

EXHIBIT 9 – R&R STUDY

See attached.

DRAFT

MID-WESTERN PLACER REGIONAL SEWER PROJECT REPAIR AND REPLACEMENT STUDY

OCTOBER 4, 2013



Placer County
California



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PURPOSE OF THE REPORT

Proper sewer system repair and replacement (“R&R”) can save a community from large expenditures required to replace deteriorated infrastructure and extend the useful life of the system. This report will identify the estimated R&R needs over the first 30 year life of the Mid-Western Placer Regional Sewer Project (“MWPRSP”), from the plant’s inception in 2004 through 2034.

Furthermore, a funding mechanism needs to be established in order to ensure that adequate funds are available to pay for the anticipated R&R needs that benefit current ratepayers. Such funds should be accumulated in an orderly manner and drawn down on as required to fund R&R projects without the need to abruptly increase sewer service rate charges. This report will establish a funding plan whereby each partner utilizing the MWPRSP will provide their share of future R&R costs.

An R&R plan should be re-evaluated at least every five years to ensure potential expenditures are identified and a sufficient revenue stream exists. Neglect in identifying potential R&R projects can result in unexpected capital costs and insufficient funding. Inadequate R&R funding can result in a deferral of necessary equipment repair and replacement and the need to borrow money, resulting in additional costs.

With the MWPRSP, such costs should be equitably shared between the City of Lincoln and Placer County SMD 1 users. This report will set forth a plan for dividing the costs between the partners based on proportional utilization of the Lincoln Wastewater Treatment and Recycling Facility (“WWTRF”). As each partner’s proportional utilization will change regularly, the actual division of R&R funding responsibilities should be adjusted accordingly.



ANTICIPATED R&R PROJECTS AND ESTIMATED COSTS

WWTRF Projects

The Lincoln WWTRF was placed in service in June 2004. Over the first 30 years of operations of the plant, several R&R projects will be required in order to repair and replace deteriorated infrastructure and extend the useful life of the facility.

An evaluation of the WWTRF was conducted by Stantec to determine anticipated R&R projects that may be needed through FY 2034-35 and the estimated cost of such projects, expressed in 2013 dollars. Such projects are separated into two categories:

- A) R&R projects related to existing treatment plant components
- B) R&R projects related to new plant components

For any project costing \$100,000 or more, additional soft costs of 25% of the project cost were added to account for engineering and procurement services. Plus an additional \$25,000 expenditure every 5 years was included in Category B to fund the cost of the engineering, analysis and the preparation of ongoing R&R studies. The evaluation also provided an estimate of the anticipated timeline by which project expenditures were likely to occur, broken down into 5 year windows.

As shown in **Table 1**, a total of \$9.9 million of costs for Category A WWTRF projects were identified over the next 20 years. A detailed listing of these projects is provided as **Appendix A**.

TABLE 1

CATEGORY A				
Existing Lincoln WWTRF R&R Projects				
5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total
\$1,326,500	\$2,717,000	\$3,450,000	\$2,405,000	\$9,898,500

Costs provided by Stantec as of October 3, 2013 and expressed in 2013 dollars.

As shown in **Table 2**, a total of \$4.6 million of costs for Category B WWTRF projects were identified over the next 20 years. A detailed listing of these projects is provided as **Appendix B**.



TABLE 2

CATEGORY B				
New Lincoln WWTRF R&R Projects				
5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total
\$144,000	\$483,000	\$616,000	\$3,335,000	\$4,578,000

Costs provided by Stantec as of October 3, 2013 and expressed in 2013 dollars.

Pipeline and Pump Station Projects

In addition to the evaluation of the WWTRF, Stantec also completed an evaluation of the anticipated R&R projects and estimated costs over the next 20 years related to the regional pipeline and SMD 1 pump station. As with the WWTRF, for any project costing \$100,000 or more, additional soft costs of 25% of the project cost were added to account for engineering and procurement services. Plus, an additional expenditure of \$15,000 every 5 years was included to fund ongoing R&R studies. As shown in **Tables 3 and 4**, a total of \$150,000 of costs were identified related to the regional pipeline and \$1.5 million of costs related to the SMD 1 pump station. A detailed listing of these projects is provided as **Appendix C**.

TABLE 3

Regional Pipeline R&R Projects				
5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total
\$15,000	\$35,000	\$40,000	\$60,000	\$150,000

Costs provided by Stantec as of August 8, 2013 and expressed in 2013 dollars.

TABLE 4

SMD 1 Pump Station R&R Projects				
5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total
\$125,000	\$450,000	\$110,000	\$764,500	\$1,449,500

Costs provided by Stantec as of August 8, 2013 and expressed in 2013 dollars.



Spreading Costs Over 30 Year Study Window (2004-2034)

For the purposes of estimating the annual funding needs and resulting cash flow, WWTRF project expenditures in each 5 year increment were distributed over 5 year periods in even amounts, as shown in **Chart 1**. For example, the \$1.3 million of Category A expenditures identified in year 5, were allocated with even annual expenditures of \$265,300 from 2016 through 2020. Such expenditures are shown in 2013 dollars.

As with the WWTRF, the regional pipeline and SMD 1 pump station R&R project expenditures in each 5 year increment were distributed in 5 year periods in even amounts, as shown in **Chart 2**.



CHART 1

The \$9.9 Million of Category A and \$4.7 Million of Category B WWTRF R&R Expenditures Are Distributed in Even 5-Year Increments

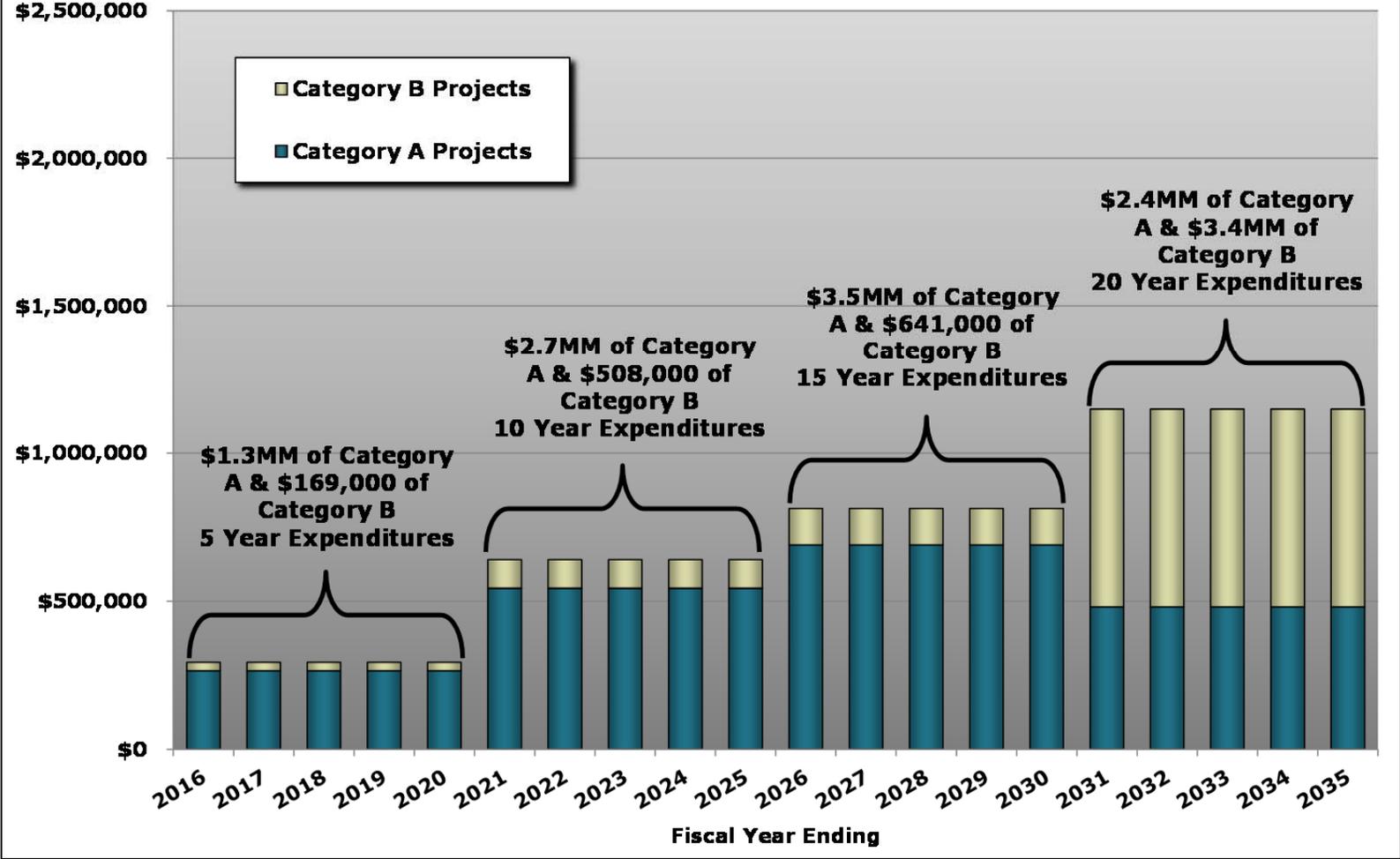
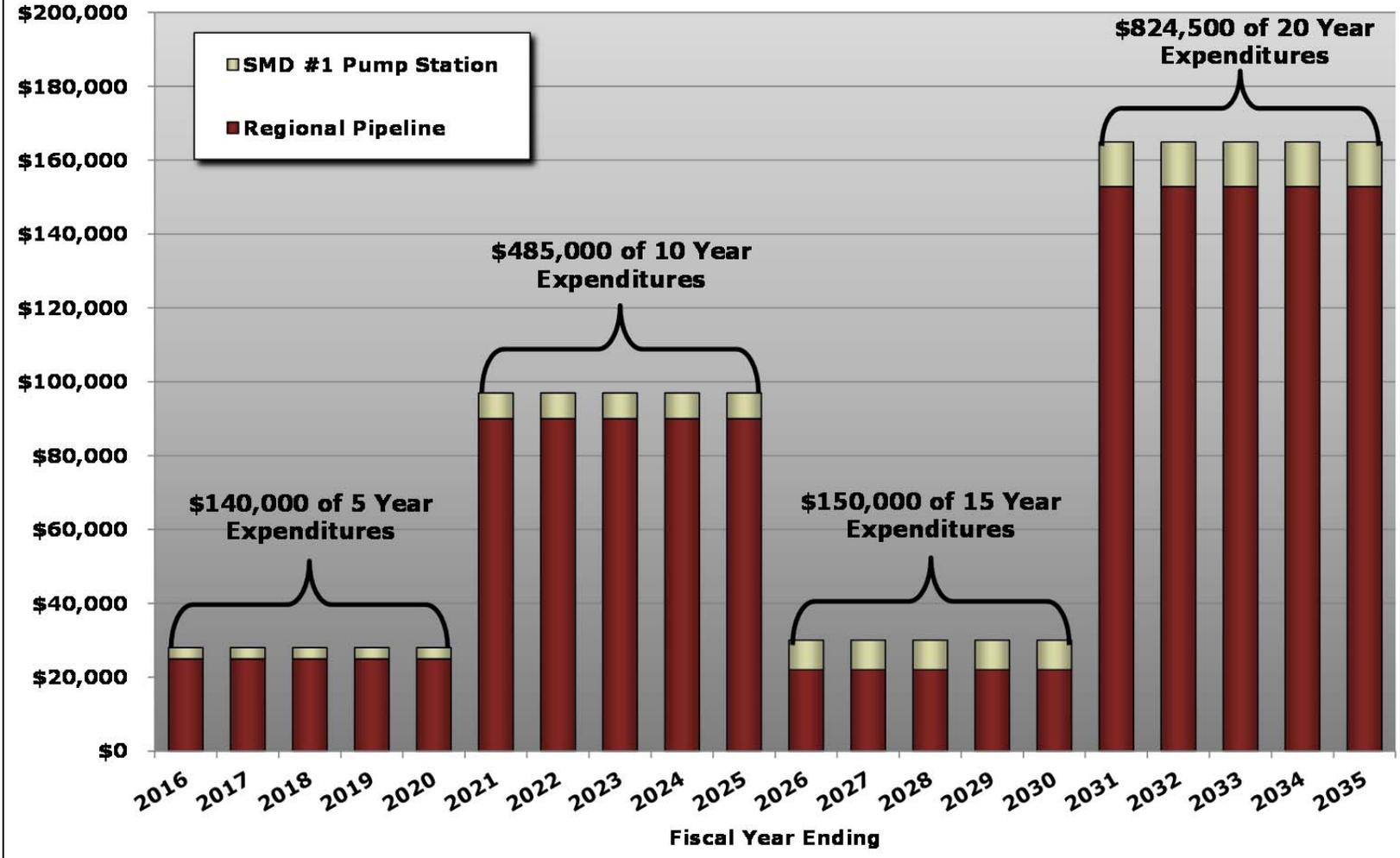


CHART 2

The \$1.6 Million of Regional Pipeline and SMD 1 Pump Station R&R Expenditures Are Distributed in Even 5-Year Increments



ANNUAL PROJECTED FUNDING REQUIREMENTS

At the time R&R projects must be completed, each partner will be responsible for a portion of the project costs.

- **Category A WWTRF Projects** – funding responsibility will be based on the timeframe each partner has utilized the WWTRF and each partner’s proportional share of Committed EDUs, as defined in the Construction, Operations and Joint Exercise of Powers Agreement (“COJA”), at the time the R&R project is completed, based on the following formula:

$$\text{Lincoln Share of R\&R Costs} = X * (11 / (Y - 2004) + (Y - 2015) / (Y - 2004)) * A / (A + B)$$

$$\text{SMD 1 Share of R\&R Costs} = X * (Y - 2015) / (Y - 2004) * B / (A + B)$$

Where:

X = Cost of R&R Project

A = Lincoln number of committed EDUs at time of R&R project

B = SMD 1 number of committed EDUs at time of R&R project

Y = Project year

- **Category B WWTRF Projects** – funding responsibility will be based on each partner’s proportional share of committed EDUs at the time the R&R project is completed, based on the following formula:

$$\text{Lincoln Share of R\&R Costs} = X * A / (A + B)$$

$$\text{SMD 1 Share of R\&R Costs} = X * B / (A + B)$$

- **Regional Pipeline and SMD 1 Pump Station** – funding responsibility is exclusive to SMD 1 as described in the COJA.

After applying the above formula for calculating the allocation of Category A and B WWTRF R&R projects and applying each partner’s current proportion of committed EDUs (Lincoln’s committed EDUs of 22,422, SMD 1’s committed EDUs of 8,094), the City of Lincoln would be responsible for:

Category A WWTRF Projects - \$8,708,053

Category B WWTRF Projects - \$3,363,748

Total - \$12,071,801

SMD 1 would be responsible for:

Category A WWTRF Projects - \$1,190,447

Category B WWTRF Projects - \$1,214,252

Pipeline and Pump Station Projects - \$1,599,500

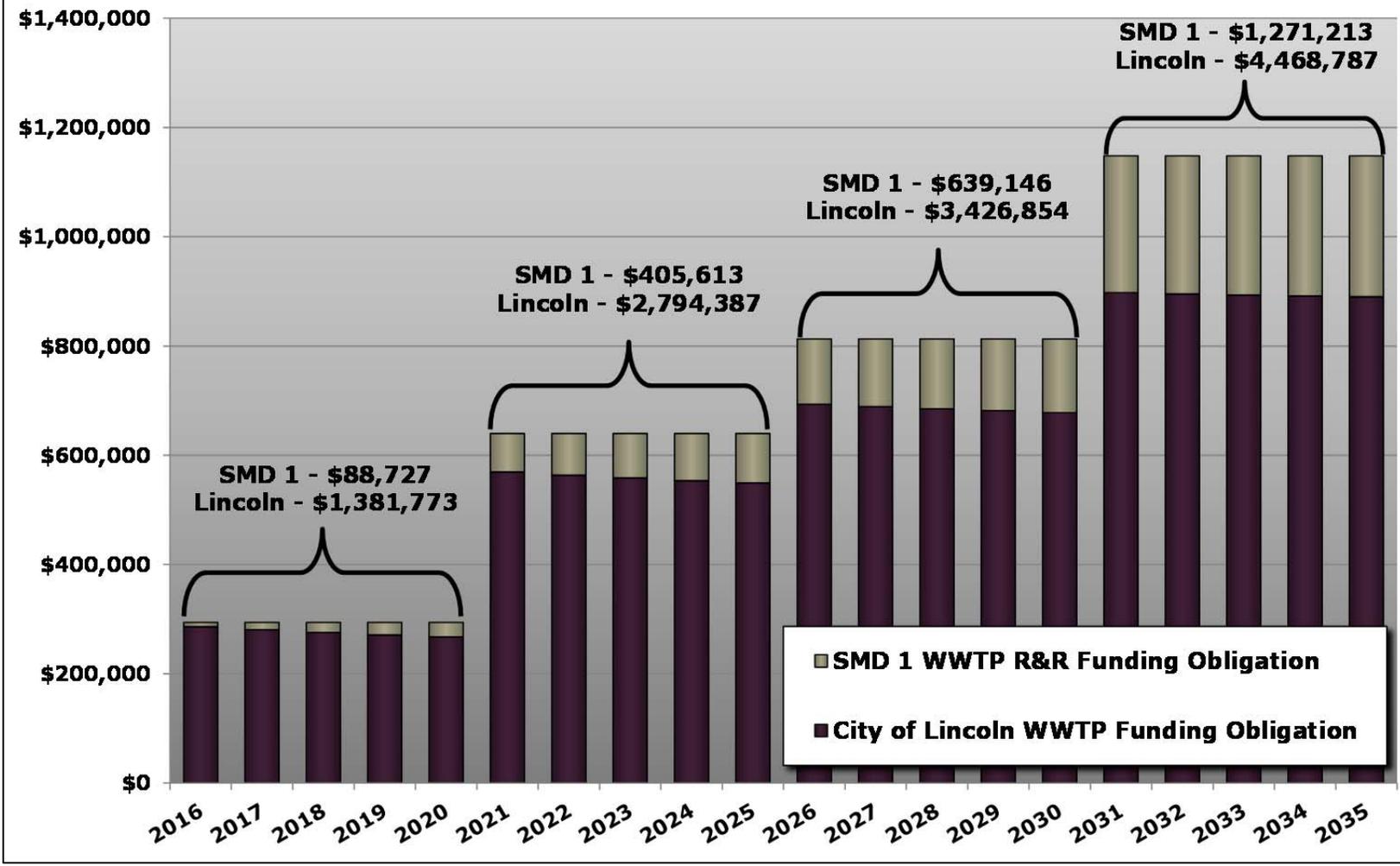
Total - \$4,004,199

As shown in **Chart 3**, the City of Lincoln’s WWTRF funding requirement over the first 5 years is \$1,381,773 and SMD 1’s WWTRF funding requirement is \$88,727.



CHART 3

The City of Lincoln Would Be Responsible for \$12.1 Million and SMD1 Would be Responsible for \$2.4 Million of WWTRF Project Costs Based on Each Partner's Currently Committed EDUs and Timeframe that Each Partner Will Have Utilized the Facility



PROJECTED R&R SET ASIDE FUNDS

Since the annual R&R funding requirements vary over time, it is important to develop a plan to fund ongoing R&R needs over time and ensure that adequate funding is available to meet expenditure requirements without incurring additional financing costs. With sound financial planning, an agency is able to set aside sufficient funds on an ongoing basis to meet R&R expenditure requirements, eliminate borrowing costs and avoid abrupt changes in sewer rates. Such set-asides can be held in designated reserve accounts, earning interest, and drawn upon as R&R project expenditures arise.

This section of the report will demonstrate the ongoing set asides needed from the City of Lincoln and Placer County SMD 1 users in order to cash fund all anticipated R&R project expenditures without requiring a borrowing based on the annual funding requirements previously described. This analysis allocates set-aside requirements evenly each year, over the remaining 20 years of the study period, assuming that the only increase in the annual contribution will be due to construction cost inflation.

WWTRF

Since the future proportion of each partner's usage of the treatment plant is unknown at this time, the current estimated proportion of capacity utilization is used to calculate each partner's share of costs. To avoid abrupt changes in sewer rates and avoid the need for a borrowing to fund R&R project expenditures, each partner can plan on collecting and setting aside R&R funds annually that can then be applied based on project funding requirements.

The City of Lincoln will be responsible for R&R funds for the portion of R&R costs distributed from FY 2004-05 until the SMD 1 users are expected to join into the system in FY 2015-16. The City of Lincoln's combined Category A and B WWTRF funding requirement is \$12,071,801. Spreading this cost evenly from 2015-16 through 2034-35 would result in equal annual set-asides of approximately \$635,000. SMD 1's total WWTRF funding obligation totals \$2,404,699, which would equate to annual set-asides of approximately \$127,000. The annual set-asides should be adjusted for construction cost inflation.

Regional Pipeline and SMD 1 Pump Station

The regional pipeline and SMD 1 pump station total R&R funding requirement is estimated to be \$1.6 million of projects over the next 20 years. SMD 1 would need to set aside approximately \$80,000 per year for these future R&R projects, expressed in 2013 dollars. The City of Lincoln users would not be responsible for any of these project costs. In total, SMD 1 would need to set aside approximately \$228,000 per year for all R&R costs.

IMPLEMENTATION

Inflation Adjustment

This R&R analysis contemplates all project costs and set-aside amounts in 2013 dollars, as of September 2013. Actual construction costs will increase over time with to construction inflation and as a result, the annual contribution will need to increase accordingly. Over the past 10 years, the Engineering News Record (“ENR”) 20-Cities Construction Cost Index has increased by an average annual rate of approximately 3.5%, as shown in *Chart 4*, with the September 2013 index at 9,552.

Since the actual construction cost escalation rate is unknown at this time, the amount of funds set-aside each year should be adjusted annually based on the actual construction cost escalation rate and the overall R&R projects and required set-aside amount should be evaluated periodically, at least every 5 years.

Designated Reserve Fund

Annual R&R set-asides can be held in a designated reserve fund so they are committed toward the future R&R expenditures and not utilized for other funding needs, except on an emergency or cash flow basis. Each agency should consider a mechanism for formally designating such reserves and providing policies for how such reserves can be utilized and reimbursed. The specific funding plan for each agency’s required R&R funding is described as an exhibit to the COJA.

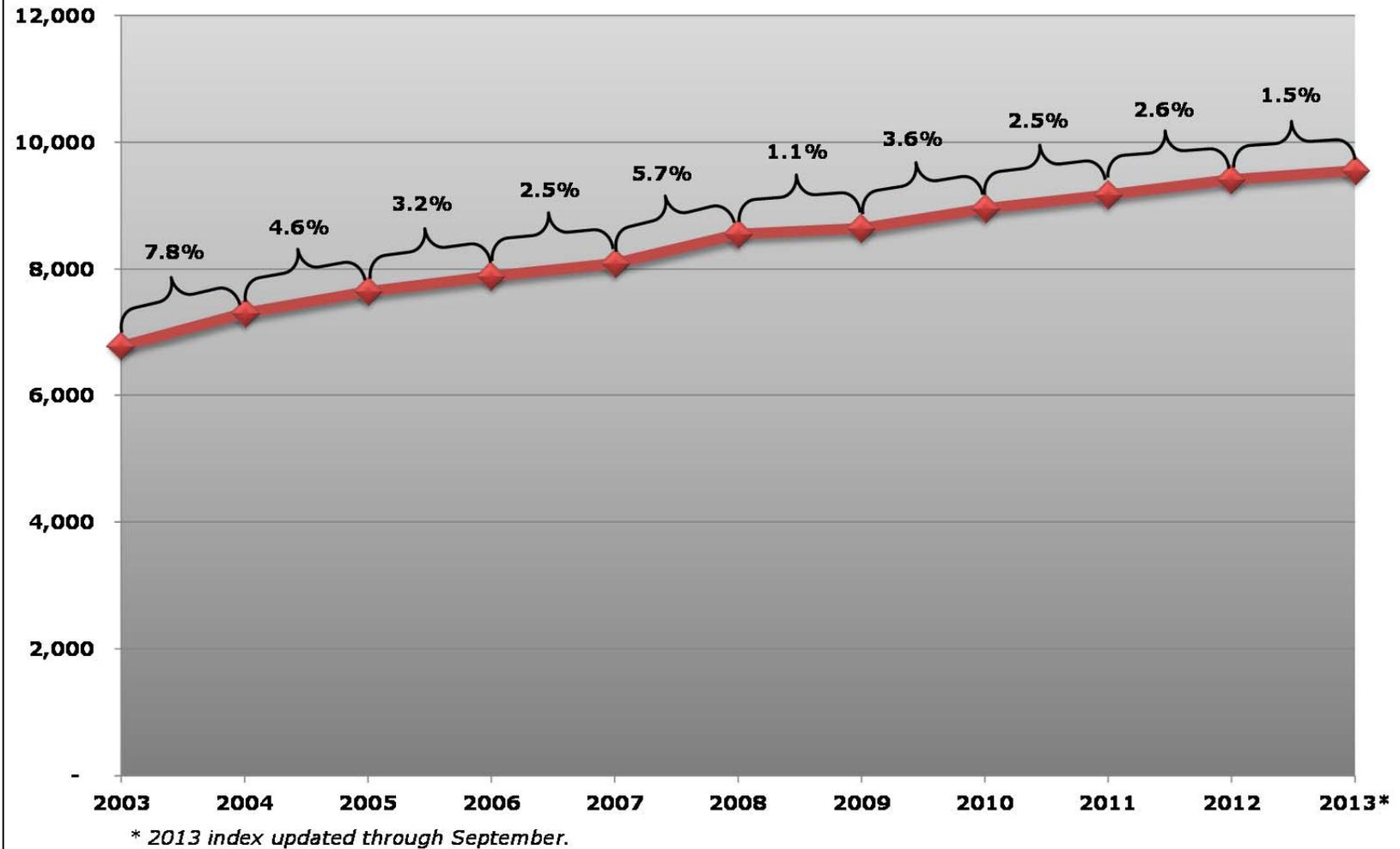
Interest Earnings

Interest will be earned on fund balances on any designated R&R reserves. As with construction cost escalation, the actual earnings rate is unknown at this time. These interest earnings can be used to offset additional contributions required due to construction cost escalation. As the R&R set-aside amount should be revisited periodically, any future analysis should take into consideration existing fund balances, including interest earnings, that can be applied toward future R&R project expenditures.



CHART 4

The Engineering News Record 20-Cities Construction Cost Index Has increased by an Average Annual Rate of 3.5% Over the Past 10 Years



APPENDIX A: CATEGORY A EXISTING WWTRF PROJECTS AND COSTS

CATEGORY A Existing Lincoln WWTRF R&R Projects							
Component	Location	5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total	One Time Full Replacement Costs
HVAC for MCC-100 Structure	Control 100 Control Pnl's Headwrks/Biofltrs	\$5,000				\$5,000	\$5,000
HVAC for MCC-200 Structure	Control 200 Control Pnl's Sec. Treatment	\$5,000				\$5,000	\$5,000
HVAC for MCC-300,400 Structure	Control 300 Advanced Treatment Panels	\$5,000				\$5,000	\$5,000
HVAC Unit 1 UV Building	Control 400 UV and Effluent Control Panels	\$5,000				\$5,000	\$5,000
HVAC Unit 2 UV Building	Control 400 UV and Effluent Control Panels	\$5,000				\$5,000	\$5,000
HVAC Unit 3 UV Building	Control 400 UV and Effluent Control Panels	\$5,000				\$5,000	\$5,000
HVAC for MCC 480 Structure	Control 480 Reclaimed Controls		\$5,000			\$5,000	\$5,000
HVAC for MCC 500 room	Control 500 Chems/Util/Yard Cntrl Pnl's		\$5,000			\$5,000	\$5,000
HVAC #1/#2 Admin bldg (BOD)	Administration Building		\$5,000			\$5,000	\$5,000
HVAC #4 Admin bldg (bioassay)	Administration Building		\$5,000			\$5,000	\$5,000
HVAC #2 Admin bldg (womens RR)	Administration Building		\$5,000			\$5,000	\$5,000
HVAC #3 Admin bldg (lab)	Administration Building		\$5,000			\$5,000	\$5,000
HVAC for MCC 700 Structure	Control 700 Solids Handling Control Pnl's		\$5,000			\$5,000	\$5,000
Oxidation Ditch Rotor 1A	Oxidation Ditch 1		\$10,000			\$10,000	\$10,000
Oxidation Ditch Rotor 1B	Oxidation Ditch 1		\$10,000			\$10,000	\$10,000
Oxidation Ditch Rotor 1C	Oxidation Ditch 1		\$10,000			\$10,000	\$10,000
Oxidation Ditch Rotor 1D	Oxidation Ditch 1		\$10,000			\$10,000	\$10,000
Oxidation Ditch Rotor 1E	Oxidation Ditch 1		\$10,000			\$10,000	\$10,000
Oxidation Ditch Rotor 1F	Oxidation Ditch 1		\$10,000			\$10,000	\$10,000
Oxidation Ditch Rotor 2A	Oxidation Ditch 2		\$10,000			\$10,000	\$10,000
Oxidation Ditch Rotor 2B	Oxidation Ditch 2		\$10,000			\$10,000	\$10,000
Oxidation Ditch Rotor 2C	Oxidation Ditch 2		\$10,000			\$10,000	\$10,000
Oxidation Ditch Rotor 2D	Oxidation Ditch 2		\$10,000			\$10,000	\$10,000
Oxidation Ditch Rotor 2E	Oxidation Ditch 2		\$10,000			\$10,000	\$10,000
Oxidation Ditch Rotor 2F	Oxidation Ditch 2		\$10,000			\$10,000	\$10,000
Reaeration Basin Aerator 1A	Reaeration Basin 1			\$5,000		\$5,000	\$5,000
Reaeration Basin Aerator 1B	Reaeration Basin 1			\$5,000		\$5,000	\$5,000
Reaeration Basin Aerator 1C	Reaeration Basin 1			\$5,000		\$5,000	\$5,000
Diffusers, Fine Bubble	Solids Holding Tanks			\$5,000		\$5,000	\$5,000
Emer Stor Basin Aerator 1A	Emergency Storage Basin			\$5,000		\$5,000	\$5,000
Emer Stor Basin Aerator 1B	Emergency Storage Basin			\$5,000		\$5,000	\$5,000
Emer Stor Basin Aerator 1C	Emergency Storage Basin			\$5,000		\$5,000	\$5,000



CATEGORY A
Existing Lincoln WWTRF R&R Projects (Cont'd)

Component	Location	5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total	One Time Full Replacement Costs
Emer Stor Basin Aerator 1D	Emergency Storage Basin			\$5,000		\$5,000	\$5,000
Filters/Clarifiers	Tertiary Filters			\$50,000		\$50,000	\$50,000
Filter blower 1B	Tertiary Filter Support Equip.		\$25,000		\$175,000	\$200,000	\$175,000
SHT/Centrifuge/Greenhouses	Centrifuge Solids Dewatering			\$100,000		\$100,000	\$100,000
UV/Plant Water PS	UV Disinfection Unit 1 (Ch1-3)			\$25,000		\$25,000	\$25,000
Bio Filter	Biofilter Filter System	\$20,000				\$20,000	\$20,000
Underground Bioscrubber	Adjacent to the Headworks		\$40,000			\$40,000	\$40,000
Building 480	Reclamation Booster PS		\$25,000	\$50,000		\$75,000	\$50,000
Solids Holding Tank Blower 1A	Solids Holding Tanks		\$20,000			\$20,000	\$20,000
Solids Holding Tank Blower 1B	Solids Holding Tanks		\$20,000			\$20,000	\$20,000
Solids Holding Tank Blower 1C	Solids Holding Tanks		\$20,000			\$20,000	\$20,000
DAF Air Compressor 1A	DAF Unit 1	\$25,000		\$65,000		\$90,000	\$65,000
DAF Air Compressor 1B	DAF Unit 1		\$25,000		\$65,000	\$90,000	\$65,000
Filter Air Compressor 1	Tertiary Filter Support Equip.	\$10,000				\$10,000	\$10,000
Filter Air Compressor 2	Tertiary Filter Support Equip.	\$10,000				\$10,000	\$10,000
UV Air Compressor 1A	UV Disinfection Unit 1 (Ch1-3)	\$10,000				\$10,000	\$10,000
Solids Dewatering Air Comp1	Sludge Pump Centrifuge Area	\$90,000				\$90,000	\$90,000
Solids Dewatering Air Comp2	Sludge Pump Centrifuge Area	\$90,000				\$90,000	\$90,000
De-watering Centrifuge 1	Centrifuge Solids Dewatering	\$100,000		\$725,000		\$825,000	\$725,000
De-watering Centrifuge 3	Centrifuge Solids Dewatering		\$100,000		\$725,000	\$825,000	\$725,000
Pivot Drive 1	Pivot Assemblies 1 & 2		\$50,000			\$50,000	\$50,000
Pivot Drive 2	Pivot Assemblies 1 & 2		\$50,000			\$50,000	\$50,000
Tertiary Filter 1	Tertiary Filters		\$312,500			\$312,500	\$312,500
Standby Generator	Stand-by Power Generation	\$7,500	\$7,500	\$7,500	\$7,500	\$30,000	\$7,500
Influent Pump Hoist	Influent Collection Structure	\$7,500	\$7,500	\$7,500	\$7,500	\$30,000	\$7,500
UV Bridge Crane 1	UV Disinfection Unit 1 (Ch1-3)	\$7,500	\$7,500	\$7,500	\$7,500	\$30,000	\$7,500
UV Bridge Crane 2	UV Disinfection Unit 2 (Ch4&5)	\$7,500	\$7,500	\$7,500	\$7,500	\$30,000	\$7,500
Davit Crane	Plant Drain Pump Station		\$10,000			\$10,000	\$10,000
Effluent Pump Hoist	Effluent Pump Station	\$7,500	\$7,500	\$7,500	\$7,500	\$30,000	\$7,500
Centrifuge Bridge Crane	Centrifuge Solids Dewatering	\$7,500	\$7,500	\$7,500	\$7,500	\$30,000	\$7,500
Shop Hoist	Shop/ Maintenance Building	\$7,500	\$7,500	\$7,500	\$7,500	\$30,000	\$7,500
Godwin 4" Portable Pump	Plantwide General & Portable Equip		\$12,500			\$12,500	\$12,500
UV Channel 1 Inlet Gate	UV Disinfection Unit 1 (Ch1-3)			\$15,000		\$15,000	\$15,000
UV Channel 2 Inlet Gate	UV Disinfection Unit 1 (Ch1-3)			\$15,000		\$15,000	\$15,000
UV Channel 3 Inlet Gate	UV Disinfection Unit 1 (Ch1-3)			\$15,000		\$15,000	\$15,000



CATEGORY A
Existing Lincoln WWTRF R&R Projects (Cont'd)

Component	Location	5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total	One Time Full Replacement Costs
UV Channel 4 Inlet Gate	UV Disinfection Unit 2 (Ch4&5)			\$15,000		\$15,000	\$15,000
UV Channel 5 Inlet Gate	UV Disinfection Unit 2 (Ch4&5)			\$15,000		\$15,000	\$15,000
UV Channel 6 Inlet Gate	UV Disinfection Unit 2 (Ch4&5)			\$15,000		\$15,000	\$15,000
Lime Feed Valve 1	Oxidation Ditch Splitter			\$25,000		\$25,000	\$25,000
WAS Valve 1	RAS/WAS Pump Station			\$25,000		\$25,000	\$25,000
Mat Pond PS Cont Valve	Maturation Pond Pump Station			\$25,000		\$25,000	\$25,000
Mat Pond Emer Stor Div Valve	Maturation Pond Pump Station			\$25,000		\$25,000	\$25,000
Storage Return CV1	DAF Unit 1			\$25,000		\$25,000	\$25,000
Storage Return CV2	DAF Unit 2			\$25,000		\$25,000	\$25,000
Filter Chemical Valve 1	Tertiary Filters			\$25,000		\$25,000	\$25,000
Filter Chemical Valve 2	Tertiary Filters			\$25,000		\$25,000	\$25,000
Filter Chemical Valve 3	Tertiary Filters			\$25,000		\$25,000	\$25,000
Filter Chemical Valve 4	Tertiary Filters			\$25,000		\$25,000	\$25,000
Centrifuge Cake Valve 1	Centrifuge Solids Dewatering			\$25,000		\$25,000	\$25,000
Centrifuge Cake Valve 3	Centrifuge Solids Dewatering			\$25,000		\$25,000	\$25,000
Polymer Aging Tank1 Inlet Vlv	Solids Chemical Area in Solids Dewatering			\$25,000		\$25,000	\$25,000
Sludge Cake Valve 1	Sludge Pump Centrifuge Area			\$25,000		\$25,000	\$25,000
Sludge Cake Valve 3	Sludge Pump Centrifuge Area			\$25,000		\$25,000	\$25,000
Polymer Injection Ring Valve 3	Sludge Pump Centrifuge Area			\$25,000		\$25,000	\$25,000
Polymer Injection Ring Valve 4	Sludge Pump Centrifuge Area			\$25,000		\$25,000	\$25,000
High Pressure Air Valve 4	Sludge Pump Centrifuge Area			\$25,000		\$25,000	\$25,000
Sludge Cake Valve 1A	Sludge Loading Solids Dewatering Building			\$25,000		\$25,000	\$25,000
Sludge Cake Valve 1B	Sludge Loading Solids Dewatering Building			\$25,000		\$25,000	\$25,000
Sludge Cake Valve 2B	Sludge Loading Solids Dewatering Building			\$25,000		\$25,000	\$25,000
Sludge Cake Valve 2C	Sludge Loading Solids Dewatering Building			\$25,000		\$25,000	\$25,000
Sludge Cake Valve 2D	Sludge Loading Solids Dewatering Building			\$25,000		\$25,000	\$25,000
Outfall Valve	Outfall & R3 Upstream			\$25,000		\$25,000	\$25,000
Emer Storage Return CV	Emergency Storage Basin			\$25,000		\$25,000	\$25,000
Trail Mower	Centrifuge Solids Dewatering			\$10,000		\$10,000	\$10,000
Vaughn Chopper Pump-71260B	Plantwide General & Portable Equip	\$15,000				\$15,000	\$15,000
Influent PS Pump 1A	Influent Collection Structure	\$25,000	\$48,000			\$73,000	\$48,000
Influent PS Pump 1B	Influent Collection Structure	\$25,000	\$25,000	\$48,000		\$98,000	\$48,000
Influent PS Pump 2B	Influent Collection Structure	\$25,000	\$25,000	\$25,000	\$48,000	\$123,000	\$48,000
Influent PS Pump 2C	Influent Collection Structure	\$25,000	\$48,000			\$73,000	\$48,000
Ox Ditch Recycle Pump 1A	Oxidation Ditch 1	\$18,000				\$18,000	\$18,000



CATEGORY A
Existing Lincoln WWTRF R&R Projects (Cont'd)

Component	Location	5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total	One Time Full Replacement Costs
Ox Ditch Recycle Pump 1B	Oxidation Ditch 1		\$18,000			\$18,000	\$18,000
Ox Ditch Recycle Pump 2A	Oxidation Ditch 2			\$18,000		\$18,000	\$18,000
Ox Ditch Recycle Pump 2B	Oxidation Ditch 2				\$18,000	\$18,000	\$18,000
Maturation Pond PS Pump 1	Maturation Pond Pump Station	\$10,000	\$65,000			\$75,000	\$65,000
Maturation Pond PS Pump 2	Maturation Pond Pump Station	\$10,000	\$10,000	\$65,000		\$85,000	\$65,000
Maturation Pond PS Pump 3	Maturation Pond Pump Station	\$10,000	\$10,000	\$10,000	\$65,000	\$95,000	\$65,000
Maturation Pond PS Pump 4	Maturation Pond Pump Station	\$10,000	\$10,000	\$65,000		\$85,000	\$65,000
Maturation Pond PS Pump 5	Maturation Pond Pump Station	\$10,000	\$10,000	\$10,000	\$65,000	\$95,000	\$65,000
Filter Feed PS Pump 1	Filter Feed Pump Station	\$55,000				\$55,000	\$55,000
Filter Feed PS Pump 2	Filter Feed Pump Station	\$10,000	\$55,000			\$65,000	\$55,000
Filter Feed PS Pump 3	Filter Feed Pump Station	\$10,000	\$10,000	\$55,000		\$75,000	\$55,000
DAF Pressurization Pump 1A	DAF Unit 1	\$35,000				\$35,000	\$35,000
DAF Pressurization Pump 1B	DAF Unit 1	\$35,000				\$35,000	\$35,000
DAF Pressurization Pump 1C	DAF Unit 1	\$35,000				\$35,000	\$35,000
DAF Float Pump 1A	DAF Unit 1	\$30,000				\$30,000	\$30,000
DAF Float Pump 1B	DAF Unit 1	\$30,000				\$30,000	\$30,000
Filter Backwash Pump 1A	Plant Water Plant Water PS, 3 Water	\$10,000	\$10,000	\$65,000		\$85,000	\$65,000
Filter Backwash Pump 1B	Plant Water Plant Water PS, 3 Water	\$10,000	\$10,000	\$65,000		\$85,000	\$65,000
Plant Water Pump Station 1A	Plant Water Plant Water PS, 3 Water	\$5,000	\$5,000	\$40,000		\$50,000	\$40,000
Plant Water Pump Station 1B	Plant Water Plant Water PS, 3 Water	\$5,000	\$5,000	\$5,000	\$40,000	\$55,000	\$40,000
Plant Water Pump Station 1C	Plant Water Plant Water PS, 3 Water	\$5,000	\$5,000	\$40,000		\$50,000	\$40,000
Plant Water Pump Station 1D	Plant Water Plant Water PS, 3 Water	\$5,000	\$5,000	\$5,000	\$40,000	\$55,000	\$40,000
Plant Drain Pump 1	Plant Drain Pump Station		\$22,000			\$22,000	\$22,000
Plant Drain Pump 2	Plant Drain Pump Station		\$22,000			\$22,000	\$22,000
Effluent PS Pump 1	Effluent Pump Station	\$10,000	\$10,000	\$50,000		\$70,000	\$50,000
Effluent PS Pump 2	Effluent Pump Station	\$10,000	\$10,000	\$50,000		\$70,000	\$50,000
Effluent PS Pump 3	Effluent Pump Station	\$10,000	\$10,000	\$10,000	\$50,000	\$80,000	\$50,000
RAS Pump Station	RAS Meter Pit	\$57,000				\$57,000	\$57,000
RAS Pump Station	RAS Meter Pit	\$57,000				\$57,000	\$57,000
RAS Pump Station Flow Meter	RAS Meter Pit	\$10,000				\$10,000	\$10,000
Tertiary Storage Return Pmp 1	Tertiary Storage Basins	\$5,000				\$5,000	\$5,000
Alum/Cationic Tank 1	Chemical Feed Systems Bldg.		\$12,000			\$12,000	\$12,000
Alum/Cationic Tank 2	Chemical Feed Systems Bldg.			\$12,000		\$12,000	\$12,000
Alum Storage Tank 4500 Gallon	Chemical Feed Systems Bldg.			\$12,000		\$12,000	\$12,000



CATEGORY A							
Existing Lincoln WWTRF R&R Projects (Cont'd)							
Component	Location	5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total	One Time Full Replacement Costs
Emulsion Storage Tank	Chemical Feed Systems Bldg.				\$12,000	\$12,000	\$12,000
Acid Storage Tank	Chemical Feed Systems Bldg.		\$12,000			\$12,000	\$12,000
Caustic Storage Tank	Chemical Feed Systems Bldg.				\$12,000	\$12,000	\$12,000
Polymer Aging Tank 1	Centrifuge Solids Dewatering			\$10,000		\$10,000	\$10,000
Polymer Aging Tank 2	Centrifuge Solids Dewatering			\$10,000		\$10,000	\$10,000
Polymer Day Tank	Centrifuge Solids Dewatering			\$10,000		\$10,000	\$10,000
UV Control Panels (2)	Control 400 UV		\$50,000			\$50,000	\$50,000
UV Channels (5)	UV Disinfection	\$50,000				\$50,000	\$50,000
Screenings Washer/Compactor	Headworks Screening				\$100,000	\$100,000	\$100,000
Lining	TSB and Maturation Pond Liners (replacing existing)		\$937,500	\$937,500	\$937,500	\$2,812,500	\$2,812,500
Dodge Van 2002	Plantwide General & Portable Equip	\$35,000				\$35,000	\$35,000
4x4 (Dodge Dakota)	Outside Rounds Vehicle	\$35,000				\$35,000	\$35,000
C5500 Crane Truck (Chevy)	All Purpose		\$75,000			\$75,000	\$75,000
Electric carts (2); Kabota (1)	All Purpose	\$20,000	\$15,000			\$35,000	\$20,000
SCADA Upgrade	WWTRF	\$25,000				\$25,000	\$25,000
General Equipment Painting	WWTRF	\$25,000				\$25,000	\$25,000
DAF & Clarifier Mechanisms	Clarifier Mechanisms		\$250,000			\$250,000	\$250,000
Roll-Up Doors	Tracks, Paneling and Operators	\$20,000				\$20,000	\$20,000
Total Category A WWTRF R&R Project Costs		\$1,326,500	\$2,717,000	\$3,450,000	\$2,405,000	\$9,898,500	

Source: Stantec, October 3, 2013, with all costs expressed in 2013 dollars.

APPENDIX B: CATEGORY B NEW WWTRF R&R PROJECTS

CATEGORY B New Lincoln WWTRF R&R Projects							
Component	Location	5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total	One Time Full Replacement Costs
Chemical Feed and Storage Facilities	Chemical Storage Facilities		\$15,000	\$15,000	\$15,000	\$45,000	<i>\$15,000</i>
Filter Feed Pump Replacement	Filter Pumping Facility	\$10,000	\$10,000	\$10,000	\$55,000	\$85,000	<i>\$55,000</i>
Secondary Clarifier	#3 Clarifier		\$50,000		\$50,000	\$100,000	<i>\$50,000</i>
Pump and Motor Rebuild/Replacement	RAS Meter Pit			\$57,000		\$57,000	<i>\$57,000</i>
Flow Meter	RAS Meter Pit			\$10,000		\$10,000	<i>\$10,000</i>
Oxidation Ditch Blower (3)	Oxidation Ditch 3		\$50,000	\$50,000	\$50,000	\$150,000	<i>\$50,000</i>
Oxidation Ditch Aerostrip Diffuser	Oxidation Ditch 3				\$218,750	\$218,750	<i>\$218,750</i>
Oxidation Ditch Wall Pumps (2)	Oxidation Ditch 3	\$20,000	\$40,000	\$20,000	\$40,000	\$120,000	<i>\$40,000</i>
Oxidation Ditch Mixer, Planetary Gear (2)	Oxidation Ditch 3	\$22,000	\$44,000	\$22,000	\$44,000	\$132,000	<i>\$44,000</i>
Oxidation Ditch Mixer, Banana Blade (4)	Oxidation Ditch 3	\$22,000	\$44,000	\$22,000	\$44,000	\$132,000	<i>\$44,000</i>
Oxidation Ditch Pump, Self Priming	Oxidation Ditch 3		\$5,000		\$23,000	\$28,000	<i>\$23,000</i>
Influent Pump Station Bypass Pump	Headworks		\$5,000		\$13,000	\$18,000	<i>\$13,000</i>
Influent Pump Station Pump, Submersible, N-impeller, 85 hp	Headworks	\$25,000	\$25,000	\$25,000	\$48,000	\$123,000	<i>\$48,000</i>
Headworks Screen	Influent Channel				\$356,250	\$356,250	<i>\$356,250</i>
Filters	Tertiary Filters				\$25,000	\$25,000	<i>\$25,000</i>
Filters	Filter Gallery				\$187,500	\$187,500	<i>\$187,500</i>
Effluent Pumps, 60-HP	Effluent Pump Station	\$10,000	\$10,000	\$10,000	\$40,000	\$70,000	<i>\$40,000</i>
Effluent Pumps, 25 HP	Effluent Pump Station	\$10,000	\$10,000	\$10,000	\$30,000	\$60,000	<i>\$30,000</i>
Oxidation Ditch Rotor 1F	Oxidation Ditch 1		\$10,000			\$10,000	<i>\$10,000</i>
HVAC for MCC-100 Structure	Control 100 Control Pnl's Headworks/Biofilters			\$5,000		\$5,000	<i>\$5,000</i>
HVAC for MCC-200 Structure	Control 200 Control Pnl's Sec. Treatment			\$5,000		\$5,000	<i>\$5,000</i>
HVAC for MCC-300, 400 Structure	Control 300 Advanced Treatment Panels			\$5,000		\$5,000	<i>\$5,000</i>
HVAC for Unit 1 UV Building	Control 400 UV and Effluent Control Panels			\$5,000		\$5,000	<i>\$5,000</i>
HVAC for Unit 2 UV Building	Control 400 UV and Effluent Control Panels			\$5,000		\$5,000	<i>\$5,000</i>
HVAC for Unit 3 UV Building	Control 400 UV and Effluent Control Panels			\$5,000		\$5,000	<i>\$5,000</i>
HVAC for MCC 480 Structure	Control 480 Reclaimed Controls				\$5,000	\$5,000	<i>\$5,000</i>
HVAC for MCC 500 Room	Control 500 Chems/Util/Yard Control Panels				\$5,000	\$5,000	<i>\$5,000</i>



CATEGORY B
New Lincoln WWTRF R&R Projects (Cont'd)

Component	Location	5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total	One Time Full Replacement Costs
HVAC for #1/#2 Admin Building (BOD)	Administration Building				\$5,000	\$5,000	\$5,000
HVAC #4 Admin Building (bioassay)	Administration Building				\$5,000	\$5,000	\$5,000
HVAC #2 Admin Building (women's RR)	Administration Building				\$5,000	\$5,000	\$5,000
HVAC #3 Admin Building (lab)	Administration Building				\$5,000	\$5,000	\$5,000
HVAC for MCC 700 Structure	Control 700 Solids Handling Control Panels				\$5,000	\$5,000	\$5,000
Oxidation Ditch Rotor 1A	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
Oxidation Ditch Rotor 1B	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
Oxidation Ditch Rotor 1C	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
Oxidation Ditch Rotor 1D	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
Oxidation Ditch Rotor 1E	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
Oxidation Ditch Rotor 1F	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
Oxidation Ditch Rotor 2A	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
Oxidation Ditch Rotor 2B	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
Oxidation Ditch Rotor 2C	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
Oxidation Ditch Rotor 2D	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
Oxidation Ditch Rotor 2E	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
Oxidation Ditch Rotor 2F	Oxidation Ditch 1				\$10,000	\$10,000	\$10,000
SHT/Centrifuge	Centrifuge Solids Dewatering				\$100,000	\$100,000	\$100,000
UV/Plant Water PS	UV Disinfection Unit 1 (Ch1-3)				\$25,000	\$25,000	\$25,000
Bio Filter Fan	Bio Filter System				\$20,000	\$20,000	\$20,000
Underground Bioscrubber	Adjacent to the Headworks				\$40,000	\$40,000	\$40,000
Solids Holding Tank Blower 1A	Solids Holding Tanks				\$40,000	\$40,000	\$40,000
Solids Holding Tank Blower 1B	Solids Holding Tanks				\$40,000	\$40,000	\$40,000
Solids Holding Tank Blower 1C	Solids Holding Tanks				\$40,000	\$40,000	\$40,000
Filter Air Compressor 1	Tertiary Filter Support Equipment			\$10,000		\$10,000	\$10,000
Filter Air Compressor 2	Tertiary Filter Support Equipment			\$10,000		\$10,000	\$10,000
UV Air Compressor 1A	UV Disinfection Unit 1 (Ch1-3)		\$10,000	\$10,000	\$25,000	\$45,000	\$25,000
Solids Dewatering Air Comp1	Sludge Pump Centrifuge Area				\$90,000	\$90,000	\$90,000
Solids Dewatering Air Comp2	Sludge Pump Centrifuge Area				\$90,000	\$90,000	\$90,000
Pivot Drive 1	Pivot Assemblies 1 & 2				\$187,500	\$187,500	\$187,500



CATEGORY B
New Lincoln WWTRF R&R Projects (Cont'd)

Component	Location	5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total	One Time Full Replacement Costs
Pivot Drive 2	Pivot Assemblies 1 & 2				\$187,500	\$187,500	<i>\$187,500</i>
Tertiary Filter 1	Tertiary Filters				\$312,500	\$312,500	<i>\$312,500</i>
Vaughn Chopper Pump-71260B	Plantwide General & Portable Equip			\$15,000		\$15,000	<i>\$15,000</i>
Influent PS Pump 1A	Influent Collection Structure			\$25,000	\$25,000	\$50,000	<i>\$25,000</i>
Influent PS Pump 1B	Influent Collection Structure				\$25,000	\$25,000	<i>\$25,000</i>
Influent PS Pump 2C	Influent Collection Structure			\$25,000	\$25,000	\$50,000	<i>\$25,000</i>
Maturation Pond PS Pump 1	Maturation Pond Pump Station		\$10,000	\$10,000	\$10,000	\$30,000	<i>\$10,000</i>
Maturation Pond PS Pump 2	Maturation Pond Pump Station				\$10,000	\$10,000	<i>\$10,000</i>
Maturation Pond PS Pump 34	Maturation Pond Pump Station				\$10,000	\$10,000	<i>\$10,000</i>
Filter Feed PS Pump 1	Filter Feed Pump Station		\$10,000	\$10,000	\$10,000	\$30,000	<i>\$10,000</i>
Filter Feed PS Pump 2	Filter Feed Pump Station			\$10,000	\$10,000	\$20,000	<i>\$10,000</i>
Filter Feed PS Pump 3	Filter Feed Pump Station				\$10,000	\$10,000	<i>\$10,000</i>
DAF Pressurization Pump 1A	DAF Unit 1				\$35,000	\$35,000	<i>\$35,000</i>
DAF Pressurization Pump 1B	DAF Unit 1				\$35,000	\$35,000	<i>\$35,000</i>
DAF Pressurization Pump 1C	DAF Unit 1				\$35,000	\$35,000	<i>\$35,000</i>
DAF Float Pump 1A	DAF Unit 1				\$30,000	\$30,000	<i>\$30,000</i>
DAF Float Pump 1B	DAF Unit 1				\$30,000	\$30,000	<i>\$30,000</i>
Filter Backwash Pump 1A	Plant Water Plant Water PS, 3 Water				\$10,000	\$10,000	<i>\$10,000</i>
Filter Backwash Pump 1B	Plant Water Plant Water PS, 3 Water				\$10,000	\$10,000	<i>\$10,000</i>
Plant Water Pump Station 1A	Plant Water Plant Water PS, 3 Water				\$5,000	\$5,000	<i>\$50,000</i>
Plant Water Pump Station 1C	Plant Water Plant Water PS, 3 Water				\$5,000	\$5,000	<i>\$5,000</i>
Effluent PS Pump 1	Effluent Pump Station				\$10,000	\$10,000	<i>\$10,000</i>
Effluent PS Pump 2	Effluent Pump Station				\$10,000	\$10,000	<i>\$10,000</i>
RAS Pump Station	RAS Meter Pit				\$57,000	\$57,000	<i>\$57,000</i>
RAS Pump Station	RAS Meter Pit				\$57,000	\$57,000	<i>\$57,000</i>
RAS Pump Station	RAS Meter Pit				\$57,000	\$57,000	<i>\$57,000</i>
Tertiary Storage Return Pmp 1	Tertiary Storage Basins		\$5,000	\$25,000	\$5,000	\$35,000	<i>\$25,000</i>
Acid Storage Tank	Chemical Feed Systems Bldg.				\$10,000	\$10,000	<i>\$10,000</i>
Caustic Storage Tank	Chemical Feed Systems Bldg.				\$12,000	\$12,000	<i>\$12,000</i>
UV Channels (5) Coating	UV Disinfection				\$50,000	\$50,000	<i>\$50,000</i>



CATEGORY B New Lincoln WWTRF R&R Projects (Cont'd)							
Component	Location	5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total	One Time Full Replacement Costs
Dodge Van 2002	Plantwide General & Portable Equip			\$35,000		\$35,000	\$35,000
4x4 (Dodge Dakota)	Plantwide General & Portable Equip		\$35,000	\$35,000	\$35,000	\$105,000	\$35,000
Electric Carts (2); Kabota (1)	All Purpose			\$20,000	\$15,000	\$35,000	\$20,000
SCADA Software Support & Equipment	WWTRF		\$25,000	\$25,000	\$25,000	\$75,000	\$25,000
General Equipment Painting	WWTRF		\$25,000	\$25,000	\$25,000	\$75,000	\$25,000
Roll-Up Doors	Tracks, Paneling and Operators		\$20,000	\$20,000	\$20,000	\$60,000	\$20,000
Sub-Total Category B WWTRF R&R Project Costs		\$119,000	\$458,000	\$591,000	\$3,310,000	\$4,478,000	
R&R Studies		\$25,000	\$25,000	\$25,000	\$25,000	\$100,000	
Total Category B WWTRF R&R Project Costs		\$144,000	\$483,000	\$616,000	\$3,335,000	\$4,578,000	

Source: Stantec, October 3, 2013, with all costs expressed in 2013 dollars.

APPENDIX C: REGIONAL PIPELINE AND SMD 1 PUMP STATION PROJECTS AND COSTS

Regional Pipeline R&R Projects						
Component	Location	5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total
Biofilter Fan	Ferrari Ranch Biofilter			\$25,000	\$25,000	\$50,000
Biofilter Media	Ferrari Ranch Biofilter		\$20,000		\$20,000	\$40,000
Sub-Total Regional Pipeline R&R Project Costs		\$0	\$20,000	\$25,000	\$45,000	\$90,000
Soft Costs		\$15,000	\$15,000	\$15,000	\$15,000	\$60,000
Total Regional Pipeline R&R Project Costs		\$15,000	\$35,000	\$40,000	\$60,000	\$150,000

SMD 1 Pump Station R&R Projects						
Component	Location	5 Year Projects Estimated Cost	10 Year Projects Estimated Cost	15 Year Projects Estimated Cost	20 Year Projects Estimated Cost	Total
HVAC for Electrical Building	Electrical Building				\$25,000	\$25,000
SCADA Computer	Electrical Building	\$5,000	\$5,000	\$5,000	\$5,000	\$20,000
SCADA Software	Electrical Building		\$25,000		\$25,000	\$50,000
Pumps	Pump Station	\$90,000	\$90,000	\$90,000	\$90,000	\$360,000
Pump VFDs	Electrical Building		\$180,000		\$180,000	\$360,000
Hoist/Trolley	Pump Station				\$87,000	\$87,000
Flush Gate	Clarifier 3&4				\$25,000	\$25,000
Fine Screen	Headworks Screening		\$20,000			\$20,000
Grit Pump	Headworks Screening	\$15,000	\$15,000			\$30,000
Bio Filter	Biofilter Filter System		\$20,000		\$20,000	\$40,000
Biofilter Fan	Biofilter Filter System		\$25,000		\$25,000	\$50,000
Standby Generator	Stand-by Power Generation		\$10,000		\$10,000	\$20,000
Composite Sampler	Plantwide General & Portable Equip				\$25,000	\$25,000
ESB1 Liner	ESB1				\$150,000	\$150,000
Subtotal WWTP R&R Project Costs		\$110,000	\$390,000	\$95,000	\$667,000	\$1,262,000
Soft Costs		\$15,000	\$60,000	\$15,000	\$97,500	\$187,500
Total SMD1 Pump Station R&R Project Costs		\$125,000	\$450,000	\$110,000	\$764,500	\$1,449,500

Source: Stantec, August 8, 2013, with all costs provided in 2013 dollars.

