

MEMORANDUM

DATE: July 7, 2015
TO: William Stowe, CEO and General Manager
FROM: Peggy Freese, CFO
SUBJECT: 2014 Cost of Service Study

The 2014 Cost of Service (COS) Study has been completed and the Executive Summary, Trends and Highlights, and Future Considerations are attached.

DMWW has been compiling COS studies annually since 1987. The COS is based on AWWA methodology outlined in the manual “Principles of Water Rates, Fees, and Charges,” also known as the “M1” manual. The M1 manual outlines two methodologies for calculating cost of service, base-extra capacity and the commodity-demand. We analyze costs using both methods. The attached report focuses on the base-extra capacity method as this is the method we use as the basis for setting rates. The complete COS contains the commodity-demand data in addition to the base-extra capacity data.

In the COS, the calculation of cost per 1,000 gallons is comprised of both operating and capital costs. Operating costs are actual expenditures. The capital cost component is a calculated amount based on the replacement cost depreciation of our assets. The replacement cost for each asset is calculated based on the original cost of the asset updated by the Engineering New Record (ENR) Construction Cost Index. The annual depreciation is calculated using the replacement cost and life expectancy of each asset. Collecting replacement cost depreciation through water rates allows DMWW to fund capital expenditures on a pay-as-we-go basis rather than incurring debt. For service areas outside the city of Des Moines, the cost calculation also includes a return on investment component.

Consumption in 2014 decreased by 8.21% from 2013 and was the lowest total annual consumption since 2000. Consumption in the Des Moines Inside City service area decreased 5.2%. Consumption by wholesale customers decreased 11%. Sales to the aggregate areas outside Des Moines were 57% of total consumption while sales to the Inside City service area were 43% of consumption.

Total costs increased 9.3% overall. Operating and maintenance costs increased 13.2% and capital replacement costs increased 0.86%. All operational areas saw an increase in costs in 2014.

Replacement cost depreciation accounts for 29% of the total cost of service. For Des Moines Inside City, 32% of the cost per 1,000 gallons is due to replacement cost depreciation. For the Purchased Capacity rate class, 26% of the cost is replacement cost depreciation.

The combination of increased costs and decreased consumption resulted in an increase in the cost per 1,000 gallons in nearly all service areas. Page 6 shows a summary of costs per 1,000 gallons for the years 2010 through 2014. Total cost per 1,000 gallons for Des Moines Inside City step 1 increased from \$3.32 to \$3.82. The Purchased Capacity cost increased from \$1.43 to \$1.75.

Following our review with the Finance and Audit Committee, the Board will receive and file the COS report at the July Board meeting. We will forward the report to our full service and wholesale customers and schedule a review meeting with them in August. Staff will do additional analysis and develop preliminary rate recommendations for discussion at the September Finance and Audit Committee meeting. Action on water rates for 2016 will occur at the October Board meeting. Our wholesale contracts require a six-month notice before a water rate change can be made.

DES MOINES WATER WORKS

COST OF SERVICE STUDY

FOR THE YEAR ENDING

DECEMBER 31, 2014



This report has been prepared by:

Donna Heckman, and members
of the Des Moines Water Works
Finance Staff

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Des Moines Water Works performs cost of service studies to determine the cost of providing a water supply to a variety of service areas and customer classes. The studies review costs for a one-year period in order to estimate the revenue required to fund future operating expenses and capital replacements. To that end this isn't a traditional accounting analysis but rather one that considers non-cash elements such as replacement cost depreciation and return on investment in addition to cash outlays. Des Moines Water Works uses the methodology developed in the American Water Works Association's "Principles of Water Rates, Fees, and Charges". This is commonly referred to as the M1 Manual. The base-extra capacity method and the commodity-demand method are two accepted approaches of analyzing the costs to serve various customer classes. Historically, the Des Moines Water Works has used the base-extra capacity method as the basis for setting rates. However, we also analyze costs using the commodity-demand method, which is more sensitive to the relationship between the peak and average demand characteristics of each customer class. Higher costs are assigned to the residential user by the commodity-demand method compared with the base-extra capacity method, demonstrating the extreme demand placed on our system by residential irrigation of lawns and gardens during the summer months. The focus of this Executive Summary is the base-extra capacity method; however, there is more information on the commodity-demand method in the full Cost of Service Report.

In the base-extra capacity method, costs of service are separated into four primary cost components: (1) base costs, (2) extra-capacity costs, (3) customer costs, and (4) direct fire-protection costs. Base costs are those that vary with the total quantity of water produced plus operation and maintenance expenses and capital costs associated with average demand characteristics. Extra-capacity costs are the operation and maintenance expenses and capital costs for system capacity beyond the average rate of use. Extra capacity costs are further divided between maximum-day demand and maximum-hour

demand. Customer-related costs stem from services to customers, regardless of the amount of water used or the demand on the system. They include meter reading, billing, and customer service activities. Finally, fire protection costs include the maintenance and replacement costs of public fire hydrants and the mains and valves that serve them. The allocation of replacement cost depreciation, within the above components, is based upon a combination of percent of total consumption, percent of total customer accounts and percent of total hydrants.

In addition to the Des Moines service area, the Des Moines Water Works provides water under total service agreements to unincorporated Polk County, Windsor Heights, Warren County, Pleasant Hill, Runnells, Cumming, Alleman, Polk County Rural Water District #1(PCRWD#1) and the Berwick Water District service areas. The Des Moines service area is further divided into Inside City, Outside City (accounts outside Des Moines' city limits but not in one of the other eight service areas) and Wholesale (accounts that buy water on a wholesale basis and resell it to their own customers). The base-extra capacity method distributes costs to each service area and to three progressive rate steps in service areas with significant commercial and industrial consumption. The first and second rate steps have consumption thresholds that result in a tiered or step-like rate structure - when a customer's consumption exceeds the first step threshold, the customer progresses to the second step and so on. It is presumed that most residential customers will remain in the first step. While commercial and industrial customers have consumption in the first step, many have consumption in the second and third steps.

Overall operating and maintenance costs increased 13.2% following 4.9% higher costs in 2013. All operational areas saw an increase in expenses during 2014. Water Production saw a 21.2% increase in costs in 2014 over 2013. The Pipelines operational area had a cost increase in 2014 with costs increasing 18.1%. After an increase of 8.6% in 2013, Customer Service costs increased 7.40% in 2014. Administrative costs changed from 2013 with a 1.5% increase in costs. There was an increase of 1.6% in the Consumer

Price Index for 2014. A chart on page 15 in the Trends and Highlights section shows cost detail for the years 2011 thru 2014.

Capital replacement costs increased slightly with an increase of 0.86% from 2013 to 2014. The Construction Cost Index used to measure the relative change in cost increased 2.69% in 2014 after a 2.72% increase in 2013.

In the 2014 study, total cost (combined O&M and replacement cost depreciation) increased 9.30% over 2013.

For the second straight year, we saw a reduction in overall consumption. Consumption was 8.21% less than consumption in 2013. Des Moines Inside City consumption decreased by 5.2%. A more detailed analysis of trends in cost, revenue and consumption patterns over the past five years is presented in the following section.

The summary on page 5 compares the total costs for each service area and customer class. The results of the study show that after adjusting both cost and revenue for the effect of monthly availability charges, total revenue from the rate structure for 2014 was 19.3% below costs compared to 2013 when costs exceeded revenue by 4.3% and 2012 when revenue exceeded costs by 4.6%.

The calculation of cost per 1,000 gallons is impacted by costs and consumption. In 2014, costs increased and consumption decreased. The fact that these two components went in opposite directions had a dramatic impact on the cost per 1,000 gallons.

Total Cost and Revenue Comparison
(Availability charge revenue and corresponding costs are excluded)
2012 Through 2014

| | 2012 | | | | 2013 | | | | 2014 | | | |
|-----------------------|--------------------------------|--------------------------|---------------------|------------|--------------------------------|--------------------------|---------------------|------------|--------------------------------|--------------------------|---------------------|------------|
| | Consumption (1,000 gallons) | Base-Extra Cap. Costs | TOTAL REVENUE | % Variance | Consumption (1,000 gallons) | Base-Extra Cap. Costs | TOTAL REVENUE | % Variance | Consumption (1,000 gallons) | Base-Extra Cap. Costs | TOTAL REVENUE | % Variance |
| Inside City: | | | | | | | | | | | | |
| Step 1 (Residential): | | \$14,621,954 | \$13,366,408 | | | \$15,669,454 | \$14,614,914 | | | \$17,401,338 | \$14,266,150 | |
| Step 2 (Commercial): | | 1,302,467 | 1,374,482 | | | 1,366,651 | 1,272,615 | | | 1,565,294 | 1,279,255 | |
| Step 3 (Industrial): | | 1,901,308 | 3,122,041 | | | 1,932,052 | 1,849,080 | | | 2,053,716 | 1,674,098 | |
| Subtotal | 6,847,407 | \$17,825,729 | \$17,862,931 | -0.21% | 6,531,927 | \$18,968,157 | \$17,736,609 | 6.94% | 6,194,045 | \$21,020,348 | \$17,219,503 | 22.07% |
| Outside City: | | | | | | | | | | | | |
| Step 1 (Residential): | | \$264,470 | \$274,827 | | | \$279,198 | \$260,216 | | | \$302,336 | \$250,995 | |
| Step 2 (Commercial): | | 14,963 | 16,648 | | | 17,855 | 17,641 | | | 17,097 | 14,680 | |
| Step 3 (Industrial): | | 4,289 | 4,808 | | | 1,486 | 1,461 | | | 1,169 | 968 | |
| Subtotal | 93,165 | \$283,722 | \$296,283 | -4.24% | 87,065 | \$298,539 | \$279,318 | 6.88% | 79,808 | \$320,602 | \$266,643 | 20.24% |
| Wholesale: | | | | | | | | | | | | |
| With Storage: | | \$2,343,395 | \$2,534,523 | | | \$2,327,670 | \$2,343,034 | | | \$2,299,163 | \$2,079,866 | |
| Off Peak: | | 250,955 | 277,279 | | | 126,989 | 125,401 | | | 81,834 | 68,618 | |
| Purchased Capacity: | | 9,788,434 | 10,776,035 | | | 10,166,615 | 9,953,329 | | | 11,161,866 | 9,226,000 | |
| Subtotal | 8,713,912 | \$12,382,784 | \$13,587,837 | -8.87% | 7,957,097 | \$12,621,274 | \$12,421,764 | 1.61% | 7,080,854 | \$13,542,863 | \$11,374,484 | 19.06% |
| Polk County: | | | | | | | | | | | | |
| Step 1 (Residential): | | \$2,416,938 | \$2,610,409 | | | \$2,660,264 | \$2,545,806 | | | \$2,788,341 | \$2,554,705 | |
| Step 2 (Commercial): | | 124,608 | 147,194 | | | 136,841 | 163,726 | | | 152,068 | 164,279 | |
| Step 3 (Industrial): | | 573,322 | 653,512 | | | 501,507 | 544,722 | | | 535,051 | 512,287 | |
| Subtotal | 759,623 | \$3,114,868 | \$3,411,115 | -8.68% | 693,540 | \$3,298,612 | \$3,254,254 | 1.36% | 640,679 | \$3,475,460 | \$3,231,271 | 7.56% |
| Windsor Heights: | 132,058 | \$380,327 | \$411,901 | -7.67% | 124,607 | \$421,172 | \$388,890 | 8.30% | 114,520 | \$487,855 | \$371,647 | 31.27% |
| Warren County: | | | | | | | | | | | | |
| Step 1 (Residential): | | \$40,190 | \$38,184 | | | \$41,911 | \$41,817 | | | \$46,234 | \$41,873 | |
| Step 2 (Commercial): | | 13,915 | 11,574 | | | 14,064 | 12,195 | | | 11,071 | 8,664 | |
| Subtotal | 5,160 | \$54,105 | \$49,758 | 8.74% | 5,279 | \$55,975 | \$54,012 | 3.63% | 4,624 | \$57,305 | \$50,537 | 13.39% |
| Pleasant Hill: | | | | | | | | | | | | |
| Step 1 (Residential): | | \$812,585 | \$877,857 | | | \$923,762 | \$898,086 | | | \$1,002,385 | \$910,791 | |
| Step 2 (Commercial): | | 404,892 | 394,831 | | | 510,236 | 490,231 | | | 466,731 | 400,686 | |
| Subtotal | 268,375 | \$1,217,477 | \$1,272,688 | -4.34% | 276,925 | \$1,433,998 | \$1,388,317 | 3.29% | 242,041 | \$1,469,116 | \$1,311,477 | 12.02% |
| Runnells: | | | | | | | | | | | | |
| Water | | \$42,335 | \$49,772 | | | \$48,406 | \$48,396 | | | \$42,061 | \$49,102 | |
| Waste Water | | 38,245 | 48,191 | | | 48,499 | 49,298 | | | 38,631 | 49,268 | |
| Subtotal | 9,953 | \$80,580 | \$97,963 | -17.74% | 9,291 | \$96,905 | \$97,694 | -0.81% | 9,026 | \$80,692 | \$98,370 | -17.97% |
| Cumming: | 14,075 | \$28,766 | \$67,967 | -57.68% | 13,241 | \$41,312 | \$69,203 | -40.30% | 10,049 | \$54,265 | \$53,987 | 0.51% |
| Alleman | 11,419 | \$49,675 | \$62,743 | -20.83% | 10,719 | \$74,497 | \$62,664 | 18.88% | 9,108 | \$80,241 | \$55,839 | 43.70% |
| PCRWD#1 | | | | | 24,352 | \$81,092 | \$101,674 | -20.24% | 24,141 | \$114,911 | \$93,591 | 22.78% |
| Berwick | | | | | | | | | 32,930 | \$183,420 | \$132,056 | 38.90% |
| Total | 16,855,147 | \$35,418,033 | \$37,121,186 | | 15,734,043 | \$37,391,533 | \$35,854,399 | | 14,441,825 | \$40,887,078 | \$34,259,405 | |

Costs were 4.6% < revenue in 2012

Costs were 4.3% > revenue in 2013

Costs were 19.3% > revenue in 2014

The table below shows the previous four years' costs compared with the 2014 cost per thousand gallons.

COSTS PER 1,000 GALLONS
Base-Extra Capacity Method

| | 2010 | 2011 | 2012 | 2013 | 2014 | % Inc/(Dec) 2013 to 2014 | Average Annual Increase | Current Rate |
|---------------------------|-------|-------|-------|-------|-------|-----------------------------|-------------------------------|-----------------|
| Des Moines Inside | | | | | | | | |
| Residential (Step 1) | 3.06 | 3.12 | 3.01 | 3.32 | 3.82 | 15.06% | 6.21% | 3.40 |
| Commercial (Step 2) | 2.01 | 2.04 | 1.92 | 2.18 | 2.58 | 18.35% | 7.09% | 2.28 |
| Industrial (Step 3) | 1.45 | 1.53 | 1.45 | 1.63 | 1.98 | 21.47% | 9.14% | 1.75 |
| Des Moines Outside | | | | | | | | |
| Residential (Step 1) | 3.29 | 3.33 | 3.16 | 3.53 | 4.11 | 16.43% | 6.23% | 3.69 |
| Commercial (Step 2) | 2.32 | 2.32 | 2.22 | 2.50 | 2.99 | 19.60% | 7.22% | 2.77 |
| Industrial (Step 3) | 1.60 | 1.68 | 1.57 | 1.79 | 2.21 | 23.46% | 9.53% | 1.98 |
| Wholesale | | | | | | | | |
| Purchased Capacity | 1.30 | 1.35 | 1.27 | 1.43 | 1.75 | 22.38% | 8.65% | 1.53 |
| With Storage | 2.83 | 2.94 | 2.82 | 3.03 | 3.48 | 14.85% | 5.74% | 3.33 |
| Off Peak | 1.47 | 1.52 | 1.43 | 1.60 | 1.95 | 21.88% | 8.16% | 1.72 |
| Polk County | | | | | | | | |
| Residential (Step 1) | 5.64 | 5.70 | 5.11 | 5.85 | 6.58 | 12.48% | 4.17% | 6.69 |
| Commercial (Step 2) | 3.43 | 3.30 | 2.92 | 3.03 | 3.52 | 16.17% | 0.66% | 4.10 |
| Industrial (Step 3) | 2.50 | 2.61 | 2.35 | 2.59 | 3.08 | 18.92% | 5.80% | 3.20 |
| Windsor Heights | 3.10 | 3.05 | 2.88 | 3.38 | 4.26 | 26.04% | 9.35% | 3.46 |
| Warren County | | | | | | | | |
| Residential (Step 1) | 13.00 | 13.20 | 10.96 | 11.07 | 12.80 | 15.63% | -0.38% | 12.54 |
| Commercial (Step 2) | 10.94 | 11.25 | 9.32 | 9.42 | 10.94 | 16.14% | 0.00% | 9.21 |
| Pleasant Hill | | | | | | | | |
| Residential (Step 1) | 5.43 | 5.47 | 4.66 | 5.40 | 6.27 | 16.30% | 3.91% | 6.23 |
| Commercial (Step 2) | 5.03 | 4.98 | 4.31 | 4.82 | 5.68 | 17.84% | 3.23% | 5.25 |
| Runnells | | | | | | | | |
| Water | 4.93 | 4.35 | 4.25 | 5.21 | 4.66 | -10.36% | -1.32% | 5.91 |
| Sewer | 5.41 | 3.60 | 3.84 | 5.22 | 4.28 | -18.01% | -5.22% | 6.41 |
| Cumming | 2.25 | 2.57 | 2.04 | 3.12 | 5.40 | 73.40% | 35.11% | 5.81 |
| Alleman | 5.56 | 5.23 | 4.35 | 6.95 | 8.81 | 26.76% | 14.61% | 6.59 |
| PCRWD#1 | | | | 3.33 | 4.76 | 42.94% | | 4.00 |
| Berwick | | | | | 5.57 | | | 4.00 |

TRENDS AND HIGHLIGHTS

TRENDS AND HIGHLIGHTS

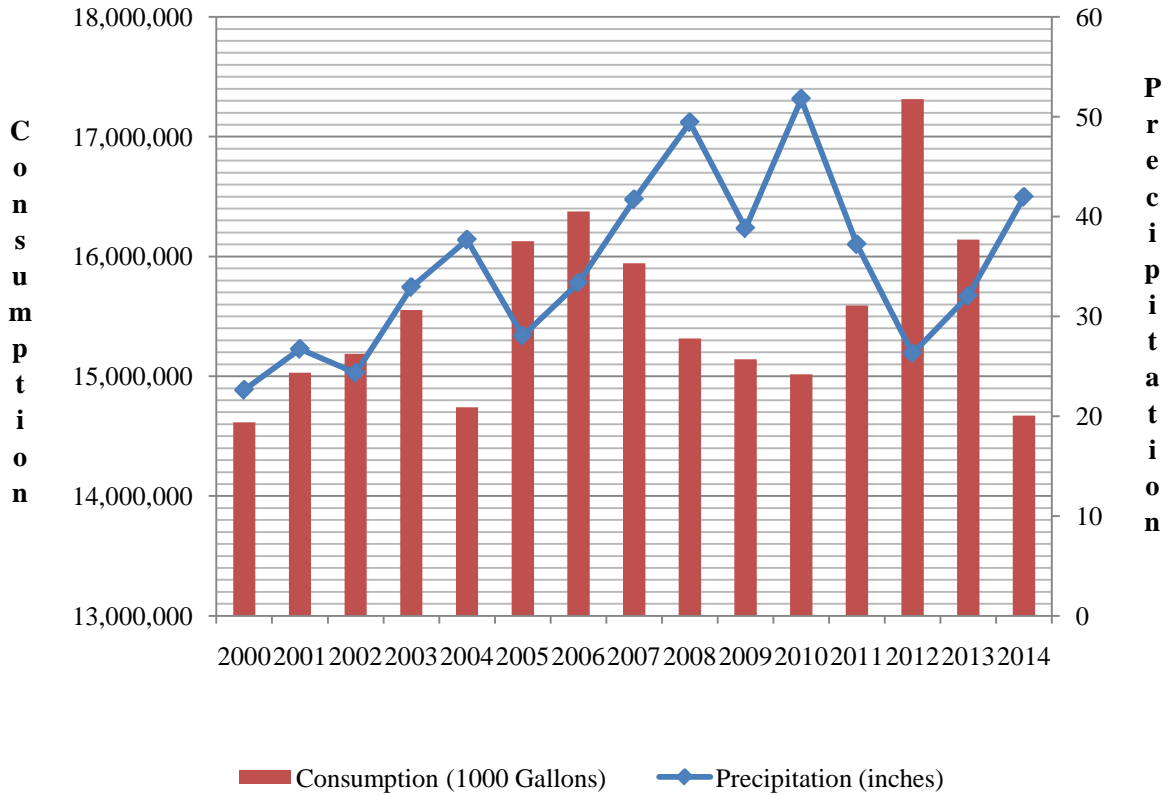
There are two main components evaluated in Trends and Highlights; consumption and total costs. While consumption is important in evaluating a per thousand gallon cost, it is the total cost components that are our main focus in trending. There are two separate components in total costs; operating & maintenance and replacement cost depreciation.

Consumption

Following a record pumpage year in 2012, consumption decreased in almost all service areas in 2013. This decrease in consumption continued throughout 2014. Because of their small relative size, statistics for the Warren County, Runnells, Cumming, Alleman, PCRWD#1 and Berwick Water District service areas are included with Outside City in these illustrations unless noted otherwise. Generally speaking, pumpage refers to the total amount of water that left the treatment plants; whereas, consumption refers to the amount of water billed to our customers. The difference between the two is often referred to as lost water.

The chart on page 9 shows the historical billed consumption versus the amount of precipitation recorded in the Des Moines Metro area. Total consumption in 2014 (14.8 billion gallons) was the lowest it's been since 2000. While rain patterns can be different month to month in any given year, this chart shows a correlation between years with high precipitation patterns and low water consumption.

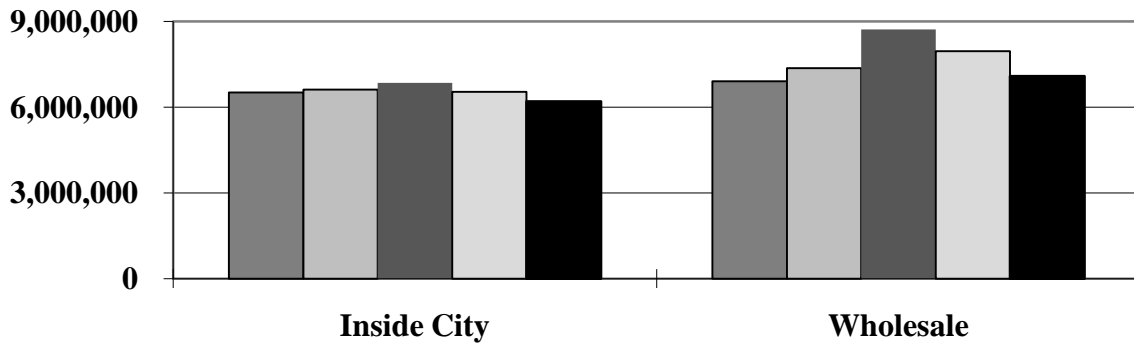
Historical Consumption vs. Precipitation

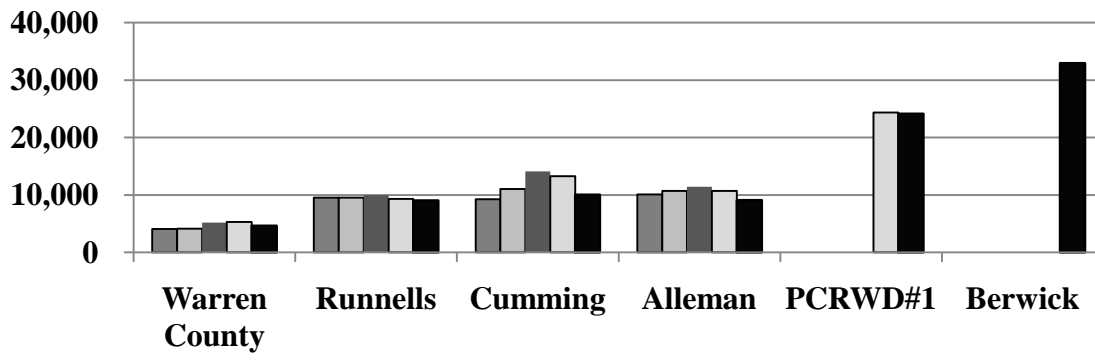
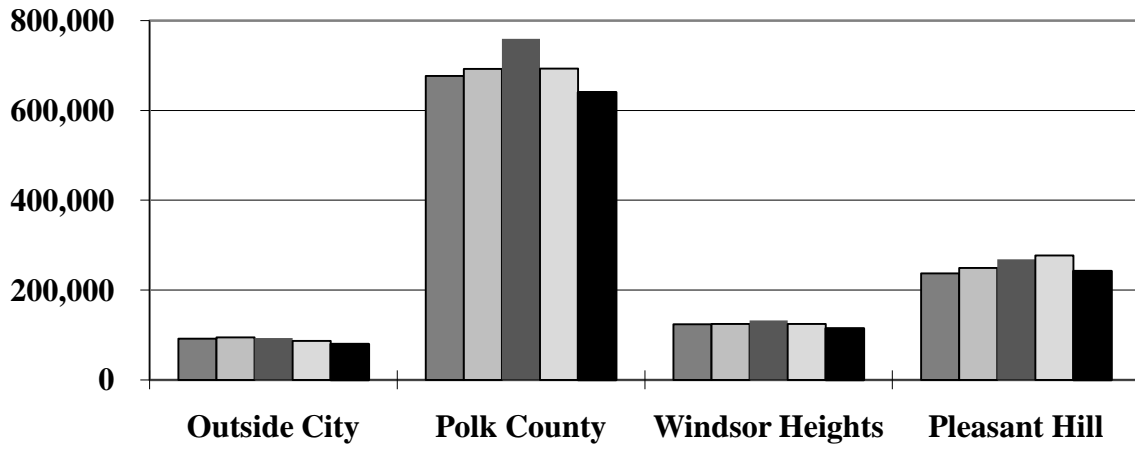


The charts below illustrate the consumption patterns from 2010 thru 2014 for the various service areas:

Service Area Consumption (in 1000 Gallons)

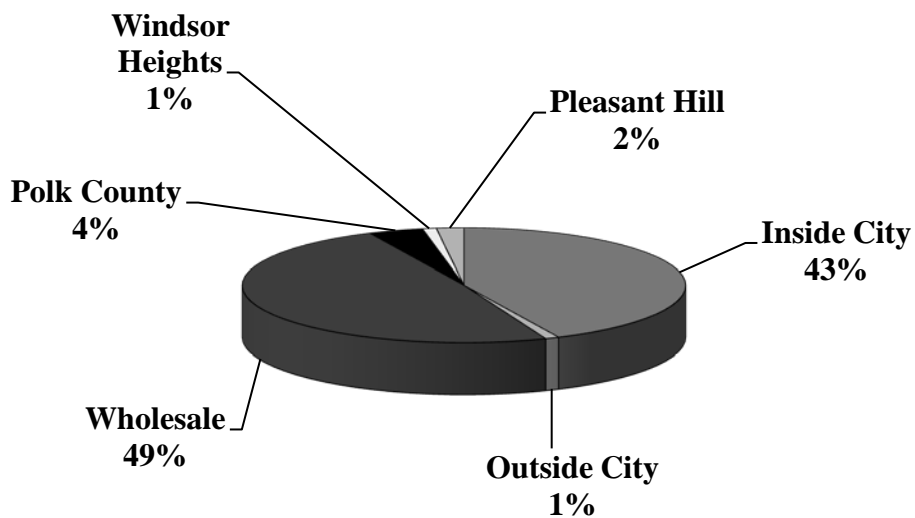
■ 2010 ■ 2011 ■ 2012 ■ 2013 ■ 2014



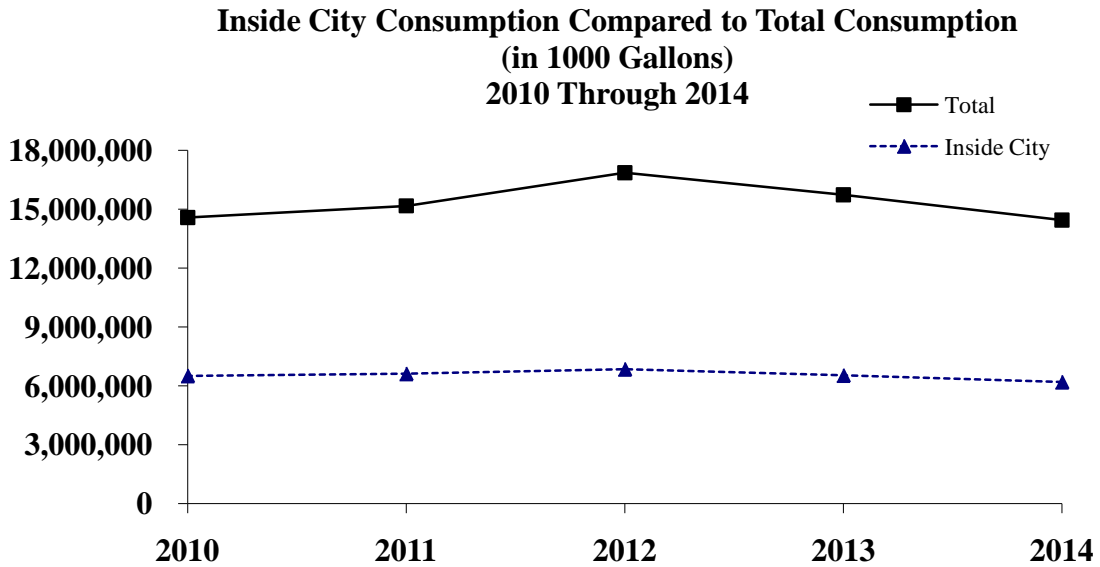


The percentage of water billed to Wholesale customers dropped slightly to 49% of total water billed.

2014 Consumption

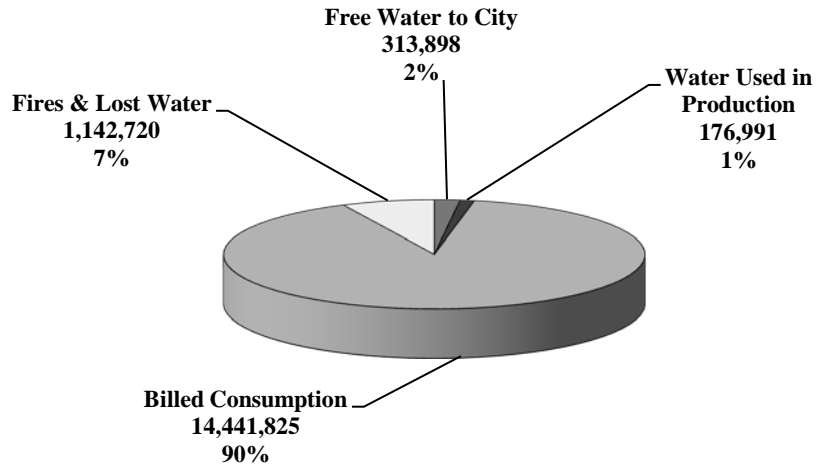


At 57%, sales to the aggregate of all areas outside Des Moines exceeded Inside City billed consumption which was 43% of the total. In comparison, 2013 consumption was comprised of 58% to Outside City and 42% of consumption was Des Moines Inside City. The chart below illustrates that Des Moines Inside City consumption is relatively flat, even in years of high pumpage.



The chart on the next page shows that a total of 90% of water produced and pumped from the three treatment plants was billed to customers. Free water supplied to the City of Des Moines was 2% of the total and water used in production was 1% of the total. The remaining unbilled water (7%) was used in fighting fires or lost to main breaks and other leakage. This percentage is kept to a minimum by leak detection efforts. The average annual fire/lost water percentage from 2010 thru 2014 has been 7% of the total pumpage.

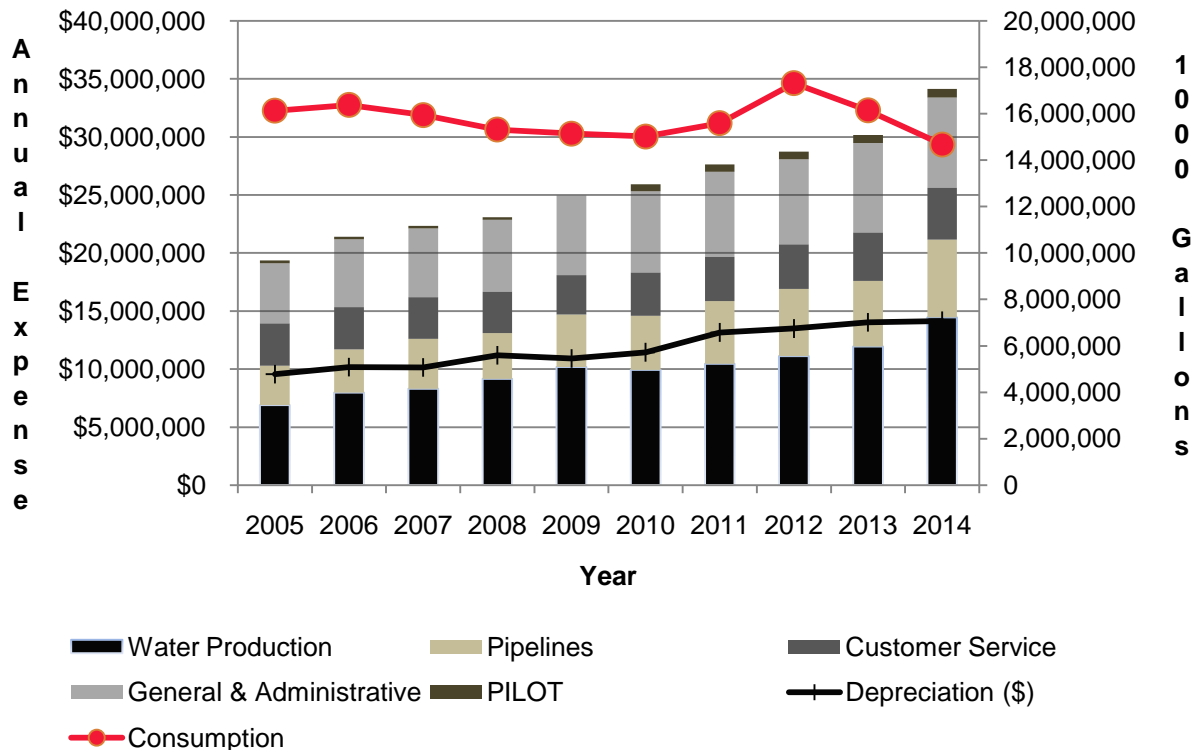
Distribution of Water Produced in 2014 (in 1000 Gallons)



Costs

There are two main types of costs in this study; operating & maintenance and replacement cost depreciation. The chart below illustrates how these costs increase yearly and how this increase is not correlated to consumption.

Historical Expenses vs. Consumption

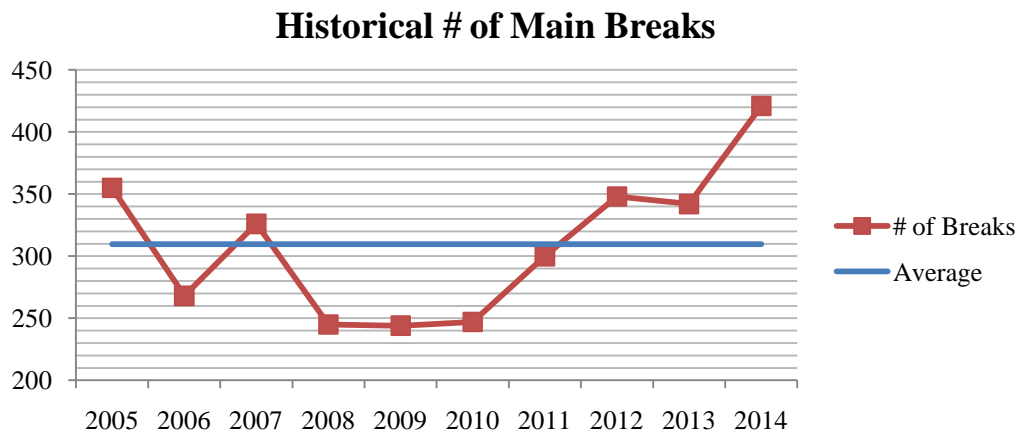


Operating and Maintenance Costs

Annual operating and maintenance costs increased 13.2% in 2014 compared with an increase of 4.9% seen in 2013. All operating and maintenance costs are allocated to operational areas of cost of service; Water Production, Pipelines, Customer Service and Administrative.

Water Production costs increased 21.23% in 2014. Most of this was due to an increase in the costs to remove residuals at the L.D. McMullen Water Treatment Plant (\$1.5M).

For the first time in history, DMWW had to operate the Nitrate Removal Facility during the winter months. Normally during this time, we do not see high levels of nitrates in our source water. In December 2014 (and continuing into 2015), we operated an average of 3.4 vessels per day for 28 days for a cost of nearly \$100,000. While some overtime labor was incurred in dealing with nitrate concentration levels, labor hours were also diverted from other maintenance projects in order to facilitate the nitrate issue. Pipeline costs increased 17.8% during 2014. This was mainly due to an increase in expenses associated with broken main repairs (\$1M). Almost all of this increase (\$865K) was directly expensed to the Des Moines Inside City service area. For Inside City of Des Moines, these additional costs were allocated between Max Day (\$600K), Max Hour (\$90K), Customer Related (140K) and Fire Protection (\$35K) expenses within the study. The other service areas would have seen a similar breakdown. Below is a chart showing the historical number of main breaks compared to the average.



Administrative costs remained relatively flat with a 0.76% increase in costs in 2014 over 2013. Customer Related costs also increased 7.4% over 2013. Most of this increase was in labor and labor related expenses. This was the first full year of additional costs related to adding FTE's in 2013. The average annual increase in total cost from 2011 to 2014 was 7.8%. The Consumer Price Index increased an average of 1.6% yearly over the same period. The table on the next page shows annual operating and maintenance costs by function from 2011 through 2014.

OPERATING & MAINTENANCE COST ALLOCATION

| | 2011 | 2012 | 2013 | 2014 | % Increase 11 - 14 | % Increase 13 - 14 |
|-------------------------|--------------|--------------|--------------|--------------|-----------------------|--------------------------|
| Water Production | | | | | | |
| Power | \$1,192,107 | \$1,446,755 | \$1,569,748 | \$1,627,288 | 36.51% | 3.67% |
| Chemicals | 3,872,475 | 4,073,656 | 4,006,073 | 4,257,573 | 9.94% | 6.28% |
| Ops, Maint. | 5,391,785 | 5,573,439 | 6,344,557 | 8,565,803 | 58.87% | 35.01% |
| Total | \$10,456,367 | \$11,093,850 | \$11,920,378 | \$14,450,664 | 38.20% | 21.23% |
| Pipelines | | | | | | |
| Des Moines | \$4,810,050 | \$5,239,247 | \$5,056,416 | \$5,970,215 | 24.12% | 18.07% |
| Polk County | 432,064 | 394,013 | 415,373 | 451,377 | 4.47% | 8.67% |
| Windsor Heights | 34,736 | 40,549 | 53,032 | 78,257 | 125.29% | 47.57% |
| Pleasant Hill | 74,164 | 88,915 | 75,982 | 71,759 | -3.24% | -5.56% |
| Runnells | 34,020 | 40,845 | 49,300 | 39,394 | 15.80% | -20.09% |
| Cumming | 7,856 | 7,274 | 3,798 | 12,215 | 55.49% | 221.62% |
| Alleman | 5,213 | 4,272 | 5,460 | 5,481 | 5.14% | 0.38% |
| PCRWD#1 | | | 14,489 | 12,474 | 0.00% | -13.91% |
| Berwick | | | | 44,251 | 0.00% | 0.00% |
| Total | \$5,398,103 | \$5,815,115 | \$5,673,850 | \$6,685,423 | 23.85% | 17.83% |
| Customer Service | | | | | | |
| Des Moines | \$3,159,432 | \$3,215,620 | \$3,481,866 | \$3,777,838 | 19.57% | 8.50% |
| Polk County | 335,493 | 341,680 | 361,733 | 359,975 | 7.30% | -0.49% |
| Windsor Heights | 78,973 | 78,903 | 83,877 | 91,211 | 15.50% | 8.74% |
| Pleasant Hill | 189,296 | 166,242 | 176,558 | 172,725 | -8.75% | -2.17% |
| Runnells | 9,046 | 6,788 | 8,431 | 7,759 | -14.23% | -7.97% |
| Cumming | 6,011 | 4,890 | 6,497 | 5,941 | -1.16% | -8.56% |
| Alleman | 8,899 | 6,308 | 7,032 | 6,675 | -24.99% | -5.08% |
| PCRWD#1 | | | 23,352 | 24,539 | 0.00% | 5.08% |
| Berwick | | | | 9,921 | 0.00% | 0.00% |
| Total | \$3,787,150 | \$3,820,431 | \$4,149,346 | \$4,456,584 | 17.68% | 7.40% |
| General & Admin | \$7,330,872 | \$7,325,816 | \$7,715,901 | \$7,774,791 | 6.06% | 0.76% |
| PILOT | \$647,645 | \$675,381 | \$688,445 | \$755,340 | 16.63% | 9.72% |
| TOTAL | \$27,620,137 | \$28,730,593 | \$30,147,920 | \$34,122,802 | 23.54% | 13.18% |

Total costs increased during the three-year period by \$6.4 million and, as stated above, were an average 7.8% higher annually. Water Production costs were \$4.0 million higher than at the beginning of the three-year period, a 12.7% average annual increase.

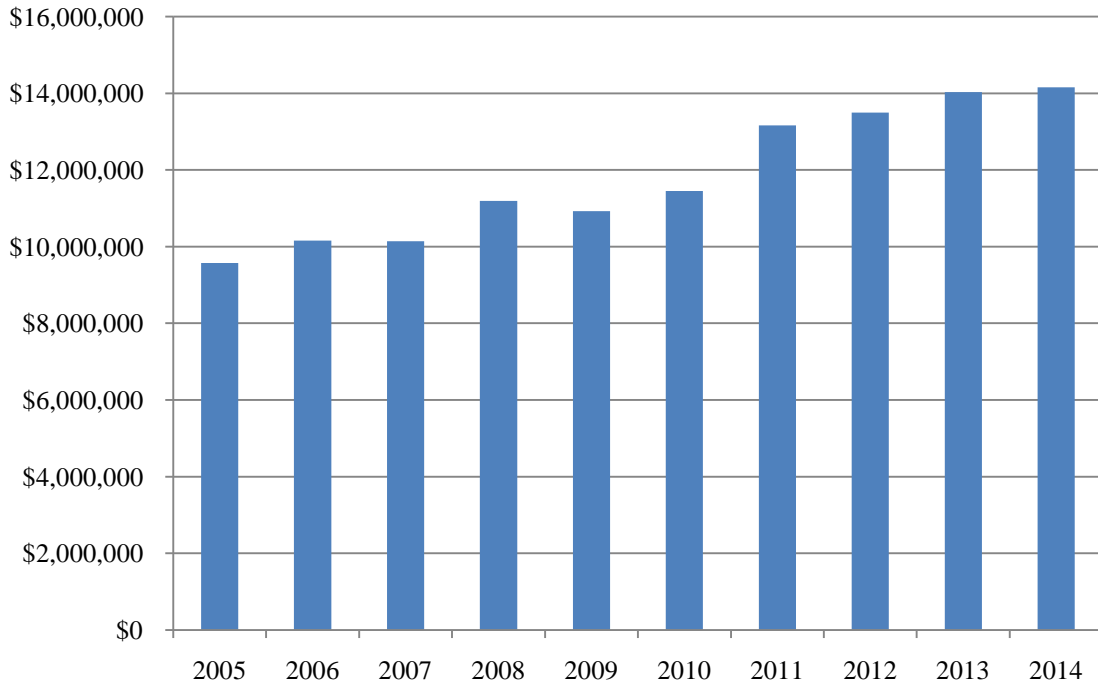
Administrative costs, including Finance, Insurance, Information Services, Human Resources, Engineering and Office of the CEO averaged 2% higher, an increase of \$0.4 million from 2011 to 2014. Pipelines costs increased \$1.3 million, averaging a 8.0% increase annually. Customer Service costs were \$0.7 million higher over the period, increasing at an average rate of 5.9% annually.

Replacement Cost Depreciation

Historically the largest component of the costs to provide water to our customers has been replacement cost depreciation. In 2014, replacement cost depreciation is 29% of our total overall costs. DMWW includes replacement cost depreciation in our rate structure to collect funds on an ongoing basis to replace assets as opposed to borrowing money to pay for asset replacement.

The chart on the following page shows replacement cost depreciation for the years 2005 through 2014. Over this period, replacement cost depreciation has grown from \$9.5 million to approximately \$14.1 million and it will likely continue to grow. Two factors contribute to the continued increases: the addition of assets and the increase in the *Engineering News Record* Construction Cost Index (ENR CCI). The ENR CCI has increased every year since 1935. Over the last 10 years, we have averaged over \$10 million dollars in yearly asset additions. The water industry relies heavily on infrastructure and keeping the infrastructure in good condition requires ongoing reinvestment.

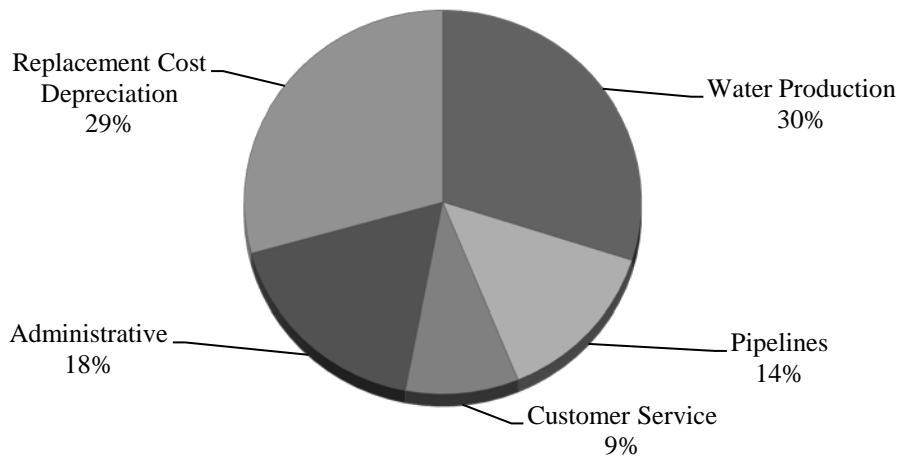
Replacement Cost Depreciation 2005 thru 2014



Overall Cost Analysis

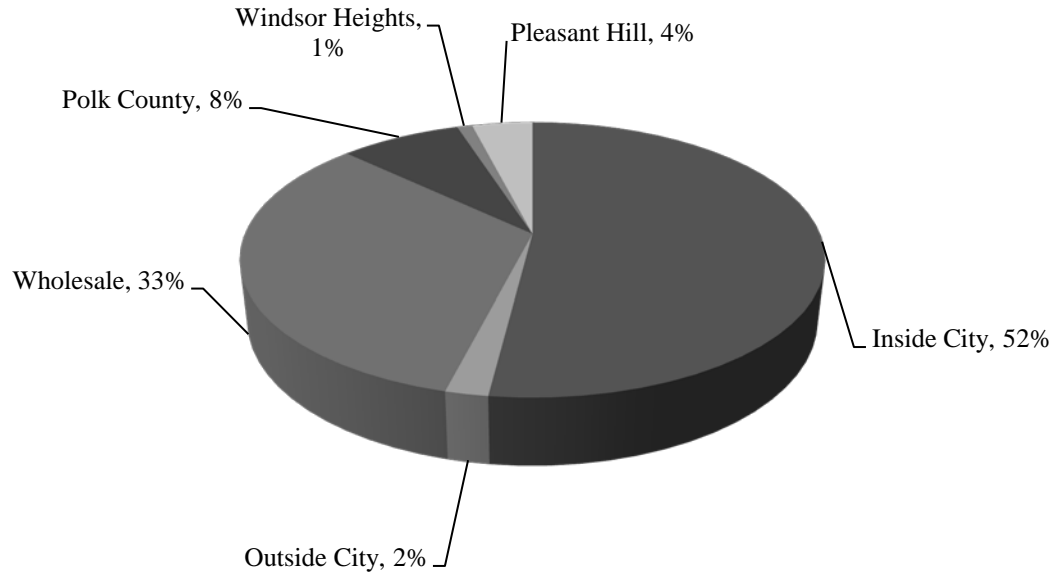
The total distribution of costs in 2014 changed slightly, with an increase in production cost up 3% to 30% of total. Pipeline costs went up 1% to 14% of total costs. Customer Service and Administrative remained flat for 2014. Replacement Cost Depreciation went down 3% to 29% of the total.

2014 Total Costs



The following chart shows the 2014 Total Costs allocated to the various service areas. This chart is similar to the 2014 Revenue chart on page 21. This is to be expected as rates are established based on costs.

2014 Total Costs by Service Area



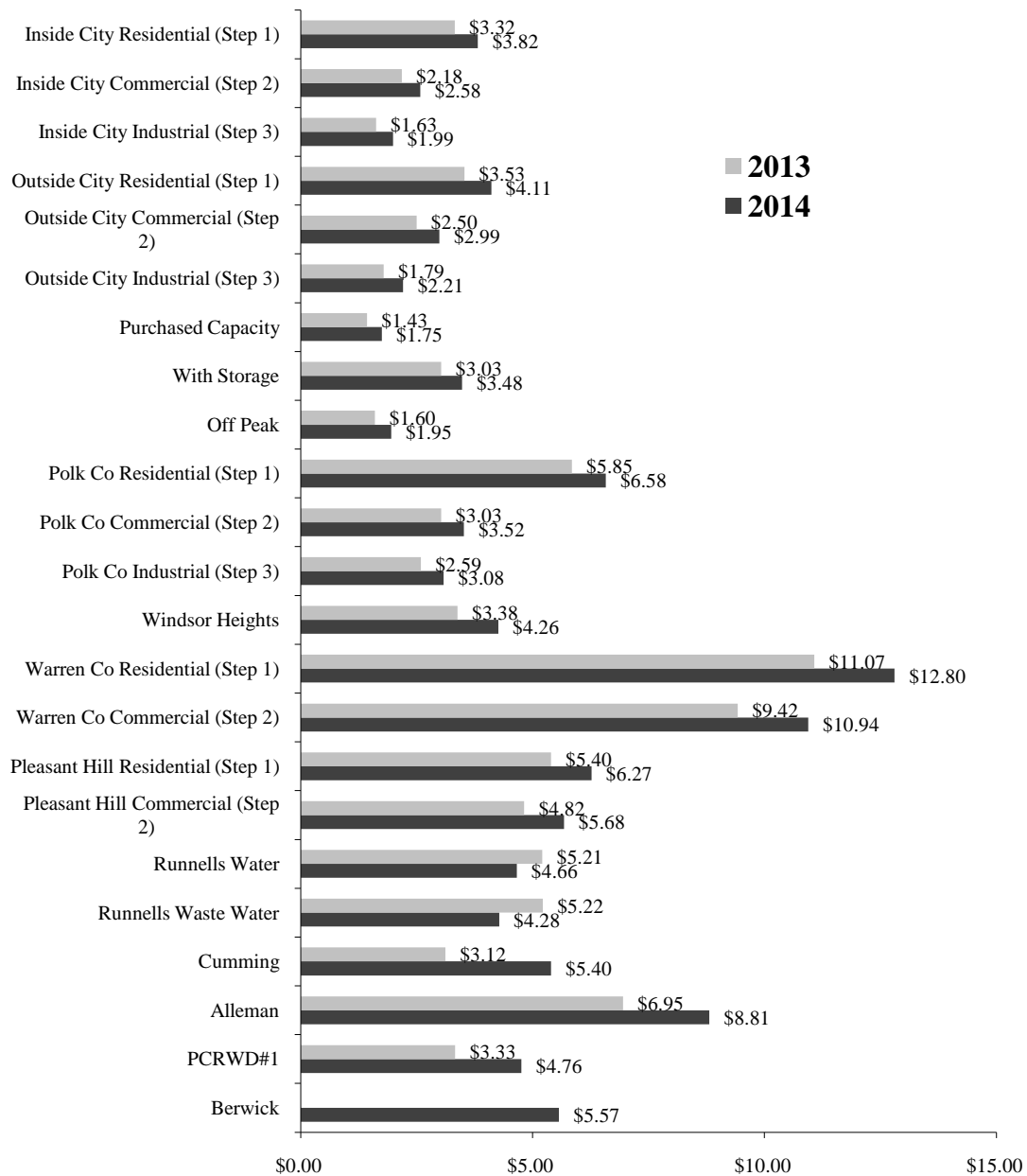
Costs per 1,000 Gallons

The 13.2% increase in operating and maintenance costs along with a .86% increase in capital replacement costs results in a net 9.3% increase in overall costs. The Construction Cost Index used to measure the relative change in capital replacement costs increased 2.69% in 2014. The rate of return on original assets in this study is calculated at 5.00%.

The chart (on page 19) of costs per 1,000 gallons compares the complete results of the base extra capacity allocation method from the 2014 Study with the corresponding results from the 2013 Study. As previously stated, costs per 1,000 gallons were higher across the board because of decreased consumption and increased costs.

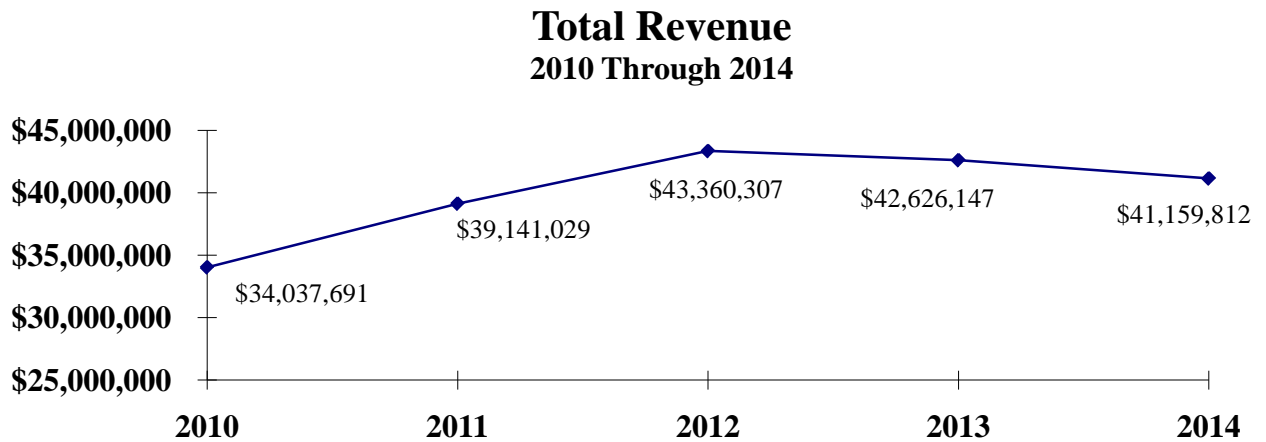
Costs in the Residential rate class ranged from 12.5% higher for Polk County to 73.4% higher for Cumming. Costs in the Commercial rate class per 1,000 gallons saw increased costs as well from Polk County being 16.2% higher to Des Moines Inside City having 15.1% higher costs. The Industrial rate class showed increases as well with Des Moines Inside City up 21.5%. Wholesale costs per 1,000 gallons were higher by 22.4% for Purchased Capacity, 21.9% for Off Peak and 14.9% for With Storage.

**Base-Extra Capacity
Costs per 1,000 Gallons
(Costs Exclude Availability Charges)**

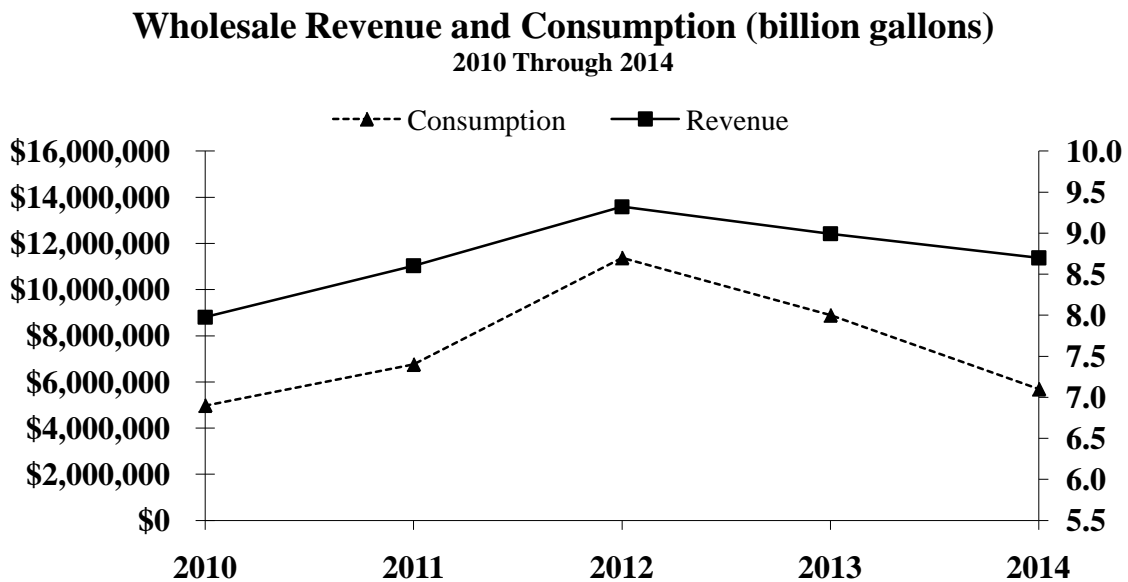


Revenue

Even with across the board rate increases in 2014, the 8.2% decrease in consumption resulted in an overall decline in revenue.



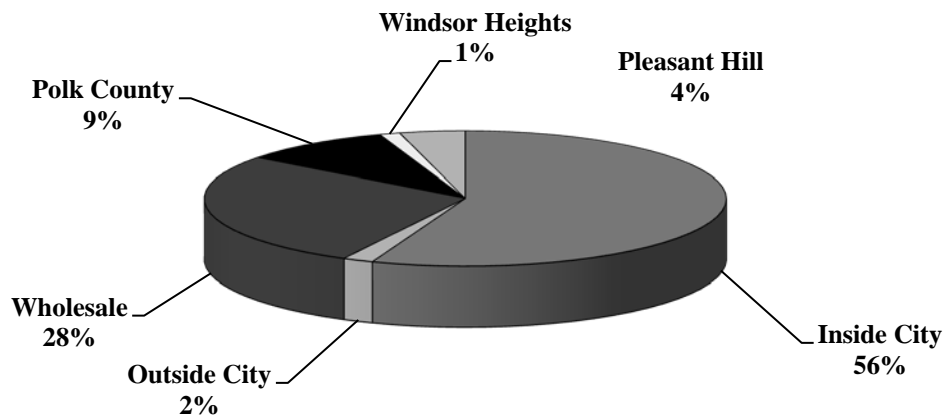
Revenue patterns generally follow consumption, deviating only due to changes in rates and in the relative mix of sales to each service area and rate class.



Inside City revenue, at 56%, still dominated the revenue picture in 2014. Although volume is higher outside the city (primarily in Wholesale), revenue is higher Inside City. For customers inside the City of Des Moines, as well as our other full service customers, the revenue collected covers expenses related to providing all services to these areas.

This includes water production, customer service, distribution services, and administrative services. Political Subdivisions are charged a wholesale rate that includes an appropriate allocation of costs based upon the lesser level of service we provide to them. For example, we do not maintain the distribution system inside the city limits of wholesale customers and we do not provide direct customer service (such as reading meters and billing) to their customers.

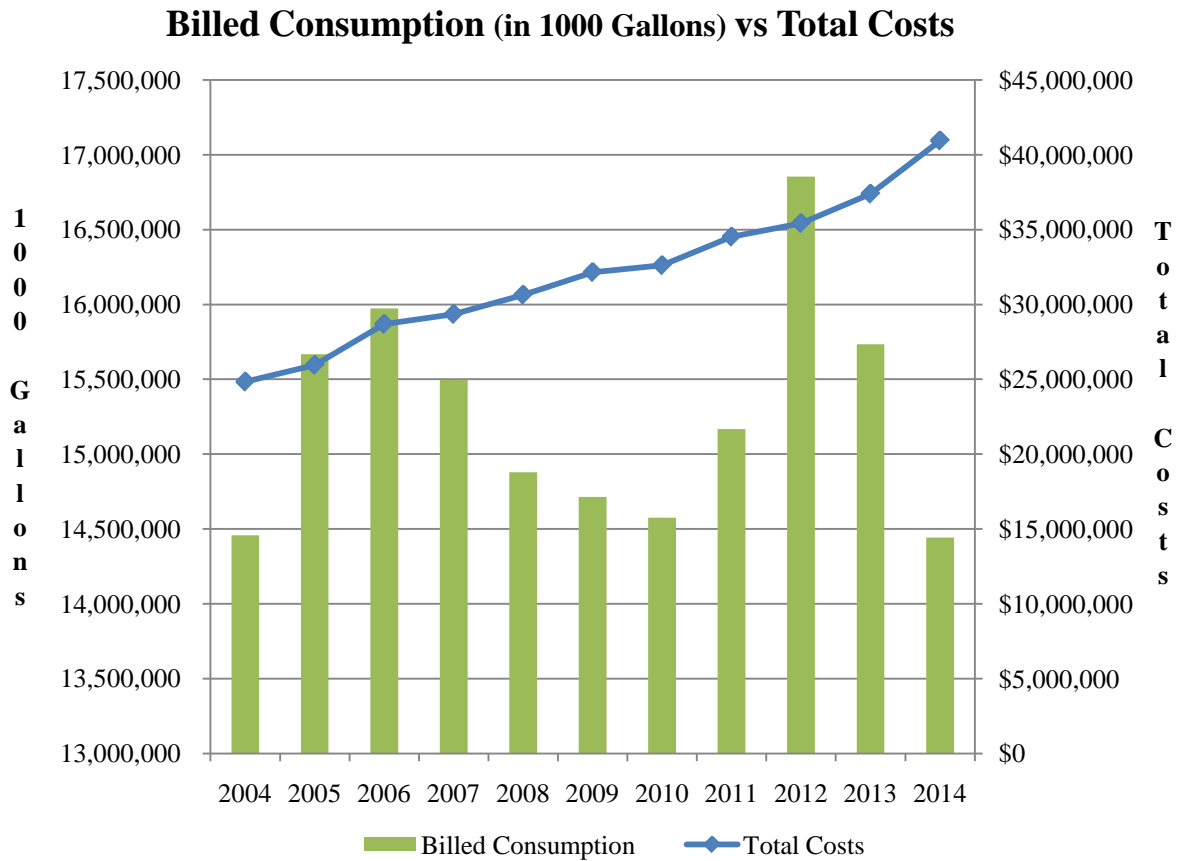
2014 Revenue



FUTURE CONSIDERATIONS

FUTURE CONSIDERATIONS

The calculation of cost per 1,000 gallons is impacted by costs and consumption. In 2014, costs increased and consumption decreased. The fact that these two components went in opposite directions had a dramatic impact on the cost per 1,000 gallons. The chart below illustrates that regardless of the amount of billed consumption, costs are continuing to rise.



To look ahead at estimated 2015 cost of service, we first removed from the 2014 costs the excess lime residual expenses and unexpected main break expenses. We then took these adjusted 2014 costs and increased them by the average yearly increase over the last 5 years. The chart on the following page shows the comparison of estimated 2015 costs with the 2015 rates.

| | Number of Accounts | 2014 COS | Adjusted 2014 COS | Estimated 2015 COS | 2015 Rate |
|---------------------------|-----------------------|-------------|----------------------|-----------------------|--------------|
| Des Moines Inside | 66,724 | | | | |
| Residential (Step 1) | | 3.82 | 3.62 | 3.75 | 3.40 |
| Commercial (Step 2) | | 2.58 | 2.42 | 2.51 | 2.28 |
| Industrial (Step 3) | | 1.99 | 1.83 | 1.93 | 1.75 |
| Des Moines Outside | 1,258 | | | | |
| Residential (Step 1) | | 4.11 | 3.92 | 4.06 | 3.69 |
| Commercial (Step 2) | | 2.99 | 2.83 | 2.93 | 2.77 |
| Industrial (Step 3) | | 2.21 | 2.06 | 2.18 | 1.98 |
| Wholesale | 39 | | | | |
| Purchased Capacity | | 1.75 | 1.63 | 1.72 | 1.53 |
| With Storage | | 3.48 | 3.30 | 3.42 | 3.33 |
| Off Peak | | 1.95 | 1.83 | 1.93 | 1.72 |
| Polk County | 6,765 | | | | |
| Residential (Step 1) | | 6.58 | 6.52 | 6.75 | 6.69 |
| Commercial (Step 2) | | 3.52 | 3.39 | 3.39 | 4.10 |
| Industrial (Step 3) | | 3.08 | 2.93 | 3.04 | 3.20 |
| Capital Improvement Fee | | | | | 1.50 |
| Windsor Heights | 2,002 | | | | |
| Capital Improvement Fee | | 4.26 | 4.18 | 4.42 | 3.46 |
| | | | | | 1.00 |
| Warren County | 77 | | | | |
| Residential (Step 1) | | 12.80 | 12.63 | 13.35 | 12.54 |
| Commercial (Step 2) | | 10.94 | 10.75 | 11.42 | 9.21 |
| Pleasant Hill | 2,960 | | | | |
| Residential (Step 1) | | 6.27 | 6.15 | 6.86 | 6.23 |
| Commercial (Step 2) | | 5.68 | 5.52 | 6.69 | 5.25 |
| Runnells | 182 | | | | |
| Water | | 4.66 | 4.64 | 4.68 | 5.91 |
| Sewer | | 4.28 | 4.46 | 4.38 | 6.41 |
| Cumming | 140 | | | | |
| | | 5.40 | 5.35 | 6.71 | 5.81 |
| Alleman | 150 | | | | |
| | | 8.81 | 8.73 | 9.94 | 6.59 |
| PCRWD#1 | 467 | | | | |
| | | 4.76 | 4.69 | 5.07 | 4.00 |
| Berwick | 218 | | | | |
| | | 5.57 | 5.50 | 5.80 | 4.00 |

Another component to anticipated costs is the availability costs and their associated charges to customers. The chart on the following page illustrates the variances between the Availability Charges and Availability Costs for 5/8" meters. The difference between the charge and cost are allocated in the per thousand gallon rate to the individual service areas.

**Comparison of Availability Charges to
Availability Costs
5/8" Meters**

| Service Area | Current Availability Charge* | 2014 Availability Cost |
|-------------------------|------------------------------------|------------------------------|
| Des Moines Inside City | \$6.00 | \$9.57 |
| Des Moines Outside City | 8.00 | 14.82 |
| Polk County | 7.00 | 14.34 |
| Windsor Heights | 6.00 | 9.63 |
| Warren County | 8.00 | 11.35 |
| Pleasant Hill | 10.00 | 8.87 |
| Runnells | 6.00 | 25.19 |
| Cumming | 9.00 | 17.23 |
| Alleman | 6.00 | 14.53 |
| PCRWD#1 | 4.00 | 10.69 |
| Berwick | 3.00 | 21.90 |

*Based upon rates effective 4/1/15

Conclusion

A cost of service study is an analysis of costs at a fixed point in time. Many factors impact the results of the study, some of them significantly. Because of this, the results of any one year should not be weighed too heavily. The true value of the data is the highlighting of trends revealed in comparing multiple years of data.

Costs continue to increase, both O & M costs and capital replacement costs. Historically, DMWW has continuously explored efficiencies to keep our operational costs in check.

However, a water utility is a labor intensive business and we have added staff in operational areas to keep up with the demands of the business. Costs of goods and services such as chemicals and energy also continue to increase. In this report, we noted that main break costs and lime residual removal costs were unusually high in 2014. However, even after normalizing 2014 expenses, the data shows that costs are still increasing.

Several factors make rate setting a challenge. As previously noted, rate increases are implemented more than a year after a cost of service study. Consumption is volatile, with no way to predict in advance what it will be. It is primarily driven by precipitation due to irrigation. And finally, our costs are primarily fixed; they do not vary proportionally with consumption. Increases in costs point us toward rate increases. Rate increases are never eagerly anticipated. However, in order to provide clean, safe drinking water, we must keep pace with our increasing costs. While we have a long history of investing in our asset infrastructure, we feel we need to increase our level of capital investment in order to improve the overall condition of our assets, particularly the distribution system.