
SUMMARY, PLANNING COSTS AND PHASING

11.1 GENERAL

The improvements outlined in this Master Plan update were developed for planning purposes only. Design assumptions and specific criteria should be further investigated and defined when specific project implementation begins. Although the final design features may depart from those described herein, these facilities are representative of the facilities required by the City of Lincoln and can be used for long range planning.

The costs presented for the identified improvements are based on assumptions outlined in Chapter 7, adopted from the current City CIP, or developed based on recent bid tabulations. The costs shown are for planning purposes only and should be confirmed based on more detailed engineering and design as projects are developed.

11.2 SUMMARY OF ESTIMATED IMPROVEMENT COSTS AND PHASING

11.2.1 City of Lincoln CIP

A critical step in developing the planning costs are ensuring that current needs are being addressed in the master plan. Thus, summary tables and figures have been prepared which outline the current CIP as determined during this master plan update. A summary of the CIP costs can be seen in Table 11.1 and graphically in Figure 11.1

11.2.2 Collection System

A number of improvements have been identified for the collection system as outlined in Chapter 8 and 9. The pipeline alignments identified herein were based on existing GIS data including contours and streams, and were developed for planning purposes only. A summary of the collection system capital costs is outlined in Table 11.2. Shown graphically in Figure 11.2 are the planning level costs for the improvements based on 2014 dollars as well as costs based on an annual inflation rate of 3-percent.

11.2.3 Wastewater Treatment Facilities

Several improvements have been identified for the Theresa Street and Northeast wastewater treatment facilities as outlined in Chapter 10. The planning level costs associated with the proposed improvements are shown graphically in Figure 11.3 and are outlined in Table 11.3. The planning level costs for the improvements are based on 2014 dollars and an annual inflation rate of 3.0-percent.

11.3 OTHER RECOMMENDATIONS AND SUGGESTIONS

The main purpose of this document is to outline the improvements that will be needed so that the project timing and funding can be planned for. However, during the preparation of the master plan update, other recommendations and suggestions have been noted, as outlined below.

- Continue and expand the sewer cleaning and CCTV programs as the collection in proportion to the expansion of the collection system.
- Consider performing I/I reduction studies on basins in the City that have been identified as areas with a high 'R' factors, possibly starting with a pilot program to determine what defects are being found and the effect that reducing these defects will have on the overall system.
- Continue and possibly expand the flow monitoring program to further define the system characteristics.
- Start the nutrient studies for both wastewater treatment facilities.
- Consider updating the hydraulic model to include smaller pipes. This could be completed in small pieces to meet current and future budgetary constraints.
- Update the Master Plan on a periodic basis, and include the City's current CIP in the analysis.

Table 11.1 City of Lincoln Existing CIP Summary
Wastewater Facilities Master Plan Update - 2014
City of Lincoln, NE

Type	Project CIP ID	WW CIP ID	Project Title	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
General System Improvement		0173	Wastewater cost of street construction (GSI)	40	41	42	43	44	45	-	-	-	-	-	-	-
		0223	Preliminary Design & Engineering (GSI)	40	41	42	43	44	45	-	-	-	-	-	-	-
		0721	Subsidies(GSI)	50	50	60	70	80	100	-	-	-	-	-	-	-
		0281	Selected repair/repl of WW fac/collectors	1,400	1,500	1,800	2,000	2,000	2,000	-	-	-	-	-	-	-
		0278	Facilities Plan Update (GSI)	-	-	-	-	400	-	-	-	-	-	-	-	-
Subtotals:				1,530	1,632	1,944	2,156	2,568	2,190	0	0	0	0	0	0	0
Collection System		0737	Replace C-6, C-7.C-13 Liftstation Components	80	-	-	-	-	-	-	-	-	-	-	-	-
	700929		Rokey Rd S. 70th to S 84th	1,404	-	-	-	-	-	-	-	-	-	-	-	-
	701069	0558	P Street Liftstation Replacement Ph I (W "O")	1,000	-	-	-	-	-	-	-	-	-	-	-	-
			Sewer N & S of Rokey Road East of 40th St	820	-	-	-	-	-	-	-	-	-	-	-	-
	701068		Subbasin NW43/NW52/N I-80 (Ringneck)	300	-	-	-	-	-	-	-	-	-	-	-	-
	701093		Middle Creek Lift Station (D Street LS)	1,150	-	-	-	-	-	-	-	-	-	-	-	-
	502941		Repl Swr - S Runway, NW 44th & West Mathis	1,644	-	-	-	-	-	-	-	-	-	-	-	-
	502456	0617	Trunk Sewer SW Salt Creek (SW Village) (SV)	-	-	500	5,100	-	-	-	-	-	-	-	-	-
	0619	Repair 48" Sewer Pioneers to "O" St (SV)	-	-	350	1,000	1,000	1,000	-	-	-	-	-	-	-	
Subtotals:				6,398	0	850	6,100	1,000	1,000	0	0	0	0	0	0	0
Teresa Sreet Treatment Plant	701119		Emergency Generator Installation	750	-	-	-	-	-	-	-	-	-	-	-	-
	701427		Headworks/Grit Corr Rehab	125	-	-	-	-	-	-	-	-	-	-	-	-
	502428		Biogas Study	200	-	-	-	-	-	-	-	-	-	-	-	-
		0730	Digester Boiler Installation	600	-	-	-	-	-	-	-	-	-	-	-	-
		0724	Strain Press Replacement & Relocation TSTP	350	-	-	-	-	-	-	-	-	-	-	-	-
		0725	Security Gate at South Entrance TSTP	50	-	-	-	-	-	-	-	-	-	-	-	-
		0723	Bar Screen Replacement TSTP	300	-	1,500	-	-	-	-	-	-	-	-	-	-
	702371	0728	Solids Handling Improvements (Thickening)	500	3,600	1,500	-	-	-	-	-	-	-	-	-	-
		0729	Solids Handling Improvements -Digestion	80	100	600	-	-	-	-	-	-	-	-	-	-
	701131	0561	Influent Pumping Upgrades (TSTP)	100	1,100	-	1,000	-	-	-	-	-	-	-	-	-
	701429	0323	Westside Odor Control Improvements (TSTP)	-	-	500	-	-	-	-	-	-	-	-	-	-
		0727	SCADA/PLC Upgrades	-	300	300	-	-	-	-	-	-	-	-	-	-
	701431	0731	Liquid Dumpstation Improvements	-	-	-	500	-	-	-	-	-	-	-	-	-
			Construct Solids Storage Pad	-	-	-	-	-	-	290	-	-	-	-	-	-
		Wet Weather Treatment	-	-	-	-	-	-	-	2,576	-	-	-	-	-	
		12.6 mgd Central Train expansion	-	-	-	-	-	-	-	-	-	-	-	-	50,400	
	0722	TSTP NPDES Nutrient Removal Study	-	300	-	-	4,000	15,000	-	-	-	-	-	-	-	
Subtotals:				3,055	5,400	4,400	1,500	4,000	15,000	290	2,576	0	0	0	0	50,400
Northeast Treatment Plant	502516		Aeration Blower Installation	0	-	-	-	-	-	-	-	-	-	-	-	-
	702275	0470	Emergency Generator Installation (NETP)	-	-	500	-	-	-	-	-	-	-	-	-	-
		0727	SCADA/PLC Upgrades	500	-	-	-	-	-	-	-	-	-	-	-	-
		0732	NPDES Nutrient Removal Study, design, construct	-	50	200	-	1,000	-	-	-	-	-	-	-	-
		0733	Odor Control Chemical Feed System Replacement	-	75	-	-	-	-	-	-	-	-	-	-	-
		0734	Security Gate at North East	50	-	-	-	-	-	-	-	-	-	-	-	-
		0735	Diversion Gate Replacemnet	20	-	-	-	-	-	-	-	-	-	-	-	-
		0736	Replace Two Raw-wastewater Pumps	-	-	175	175	-	-	-	-	-	-	-	-	-
		-	Solids Dewatering Improvments	-	-	-	-	-	-	800	-	-	-	-	-	-
	-	Replace RDT's	-	-	-	-	-	-	-	-	-	-	5,300	-	-	
	-	Wet Weather Treatment	-	-	-	-	-	-	-	-	-	-	1,969	-	-	
Subtotals:				570	125	875	175	1,000	0	800	0	0	0	7,269	0	0
TOTALS:				11,553	7,157	8,069	9,931	8,568	18,190	1,090	2,576	0	0	7,269	0	50,400

Table 11.2 Summary of Collection System Improvement Costs ⁽¹⁾ Wastewater Facilities Master Plan Update - 2014 City of Lincoln, Nebraska				
Basin	Tier I (2015-2040)	Tier II (2040-2060)	Tier III (2060-2115)	Basin Totals
Salt Valley	\$7,770,000	\$2,000,000	\$4,000,000	\$13,770,000
Antelope Valley	\$0	\$0	\$0	\$0
Beal Slough	\$1,410,000	\$0	\$0	\$1,410,000
Upper Southeast	\$8,962,000	\$4,430,000	\$0	\$13,392,000
Upper Southwest	\$9,710,000	\$4,290,000	\$34,460,000	\$48,460,000
Haines Creek	\$4,370,000	\$12,270,000	\$9,570,000	\$26,210,000
West O St & Middle Creek	\$9,820,000	\$0	\$34,270,000	\$44,090,000
Oak Creek & Lynn Creek	\$5,710,000	\$4,110,000	\$48,000,000	\$57,820,000
Little Salt Creek	\$7,870,000	\$0	\$13,500,000	\$21,370,000
Deadmans Run, East Campus, Havelock	\$0	\$0	\$0	\$0
Northeast Salt Creek	\$9,420,000	\$0	\$47,960,000	\$57,380,000
Stevens Creek	\$39,760,000	\$57,360,000	\$40,680,000	\$137,800,000
Southeast	\$0	\$0	\$10,440,000	\$10,440,000
Totals	\$104,802,000	\$84,460,000	\$242,880,000	\$432,142,000
Notes:				
1. ENR CCI for Kansas City 10,881 (August 2014).				

Table 11.3 Summary of Wastewater Treatment Facility Improvement Costs ^(1,2) Wastewater Facilities Master Plan Update - 2014 City of Lincoln, Nebraska				
Treatment Plant	Tier I (2015-2040)	Tier II (2040-2060)	Tier III (2060-2115)	Plant Total
Theresa Street WWTF	\$86,621,000	\$103,500,000	\$0	\$190,121,000
Northeast WWTF	\$10,814,000	\$25,000,000	\$43,640,000	\$79,454,000
Total	\$97,435,000	\$128,500,000	\$43,640,000	\$269,575,000
<u>Notes:</u>				
1. ENR CCI for Kansas City 10,881 (August 2014).				

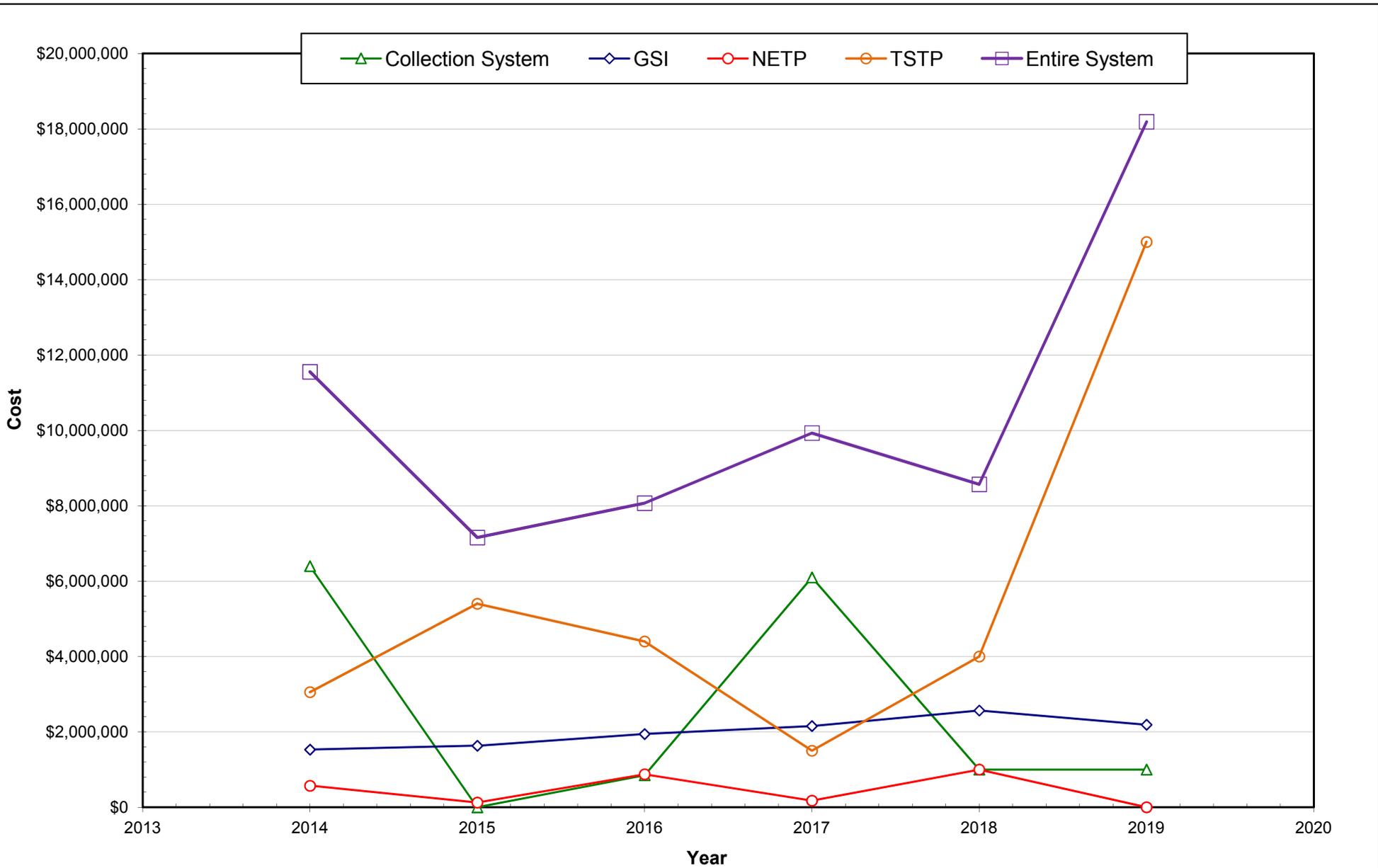


FIGURE 11.1 - ANNUAL COST OF CITY CIP PROJECTS
 WASTEWATER FACILITIES MASTER PLAN UPDATE – 2014
 CITY OF LINCOLN, NEBRASKA

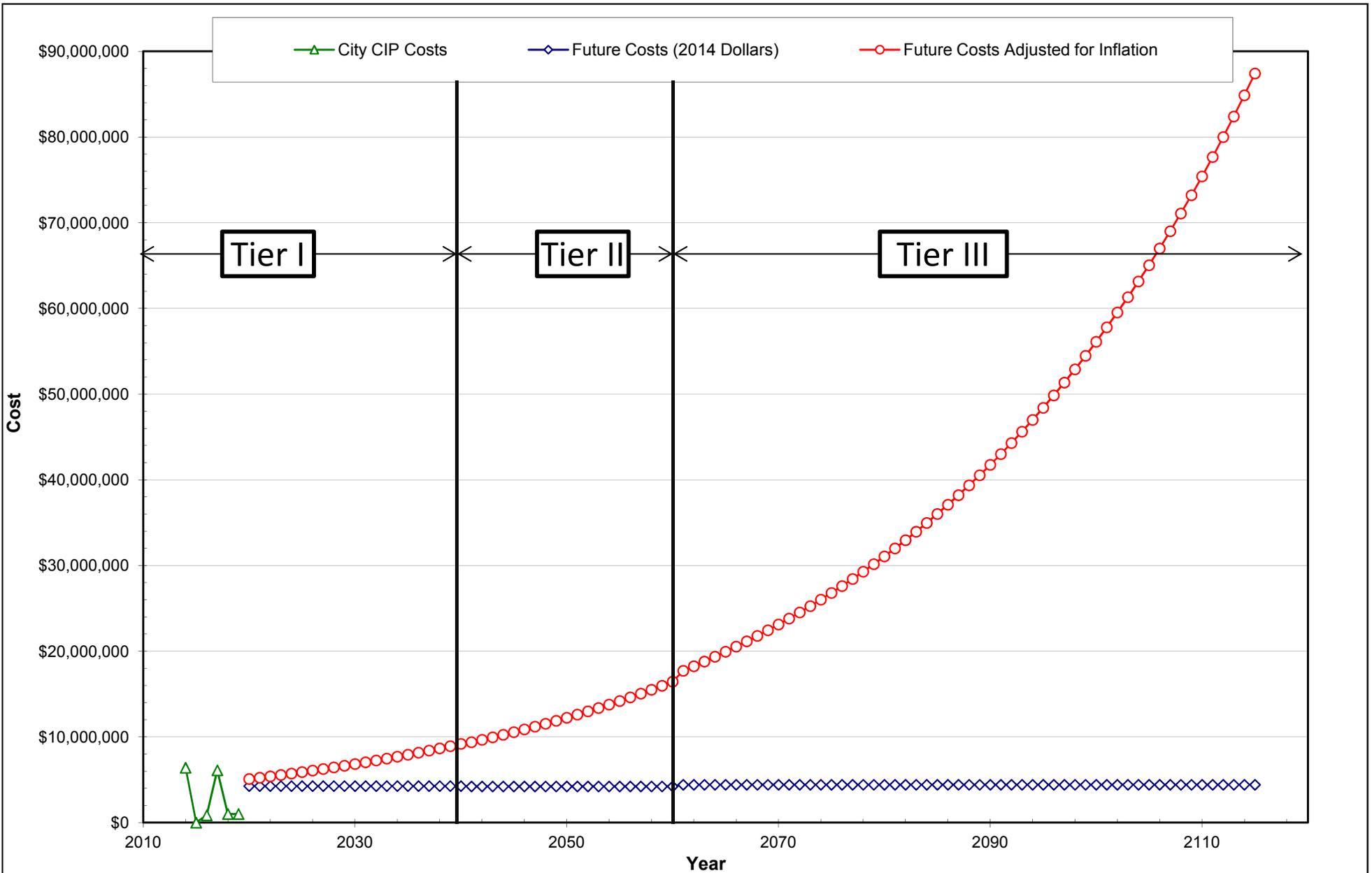


FIGURE 11.2 - ANNUAL COST OF COLLECTION SYSTEM IMPROVEMENT PROJECTS

WASTEWATER FACILITIES MASTER PLAN UPDATE – 2014
CITY OF LINCOLN, NEBRASKA

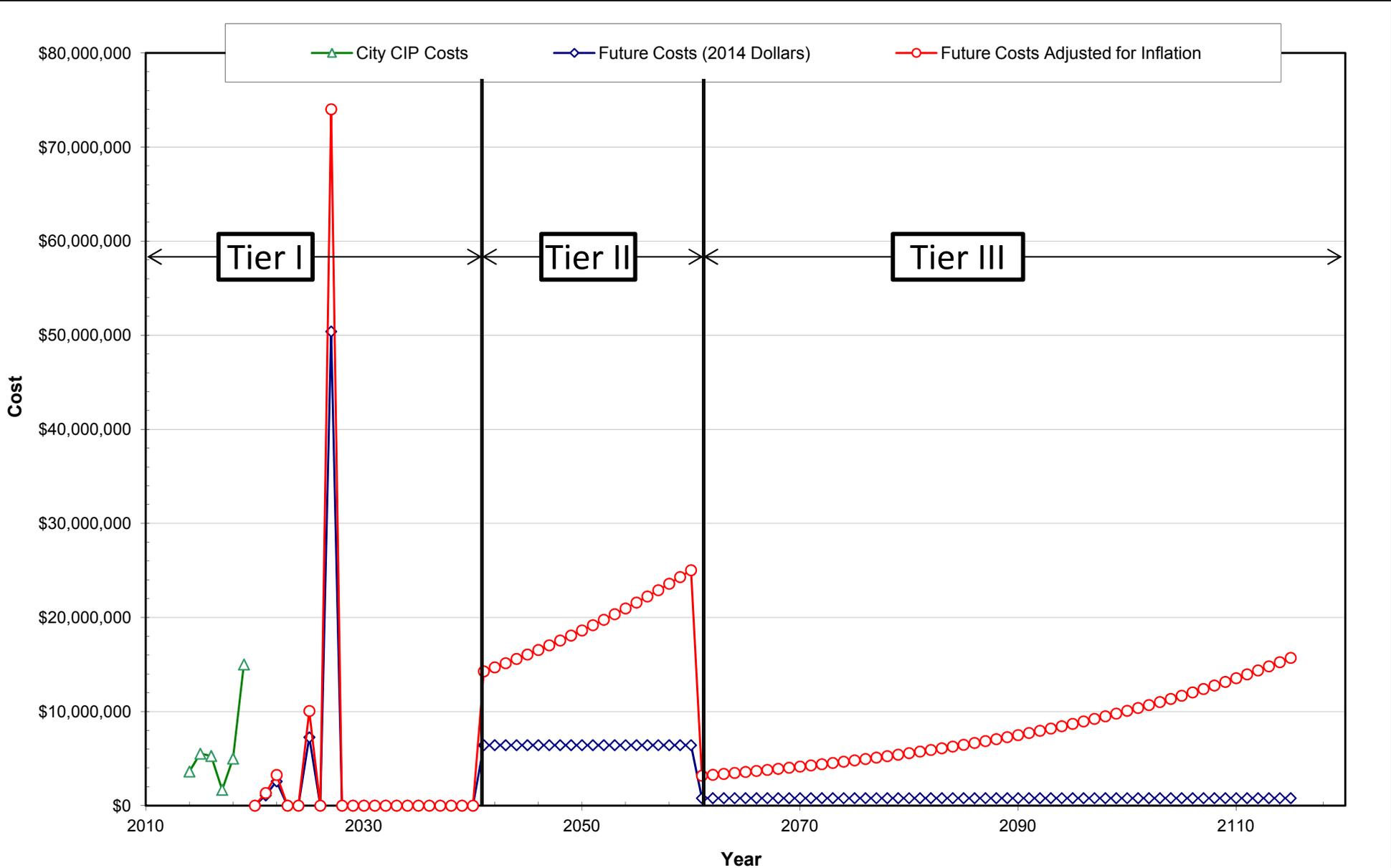


FIGURE 11.3 - ANNUAL COST OF THERESA STREET AND NORTHEAST WWTF IMPROVEMENT PROJECTS
 WASTEWATER FACILITIES MASTER PLAN UPDATE – 2014
 CITY OF LINCOLN, NEBRASKA

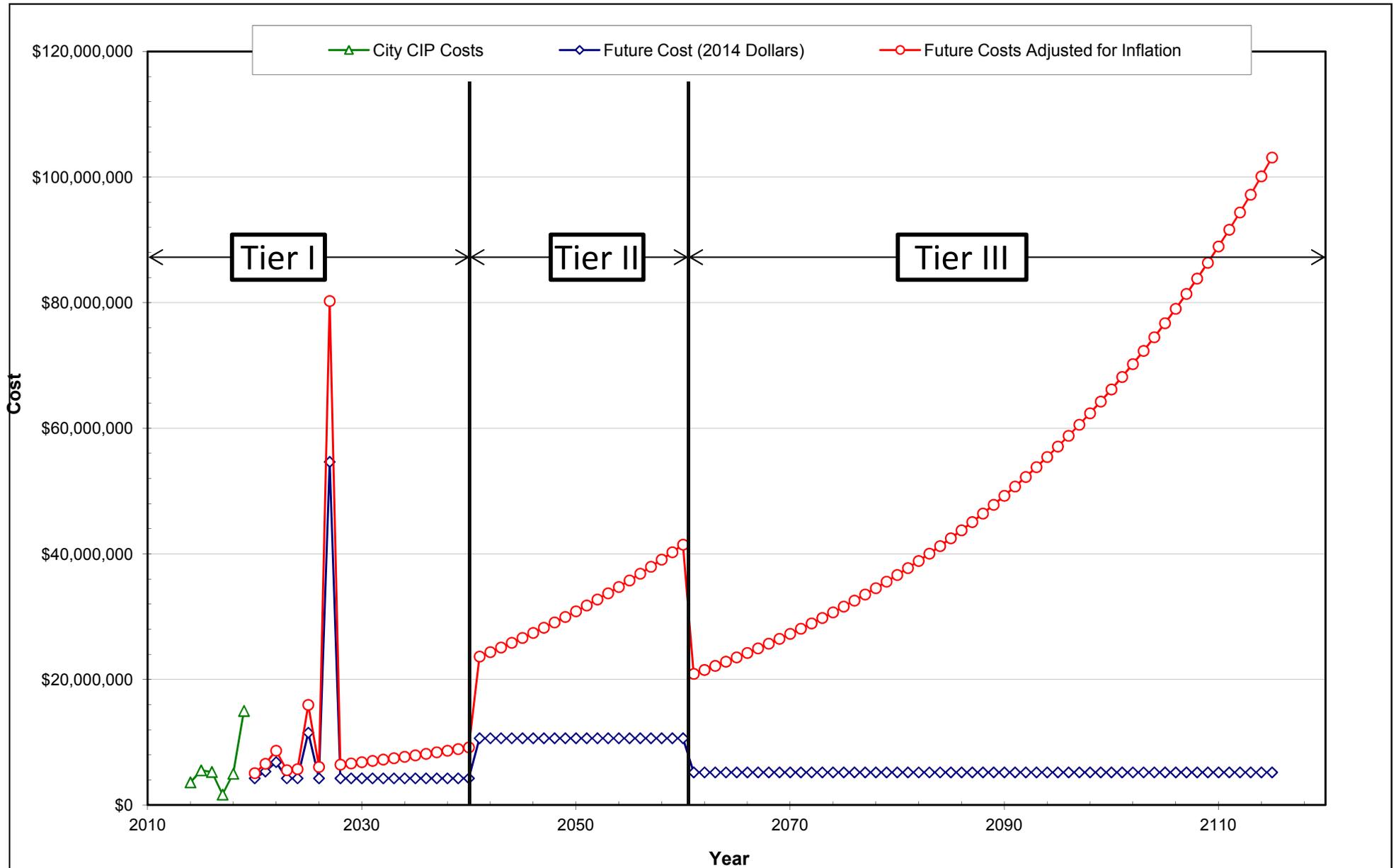


FIGURE 11.4 - ANNUAL COST OF CITY WIDE IMPROVEMENT PROJECTS

WASTEWATER FACILITIES MASTER PLAN UPDATE – 2014
CITY OF LINCOLN, NEBRASKA