MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

CLEAN WATER STATE REVOLVING FUND
ADDITIONAL SUBSIDIZATION AFFORDABILITY ANALYSIS

Project Identification: Sewer Collection and Treatment System Improvements

Applicant: City of Metropolis Project No.: C295000-01

Facility: Metropolis WWTF MSOP No.: MO-0135000

City: Metropolis County: Metro State: Missouri

Total Project Amount: $2,931,355 Potential Loan: $2,931,355

Pursuant to the Federal Water Pollution Control Act (FWPCA) section 603(i), the Missouri Department of Natural Resources' (department) may elect to award additional subsidization (i.e. grant funds) to a municipality based on affordability criteria. The department has elected to conduct an affordability analysis for potential Clean Water State Revolving Fund (SRF) recipients in order to determine which municipalities may be eligible to receive grant funding. The estimated financial burden determination will support the department in additional subsidization funding decisions. However, this affordability analysis does not singly determine nor guarantee whether the department will enter into a binding commitment for a SRF loan or additional subsidization with the applicant.

This affordability analysis is based on data available to the department as provided by the SRF applicant and data obtained from readily available sources. For the most accurate analysis, it is essential that the applicant provides the department with current information about the local financial and socioeconomic situation. The Financial Questionnaire form is available online at dnr.mo.gov/forms/780-2511-f.pdf to assist applicants with providing this information.

EXAMPLE

(1) Proposed Project Description:

Application: The Clean Water SRF Loan Application was submitted by the city of Metropolis on August 28, 2013. The department evaluated the number of priority points for the applicant and assigned 115 priority points in accordance with 10 CSR 20-4.010.

Debt Instrument: The city of Metropolis passed a sewer revenue bond in April 8, 2014 for the amount of $3,000,000.

Facility Plan: The recommended project and associated costs, including the estimated user rate, is in accordance with the facility plan and the facility plan addendum No. 1 submitted by Superman Engineering, Inc. on August 28, 2013 and November 20, 2014 respectively and signed and sealed by Clark Kent, P.E. on April 3, 2013 and November 14, 2014.

Purpose and Need: The Missouri State Operating Permit (MSOP), MO-0135000, issued on June 1, 2013 included a Schedule of Compliance (SOC) to meet new ammonia effluent limitations by June 1, 2017 and a plan to reduce hydraulic overloading. Based on current treatment methods, the Metropolis Wastewater Treatment Facility (WWTF) cannot achieve compliance with the proposed ammonia limits. A new treatment process will attain compliance with the proposed effluent limitations and water quality standards, providing for a higher quality effluent. An Inflow and Infiltration (I/I) study conducted in 2008 revealed a significant need to repair the existing collection system in order to decrease I/I, potential Sanitary Sewer Overflows (SSOs), and hydraulic overloading at the Metropolis WWTF. The I/I study also determined that the East pump station is located in a low lying area and collects runoff during rain events. Rehabilitating the collection system and relocating the East pump station will reduce I/I and potential SSOs, which is a release of untreated wastewater into the environment.

Design Factors: The proposed Metropolis WWTF will treat a design average flow of 120,000 gpd and a peak wet weather flow of 480,000 gpd. The facility will treat an organic load of 204 lbs/day Biochemical Oxygen Demand$_5$ (BOD_5). The proposed Metropolis WWTF is designed to meet average monthly effluent limits of 30 mg/L BOD_5, 30 mg/L Total Suspended Solids (TSS), 0.6 mg/L Ammonia as Nitrogen in the summer and 1.9 mg/L Ammonia as Nitrogen in the winter, 126 colonies/100mL E. coli and 8 µg/L Total Residual Chlorine during the recreational season, April 1 through October 31, and 10 mg/L Oil and Grease.

Rehabilitation of the collection system includes lining of 28,600 lf of eight-inch vitrified clay pipe (VCP) and 1,750 lf of ten-inch VCP gravity sewer and 150 manholes with point repairs and replacement of sewer as needed. The relocated East pump station will have a capacity of 30 gallons per minute at a total dynamic head of 24 feet per pump. The design will comply with 10 CSR 20-8.

Number of Connections:

Residential Connections:	390
Commercial Connections:	25
Industrial Connections:	0
Total Connections for this facility:	415

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Recommended Project: The recommended treatment facility project will convert the third lagoon cell into an extended aeration earthen basin and clarifier. The treatment facility project also includes the installation of a mechanical bar screen, conversion of the first lagoon cell into a wet weather overflow basin and the second cell into a sludge holding basin. The recommended collection system project includes lining of sewers, point repairs, and replacement of some sections of sewer. In addition, the project will include the relocation of the East pump station to a higher elevation with construction of a new force main. Including all necessary appurtenances to complete the project. The recommended projects were the most cost effective, practical, and feasible of the alternatives considered.

Capital Cost:	$2,931,355
Annual Operation & Maintenance Cost:	$32,966
Anticipated Loan Term:	20 years
Present Worth Cost:	$3,538,397
Total SRF Eligible Cost:	$2,931,355

User Rate: The current user rate is based on $9.50 minimum and $3.50/1,000 gallons based on metered water usage. The average monthly sewer user rate is estimated to be $69.35 based on water usage of 5,000 gallons per month per customer.

Current User Rate:	$27.00	/5,000 gal/month
Monthly Loan Repayment Cost:	$35.73	/month
Monthly Operation & Maintenance Cost:	$6.62	/month
Estimated User Rate:	$69.35	/5,000 gal/month

(2) Inclusion of ongoing costs of operating and maintaining the existing wastewater collection and treatment system, including payments on outstanding debts for wastewater collection and treatment systems when calculating projected rates:

The applicant reported their outstanding debt for their current wastewater collection system and treatment facility to be $197,000. The applicant reported that each user pays $4.52 each month, which is used toward payments on the current outstanding debt.

(3) An assessment of other investments and operating costs relating to environmental improvements and public health protection:

The applicant did not report any other investments relating to environmental improvements, nor could it be found through readily available data.

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(4) A federal and state distressed assessment:

Federally Distressed Areas:
An area may be defined as distressed if it meets one or more of the following criteria in accordance with 42 U.S.C. 3161:

- Low per capita income – The area has a per capita income of 80% or less of the national average.
- Unemployment rate above national average – The area has an unemployment rate that is, for the most recent 24-month period for which data is available, at least one percent greater than the national average unemployment rate of the most recent 24 month period.
- Unemployment or economic adjustment problems – The area is an area that the Secretary of Commerce determines has experienced or is about to experience a special need arising from actual or threatened severe unemployment or economic adjustment problems resulting from severe short-term or long-term changes in economic conditions.

National per capita income[1] (2013):	$28,155
80% of national per capita income:	$22,524
Project area per capita income[1] (2013)	$15,312
National unemployment rate[2] (24 month average):	6.8%
Project area unemployment rate[3] (24 month average – Metro County):	5.4%
Approved U.S. Secretary of Commerce area:	unknown

The proposed project area is classified as a federally distressed area based upon the per capita income. The per capita income of the city of Metropolis is less than 80% of the national average. The unemployment rate of Metro County is below the national unemployment average. The city of Metropolis did not provide documentation of approval from the U.S. Secretary of Commerce as a federally distressed area.

Missouri Distressed Communities:
Section 135.530.1 RSMo defines a distressed community as a municipality within a metropolitan statistical area which has a median household income (MHI) of under 70% of the MHI for the metropolitan statistical area. In addition, the definition includes municipalities not in a metropolitan area statistical area, with a MHI under 70% of the MHI for the nonmetropolitan areas in Missouri. The Missouri Department of Economic Development (DED) identifies and provides a list of entirely distressed municipalities in Missouri online at ded.mo.gov/upload/2010_dstressed_communities-entire_municipalities.pdf based on the 2010 U.S. Census Bureau data.

The city of Metropolis is not classified as a Missouri distressed community by the Missouri DED[4].

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(5) An assessment of factors set forth in the United States Environmental Protection Agency's (EPA) guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development":

Debt Indicators:

Bond Rating:	N/A
Net Direct Debt:	$0
Overlapping Debt:	unknown
Other Debt:	$197,000
Overall Net Debt (Net Direct Debt + Overlapping Debt):	$0
Full Market Property Value (FMPV):	$1,335,481
Overall Net Debt as a Percent of FMPV:	0%

$$Overall\ Net\ Debt\ as\ a\ Percent\ of\ FMPV = \frac{\$0}{\$1{,}335{,}481} \times 100\ = 0\%$$

The city of Metropolis listed the bond rating as "N/A" on the Financial Questionnaire form and an online search of emma.msrb.org did not result in a current bond rating. The overlapping debt was not provided by the city of Metropolis.

Socioeconomic Indicators:

Unemployment Rate[3] (May 2015 – Metro County):	4.8%
Adjusted Median Household Income[6] (MHI) (2013):	$39,108
Percent Change in MHI[6] (1990-2013):	+ 91.4%
Percent Population Growth/Decline[7] (1990-2013):	+ 6.8%
Change in Median Age in Years[7] (1990-2013):	+ 13.39%
Percent of Households in Poverty[8] (2013):	16.5%
Percent of Households Relying on Food Stamps[8] (2013):	28.9%

Financial Management Indicators:

Property Tax Revenues:	$27,156
Property Tax Revenues as a Percent of FMPV:	2.0%
Property Tax Revenue Collection Rate:	85.0%

$$Property\ Tax\ Revenues\ as\ a\ Percent\ of\ FMPV = \frac{\$27{,}156}{\$1{,}335{,}481} \times 100 = 2.0\%$$

In the Financial Capability Indicator Table (see Table 1-1), nine indicators are used to evaluate the debt, socioeconomic, and financial conditions that affect an applicant's financial capability to fund the proposed SRF project. These indicators are compared to Missouri benchmarks. Not all indicators may be applicable or known for each applicant. In these circumstances, simply use the remaining indicators to determine the Financial Capability Indicators Average Score.

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TABLE 1-1. Financial Capability Indicator Table

Indicators	Strong (3 points)	Mid-Range (2 points)	Weak (1 point)	Score
Bond Rating Indicator	Above BBB or Baa	BBB or Baa	Below BBB or Baa	N/A
Overall Net Debt as a % of Full Market Property Value	Below 2%	2% - 5%	Above 5%	3
Unemployment Rate	>1% below Missouri average of 5.7%	± 1% of Missouri average of 5.7%	>1% above Missouri average of 5.7%	2
Median Household Income	More than 25% above Missouri MHI ($49,210)	± 25% of Missouri MHI ($49,210)	More than 25% below Missouri MHI ($49,210)	2
Percent Population Growth/Decline[9]	>10% above Missouri average of 18.0%	± 10% of Missouri average of 18.0%	>10% below Missouri average of 18.0%	1
Percent of Households in Poverty[9]	>10% below Missouri average of 14.0%	± 10% of Missouri average of 14.0%	>10% above Missouri average of 14.0%	2
4.87Percent of Households Relying on Food Stamps[9]	>5% below Missouri average of 11.4%	± 5% of Missouri average of 11.4%	>5% above Missouri average of 11.4%	1
Property Tax Revenues as a % of Full Market Property Value	Below 2%	2% - 4%	Above 4%	2
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%	1

Financial Capability Indicators Average Score: 1.8

Residential Indicator: 2.1%

$$Residential\ Indicator = \left(\frac{\$69.35/month}{\$39{,}108 \div 12\ months}\right) \times 100 = 2.1\%$$

The Financial Capability Indicator (FCI) score is an assessment of the applicant's debt burden, socioeconomic conditions, and financial operations. The Residential Indicator is the percentage of the applicant's MHI expended on wastewater systems based on the estimated user rate. These two measures are subsequently entered into the Financial Capability Matrix (see Table 2-1) to determine the level of financial burden that the proposed wastewater project will place on residential customers and the applicant.

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TABLE 2-1. Financial Capability Matrix

Financial Capability Indicators Score	**Residential Indicator**		
	Low (below 1.0%)	Mid-Range (1.0% - 2.0%)	High (above 2.0%)
Weak (below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (1.5 – 2.5)	Low Burden	Medium Burden	High Burden
Strong (above 2.5)	Low Burden	Medium Burden	High Burden

Estimated Financial Burden: High Burden

(6) An assessment of any other relevant local economic condition:

The city of Metropolis reported the anticipated Metropolis Elementary School closure and consolidation with another nearby city. The Metro County R-II school district expects the new consolidated elementary school to open August 2016.

(7) Conclusion:

The department considered the financial and socioeconomic criteria above to determine the affordability of the proposed project. The department found that the proposed project may result in a high burden with regard to the city of Metropolis' overall financial capability. This determination is based on readily available data.

This high burden determination may make the city of Metropolis eligible for additional subsidization in the form of a grant subject to other eligibility requirements and to the availability of grant funds as described in the current version of the Clean Water Intended Use Plan.

References:

1. The per capita income was found using the American Community Survey as reported by the U.S. Census Bureau online at factfinder.census.gov.
2. The national unemployment rate was obtained from the U.S. Department of Labor's Bureau of Labor Statistics online at www.bls.gov/cps/.
3. Monthly unemployment data was obtained from the Missouri Department of Economic Development online at www.missouriconomy.org/indicators/unemp/index.stm.
4. Missouri distressed communities are identified by the Missouri Department of Economic Development online at ded.mo.gov/upload/2010_dstressed_communities-entire_municipalities.pdf.
5. Bond ratings may be found online at emma.msrb.org.
6. The median household income was found using the American Community Survey as reported by the U.S. Census Bureau online at factfinder.census.gov.
7. Population trend data was obtained from online at: 2013 Census Bureau Population Data - factfinder.census.gov/faces/nav/jsf/pages/guided_search.xhtml, 2000 Census Bureau Population Data - www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls, 1990 Census Bureau Population Data - www.census.gov/main/www/cen1990.html.
8. Poverty data was found using the American Community Survey as reported by the U.S. Census Bureau online at factfinder.census.gov.
9. Financial Capability Indicators which are specific to the State of Missouri.

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