

May 19, 2010

The Honorable Greg Canuteson, Mayor
Members of the City Council
101 East Kansas
Liberty, MO 64068

Re: Utility Task Force Final Report

Gentlemen:

The Mayor's Utility Task Force is pleased to submit this final report. Following a detailed review of key issues, we have offered a prioritized action plan for improved efficiencies and best practices.

Since the middle of February, the task force has conducted weekly meetings and included a tour of the water treatment plant on March 16. The meetings have consisted of a comprehensive review and extensive discussion of existing financial information, contracts and policies and procedures. Specifically, recommendations for improved financial results of potential water and sewer plant operations and metering of services were extensively discussed. Projected improvement in efficiencies and cost reductions are estimates based on the best information available.

The members of the task force believe that the recommendations offered in this report have the potential to generate significantly improved financial results for the City in the short, intermediate and longer term. To that end, members of the task force are unanimous in their endorsement of the recommendations contained in this report.

We would like to acknowledge with appreciation the support provided by City staff; Dan Estes, Steve Hansen, Brian Hess and Diana Adams.

Thank you for involving Liberty citizens in the formulation of ideas for this important issue.

Respectfully submitted,

Donald Smith, Chair
Thomas Beckley
William Moberly
William Taylor
William Carlin Walker

Final Report
Mayor's Task Force – Utilities
May, 2010

Task Force Members

- Donald Smith, Chair
- Thomas Beckley
- William Moberly
- William Taylor
- William Carlin Walker

Mayor's Direction

Investigate and propose ideas for improving efficiencies and reducing costs of Liberty's water and sewer utility operations.

Focus of Meetings/Activities

- Discussions with Liberty's staff to learn about current utility operations.
- Toured and inspected Liberty's water treatment plant on March 16, 2010 with discussions and interactions with OMI personnel.
- Review and discussions of 2010 water and sewage treatment budgets including OMI water plant operations and Kansas City, MO. Sewage treatment of Liberty's sewage.
- Listing and brainstorming for ideas to improve efficiencies and reduce costs of utility operations.
- Ranking and prioritizing of selected ideas for presentation to Liberty's mayor and City Council.

Key Findings

- Liberty's sewage is currently treated by Kansas City, MO. (KC) in its sewage treatment system at a 2010 budgeted cost of \$3,507,947. It is projected that KC will quadruple its fees over the next 15 years in order to make multi-billion dollar improvements ordered by the EPA. Liberty's sewage treatment fees paid to KC could reach \$14,303,270/year for year 2025 and total \$122,234,423 for years 2010 through 2025.
- Liberty's water treatment plant is currently operated under contract by the management firm OMI. The current contract is budgeted for \$1,593,337 for 2010. The contract allows a 3%/year increase through 2011, the last year of the contract.
- Liberty's sewage is transferred to KC's sewage treatment facilities through 2 primary transfer lines. The "East" transfer line is metered and is billed

by KC at \$2.22/1,000 gallons of sewage. The “West” transfer line is not currently being metered due to inoperative metering systems. In the absence of metering, the sewage transferred through the West line is being billed at \$3.29/1,000 gallons plus a monthly fixed fee of \$9.90 per connected customer. This fixed fee amounts to \$471,398/year for the 3,968 customers on the West line. If Liberty were to adopt a “bi-monthly” billing procedure for Liberty customers, the fixed fee would drop to \$6.56/customer/month or \$312,360/year for an annual savings of \$159,068.

- Liberty’s water treatment and delivery system is currently experiencing a loss of approximately 20% of the water pumped. In other words only about 80% of water treated and pumped into the distribution system is being billed to customers. One likely contributing factor to water loss is metering inaccuracies. A study done by the Siemens Company for Liberty indicates that Liberty could reduce its water losses by 5% by installing new water meters and a fixed-based radio system for automatic meter reading (AMR). It is estimated that an additional 49,732,031 gallons per year could be billed with the new meters.
- During discussions of water and sewer billing procedures we found that various city ordinances and policies were not codified into a single procedure. It was agreed by staff that this would be helpful in applying a consistent enforcement of the city ordinances and policies regarding water and sewer operations.
- Consideration of Liberty’s sale of water to wholesale customers centered on water sales to water district #4, Liberty’s only current wholesale customer. Water District #4 currently purchases approximately 44.5 million gallons per year from Liberty and in turn contractually resells water to Missouri City and Water District #7. Current pricing seems appropriate, but future contracts should contain provisions to protect Liberty from selling water below its costs of treatment and delivery, and provide that wholesale customers pay their fair share of cost increases.

Recommendations and Priorities

- **Sewer Treatment Operations**

Liberty’s dependence upon Kansas City, MO. (KC) for sewage treatment places Liberty in a very vulnerable position. We recommend changing our customer billing to a bi-monthly schedule as soon as possible to save at least \$159,000/year not counting possible savings in postage, vehicle fuel, maintenance and manpower. We also recommend that Liberty contract with a competent engineering firm to re-evaluate sewage treatment by a Liberty

operated sewage treatment plant. Preliminary estimates by the Task Force indicate a potential saving of \$47,900,455 for the years of 2013 through 2025 if Liberty operates its own sewage treatment plant. The engineering study should also evaluate sewage metering and I&I for Liberty's West sewage line. There are potential savings of between \$182,368 and \$677, 528/yr if the West sewage line flow is metered while treatment by KC is still ongoing. Please review the Appendix Exhibits I (Sewage Treatment Plant Operations), II (West Sewer Line Metering), and Exhibit III (Bi-monthly Billing) for details.

- **Water Treatment Operations**

Liberty's Water Treatment Plant located at Ruth Ewing Road is currently operated under contract by OMI management firm. The 2010 budget cost of this operation is \$1,593,337, but it is estimated that a Liberty managed operation would cost \$249,647 less per year. It is therefore recommended that Liberty resume operation of the plant with Liberty management and personnel. The continued operations by a management firm will cost as much as \$249,647/year more than operating under direct Liberty control. Please review Appendix Exhibit IV (Water Treatment Plant Operations) for details.

- **Water System Metering to Customers**

The Siemens Company recently conducted a pilot program for Liberty evaluating water meter accuracy. The findings of this study indicated that current meters are reading 5% low on average. The replacement of existing meters in Liberty could result in billing an additional 49,732,031 gallons based on 2009 water production. This added billing could generate an additional \$577,388/year based on \$4.22/1,000 gallons of water and \$7.39/1,000 gallons for sewage treatment. An order-magnitude estimate of \$1.5 million would be required to replace approximately 9,500 Liberty water meters. This equates to a 2.6 year simple pay back. We recommend that this project be undertaken as soon as possible. Please review Appendix Exhibit V (Water System Metering) for details.

- **Water System Supply Policies & Procedures**

We recommend that Liberty's ordinances and policies regarding water services to retail customers be codified in a single procedure. This will insure consistent enforcement of city ordinances and policies. Please review Appendix Exhibit VI for details.

We also recommend that future contracts for wholesale water sales contain provisions that protect Liberty from the possible sale of water at prices below the actual cost of treatment and delivery, and provide that wholesale customers pay their fair share of cost increases.

Appendix

- Exhibit I Sewage Treatment Plant Operations**
- Exhibit II West Sewer Line Metering**
- Exhibit III Bi-Monthly Billing**
- Exhibit IV Water Treatment Plant Operations**
- Exhibit V Water System Metering to Customers**
- Exhibit VI Water System Supply Policy & Procedures**
- Exhibit VII Comparative Water & Sewer Rates – Liberty vs. Surrounding Cities**

Exhibit I

Sewage Treatment Plant Operations

Currently Liberty contracts its sewage treatment operations with Kansas City for sewage treatment and with OMI (a management firm) for other sewage system operations. The 2010 budgeted expenses are \$3,507,947 for Kansas City's sewage treatment and \$259,381 for OMI's services. The fees paid to Kansas City are forecasted to increase by approximately 10%/year (on average) through 2025. The fees paid to Kansas City would reach \$14,303,270 for year 2025 and would total \$122,234,423 for years 2010 through 2025.

Considering these rapidly increasing sewage treatment costs, Liberty must re-evaluate its options for long term sewage treatment. The Utility Task Force committee recommends that Liberty should contract an engineering firm to evaluate a Liberty operated sewage treatment plant operation.

A preliminary estimate by this Task Force for the costs associated with a Liberty operated sewage treatment plant is \$4,968,600 annually with the first year of operation in 2013. The 2013 expense includes and estimated \$2,338,600 for plant operations and \$2,620,000 for repayment of bond interest and principal. These preliminary estimates are based on a \$30,000,000 bond issue to finance the sewage treatment plant with an average interest rate of 5.4% assuming the issuing of revenue bonds. The \$30 million estimated for a new waste treatment plant is an order of magnitude estimate supplied by the city staff members. The interest costs could be less if Build America Bonds are issued. The plant operating costs are estimated assuming a plant staff of 8 operators, 4 shift leaders, 1 plant superintendent, 1 maintenance supervisor, 2 maintenance technicians, and 1 laboratory technician.

Differential Sewage Plant Budget (2013 cost basis)

Salaries, wages, benefits	\$1,138,600
Electricity	450,000
Chemicals	350,000
Gas	50,000
Maintenance	120,000
Insurance	30,000
Sludge disposal	150,000
Training & licensing	15,000
Software expenses	15,000
Vehicle Insurance	10,000
Vehicle fuel / maintenance	<u>10,000</u>

TOTAL: \$2,338,600

Assuming the plant operating costs escalate at 3% /year, and calculating the average bond interest and principal are payment costs at \$1,943,000/year, we estimate the costs of a Liberty operated sewage treatment plant to be \$63,179,516 for the period of 2013 through 2025. This compares to a cost of \$110,979,975 for Kansas City sewage treatment for the years of 2013 through 2025.

These preliminary estimates show a potential saving of \$47,800,455 for the years of 2013 through 2025 or \$3,676,958/year. Therefore, because of the significant potential savings the Utility Task Force recommends this option should be evaluated by a competent engineering firm.

Exhibit II

West Sewer Line Metering

Currently Liberty's sewage is being transferred to Kansas City's sewage treatment system through 2 large transfer lines. The East transfer line has an operational metering system and sewage transferred through the East line is treated by KC at a current cost (May 1, 2010) of \$2.22/1000 gallons of sewage. Liberty's West sewage transfer line has an inoperative metering system, and Liberty is currently charged a volume rate of \$3.29/ 1,000 gallons of water that is billed to the 3,968 metered connections on the West line, and also a fixed monthly fee of \$9.90 for each of the 3,968 customers connected to the West transfer line.

If the West transfer line metering system is restored to proper operation, Liberty can save \$311,884/year in fixed fees at the rate of \$6.55 per month assuming Liberty first adopts a bi-monthly billing schedule, and another \$356,644 per year in volume charges assuming little or no infiltration and inflow (I&I) into the sewer system. If the I&I in the West line brought the average flow per customer to the same flow as on the East line, which is metered, of 11,600 gallons per month, the annual total savings would still be \$182,368/year.

The West transfer line metering is composed of 3 separate meters. One meters sewage from a Pleasant Valley tie-in to Liberty's system, and another from some customers actually located in KC whose sewage is transferred to Liberty's system. The third meter is intended to meter the total sewage flow transferred to KC's sewage treatment system.

Because of the significant savings potential of between \$182,368/year and \$677,528/year, the Utility Task Force recommends that the metering systems on the West Sewage transfer be made operational if Liberty continues to have its sewage treated by Kansas City, Mo.

Exhibit III

Bi-Monthly Sewer Billing

Charges for sewer treatment from the City of Kansas City are recovered from the City of Liberty in two ways:

1. For approximately half of the City of Liberty (sometimes referred to as the "East Side" in terms of sanitary sewer flow) all sewage flow is metered and the rate paid to the City of Kansas City for this flow is a volume rate only, currently \$2.22 per 1,000 gallons of sewage.
2. For the other half of the City of Liberty (sometimes referred to as the "West Side" in terms of sanitary sewer flow) the sewage flow is not metered but instead estimated based on the number of homes and commercial customers connected to the system based on metered water supplied to these customers. For both residential and commercial customers, there is a fixed charge that varies based on whether the City of Liberty bills these customers on a monthly or bi-monthly basis, and a volume charge of \$3.29 per 1,000 gallons of water metered to customers.

The method of billing for the East Side is preferable; it is based on actual flow, and the City of Liberty pays its exact share of inflow and infiltration based on the metered flow. The method of billing for the West Side, in general, is not unreasonable. It is often necessary to rely on estimates to bill sewer service. However, the issue with City of Kansas City's rate structure is the per bill charge for monthly customers is \$9.90/month while the per bill charge for bi-monthly customers is \$13.11 per 2 months which is the equivalent to \$6.56 per month.

Such a differential is not uncommon for utilities providing retail service as there are fixed costs associated with each house for meter reading, billing, and collection. Therefore a bi-monthly bill is not just double a monthly bill, but rather the monthly bill is larger to reflect these larger fixed costs. However, in the wholesale relationship between the cities of Liberty and Kansas City, there are minimal billing costs for the City of Kansas City and they are not related to the number of Liberty's sewer customers.

For each of these residential customers, the City of Liberty is paying \$6.68 more every two months by billing them monthly instead of bi-monthly. There are approximately 3,968 of these residential customers, so the additional annual amount that the City of Kansas City charges is \$159,000.

In addition to the amount saved on the charges from the City of Kansas City, there would be additional savings in meter reading and billing costs for the City of Liberty by not having to read and bill customers on a monthly basis. Savings on

postage is estimated at \$12,500/yr and savings of vehicle fuel and maintenance is estimated to be another \$5,500/yr. Total savings of \$177,000/yr can be made by switching to bi-monthly billing.

The downside to bi-monthly billing is that each bill will be doubled, and it is expected that rates will be increasing in the future. However, the Task force feels that the use of a "level payment plan" can be used for customers who wish to pay a smaller monthly payment. This payment plan is used by Gladstone in conjunction with their bi-monthly billing system.

The Task Force recommends adopting the bi-monthly billing system as soon as possible to obtain the estimated savings of \$177,000/yr.

Exhibit IV

Water Treatment Plant Operations

Currently Liberty's Water Treatment Plant is operated on a contract basis by OMI management firm. The 2010 budgeted cost of this operation is \$1,593,337 and is forecasted to increase by 3% per year through 2015 when the annual cost would be \$1,847,113. The services provided by OMI for water treatment includes 7 operating personnel including the Project Manager, utilities and chemicals needed to operate the plant and plant maintenance not to exceed \$26,500/year. OMI also provides computerized maintenance, process control and laboratory management systems, as well as maintenance, fuel and insurance for 3 pickup trucks and one tractor owned by Liberty. The operating personnel are trained by OMI and meet the required State of Missouri requirements for operating a water treatment facility. Liberty also has a contract with OMI for certain sewer system operations which are budgeted for \$259,381 for 2010. This cost is in addition to the water plant operation cost of \$1,593,337 for 2010.

The Utility Task Force has made an evaluation of a Liberty City operation of our water treatment plant including a tour of the Water Plant at Ruth Ewing road on March 16, 2010. A preliminary evaluation indicates a Liberty operated plant which would include 8 personnel including a Water Superintendent, Maintenance Supervisor, Chief Water Operator, 3 Water Plant Operators, 1 Water Maintenance Technician, and 1 Water Lab Technician could be operated at a differential cost of \$1,343,690 compared to the OMI cost of \$1,593,337 for 2010. This equates to an annual savings of \$249,647/year.

The estimated differential budget is listed for informational purposes, the salaries and benefits used were provided by staff as a mid-range value for the positions listed if they were Liberty employees. The other expense categories are expenses not currently paid by the city since they are covered by the OMI contract. Expenses such as property insurance, building maintenance, water tower maintenance, etc. are not shown as they will be the same as they are with the OMI contract. The water plant production is currently averaging 3.5 million gallons per day and the estimated costs might escalate if the water needs increased significantly.

Differential Water Plant Budget (2010)
(Costs incurred w/o OMI contract)

Salaries, Wages & Benefits	\$495,023
Chemicals	394,877 *
Electricity	300,290 *
Natural Gas	90,000
Plant Maintenance	26,500 *
Vehicle Insurance	2,000
Vehicle Fuel/Maintenance	10,000
Software Expense	10,000
Training/Licensing Expense	<u>15,000</u>
TOTAL:	\$1,343,690

* Current costs per OMI.

The Utility Task Force strongly recommends that the Liberty City Council resume plant operations with Liberty management and operating personnel. The only significant savings which can accrue to operating the Water Treatment Plant is by direct City operation rather than by a contractor. We currently estimate these annual savings to be at least \$249,647 per year.

Exhibit V

Water System Metering to Customers

Liberty has recently worked with Siemens Company to conduct a pilot program for meter replacement. Siemens replaced 100 residential water meters and tested the meters that were replaced and it was estimated that the old meters were under-registering usage by at least 5%.

The new meters are more accurate for two key reasons:

1. As traditional meters age, they become less accurate, and by design this loss of accuracy is an under-metering of actual flow. Billed consumption is less than actual consumption.
2. The new meters proposed by Siemens do not use moving parts to measure the flow of water.

Siemens has indicated that they offer financing packages for complete meter replacement for systems such as Liberty's. The new systems are financed by the additional revenue that would be generated by installing more accurate meters. The new meters would also include the provision of automatic meter reading, which would reduce the time and expense associated with meter reading, reduce human error in meter reading, and eliminate the need for estimated readings during periods of inclement weather.

We estimate that new meters could increase water and sewer billing by 49,732,031 gallons per year based on 2009 water production. The added revenue would be \$577,388/year based on water billed at \$4.22/1,000 gallons and a sewer charge of \$7.39/1,000 gallons. The total investment to install 9,500 new meters and radio transmission infrastructure is an order of magnitude estimate of \$1.5 million. The simple payback on this investment would be approximately 2.6 years.

The Task force believes that Liberty should examine this option further with potential providers. The next step to explore this option is to issue an RFQ (per Missouri Statute) for an Energy Performance contract. The City would select a qualified Energy Services Company (ESCO) and enter an agreement for the ESCO to develop a self-funded project. If a guaranteed project cannot be cost justified, there is no charge from the ESCO for development.

Exhibit VI

Water System Supply Policies & Procedures

Water connection and service provided by the City of Liberty to the owner or occupant of a residence will be subject to the following procedures:

- 1. All new accounts must submit a water security deposit to the City of Liberty prior to service being provided. Rental property will necessitate both the occupant and property owner be designated with submittal of the deposit. A water security deposit of \$75.00 will be applicable for owner occupied residences and \$100.00 occupants of rental property. In instances where several residences share a common water and sewer line, the owner of the real property upon which the residences are located shall post a water security deposit of \$150.00. The account deposit will be reimbursed after a twelve (12) consecutive month period without a delinquent payment.**
- 2. Monthly billing will commence when the meter is set or connected to the property. Bills are sent out at the end of each month and payment is due by the 20th of each month. A minimum monthly bill of \$12.00 will be applicable for each connection.**
- 3. If payment is not received by the 20th of each month, a delinquency charge of 10% will be incurred and service shall be subject to disconnection. Notice of termination must be provided to both the occupant and the owner of the property prior to disconnection of service of rental property. If payment in full is not made and the City receives no contact from the customer within ten (10) days of the dated letter, or by the indicated date of the disconnection notice, water service will be disconnected. A shutoff and reconnection charge of \$40.00 each plus the total amount of the unpaid bill must be paid in full prior to reconnection. If an account experiences a second termination of service in a rolling twenty (24) month period, a shutoff and reconnection charge of \$50 each plus the total amount of the unpaid bill must be paid prior to reconnection. All disconnection and reconnection services will be performed only during the hours of 8:00 a.m. – 5:00 p.m. Monday through Friday, excluding holidays.**
- 4. A water security deposit will be required for each existing account that has been disconnected for delinquent payments. The applicable water security deposit will be consistent as those required for a new account. The deposit will be reimbursed after a twelve (12) consecutive month period without a delinquent payment.**
- 5. Water service will be discontinued to any water user or property due to temporary vacancy of such property upon written request of the water user and upon payment of all charges due as determined by City of Liberty.**

6. In the case of a water user who had discontinued service from the system for a reason other than the vacancy of the property, or in the case of an owner of such property desiring to restore service, the water user or owner shall pay a minimum monthly fee of \$12.00 for each month of discontinued service plus a shutoff and reconnection charge of \$40.00 each. All charges incurred must be paid in full prior to reconnection.

7. The standard residential water service connection is for the sole use of the water user and no water shall be for resale purposes.

8. No person, partnership or corporation other than the City of Liberty employees or their contractors shall tap or perform any service on the water line, water meter, meter setting, or meter well. Nor shall any of the above remove earth or add earth to the water line or in any way change the location of a water line. Any damage done to the City of Liberty's lines or meters will be replaced by the City at the expense of the party that created the damage.

9. No water service connection shall be installed or maintained to any premises where lead base materials were used in new construction or modifications of the drinking water plumbing after January 1, 1989. If a premise is found to be in violation, water service shall be discontinued until such time that the drinking water plumbing is lead free.

10. Any yard sprinkler system or water cross-connection system is required to have a backflow prevention device installed by a certified backflow installer. This requires an annual inspection with a copy of the inspection sent to the City of Liberty.

11. The laws of the State of Missouri, ordinances of the City of Liberty, as adopted by the city council, are applicable, may be amended and are made a part of service provisions.

The Utility Task Group believes there is potential to increase revenue for water service and reduce the amount of uncollectable charges for services provided. We recommend that the above best practices and procedures be implemented.

Exhibit VII

Donald Smith

From: "Donald Smith" <dks@kc.rr.com>
To: "D.K. Smith" <dks@kc.rr.com>; "Thomas Beckley" <tbeckley@raftelis.com>; "William Moberly" <williamm.moberly@gmail.com>; "Brian Hess" <BHESSE@ci.liberty.mo.us>; "D. Adams" <DADAMS@ci.liberty.mo.us>; "Dan Estes" <destes@ci.liberty.mo.us>; "Curt Wenson" <CWENSON@ci.liberty.mo.us>; "Steve Hansen" <SHANSEN@ci.liberty.mo.us>; "William Taylor" <william_taylor@prodigy.net>
Cc: "Jeff Moore" <jeff.moore@4lands.com>
Sent: Saturday, March 20, 2010 3:58 PM
Subject: Comparative Water & Sewer Rates- Liberty Vs. Surrounding Cities

In order to emphasize the importance of making economies in Liberty's utility operations I have researched the water and sewer rates of 5 other local communities. I obtained the information of current rates from the web sites of each city except Kearney whose data I obtained from a news publication. The cities reviewed are Liberty, Gladstone, North Kansas City, Kansas City, Kearney, and Excelsior Springs. Gladstone like Liberty has its sewage treated by Kansas City, and Kearney buys its water from Kansas City.

For comparison purposes the monthly costs in each city are based on a resident's use of 6,000 gallons of water, and sewage treatment of the same volume. Kansas City and Gladstone both bill their residents on a bi-monthly basis. The costs listed in the following table are based on a monthly cost for direct comparison purposes. I would note that Gladstone does offer their residents the option of paying their utility bills either bi-monthly or on a level pay plan monthly.

Comparative Utility Rates
 (Costs in Dollars/ Month@ 6,000 Gal./month)

City	Water	Sewer	Storm Sewer	Total
Liberty	29.43	46.34	n/a	75.77
Gladstone	23.86	31.98	n/a	55.84
KC	27.37	24.24	2.00	53.61
Kearney	31.65	19.04	n/a	50.69
Ex. Springs	26.71	20.29	n/a	47.00
NKC	19.26	18.55	n/a	37.81

Note: KC charges residents a storm water run-off fee.

As can be determined from the table Liberty's water and sewer rates are 35.69% higher than Gladstone, 41.34% higher than Kansas City, and 100.4% higher than North Kansas City.

It is notable that Liberty and Gladstone have the highest sewer treatment rates. Kansas City treats the sewage for both cities, but Gladstone meters their sewage to KC and therefore gets a lower treatment rate than Liberty. It is also notable that Liberty and Kearney have the highest water rates. Liberty contracts their Water Plant operations to a contract firm (OMI) and Kearney buys their water from KC. The common denominator of the highest water and sewage treatment rates is contracting these services out to another party. The lowest water and sewer rates are in cities that operate their own water and sewer treatment operations.

In conclusion, it is obvious that Liberty's utility rates are significantly higher than all of the surrounding cities. Our Utility Task Force must find potential cost cutting opportunities and recommend them to the City Council. Perhaps, in time, Liberty's utility rates can be brought into a structure that is competitive with neighboring cities.

Sincerely,

Don Smith