Detroit Water and Sewerage Department

Wastewater Master Plan

DWSD Project No. CS-1314

Performance Benchmarking

Technical Memorandum
Original Date: September 3, 2002
Revision Date: May 31, 2003
Author: CDM

Table of Contents

1. Objective 1

2. Scope of Work 1

3. Background 2

4. Chosen Comparable Utilities 2

5. Data Collection 4

6. Performance Indicators 4

6.1 High Level Performance Measures 4
6.2. Maintenance Program and System Related Performance Measures 8
6.3 Human Resources Performance Measures 12
6.4 Customer Service/Relations Performance Measures 15

7. Summary & Conclusions 22

Appendix……..……22

Executive Summary

CDM is currently in the process of completing a Wastewater Master Plan (WWMP) for the Detroit Water and Sewerage Department (DWSD). As part of this master planning effort, CDM has performed a performance benchmarking exercise that provides comparable information gathered from other wastewater service providers or utility standards. In particular, the following areas were part of the benchmarking task:

- High-level Metric Benchmarks
- Collection System and CIP
- Human Resources
- Wholesale Sewer Customer Relations

The analysis does not only relate DWSD data to comparable utility information but also looks at some of the information on a trend basis. Overall, the objective of this task was to provide evidence on the competitive position held by DWSD. The main focus was in the area of wholesale customer relations in light of the increased work on the contractual issues between DWSD and its first and second tier customers.

Conclusions & Recommendations

Based on the obtained information, we have been able to develop the following conclusions and recommendations:

- Overall, DWSD falls within the range of expense and operations parameters of the sample wastewater utilities group.

- Total cost increases have been moderate but relative costs (Expenditures per flow unit) have been increasing more rapidly.

- DWSD has had elevated employee turnover over the last several years. An emphasis should be placed on correcting this trend in order to avoid excessive hiring and training expenses in the future, especially in light of the magnitude of the Department's labor costs. After a peak in FY 2000, staff turnover has returned to a value under 6%

- In regard to the system maintenance and improvement categories, DWSD finds itself close to the average of the comparables group. Nevertheless, going forward, a continued effort should be placed on system rehabilitation initiatives.

- DWSD has additional work to complete in order to catch up with the comparables group in regard to wholesale customer relations practices. The WWMP has developed recommendations to bring more structure to retail and wholesale customer relations. Current efforts by DWSD to strengthen the role of the Steering Committee should continue. An emphasis should be placed on the

development of a standardized contractual agreement with the wholesale customer group as well as the application of these principles in the relationships with DWSD's first (and second) tier customers.

Performance Benchmarking

1. Objective

The objective of this report is to develop an overview of the operational and financial posture of the Detroit Water and Sewerage Department (DWSD). This assessment compiles performance indicators in several key areas such as the operations of the utility, human resources, and the service provided to wholesale sewer customers. Performance benchmarking has taken a prominent role with water and wastewater utilities nationwide as well as around the world. It is in each utility's interest to assess its competitive position and the progress that the organization has made towards the achievement of any set goals. The term benchmarking is being used in numerous different contexts and needs to be defined clearly before laying out the purpose and outline of this task.

In general, a benchmarking exercise includes the computation of certain performance indicators, which can then be compared against similar measures for other utilities or national or regional averages. Additionally, performance values can be tracked over time or compared to an industry standard or privatizer's approach. By doing so, the utility can establish threshold performance values that it should meet. Benchmarking performance indicators are primarily quantitative concepts that allow for easy comparison against other entities. However, a benchmarking study may also include a qualitative assessment of the utility's competitive position as well as the system of performance monitoring currently used.

2. Scope of Work

The scope of the benchmarking evaluation includes analyses of general high-level performance benchmarks as well as the assessment of three key strategic areas. The chosen strategic areas that have been identified are (1) Collection System and CIP-related measures, (2), Human Resource-related indicators, and (3) Wholesale Customer Relations & Service. The emphasis is on these areas because of DWSD's particular interest to collect information on comparable practices, as expressed in several rounds of interviews with DWSD staff.

In a previous task, CDM analyzed the wholesale sewer contracts established between DWSD and its wholesale customers. The analysis included both DWSD's first and second tier communities. Recommendations for the development of a "model contract" were made. These recommendations included an emphasis on contractually defined customer relations practices.

Moreover, CDM has developed a Human Resource Plan technical memorandum for DWSD. In light of this effort, it makes sense to include this particular area as part of the benchmarking task. Finally, it is common practice to also compare and analyze system specific, or CIP related, performance parameters in order to obtain a general overview and assessment of the operational competitiveness of a utility.

If data is available, performance indicators are presented in two ways. First, trend data for DWSD shows the utility's performance over time. Second, comparisons to a group of other utilities assist in providing a clear perspective on the operational and organizational position of DWSD. Looking at trend data alone is not meaningful because of the lack of a comparable standard. Limiting the analysis to a point-in-time benchmarking comparable analysis is not entirely meaningful either because of the lacking perspective on performance over time.

We present each strategic area and the relevant performance indicators separately. We explain how data was obtained and what the results may tell DWSD's management. Lastly, we provide DWSD with any applicable additional recommendations and conclusions based on this task.

3. Background

The DWSD's sewerage system serves an area of approximately 904 square miles in the City of Detroit and suburban communities in Wayne, Oakland, and Macomb Counties. Sewer disposal service is provided on a retail basis within the City of Detroit and on a wholesale basis to 76 first and second tier communities in the three counties. DWSD has sewage disposal agreements with all of its first tier wholesale customers and is indirectly involved with the second tier communities through their respective agreements with the first tier group. Most of these agreements have gone through multiple rounds of amendments over the last decades.

4. Chosen Comparable Utilities

Comparable utilities have been chosen based on their similar characteristics in regard to service provided, area covered, and annual flow processed. Some of the chosen wastewater utilities are significantly different in size and do not provide a combination of wholesale and retail service but only one type of service (MWRA – only wholesale, Chicago – only retail). However, the chosen group provides a sufficient sample of data for the assessment and evaluation of DWSD's performance. The wastewater wholesale provider sample group includes the following utilities:

- MSD - Metropolitan Sewerage District, Cincinnati, Ohio
- WSSC - Washington Suburban Sewerage Commission, Baltimore, Maryland
- Chicago - City of Chicago Sewer Department, Chicago, Illinois
- MCES – Metropolitan Council Environmental Services, St. Paul, Minnesota
- MWRA - Massachusetts Water Resources Authority, Boston, Massachusetts
- WASA - Washington Area Sewerage Agency, Washington, District of Columbia

The benchmarking analysis will be performed using blinded comparisons. This means that the identities of these utilities will not be disclosed in the actual data tables and charts. We have chosen this approach in order to facilitate the cooperation of each

utility in the data collection process. The utilities will also not be ranked because the choice of comparables determines the overall ranking. Precise determination of rank measuring performance is therefore meaningless.

Table 1 shows DWSD and the six comparable utilities. Initial comparisons are made by listing the area and population served, the number of wholesale customers, total employees, average flow in 2001, and total length of the system (including community customer systems).

Table 1: Utility Comparables Group

Utility Characteristics	DWSD	MSD	WSSC	Chicago	MCES	MWRA	WASA
Area served (sq mi)	901	400	1,000	225	No data	502	725
Total populations served	3,003,222	800,000	1,539,000	2,896,016	2,350,000	1,961,000	2,172,000
Type of Service	Wholesale & Retail	Wholesale & Retail	Retail	Retail	Wholesale & Retail	Wholesale	Wholesale & Retail
Total sewer wholesale customers	76*	33	N/A	N/A	104	43	7
Average flow (MGD)	615	174	181	969	300	324	322
Employees**	2,027	752	1,500	1,208	767	1,543	1,309
Total Length of System (miles)	3,383	3,000	4,989	4,300	5,550	5,628	1,800

* = Includes both first and second tier customers
** = Employees dedicated to wastewater collection and treatment

DWSD is the largest wastewater wholesale provider in terms of service area and population served. Average flows are only exceeded by the City of Chicago's sewerage department.

Based on the FY 2002 Budget, DWSD provided funding for a total of 3,919 budgeted positions in both the water and sewer division. However, there is a significant gap between the actual number of employees and the number of budgeted positions. Based on the FY 2001 Summary of Operating Statistics, the number of employees amounts to 3,213[1]. The sewer only budget for the same fiscal year lists a total of 1,081[2] as the number of employees working in this division. The actual number of employees for the water division is stated as 303 in Appendix B, 2001-D Official Statement. Based on the same source, 40-50% of any positions not directly assigned to either division apply to the sewerage system. We used 45% as the sewer applicable percentage. The overall total then amounts to an estimated 2,027[3] sewer only positions.

[1] Summary of Operating Statistics, Year ending June 30, 2001, Addressograph Section, page 76.
[2] Sewer Budget, FY 2002, "Mission, Goals, and Budget Summary", page 42-1.
[3] Estimation: Sewer only: 1,081 plus 45% of 2,102 (3,213 minus 1,081 minus water only: 303).

5. Data Collection

Comparable utilities have been contacted directly by CDM staff. As part of this process, Annual Budgets, Capital Improvement Plans, Bond Feasibility Reports, and Audited Financial Statements were collected. Additional information and data were then also collected from each utility's website. If not stated to the contrary, all data showing utility comparisons refer to the fiscal year 2001.

Information on customer relations and service practices on the wholesale level was obtained by descriptions provided in Annual Reports and other documents as well as by submitting a list of questions to each utility and then following up with the responsible individuals at each wastewater provider.

6. Performance Indicators

Comparing the chosen performance indicators to the comparable values for other utilities as well as trend patterns of DWSD data over time assesses DWSD's overall performance. As pointed out above, one general and three strategic areas have been chosen for this task:

- High Level Performance Measures
- CIP and System related Indicators
- Human Resources/Staff related Indicators
- Customer Service/Relations Indicators

The first three groups are analyzed in a quantitative way while the last category, covering wholesale customer relations, is analyzed in a qualitative comparison.

In the following text, when the term "Sewer Costs" is used, that means costs related to wastewater collection and treatment, including industrial wastewater control.

6.1 High Level Performance Measures

6.1.1 Cost of Operations (O&M) per MGD

Relative operating cost can be measured by calculating total operations cost, i.e. operations and maintenance related expenses, per million gallons of wastewater treated. As an intermediate step, Figure 1 illustrates the total cost trend for DWSD over the last five years. The total wastewater collection and treatment O&M actual expenditures have increased from approximately $148 to $172 million, yielding an annual increase of about $24 million. FY01 had some special costs that are not representative.

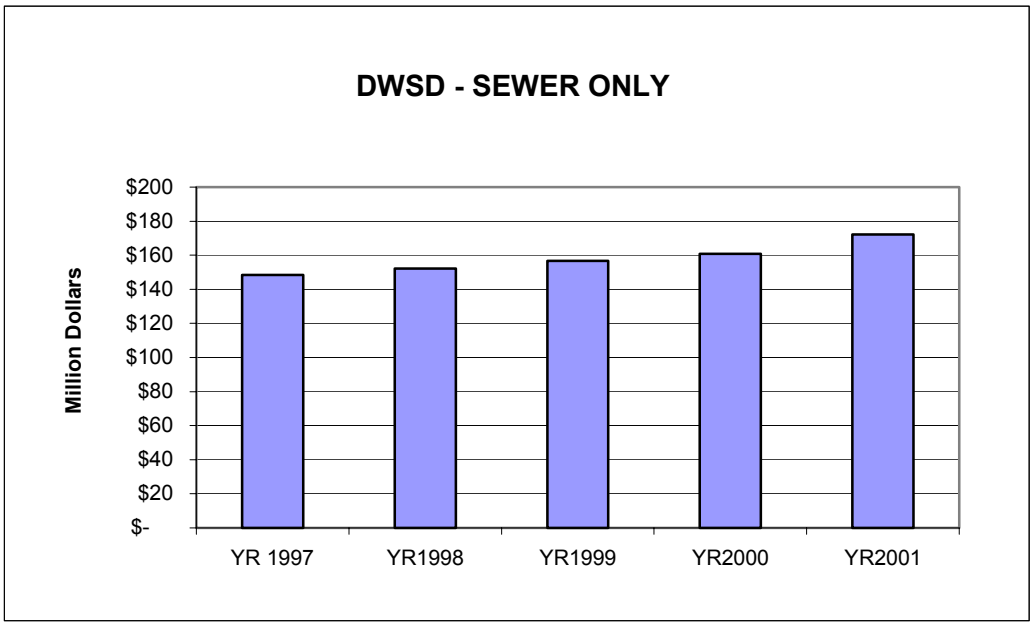

Figure 1: Sewer O&M Actuals[4]

Figure 2 shows the relative cost measured in O&M cost per MGD processed. DWSD exhibits an upward cost trend over the last five years in relative terms. The flow number used in this figure is 667 MGD, equal to the average flow for the last five years. We have used this number due to the fact that DWSD treated flow has decreased over the same timeframe, which would distort this measure if annual flow estimates were used. DWSD has decreased the average volume of sewage treated from 710 MGD in 1996 to 615 MGD in 2001. It should be noted that flows and costs are based on the fiscal year calendar, which begins in July and ends in June.

The reasons for the average flow reduction over time are two-fold. On the one hand, these reductions are due to changes in metering and methods used to calculate flow. DWSD has set up a metering task force that has looked at these kinds of issues. On the other hand, the flow reductions constitute fluctuations in weather patterns and the level of precipitation per year.

[4] Source: KPMG Audited Annual Financial Statements, 1998 through 2001 (Part of the Summary of Operating Statistics Reports).

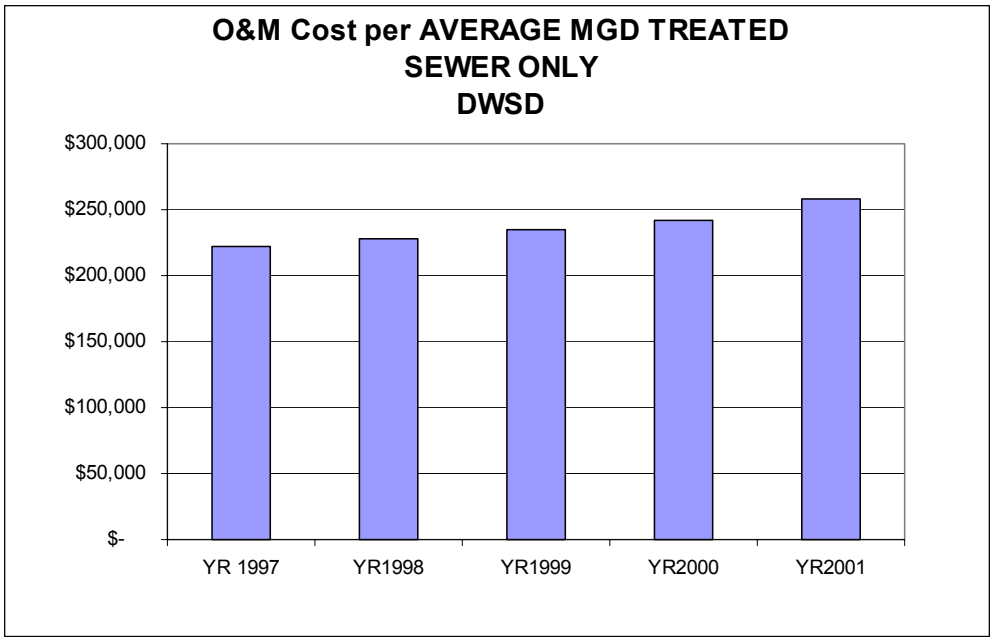

Figure 2: Sewer O&M Cost per MGD treated[5]

Figure 3 illustrates the comparison of O&M cost per MGD to the chosen utilities. At roughly $258,000 per MGD in 2001, DWSD operates below the average of the other wholesale sewer providers of $455,000. However, this comparison directly depends on the choice of comparable utilities and is also driven by the mix of wholesale to retail service for each entity.

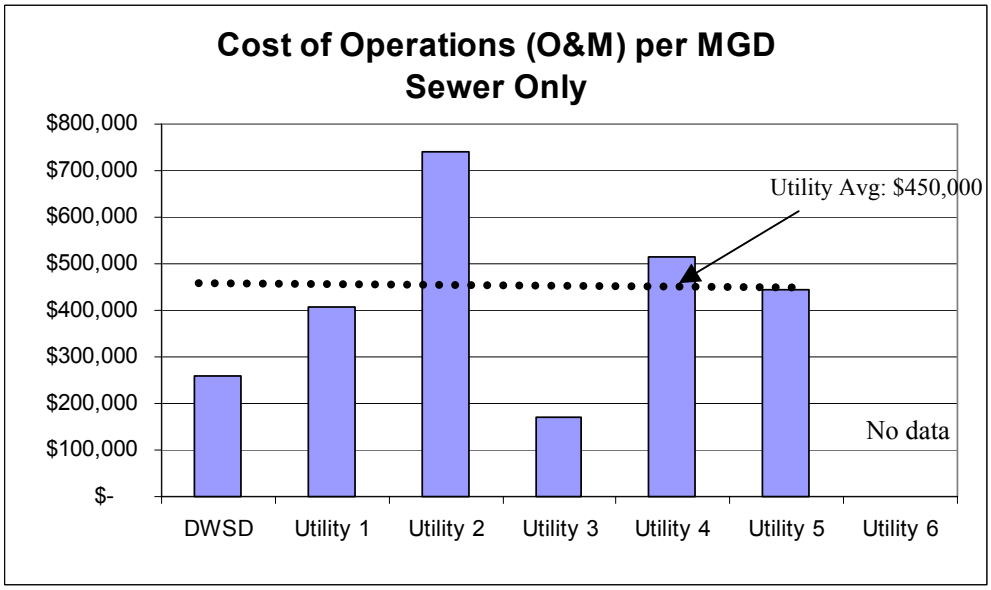

Figure 3: O&M Cost Benchmarking

[5] MGD treated calculated by taking the 5-year MGD average per the DWSD Summary of Operating Statistics. O&M Costs are year-end actuals per the Audited Financial Statements.

6.1.2 Cost of Operations (O&M) per capita

An alternative presentation is to look at O&M expenses per capita, i.e. population served. Figure 4 illustrates this cost trend. The average annual increase of per capita operations cost is nearly 4 percent.

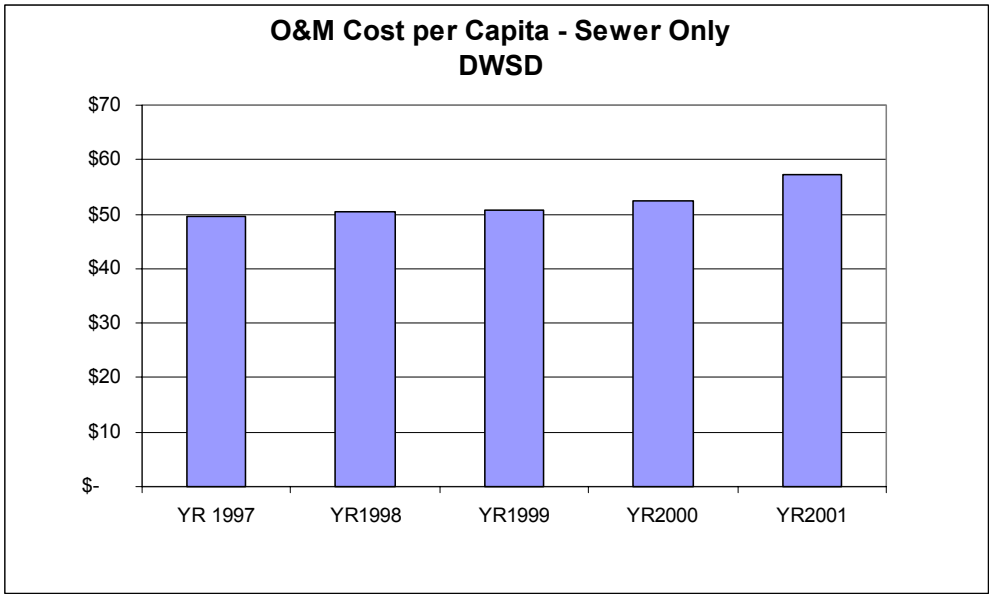

Figure 4: Sewer O&M Cost per capita[6]

In comparison, DWSD provides its wastewater service at a cost per capita at the lower end of the comparable wholesale utilities. This information is provided in Figure 5. Again, the comparison depends directly on the mix of retail to wholesale sewer services provided.

[6] Operating Costs and Population estimates taken from Audited Financial Statements and Summary Section published in Summary of Operating Statistics Report, FY 2001.

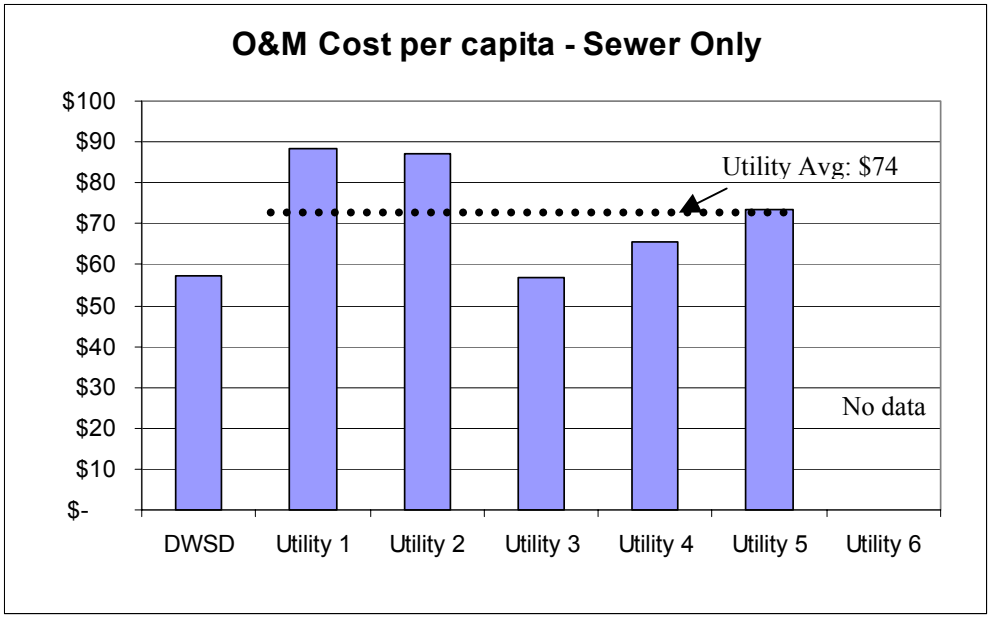

Figure 5: O&M Cost Benchmarking

6.2. Maintenance Program and System Related Performance Measures

6.2.1 Maintenance Work Orders

An indication of the state of repair or disrepair of the system operated by a utility can be obtained from the number of maintenance work orders issued annually. Taking DWSD's data, we have found at first a diminishing trend in the years 1996 through 1998 but then an increase of work orders issued in 1999 and beyond. This may be due to the expansive Capital Improvement Program implemented by DWSD in recent years. The trend data is presented in Figure 6.

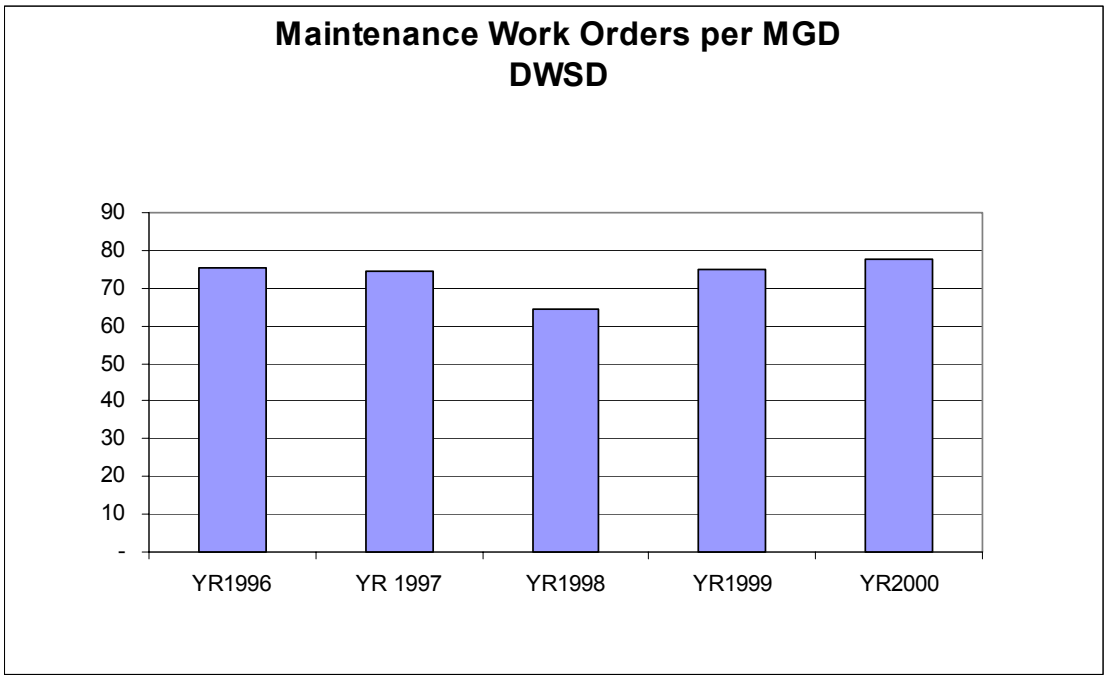

Figure 6: Maintenance Work Orders[7]

6.2.2 Percent of System cleaned

Figure 7 illustrates the percentage of the collection system that is cleaned per year. DWSD cleaned roughly 4.6% of its system in FY 2001, including lateral sewers, trunk sewers, and interceptors, where these efforts were tracked through the Maintenance Work Orders. This implies a total cleaning cycle of 20 years. Other utilities in this sample have a cleaning cycle that is significantly shorter. Cleaning of gravity sewers means removing any foreign matter from the inside walls of the pipe that would restrict the flow of water and wastewater. The objective in properly cleaning the sewer is to return the inside surface of the pipe as near as possible to its original smooth condition for maximum efficiency. Sewers are designed with as smooth as practical pipe material on the inside. Gravity sewers are constructed with optimum slope to convey raw water and wastewater to the proper treatment facility. Construction practices for gravity sewers are geared towards being as direct as possible and with a minimum of uneven surfaces. The nature of wastewater is that various types of solids tend to attach to the sides and bottom of the pipe. Routine (or "light") cleaning involves flushing or spraying (jetting) the inside walls of the pipe with clean water under pressures of 1,000 to 2,000 PSI in the direction of the gravity flow to dislodge and move debris. "Heavy" cleaning is sometimes required when debris build-ups occur due to obstructions that develop either with foreign matter that enters the pipe or with changes or shifts that occur in the pipe structure. This may involve repeated passes with the "jetting" process or swirl

[7] Source: Summary of Operating Statistics Reports, Last 5 Fiscal Years.

(tornado) jetting, and may require adding the use of tools such as root cutters or bucket machines to remove more dense obstructions. Sewers should be cleaned at least once every 5 years and more often where the high presence of debris and obstructions is known.

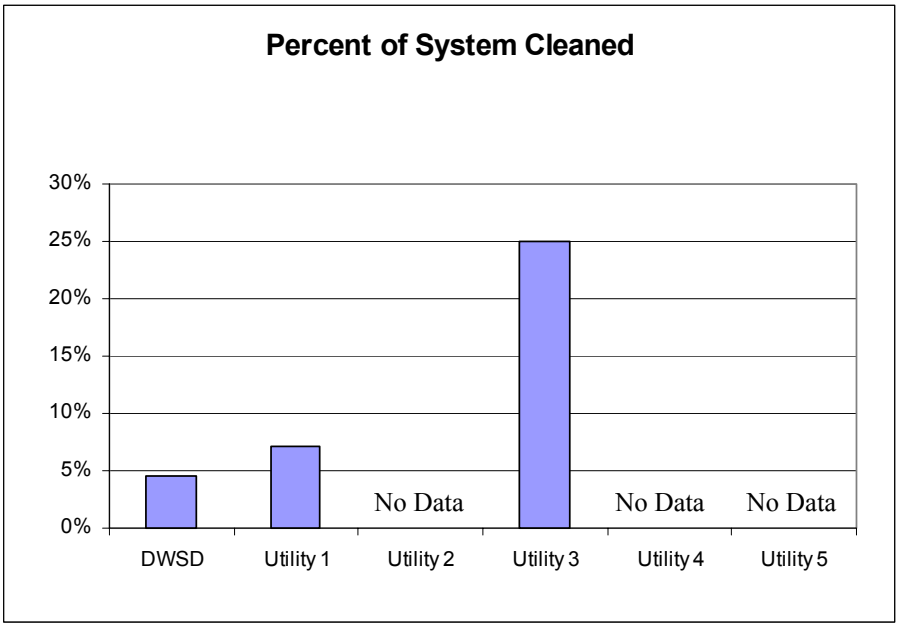

Figure 7: Percent of System Cleaned[8]

6.2.3 Percent of System rehabilitated

The amount of rehabilitation work also determines the level of effort shown by the utility to keep its assets within the collection system in good working condition. The amount of work performed, however, depends on the average age of the assets. Older assets require significantly more improvement and maintenance work. Additionally, the share of the collection system that is rehabilitated provides an assessment of the utility's level of maintenance and capital replacement. As shown in Figure 8, DWSD rehabilitated approximately 0.45%[9] of its system. This number is roughly in line with the average of the comparable group.

[8] Source: Summary of Operating Statistics, FY 2001
[9] CDM Estimate: 2001 – 49,571 Feet Rehabilitated, 2002 (Through July) – 53,959 Feet rehabilitated.

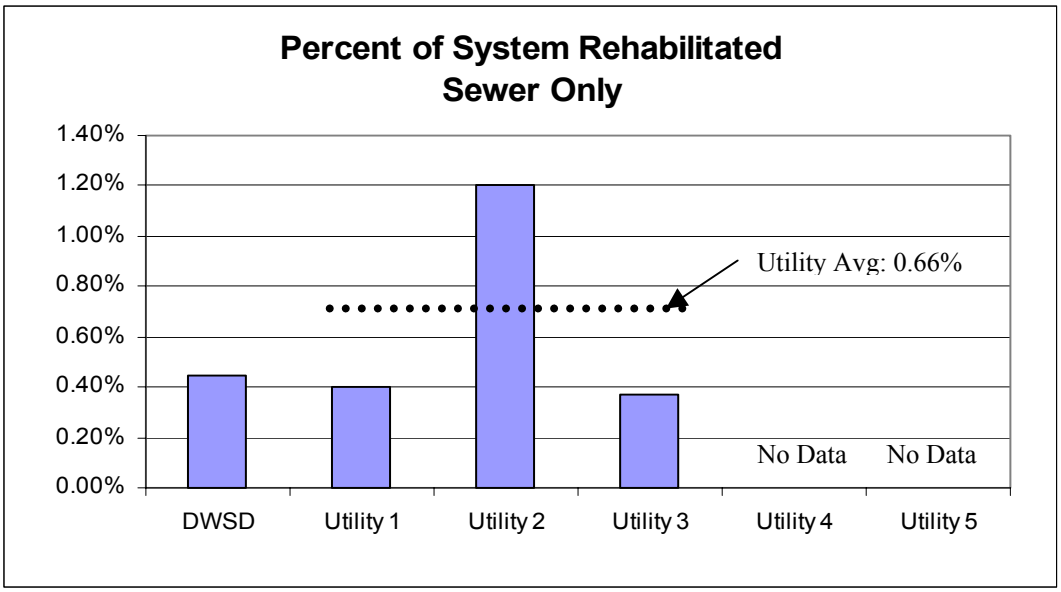

Figure 8: System Rehabilitation

6.2.4 Debt Service as % of Sewer Revenue

Rehabilitation as well as capital improvement work creates additional financial responsibilities for the utility. Major capital improvement projects are typically financed through the issue of long-term bonds. This form of issued debt requires annual debt repayments over the life of the loan. In order to assess the burden placed on the utility due to the issuance of debt, the ratio of debt service to total sewer revenue is computed. Figure 9 illustrates this data for DWSD and the comparable utilities group. DWSD spent slightly more than 30% of total sewer revenue on the repayment of debt. This is roughly equivalent to the average of the respective percentages of the sample group. However, this percentage is expected to increase significantly in light of the upcoming water and wastewater master planning efforts.

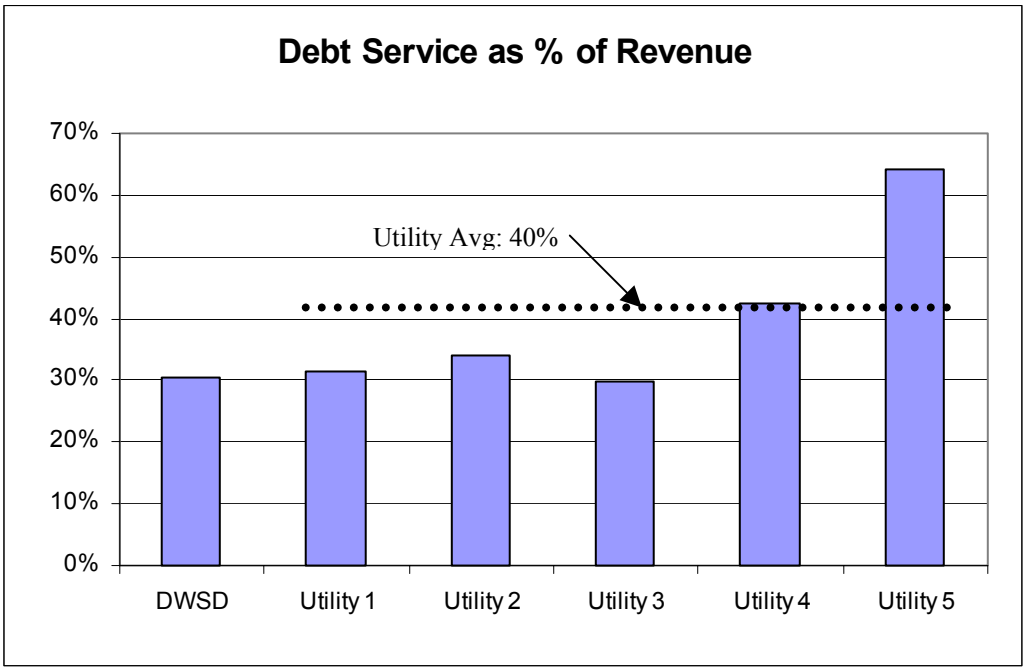

Figure 9: Debt Service as Percentage of Revenue

6.3 Human Resources Performance Measures

6.3.1 Staff Turnover

An important performance indicator for a utility's human resource function is the percentage of employees leaving the organization over a one-year period, i.e. employee turnover. Industry benchmarks put a "desirable turnover rate" somewhere close to 5 percent. Any rate exceeding 10% is an indication of too many staff members leaving the organization, creating significant costs for recruitment and related activities. Figure 10 illustrates the turnover rate for DWSD over the last six years. Overall, there is an increasing trend in this indicator. However, after a peak in FY 2000, staff turnover has returned to a value under 6%. During the last two fiscal years, employees retiring from service accounted for approximately one-third of the total turnover number.

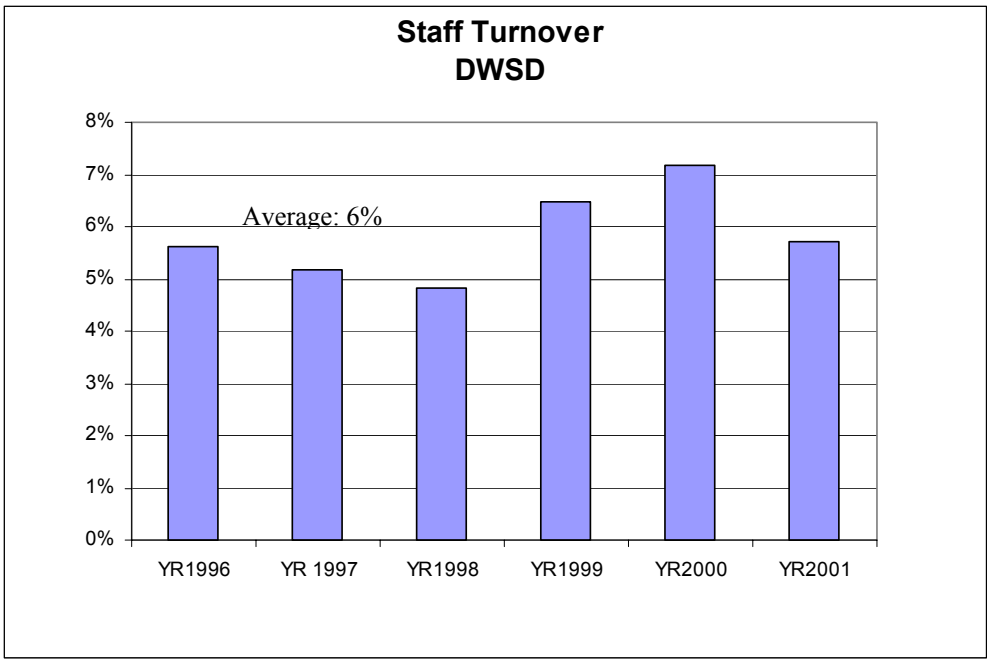

Figure 10: Staff Turnover[10]

6.3.2 Labor Cost per MGD

Operating costs alone do not draw a complete picture of the competitiveness of a utility. Breaking down the total cost into sub-categories allows the analysis of disaggregated cost trends. For instance, labor costs provide a useful indication of how staff intensive the operations of a utility are.

DWSD's labor cost per MGD cost measure at roughly $90,000 is below the average of the comparable group of approximately $190,000 (Figure 11). However, this number does not take into consideration any outside contract labor cost incurred. Based on additional data analyzed, the average percentage increase labor cost per MGD over the six-year time frame amounts to 11 percent.

[10] Summary of Operating Statistics, FY 1997 through 2001.

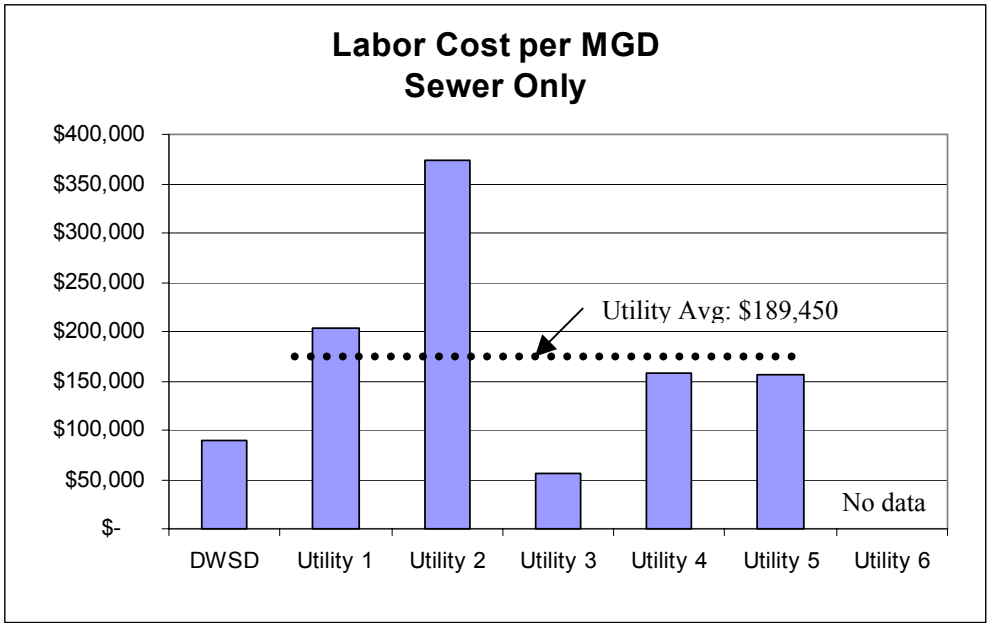

Figure 11: Sewer Labor Cost Benchmarking[11]

DWSD faces labor costs that take up close to 35% of total O&M expenses, as illustrated in Figure 12. The level of these costs is approximately in line with the comparable utilities' group. However, these costs are significant and a clear driver of the overall operating costs incurred by the Department.

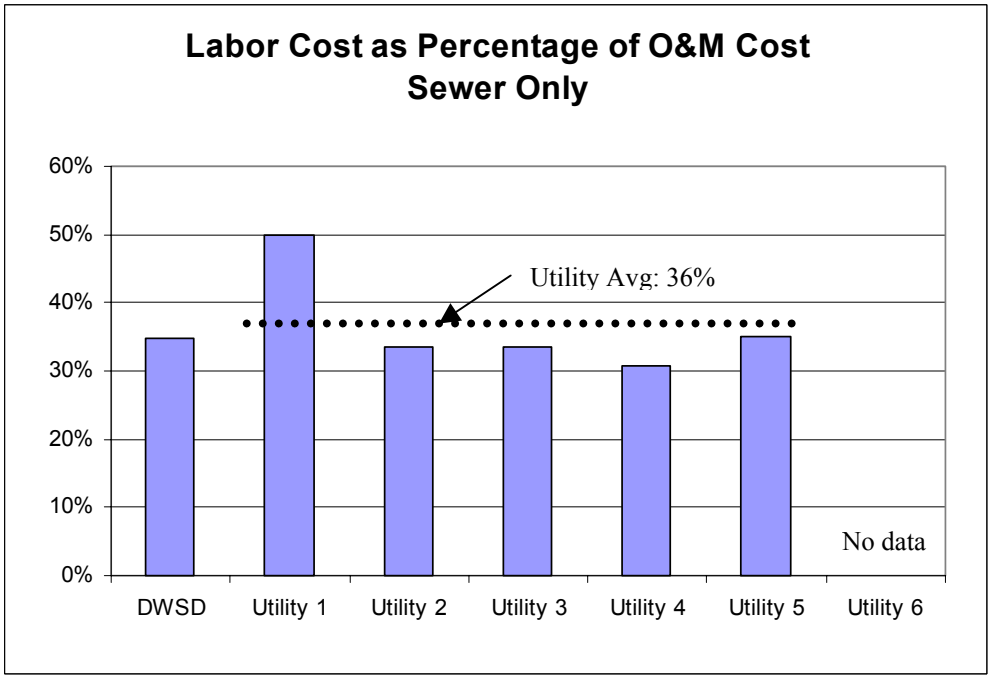

Figure 12: Sewer Labor Cost Benchmarking (Percent of O&M Cost)

[11] DWSD Labor Costs based on Operating Statistics Report, June 30, 2001, page 1.

6.3.3 Staff per MGD

The number of employees for a utility also directly drives labor costs. This puts DWSD within the range of the average wastewater utility as shown in Figure 13.

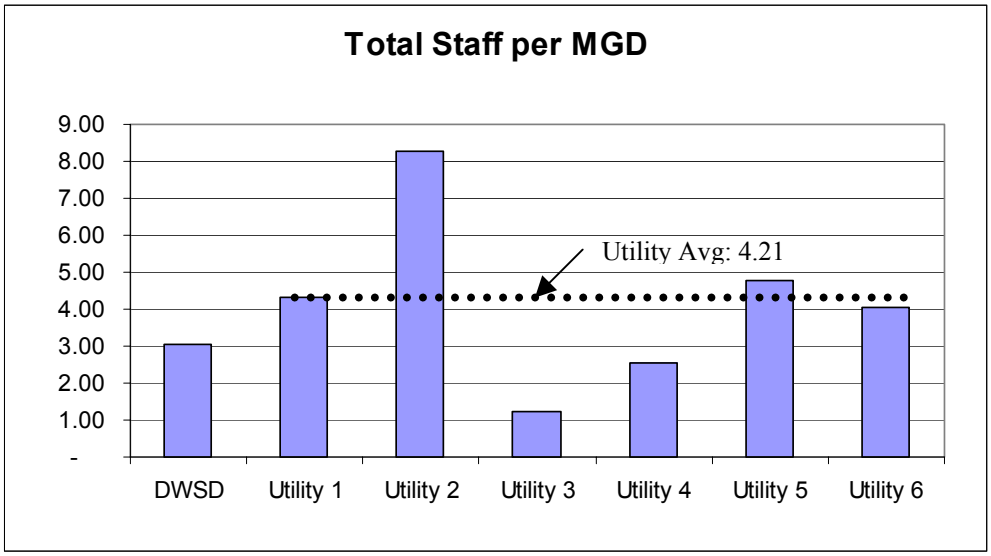

Figure 13: Total Staff Benchmarking

6.4 Customer Service/Relations Performance Measures

DWSD provides wholesale sewer service to the Greater Detroit Metropolitan area. Only the City of Detroit is served on a retail basis. This benchmarking task limits the analysis of customer relations practices to the wholesale business generated with communities surrounding the City of Detroit. Wholesale customer service is characterized by customer inquiries except for regularly scheduled maintenance, scheduled interaction as called by technicians, and stable payments, sometimes made in the form of assessments at the beginning of a fiscal year. Less emphasis is placed on customer call centers and the "conventional" performance indicators found in retail customer service benchmarking, i.e. number of minutes spent on hold, hang-up rates, or number of corrections/complaints per 1,000 bills issued.

This task focused on the customer service provided to wholesale customers by asking the following 4 questions:

- Number of disputed wholesale bills per year/Number of wholesale customer inquiries per year
- Are the customer contacts with a utility clearly defined?
- Is there a clear administrative structure?
- Do wholesale customer relations/service policies exist?

The comparisons have been made on a qualitative basis due to difficulty of measuring and quantifying this type of information.

DWSD **Issues/Questions**	**Answers/Response**
• Number of disputed wholesale bills per year/Number of wholesale customer inquiries per year	Billing Work Group and Flow Metering Task Force have facilitated the improvement of flow measurements and reductions of community billing complaints.
• Are the customer contacts with a utility clearly defined?	DWSD maintains several working groups that establish contact and facilitate communication between the utility and its wholesale customers (primarily first tier) – First Tier Steering Committee, WWMP Technical Work Group, and the SSO Work Group. • Is there a clear administrative structure? • Do wholesale customer service policies exist? Requests are processed as needed by different divisions. Sometimes the processing time can be in excess of several months. Contact may also be established through a variety of committees and workgroups. No clear practice exists for implementation of the Growth-Pays-for-Growth policy; clearer policies are needed for customers seeking to join the regional system; joint financing of projects. Additional confusion and ambiguity exists due to differences (age, contractual provisions) in the numerous sewer disposal agreements and amendments. DWSD Contracts workgroup is dealing with the standardization of all wholesale sewer service contracts.

Utility 1

Issues/Questions	**Answers/Response**
• Number of disputed wholesale bills per year/Number of wholesale customer inquiries per year	No data available on wholesale customer inquiries
• Are the customer contacts with a utility clearly defined?	Yes. The Utility has designated the position of Inter-governmental coordinator to take responsibility of wholesale customer concerns.
• Is there a clear administrative structure?	Yes. Administrative rules have been established. Established procedures guide the dispute resolution between utility and customers as well as any responsibilities given to different departments and any applicable deadlines.
• Do wholesale customer service policies exist?	Policies exist, but customer service on the wholesale side is not explicitly defined.

Utility 2

Issues/Questions	**Answers/Response**
• Number of disputed wholesale bills per year/Number of wholesale customer inquiries per year	No data available on wholesale customer inquiries.
• Are the customer contacts with a utility clearly defined?	Contacts are defined. Retail customer service addressed through customer care team.
• Is there a clear administrative structure?	Customer Advisory Board was created in order to address any issues relating to customer service practices. Board includes several members of communities that are being served.
• Do wholesale customer service policies exist?	Customer service polices exist and are being enforced through the customer care team (Bill Adjustment Policy). However, the emphasis is clearly on retail service.

Utility 4

Issues/Questions	**Answers/Response**
• Number of disputed wholesale bills per year/Number of wholesale customer inquiries per year	No data available on wholesale customer inquiries.
• Are the customer contacts with a utility clearly defined?	Customer contact dealing with municipal service is clearly defined within the Wastewater Services Department.
• Is there a clear administrative structure?	The Municipal Services sub-department clearly handles all issues related to wholesale service. Among these issues are determination and billing of flow, sewer extension issues, and general administration of charges.
	• Do wholesale customer service policies exist?
	Wholesale customer service falls within the responsibility of the municipal services group. Interactions are governed by department policies, not necessarily codified wholesale policies. However, detailed and uniform policies exist that govern the overall business conduct between the utility and its wholesale customers.

Utility 5

Issues/Questions	**Answers/Response**
• Number of disputed wholesale bills per year/Number of wholesale customer inquiries per year	No data on wholesale customer inquiries available.
• Are the customer contacts with a utility clearly defined?	Yes. A division exists that handles community relations. Wholesale customers are assigned a contact person who deals with a defined group of customers.
• Is there a clear administrative structure?	Responsibilities are clearly defined so that any disputes of billing/contract issues can be handled. Disputes occur infrequently due to the standardized and well-established nature of the wholesale contracts. An Advisory Board consisting of representatives from each community deals with high-level service issues.
• Do wholesale customer service policies exist?	Detailed policies have been created. The majority of these policies relate to the allocation of cost and development of annual assessments as well as system expansion policies. Customer service on the wholesale side occurs very infrequently. But there is a division within the utility that deals with community-related issues.

Utility 6

Issues/Questions	**Answers/Response**
• Number of disputed wholesale bills per year/Number of wholesale customer inquiries per year	No data on wholesale customer inquiries available.
• Are the customer contacts with a utility clearly defined?	Utility has established a Department of Customer Service dealing with both retail and wholesale customers.
• Is there a clear administrative structure?	Yes. It appears that administrative issues are defined.
• Do wholesale customer service policies exist?	Policies exist in regard to cost allocations and sharing of treatment plant capacity. However, contact on sewer wholesale service is very infrequent and, therefore, wholesale customer service is not a real issue for the utility.

7. Summary & Conclusions

The purpose of this task was to analyze the competitive position of DWSD through a benchmarking comparison with other wholesale wastewater service providers. In several cases, not only a point-in-time comparison has been made; but also a trend analysis of DWSD data has been performed. The assessment centered on several different strategic areas identified though several rounds of interviews conducted by CDM with DWSD staff members.

DWSD falls within the range of the utility sample in regard to cost of operations and the current level of staff per million gallons of water treated. Overall, operations cost appear to be controlled and within the average range of other utilities. However, labor costs take up a significant share of the total O&M budget and have exhibited an increasing trend over time.

In general, there has been an increasing trend of relative cost over the last 6 years even when controlling for fluctuations in metered flow due to changes in metering procedures and precipitation.

DWSD staff turnover appears to be elevated in recent years even though this number has come down from the peak in FY 2000. Going forward, an emphasis should be placed on retaining employees in order to avoid additional costs to retrain and hire new people.

In regard to system and CIP specific performance indicators, DWSD finds itself within the average of the comparables group. This can be said in regard to the cleaning and rehabilitation work performed on the collection system. However, continued focus should be placed on system rehabilitation efforts. In terms of debt load, DWSD is in a stable position considering the share of revenue spent on annual debt service. However, the level of debt may increase significantly due to the ongoing wastewater master planning effort.

DWSD has additional work to do in order to come closer to the standard set by the sample group. Other utilities have established detailed policies, procedures and customer relation departments that provide more comprehensive service than the respective structure established by DWSD. Partially, this is due to the nature of service agreements between wholesale providers and their community customers. DWSD does not have a standardized wholesale contract but a variety of different agreements with numerous amendments dating back up to 85 years. Emphasis should be placed on the establishment of standardized contractual relationships and their application into the management of customer relations with the first tier community group.

Appendix

A.1 Wholesale Customer Service Practices

A.2 Outline of data sources used

Table A.1 Wholesale Customer Service Practices

	DWSD	Utility 1	Utility 2	Utility 4	Utility 5	Utility 6
Number of disputed wholesale bills per year/ inquiries per year	No data on wholesale customer inquiries available. Metering work group has reduced frequency.	No data on wholesale customer inquiries available	No data on wholesale customer inquiries available	No data on wholesale customer inquiries available	No data on wholesale customer inquiries available	No data on wholesale customer inquiries available
Are the customer contacts with a utility clearly defined?	Contacts not clearly defined. Wholesale inquiries do not go through retail customer service department. Instead, inquiries may be submitted to different departments.	Yes. The Utility has designated the position of Inter-governmental coordinator to take responsibility of wholesale customer concerns.	Contacts are defined. Retail customer service addressed through customer care team.	Customer contact dealing with municipal service is clearly defined within the Wastewater Services Department	Yes. A division exists that handles community relations. Wholesale customers are assigned a contact person who deals with a defined group of customers.	Utility has established a Department of Customer Service dealing with both retail and wholesale customers.
Is there a clear administrative structure?	Requests are processed as needed by different departments. Sometimes the processing time can be in excess of several months. Contact is established through committees and work groups	Yes. Administrative rules have been established. Established procedures guide the dispute resolution between utility and customers as well as any responsibilities given to different departments and any applicable deadlines.	Customer Advisory Board was created in order to address any issues relating to customer service practices. Board includes several members of communities that are being served.	The Municipal Services sub-department clearly handles all issues related to wholesale service. Among these issues are determination and billing of flow, sewer extension issues, and general administration of charges.	Responsibilities are clearly defined so that any disputes of billing/contract issues can be handled. Disputes occur infrequently due to standardized and well-established wholesale contracts.	Yes. It appears that administrative issues are defined.

Table A.1 Wholesale Customer Service Practices

	DWSD	Utility 1	Utility 2	Utility 4	Utility 5	Utility 6
Do wholesale customer service policies exist?	No clear policies exist. Additional confusion and ambiguity exists due to differences (age, contractual provisions) in the numerous sewer disposal agreements and amendments. Contracts work group has been created.	Policies exist but customer service on the wholesale side is not explicitly defined.	Customer service polices exist and are being enforced through the customer care team (Bill Adjustment Policy). However, the emphasis is clearly on retail service.	Wholesale customer service falls within the responsibility of the municipal services group. Interactions are governed by department policies, not necessarily codified wholesale policies. However, detailed and uniform policies exist that govern the overall business conduct between the utility and its wholesale customers	Detailed policies have been created. The majority of these policies relate to the allocation of cost and development of annual assessments as well as system expansion policies. Customer service on the wholesale side occurs very infrequently. But there is a division within the utility that deals with community related issues.	Policies exist in regard to cost allocations and sharing of treatment plant capacity. However, contact on sewer wholesale service is very infrequent and therefore wholesale customer service is not a real issue for the utility.

A.2 Data Sources Used

DWSD - Detroit Water & Sewer Department

- Summary of Operating Statistics, FY 2001
- Summary of Operating Statistics, FY 2000
- Summary of Operating Statistics, FY 1999
- Summary of Operating Statistics, FY 1998
- Summary of Operating Statistics, FY 1997
- Official Statement 2001 D, 2001 D-1, 2001 D-2 Bond Issue
- DWSD Data sheet (downloaded from website)
- DWSD staff information provided to CDM (Interviews and Email Correspondence)

MSD - Metropolitan Sewerage District, Cincinnati, Ohio

- Annual Report FY 2001
- Approved 2002 Budget Update-In-Brief
- MSD Capital Budget FY 2002
- Information obtained from staff directly
- Information and data obtained from website

WSSC - Washington Suburban Sewerage Commission, Baltimore, Maryland

- FY 2002 Approved Budget
- 2001 Annual Report
- Information obtained from staff directly
- Information and data obtained from website
- CIP (Adopted) FY 2002-2007

Chicago - City of Chicago Sewer Department, Chicago, Illinois

- FY 2002 Budget
- CIP FY 2000
- CAFR FY 1999
- CAFR FY 2000
- CAFR FY 2001
- Comprehensive Annual Financial Report FY 2000
- Information and data obtained from website

MCES – Metropolitan Council Environmental Services, St. Paul, Minnesota

- 2001 Summary Budget
- Waste Discharge Rules, December 1998
- 2000-2005 Plan for Allocating Resources and 2000 Annual Budget
- 1998-2002 Plan for Allocating Resources and 1999 Annual Budget
- 2001-2006 Plan for Allocating Resources and 2001 Annual Budget
- 2001 Year-End Report
- Service Availability Charge Manual, January 2000
- Information obtained from staff directly
- Information and data obtained from website

MWRA - Massachusetts Water Resources Authority, Boston, Massachusetts

- CIP FY 2001-2003
- FY02 Current Expense Budget
- OS 2002 B Bond Issue
- FY 2001 Current Expense Budget
- CIP Proposed FY 2003-2005
- Information obtained from staff directly
- Information and data obtained from website

WASA - Washington Area Sewerage Agency, Washington, District of Columbia

- Comprehensive Annual Financial Report 2001
- Proposed FY 2003 Operating and Capital Budgets
- Information obtained from staff directly
- Information and data obtained from website