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### MEMORANDUM

DWSD FY 2012-13 Water Rates

February 10, 2012

To: Sue McCormick

From: Bart Foster

You have asked if there are any changes in methodology associated with the proposed FY 2012-13 Water Rates. The answer is no. There are, however, three items that reflect modifications in data and/or assumptions from the existing rates. We are preparing presentation material on each of these topics for next week's rate rollout meeting. The intent of this memorandum is to formally introduce these topics in advance of that meeting.

#### **Fixed Portion of Suburban Water Rate Structure**

For purposes of determining the FY 2012-13 Water Rates, DWSD intends to carry out the third and final phase to recover all capital revenue requirements through a fixed monthly charge, rather than through commodity charges. This will effectively result in recovery of approximately 40% of the total Suburban Wholesale revenue requirement through fixed charges, up from approximately 27% in the existing rates.

*This topic has been discussed at numerous TAC and other forums and has been formally endorsed by the TAC. While all stakeholders should already be aware of this modification, it is an often-misunderstood concept and DWSD should take strides to explain it thoroughly at the rollout meeting next week. We are in the process of developing presentation material towards that end.*

#### **Suburban Wholesale Rate of Return**

DWSD has traditionally established rates of return for Suburban Wholesale water rates that reflect a margin over and above the average cost of debt on the Water System's revenue bonds. In doing so, DWSD has utilized two parameters as guidelines to define the "reasonable range" of the margin:

- \* The absolute margin over the debt rate ( $ROR - Debt Rate$ ) should approximate 1.5%, and fall within a range of 1.25% to 1.75%
- \* The margin ratio over the debt rate ( $ROR/Debt Rate$ ) should approximate 1.25, and fall within a range of 1.2 to 1.3

Consistent with the material we reviewed with the Board Finance Committee last week, we have targeted a rate of return in the “mid-point” of the range indicated by this protocol. Since the average cost of debt increased about 30 basis points from last year, the indicated “range mid point” of the 2 indicators we use increased by 30 to 40 basis points, and the approach we are suggesting for the FY 2012-13 Water Rates raises the existing rate of return by 35 basis points, from 6.95% to 7.30%.

*We characterize this position as simply recognizing the realities of the capital financing structure within the Water System. As illustrated in the attached exhibits, Suburban Wholesale rates of return have often been reduced when the System’s cost of debt has reduced. The approach for FY 2012-13 follows the same protocol, which has been presented on a consistent basis for several years. This is the first time the specific rate of return for the FY 2012-13 Water Rates will be presented.*

#### **Detroit Max Day and Peak Hour Demands**

Max day and peak hour demands for individual customers (and the Detroit retail customer class<sup>1</sup> at large) are key components to allocating costs of service. Prior to the implementation of the “Contract Method” Water Rate Methodology for the FY 2008-09 Water Rates, all max day and peak hour demands were defined by “peaking factors” that reflected ***rolling average*** margins above average daily use. With the advent of the Contract Method, demands for all customers were modified to reflect ***actual*** max day and peak hour use on the DWSD max day. Use of these ***actual*** data points meant that estimated peak demands for each customer increased, since they were being defined by a recently obtained peak rather than an average of several individual data points. As shown in the attached exhibit, max day and peak hour demands (as expressed by peaking factors) increased in 2009 for the Suburban Wholesale class. Peaking factors for the Detroit retail class was similarly increased, based on the assumption that the “actual” versus “average” change would similarly impact that class – we had no data from which to reliably compute the factors. These “peaking factors” have remained fairly stable for both classes since that time, adjusting to reflect new Exhibit Bs, etc. for suburban customers, with Detroit being adjusted in a manner to balance the impact of those changes.

The Department (and the Customers) have been able to obtain “real-time” data on each suburban master meter for several years, and that data has been used to compute peaking factors, to establish demand proxies, and to provide information in negotiation of Exhibit Bs. However the same data has not been available for the Detroit retail class, until now. The implementation of the automated retail meter reading system in Detroit has begun to provide some “real time” data that can be used to estimate Detroit max day and peak hour demands. Raphael Chirolla has reviewed of sample data from the retail meter historian for the DWSD max day during the summer of 2011. That review, which is summarized at the bottom of the attached exhibit, indicates a “max day peaking factor” of approximately 1.59 for this sample

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<sup>1</sup> Water use for the City of Dearborn is estimated based on their own retail meters and peak demands must be estimated for them as well.

of the Detroit retail class. If the industrial class is removed (which appears to reflect a data anomaly) the factor is 1.56 for Detroit residential and commercial customers. While we believe that additional data should be developed, analyzed, and reviewed with stakeholders, we also believe that it is appropriate to incorporate this information into the cost of service allocations and rate development for FY 2012-13. For purposes of the FY 2012-13 cost allocations we have utilized a max day factor of 1.62 for the Detroit class, and have reduced the peak hour factor from 2.01 to 1.73.

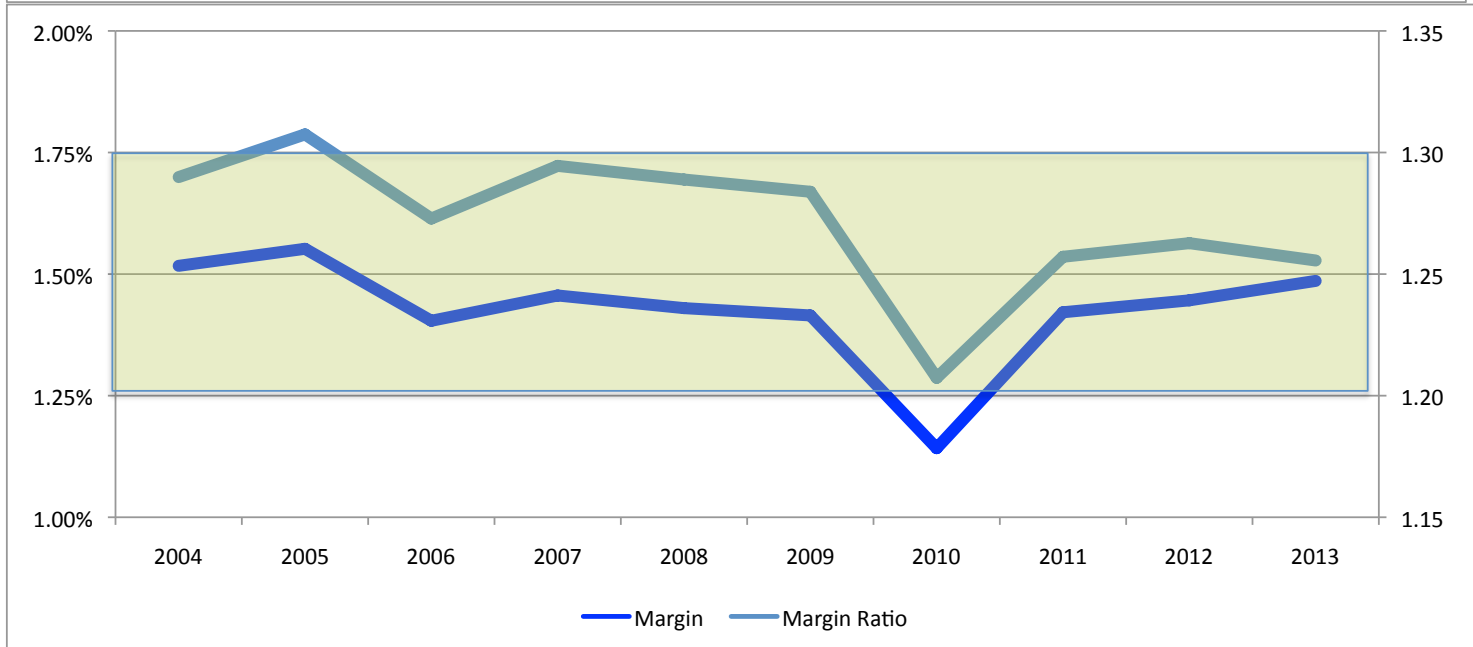
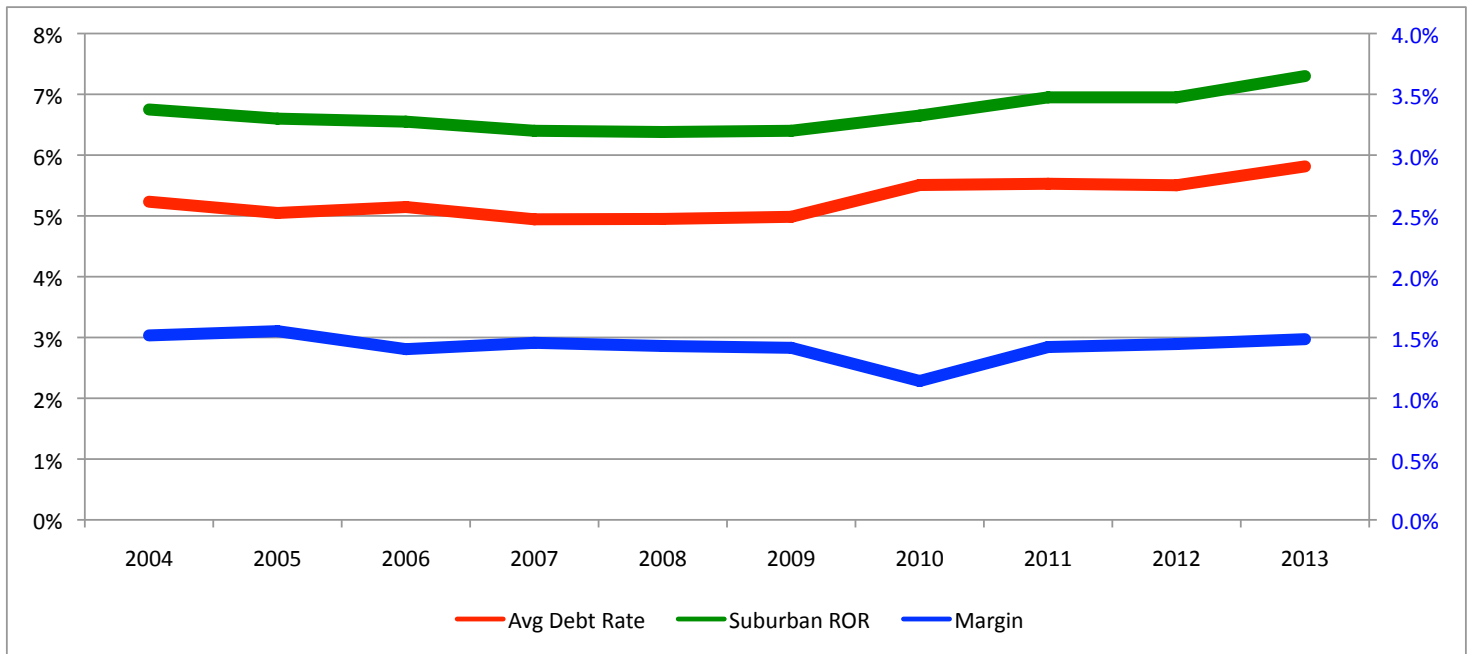
*We characterize this modification as a change in assumptions to reflect the “best available, verifiable” information – a concept that has been the hallmark of DWSD rate activities for several years. While the theory of this topic has been discussed at various meetings of the Water Rates Work Group, and at rollout meetings on water rates, this is the first time (to our knowledge) that data and analysis will be presented.*

These issues will be discussed in detail in the Water Rate Report, which we are striving to complete and publish by Monday.

We are available to discuss this matter at your convenience.

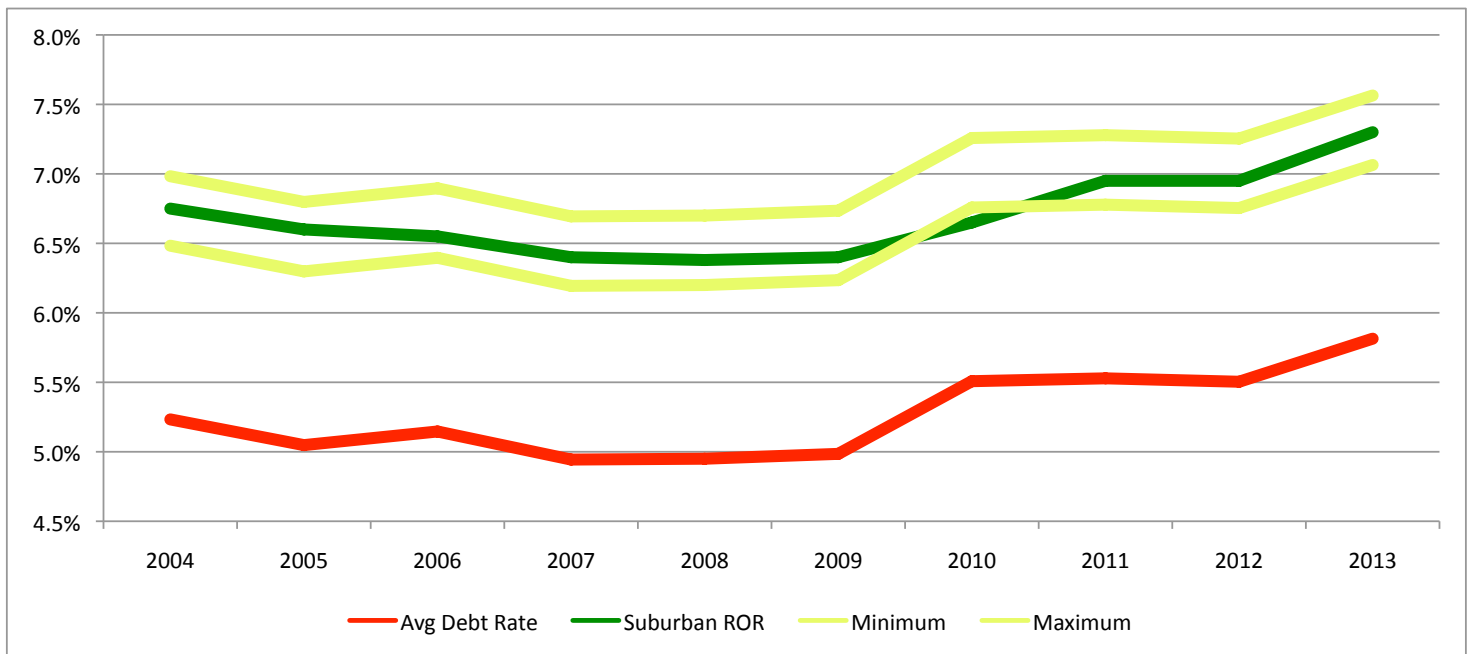
DWSD Water Rates - Summary of Recent Rate of Return Calculations

	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Avg Debt Rate	5.23%	5.05%	5.15%	4.94%	4.95%	4.99%	5.51%	5.53%	5.50%	5.81%
Suburban ROR	6.75%	6.60%	6.55%	6.40%	6.38%	6.40%	6.65%	6.95%	6.95%	7.30%
Margin	1.52%	1.55%	1.40%	1.46%	1.43%	1.42%	1.14%	1.42%	1.45%	1.49%
Margin Ratio	1.29	1.31	1.27	1.29	1.29	1.28	1.21	1.26	1.26	1.26
<u>Margin Range</u>										
Minimum	6.48%	6.30%	6.40%	6.19%	6.20%	6.24%	6.76%	6.78%	6.75%	7.06%
Maximum	6.98%	6.80%	6.90%	6.69%	6.70%	6.74%	7.26%	7.28%	7.25%	7.56%
<u>Margin Ratio Range</u>										
Minimum	6.28%	6.06%	6.18%	5.93%	5.94%	5.98%	6.61%	6.63%	6.60%	6.98%
Maximum	6.80%	6.56%	6.69%	6.43%	6.44%	6.48%	7.16%	7.19%	7.16%	7.56%



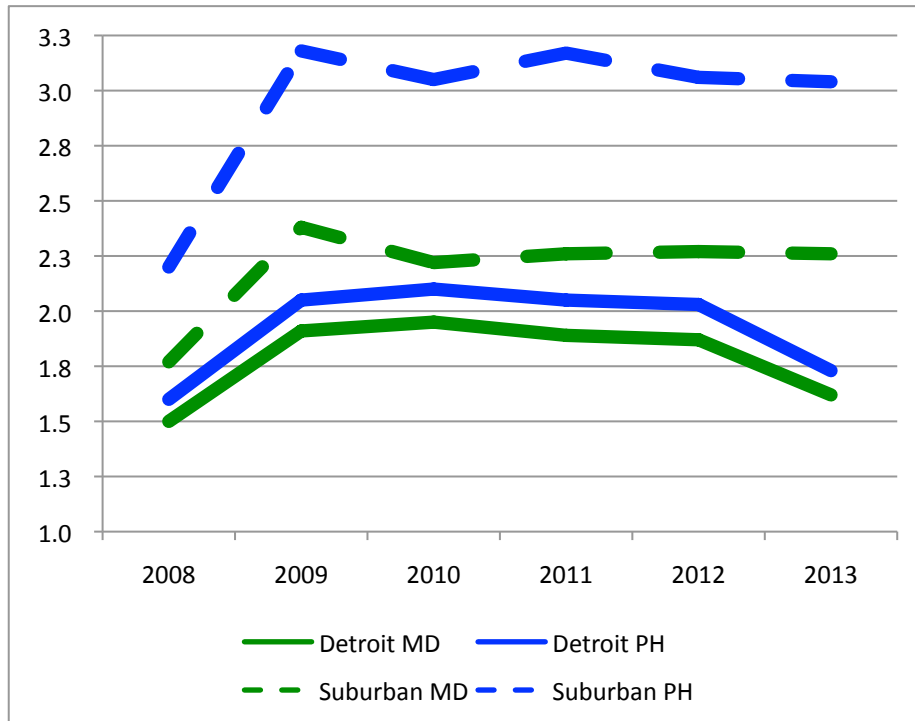
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Maximum	6.80%	6.56%	6.69%	6.43%	6.44%	6.48%	7.16%	7.19%	7.16%	7.56%



### DWSD Water Rates - Summary of Peaking Factors

	2008	2009	2010	2011	2012	2013
Detroit MD	1.50	1.91	1.95	1.89	1.87	1.62
Detroit PH	1.60	2.05	2.10	2.05	2.03	1.73
Suburban MD	1.77	2.38	2.22	2.26	2.27	2.26
Suburban PH	2.20	3.18	3.05	3.17	3.06	3.04



### Sample Detroit Use - DWSD Max Day 2011

<u>Account Type</u>	<u>Annual Use</u>	<u>Max Day Use</u>	<u>Max Day Factor</u>
Residential	4,140,374	6,338,097	1.53
Commercial	376,543	738,925	1.96
Industrial	28,797	168,363	5.85
Other (Excludes Firelines)	47,874	62,420	1.30
Totals	4,593,588	7,307,805	1.59
<i>Subtotal w/o Industrial</i>	<i>4,217,045</i>	<i>6,568,880</i>	<i>1.56</i>