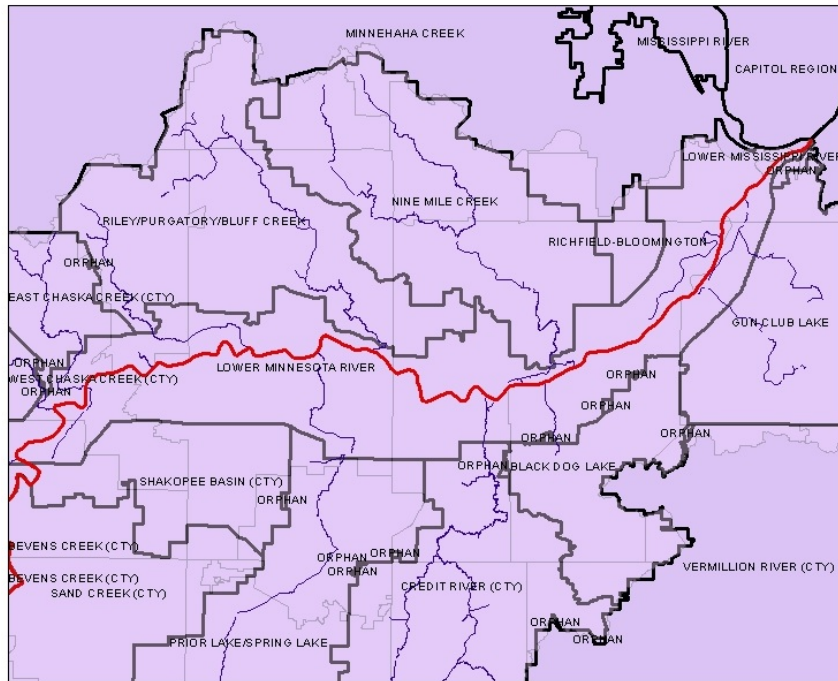
#### Jurisdiction

A third major issue identified by LMRWD is the inability to control factors outside of the District that have led to the impairment of the Minnesota River. The LMRWD is unique among Watershed Districts in that its boundaries are not drawn to correspond with the surrounding watershed, but rather are drawn narrowly on each side of the Minnesota River. The following map shows the LMRWD's boundaries and the boundaries of the surrounding watershed districts, with the Minnesota River in red.



Figure 5: Lower Minnesota River Watershed District (GIS image)

### Lower Minnesota River Watershed District



Since the District’s original purpose was to sponsor the COE in dredging operations, at the time there was less of a perceived need to have jurisdiction over the watershed as a whole. However, as water quality has become a priority, these jurisdictional limitations have impeded the LMRWD’s ability to control factors outside of its boundaries, which contribute a large portion of pollutants and sediment to the impairment of the Lower Minnesota River.

According to the LMRWD’s Water Management Plan, “Major land use in the basin is agricultural in the upstream reaches and urban in the lower reaches.” (LMRWD, Watershed Management Plan 2-1, 2011). The geographic position of LMRWD and the hydrology of the Minnesota River Basin pose a unique set of challenges to its management efforts. As noted previously, LMRWD is situated at the confluence of the

Minnesota River and the Mississippi River. The district is the last sub-watershed before the Minnesota River discharges into the Mississippi River, therefore is highly susceptible to outside influences (LMRWD, Watershed Management Plan 2-1, 2011). Both the agricultural and urban land uses contribute to pollution and sedimentation entering the jurisdiction of the LMRWD, affecting the District's ability to influence water quality within its boundaries. The geographic extent of LMRWD is also very small when compared to the Minnesota River Basin as a whole. It covers a 64 square mile area, and extends 14.7 miles upstream (LMRWD, Lower Minnesota River Watershed District, 2012). The Minnesota River Basin, which represents the entire geographical area that drains into the Minnesota River, covers 16,770 square miles.

The major pollutants entering LMRWD jurisdiction result from excess fertilizers, herbicides, and insecticides from agricultural lands and residential areas, as well as oil, grease and toxic chemicals from urban runoff and energy production. Excess sedimentation results from improperly managed construction sites, crop and forest lands, and naturally eroding streambanks (LMRWD, Watershed Management Plan 2-1, 2011). While erosion and sedimentation are naturally occurring in the river, land use practices have accelerated the rate of erosion and increased sedimentation rates in LMRWD's jurisdiction. According to the LMRWD, the extent of the Minnesota River within the District's jurisdiction "would continue to be impaired even if the District's discharge of point and nonpoint sources was reduced to zero." (LMRWD, Watershed Management Plan 2-1, 2011)

### **Water Quality in the Minnesota River Basin**

Water quality of the Minnesota River has attracted a great deal of attention from state and federal agencies, as well as concerned citizens and advocacy groups. It has been identified by MPCA as meeting the criteria of an "impaired waterway" under the Clean Water Act, and as a result a series of Total

Maximum Daily Load (TMDL) studies and implementation plans are underway or have been completed for the river basin as a whole, and for specific watersheds within the basin. These include, but are not limited to, basin-wide TMDLs for turbidity, low dissolved oxygen, and phosphorus as well as watershed specific TMDLs for fecal coliform and turbidity in the Blue Earth River, ammonia and fecal coliform in the Chippewa River, bacteria in the Redwood River, and bacteria in the Rush River (MPCA, Impaired Waters, TMDLs and Water Quality in the Minnesota River Basin, 2012).

There are a number of factors that play into the impairment of the Minnesota River. First, the historic geology of the Minnesota River valley lends itself to high rates of erosion. 12,000 years ago, floods lowered the valley approximately 70 meters, and tributaries to the Minnesota River have been catching up ever since, carving their own valleys, which will eventually lower the tributary river beds to their original height relative to the river. Bluffs and ravines, the geologic features with the highest erosion rates in this “catch-up” process, contribute a great deal of sediment to the Minnesota River (MPCA, Identifying Sediment Sources in the Minnesota River Basin, 2009). High agricultural land use intensity also plays a prominent role. Approximately 65% of the Minnesota River Basin is planted in row crops (MPCA, Identifying Sediment Sources in the Minnesota River Basin, 2009). Because agriculture replaces natural vegetation with more sparsely planted crops, infiltration capacity is diminished, and erosion and sedimentation rates increase.

The Clean Water Legacy Act requires that all TMDL studies also include cost estimates for implementation of BMPs that would render waterways unimpaired. There are many variables involved with these estimates; therefore their purpose is to provide ballpark estimates of costs associated with different management scenarios. We provide an example in this study to add perspective to the magnitude of the erosion problems upstream of the jurisdiction of LMRWD, and the costs associated

with making incremental steps towards reducing the pollution and sediment load to the point of meeting CWA standards. Modeling suggests that one important component of attaining water quality standards would be an increase in perennial crop cover in the Minnesota River Basin (MPCA, Minnesota River Basin Total Maximum Daily Load Project for Turbidity, 2011). In order to reach the asserted goal of 20% of each watershed being covered by perennial crops, an additional 1.1 million acres would need to be placed in conservation programs, reforested, or otherwise taken out of production and re-planted with perennial crops. At an estimated cost of \$2,000 to \$4,500 per acre depending on local land prices, it would cost \$2.2 billion-\$4.9 billion to make this conversion across the entire watershed. Implementation cost estimates for point municipal stormwater BMPs are estimated at \$175 million (MPCA, Minnesota River Basin Total Maximum Daily Load Project for Turbidity, 2011).

### **Basin Level Management**

There has been a number of proposed governance design changes at the state level aimed at more effective water management at the level of the basin rather than the watershed. Minnesota State Representative Morrie Lanning introduced a piece of legislation in 2008 that sought to create a board in each of the state's basins dedicated to implementing projects and programs of common benefit to the respective basins (Minnesota House of Representatives). The bill was a response to the achievements of the Red River Basin Commission (RRBC), an advisory council that crafts management plans for its basin that address implementation of flood control measures (the primary concern of the commission), as well as nutrient and pollution control measures. Though the RRBC does not have regulatory authority, many stakeholders have recognized its accomplishments and contribution to the governance structure as a successful endeavor.

The addition of a basin level management entity could have benefits over management at the level of the watershed. Just as the Red River Basin Commission was able to compile knowledge and make recommendations on the persistent, large-scale problem of flooding that affected the entire basin, so too could a basin commission in the Minnesota River Basin shed light on solutions for the sedimentation issue from the perspective of the entire basin.

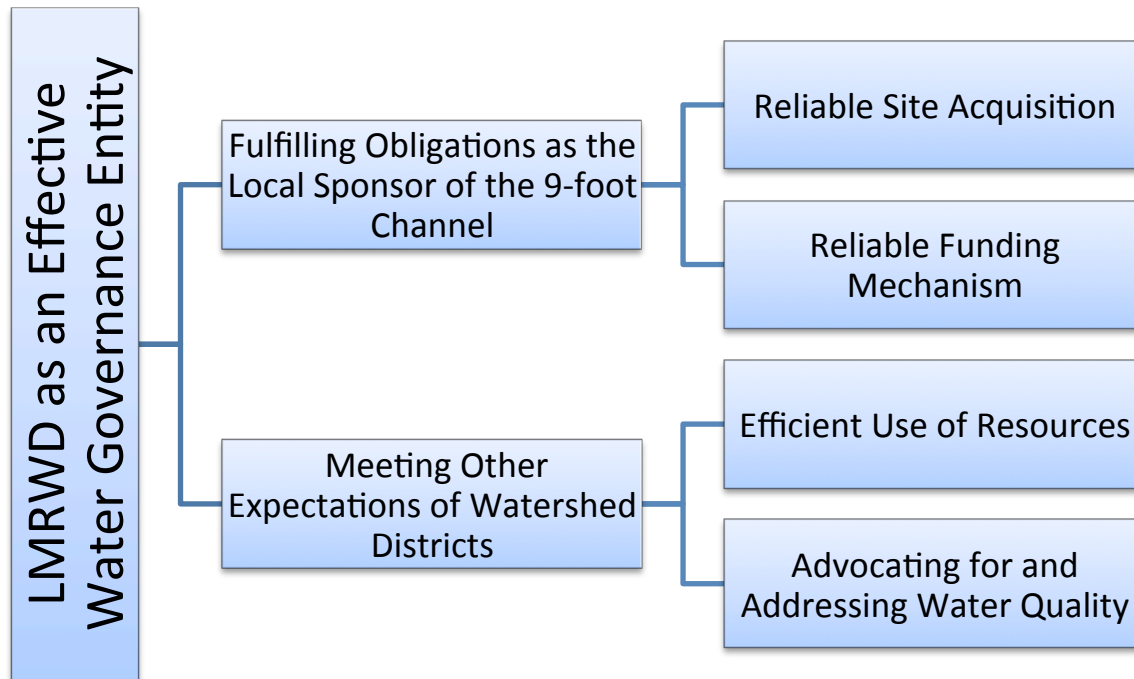
When considering basin level management statewide, however, it is important to understand some of the differences between the Red River Valley and a basin like the Minnesota River Basin. RRBC operates in a very rural part of Minnesota, with a lower population, and fewer existing water management entities. RRBC also had a very specific charge upon its creation: to deal with flooding that had plagued the region, causing loss of life and millions of dollars in property damage. The creation of basin commissions elsewhere, where a more robust water governance infrastructure already exists, would likely prove to be challenging.

### **Methodology**

To achieve its purpose, this report will highlight the benefits and drawbacks of the governance options selected by our research team, key stakeholders, and LMRWD board of managers. We consider four alternatives that have the potential to allow for dredging operations on the Lower Minnesota River to be managed at the least cost to affected parties, while satisfying key stakeholders, and allowing for the most effective structure for maintaining and improving water quality. The diagram below illustrates the broad criteria considered in this analysis, used to analyze management options in a policy analysis approach (Bardach, 2008). These criteria have been developed both from discussions with the LMRWD staff and Board of Managers, as well as from stakeholder interviews. Specific criteria for governance

alternatives will be introduced later in this work.

Figure 6: Broad criteria for effective governance

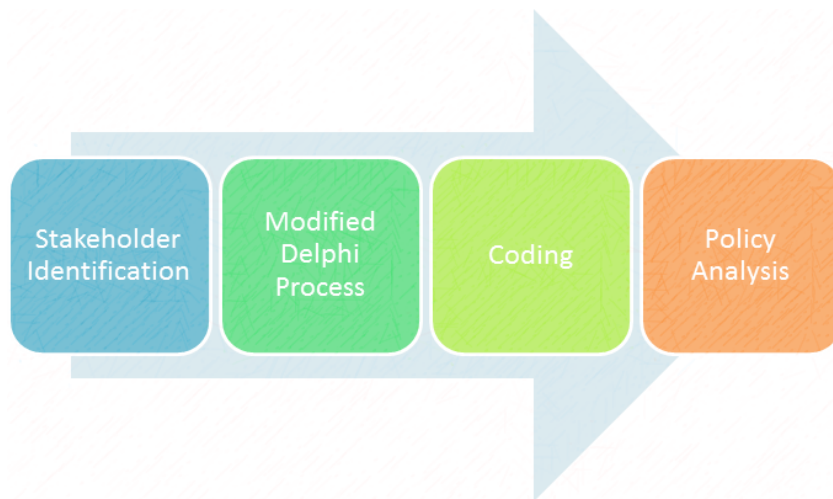


In order to complete our analysis, we first conducted a thorough literature review, looking for relevant case studies of effective dredge management as well as reports and background information that may give better insight into the needs, priorities and challenges of the parties affected by both dredging operations and the Lower Minnesota River Watershed District’s presence. Our literature review has been conducted primarily by looking at relevant statutes, reports listed on agencies’ websites, and through the use of Google Scholar.

In addition to our literature review, we have conducted a series of interviews with a wide range of stakeholders in order to gain perspectives from all affected parties. Again, for the purpose of this analysis, stakeholders refer both to experts in the field of water management as well as other interested

or concerned parties that may be affected by changes to the structure of the Lower Minnesota River Watershed District. In order to gain the most useful and pertinent information from our interviews, we have used a modified Delphi process and have followed the structure of a stakeholder analysis as outlined by Bryson (2004). Because of the specific nature of the District’s role and responsibilities, our literature review primarily aided our understanding of relevant background materials and provided a theoretical foundation for our analysis of stakeholder interviews. Our evaluation of management alternatives relied heavily on information derived from stakeholder interviews, which drove the development of practical and applicable recommendations. The following diagram provides an overview of our methodological structure:

Figure 7: Methodological Process



### The Delphi Process

The Delphi process is a survey method of research first developed by the Rand Corporation in the 1950s. Its purpose is to “generate discussion and enable judgment on a specific topic to be made so that policy decisions can be taken which can claim to represent a given group’s wants and views” (Goodman, 1987).

The process includes four key components to extracting the most beneficial information from a range of stakeholders: anonymity, iteration with controlled feedback, statistical group response, and expert input (Goodman, 1987). Our interviews follow this process in that we have maintained anonymity of our interviewees, have provided a degree of controlled feedback, have used statistical group response, and have primarily been interested in the input of expert stakeholders.

While we have followed the basic outline of the Delphi Process, we have also deviated from this process in a few ways. The article “The Delphi Technique: a critique,” by Claire M. Goodman (1987), discusses both the benefits and drawbacks of these four key components. Based on the concerns identified with each component of the Delphi Process, we have outlined where we deviated from the process and how we have accounted for these concerns.

First, Goodman describes how anonymity can “encourage opinions that are true and not influenced by peer pressure or other extrinsic factors.” At the same time, anonymity creates a situation in which there is no accountability for the opinions given by stakeholders (Goodman, 1987). Thus, Goodman states that this method is more useful for gathering opinions than it is for producing an in-depth analysis. For the purpose of this study, our goal in interviewing stakeholders was to gain a broad sense of challenges and priorities for each sector affected by the LMRWD, as well as to obtain specific comments and opinions on governance alternatives.

The second component of the Delphi Process is iteration with controlled feedback. Goodman describes this component as a series of questionnaires given throughout the analysis to allow stakeholders an opportunity to comment initially, and amend their comments as feedback is presented (Goodman, 1987). Due to a limited time frame, we used a version of controlled feedback within the time allotted for



each interview by developing our questions to elicit broad comments initially, and more specific comments as information is presented to the interviewee. Specifically, our interview questions first ask for comments on broad themes in water governance in the Twin Cities metropolitan area. Once we gained a sense of the relationship between the interviewee and the LMRWD, as well as the interviewee's point of view on the opportunities and challenges in Twin Cities' water governance on the whole, we presented the interviewee with specific management options that could be implemented by LMRWD, and asked for specific feedback on each. Though we did not present the interviewees with feedback as our analysis progressed, we did offer each interviewee the opportunity to provide us with any additional information or commentary as they saw fit after the interview was completed. The interview questions used for this analysis are presented in Appendix A of this paper.

The third component of the Delphi process is the use of statistical group response. For the purpose of our study we have coded key words or concepts that were repeated in our interviews in order to provide a more quantitative analysis of the most important criteria, concerns or priorities of those affected by the role of the Lower Minnesota River Watershed District. The methodology for our coding process is discussed in the Coding section of this paper. While much of our data obtained through the stakeholder analysis has been used qualitatively, the use of statistical group response allows us to represent key themes and ideas through an alternative lens.

Finally, the last component of the Delphi process is the use of experts. Goodman comments that while experts are key to informing policy decisions, the difficulty with this component lies in choosing the most appropriate experts, determining what constitutes an expert, and avoiding strong biases (Goodman, 1987). To avoid potential biases, we included equal representation from three stakeholder groups, and identified from which groups key comments and repeated themes originated.

## Coding

In order to code our interviews most effectively, we have followed the guidelines of thematic analysis as outlined in Gibson & Brown (2009). Gibson & Brown describe thematic analysis as the “process of analyzing data according to commonalities, relationships and differences across the data set” (Gibson & Brown, 2009). This process involves identifying distinctive features of data that can be used to create well-defined categories. The codes created from data sets are defined as either apriori codes or empirical codes. Apriori codes refer to codes that are defined prior to the examination of data, while empirical codes refer to codes that are generated through the examination of the data itself (Gibson & Brown, 2009). For this study we will be using empirical codes that have emerged through the initial examination of our interview data.

By following the process of empirical coding as outlined by Gibson & Brown, we examined interview notes and transcripts for the following:

- Themes that have emerged two or more times throughout our interviews, or
- Key concepts or ideas which are of particularly strong importance to one or more of our interviewees, or
- Concepts that are contentious or have strongly varying opinions between the interviewees.

These codes will be used more informally to determine the set of criteria used to evaluate each of our alternatives, as well as to offer feedback on the alternatives themselves. Points of contention, especially, will be discussed in further detail such that the LMRWD may be aware of the tensions occurring in the broader community.

## Stakeholder Identification

Bryson's article "What to do when Stakeholders Matter" outlines a step-by-step process of identifying relevant stakeholders, gathering information from stakeholders and analyzing that information in order to make the most appropriate policy decision (Bryson, 2004). Using many of Bryson's techniques, we have identified stakeholders to inform this study, categorized the data collected in interviews, and finally analyzed that data to better inform our final recommendations.

Our first step in this process was identifying stakeholders. Given our limited time-frame, we had to be selective in choosing the stakeholders most relevant to this project. Bryson outlines a series of steps to choose the most appropriate stakeholders. In summary, these steps entail a preliminary stakeholder analysis resulting from a small planning group, developing a larger, more comprehensive list, evaluating the positive and negative consequences of involving each of these stakeholders, determining who would be more beneficial to contact earlier rather than later in the study, and finally developing a complete list (Bryson, 2004).

While we have adhered to this process as a guideline, a major challenge with this study was to remain objective and consider all possible alternatives; therefore, we adjusted our stakeholder list as new insights were gained through interviews and subsequent research. Furthermore, as previously noted, we had a limited time-frame. In some cases it was not possible to interview the specific stakeholders chosen in our initial comprehensive list. Most importantly, we were able to gain insights from each identified stakeholder group (i.e. private, government, non-government organizations, citizens and other interested parties). A list of stakeholder affiliations and expertise is provided in Appendix B of this paper.

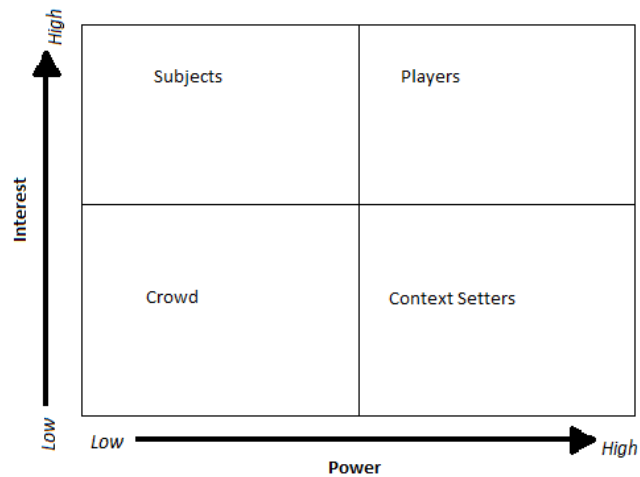
## Stakeholder Analysis Techniques

As we completed our interviews, it was necessary to put the qualitative information gained into a format that could most effectively inform our recommendations. Bryson discusses a series of charts and diagrams that we utilized to organize and rank our data.

The first chart we used develops a list of criteria that each stakeholder would use in judging the performance of the Lower Minnesota River Watershed District, as determined by the stakeholder interviews. Using these criteria as a starting point, we were then able to identify what solutions would be necessary to satisfy these criteria, discuss issues or biases with each stakeholder, discuss how these stakeholders influence the Lower Minnesota River Watershed District and rank the stakeholders according to their importance to the Lower Minnesota River Watershed District. The information we used to develop our initial chart was based on data gathered through each of our interviews. (Bryson, 2004)

While our initial chart was crucial in informing and categorizing much of our collected data, subsequent diagrams have further aided in informing our policy recommendations. A second method we used to analyze the stakeholders was a power and interest grid (Figure 8). This grid allows us to visually represent those stakeholders who have the strongest influence over the Lower Minnesota River Watershed District, the strongest interest in the policy outcomes, and those parties who are relevant but may not have the high power, legitimacy or attention-getting capacity as other parties.

Figure 8: Power versus Interest Grid



(Bryson, 2004)

The steps following the stakeholder identification process guided us in our understanding of the interactions between the various parties involved in water management. Though these steps were important to our understanding of the problem as researchers, in order to maintain anonymity of our interviewees, we have not reproduced diagrams representing these processes in this report.

This stakeholder analysis process allowed us to most appropriately code our data from the interviews. We were able to determine which issues were most prominent among stakeholders, which issues were common between stakeholders, and which issues were points of contention between stakeholders. This process has greatly aided us in informing the LMRWD of the policy options for moving forward which address their greatest challenges of identity, funding and jurisdiction.

The final step in our methodology is identifying and evaluating the options for water governance in the Lower Minnesota River. The use of the Delphi process, coding, and our own initial insights from interviews led to the development of criteria to evaluate alternatives consistent with the policy analysis

procedure as described in Bardach’s book, *A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving* (Bardach, 2008). These criteria were confirmed or adjusted based on the key comments that met the qualifications of our coding process

**Criteria:**

In order to evaluate each governance alternative, we have developed a set of criteria, based upon the insights gained from stakeholder interviews, which we will use to analyze each alternative. The following diagram demonstrates key criteria outlined by stakeholders, who have informed our evaluation process.

Figure 9: Criteria

<b><u>Criteria</u></b>	<b><u>Frequency of Occurrence in Interviews</u></b> <i>(out of 19 total interviews)</i>	<b><u>Key Comments</u></b>
Operational Capacity	5	<ul style="list-style-type: none"> <li>• Currently, too much inertia, can be slow to react to problems</li> <li>• Need to emphasize evaluation and adaptation with any governance alternative</li> </ul>
Long Term Viability	3	<ul style="list-style-type: none"> <li>• Needs a long term dredging plan</li> <li>• Lack of clarity of mission hinders long term planning, but improvements to current system can be made.</li> </ul>
Water Quality	12	<ul style="list-style-type: none"> <li>• The most prominent issue pertaining to water quality is the District’s lack of jurisdiction. Minnesota River is impaired because of what comes from upstream</li> <li>• Solutions given current structure:               <ul style="list-style-type: none"> <li>-Advocate for River to legislature, agencies</li> <li>-Partner with cities/counties/other WDS on available runoff/erosion projects</li> <li>-Support upstream implementation of Best Management Practices (BMPs) to the extent possible</li> </ul> </li> <li>• LMRWD expanding boundaries would be politically infeasible. Other WDs expanding boundaries to the River may be possible.</li> </ul>

Commercial Navigation	9	<ul style="list-style-type: none"> <li>• Need for a viable, safe channel and for sponsor to be dependable and consistent</li> <li>• Currently too episodic with site acquisition, perceived need for more long term planning</li> <li>• Need to more accurately determine quantity and make-up of sediment, and sedimentation rates. Should continue work with USGS</li> </ul>
Financial Feasibility	16	<ul style="list-style-type: none"> <li>• Who should be paying? Who are beneficiaries of the channel? These are major concerns with no easy solution, but without alternative funding, need leadership to make a decision on taxation</li> <li>• Current Structure: Too much spent on administrative costs, need to better understand return on projects, and put more emphasis on seeking out opportunities for collaboration and pooling of resources</li> <li>• State Legislature has valuable internal expertise-with any governance structure, LMRWD should lobby for alternative funding sources, and work closely with Legislature on governance options</li> </ul>
Political Feasibility	10	<ul style="list-style-type: none"> <li>• Need buy-in from counties and cities for any governance structure reform, especially county boards</li> <li>• Emphasize awareness of diverging stakeholder opinions, embrace open dialogue</li> <li>• LMRWD in unique position to build political support for the Minnesota River</li> </ul>
Partnerships	12	<ul style="list-style-type: none"> <li>• Partnering leads to efficiency and effectiveness-Any governance option must lend itself well to partnering efforts</li> <li>• Lack of structural integration between water management agencies makes partnering a necessity</li> </ul>

Based on the comments from our stakeholder interviews, we have synthesized key concepts and more precisely defined each criterion, which will be applied to evaluate the governance alternatives available to the LMRWD moving forward. Viable governance alternatives should hold up well when the following criteria are considered:

- Operational Capacity: The ability to effectively complete tasks associated with explicit organizational responsibilities and stakeholder expectations.
- Long-term viability: The ability to address predictable challenges via a long-term planning rather than through short-term episodic fixes, as well as having the ability to adapt to new challenges that may arise.
- Water Quality: Given jurisdictional limitations, the ability to contribute to the extent possible to improved water quality in the Lower Minnesota River.
- Commercial Navigation: The original purpose of the LMRWD was to oversee dredging operation in the Lower Minnesota River, such that the river would provide viable navigation routes for commercial navigation. Today the river remains an important channel for industries that have come to rely on this means of transportation for shipping. Thus, any alternative considered should increase effectiveness and reliability of dredge material management activities.
- Political Feasibility: With any change to policy, the political implications must be considered. For the purpose of this project, political feasibility will refer to the ability to garner stakeholder buy-in, ease in dealing with impediments to administrative change as well as the legal requirements of each alternative.
- Financial Feasibility: Though it is outside the scope of this study to provide a detailed financial analysis of each alternative, the financial concerns associated with the LMRWD's role in water management were discussed in greater frequency than any of the other criteria. Therefore, for the purpose of this project, we will evaluate the financial feasibility of each alternative from a qualitative perspective, and pick out key financial considerations that must be addressed.



- *Partnering capacity*: The final criterion we will use to evaluate each of our alternatives is the extent to which each lends itself to partnering and collaboration. Given the District's jurisdictional and financial limitations, the ability to partner with other institutions, industries and bordering watershed districts was frequently cited as an opportunity to strengthen the capacity of the LMRWD, and as a necessity for any alternate governance structure. Therefore, it is important to consider how each alternative lends itself to further collaboration among those with a direct or indirect role in water management.

### **Limitations**

Before discussing each of the alternatives available to the LMRWD, it is important to address the factors that have constrained our analysis. The first and greatest limiting factor was the time frame for this study. Given the complex nature of the role the Lower Minnesota River Watershed District plays in water management, each challenge and alternative we have discussed lends itself to a more in depth and comprehensive study. In order to meet our timeline, we were unable to pursue each challenge or alternative to the extent possible for a more rigorous analysis. However, by providing an overview of these challenges and alternatives, we hope to give the LMRWD more focused insights into their options moving forward.

The second limitation of this study, was our ability to meet with all of the appropriate stakeholders. Working from the LMRWD's Technical Advisory Committee to start our interviews, though informative, was not comprehensive. As we moved forward in our interview process we gained new insight into additional stakeholders that may have strong power and/or interest in the LMRWD's future role in water management. One group of stakeholders in particular, the county board members, was not appropriately represented in this study. The LMRWD should consider an extension to this study

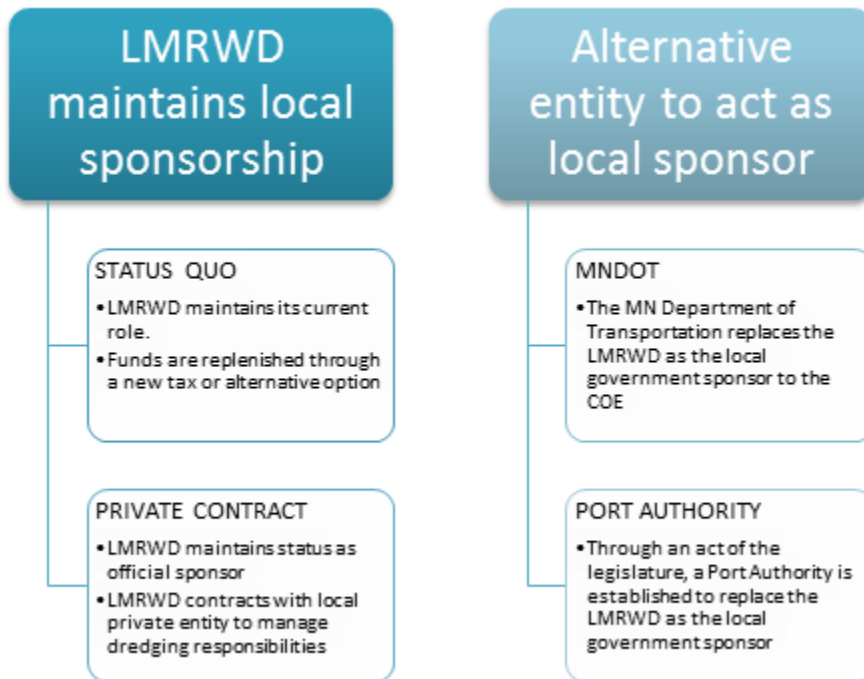
to include additional interviews with those not included in this report.

Finally, a financial analysis of the management options was outside of the scope of this study. A thorough investigation into the costs associated with each is an integral part of choosing the best option.

### **Alternatives**

The following diagram provides an overview of each management alternative considered in this study, with a detailed discussion and analysis of each to follow. Similar to the development of our criteria, the analysis section looks to stakeholder comments relating to each alternative, as well as the number of stakeholders who were directly in favor or opposed to each alternative. Our analysis will provide the LMRWD board of managers with raw data on how many interviewees from each stakeholder group voiced direct support or opposition to each governance alternative, the key concerns and comments of individuals from each stakeholder group regarding governance alternatives, and a discussion of points of contention between sectors (i.e. private vs. government). Following each key stakeholder comment is a list of the stakeholder groups most concerned with the corresponding statement, meaning that 2 or more from each group repeated the theme. While this section will address how each alternative is assessed with respect to our developed criteria, in some cases, limited information will prevent a comprehensive application of each criterion to said alternative. Thus, we will focus on stakeholder insights to determine where conclusions can be drawn in relation to our criteria regarding each alternative.

Figure 10: Alternatives



### **Status Quo**

#### **Background**

The option of maintaining the status quo is relatively straightforward, in that the LMRWD would maintain its sponsorship of the COE and continue its efforts to fulfill its additional responsibilities of improving and maintaining water quality in the Lower Minnesota River. While this may be the simplest of the four alternatives, the success of this option is contingent upon a number of factors, primarily, solutions to financial constraints and the ability to increase operational capacity.

Due to financial constraints, the status quo would still require a new source of funding to replenish the 9-Ft Channel fund in order for the LMRWD to meet their dredge material siting responsibilities. As stated in the limitations section of this paper, a financial analysis is outside the scope of this study, but it

is important to note that funding issues must be addressed immediately if the District is to move forward with its current role. Operational capacity will be discussed further in the analysis of this alternative.

Analysis

Given that the analysis of each alternative is based primarily on key insights from our stakeholder interviews, it is important to first consider the relevant themes that arose from those interviewed. Out of the 19 individuals interviewed, few were directly in favor or directly opposed to the status quo. Instead, most expressed concerns about the effectiveness of the current structure, and suggested ways that LMRWD could improve if it does not pursue one of the other governance alternatives.

Figure 11: Status quo data

PO=Private Industry/Other Organizations  
 SG=State Government  
 LG=Local Government

Alternative	Number in favor ( <i>out of 19 total interviews</i> )	Number directly against	Key Comments
Status quo	Ad valorem: 2 Special Assessment: 1	4	-Too much money spent on administrative activities (LG, PO) -Need to share resources (LG, SG, PO) -Issues of legal liability are restricting Dredge Material Management options (PO) -Need for more active, dynamic leadership (PO, LG, SG) -Can be slow to react to problems (PO, SG, LG) -Need to actively seek out more partnership opportunities (LG, SG, PO)

## Key Stakeholder Comments/Repeated Themes

- “Too much money is spent on administrative activities” and the “need to share resources”: Two of the most frequently cited concerns throughout our interviews were related to financial feasibility. Many stakeholders believed that the benefits of LMRWD’s actions come with a hefty administrative price tag, and that more direct action with measurable results should be emphasized. Also, many stakeholders expressed that in a time of budget cuts and limited resources, the ability to partner and cost-share is a great opportunity for the District, which is currently underutilized. (Local Government, Private Industry/Other Organizations)
- “Issues of legal liability”: A second repeated theme throughout our interviews was the issue of legal liability related to the composition of dredge material. Stakeholders believed that the lack of sound data on sediment may be preventing partnerships from occurring. Further, the fear of liability, due to uncertainty regarding sediment composition has limited the District’s ability to realize potential relationships with industry and other organizations. (State Government, Local Government, Private Industry/Other Organizations)
- “Need more active leadership” and the “Slow reaction to problems”: While those interviewed had varying opinions regarding the ultimate role the district should play in dredge management and water quality, many felt that the primary problems with the District have been on-going, and that though the District is beginning to take more direct action, it remains slow and somewhat inefficient when compared to other WDs. (State Government, Local Government, Private Industry/Other Organizations)
- “Lack of collaboration”: Stakeholders expressed that the District is not taking full advantage of partnering opportunities with other water management organizations, local and state government, and the private sector. A more inclusive collaborative structure, meaning creating and maintaining a more robust collaborative network with respect to all water quality and/or

dredging projects, would increase cost-effectiveness and provide long-term local solutions.  
(State Government, Local Government, Private Industry/Other Organizations)

#### Application of Criteria

- Operational Capacity: Given the highlighted stakeholder concerns, operational capacity should increase if the status quo is to remain a viable option. Stakeholders perceived LMRWD as comparatively slow, and in need of fully realizing opportunities for cost-sharing and other partnerships.
- Water Quality: The LMRWD is certainly implementing *some* projects to address issues of water quality, as demonstrated earlier in this paper. However, as also demonstrated, even if the District were to reduce its own point and nonpoint source pollutants to zero, the Lower Minnesota River would continue to be impaired. Thus without significant progress in the District's ability to have influence upstream, water quality in the Lower Minnesota River will continue to be an important issue.
- Commercial Navigation: The LMRWD has continued to meet its requirements in providing sites for the deposit of dredge material. Thus far, lack of dredge sites has not impeded the COE's ability to maintain the 9-foot channel. However, as sedimentation entering the District's jurisdiction is not likely to decrease without broad policy change, the current strategy may not be able to deliver acceptable results in the future. LMRWD must demonstrate vision and leadership by establishing a long-term Dredge Material Management Plan if it is to continue to act as local sponsor by systematically ruling out infeasible sites, and working with a broad range of stakeholders in identifying ways to increase capacity to accept dredge material.

- Financial Feasibility: Given the limitations of this study, the financial feasibility of maintaining the District's current structure remains uncertain. Still, one impediment under this criterion is that the District needs to raise money to continue meeting its basic responsibilities. Along with the need to raise funding, the perception of the broader community is that more money is being spent to comply with administrative requirements than going towards actual water quality improvements.
- Political Feasibility: Though there was not broad support among stakeholders for the continued role of the District in both water quality and dredging, administratively, this option would require the least burden. Any major governance reform would require buy-in from a diverse set of stakeholders with diverse interests.
- Partnering Capacity: The current governance structure lends itself to partnering, though stakeholders expressed that LMRWD could more actively seek out partnership opportunities. There are a myriad of agencies and organizations carrying out water management activities within or near the jurisdiction occupied by LMRWD. Actively seeking ways to work with each was a high priority for stakeholders if the governance structure were to remain in its current form.

#### Who Pays/Who Benefits

- Under this alternative, the property tax base within the jurisdiction of LMRWD continues to pay for the organization's activities. There was disagreement among interviewed stakeholders over who benefits from the 9-foot channel. Some felt that private industry was the most prominent beneficiary of dredging activities, while others believed that the cost savings that result from decreased shipping costs are passed on to the consumer, therefore there are broader, regional economic benefits. Though water quality projects are currently limited, beneficiaries of these

activities are primarily local users of the river. A second beneficiary group consists of a broader base of citizens that benefit from LMRWD taking steps towards a healthier Minnesota River.

### **Private Option**

#### **Background**

If the LMRWD were to continue its role as the sponsor of the COE's dredging operations in the Lower Minnesota River, the primary management alternative requiring the least administrative change to the status quo is to hire a private entity to take over responsibilities related to dredging. This organization would likely be an excavation company, a sand and gravel company, a private entity that specializes in dredge material management, an engineering firm or a consulting firm with specialized knowledge of dredge material management, as well as knowledge of the commercial activities on the river. Essentially, this option would require the LMRWD to contract all dredge management responsibilities out to some private entity, assuming that there is a private entity willing and interested in taking on this role. An important consideration with this alternative is the extent to which its success is contingent upon who would take on this specific responsibility and how the contract would be established.

#### **Analysis**

Throughout our interviews there were a number of stakeholders who favored this option for its ability to relieve the District of its dual role, while keeping the management local. However, those directly opposed to this option were strongly opposed, emphasizing that LMRWD must make sound business decisions to make this option a success.



Figure 12: Private option data

Alternative	Number in favor ( <i>out of 19 total interviews</i> )	Number directly against	Key Comments
Private Option	6	3	<ul style="list-style-type: none"> <li>-Is there a private entity willing to take on this role? (PO)</li> <li>-Could help reduce issues of liability for the District (SG)</li> <li>-Does LMRWD have the capacity to set up contract and ensure that the private entity is effective? (PO)</li> <li>-Consider broader entities to take on this role (PO)</li> </ul>

Key Stakeholder Comments/Repeated Themes

- “Is there a private entity willing to take on this role?”: It was outside the scope of this study to determine which, if any, private entities would be willing to take on the responsibility of managing dredging operations, acquiring dredge deposit sites and potentially marketing the dredge material. However, it is important for the District to understand the level of interest the private sector may have in taking on this responsibility, such that this option is not pursued unless there is an entity interested, willing, and able to provide a reliable service at a financially feasible cost. (Private Industry/Other Organizations)
- “Reducing legal liability for the District”: One possible benefit to this option is the transfer of liability concerns from the District to the private entity. Given the District’s financial constraints, a private entity would likely have greater resources and legal support to address liability without limiting its ability to handle or market the material. (State Government)
- “Capacity to set up and maintain an effective relationship with a private entity” and the “broader consideration of entities to take on this role”: One of the strong stakeholder concerns that came out of our interviews was whether LMRWD has the expertise and capacity to set up

and maintain a business relationship with a private entity. Thus, while the private option was not necessarily opposed, its success was seen as highly dependent upon the ability of the District to demonstrate that it has the capacity and knowledge to evaluate, adapt and shape a business relationship that gets the job done reliably. Confidence in the District's ability to do this was mixed, though some stakeholders did mention that there is business expertise in the current makeup of the Board of Managers that, if applied correctly, would aid in making the private option a success. An additional stakeholder comment involved maintaining a broad initial range of potential private entities to take on this role in order to ensure that costs were kept down. None of the stakeholders interviewed were able to identify a private firm that would be a natural fit for the job. (Private Industry/Other Organizations)

#### Application of Criteria

- Operational Capacity: If an effective business relationship were established, this option could increase the District's operational capacity, by allowing the LMRWD to focus on water quality rather than maintaining its dual role. In other words, if the District is free of its dredging oversight responsibilities, it may have more opportunity, time and resources to increase its capacity to deal with issues related to water quality. However, this would still take proactive efforts on the part of the District, which stakeholders have seen as limited in the past.
- Water Quality: Meeting the criteria of appropriately addressing water quality issues, if the private sector option is to be pursued, is similar to the status quo. Issues of jurisdiction must still be addressed and are a major limiting factor for the District. At the same time, if the District were to focus on being a strong advocate for the health of the Lower Minnesota River, and on seeking out opportunities to make incremental improvements to water quality, relieving the

LMRWD of dredging responsibilities may free them to concentrate more significantly on this role.

- Commercial Navigation: Without knowledge of which private entity would take over dredge management responsibilities, it is difficult to predict how much positive impact moving to a private dredge material management entity would have. However, a private option may have the benefits of long-term viability in marketing dredge material and adherence to a proven business model.
- Financial Feasibility: Again, with a financial analysis being outside the scope of this study, the most important financial component to consider is establishing a strong initial contract. It is important to find an entity that can both perform the necessary services as well as remain financially feasible for the District.
- Political Feasibility: Similarly to the status quo option, contracting with a private entity would not require great administrative burdens, but a careful planning and analysis process. Since this option would primarily affect dredge management, it may be especially important to have the support of the industries on the river as well as the Corps of Engineers.
- Partnering Capacity: Working with a private entity on dredge management would inherently increase the degree to which the District is partnering with other organizations. Further, relieving the District of dredge management responsibilities may free the LMRWD to pursue additional partnerships with other organizations and local units of government for the purpose of improving water quality efforts.

#### Who Pays/ Who Benefits

- Under this alternative, the property tax base within the jurisdiction of LMRWD continues to pay for the organization's activities. The difference between this and the Status Quo is that a

contractor would actually carry out the dredge material management activities. Again, there was disagreement among interviewed stakeholders over who benefits from the 9-foot channel. Some felt that private industry was the most prominent beneficiary of dredging activities, while others believed that the cost savings that result from shipping on the Lower Minnesota River are passed on to the consumer, therefore there are broader, regional economic benefits. Though water quality projects are currently limited, the number of this type of project would likely go up under this this alternative, leaving more overall benefit of LMRWD's work. Beneficiaries of these activities remain the same as the status quo.

## **MNDOT**

### **Background**

The Minnesota Department of Transportation (MNDOT) has been identified as a potential candidate to take over LMRWD's dredge material management responsibilities. As is the case with any option that includes passing channel sponsorship to another entity, MNDOT sponsorship would allow LMRWD to operate more like a typical watershed district, and would free up organizational resources that could be concentrated on water quality improvement efforts. LMRWD's legal counsel has determined that it would fulfill the statutory requirements set forth by the Rivers and Harbors act to serve as the local sponsor to the 9-foot channel. MNDOT oversees transportation by land, water and air in the state of Minnesota, and is normally associated with maintenance of the state's trunk highway system, funding of municipal airports, and maintaining radio navigation channels (MnDOT, 2012). The agency has been known to take on special projects, but according to stakeholder interviews has never directly managed dredge material.

MNDOT currently has some responsibilities related to commercial navigation, though there is no significant degree of overlap. In 1996, the Minnesota Legislature, responding to requests from industry, MNDOT and various Port Authorities, created the Minnesota Port Development Assistance Program to be administered by MNDOT. This program funds shipping infrastructure maintenance and upgrades when projects are deemed too expensive to be funded through Port Authority revenue sources. These funds are often used to pay for dredging to maintain the necessary depth of port slips, but dredge material management normally falls elsewhere. (MNDOT Ports and Waterways)The Ports and Waterways Division of MNDOT, the office responsible for the administration of this program, does not have a great deal of administrative capacity, and according to multiple stakeholder interviews, MNDOT does not plan to replace the director once he retires sometime in the near future.

Analysis

Of the 19 stakeholders interviewed for this analysis, only 1 stated that MNDOT would be a feasible and appropriate option to take over local sponsorship of the 9-foot channel. 10 individuals expressly stated that it would not be the best management option of those discussed, with many simply stating that MNDOT is not likely be willing to take on this new responsibility.

Figure 13: MNDOT data

Alternative	Number in favor ( <i>out of 19 total interviews</i> )	Number directly against	Key Comments
MNDOT	1	10	-Willingness to take on role (PO, LG, SG) No history on the river (PO, LG) -Just another bureaucracy (PO)

## Key Stakeholder Comments/Repeated Themes

- “MNDOT would likely not be willing to take on this new responsibility” (i.e. “not feasible”):

There was a strong sentiment among interviewees that MNDOT would not be a good fit to act as the local sponsor, and that the agency would likely recognize this, making this management option a non-starter. Reasons varied, but primarily centered around MNDOT’s lack of experience with dredge material management, the tight budgetary environment in state government making the agency averse to taking on new responsibilities, its current focus on engineering (or that it is “engineering heavy”), and that dredge material management would be perceived as well outside of the agency’s scope. (State Government, Local Government, Private Industry/Other Organizations)

- “No history on the river”: Numerous stakeholders commented that MNDOT does not have any historical connection to the Minnesota River, therefore does not have appropriate knowledge and understanding of the current challenges that it faces. (Local Government, Private Industry/Other Organizations)
- “Just Another Bureaucracy”: A select group of stakeholders commented that they believed MNDOT would not be an improvement over the status quo, and that the agency would not be able to deliver reliable dredge sites more reliably than LMRWD. (Private Industry/Other Organizations)

## Application of Criteria

- Operational Capacity: As with all options in which local sponsorship is passed off to another entity, MNDOT has the potential to increase the District’s operational capacity by allowing the LMRWD to focus on water quality rather than maintaining its dual role. If the District is free of

its dredging oversight responsibilities, it could increase its capacity to deal with issues related to water quality.

- Water Quality: Assuming that MNDOT would be willing to take on the local sponsorship role, the transition would free up LMRWD's resources to focus more on water quality, and more traditional Watershed District roles. Jurisdictional issues would persist under this option, though LMRWD would be able to do more towards addressing water quality given this limitation.
- Commercial Navigation: MNDOT would be bound to the same, or a similar sponsorship agreement as that to which LMRWD is currently bound, and would be backed by a larger pool of resources than a Watershed District. This could lead to increased reliability in providing dredge sites, though much would depend upon how an agreement was set up, and the amount of resources MNDOT actually had to devote to sponsorship. Again, a specific subset of stakeholders believed that MNDOT would not be an improvement over LMRWD in providing reliable siting options for dredge material.
- Financial Feasibility: Stakeholder sentiment on the financial feasibility of the MNDOT option was mixed. Applicable comments were as follows: 1) MNDOT does have a larger pool of resources on the whole to pull from compared to LMRWD, though 2) it does carry a significant amount of long-term debt, and like most state agencies adjusting to the "new norm" of state level appropriations to agencies, the trend has been to restrict new programs and activities rather than expand them. Key MNDOT staff have publicly expressed concerns over the long term infrastructure needs of the state, and the amount of money (approximately \$2.5 billion/year) that it will take to maintain long term infrastructure investments (StarTribune, 2012). These overarching, long term budgetary concerns would likely play into any decision to take on new responsibilities like local sponsorship of the 9-foot channel.

- Political Feasibility: Prominent government stakeholders expressed that the only way that a transition to a new local sponsor to the 9-foot channel would be successful would be to gain the support of the county boards. Gauging levels of support of these key stakeholders was outside of the scope of this study, and should be a top priority if the Board of Managers makes the decision to move towards another dredge material management entity.
- Partnering Capacity: Partnering capacity takes 2 forms in this option: 1) ability of MNDOT to partner with private industry in managing dredge material and 2) the ability of LMRWD to partner with other water management organizations and private industry after a transition to MNDOT as the local sponsor. Various stakeholders expressed concern over MNDOT's ability to partner with private industry on the Minnesota River as this is not a common practice for state agencies. This was seen as a key attribute of any dredge material management entity.

#### Who Pays/ Who Benefits

- Under this alternative, the property tax base within the jurisdiction of LMRWD continues to pay for the organization's water quality activities. Dredge material management would be funded through state appropriations to MNDOT, therefore costs would fall on taxpayers across the state. Disagreement over who benefits from the channel remains under this alternative. Though water quality projects are currently limited, the number of this type of project would likely go up under this this alternative, leaving more overall benefit of LMRWD's work. Beneficiaries of these activities remain the same as the status quo.



## **Port Authority**

### Background

A Port Authority is a special entity typically responsible for the operation of ports or other transportation infrastructure. In many cases, port authorities are financially self-sufficient. They own land, shipping stations for loading and unloading of cargo, and assess a fee to users for the use of the facilities (AAPA, 2012). There are a number of established port authorities in Minnesota. The city of Duluth has a Port Authority responsible for maintaining shipping infrastructure on Lake Superior; the cities of Winona and St. Paul have Port Authorities with similar responsibilities on the Mississippi River; and the City of Bloomington has a Port Authority with little to no connection to commercial navigation. Rather, it owns land and works to promote economic development.

Port Authorities are established by the Minnesota state legislature, and in many cases must rely on state government funds to begin operating. Depending on the size and nature of the specific port authority, it will typically over time raise sufficient funds to operate independently or will be aided in part by an appropriate local government unit (typically cities) in staffing and other related expenses.

### Analysis

Of the 19 stakeholders interviewed, 11 expressly stated that a Port Authority would be a viable or favored management option. One stakeholder directly stated opposition to this option, primarily because of a perceived lack of fit. This stakeholder went on to explain that there is little physical space

for other economic development activities within the boundaries of LMRWD, and therefore a port authority would likely not be self-sustaining

Figure 14: Port Authority Data

Alternative	Number in favor ( <i>out of 19 total interviews</i> )	Number directly against	Key Comments
Port Authority	11	1	-Devil is in the details (PO, LG, SG) -Just seems to make sense. (PO, LG, SG)

Key Stakeholder Comments/Repeated Themes

- “Devil is in the Details”: Stakeholders from across our groups expressed a great deal of confidence in the port authority option, but most also stressed that success would be dependent upon how the organization was set up. (State Government, Local Government, Private Industry/Other Organizations)
- “Just seems to make sense” Stakeholders from all groups believed that, given the set of options presented by this study including the status quo, a port authority made the most logical sense as it separates dredge material management from water quality, and may have some side benefits related to economic development. (State Government, Local Government, Private Industry/Other Organizations)

## Application of Criteria

- Operational Capacity: As with all options in which local sponsorship is passed off to another entity, a Port Authority has the potential to increase the District's operational capacity by allowing for a focus on water quality rather than maintaining its dual role. If the District is free of its dredging oversight responsibilities, it would have more resources available to increase its capacity to deal with issues related to water quality.
- Water Quality: As previously mentioned, if a Port Authority were to take on the local sponsorship role, the transition would free up LMRWD's resources to focus more on water quality, and more traditional Watershed District roles. Jurisdictional issues would persist under this option, though LMRWD would be able to do more towards addressing water quality given this limitation.
- Commercial Navigation: If a Port Authority were established within the boundaries of the Lower Minnesota River, and dredge material management were its top priority, it would have a great deal of potential to provide reliable siting options to COE. Other Port Authorities have proven that they can be reliable entities to handle dredged material management. COE regularly works with Port Authorities across the US in managing dredge material, therefore there will be some institutional knowledge related these types of relationships. Also, there would likely be a more natural nexus between the business community and a Port Authority than the business community and a government entity.
- Financial Feasibility: The establishment of a Port Authority is an act of the State Legislature; therefore, resources would need to be allocated towards lobbying for and getting a bill passed. This would not necessarily be the sole responsibility of LMRWD. A coalition of interested parties could approach the legislature, but it would nonetheless require time and staff resources. A Port

Authority would also bring a number of added benefits to the communities and businesses within LMRWD's jurisdiction. Because economic development is an integral part of the mission of most Port Authorities, there may be opportunities to grow the local economy, and attract more shipping to the area. There are a number of adjacent major highways and a rail lines that lend themselves well to increased shipping volume.

- Political Feasibility: Prominent government stakeholders expressed that the only way that a transition to a new local sponsor to the 9-foot channel would be successful would be to gain the support of the county boards. In theory, this would be feasible, but as high interest and high power stakeholders, they should be consulted very early in the process as their support is pivotal. Beyond the counties, transition to a new dredge material management entity generally (MNDOT, a Port Authority, or any other entity) must include robust stakeholder participation, and stakeholder input to be successful. One added benefit of the need to approach the legislature to discuss the creation of a Port Authority would be "shining a light" on the challenges faced by LMRWD. Legislators, their staffs, and committee staff members have a great deal of institutional knowledge that could unearth new funding sources, or other ways that the legislature and state government could provide resources to LMRWD, or any new entity involved with dredge material management.
- Partnering Capacity: Because Port Authorities intrinsically have more in common with the business community than a government entity with tax a regulatory authority such as the LMRWD, it may be a more natural fit for the task of working with local commercial landowners on siting of dredge material. One of the primary concerns of stakeholders was reliability in obtaining dredge sites, and apprehension over continued uncertainty in the current ad hoc approach to siting. If successful, a Port Authority could lead to a better, more sustainable long term option for dredge material management.

### Who Pays/ Who Benefits

- Under this alternative, the property tax base within the jurisdiction of LMRWD continues to pay for the organization's water quality activities. There is currently a great deal of uncertainty over how this specific Port Authority would be funded; therefore who would actually pay remains somewhat uncertain. Disagreement over who benefits from the channel remains under this alternative. One point of contention in pursuing this option could be the extent to which city and county governments are required to pay to fund a Port Authority, especially if they perceive that private industry is enjoying most of the benefits of the channel. Though water quality projects are currently limited, the number of this type of project would likely go up under this this alternative, leaving more overall benefit of LMRWD's work. Beneficiaries of these activities remain the same as the status quo.

### **Other Options**

Given that sedimentation is not likely to decrease dramatically in the near future, and that dredging requirements to maintain the 9-foot channel will increase proportional to sedimentation rates, a select group of stakeholders suggested that the 9-foot channel might not remain the most economically viable option for transporting goods in the near future. There are potential dangers in investing in the design and implementation of a new governance structure aimed at maintaining the 9-foot channel if industry on the river makes the shift to other means of transportation such as rail or utilization of the highway system.

## Conclusions and Recommendations

While this study does not claim to represent the point of view of the entire Twin Cities water management community, it does highlight some useful considerations brought forth by a group of dedicated, highly knowledgeable actors and experts with connections to LMRWD and the Minnesota River as a whole. The conclusions and recommendations outlined here are meant to guide the process of choosing a governance alternative, and to provide the LMRWD Board of Managers with knowledge and insights of gained by our research team, and expressed by these prominent stakeholders.

### Management Options

- MNDOT would likely not be a willing or appropriate entity to take over dredge material management. Recommended Action: Remove this option from consideration, or hold a meeting with key MNDOT staff to reinforce the views expressed by stakeholders in this study, and focus efforts on other governance options.
- The Status Quo is characterized by the least amount of administrative challenge, though some reforms, especially a larger focus on partnering and cooperation, should take place regardless of whether or not LMRWD continues to act as the local sponsor in order to meet the expectations of the water management community. Recommended Action: 1) Utilize the soon to be complete review of water quality projects as a means to identify opportunities for cooperation. Make a good faith effort to reach out to other organizations and governments (i.e. cities, counties, WDs, WMOs) to actively seek opportunities for collaboration and resource sharing. 2) At an upcoming meeting of the Board of Managers, set aside a period of time specifically for engagement of citizen stakeholders, and representatives from the three stakeholder groups interviewed for this study to better understand the priorities and perspectives of each. Use this to help prioritize the organization's activities, and to bolster stakeholder sentiment related to the organization's

performance. There seemed to be a continued disconnect between actual stakeholder expectations and what LMRWD Board of Managers and staff perceive as performance expectations. More open communication could help alleviate some of this tension.

- Of the four management options considered in this study, the Port Authority option and the Private option had the most support from interviewed stakeholders. There is a great deal of potential here, though there would be administrative and political hurdles involved with making either option work. A Port Authority would call for a great deal of support from a diverse set of stakeholders, some of whom would bear a portion of the costs associated with the transition, while the private option, as we discussed it with stakeholders, is characterized by a number of uncertainties that are key in making it a viable option. Recommended Action-Port Authority: Start conversations with county board members, cities and State Legislators to further examine the feasibility of this option. Include further discussion of what high power, high interest stakeholders see as priorities in designing a role for a new Port Authority. We recommend the following priorities based upon our analysis:
  - One of the expressly stated, primary goals of a Port Authority must be dredge material management, though local economic growth should be emphasized as a parallel benefit.
  - A Port Authority must have the ability to partner and cost-share, especially with private industry on the river. The private sector should play an integral role in designing the establishment of this specific Port Authority. This would ensure that the vision of the Port Authority would align with both public and private needs.
  - Funding will be a primary concern with the establishment of this entity. Many larger Port Authorities (such as Duluth) are funded by user fees, though this entity would likely be very different in nature. When approaching this option, LMRWD should note the following: 1) The Port Authority should have the ability to be at least somewhat self-

sustain through some funding source other than tax levies by the cities and counties. This could come in the form of revenue from rental of business space, fees from services provided to private industry, or some type of other user fee arrangement with private industry. 2) Other Port Authorities have successfully applied for US Department of Transportation Grants for specific infrastructure projects. A Port Authority could open up some federal funding options. 3) Public startup funds have been utilized by other Port Authorities. As noted previously, the State Legislature should be consulted very early in the process of exploring the Port Authority option. It could provide information and considerations on funding sources to get the project off the ground, as well as funding mechanisms to maintain a viable Port Authority. We also recommend seeking legal expertise to examine statutory limitations of ongoing funding sources (i.e. limitations in seeking state level funding) to better understand how funding for a Port Authority could be diversified

Recommended Action-Private Option: If this option were to be pursued, the following considerations should be taken into account:

- Contracting with a private entity to manage dredging responsibilities would entail high initial transaction costs primarily related to legal and accounting services. The District should consider whether it is within their budgetary and human resource capacity to incur these costs, and whether cost-savings over the life of the contract would provide sufficient return on this initial investment.
- Stakeholders expressed that the District should consider a wide variety of potential private contractors to ensure that costs are kept as low as possible.



- Any course of action that entails major governance reform will require robust stakeholder involvement, especially by the county boards. Recommended action: Continue to strengthen relationships with county board members and city officials.

### Continued Existence

Stakeholders disagreed over whether the LMRWD should continue to exist, or dissolve and allow adjacent water management entities to take over its jurisdiction. The primary argument for its continued existence is the perceived need among certain stakeholders for a single entity to advocate for the Lower Minnesota River. The primary argument for dissolving is one of streamlining and simplifying the governance structure, and managing the land area currently occupied by the LMRWD, while eliminating the administrative costs associated with its existence.

Recommended action 1: Before considering the two courses of action, the LMRWD must first decide if it is to continue its sponsorship of the COE, in that continued sponsorship would necessitate the existence of the District.

Recommended action 2a: Continued Sponsorship: In the event of continuing sponsorship, the District will continue to exist and should adhere to the aforementioned recommendations relating to partnerships and pursuing options to share resources, collaborate, and increase overall effectiveness.

Recommended action 2b: Discontinue Sponsorship: In the case that the LMRWD finds an alternative local government sponsor to the COE, it must determine its future role in addressing water quality in the Lower Minnesota River. Though there are certainly benefits to eliminating the LMRWD, we recommend that the District continue to exist and increase its role as an advocate for the Lower Minnesota River.

## **Future Research**

Given the limited time frame of our study, we recommend that the District consider this study a pilot project, or an initial examination of governance alternatives. While we offer specific recommendations based on our analysis, our primary recommendation for the District is to further engage both citizen and expert stakeholders to establish a well-defined and widely acceptable course of action. In moving forward with any of the four alternatives, the following specific research items should be prioritized:

- Develop a set of sub-options for the Port Authority and Private option to fully explore the different ways each could be designed.
- Engage a larger, more diverse set of stakeholders through broader surveys and interviews. Use the initial conclusions and recommendations in this report as a guide.
- Conduct an in-depth financial analysis of each viable alternative.

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## **APPENDIX A**

### **Interview Questions**

1. Please briefly describe your role in water management, or how water management entities affect your organization.
  - a. More specifically, what is your relationship, if any, with the Lower Minnesota River Watershed District?
  
2. Who do you interact with most frequently and how does it occur?
  - a. Government agencies
  - b. Private sector
  - c. Non-government organizations
  
3. What are some opportunities your organization is currently, or could be able to take advantage of in the current system?
  
4. What are some challenges or obstacles you regularly face? (Ask separately about challenges with relationships and financial considerations).
  - a. Relationships
  - b. Financial Considerations
  
5. What is your understanding of the unique nature of the Lower Minnesota River Watershed District?
  
6. What organizations do you think of when you think about dredging in the Lower Minnesota River? Do you see dredging as more of an issue of economic development or water quality?
  
7. As part of its comprehensive plan, the LMRWD is considering rethinking its role in water management, particularly its relationship with the Corps of Engineers and its dredge material management responsibilities. There are a few options the Board of Managers is considering to more effectively manage dredge material.  
Please offer comments on each of the below options, including a best option (if you see one) and comments on the feasibility of each option.

- a. LMRWD continues its role in dredge material management by securing additional funding through an ad valorem tax or a special assessment on those who benefit from the channel.
  - b. LMRWD continues to act as the official government sponsor, but hires a private entity to manage and market the dredge material.
  - c. MDOT takes over as the local government sponsor for dredging operations.
  - d. Port Authority takes over as the sponsor for dredging operations.
  
8. What other roles do you see the LMRWD playing outside of dredge management and what are some strengths and weaknesses of its capacity to perform these roles?
  
9. A number of alternatives may provide a more effective option for maintaining and improving water quality. Comments.
  - a. Status quo
  - b. Expanding the boundaries of the LMRWD into sub-watersheds
  - c. Dissolving as a WD and allowing the region to become part of the bordering watershed districts.
  
10. What have we missed? Do you see any viable alternatives that we have not discussed?
  
11. In the event of any organizational reform, from your organizations standpoint, what is the top consideration the LMWRD should take into account in making its decision? What do you value in the role of the LMWRD?

## **Appendix B**

### State and/or federal agencies:

Minnesota Department of Transportation (2)

Army Corps of Engineers

Water Resources Center (University of Minnesota)

USGS

Metropolitan Council

Board of Water and Soil Resources

Minnesota Pollution Control Agency

### Local units of government:

Hennepin County

Riley-Purgatory Bluff Watershed District

Nine-Mile Creek Watershed District

Scott County

City of Chaska

City of Bloomington

### Private/Other organizations:

Cenex Harvest States (2)

Kraemer Quarries

Upper Mississippi Waterway Association

Minnesota Farm Bureau