

PLANNED AND POTENTIAL COLLECTION SYSTEM IMPROVEMENTS

9.1 SUMMARY OF IMPROVEMENTS

As discussed previously, the 2007 modeling effort identified the addition of over one million feet of pipeline and almost 42.0 million gallons of collection system storage over the 100 year planning period. In this update, these improvements were refined based upon the new flow monitoring data and the updated model. In this chapter, a summary of how both the collection system piping, and storage improvements were updated will be presented. All improvements identified are considered planning level, and detailed engineering studies are recommended to finalize location and design criteria for each project.

9.2 COLLECTION SYSTEM PIPELINE IMPROVEMENTS

For this master plan update, the piping improvements as included in the 2007 master plan were updated based upon new planning information provided by the City. The new information included revisions to the Tier I, Tier II, and Tier III planning areas which were used to reassign each project into its respective updated planning horizon. It should be noted that for this update, only the timing of the projects changed while the location and size remained the same. A summary of the updated pipeline improvements can be seen in Table 9.1. It should be noted the pipe lengths presented in this table do not include any pipes identified in the current City CIP. Additionally a layout showing the overall updated Tier areas, and proposed sewers for the Tier I, Tier II, and Tier III can be seen in Figure 9.1, 9.2, and 9.3, respectively. Individual figures and summary tables for each basin are included in Appendix F.

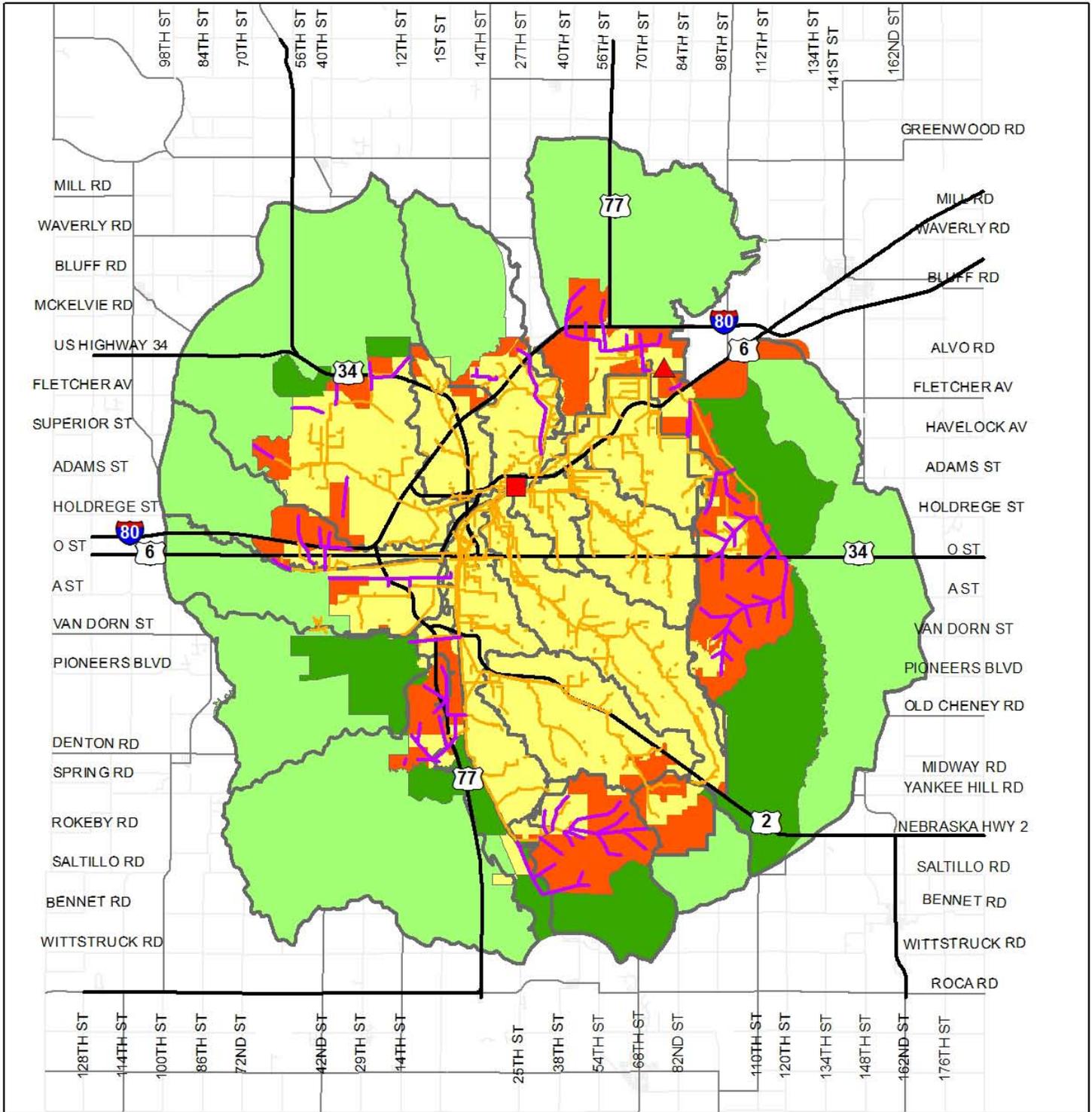
Table 9.1 Summary of Collection System Pipeline Improvements ⁽¹⁾ Wastewater Facilities Master Plan Update - 2007 City of Lincoln, Nebraska				
Basin	Tier I⁽²⁾	Tier II⁽³⁾	Tier III⁽³⁾	Basin Totals
	(2015-2040)	(2040-2060)	(2060-2115)	
Salt Valley	0	0	0	0
Antelope Valley	0	0	0	0
Beal Slough	0	0	0	0
Upper Southeast	48,696	16,198	0	64,894
Upper Southwest	32,780	14,888	123,794	171,462
Haines Creek	7,019	61,464	56,131	124,614

**Table 9.1 Summary of Collection System Pipeline Improvements ⁽¹⁾
Wastewater Facilities Master Plan Update - 2007
City of Lincoln, Nebraska**

Basin	Tier I⁽²⁾ (2015-2040)	Tier II⁽³⁾ (2040-2060)	Tier III⁽³⁾ (2060-2115)	Basin Totals
West O St & Middle Creek	41,780	0	142,603	184,383
Oak Creek & Lynn Creek	19,920	18,913	150,021	188,854
Little Salt Creek	20,742	0	52,792	73,534
Deadmans Run, East Campus, Havelock	0	0	0	0
Northeast Salt Creek	41,216	0	127,715	168,931
Stevens Creek	96,163	116,779	155,456	368,398
Southeast	0	0	25,934	25,934
Totals:	308,315	228,243	834,446	1,371,004

Notes:

1. Includes all sizes of pipes including forcemains.
2. Tier I values include pipelines 10-inches and larger.
3. Tiers II and III values generally includes pipelines 15 inches and larger.



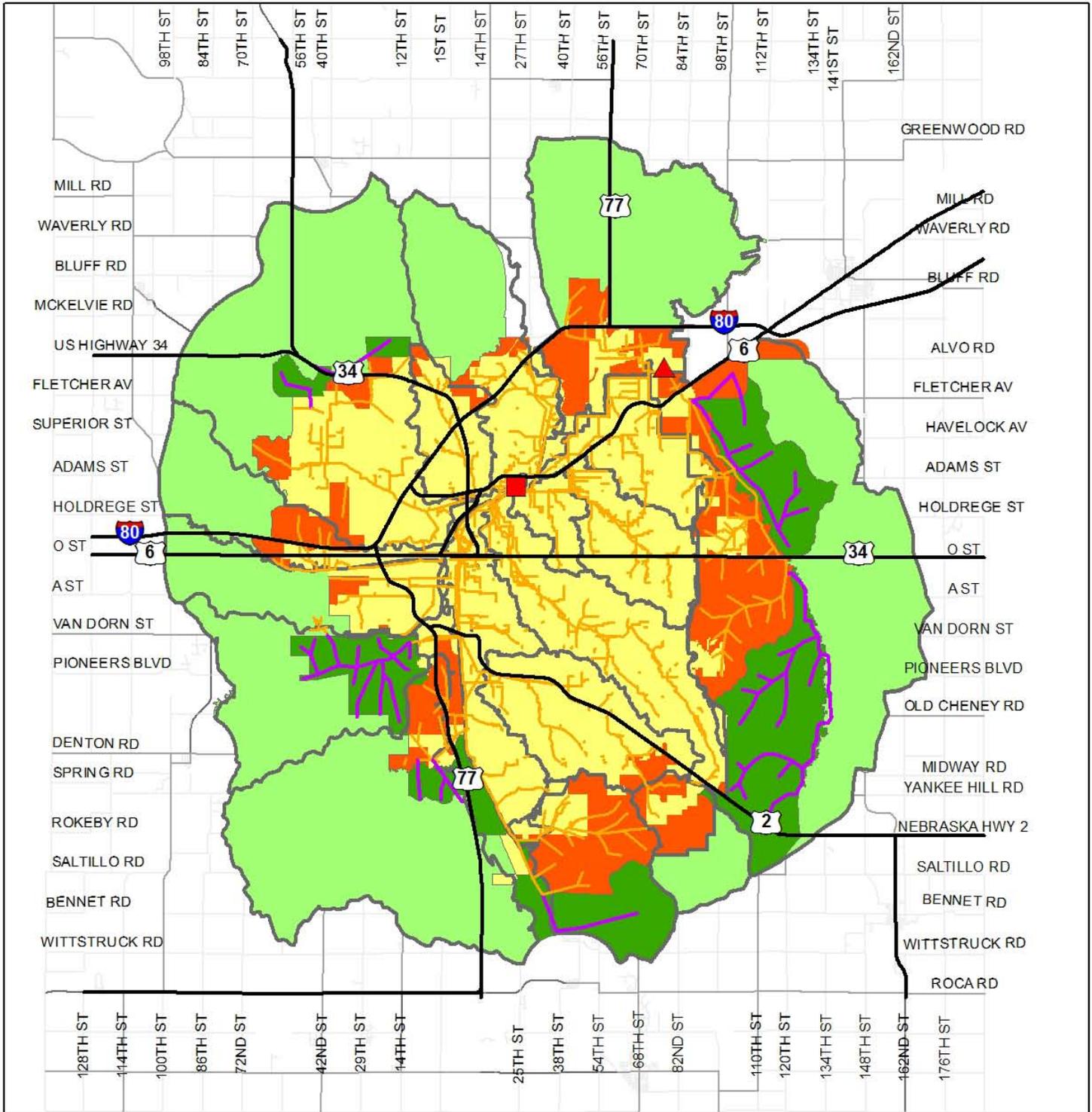
Legend

- Theresa St. WWTP **Growth Tiers**
- ▲ Northeast WWTP
- Basin Outlines
- Existing City ⁽¹⁾
- Tier IB and IC
- Tier II **Pipes**
- Tier III
- Tier I
- Existing Sewers

Notes:
 (1) Represents all land within City limits which includes Tier IA.



FIGURE 9.1 – PLANNING AREA TIER I IMPROVEMENTS
 WASTEWATER FACILITIES MASTER PLAN UPDATE – 2014
 CITY OF LINCOLN, NEBRASKA



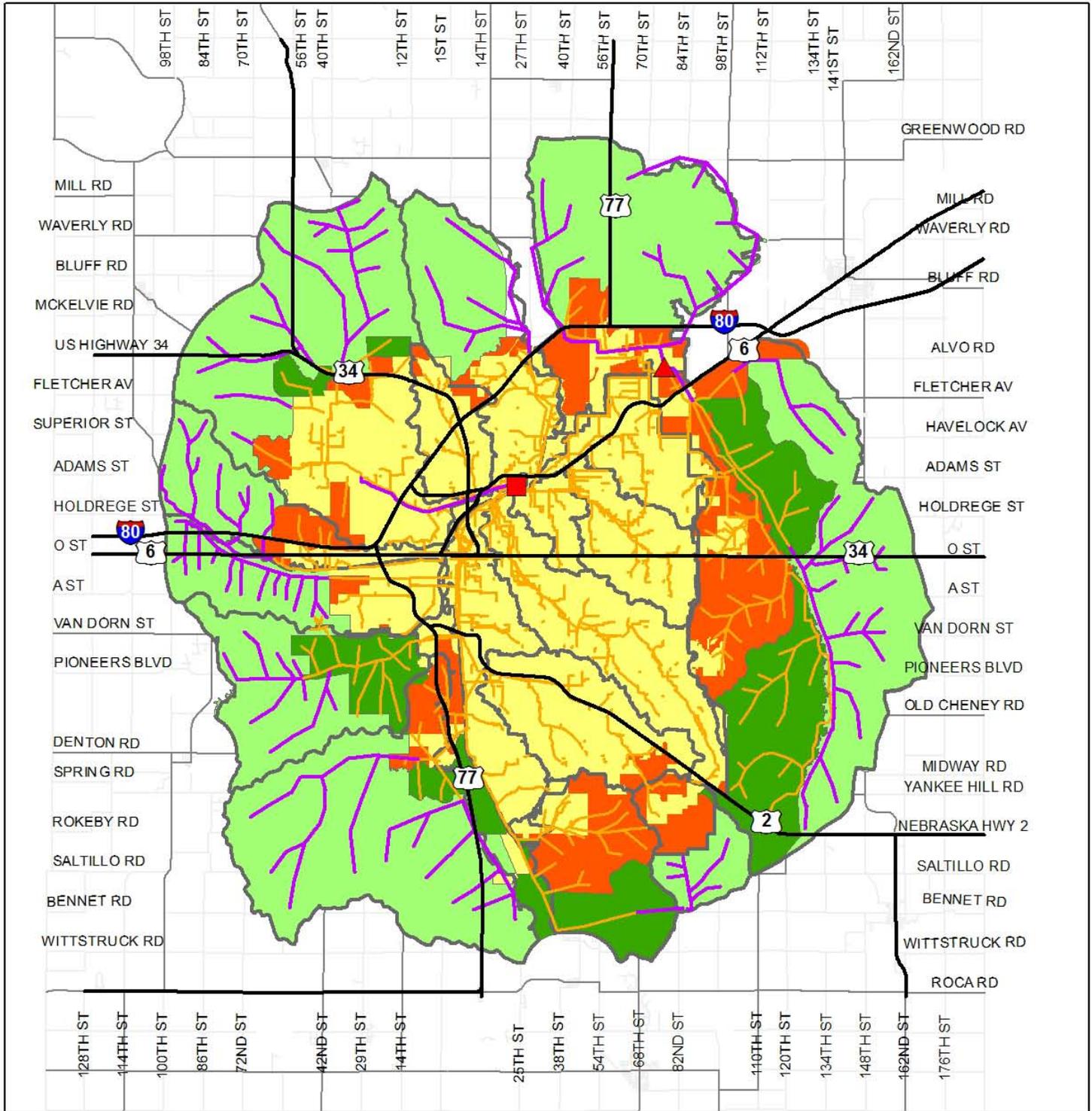
Legend

- Theresa St. WWTP **Growth Tiers**
- ▲ Northeast WWTP
- Basin Outlines
- Existing City ⁽¹⁾
- Tier IB and IC
- Tier II **Pipes**
- Tier III
- Tier II
- Existing and Tier I

Notes:
 (1) Represents all land within City limits which includes Tier IA.



FIGURE 9.2 – PLANNING AREA TIER II IMPROVEMENTS
 WASTEWATER FACILITIES MASTER PLAN UPDATE – 2014
 CITY OF LINCOLN, NEBRASKA



Legend

- Theresa St. WWTP **Growth Tiers**
- ▲ Northeast WWTP
- Basin Outlines
- Existing City ⁽¹⁾
- Tier IB and IC

- Tier II **Pipes**
- Tier III
- Tier III
- Existing and Tier I/II

Notes:

(1) Represents all land within City limits which includes Tier IA.



FIGURE 9.3 – PLANNING AREA TIER III IMPROVEMENTS
 WASTEWATER FACILITIES MASTER PLAN UPDATE – 2014
 CITY OF LINCOLN, NEBRASKA

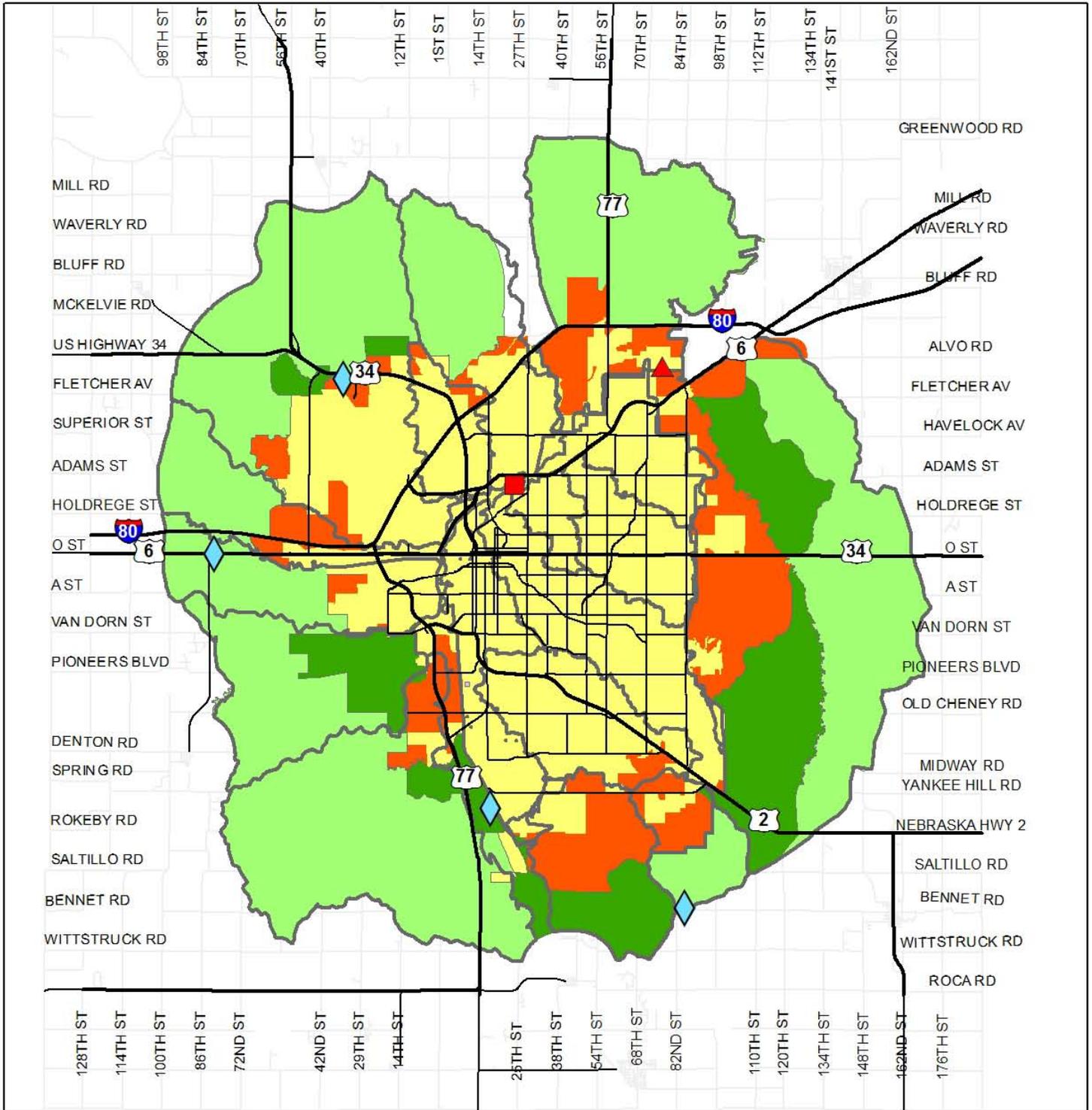
9.3 COLLECTION SYSTEM STORAGE IMPROVEMENTS

As stated previously the volumes, locations, and timing of the proposed storage facilities were reevaluated based upon the updated model. This resulted in the amount of required storage being much less than the 2007 version of the master plan. These updated storage facilities are summarized in Table 9.2. As seen in the table, the city may need storage in the West O, Oak Creek and Southeast basins to meet the minimum required freeboard of 3 feet. Although storage is showed for the Salt Valley basin under Tier II conditions, in reality no storage may be needed. The city needs to continue to monitor the Salt Valley trunk downstream of Manhole B1-290 as development increase in the SW Salt basin to determine if storage is required. It is also recommended that the city continues the flow monitoring efforts in all the basins as funds permit. These proposed storage facilities are illustrated in Figure 9.4

Table 9.2 Summary of Proposed Storage Improvements Wastewater Facilities Master Plan Update - 2014 City of Lincoln, NE				
Basin	Location	Capacity (MG)		
		Tier I	Tier II	Tier III
Oak Creek	East of Fletcher and NW 40th St.	0	0	2.0
West O	O St and NW 84th St	0	0	1.5
Salt Valley	Rokeby and S 14th St	0	0.5	0
Southeast	Bennet and S 84th St	0	0	1.0

9.3.1 Recommended Improvements to Existing Lift Stations

Currently there are only two lift station improvements identified in the City's current wastewater CIP. One of these projects is identified as project 0737, Replace C-6, C-7, C-13 Lift Station components which includes replacement of the existing motor, control centers and pumps which have exceeded their useful life. The other CIP project is identified as project 0558, P Street Liftstation Replacement Ph I (W "O") which includes replacing the P street liftstation which has exceeded its useful life and requires additional capacity to serve the new development in the West "O" Street basin.



Legend

- Theresa St. WWTP
- ▲ Northeast WWTP
- Basin Outlines
- ◆ Proposed Storage

Growth Tiers

- Existing City ⁽¹⁾
- Tier IB and IC
- Tier II
- Tier III

Notes:

(1) Represents all land within City limits which includes Tier IA.



FIGURE 9.4 – PLANNING AREA STORAGE IMPROVEMENTS
 WASTEWATER FACILITIES MASTER PLAN UPDATE – 2014
 CITY OF LINCOLN, NEBRASKA