EVALUATION OF MUSKEGON AREA WATER COLLABORATION

September 2012

Commissioned by the Muskegon Lakeshore Chamber of Commerce

Municipal Analytics

Insights and applications for better financial management

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September 17, 2012

Cindy Larsen
President
Muskegon Lakeshore Chamber of Commerce
380 W. Western Avenue, Ste. 202
Muskegon, MI 49440

Dear Ms. Larsen,

We have completed our evaluation of water collaboration issues in the Muskegon area, including a review of a variety of documents, interviews with municipal and community stakeholders, and independent research to support the study.

The project has been undertaken to provide an objective, third-party review of the issues surrounding municipal water supply, as well as to provide a basis to continue discussions on this sometimes challenging topic. Related to this, the project facilitator (Val Washington, with Settlemate Inc.) has met individually with community representatives, and will meet with those stakeholders in a joint session later this month to hear feedback from this report and offer suggestions about how to move forward with a common goal. We have made no attempts to suggest a solution; rather, we have presented a variety of possible solutions, each with its own merits and challenges. We firmly believe a solution can be worked out between the various parties, which will address the unique challenges faced by the communities of Muskegon County.

In summary, our evaluation has identified the following:

- There is a widely shared belief that improved collaboration of some form could be beneficial to each community and to the larger service area
- The capacity of existing water filtration plants in the area is well above current and forecasted demand
- Average day water needs for all customers served by the Muskegon Heights and Muskegon water plants could currently be met with a single plant
- Current peak day water demands could be met with the Muskegon plant alone, but future peak day estimates would exceed the Muskegon plant's current capacity

- There are a number of possible arrangements regarding the ownership, management and governance of the water plants
- Retail water rates in Muskegon County vary considerably
- Wholesale water rates charged by the two communities with production capacity are based on different methodologies, both of which are acceptable based on rate setting standards in the water industry
- The wholesale rate for water on the Muskegon system is $2.58/1,000 gallons, whereas the total wholesale rate for Muskegon Heights (including debt) is approximately $2.35/1,000 gallons (we have used 1,000 gallons as the basis for our discussions throughout the report; rates and volumes normally presented in hundred cubic feet units has been converted)
- A uniform wholesale rate does not necessarily translate into more rate uniformity at the retail level
- Both Muskegon and Muskegon Heights have a similar level of debt on their water plants
- Debt is one issue that will need to be addressed if plant ownership changes or major wholesale customers leave an existing agreement for water supplies
- The cost of producing a unit of water appears to be higher at the Muskegon Heights plant
- Muskegon Heights has a higher level of cash in its water supply fund than Muskegon has in its water fund; however, Muskegon Heights may be investing significant amounts of cash into improving its plant in the coming years
- There is a general deficiency of utility financial management policies governing both systems

Based on our findings, we have concluded the following:

- Adding a third source of water supply to the existing service area would result in a substantial excess capacity in the area
- Current water production facilities in Muskegon and Muskegon Heights have ample combined capacity to meet forecasted needs through at least 2035
- Water rates are generally competitive with other municipal providers in Michigan
- Opportunities exist to improve collaboration through the formation of a water supply authority
- The impact on water rates of any new arrangement will depend on a number of factors, including the disposition of debt, purchase price of assets, new bonding, scope of control and other issues surrounding the establishment of an authority or outright purchase of existing infrastructure
- The ample capacity of water and wastewater treatment facilities in and around Muskegon makes the area well suited to attract large water users, including food processors, bottled beverage facilities, water-intensive manufacturing and other industries
- Business attraction and retention efforts could be bolstered by improved collaboration and cooperation surrounding water production and supply

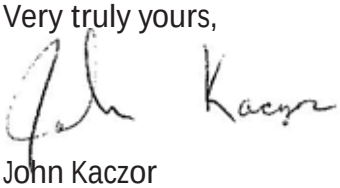
- Business owners prefer to locate in areas that have demonstrated a cooperative approach to problem solving and stability of costs
- Opportunities exist to find a collaborative solution to water supply needs in the Muskegon area
- Successful resolution of this issue is dependent on stakeholders focusing on common goals, taking a forward-looking perspective, basing decisions on facts, and maintaining open, direct and honest discussions.

We greatly appreciate this opportunity to assist the Chamber with this study, and we appreciate the contributions made by Chamber members, local community leaders and employees of many communities in the Muskegon area.

Municipal Analytics and SETTLEmate® Inc. are prepared to continue assisting the local communities with facilitation and further fact-finding to advance this effort from a study to a working solution.

Should you or any stakeholders have questions regarding this report, please do not hesitate to contact me at 734-623-8033, or Val Washington at 810-407-6868.

Very truly yours,



John Kaczor
Principal
Municipal Analytics

EVALUATION OF MUSKEGON AREA WATER COLLABORATION OPTIONS

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ACKNOWLEDGEMENTS

The Muskegon Lakeshore Chamber of Commerce, Municipal Analytics, and SETTLEmate® Inc. would like to acknowledge and thank all of the Muskegon Area Leaders who gave of their time and efforts to provide the background information, current data, and proposed solutions moving forward for this project. The contributions were invaluable and this report would not have been possible without their support.

INTRODUCTION

Currently, there are two municipal water treatment plants in Muskegon County: one owned and operated by the City of Muskegon and the other by the City of Muskegon Heights. The Muskegon Heights plant serves the cities of Muskegon Heights, Norton Shores, and Fruitport Township. The Muskegon plant serves the cities of Muskegon, Roosevelt Park and North Muskegon, as well as Muskegon Charter Township and the County Northside System.

A 2011 *Feasibility Study for Municipal Shared Services in Muskegon County* identified a number of opportunities for improved collaboration between municipalities, which could result in improved efficiencies and lower costs of government services. One of the topics discussed in the report is water production facilities. This issue has been the subject of discussion, debate and disagreement between local governments for a number of years in Muskegon County. The ongoing struggles are increasingly impacting government relationships, and they are spilling over into the communities served by the water systems. The Muskegon Lakeshore Chamber of Commerce has noted that the disharmony is impacting business attraction and retention, and has questioned whether a solution could be found to resolve the long-standing issues related to water production in the county. Additionally, the Chamber desires to ensure a reliable supply of affordable water throughout the county, which could help with economic development efforts for the region.

The need for resolution of this matter has reached a critical point, as several communities are considering constructing a 3rd municipal water plant in the county, to serve their customers directly, and avoid the difficulties of negotiating and managing wholesale water contracts with another municipal provider. There is concern that a 3rd plant would be excessive for the region's water needs, and could place additional financial burdens on water customers to pay for the construction and operation of the plant.

The intent of this study, and subsequently this report, is to provide a platform for open, honest, and direct discussion of the water supply options for Muskegon County communities currently served by the Muskegon Heights and Muskegon water filtration plants. Efforts have been undertaken to understand the issues faced by the primary stakeholders as they continue their deliberations with the combined goal of reaching a solution to the current and long-standing challenges surrounding the provision of municipal water in the Muskegon area. As part of this study, stakeholders were given an opportunity to meet one-on-one with the project's facilitator, to provide input regarding ideal solutions and share some of their perspectives on this topic. All key stakeholders invited to participate in the individual meetings did so, and their participation is greatly appreciated.

Given the long history of water supply issues in Muskegon County, we have elected to take a forward-looking approach in this report. Prior disputes, proposals and challenges have been adequately documented in other reports, and continually reflecting on the mistakes, misgivings

and mistrust of the past will be counterproductive and will likely serve only to prevent a resolution to this complex and emotional issue.

We consider this time an opportunity to leave the past in the past and move forward with new energy and ideas based on three criteria:

- Factual information
- Open and direct dialogue between all parties
- Recognition of the impact that local decisions will have on the larger Muskegon area

Ultimately, a resolution will require negotiations between a number of parties, each with its own needs, motivations, fears and suspicions. As part of this study, the Chamber has arranged a meeting with stakeholders to share the results of the study and facilitate the initial conversations to find common ground, before addressing more specific and complicated topics. Additionally, the Chamber has indicated interest in continuing to advance and support improved cooperation and eventual resolution of this issue, which impacts the lives and livelihoods of not only the municipalities involved, but also residents, businesses, schools, visitors and potential future water customers. Related to this, the benefits of resolving the issue include:

- Increased collaboration of municipal governments in the area
- Possible State financial support through the Economic Vitality Incentive Program (EVIP)
- Long-term water rate and supply stability at both the wholesale and retail levels
- Enhanced economic development opportunities
- Greater potential of attracting large water users, which could also benefit the currently underutilized County wastewater system
- Improved image of the Muskegon area
- Opportunity for increased media coverage of positive aspects of the local communities
- Increased trust in government to efficiently and effectively serve the public.

In the following sections, we present a summary of the findings and conclusions resulting from our analysis of myriad financial, operational and contractual issues associated with the treatment and supply of municipal water in Muskegon County. The report is intended to present information in a neutral manner, with a focus on factual data that may be helpful as local leaders discuss opportunities for water collaboration. We recognize there have been a number of attempts (some successful) to increase intergovernmental collaboration on this issue in previous years. While various proposals may have offered possible solutions, parties have not been able to agree on a plan that is sufficiently satisfactory to advance the proposal to the implementation level.

We do not assume to have a solution to this issue, but rather seek to provide a foundation upon which further discussions can be based.

FINDINGS

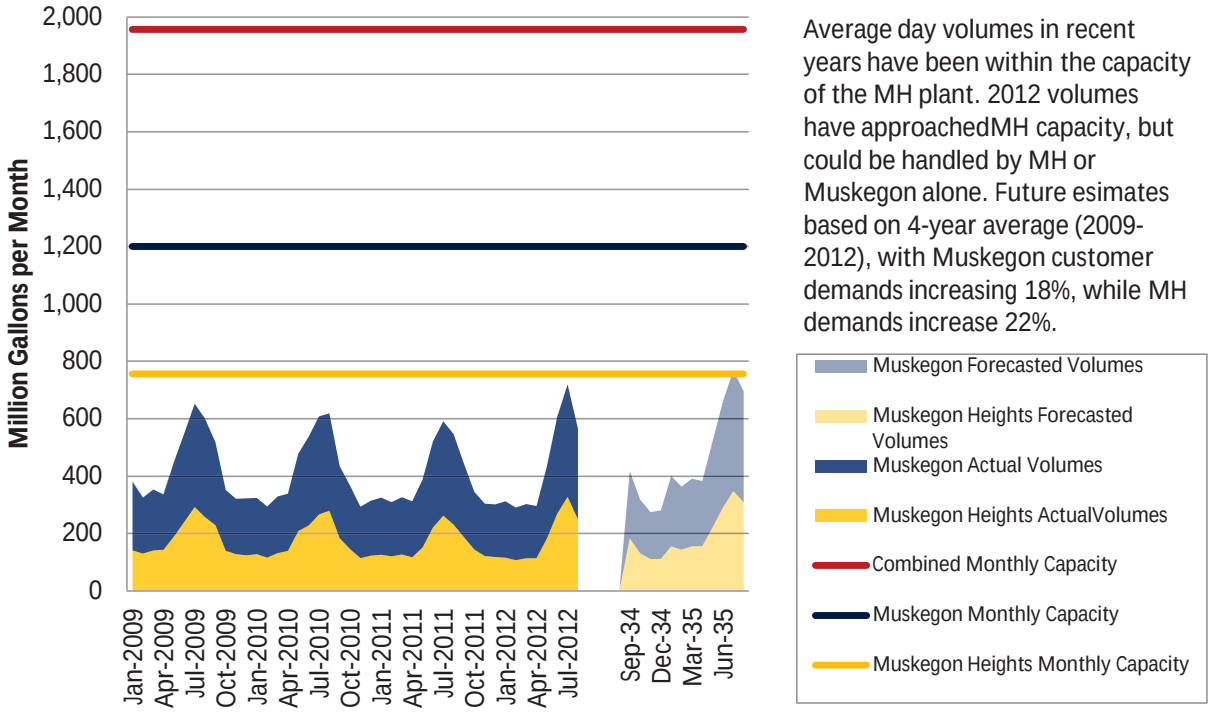
Capacity and Demand

Recent engineering studies, as well as plant production and billing records, indicate demand on both Muskegon Heights and Muskegon systems has been declining for a number of years. As a result, there is now a substantial level of excess capacity on both water supply systems. In this section, we present summary information related to recent historical volumes, and provide a comparison to forecasted demand for the year 2035, as estimated in recent reliability studies performed for the Muskegon and Norton Shores/Fruitport Township water systems.

Monthly Volumes

The volume of water treated on a monthly basis, from 2009 to present, is illustrated in Figure 1. The chart shows the seasonal variation in filtration rates, with summer months peaking at about 200% of winter volumes. The demand for water over the past 3.5 years has been fairly consistent, with the 2012 summer months somewhat higher due to the unusually dry season.

Figure 1
Muskegon Area Combined Water Supply
Monthly Raw Water Treatment Volumes



The yellow line in Figure 1 indicates the capacity of the Muskegon Heights water plant, while the blue line indicates the City of Muskegon plant capacity. The red line reflects the combined

capacity of the two plants. Clearly, the volume of water required to meet demand on a monthly basis is well within the capacity limits of either existing water plant.

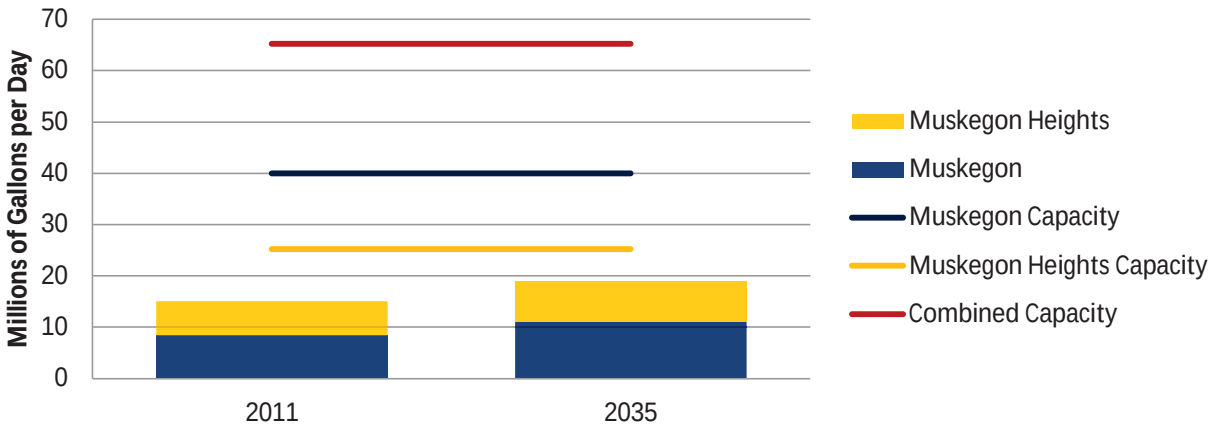
Looking forward to 2035, the forecasted demand for water is expected to reach the current capacity of the Muskegon Heights plant, but still fall within the limits of the Muskegon plant.

Average Day Volumes

Similar to the monthly volumes illustrated in Figure 1, the average day volumes of the two water filtration plants are presented in Figure 2. The 2011 figures represent actual average day values, while the 2035 column reflects estimated volumes, based on recent engineering analysis.

On an average day basis, either plant could provide sufficient volumes of treated water, even in 2035.

Figure 2
Muskegon and Muskegon Heights Water Systems
Average Day Demand
2011 vs. 2035



Maximum Day Capacity and Demands

While average day and monthly volumes provide insight into day-to-day production requirements, water plants must be capable of handling maximum day volumes. These volumes can exceed average day demand by a multiple of 2 or more. In Muskegon, the average day volume for 2011 was 7.7 million gallons per day (MGD), while maximum day demand for that year was over 13.6 MGD. Similarly, at the Muskegon Heights plant, average day volumes for the first 8 months of 2012 has been about 6 MGD; however, the maximum day in July was over 17 MGD (more typical max day volumes are closer to 14 MGD).

Figure 3
City of Muskegon
Water Filtration Plant
Comparison of Max Day Volumes

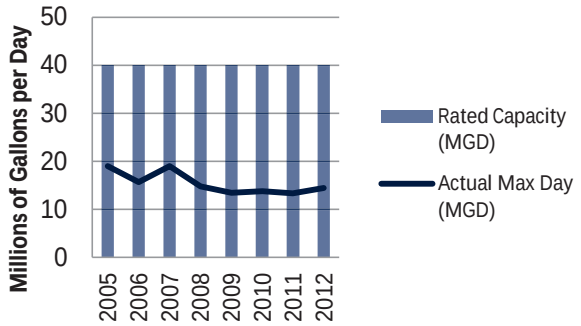
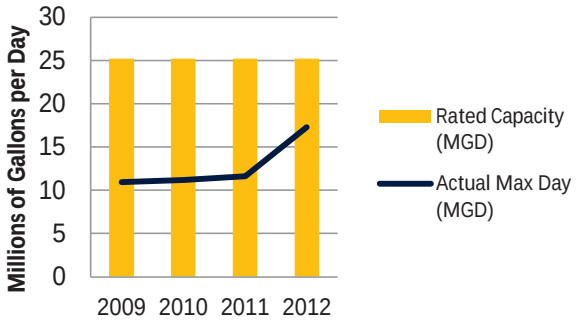
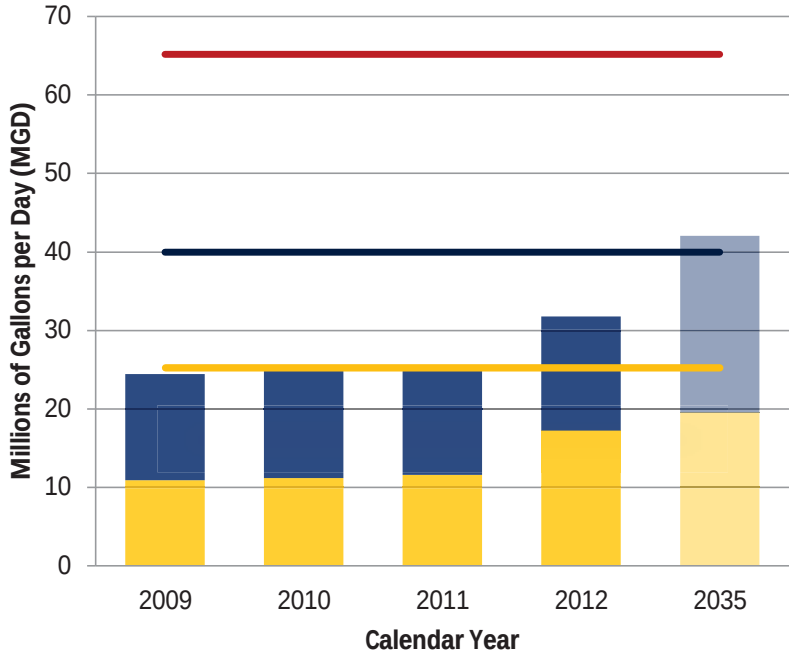


Figure 4
City of Muskegon Heights
Water Filtration Plant
Comparison of Max Day Volumes

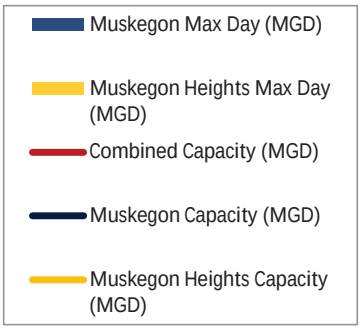


When the maximum day demands for the two plants are combined for analytic purposes, as in Figure 5, we see that the Muskegon Heights plant would have been at or near capacity for the past three years, and over capacity for the current year. Looking forward to 2035, the forecasted max day requirements are expected to exceed the capacity at the Muskegon plant as well.

Figure 5
Combined Muskegon & Muskegon Heights
Water Filtration Plants
Comparison of Max Day Volumes to Plant Capacity



Max day volumes in recent years have been at capacity for the MH plant. 2012 max day volumes exceeded MH capacity, but could easily be handled by both plants or Muskegon alone. Future esimates based on 4-year average (2009-2012), with Muskegon customer demands increasing 18%, while MH demands increase 22%.



Input from Key Stakeholders

As noted earlier, a critical component of this study is the participation and input of key stakeholders in the water supply issue in Muskegon County. To elicit input from stakeholders, the project's facilitator met individually with elected and appointed officials of a number of communities, as well as several Chamber members, to gather input and discuss possible resolutions to the water supply issues. A summary of the meetings is presented in Appendix A, with responses categorized into different "buckets." Generally speaking, the vision shared by many can be summarized as follows:

- A more unified water supply arrangement is favored by many stakeholders, although the ideal level of combined services and governance structure varies
- It is important that rates be valid, stable, objective and transparent
- Some value the ability of each community to set its own retail water rates
- The County may serve well as an objective administrator of water supply
- There is value in preserving two treatment plants in the area

Municipal Water Customer Needs

In addition to the stakeholder input noted above, it is important to also remember the priorities of municipal water providers, including those who treat their own water, as well as those who purchase water from other municipalities. In summary, common needs identified by water providers include:

- Quality drinking water (taste, safety)
- Reliability (there when you need it, including fire suppression)
- Redundancy (options for continuing flow even in event of localized failures)
- Security (related to reliability, redundancy and quality)
- Price (best possible, assuming other needs are met)

Options for Moving Forward

Based partially on stakeholder input, as well as arrangements that have been made in other communities, we present the following list of options for structuring water supply ownership, governance and administration. This list is intended as a framework for beginning discussions of the options available. There are many variations of the structures presented here, and we believe strongly that the end solution should reflect the unique challenges, opportunities and needs of Muskegon County's communities.

Possible alternatives are grouped into four primary categories, with some variations explored further to enhance understanding of the option and help facilitate deliberations.

Maintain Two Separate Municipal Water Supplies

Each of the following options may include increased connectivity between the two supply systems, but such connections would not be required except in the case of Norton Shores and Fruitport Township leaving the Muskegon Heights system. Some options in this category present an opportunity to improve collaboration and efficiency, with no immediate capital costs required.

- Continue current service areas for both production plants
    - Muskegon recently signed 40-year water supply contracts with all of its wholesale customers, providing rate stability and guaranteeing adequate supply for a long period
    - Muskegon Heights wholesale customers have given notice of their intent to terminate their water supply agreement with the city, which will end in April 2015, unless a compromise can be made to retain Norton Shores and Fruitport Township as customers of Muskegon Heights
        - Further discussions and negotiations would be required to re-establish a basis for moving forward with this alternative
        - A completely rewritten supply agreement between the communities may be one approach to "reset" the discussion of this option
- City of Muskegon contracts remain in place, and Norton Shores and Fruitport Township negotiate a contract with Muskegon for water
- Muskegon takes over operations and management of both plants, and either leases or purchases the Muskegon Heights plant
    - A 2011 framework for this option was prepared by Muskegon
    - Revisiting the proposal in a cooperative, mutually engaged fashion may allow this option to advance further
- Muskegon Heights takes over operations and management of both plants, and either leases or purchases the Muskegon plant
    - Similar to the previous option, with the tables turned on which community is managing the other's plant
- Both existing plants sold to a new authority, jointly governed[1] by all municipalities receiving water. The authority then manages and operates both plants independently of any one unit of local government. Variation: operations and management could be contracted to private firm.
    - The most appealing aspect of this approach to Muskegon and Muskegon Heights may be the cash infusion they could receive through the sale of the water plants

[1] Governance may be structured as one vote per participating governmental unit, or may take other forms as agreed to by the parties.

    - Careful consideration would have to be made to ensure the purchase price of the plants does not require debt service obligations that would result in higher rates for customers, even if greater efficiencies could be achieved
    - The West Michigan Regional Water Authority, currently comprised of Norton Shores and Fruitport Township, may serve as a foundation for the formation of a broader authority. Alternative structures, and other authorizing legislation, may also be explored
- An authority is formed to purchase both plants, with governance by all customer communities. However, one municipality takes responsibility for operating and managing both plants
    - Similar considerations as the previous option
- The County buys both plants, and takes over operations and management, with or without oversight from all municipal customers. Variation: operations and management could be contracted to private firm.
    - Similar considerations as previously discussed
- Muskegon Heights and Muskegon form a joint water supply authority. Governance and operations/management are shared or assigned to one unit of government, with oversight by authority board comprised of representatives of both municipalities
    - This option may be less appealing to the current owner communities, since no cash infusion would result
    - Potential savings could be realized through more efficient operations

Add a Third Municipal Supplier to the Existing Service Area

- Fruitport Township and Norton Shores leave the Muskegon Heights supply system and construct their own plant
    - Estimates suggest such a plant would cost over $50 million
    - Significant work would have to be undertaken in the next 2.5 years to implement this option
- Fruitport Township and Norton Shores leave the Muskegon Heights supply system and arrange to purchase water from the North Ottawa Water System
    - The viability of this option remains unknown at this time

Eliminate One Existing Water Source

- Muskegon Heights, Norton Shores and Fruitport Township all switch to the City of Muskegon water supply system, and abandon, sell or mothball the existing Muskegon Heights facility
    - This option results in a substantial loss of water supply capacity
    - Muskegon Heights “loses” if it receives no compensation for the plant it has invested in for decades
    - The private market for municipal water plants is very small
    - Mothballing will require some continued costs to keep the plant viable for future needs

Unify All Water Assets Under Single Owner/Service Provider

- Create a comprehensive water authority, which would purchase the entire water treatment, supply, storage and distribution assets from all communities, and take responsibility for operating and managing the systems of all communities, including rate setting, billing, debt issuance, infrastructure planning, etc.

This may be the most radical of all options available, and it seems to have some support from community stakeholders. Moving to this arrangement may require the longest lead-time, and involvement of the greatest number of local units. It may also be the most costly approach, depending on how the purchase of existing assets was structured. In the end, this option may best serve some of the larger goals identified by stakeholders, including uniform rates, increased cooperation, and a single provider of municipal water services. Specific challenges and advantages of a unified system are summarized below.

Potential challenges of a unified water system (single owner of all water supply & distribution assets; unified operations, financial management, etc.) might include:

- Securing a buyer and operator of the system may prove challenging
- Local planning and zoning decisions get complicated if system expansion is desired
- Local control of economic development vis-a-vis water infrastructure is lost or diminished
- System planning becomes a regional exercise, pitting the needs of one jurisdiction against others
- Increased time to get approval for system improvements
- Governance, representation and cost sharing may be difficult to establish in a manner perceived as equitable and balanced
- Cost of acquisition may result in significant debt service obligations (and higher rates) for an extended period

Advantages of a unified system may include:

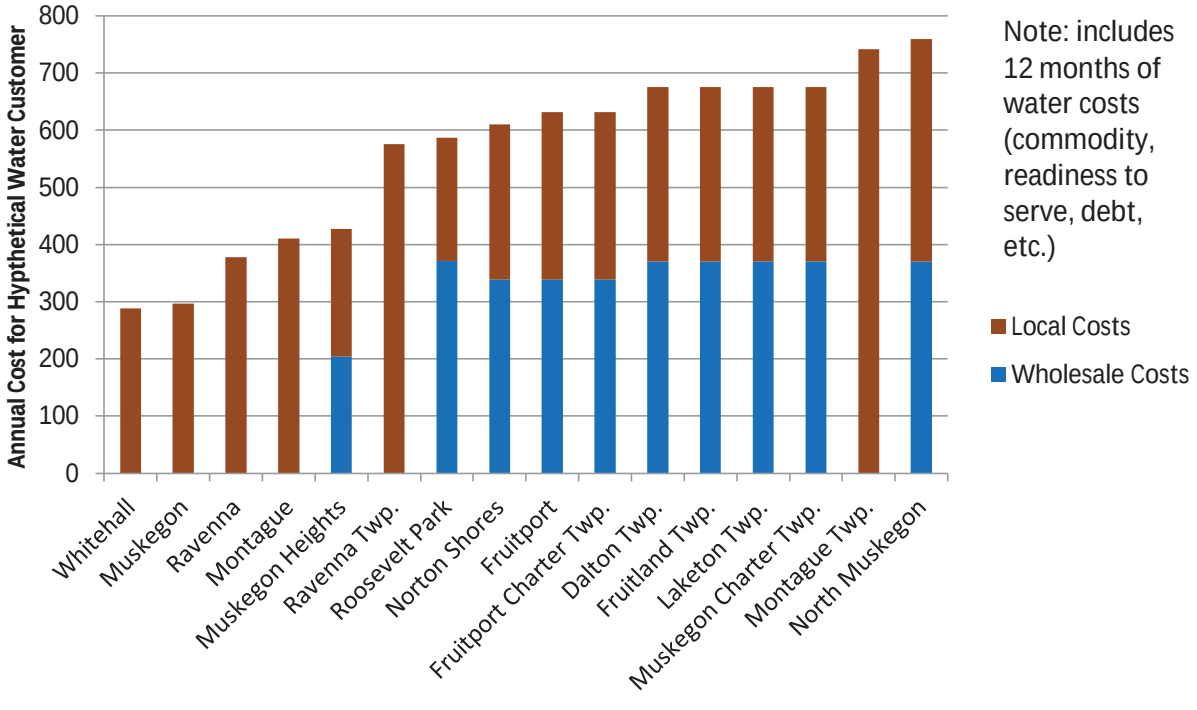
- Significant improvements in operational efficiencies
- Operational transparency
- Single source for municipal water information, repairs, billing, etc.
- Potential for uniform rate across all municipalities
- Greater purchasing power
- Improved perception of governmental cooperation

Water Rates

One stated goal of improved water collaboration in Muskegon County is the potential for more unified rates. Figure 6 presents a comparison of current water rates in different communities throughout the county. To simplify the comparison, we have calculated the annual cost of water to a residential customer with a 3/4" meter, assuming the customer uses 12,000 gallons of water per month. All unit costs have been converted to thousands of gallons, and we have attempted to include all readiness to serve charges, customer charges and debt charges in the annual cost. For those communities purchasing water on a wholesale basis from Muskegon or Muskegon Heights, we have included the cost of water separate from the local costs of distribution, debt, metering, etc. For the Muskegon wholesale customers, we have used a consistent wholesale multiplier of 1.25, as agreed to in the recently negotiated wholesale contract for Muskegon and its customers.

As can be seen in Figure 6, the total retail cost of water varies substantially between communities, and even varies between communities, which pay the same wholesale rate for water. The reasons for the variations include unique system demands in each community's distribution system, different elevations, a range of system age and quality, local debt service obligations, and the cost of labor and supplies to operate each system.

Figure 6
Muskegon Area Communities
Annual Water Cost Comparison
Residential Customer | 3/4" Meter | 12,000 gallons/month

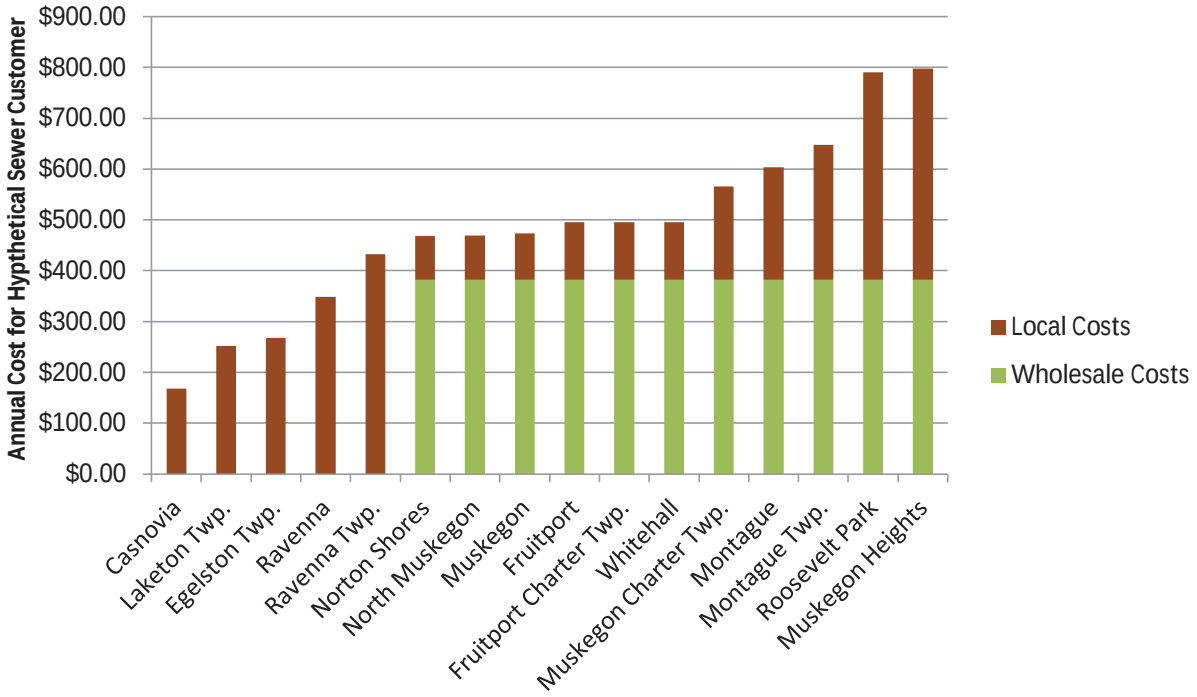


To understand the potential for rate uniformity at the retail level, we performed a similar analysis of wastewater rates in the county. Figure 7 contains the results of this survey, making the same assumptions that were made for the water rate comparison. The majority of communities in the county pay a unified wholesale rate for wastewater treatment, which is provided by the County's wastewater treatment operation.

Figure 7 suggests that even though wholesale rates may be uniform, the retail rate can still vary widely. The reasons for this variation are similar to what was noted for the difference in water rates.

While rate uniformity at the wholesale level may be achieved through improved collaboration, it is unlikely retail rates could be uniform.

Figure 7
Muskegon Area Communities
Annual Sewer Cost Comparison for Hypothetical Residential Customer (3/4" Meter; 12,000 gallons/month)



Water Treatment Financials

To understand the financial position of the two water treatment operations in the county, we prepared a summary of selected financial measures in Figure 8. In some respects, the financials

of the two plants are comparable, while other measures suggest differences between the financial standing of the two operations.

Bonds and Other Liabilities

Figure 8 shows the outstanding long-term liabilities for both Muskegon ($15.3 million) and Muskegon Heights ($15.6 million). In each community, accrued employee absences and other post employment benefits is under $200,000, and the balance is bonded debt.

One consideration of changing ownership or revenue streams of the water production plants in these communities is debt obligations. All water supply debt currently outstanding is in the form of revenue bonds, which were issued based on the system's demonstrated ability to generate sufficient revenue to cover the cost of annual debt service requirements. If revenue from current customers is decreased, the utility is obligated to increase rates and charges to meet debt service requirements.

Figure 8: Comparison of Select Financial Measures

	Muskegon		Muskegon Heights	
Outstanding Long-Term Debt	**$ 15,297,153**		**$ 15,647,561**	
Wholesale rate (operations & capital)			$1.42	
Wholesale surcharge			0.36	
Additional cost for system debt			0.57	
Wholesale Cost of Water (1,000 gallons)	**$2.58**		**$2.35**	
Cash & Investments	$ 2,739,997	*	$ 4,584,806	o
Water Supply Expenditures	$ 6,239,106	*	$ 3,033,765	
Cash as Percentage of Expenditures	**43.9%**		**151.1%**	
Water Supply System (Original Cost)	$ 64,182,672	*	$ 26,862,212	
Water Supply System (Current Value)	$ 38,910,332	*	$ 16,576,820	
Percentage of Original Cost	**60.6%**		**61.7%**	
Operating Expenses: Filtration	$ 1,884,846	^	$ 1,573,798	^
Million gallons treated	2,806.7	a	1,945.1	a
Cost per MG treated	**$671.55**		**$809.11**	

**Muskegon values include water production and distribution (combined fund).*
^Reflects 2012 budgeted expenditures, less capital and debt service.
[a]Treated volumes July 2011-June 2012.
[o]Includes cash reserved for debt service.

In the case of Muskegon Heights, an amendment to the water service agreement requires that, in the event the agreement is terminated, "Norton Shores and Fruitport each agree as a condition of termination to make a termination payment to Muskegon

Heights in an amount equal to (i) all its unpaid water bills…plus (ii) the then present value of its portion of the remaining debt." This provision of the agreement may require a defeasance (cancellation) of the bonds, which would in turn require the bonds be called and paid in full. The first opportunity to call the bonds without penalty is about six months after the water service agreement is currently set to terminate. An alternative to defeasance may be to escrow the payments made by Norton Shores and Fruitport, until such time that the bonds can be called without penalty. This issue requires further review by bond counsel before all options and their impacts may be fully known.

Depending on the direction chosen to pursue with respect to water production ownership, the impact on debt obligations could be neutral or negative. As discussions advance past conceptual generalities, it will be important to consult with bond counsel on this issue for all debt involved.

Cash Balances

The ending cash balance in the Muskegon Water Fund in June 2012, compared to 2011-12 expenditures, suggests the cash balance is about 44% of expenditures. These figures reflect a combined accounting of all water related expenses in Muskegon, which is different than the numbers presented for Muskegon Heights, whose numbers reflect cash and expenditures only related to water production. The cash balance in Muskegon Heights' Water Supply Fund is at about 151% of fund expenditures. The City has targeted a cash level of 150% of expenditures.

Cost of Production

The cost to treat a million gallons of water (excluding debt and capital replacements) is estimated to be about 20% higher at the Muskegon Heights plant. Due to the combined accounting of Muskegon's water filtration plant and larger distribution system, it is unclear if some costs of water production have been assigned to the larger distribution or administration categories. This cost difference between the two operations may suggest opportunities exist at the Muskegon Heights plant to improve efficiencies.

Given the high fixed costs of treating water, the unit cost of production at both water plants would go done as volumes of water treated increased. Simply put, as more water is treated at either of the existing plants, the cost of water from that plant will go down.

Basis for Wholesale Rate Multiplier and Rate Design

Presently, the Cities of Muskegon and Muskegon Heights wholesale rates are calculated using a base rate, multiplied by 1.25. This means other communities contracting for water pay 25% more than customers in Muskegon and Muskegon Heights pay. The basis for the rate multiplier is significantly different between the two cities. Currently, Muskegon's wholesale rate is $2.58/thousand gallons ($1.93/100 cubic feet), while

Muskegon Heights' wholesale rate is $1.42/thousand gallons, plus a 25% wholesale surcharge and debt service costs.

In Muskegon, the basis for the wholesale rate is the retail rate paid by City customers, including the cost to produce, distribute, meter, bill and manage the system. The rate includes debt service and capital improvement expenditures, in addition to operating and maintenance costs. In effect, wholesale customers are partially paying for the City of Muskegon's entire water system. This approach may be reasonable, since the connections to wholesale customers' systems are largely integrated into the City's distribution network, rather than through direct transmission lines to the wholesale customers.

All revenues received by Muskegon are deposited into the Water Fund, including the surcharge revenues to wholesale accounts. Surcharge revenues are used to offset the cost of the water system, thus allowing rates (in-City and wholesale) to be set at a lower level.

The approach to calculating wholesale rates in Muskegon Heights differs from the Muskegon method in three key ways. First, the rate is based solely on the costs of water production (including capital improvements at the plant). No Muskegon Heights distribution costs are included in the water supply rate. Second, the surcharge collected from wholesale customers is used to offset the cost of the water distribution system in Muskegon Heights, rather than being applied to the Water Supply Fund. Third, in addition to the commodity rate charged to wholesale customers, an additional cost for debt is allocated to each community on the system, based on the debt service obligation and the volume of water sold to each community the prior year. Presently, the cost for debt is about $0.57/1,000 gallons of water. When combined with the wholesale rate for operations and capital, the total wholesale equivalent rate is $2.35/1,000 gallons.

While these approaches may be quite different, both are reasonable, according to rate setting methodologies used in the water industry[2]. In addition to rate methodology, rate philosophy and policy play a role in establishing wholesale and retail water rates. Some considerations governed by philosophy and policy issues include:

- Commodity rate only vs. a combination of commodity and fixed charges (often for capital, debt, fixed operating costs, etc.)
- Frequency of billing cycles
- Inclining, flat or declining rate structures, depending on the volume of water utilized

[2] The American Water Works Association (AWWA) rate setting methodology recommends rate bases be rooted in a utility's established financial management policies, and that wholesale rates include a rational basis for recovering owner investment in the system.

- Allocation of specific costs to different customer classes (residential, industrial, commercial, multi-family, etc.)

Both wholesale providers charge customers only a single commodity rate for water, which is uniform for all volumes of water purchased.

Water Supply Financial Management Policies

Prudent financial management of public assets and enterprise fund finances is critical to ensure public trust and maintain a good understanding of the position of utility financials. One often overlooked aspect of financial management, beyond the day-to-day accounting, budgeting, cash management and other functions, is the establishment of financial policies. Utilities with well thought out policies tend to have more transparent, consistent and defensible finances.

A review of financial policies governing Muskegon and Muskegon Heights' water supply operations revealed only minimal policies have been adopted and put in place. This is not at all uncommon in public utility systems. Examples of typical policies include:

- Cash reserve targets
- Basis for rate setting
- Frequency of rate review
- Treatment of capital replacement in the rate process
- Adjustments for low income customers
- Payments to other municipal funds (administrative charges, payments in lieu of taxes or central service cost allocation)
- Accounting for unspent capital improvement charges

We have included in Appendix B examples of policies that each municipality may want to consider.

CONCLUSIONS

Capacity and Demand

Historical demands clearly indicate there is sufficient capacity with the existing two treatment plants to meet current demand and a significant amount of additional demand as well. It is possible that the current customer base served by the two plants could be served by either existing plant alone, with the Muskegon plant more suited to handle max day volumes, particularly if flows continue to reach the levels experienced in 2012.

The Muskegon County area can benefit from continued operation of two water plants capable of supplying area water needs. Interconnecting the two systems could substantially improve reliability and redundancy. Consistent high volume production capacity could bolster the appeal of the area to high water users such as large-scale residential and institutional developments, food processing facilities, bottled beverage operations and other water-intensive manufacturers. Such users could be beneficial to all communities served by the County wastewater system, since increased volumes could result in lower rates to all communities.

Adding a third water source to service the existing service area would result in a significant excess of capacity for the area.

Reliability studies performed between 2009 and 2011 suggest potential maximum day demand for the current service area could approach 42 MGD by 2035. This expected volume of need 23 years from now is well within the combined capacity of both existing plants.

Ability of Existing Water Supply Facilities to Meet Future Demand

While current capacity is a critical variable in determining the ability of existing infrastructure to meet potential future demand, it is also important to understand the remaining service life of current assets.

The City of Muskegon Water Plant was initially constructed in 1937, and has since had a number of upgrades, expansions and improvements. Asset records for the Muskegon water supply system (including the filtration plant, storage, and distribution assets) suggest the current facility and related equipment is about 40% depreciated.

The City of Muskegon Heights Water Filtration Plant was initially constructed in 1940 It was expanded to its current capacity of 25.2 MGD in 2004. Asset records indicate the plant is about 38% depreciated.

While asset value may be an indication of a plant's remaining expected life, many assets continue in service for years after being fully depreciated. Plant life can also be extended through upgrades, expansions and maintenance.

Both cities have ample space for future expansion of their water plant, if needed. The Muskegon plant would be more challenging to expand, due to its proximity to the beach and dunes. However, given current capacity, the need for plant expansion is not anticipated for quite some time. Regulations governing beach and dune disruption could change significantly before the need for increased plant capacity becomes an issue.

Looking forward, the areas served by the two existing water treatment plants is expected to experience modest growth in the next 20-25 years, resulting in only modest increases in average and maximum day demand. Should one or more major water users be added to the water demands in the area, there would remain ample capacity to meet expected demands of the current customer base.

Water Rates

Current rates are generally competitive with those charged in other Michigan communities (see Appendix C for a comparison of Muskegon area rates to other communities). The area may be more attractive to large water users if rates could be reduced and stabilized.

Uniform wholesale rates will not necessarily translate into uniform retail rates. However, consistent wholesale rates could help simplify comparisons between community water costs.

Altering the structure of water supply in the county may result in lower and/or more stable water rates, if operational efficiencies can be achieved. The degree to which rates could be reduced or stabilized would depend on a number of variables, including future debt loads, per unit cost of water production, water treatment capacity, customer demand and other conditions. As local policy makers consider the options of improved collaboration, it will be important to evaluate the impact any proposed solution may have on rates.

The option of adding an additional source of water supply to the area will reduce the opportunity to realize rate reductions through operational efficiencies.

Merging Water Production and Management

Combining the operations and financial management of the two water plants (under any of the options noted above) would likely result in some operational efficiencies, and thereby lower per unit costs of water production. The level of savings that could be derived has not been evaluated as part of this study. Examples of potential savings include:

- Single reliability study covering entire service area

- Reduced costs for audit, compliance reports and other services currently required of the two operations separately
- Increased purchasing power, resulting in some lower costs
- Reduced staffing requirements
- Improved operational efficiencies resulting in lower per unit costs

While these savings may reduce costs, the extent of savings will ultimately depend on the operational and management structure selected.

Further, depending on the management and governance structure put in place, it is possible that no immediate costs would need to be incurred to make new connections between any existing customers.

Financial Management

Regardless of the option eventually chosen, financial management could be improved through the adoption of utility financial policies. Appendix B provides examples of some policies that have been adopted in other communities. Such policies help with the management of public utilities, and generally provide a more stable and less politically charged environment for utility finances.

Business Attraction and Retention

The Muskegon area is fortunate to have ample capacity of both water supply and wastewater treatment. These assets, combined with Lake Michigan access, and other area amenities, make the Muskegon area an attractive location for businesses that require a high volume of water and wastewater capacity. Consideration should be given to this fact as the future of water supply in the area is discussed. Maintaining the ability to meet the water demands of businesses interested in locating to the area could provide an economic development advantage that other cities and regions cannot offer without significant investment in expanding capacity.

In addition to capacity, businesses prefer to locate in communities that provide stability and demonstrate a cooperative attitude toward problem solving. By working together to improve collaboration on water supply, local leaders can demonstrate cooperation and help improve stability for current and future residents and businesses in the Muskegon area.

Moving Forward

As noted earlier, there are a significant number of potential avenues for moving forward with water supply in Muskegon County. While each option has its own merits and challenges, the eventual outcome will likely be a variation of one or more options presented.

We recommend the focus of any discussions be on the benefits that can be realized by the larger Muskegon area through resolution of this long-standing challenge. Furthermore, it is imperative that discussions on this issue be based on factual information, with a look forward to the potential for improved collaboration in the area of water supply.

APPENDIX A

Muskegon Area Water Supply Project Interview Summaries

Unified System Bucket

1. A single unified county-wide water system is best for all parties in county

2. By agreement the City of Muskegon Heights and the city of Muskegon would value by appraisal their facilities and offer them for sale to a unitary system and those entities that have a portion of the distribution system in the ground be compensated for their infrastructure. When the bonding happens - there should be payment for the historic sewage arrearage that the City of Muskegon says that the County owes to it. Not limited to payment but an agreement to put the issue to rest.

3. Unified rate for water, recognizing that there are costs the further you extend the facility - unified rate would be attractive for economic development unified rate does not include hookup charges - combination of governmental units (including the county or the authority) sitting together to work through the problem, hydrants, hookups etc.

4. Unitary system to combine water production, distribution, and sewage treatment - entity under county management - other entity operating under an inter-Urban Agreements

5. Unified system - not being tied to one community - equal governance

6. Unified system to serve the entire area with under an authority to manage and representation from the participants - to reflect the use of the system - not 1 city 1 vote - proportional to size

7. Unified water system – county wide authority

Water Supply Authority Bucket

1. 1 or 2 water filtration plants to provide service and redundancies necessary for the systems.

2. Cities of Muskegon and Muskegon Heights create a water supply authority to supply all of Muskegon Heights' existing customers and all of Muskegon's customers and any other customers who want to purchase water from the authority with water. Thereby creating a system that would cost less and have more flow potential. Included would be obtaining EVIP dollars to connect the two plants.

3. The authority should include operation of the distribution, billing, and administration systems.

4. Water supply authority vision one community overseeing operations - 2 plants connected - all communities are charged the same rate for water - however, non-owner communities would pay up charge - compensation for owners of the plants transferred to the authority.

5. Under the control of a regional authority with all equal members

6. The authority makes decisions one community one vote with county operations

7. Exactly like the sewer system is being run

8. Independent Appraisals of both water plants for purchasing by authority

9. Authority would be managed/operated by an outside independent entity

10. One vote one voice per authority member

Water Rates Bucket

1. Valid rates

2. Stable rates

3. Financial integrity - proper accounting for payments

4. Objective setting of rates by outside entity

5. Unified and stable wholesale rates

6. Using an outside analysis with unanimity being necessary to increase rates

7. Ability to set retail rates would not be interfered with by unified system

Miscellaneous Bucket

1. City of Muskegon Heights would retain existing customers and get more.

2. New plant 50 million cost with 60 percent reduction of annual cost of operation.

APPENDIX B

City of Anytown
Water and Sewer Utility Rate Study
Financial Policy Considerations

In preparing to conduct a comprehensive utility rate study, it is helpful to first evaluate the City's policies, and clarify some areas of financial policy that may not have been considered by the City before this time. Some policy considerations that might be useful as we prepare to develop an accurate and equitable rate structure include the following:

- How often should rates be reviewed by City staff and adjusted?
- Should there be a minimum rate adjustment each year, in an effort to reduce the need for large adjustments in future years?
- How often should a rate study be conducted by an independent, outside firm?
- Are there limits to how much rates should be adjusted in any given year?
- Under what circumstances would a rate reduction be permitted?
- Should there be a limit on how much utility operating costs are subsidized by the General Fund or taxes? Should the utility function without subsidies?
- How should general government costs of supporting the utility fund be calculated and reimbursed? (Often referred to as PILOT payment or administrative charge)
- How should rates be structured to address affordability concerns?
- Should subsidies be provided to support economic development?
- How should revenue responsibilities be distributed across customer classes?
- Should variances from cost-of-service based rates be eliminated, and if so, over what period of time?
- Should connection charges, tap fees, development fees, etc. be set aside for future capital expenditures?
- What is an appropriate annual set-aside for capital replacement?
- What level of cash reserves is desired? (Typically expressed as a number of days, or as a % of operating expenditures)
- Is the City committed to meeting or exceeding minimum bond coverage levels?

The attached document presents one example of utility fund financial policies that have been adopted in other communities. Many other examples can be found on-line or by contacting other communities with water utilities.

EXAMPLE #1

Recommended Sewer Utility Rate and Financial Management Policies

Rates will be equitable. The various costs of operating and financing the system will be allocated to those users who require the respective costs be incurred. All users of the utility will be assessed charges based on usage and demand.

Costs will be controlled. The City will incur costs to the utility only if required by operations, capital improvements, regulations, system demand or other necessary influences.

Policies will be established to minimize rates to the greatest extent possible. Policy-setting boards with oversight over the utility will be diligent in their efforts to minimize rates to all users of the utility.

Revenues will at least match expenditures annually. The utility fund will generate revenues sufficient to cover all direct and indirect costs and comply with all financial policies established for the utility.

Investments will be prudent. Excess cash will be invested in compliance with the City's investment policies under the guidelines of applicable State and Federal investment regulations.

An independent contractor will review utility rates every five years. Utility rate studies shall be conducted at least every five years by an independent, third party firm to update assumptions and ensure the long-term solvency and viability of the utility.

Utility rates will be reviewed and adjusted annually by the City. Rates should be reviewed and adjusted annually, if necessary, to reflect inflation, adjustments to operations and system improvements, maintain bond covenants and avoid major periodic increases.

Utility rates shall include an annual capital contribution equal to current year depreciation. To enhance the ability to replace utility system capital as it wears out and to reduce major variations in rates due to capital purchases, rates will include an annual expenditure equal to the current year depreciation of the system. This cost shall be reserved for capital improvements and replacements.

Working capital reserves shall be maintained at levels necessary to meet operating, capital and contingency requirements. To ensure solvency of the Fund, the City will reserve funds sufficient to cover no less than 3 months of operating expenses.

Excess working capital reserves shall be used to offset rate increases where possible. The City desires to minimize rate fluctuations from year to year. For this reason, prior to any rate

increase, the City will evaluate its working capital reserves to determine if funds are available to utilize in place of generating additional revenues from rates.

Utility rates will be reduced only if long-term financial analysis indicates current rates are more than sufficient to cover anticipated costs. To avoid large rate variances from year to year, rates will not be decreased without first conducting a thorough analysis of the long-term financial impact of a proposed rate reduction.

Reasonable adjustments to summer utility bills will be made to reflect increased water consumption not resulting in increased sewer discharges. The City recognizes that many residential customers increase water consumption in summer months for lawn watering and other outdoor activities. These uses of water do not result in increased utilization of the sewer collection and treatment system. For this reason, summer bills will be adjusted to the highest monthly water usage metered for the prior months of November-April, typical non-watering months.

EXAMPLE #2

Water and Sewer Utilities
Financial Management and Rate Setting
Policies and Guidelines

These recommended financial policies and guidelines have been developed to assist the Charter Township of Anytown in achieving financial and rate stability from year-to-year.

In addition, these proposed policies should provide consistency in decision-making to both the Township Board and utility management.

These proposed policies and guidelines should be used as a starting point in the utility's overall utility financial planning and rate setting process.

The proposed policies and guidelines listed below should be reviewed over time to determine if they are still relevant and appropriate.

1. **Rates Should Be Established Utilizing a "Generally Accepted" Rate Setting Methodology.**

   When reviewing rates, it is important to use a methodology that is "generally accepted" in the financial and rate setting community as well as the water, sewer and storm water utility industry. This will assure a legally defendable approach as well as consistency of the analysis over time.

   1.1 It is recommended the Township use the following "generally accepted" approaches to establish rates for each utility.

   - Revenue requirement analysis
   - Cost of service analysis
   - Rate design analysis

   REVENUE REQUIREMENTS:

   1.1.1 Revenue requirements will be established on a "cash basis" approach that will include operation & maintenance expenses, administrative transfers, debt service (principal and interest) and capital improvements funded from rates.

   1.1.2 Revenues and costs will be annually projected for a future five-year time period.

   1.1.3 Projections of operations and maintenance (O&M) costs should include any estimated incremental O&M costs associated with future capital

improvements.

1.1.4 The administrative fee transfer from utility enterprise funds to the General Fund is a payment for various services provided by the General Fund. The amount of each year's administrative fee shall be based on a reasonable estimate of General Fund costs incurred by the utility enterprise funds.

1.1.5 Any wholesale cost increases imposed upon the Township by a water or sewer supplier/partner should be equitably passed through to the Township's ratepayers at the same time such rates become effective upon the Township.

COST OF SERVICE:

1.2.1 A cost of service study will be utilized to equitably allocate the water and sewer costs to the customer classifications of service.

1.2.2 The cost allocation methodology will utilize techniques that are "generally accepted" by the industry (e.g. American Water Works Association, Water Environment Federation).

1.2.3 The water cost of service will, at a minimum, consider the following cost components:

- *Commodity/base costs* ~ those costs that vary with the total amount, or flow of water consumed by a customer over an extended period of time (e.g. electricity and chemicals)
- *Capacity costs* - those costs that vary with maximum demand, or the maximum rates of flow to customers (e.g. sizing facilities to meet peak demands)
- *Public fire protection costs* - those costs related to the public fire protection function (e.g. hydrants and over-sizing of mains)
- *Customer related costs* - those costs that vary with the number of customers on the system (e.g. postage, meter maintenance expense)
- *Revenue related costs* - those costs associated with the amount of revenue received by the utility (e.g. a gross proceeds tax, delinquent fees)

1.2.4 The sewer cost of service will, at a minimum, consider the following cost components:

- *Volume costs* - those costs that vary with the total flow of wastewater contributed by a customer over an extended period of time.
- *Strength costs* - those treatment related costs associated with the strength of wastewater (biochemical oxygen demand and suspended solids).
- *Customer related costs* - those costs that vary with the number of customers on the system (e.g. postage, meter maintenance expense)
- *Revenue related costs* - those costs associated with the amount of revenue received by the utility (e.g. a gross proceeds tax, delinquent

fees)

1.2.5 The water and sewer cost of service will consider the specific circumstances and unique characteristics of the Township's systems in the cost allocation methodology.

RATE DESIGN:

1.3.1 User charges (rates) will be established so that operating revenues are at least equal to the direct and indirect operating costs, to include costs of administration for each individual utility.

1.3.2 Rate designs will be reflective of utility needs, and also reflect the greater public purpose and policy goals of the Township Board (e.g., conservation, economic development, ability to pay, etc.).

1.3.3 Rates will recognize and attempt to incorporate a fixed charge for the up-front fixed costs associated with serving customers and a usage or volumetric charge that attempts to recover the variable costs of operating the utility.

1.3.4 Rates will be set at a level that recovers necessary costs, by classification, yet flexible enough to accomplish the Township's objectives (e.g., public purpose programs).

1.3.5 Rates should be designed to be equitable and detailed to a level to reflect the service provided (e.g., private fire protection, multi-family services, etc.).

1.3.6 To the greatest extent possible, rates will reflect an allocation of costs to each classification of utility customers (e.g., residential, commercial, irrigation, etc.), based on the class' demands requiring certain capital and operating outlays. Any such allocation will be supported with a rational and justifiable approach defining how the allocation was determined.

1.3.7 Certain fees and charges will be implemented to reflect the additional costs of individual customers on the system. Examples of such costs include late payment charges; turn on/off services, insufficient funds charges, and other charges deemed appropriate by the utility's financial management team.

2. The Township's Utilities Should Continue to be Managed to Attempt to Maintain Financial Stability Over Time.

The Township's utilities, like any other business, should strive to maintain financial stability overtime. Financial stability is not only a prudent financial management goal; it can also minimize financial costs in the long-term (e.g. unnecessary borrowing). Above all, financial stability will provide the community with the confidence of knowing a strong, consistent management team is managing the utility.

2.1 Financial Policies and Measures will be Developed to Measure, Manage and Achieve Financial Stability.

RESERVES:

2.1.1 The Township will maintain utility reserves required by law, ordinance and bond covenant, so as to provide cash working capital for normal and ordinary operations, and also provide some insurance against economic downturns and emergencies.

2.1.2 Minimum reserve funds, excluding bond reserve funds, will be as follows:

- *Operating Reserves* - Operating reserves are composed of Active Working Capital Cash and Operating Reserves. These reserves reflect the timing difference between billing for revenues and payment of expenses. The Operating Reserve can also be used to cover unanticipated cash operating expenses or lower than expected revenue collections. The basis for establishing a minimum total operating reserve level for each utility will be 45 days of the O&M expenses for that utility.
- *Catastrophe/Emergency Reserves* - The catastrophe/emergency reserve is essentially to protect the Township's utilities against the financial impacts from unanticipated emergencies. It provides funding for emergency repairs or failure of essential equipment that needs to be immediately replaced. At a minimum, the contingency reserve will be set equal to $250,000 for each utility (water and sewer). This level of contingency/emergency reserves will be deemed sufficient to finance the required cash flow until such time that adequate emergency financing can be secured from conventional outside resources.
- *Capital Reserves* - Capital reserves are used to fund the cash flow requirements of capital infrastructure construction. These reserves can increase and decrease significantly depending on funding sources available and the capital projects that are planned during the year. The Township should, however, set a minimum funding level for each utility as follows:

  Funding should be based upon the five (5) year average of the annual capital expenditures contained within the Township's capital improvement plan for each utility.

- *Bond Reserves* - Bond reserves may be legally required for specific debt issues. Bond reserves will be established in accordance with the legal covenants of the debt issue.
- *Water Tower Maintenance Reserves* – Due to the significant costs associated with maintaining the Township's water storage tower, it is prudent to include an amortized portion of these cost in each year's rates. Revenue collected for tower maintenance on an annual basis shall be reserved for the specific purpose intended. When tower

maintenance is required, the Township will have funds available to pay for this expense, without having to raise rates significantly.

2.1.3 The Township Board may establish other reserves for specific needs that are over and above the reserves noted above.

2.1.4 Maintenance of minimum reserves should not, on its own, trigger the need for a rate adjustment, (e.g. rates will be reviewed after two consecutive years of loss of revenue or diminishing reserves as a result of covering costs).

CASH FLOW:

2.2.1 Each utility should have annual net income (total revenue less O&M, administrative fees, debt service and capital projects funded from rates) greater than or equal to zero ($).

TARGET DEBT SERVICE COVERAGE:

2.3.1 The Township should have an annual debt service coverage ratio greater than or equal to 1.40 on all outstanding debt that carries a legal bond covenant. The Township will maintain a debt service coverage ratio of 1.30 on all outstanding debt service.

CAPITAL IMPROVEMENT FUNDING FROM RATES:

2.4.1 On an annual basis, each utility should adequately fund through its rates an amount for capital improvement funding.

2.4.2 To achieve policy 2.4.1, the following <u>minimum</u> funding for each utility should be included within the rates, and escalated (increased) over time to reflect the impacts of inflation and replacement cost of infrastructure.

- Water utility Annual depreciation expense, plus 10%
- Sewer utility Annual depreciation expense, plus 10%

2.4.3 As new large capital facilities are added to the Township's utility systems, consideration may be given to phasing-in the rate impact of policy 2.4.2.

3. Rates Should be Stable Over Time.

Financial stability of a utility also provides rate stability. Rate stability reinforces that costs are being managed and controlled, thereby gaining customers confidence of the management team's credibility.

3.1 Rates Should be Stable in Their Ability to Generate Sufficient Revenues, but also in the Customer's Perception of the Rate Changes from Year to Year.

3.1.1 The Township, on an annual basis, to assure that they provide sufficient revenues, should review rates.

3.1.2 Annual rate reviews will consider a five-year projected period to attempt to stabilize and minimize rates over time.

3.1.3 Needed rate adjustments will attempt to minimize impacts to customers by phasing-in large rate adjustments over time.

3.14 Rates should reflect pass-through components for costs that fluctuate *and* are not controllable by the Township, such as wholesale water and wastewater costs and energy costs.

3.1.5 A comprehensive rate study will be conducted by an outside party at least every 5 years in order to assess the fairness of the rates to the Township's ratepayers and to ensure that the necessary revenue is available for the Township's operating and capital needs.

4. The Township will maintain utility facilities at a level that will provide for the public well being and safety of the residents.

The Township's operating and maintenance (O&M) program will be maintained at a level that assures system reliability and efficiency. A well thought out maintenance program will extend the life of the system that will in turn reduce infrastructure costs in the long-term.

4.1 Sufficient funding should be made to provide for adequate maintenance and/or replacement of capital plant and equipment. This is to protect the Township's capital investment and to minimize future maintenance and replacement costs.

4.1.1 The Township will adequately fund costs for meeting current industry standards and regulations (e.g., Safe Drinking Water Act) in the annual financial review.

4.1.2 The Township will develop a 5-year capital improvement plan and update it annually. The capital improvement plan will be coordinated with the operating budget and consider impacts on ratepayers.

4.1.3 The Township will make all capital improvements according to an adopted Capital Improvement Program.

4.1.4 The Township's capital improvement program for each utility will consider mandated capital, growth related capital and replacement, reproduction and refurbishment capital.

5. The Township will consider the impacts of rates on its customers and financial and operating needs will be balanced against the rates and financial impacts.

Utility rates are the primary communication the Township has with its utility customers. Whenever possible, the Township's rates should be easy to understand, stable from year-to-year and minimize the overall impacts to customers.

5.1 Rates will be easy to understand and the Township will attempt to keep rate increases to a minimum.

5.1.1 Rates for each utility will be structured to promote understanding by the Township's customers (e.g., bills that are easy to hand calculate and understand).

5.1.2 Rate adjustments will be phased-in, over time, when large financial impacts to customers are anticipated (i.e., eliminate rate shock).

5.2 Rates will be reviewed for their overall competitiveness.

5.2.1 Any rate adjustment to a utility should consider the Township's "competitiveness" with neighboring utilities.

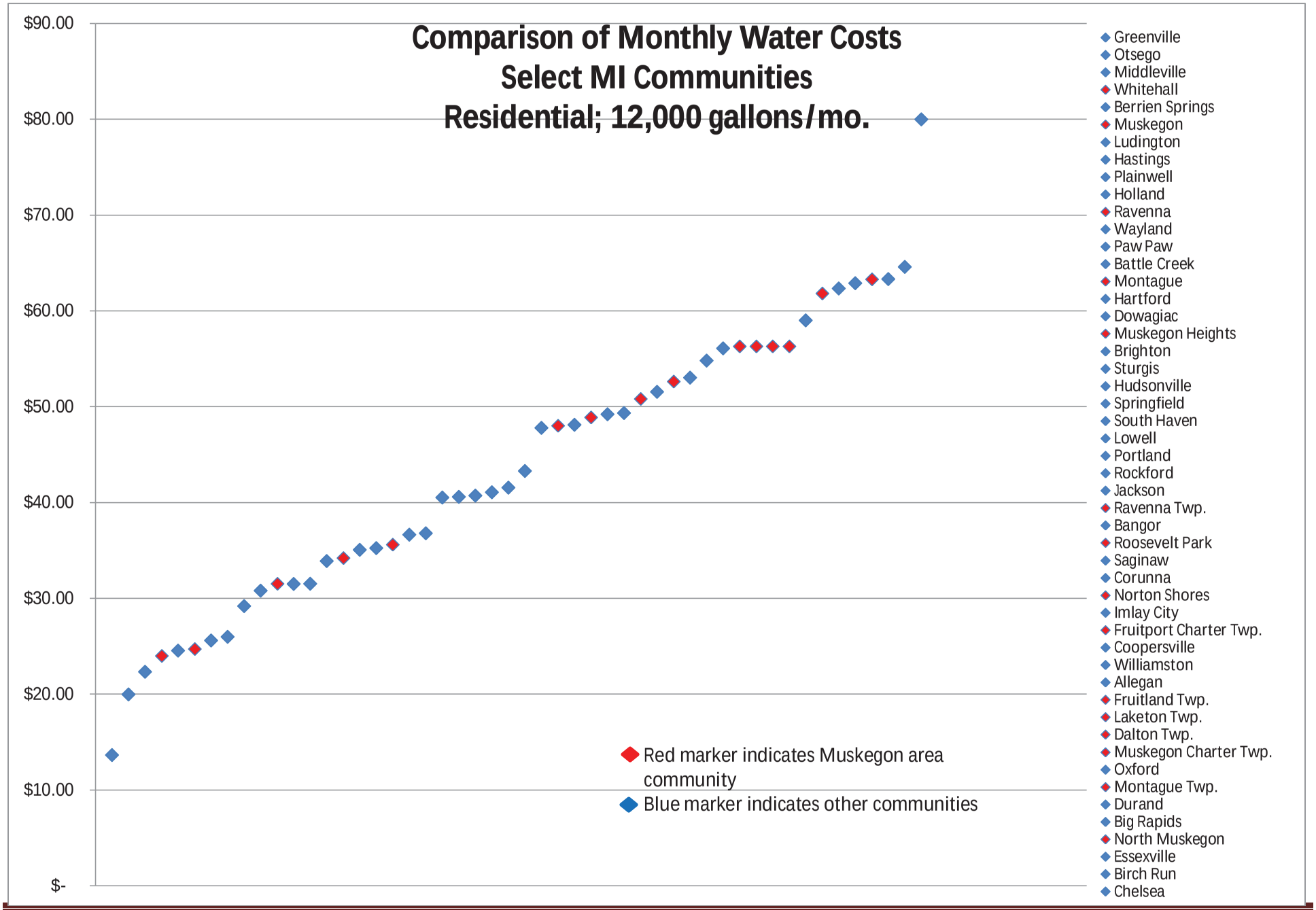
5.2.2 The "competitiveness" of the Township's rates should not necessarily take precedence over prudent financial and business practices.

APPENDIX C

Comparison of Monthly Water Costs
Select Michigan Communities

(see chart on following page)

Source: rate surveys conducted between January 2012 and September 2012 by City of Plainwell and Municipal Analytics. Rate information gathered through phone calls, faxes, website reviews and email. Water cost estimates based on residential customer cost for ¾" meter, consuming 12,000 gallons of water per month. Includes RTS, debt, commodity and other charges.


Comparison of Monthly Water Costs
Select MI Communities
Residential; 12,000 gallons/mo.
$90.00
$80.00
$70.00
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
$-
Red marker indicates Muskegon area community
Blue marker indicates other communities
Greenville
Otsego
Middleville
Whitehall
Berrien Springs
Muskegon
Ludington
Hastings
Plainwell
Holland
Ravenna
Wayland
Paw Paw
Battle Creek
Montague
Hartford
Dowagiac
Muskegon Heights
Brighton
Sturgis
Hudsonville
Springfield
South Haven
Lowell
Portland
Rockford
Jackson
Ravenna Twp.
Bangor
Roosevelt Park
Saginaw
Corunna
Norton Shores
Imlay City
Fruitport Charter Twp.
Coopersville
Williamston
Allegan
Fruitland Twp.
Laketon Twp.
Dalton Twp.
Muskegon Charter Twp.
Oxford
Montague Twp.
Durand
Big Rapids
North Muskegon
Essexville
Birch Run
Chelsea