Summary of Annual Sewer Rates for Selected Cities (As Revised on May 19, 2011)

In the context of making its May 11, 2011, determination, EPA developed a document entitled "Summary of Annual Sewer Rates for Selected Cities." The document summarized information considered by EPA in assessing economic impacts that could result if the Metropolitan Water Reclamation District of Greater Chicago constructed and operated disinfection facilities at two of its water reclamation facilities. The document cited to two other documents that EPA developed: "EPA's Analysis of the Impact on Property Taxes of Installing and Operating Disinfection Facilities at MWRDC's Calumet and North Side Water Reclamation Plants;" and "Community-Specific Information Regarding Costs of Long Term Sewer Remedial Measures, Service Populations and Residential Sewer Rates."

The May 11, 2011, document entitled "EPA's Analysis of the Impact on Property Taxes of Installing and Operating Disinfection Facilities at MWRDC's Calumet and North Side Water Reclamation Plants," contained certain mathematical errors that EPA has corrected. The changes from the May 11, 2011, version are shown in redline/strikeout. There were no changes to the "Summary of Annual Sewer Rates for Selected Cities" or the "Summary of Annual Sewer Rates for Selected Cities" from the May 11, 2011, versions. The changes to "EPA's Analysis of the Impact on Property Taxes of Installing and Operating Disinfection Facilities at MWRDC's Calumet and North Side Water Reclamation Plants" show that a smaller property tax increase is likely to occur than was shown in the May 11, 2011, version.

May 11, 2011: Summary of Annual Sewer Rates for Selected Cities

The following sources were reviewed for purpose of comparing the amount that residents living in the Metropolitan Water Reclamation District of Great Chicago (MWRDGC) pay for sewage conveyance and treatment compared with the amounts that residents in other municipalities pay:

City of Indianapolis, Table entitled "City of Indianapolis - Average Sewer Bill Based on 5,400 gallons, taken from the City of Indianapolis' website, available at http://www.indy.gov/eGov/City/DPW/Environment/CleanStream/Financing/Pages/2009-2013SewerRatesFAQs.aspx

City of San Diego Wastewater Cost of Service (Table ES-5 at 1-6), available at http://www.sandiego.gov/ mwwd/pdf/ ratestudy.pdf

NACWA 2009 Service Charge Index, available at http://www.nacwa.orgfimages/stories/public/2009nindex.pdf

NYCDEP Water and Sewer Rate Study (chart at page 21), available at http://www.nyc.gov/htm1/deptpdf/water_board/dep_water_rate_study_03182010. pdf

NYCWB Water and Wastewater Rates (chart at 15), available at http://www.nyc.gov/htmI/nycwaterboard/pdf/blue_book/bluebook_2011.pdf

Ohio EPA 2009 Sewer and Water Rate Survey, available at http://www.epa.state.oh.us/PortaIs/43/Rate%20Reports/Appendix%202-09.pdf

Sources cited in attached document entitled "Community-Specific Information Regarding Costs of Long Term Sewer Remedial Measures, Service Populations and Residential Sewer Rates"

According to MWRDGC, a resident in MWRDGC's service area who owns a house worth $267,000 (the average value of a house in Cook County) pays $222 per year in property taxes for sewer services. *See* MWRDGC's "President's Annual Message 2010" (available at http://www.mwrd.org). A review of the above information indicates that this amount is much lower than the amount paid by residents of many other municipalities for sewage conveyance and treatment.

As described in the attached "EPA Analysis of the Impact on Property Taxes of Installing and Operating Disinfection Facilities at MWRDC's Calumet and North Side Water Reclamation Plants," the annual property taxes paid by MWRDGC residents for sewage conveyance and treatment will still be lower than many other communities, even if (1) MWRDGC constructs disinfection facilities with tertiary filtration at the Calumet and North Side Water Reclamation Plants, and (2) MWRDGC must fully fund the completion of construction of the Tunnel and Reservoir Plan (TARP), which MWRDGC estimates will cost approximately $355 million. (For basis ofTARP completion cost estimate, *see* TARP Status Report as of December 1, 2010, available at http://www.ipcb.state.il.us/documents/dsweb/Get/Document-71017PC565, Item 11.).

Finally, as is shown in the attached "Community-Specific Information Regarding Costs of Long Term Sewer Remedial Measures, Service Populations and Residential Sewer Rates," on a per capita basis, the $635.9 million cost that MWRDGC's estimates it will cost to construct and operate disinfection facilities (with filtration), even when combined with the approximately $355 million TARP cost, is substantially lower than the per capita costs that many other communities throughout the nation will be incurring for sewer and wastewater treatment plant improvements associated with implementing their long term remedial measures plans for their sewer systems to address combined sewer overflow and sanitary sewer overflow problems. It is important to note that MWRDGC's cost estimates for the disinfection facilities and completing TARP might be too high, and that it is not entirely clear whether MWRDGC will be responsible for funding the entire $355 million cost for completing TARP, in which case the impacts will be smaller.

EPA Analysis of the Impact on Property Taxes of Installing and Operating Disinfection Facilities at ~~MWRDC's~~MWRDGC's Calumet and North Side Water Reclamation Plants (Revised May 19, 2011)

The purpose of this analysis is to assess the ~~impact on property tax amounts that would likely result from~~economic impacts of construction and operation of two ultra violet (UV) disinfection facilities, both with and without filtration, on the residential customers of the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC). For purpose of this analysis, we use the data from ~~MWRDC's~~MWRDGC's January 3, 2011~~,~~ Electronic Filing with the Clerk of the Illinois Pollution Control Board. We did not independently verify the calculations in that filing.

A discussion on background, the current residential financial burden of the District's charges for water reclamation services, and the cost and impact of the construction and operation of the proposed UV disinfection facilities follows.

Background

The District was originally organized in 1889 and serves almost all of Cook County, Illinois. In addition to operating seven water reclamation plants (WRPs) and 559 miles of interceptor sewer, the District provides for ~~CSO~~combined sewer overflow (CSO) collection and treatment, biosolids management, and stormwater management. The District is unique in two aspects as an independent municipal corporation it receives most of its revenues from property taxation. The degree of water reclamation services a customer receives is not a factor, in that tax payers in all 129 of the municipalities comprising the District pay identical tax rates. As provided for in section 204(b) (1) of the Clean Water Act, the District also receives a portion of its revenue from user charges to pay the costs of operation, maintenance, and equipment replacement. Therefore all industrial users, which are defined as users with 25,000 gallons of flow, or greater, pay both user charges and property taxes. The result is a steady and diversified revenue stream and because of its great economies of scale, an average residential charge for services that does not pose a significant burden on the residential customers of the District.

Current~~–~~ Residential Financial Burden of the District's Charges for Water Reclamation Services

Because the County of Cook uses a State Equalized Value to calculate its tax bills estimating the residential tax burden can be difficult. Basically, as shown on Cook County Clerk's web pages, the method for calculating Equalization Value is as follows: Property Value times .~~1~~10 equals assessed value; assessed value times State Equalization Factor (in 2009, according to the Cook County Clerk this was 3.370100), equals equalized assessed value (EAV); EAV times local tax rate equals homeowners tax before exemption; less exemption(s), equals total tax after exemption. It should be noted there are several exemptions; however, we have not used those exemptions in this analysis.

Using the formula described above and the District's 2009 taxation rate of .261 percent per EAV, (from the Cook County Clerk's 2009 Tax Rates Report), it can be surmised that a property with a value of approximately $100,000 would produce $88 in tax revenue for the District. [1] Alternatively, for an average residential home of $267,000 (the average value ~~of~~for a house in Cook County), ~~the total annual cost~~that taxation rate would produce $234.96 ~~($(~~88 ~~*~~ ~~(*(~~267,000/100,000~~)) in tax revenues for the District.~~)). Even considering that municipalities in the District are providing their own collector sewer maintenance services and are charging their customers accordingly, these charges are ~~far~~ below what other municipalities in Region 5 pay for wastewater treatment services. For example, the State of Ohio's Environmental Protection Agency's long running, Sewer and Water Rate Study, ~~http://www.epa.state.oh.us/ofa/rate_survey.aspx~~http://www.epa.state.oh.us/ofa/rate_survey.aspx estimates that in 2009 in Ohio the average household paid approximately $514 in sewer bills.

Costs and Impact of Proposed UV Facilities

US EPA is assessing the cost of UV disinfection for the District's North Side WRP and Calumet WRP. However, the District provided in its January 3, 2011 Electronic Filing with the Clerk of the Illinois Pollution Control Board an assessment of the impact of construction and operating both UV Disinfection and UV Disinfection with Tertiary Filtration Facilities for its three largest WRPs. Table 1, which is taken from page 8 of MWRDGC's filling item 7D, summarizes the data that the District submitted. The District estimated that the additional construction and operation for UV with Filtration would result in a raise in its tax rate from 26.~~81cents~~81 cents per $100 dollars of EAV (pre-construction of disinfection facilities) up to 37.57 cents, or a 40.1 percent increase. The District also estimated that the construction of only UV facilities at all three WRPs would result in a 15.1 percent increase, or a tax rate of ~~.~~30.86 cents per $100 of EAV.

US EPA is evaluating the costs associated with installation of UV disinfection without tertiary filtration at its North Side WRP and its Calumet WRP. However, because the District indicates that tertiary filtration may also be needed, we have assessed both treatment technologies. Table 2 was developed from apportioning the data in Table 1 to provide for treatment only at the North Side and Calumet WRPs. Then, because the District estimated that the total annual capital cost (at a 3% interest rate over 30 years and a 3% inflation rate, which equates to an equivalent present value estimate of 6%) for only UV treatment was approximately 36.4 million dollars and 116.7 million dollars for UV treatment and tertiary filtration, we have apportioned those costs to the two WRPs. Finally, we have added the annual O&M costs for the two plants to the estimated annual capital costs to arrive at an estimate of the expected total annual costs for the two plants. The result is that upgrading the two WRPs for UV treatment will result in 44.46% of the cost of upgrading all three WRPs for UV treatment. Similarly, upgrading the two plants for UV

[1] Although the District used a tax rate of .2681 in its filing, the ~~actual~~posted 2009 Cook County tax rate for the District used in this analysis is .261.

disinfection and tertiary filtration will result in ~~41.2~~40.9 percent of the cost for upgrading all three plants for UV disinfection and tertiary filtration.

The District~~,~~ in another portion of its filing~~,~~ indicates that the total impact of constructing and operating only UV facilities would result in a 15.1 percent increase in tax rates; therefore, constructing and operating the requested UV facilities will result in a tax rate increase of 6.7 percent (.~~444~~446 * .151). That~~,~~ in turn~~,~~ would be an average residential increase the equivalent of about $15.74 a year, for a home with a market value of $267,000 ($234.96 * .067) for a total annual cost of $250.~~98~~70 per $267,000 home. Conversely, constructing both UV treatment and tertiary filtration facilities would increase ~~tax rates by~~ the District's ~~estimated~~ tax ~~rate increase of~~rates by 16.~~5~~4 percent (.401 *.~~412~~409). That~~,~~ in turn~~,~~ would increase sewer rates by $38.~~77~~53 a year ($234.96 ~~* .165~~*.164) for a total annual cost of $~~275.01~~273.49 for a $267,000 home.

The Illinois Environmental Protection Agency (IEPA) in its ~~January 3~~February 15, 2011 Post Hearing Comments to the Illinois Pollution Control Commission reached similar conclusions. On pages 21 and 22, the IEPA indicates that *the cost of UV disinfection will be several hundred million dollars. While clearly a significant amount of money, it represents a cost of 8 to 12 cents per 1,000 gallons treated and that would increase the monthly cost for atypical household by $2 to $3. However, MWRDGC's fee structure for its customers is different than for other utilities in Illinois and around the country because MWRDGC customers are charged based on the assessed value of their homes. According to MWRDGCs calculations a house with a market value of $100,000 (EAV $42,732) the 2010 tax for MWRDGC services would be $114.35). Therefore, the implementation of disinfection at all three facilities would result in increased taxes for a $100,000 home of between $9 per year for chlorination and $12 per year for UV without filtration*. The IEPA concludes that *the cost of disinfection at all three MWRDGC facilities is economically reasonable for the MWRDGC rate payers.*

Conclusion

This analysis is not intended to imply that MWRDGC will not have additional wastewater reclamation costs in the future. For example, fully funding the TARP facilities could add an additional 355 million dollars in construction costs. However, using the District's own financing assumptions~~,~~ (a 3% interest rate over 30 years and a 3% inflation rate, which equates to an equivalent present value estimate of 6%), that would amount to approximately an additional 26 million dollars in annual debt service cost, which in turn could result in an increase in the Districts charges of ~~$.015~~$0.02 per $100 ~~of~~ EAV, or an increase in property taxes for a home with a market value of $267,000 of approximately $~~40.05~~18 per year.

Therefore, it is not anticipated that any time in the near future the District's charges for reclamation services will approach what ~~many~~ other similar communities are now paying for wastewater services.

Table 1 MWRDGC Estimates as to Probable Cost of UV Disinfection and Tertiary Filtration at the North Side WRP, Stickney WRP, and Calumet WRP (costs in Millions of dollars)

Capital Cost	North Side WRP	Stickney WRP	Calumet WRP	Total for all three WRPs
UV Disinfection	$111.6	$267.2	$112.3	$491.1
Tertiary Filtration	$184.0	$703.0	$228.0	$1,115.0
Total Capital Costs	$295.6	$970.2	$340.3	$1,606.1
Annual O&M costs,				
UV Disinfection	$4.9	$12.6	$4.6	$22.1
Tertiary Filtration	$2.5	$4.6	$2.5	$9.6
Total Annual O&M costs	$7.4	$17.2	$7.1	$31.7

Source: MWRDGC's January 3, 2011~~,~~ Electronic Filing with the Clerk of the Illinois Pollution Control Board, page 8.

Table 2 MWRDGC Information Pertinent to Assessing Impacts From Costs of Disinfecting at Only Two WRPs (cost in millions of dollars)

Capital Cost	North Side WRP	Calumet WRP	Total for Two WRPs	Total for all three WRPs	Percent of Total for only two WRPs
UV Disinfection	$111.6	$112.3	$223.9*	$491.1	45.6%%*
UV Disinfection and Tertiary Filtration	$295.6	$340.3	$635.9*	$1,606.1	39.6%%*
Annual Capital Costs (30 years, 6% interest rate)					
UV Disinfection	$8.3*	$8.3*	$16.56*	$36.4	45.6%%*
UV Disinfection and Tertiary Filtration	$21.5*	$24.7*	$46.2*	$116.7	39.6%%*
Annual O&M costs,Costs					
UV Disinfection	$4.9	$4.6	$9.5*	$22.1	43.0%%*
UV Disinfection and Tertiary Treatment	$7.4	$7.1	$14.5*	$31.7	45.7%%*
Total Annual Costs Capital and O&M					
Total Annual Costs UV Disinfection	$13.2*	$12.89*	$26.01*	$58.5*	44.4% 6%*
Total Annual Costs UV Disinfection and Tertiary Filtration	$34.728.9*	$37.531.8*	$72.260.7*	$175.2148.4*	41.2% 40.9%*

Source: MWRDGC's January 3, 2011, Electronic Filing with the Clerk of the Illinois Pollution Control Board

. Values noted by an "*" were calculated by EPA using the methodology described within the text.

COMMUNITY-SPECIFIC INFORMATION REGARDING COSTS OF LONG TERM SEWER REMEDIAL, SERVICE POPULATIONS AND RESIDENTIAL SEWER CHARGES

Municipality	Approximate cost of long term remedial measures to address combined sewer overflow and/or sanitary sewer overflows	Size of service population (approximate)	Current average annual residential sewer charge
Indianapolis, IN	$1,400,000,000	860,000	$215
Hamilton County, Ohio (MSD)	$3,290,000,000	800,000	$612
NEORSD (Cleveland)	$2,996,000,000	>1,000,000	$400
Toledo, OH	$ 500,000,000	398,000	Not available
Columbus, OH	$ 2,500,000,000	1,115,200	$471
Ft. Wayne, IN	$ 239,397,825	205,727	$279
Louisville, KY	$843,000,000	>700,000	$354
ALCOSAN (Pittsburgh and surrounding communities)	$3,000,000,000	900,000	$257.88
Kansas City, MO	$2,500,000,000	650,000	Not available

	Municipality	**Sources: Cost of long term remedial measures to address combined sewer overflow and/or sanitary sewer overflows**
	Indianapolis, IN	**http://www.epa.gov/compliance/resources/decrees/civil/cwa/indy0610-cd.pdf** **http://www.federalregister.gov/articles/2010/11/15/2010-28599/notice-of-lodging-of-second-proposed-amendment-to-consent-decree-under-the-clean-water-act**
	Hamilton County, Ohio (Metropolitan Sanitary District)	http://projectgroundwork.org/sustainability/index.html
	NEORSD (Cleveland)	http://www.neorsd.org/I_Library.php?a=download_file&LIBRARY_RECORD_ID=4994
	Toledo, OH	http://www.toledowaterwaysinitiative.com/initiative-facts/sewer-rates/
	Columbus, OH	http://www.columbus.gov/content.aspx?id=7914
	Ft. Wayne, IN	http://www.cityoffortwayne.org/utilities/images/stories/docs/consent_decree/Consent_Decree.pdf
	Louisville, KY	http://www.msdlouky.org/projectwin/pdfs/IOAP/IOAP_2009-09_30_Volume1/MSD_IOAP_Vol_1_Exec_Sum20090930.pdf
	ALCOSAN (Pittsburgh and surrounding communities)	http://www.alcosan.org/MediaRoom/IntheNews/InTheNewsDetails/tabid/93/selectmoduleid/460/ArticleID/25/reftab/79/Default.aspx
	Kansas City, MO	http://epa.gov/compliance/resources/cases/civil/cwa/kansascity.html
Municipality		**Sources: Average annual residential sewer charges**
Indianapolis, IN		http://www.indy.gov/eGov/City/DPW/Environment/CleanStream/Financing/Pages/2009-2013SewerRatesFAQs.aspx
Hamilton County, Ohio (Metropolitan Sanitary District)		http://www.wcpo.com/dpp/news/local_news/public-can-comment-wednesday-on-proposed-msd-rate-hike-request
NEORSD (Cleveland)		http://blog.cleveland.com/metro/2010/10/sewer_rates_in_cleveland_north.html
Columbus, OH		http://www.dispatchpolitics.com/live/content/local_news/stories/2010/10/17/copy/city-watersewer-rates-might-rise.html?sid=101
Ft. Wayne, IN		http://www.cityoffortwayne.org/utilities/images/stories/docs/ratesppforwebsite.pdf

Louisville, KY	http://www.msdlouky.org/projectwin/pdfs/IOAP/IOAP_2009-09_30_Volume1/MSD_IOAP_Vol_1_Exec_Sum20090930.pdf
ALCOSAN (Pittsburgh and surrounding communities)	http://alcosancost.com/alegpluspitcostandaudit2009.pdf
Municipality	**Sources: Size of Service Population**
Indianapolis, IN	http://www.epa.gov/compliance/resources/decrees/civil/cwa/indy0610-cd.pdf
Hamilton County, Ohio (MSD)	http://www.msdgc.org/customer_service/#aboutmsd
NEORSD (Cleveland)	http://www.neorsd.org/I_Library.php?a=download_file&LIBRARY_RECORD_ID=4931
Toledo, OH	http://www.waterandwastewater.com/plant_directory/Detailed/683.html
Columbus, OH	http://utilities.columbus.gov/PDFs/2009-AR-Final.pdf
Ft. Wayne, IN	http://www.cityoffortwayne.org/utilities/images/stories/docs/ratesppforwebsite.pdf
Louisville, KY	http://www.ps4gov.com/images/downloads/RFI%20FINAL-%20Louisville%20&%20Jefferson%20County%20MSD%2012-13-10.pdf
ALCOSAN (Pittsburgh and surrounding communities)	http://www.alcosan.org/AboutUs/tabid/54/Default.aspx
Kansas City, MO	http://rpitt.eng.ua.edu/Class/StormWaterManagement/M3a%20Characteristics%20and%20Sources%20Internet%20material/Conceptual%20Control%20Plan_Draft.pdf