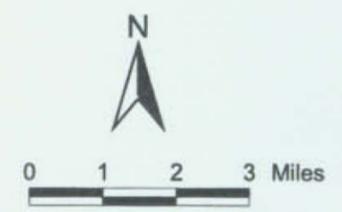
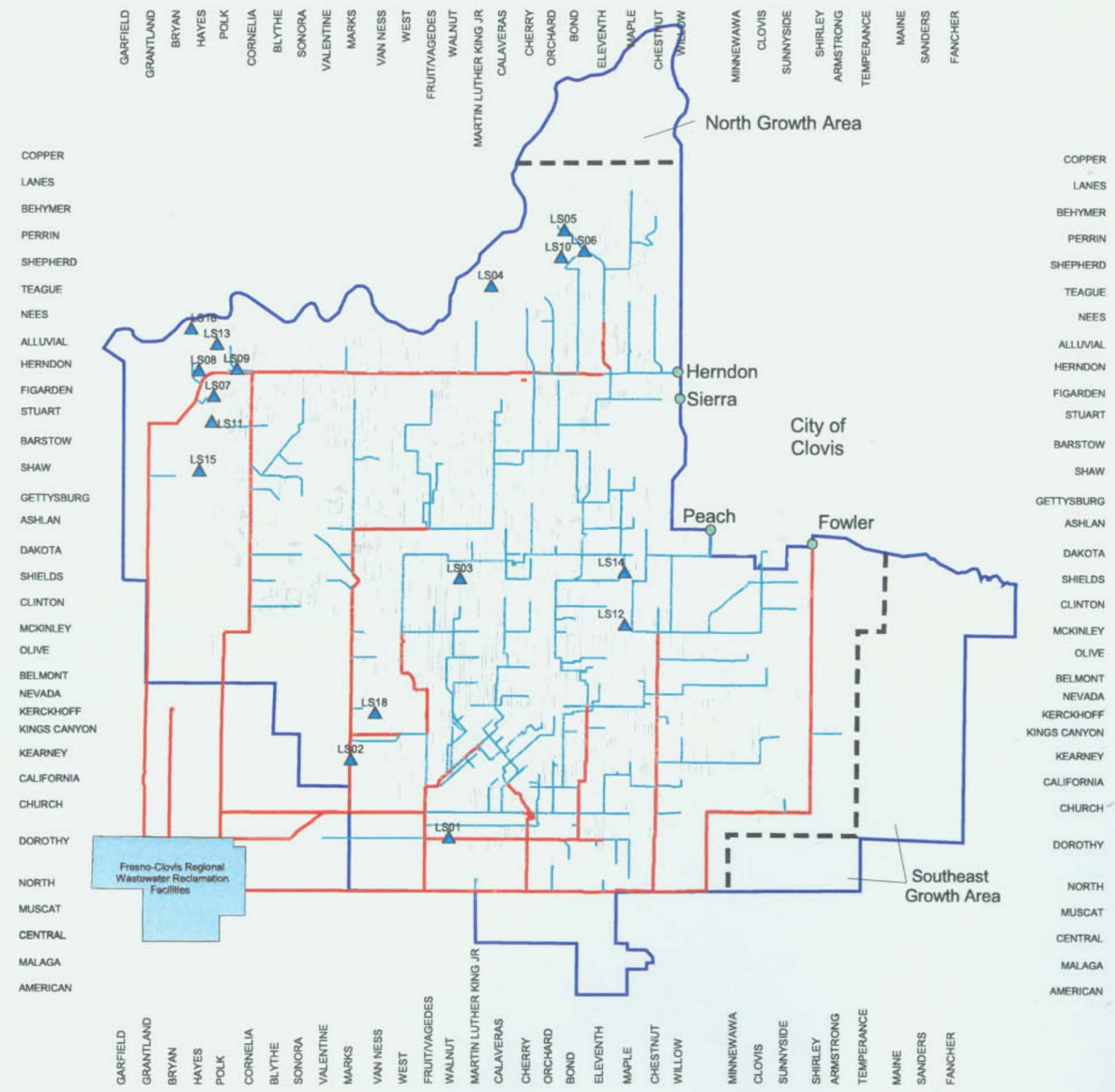


## **APPENDIX M**

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### **Wastewater System Figures**

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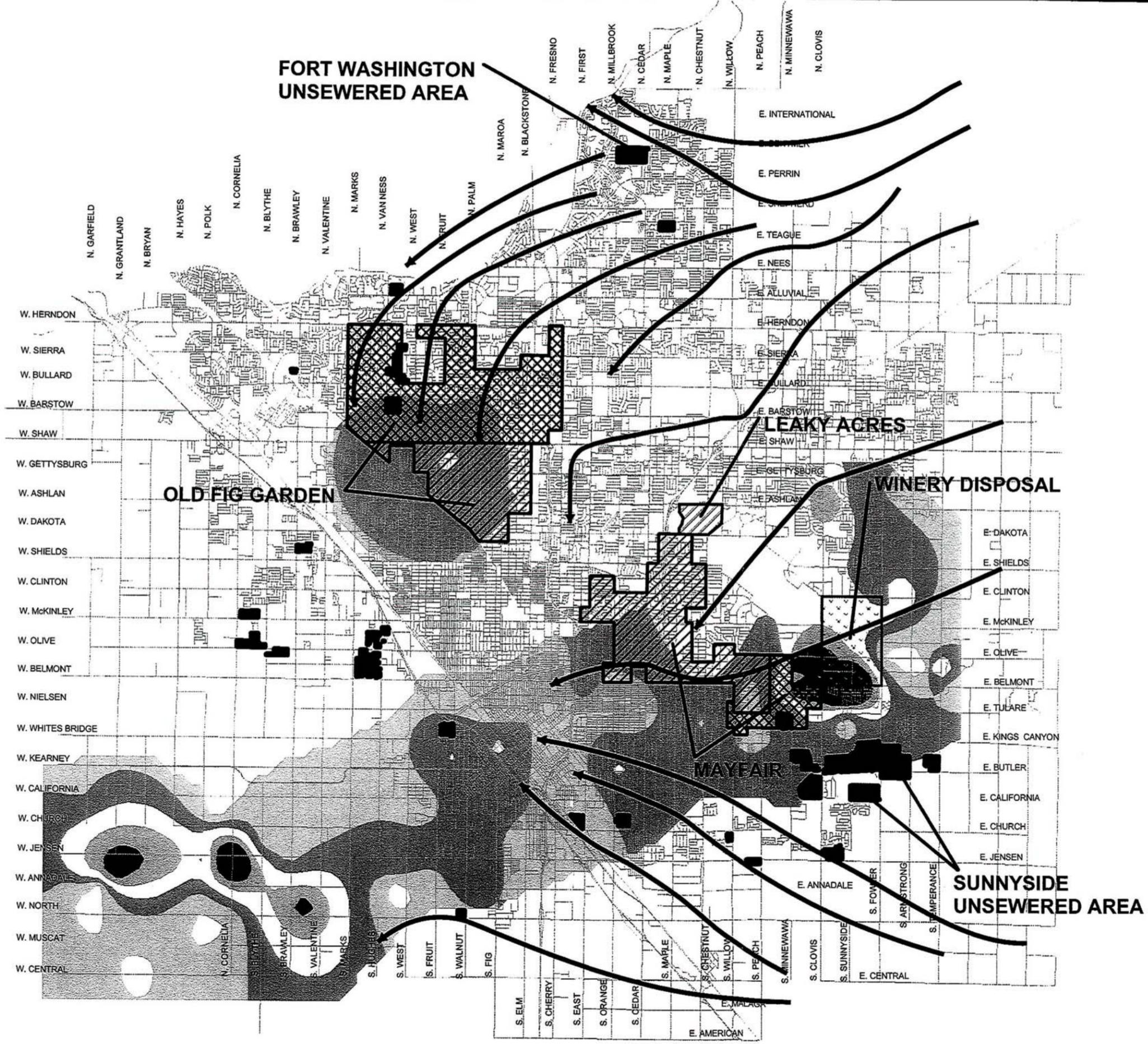
- ▲ Lift Station
- General Plan Boundary
- - - Growth Area Boundary
- < 12" Diameter Sewer
- 12" - 33" Diameter Sewer
- > 33" Diameter Sewer
- City of Clovis Connection

**Figure 1-2  
Current Sewer System**



Last Revised: May 17, 2004

V:\F0800001\CAD\DESIGN\GIS\Nitrate Plumes-FIG-2-1.mxd



### Legend

**Year Sewered**

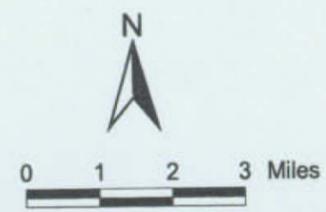
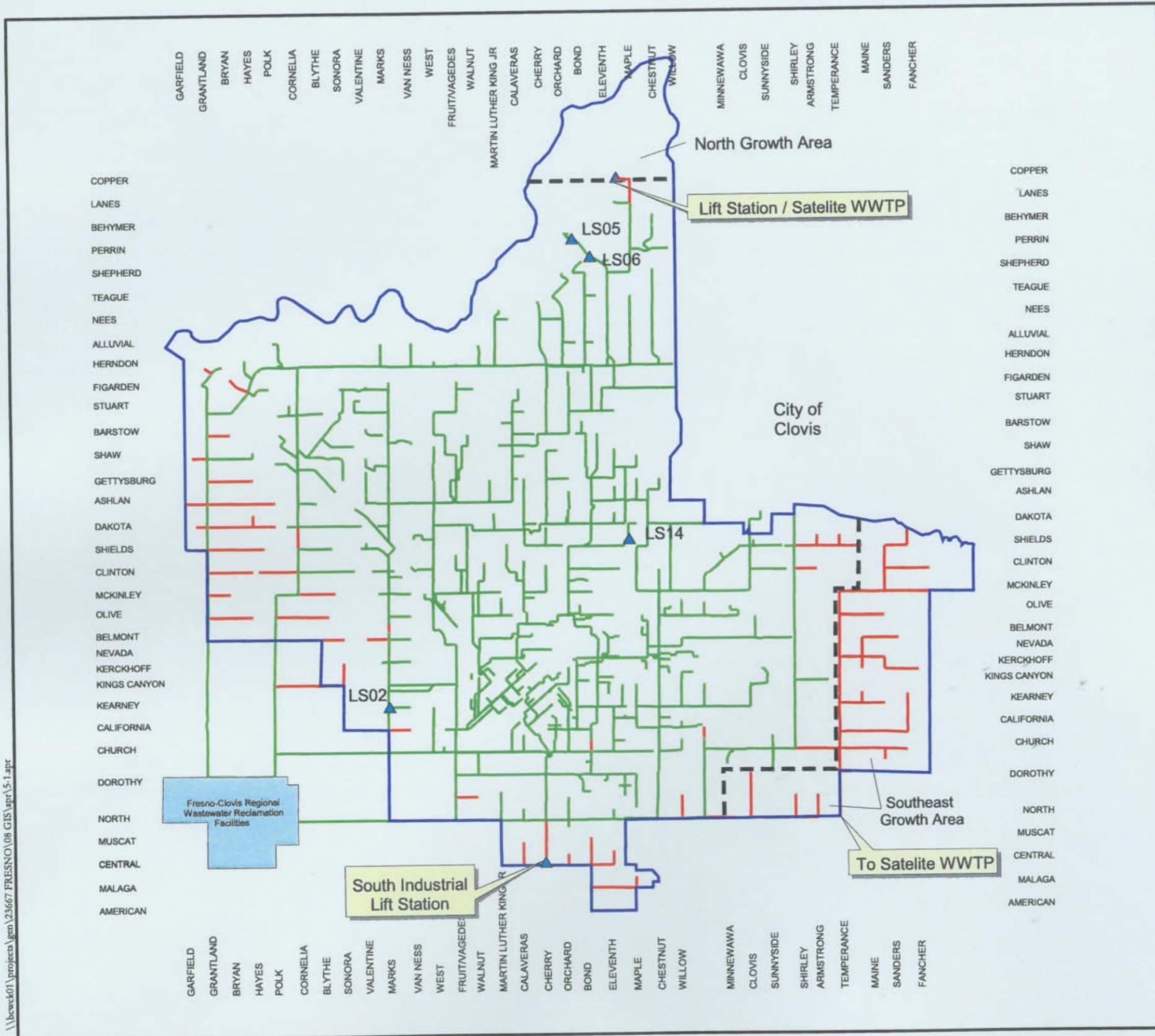
- Fig Garden 70-75
- Fig Garden 75-80
- Mayfair 70-75
- Mayfair 75-80
- Winery Disposal
- Leaky Acres

**1968-77 Nitrate Concentrations**

- No data
- 10-20 mg/L
- 20-30 mg/L
- 30-40 mg/L
- 40-50 mg/L
- >50 mg/L
- Unsewered Residential Area
- General Direction of Groundwater Flow

<b>City of Fresno</b>		
<b>1968-1977 Nitrate Concentrations</b>		
DATE	FIGURE	PROJECT NO.
2/06	2-1	F0880001
<b>Boyle Engineering Corporation</b>		

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**LEGEND:**

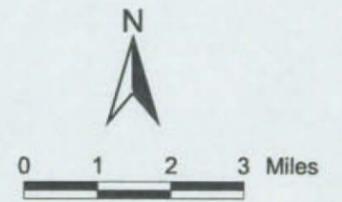
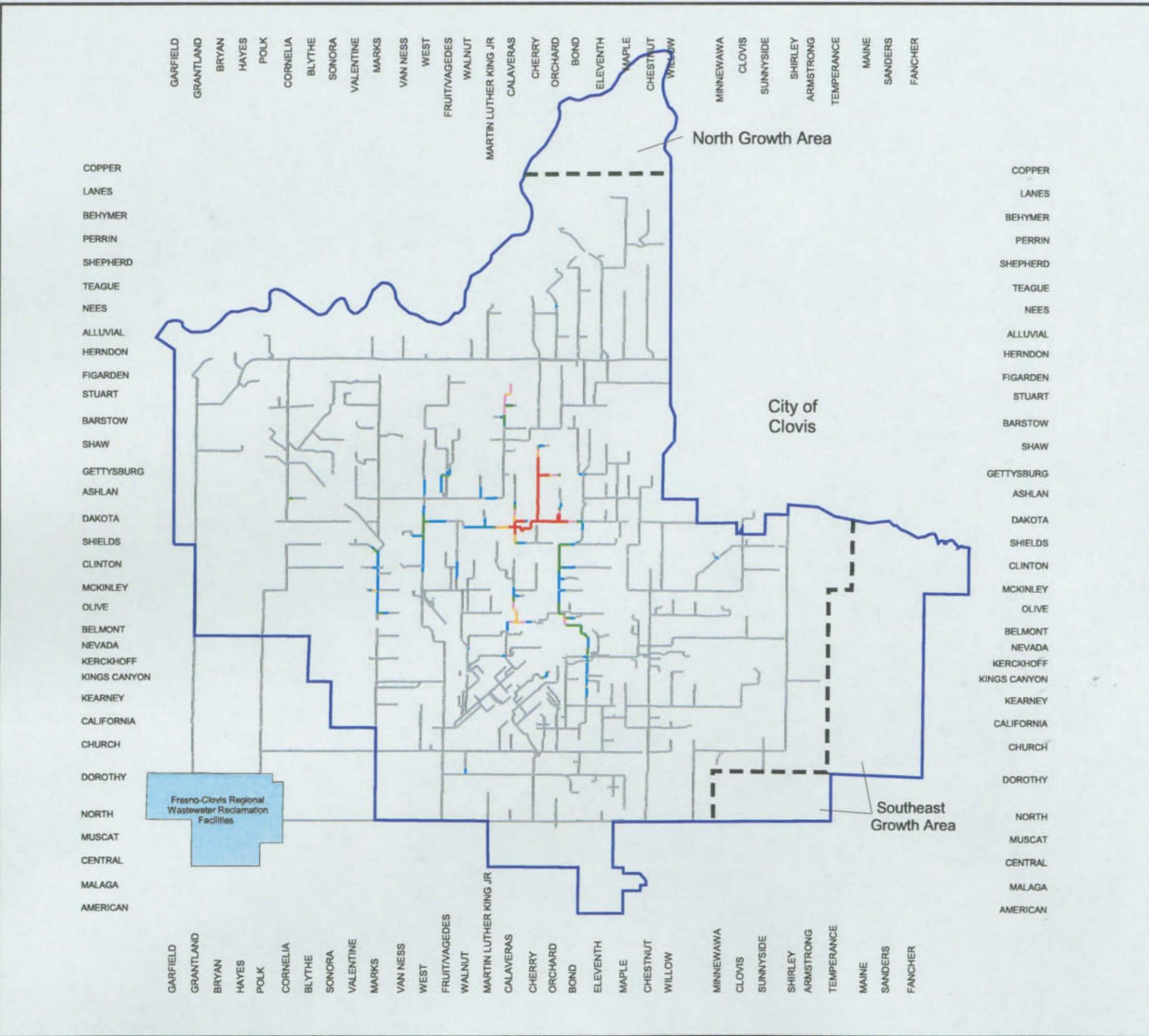
- ▲ Lift Station
- General Plan Boundary
- - - Growth Area Boundary
- Current Modeled Sewer
- Future Modeled Sewer

**Figure 5-1  
Current and Future  
Modeled Sewers**



Last Revised: May 17, 2004

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**LEGEND:**

- General Plan Boundary
- - - Growth Area Boundary

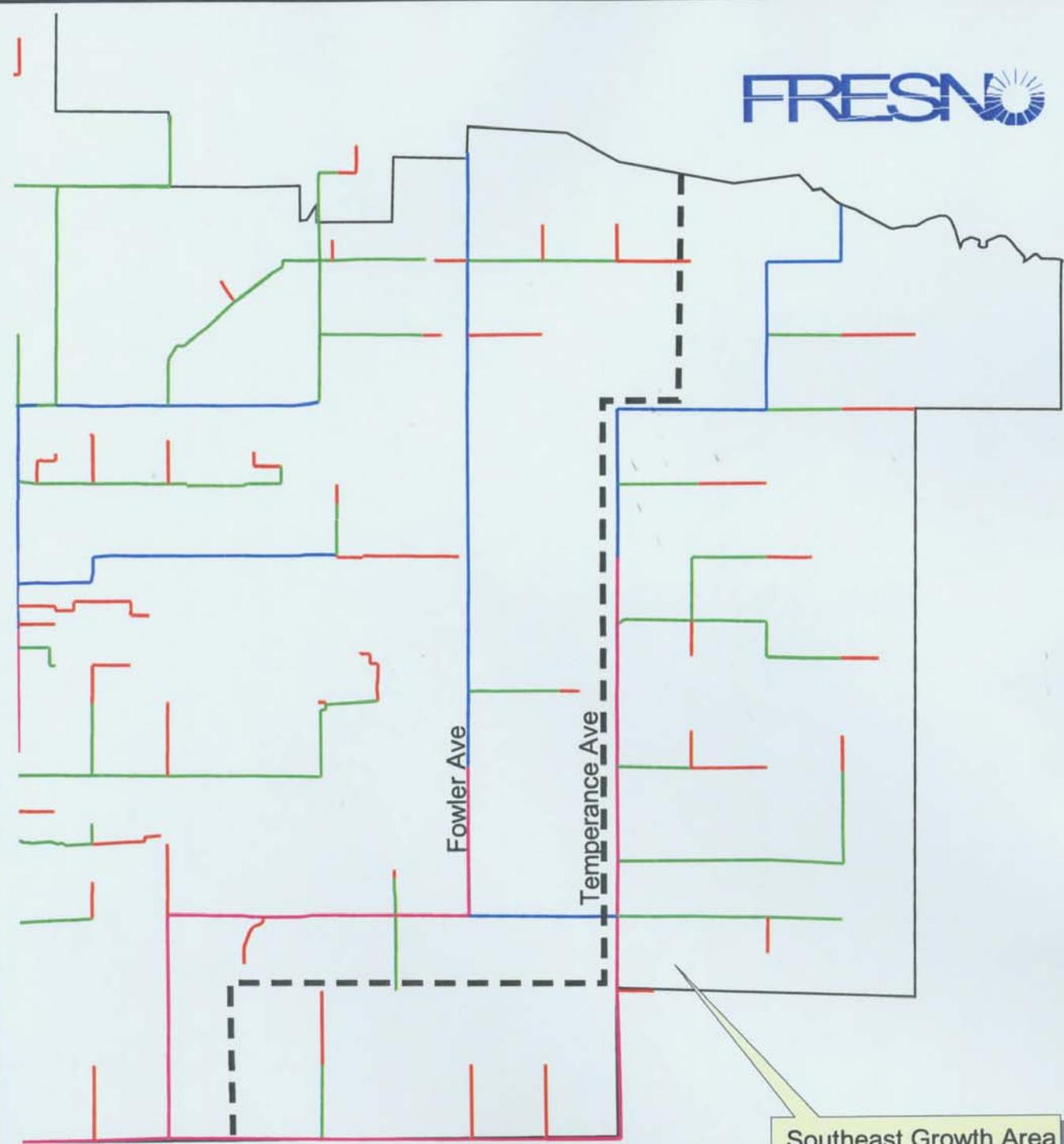
**Surcharging (feet above crown)**

- < 0
- 0 - 0.5
- 0.5 - 1
- 1 - 1.5
- 1.5 - 2
- > 2

**Figure 5-3  
Existing Wet Weather  
Surcharging with  
No Improvements**



Last Revised: May 17, 2004



Southeast Growth Area

**LEGEND:** E. North Ave

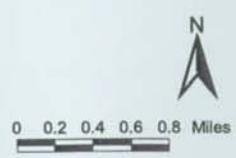
- ▲ Lift Station
- General Plan Boundary
- - Growth Area Boundary

**Pipe Diameters**

- 8" - 10"
- 12"
- 14" - 26"
- 27" - 42"
- 42" - 84"

Proposed Satellite Treatment Plant Site

**Figure 5-8  
Southeast Area**



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TABLE A																			
ESTIMATES OF RANGE OF FLOWS ASSOCIATED WITH ST-WRF																			
YEAR	RANGE OF INFLOW FROM TRUNK SEWER SYSTEM TO PUMP STATION E									RANGE OF MAKEUP INFLOW FROM PUMP STATION B TO PUMP STATION E			RANGE OF INFLOW TO PUMP STATION E			RANGE OF INFLOW TO ST-WRF			ST-WRF PLANNED FLOW CAPACITY
	ANNUAL RATE OF DEVELOPMENT IN ST-WRF SERVICE AREA			ACCUMULATED TOTAL AT END OF YEAR															
	RATE OF DEVELOPMENT			RATE OF DEVELOPMENT			RATE OF DEVELOPMENT			RATE OF DEVELOPMENT			RATE OF DEVELOPMENT			RATE OF DEVELOPMENT			
	MINIMUM (UNITS/YR)	PROJECTED (UNITS/YR)	MAXIMUM (UNITS/YR)	MINIMUM (UNITS)	PROJECTED (UNITS)	MAXIMUM (UNITS)	MINIMUM (MGD)	PROJECTED (MGD)	MAXIMUM (MGD)	MINIMUM (MGD)	PROJECTED (MGD)	MAXIMUM (MGD)	MINIMUM (MGD)	PROJECTED (MGD)	MAXIMUM (MGD)	MINIMUM (MGD)	PROJECTED (MGD)	MAXIMUM (MGD)	
2004 - 2005	0	750	1,125	0	750	1,125	0.000	0.203	0.304	0.000	0.000	0.000	0.000	0.203	0.304	0.000	0.000	0.000	0.000
2005 - 2006	250	750	1,125	250	1,500	2,250	0.068	0.405	0.608	0.000	0.000	0.000	0.068	0.405	0.608	0.000	0.000	0.000	0.000
2006 - 2007	250	750	1,125	500	2,250	3,375	0.135	0.608	0.911	0.000	0.000	0.000	0.135	0.608	0.911	0.000	0.000	0.000	0.000
2007 - 2008	250	750	1,125	750	3,000	4,500	0.203	0.810	1.215	0.000	0.000	0.000	0.203	0.810	1.215	0.000	0.000	0.000	0.000
2008 - 2009	250	750	1,125	1,000	3,750	5,625	0.270	1.013	1.519	1.600	1.587	1.081	1.870	2.600	2.600	1.970	2.600	2.600	2.900
2009 - 2010	250	750	1,125	1,250	4,500	6,750	0.338	1.215	1.823	1.600	1.385	0.778	1.938	2.600	2.600	1.938	2.600	2.600	2.900
2010 - 2011	250	750	1,125	1,500	5,250	7,875	0.405	1.418	2.126	1.600	1.183	0.474	2.008	2.600	2.600	2.008	2.600	2.600	2.900
2011 - 2012	250	750	1,125	1,750	6,000	9,000	0.473	1.620	2.430	1.600	0.980	0.170	2.073	2.600	2.600	2.073	2.600	2.600	2.900
2012 - 2013	250	750	1,125	2,000	6,750	10,125	0.540	1.823	2.734	1.600	0.778	0.000	2.140	2.600	2.734	2.140	2.600	2.734	2.900
2013 - 2014	250	750	1,125	2,250	7,500	11,250	0.608	2.025	3.038	1.600	0.575	0.000	2.208	2.600	3.038	2.208	2.600	3.038	2.900
2014 - 2015	250	750	1,125	2,500	8,250	12,375	0.675	2.228	3.341	1.600	0.373	0.000	2.275	2.600	3.341	2.275	2.600	3.341	2.900
2015 - 2016	250	750	1,125	2,750	9,000	13,500	0.743	2.430	3.645	1.600	0.170	0.000	2.343	2.600	3.645	2.343	2.600	3.645	2.900
2016 - 2017	350	1,000	1,500	3,100	10,000	15,000	0.837	2.700	4.050	1.600	0.000	0.000	2.437	2.700	4.050	2.437	2.700	4.050	2.900
2017 - 2018	350	1,000	1,500	3,450	11,000	16,500	0.932	2.970	4.455	1.600	0.000	0.000	2.532	2.970	4.455	2.532	2.970	4.455	5.600
2018 - 2019	350	1,000	1,500	3,800	12,000	18,000	1.026	3.240	4.860	1.600	0.000	0.000	2.626	3.240	4.860	2.626	3.240	4.860	5.600
2019 - 2020	350	1,000	1,500	4,150	13,000	19,500	1.121	3.510	5.265	1.600	0.000	0.000	2.721	3.510	5.265	2.721	3.510	5.265	5.600
2020 - 2021	400	1,200	1,900	4,550	14,200	21,300	1.229	3.834	5.751	1.600	0.000	0.000	2.829	3.834	5.751	2.829	3.834	5.751	5.600
2021 - 2022	400	1,200	1,900	4,950	15,400	23,100	1.337	4.158	6.237	1.600	0.000	0.000	2.937	4.158	6.237	2.937	4.158	6.237	5.600
2022 - 2023	400	1,200	1,900	5,350	16,600	24,900	1.445	4.482	6.723	1.600	0.000	0.000	3.045	4.482	6.723	3.045	4.482	6.723	5.600
2023 - 2024	400	1,200	1,900	5,750	17,800	26,700	1.553	4.806	7.209	1.600	0.000	0.000	3.153	4.806	7.209	3.153	4.806	7.209	5.600
2024 - 2025	400	1,200	1,900	6,150	19,000	28,500	1.661	5.130	7.695	1.600	0.000	0.000	3.261	5.130	7.695	3.261	5.130	7.695	5.600
2025 - 2026	400	1,200	1,900	6,550	20,200	30,300	1.769	5.454	8.181	1.600	0.000	0.000	3.369	5.454	8.181	3.369	5.454	8.181	5.600
2026 - 2027	400	1,200	515	6,950	21,400	30,815	1.877	5.778	8.320	1.600	0.000	0.000	3.477	5.778	8.320	3.477	5.778	8.320	8.400
2027 - 2028	400	1,200	0	7,350	22,600	30,815	1.985	6.102	8.320	1.600	0.000	0.000	3.585	6.102	8.320	3.585	6.102	8.320	8.400
2028 - 2029	400	1,200	0	7,750	23,800	30,815	2.093	6.426	8.320	1.600	0.000	0.000	3.693	6.426	8.320	3.693	6.426	8.320	8.400
2029 - 2030	400	1,200	0	8,150	25,000	30,815	2.201	6.750	8.320	1.600	0.000	0.000	3.801	6.750	8.320	3.801	6.750	8.320	8.400
2030 - 2031	400	1,200	0	8,550	26,200	30,815	2.309	7.074	8.320	1.600	0.000	0.000	3.909	7.074	8.320	3.909	7.074	8.320	8.400

ANALYSIS FACTORS	
270 Gallons	Unit flow generation rate (average daily flow per equivalent single family residential unit)
1.600 MGD	Design capacity of Fowler Trunk Sewer diversion facilities (average daily flow)
2.800 MGD	Desired inflow to Phase 1 of ST-WRF
30,815 Units	Maximum number of equivalent single family residential units in service area of ST-WRF
1.50	Ratio of maximum rate of development to projected rate of development

Note: All flow values in table are Average Daily Flows.