

# **CITY OF GREENFIELD**

## **2008 Update of the Wastewater System Capital Improvement Plan and Capacity Charge Study**

**July 2008**

**Prepared by**

Michael Ranker, P.E.  
City Engineer  
Terra Engineering, Inc.  
820 Park Row, #592  
Salinas, California 93901-2406  
831-455-2344            fax 831-455-1921

and

Michael J. Freitas, P.E.  
Freitas + Freitas Engineering and Planning  
Consultants, Inc.  
9011 Soquel Drive, Suite C  
Aptos, California 95003  
831-688-1168            fax 831-688-1218

## Table Of Contents

<u>Title</u>	<u>Page</u>
1. Purpose of This Report	1
2. Summary of Previous Reports	1
3. Completed Wastewater System Projects	2
4. Growth Since 2005	3
5. Changes to Sphere of Influence	3
6. Description of Facilities to Serve New Areas	5
7. Recommended Additional Projects	6
8. New Capacity Charges	7

### List of Tables

1. 2005 Recommended Wastewater System Capital Improvement Projects	1
2. 2005 Wastewater Capacity Charges	2
3. Completed or Under Construction Wastewater System Projects	2
4. Completed Growth Projects	3
5. Additional Future Wastewater Use	4
6. Existing and Future Wastewater Use By Zones	4
7. Recommended Wastewater System Capital Improvement Projects	6
8. Derivation of Wastewater Capacity Charges	8
9. Wastewater Capacity Charges By Zone Type	8

### List of Figures

1. Completed Growth Projects
2. October 2007 Sphere of Influence
3. Recommended Capital Improvement Projects
4. Proposed 2.0 MGD Treatment Plant Expansion

**City of Greenfield  
2008 Wastewater System Capital Improvement Plan Update  
And Capacity Charge Study**

**1. Purpose of This Report**

The purpose of this report is to summarize progress for the completion of work identified in the June 21, 2005 **City of Greenfield 2005-2025 Wastewater System Capital Improvement Plan Update and Capacity Charge Study** and suggests revisions to this report based on completed projects and changes in the recently adopted City Sphere of Influence. A staged capital improvement program (CIP) was proposed in that 2005 document. The City commissioned this 2008 Wastewater System Capital Improvement Plan Update and Capacity Charge Study as part of the 2008 Utility Rate Study being prepared by Bartle Wells Associates.

**2. Summary of Previous Report**

The purpose of the **2005 Wastewater Capital Improvement Plan Update** was to identify capacity deficiencies in the Wastewater system (both existing and at build-out) and recommend improvements to correct them. A staged capital improvement program (CIP) was proposed that presented the costs of the required improvements and the approximate time frame when they will be needed.

The existing City of Greenfield Wastewater system was analyzed for its capacity to handle existing and future demands. Wastewater demands were estimated based on land use information provided by the City of Greenfield Planning Department and by Pacific Municipal Consultants from the planning area defined in the 2005–2025 Greenfield General Plan. The Wastewater system analysis was based on design criteria established jointly between the City and Terra Engineering.

The Wastewater system analysis indicated that there were no significant deficiencies in the existing system under existing development conditions. Accordingly, the City's existing Wastewater distribution system needed to be enlarged to meet future demands and the required improvements identified in the analysis were necessary to serve future development.

The report recommended capital improvement projects indicated on **Table 1 – 2005 Recommended Wastewater System Capital Improvement Projects** shown below.

<b><u>Table 1</u></b> <b><u>2005 Recommended Wastewater System</u></b> <b><u>Capital Improvement Projects</u></b>	
<b><u>Facility</u></b>	<b><u>Estimated</u></b> <b><u>Construction Cost</u></b>
<b>Pipelines</b>	<b>\$ 1,488,000</b>
<b>Pump Stations</b>	<b>\$ 300,000</b>
<b>SCADA</b>	<b>\$ 200,000</b>
<b>Wastewater Treatment Plant</b>	<b>\$ 12,700,000</b>
<b>Total Construction Cost</b>	<b>\$ 14,688,000</b>
<b>Contract Administration, Engineering &amp; Contingencies</b>	<b>\$ 5,140,800</b>
<b>Total Capital Improvement Cost</b>	<b>\$ 19,828,800</b>
<b>Administration (1.5% of total cost)</b>	<b>\$ 297,432</b>
<b>Total Wastewater Capacity Charge Costs</b>	<b>\$ 20,126,232</b>

All recommended projects were fully attributable to future development.

Implementation of the CIP was undertaken and implementation activities included:

- Incorporation of CIP recommendations into the City’s CIP program.
- Incorporation of recommendations into the City’s rate study.
- Development of a plan for environmental review of projects.
- Coordination of the Wastewater projects with other construction projects such as storm drains and sewer, gas, electric, or telephone transmission facilities, or street paving projects that may share common alignments.

Wastewater capacity charges that were imposed on new development to finance new developments share of the costs of the recommended capital improvement projects as shown on **Table 2 – 2005 Wastewater Capacity Charges** below.

<b>Table 2</b>	
<b>2005 Wastewater Capacity Charges</b>	
<b>Type</b>	<b>Capacity Charge</b>
<b>Typical Residence Cost ((DFU/DU) x (\$178.68))</b>	<b>\$3,573.68</b>
<b>Typical Commercial Cost (Unit Cost per drain fixture unit)</b>	<b>\$178.68</b>

**3. Completed Wastewater System Projects**

Since the completion of the **2005 Study** the following construction items shown on **Table 3 - Completed or Under Construction Wastewater System Capital Improvement Projects** below are under construction or have been completed:

<b>Table 3</b>					
<b>Completed or Under Construction Wastewater Capital Improvement Projects</b>					
<b>No.</b>	<b>Facility</b>	<b>Size</b>	<b>Length</b>	<b>Unit Cost</b>	<b>Estimated Construction Cost</b>
	<b>SCADA</b>				
16	Install System At Pump Stations and WWTP Facilities			\$200,000	\$200,000
	<b>Subtotal</b>				<b>\$200,000</b>
	<b>Wastewater Treatment Plant</b>				
17b	1 MGD Primary Clarifiers and Appurtenances	1	each	\$350,000	\$350,000
17c	30 Foot Diameter Digester	1	each	\$150,000	\$150,000
17d	Sludge and Scum Pump Building inc. pumps	1	each	\$250,000	\$250,000
17f	Floating Aeratation System	1	l.s.	\$150,000	\$150,000
	<b>Subtotal</b>				<b>\$900,000</b>
	<b>Total Construction Cost</b>				<b>\$1,100,000</b>
18	<b>Administration, Engineering &amp; Contingencies</b>		35%		<b>\$385,000</b>
	<b>Total Capital Improvement Cost</b>				<b>\$1,485,000</b>
	Percentage of Total				7.38%

All improvements have been completed at the existing treatment plant site and the facility has an approved capacity of 2.0 MGD in accordance with **Waste Discharge Requirements Order No. R3-2002 - 0062** that has been established by the California Regional Water Quality Control Board, Central Coast Region.

**4. Growth Since 2005**

Since the completion of the **2005 Study** the completed growth areas are shown on **Figure 1 - Completed Growth Projects**. **Table 4 - Completed Growth Projects** below summarizes the projects under construction or have been completed:

<b>Table 4 Completed Growth Projects</b>							
<b>Designation</b>	<b>Zoning</b>	<b>Total</b>	<b>Ave. DU</b>	<b>Total DU</b>	<b>Unit Rate</b>	<b>ADF</b>	<b>WWFU</b>
		(ac.)			(gpd)	(gpd)	(drain fixture unit)
Residential Estate	<b>RE</b>	0	2	0	400	0	0
Low Density Residential	<b>LDR</b>	86.5	5	432.5	400	173,000	8,650
Medium Density Residential	<b>MDR</b>	59.4	10	594	400	237,600	11,880
High Density Residential	<b>HDR</b>	0	16	0	400	0	0
Neighborhood Commercial	<b>NC</b>	0	N/A		1,000	0	0
Downtown Commercial	<b>DTC</b>	4	N/A		1,000	4,000	120
Highway Commercial	<b>HC</b>	0	N/A		1,000	0	0
Light Industrial	<b>LI</b>	3.5	N/A		1,000	3,500	105
Heavy Industrial	<b>HI</b>	0	N/A		1,000	0	0
Professional Office	<b>PO</b>	0	N/A		1,000	0	0
Public Quasi Public	<b>PQP</b>	0	N/A		1,000	0	0
Artisan Ag. Visitor Serving	<b>AAVS</b>	0	N/A		1,000	0	0
Recreation Open Space	<b>ROS</b>	1	N/A		100	100	3
<b>Total</b>				<b>1,027</b>		<b>418,200</b>	<b>20,758</b>
<b>Standard Residential Dwelling = 20 wastewater fixture units (WWFU)</b>							
<b>Zones other than residential use based upon 0.03 WWFU per ADF</b>							

**5. Changes to Sphere of Influence**

The City of Greenfield adopted a new Sphere of Influence on October 2007 as shown on **Figure 2 - October 2007 Sphere of Influence**. This included an additional 670 acres outside of the area included in the **2005 City of Greenfield 2005-2025 Wastewater System Capital Improvement Plan Update and Capacity Charge Study**.

This new area will require additional average day flows and peak day flows as shown below on **Table 5 – Additional Future Wastewater Use**.

<b>Designation</b>	<b>Zoning</b>	<b>Total</b>	<b>Ave. DU</b>	<b>Total DU</b>	<b>Unit Rate</b>	<b>ADF</b>	<b>WWFU</b>
		(ac.)			(gpd)	(gpd)	(ww fixture unit)
Residential Estate	<b>RE</b>	65.2	2	130	400	26,080	2,608
Low Density Residential	<b>LDR</b>	58.8	5	294	400	23,520	5,880
Med. Density Residential (Amaral)	<b>MDR</b>	151.0	*	551	400	220,400	11,020
Highway Commercial	<b>HC</b>	61.5	N/A		1,000	61,500	1,845
Heavy Industrial	<b>HI</b>	66.1	N/A		1,000	66,100	1,983
Future Planning Area		261.0	N/A		1,000	261,000	7,830
<b>Total</b>		663.6		<b>975</b>		<b>658,600</b>	<b>31,166</b>

**\* Quantities for Amaral are based on October 2007 Amaral Annexation Water Supply Assessment**

A Summary of the uses by zoning from the 2005 report, development since 2005 and the new sphere additions is shown below on **Table 6 – Existing and Future Wastewater Use by Zones.**

<b>Designation</b>	<b>Zoning</b>	<b>2005 Total</b>	<b>Built</b>	<b>New Sphere</b>	<b>2008 Total</b>	<b>Ave. DU</b>	<b>Total DU</b>	<b>Unit Rate</b>	<b>ADF</b>	<b>WWFU</b>
		(ac.)	(ac.)	(ac.)	(ac.)			(gpd)	(gpd)	
<b>Existing 2008 Use</b>									<b>1,000,000</b>	
Residential Estate	<b>RE</b>	129	0	65	194	2	388	400	155,200	7,760
Low Density Residential	<b>LDR</b>	245	86.5	59	217.5	5	1088	400	435,000	21,750
Medium Density Residential	<b>MDR</b>	194	59.4	151	285.6	10	2856	400	1,142,400	57,120
High Density Residential	<b>HDR</b>	0	0		0	16	0	400	0	0
Neighborhood Commercial	<b>NC</b>	4	0		4	N/A		1,000	4,000	120
Downtown Commercial	<b>DTC</b>	4	4		0	N/A		1,000	0	0
Highway Commercial	<b>HC</b>	249	0	62	311	N/A		1,000	311,000	9,330
Light Industrial	<b>LI</b>	141	3.5		137.5	N/A		1,000	137,500	4,125
Heavy Industrial	<b>HI</b>	296	0	66	362	N/A		1,000	362,000	10,860
Professional Office	<b>PO</b>	0	0		0	N/A		1,000	0	0
Public Quasi Public	<b>PQP</b>	0	0		0	N/A		1,000	0	0
Artisan Ag. Visitor Serving	<b>AAVS</b>	315	0		315	N/A		1,000	315,000	9,450
Recreation Open Space	<b>ROS</b>	19	1		18	N/A		100	1,800	54
Future Planning Area				261	261	N/A		1,000	261,000	7,830
<b>Subtotal for Growth</b>									<b>3,124,900</b>	<b>128,399</b>
<b>Total</b>			154	664	2,106		<b>4,332</b>		<b>4,124,900</b>	

## **6. Description of Facilities to Serve New Areas**

The criteria for evaluation of the existing facilities and recommendations for new facilities were included in the original report. Using these criteria, the following improvements by category are described below.

### **A. Recommended Collection Pipeline Projects**

Analysis of the existing wastewater collection system shows that the existing pipelines are generally sufficient to convey the wastewater easterly from the existing city core area west of Highway 101 to the wastewater treatment plant. The main trunk line in Walnut Ave. to the wastewater treatment plant is of adequate size. Therefore, pipeline additions necessary are in the eastern undeveloped area of the city and are generally collector pipeline in the major streets.

Collection pipeline extensions will be required to serve future development. These extensions have been identified conceptually and sized as part of the Capital Improvement Plan Update process and the exact alignments will need to be defined as part of the detailed subdivision planning required for the areas.

These future collection pipeline extensions are shown on **Figure 3 – Wastewater System Capital Improvement Projects**. These collection pipelines have been routed along existing roads or assumed extensions of existing roads. The sizes provided in the Capital Improvement Plan Update are intended to serve as a guideline for the City to use in evaluating and possibly up-sizing projects proposed by developers. The actual alignments and design details of the future collection pipelines will depend on the specific development schemes. These future collection pipelines will be designed and constructed as development occurs and all costs of these future collection pipelines are attributable to future users.

### **B. Recommended Pump Station Projects**

Based on the preliminary topographic maps, three new sanitary sewer pump stations will be needed in the southeastern portion of the Sphere of Influence near the intersection of Second Street and Elm Ave. These pump stations will serve the area to the south of Elm Street and the east of Highway 101. The exact size of these pump stations will depend on the development proposed in this area.

These future pump station projects are shown on **Figure 7 – Wastewater System Capital Improvement Projects**.

### **C. Recommended Treatment Plant Expansion Project**

This Wastewater System Capital Improvement Plan Update report is recommending that an additional 2.0 MGD be provided for future anticipated growth in the City of Greenfield at the existing treatment plant. This additional capacity would bring the treatment plant capacity to 4.0 MGD.

Expansion of the plant will require that both the treatment portion of the plant (primary clarifiers and secondary ponds), sludge treatment (digesters), and effluent disposal (percolation ponds and spray fields) facilities be expanded.

Shown on **Figure 4 - Preliminary 2.0 MGD Treatment Plant Expansion** is the aerial photo preliminary plan of a proposed expansion of the plant including additional property acquisition, headworks, grinders, primary clarifiers, aerated oxidation ponds, digesters, sludge drying facilities, and effluent spray irrigation pump stations and spray fields. The following is a description of each component of the proposed expansion:

Additional property in the amount of about 80 acres will need to be purchased. A preliminary site has been chosen which is immediately westerly and adjacent to the existing treatment plant. This property extends on both sides of the bluff along the Salinas River. Most of the new facilities will be constructed on the bluff area with spray irrigation fields and a sludge drying bed located in the lower area. This site is shown on **Figure 4 – Proposed 2 MGD Treatment Plant Expansion**.

A new headworks facility including flow measuring device and grinders will be constructed as well as three new 1.0 MGD circular clarifiers. One of the clarifiers will be constructed within the grounds of the existing treatment plant site while the other two will be constructed on the new property westerly of the existing site. Scum pumps, sludge pumps and three new 1.0 MGD aerobic digesters will also be needed.

Two new oxidation ponds with floating aerators will be constructed as well as a new spray irrigation pump station with additional spray fields. In addition, the existing oxidation ponds, irrigation pump station and spray fields located easterly of the existing treatment plant site will be modified with new floating aerators, pumps and fixed spray irrigation systems. The entire property will be appropriately fenced.

The expanded site will also include the treatment, disinfection, storage, and pumping facilities for a wastewater reclamation landscape irrigation system that the City will initiate.

The proposed Capital Improvement Project Program construction costs are shown on **Table 3 – Recommended Wastewater System Capital Improvement Projects and Costs:**

**7. Recommended Additional Projects**

The Wastewater system CIP projects are shown on **Figure 3 – Capital Improvement Projects and Table 9 - Recommended Capital Improvement Projects** summarizes the estimated capital costs for the recommended Wastewater system improvements. The estimated capital costs are based upon experience with recent bid results for similar projects in the tri-county area. The CIP projects under the proposed land use conditions are sized to handle future demands, and thus serve to accommodate future growth. All projects in the CIP are fully attributable to future development.

<b>Table 7</b>					
<b>Recommended Wastewater System</b>					
<b>Capital Improvement Projects</b>					
<b>No.</b>	<b>Facility</b>	<b>Size</b>	<b>Length</b>	<b>Unit Cost</b>	<b>Estimated Construction Cost</b>
<b><u>Pipelines</u></b>					
1	8" Pine Ave. - 101 west to El Camino Real	8"	1,100	\$60	\$66,000
2	8" Pine Ave. - 101 east to Third St.	8"	2,000	\$60	\$120,000
3	8" Pine Ave. - Third St. east to Second St.	8"	2,640	\$60	\$158,400
4	8" Third St. - Pine Ave. south to Cherry Ave.	8"	1,350	\$60	\$81,000
5	8" Second St. - Pine Ave. south to Cherry Ave.	10"	1,350	\$80	\$108,000
6	8" Cherry Ave. - Third St. east to Second St.	8"	2,640	\$60	\$158,400
7	8" Second St. - Cherry Ave. south to Walnut Ave.	10"	1,320	\$80	\$105,600
8	8" Elm Ave. - Third St. east to Second St.	8"	2,640	\$60	\$158,400
9	6" Second St. - Elm Ave. Lift Sta. to Walnut Ave.	6"	4,000	\$60	\$240,000
10	8" Twelfth St. - Walnut Ave. north to Cherry Ave.	8"	1,320	\$60	\$79,200
11	8" Twelfth St. - Pine Ave. south to Cherry Ave.	8"	1,320	\$60	\$79,200
12	8" Cherry Ave. - Twelfth St. east to El Camino Real	10"	2,700	\$80	\$216,000
13	8" Tenth St. - Walnut Ave. north to Cherry Ave.	8"	1,320	\$60	\$79,200
14	8" Pine Ave. - Twelfth Street east to El Camino Real	8"	2,640	\$60	\$158,400
15	8" Cherry St. - Amaral easterly to Twelfth Ave.	8"	2,640	\$60	\$158,400
16	8" Cypress Ave. - Freeway east to Second Ave.	8"	4,700	\$60	\$282,000
17	8" Third St. - Cypress Ave. to Pine Ave.	8"	1,320	\$60	\$79,200
18	8" Second St. - Cypress Ave. to Pine Ave.	8"	1,320	\$60	\$79,200

					<u>Estimated</u>
<u>No.</u>	<u>Facility (continued)</u>	<u>Size</u>	<u>Length</u>	<u>Unit Cost</u>	<u>Construction Cost</u>
19	10" Apple Ave. - Thirteenth Ave. to El Camino Real	10"	5,400	\$80	\$432,000
20	12" Apple Ave. - El Camino Real to Freeway	12"	1,750	\$100	\$175,000
21	8" Elm Avenue southerly to SOI	8"	4,700	\$60	\$282,000
22	8" Westerly SOI to Easterly SOI	8"	7,600	\$60	\$456,000
23	6" - Pump Station to Pipeline 24	6"	2,500	\$150	\$375,000
24	12" - Pipeline 31 to 2nd Street	8"	3,400	\$150	\$510,000
25	6" 2nd Street - Elm Ave. to SOI Pump Station	6"	2,200	\$150	\$330,000
	<b>Subtotal</b>				<b>\$4,966,600</b>
	<b><u>Pump Stations</u></b>				
26	New PS @ end of Pipeline 22	500 gpm	1.s.	\$350,000	\$350,000
27	New PS @ end of Pipeline 24	400 gpm	1.s.	\$300,000	\$300,000
28	New PS @ Elm and Second St.	200 gpm	1.s.	\$250,000	\$250,000
	<b>Subtotal</b>				<b>\$900,000</b>
	<b><u>Wastewater Treatment Plant</u></b>				
29	Treatment Plant Expansion	2 MGD			
29a	Property Acquisition in acres	75	acre	\$50,000	\$3,750,000
29b	1 MGD Primary Clarifiers and Appurtenances	2	each	\$400,000	\$800,000
29c	30 Foot Diameter Digester	2	each	\$200,000	\$400,000
29d	Sludge and Scum Pump Building inc. pumps	1	each	\$300,000	\$300,000
29e	Secondary Lagoons	100,000	cy	\$15	\$1,500,000
29f	Floating Aeration System	1	1.s.	\$200,000	\$200,000
29g	Site Piping and Appurtenances		1.s.	\$200,000	\$200,000
29h	Spray Irrigation Pump Station	1	1.s.	\$200,000	\$200,000
29i	Spray Irrigation Distribution System		1.s.	\$600,000	\$600,000
29j	1,000 Amp Electrical Service		1.s.	\$150,000	\$150,000
29k	Electrical & Control		1.s.	\$250,000	\$250,000
29l	Sludge Drying Beds		1.s.	\$200,000	\$200,000
29m	Wastewater Reclamation Treatment Facility		1.s.	\$5,000,000	\$5,000,000
	<b>Subtotal</b>				<b>\$13,550,000</b>
	<b>Total Construction Cost</b>				<b>\$19,416,600</b>
30	<b>Administration, Engineering &amp; Contingencies</b>		35%		<b>\$6,795,810</b>
	<b>Total Capital Improvement Cost</b>				<b>\$26,212,410</b>

## 8. New Capacity Charges

Shown below on **Table 8 - Derivation of Wastewater Capacity Charges** are the recommended Wastewater capacity charges. The Wastewater Capacity Charges presented in this study are based on the General Plan land use and development projections set forth above, the need for additional facilities in the City created by that development, and the best available construction cost estimates, all as described in the earlier sections of this analysis. The calculation includes a component for the City's costs of administering the program, which is set at 1.5% of the total costs. This administrative charge is intended to allow the City to recover the costs of preparing the analysis that supports the charge, to prepare the necessary documents to adopt the charge, to calculate the annual inflationary increases, and to administer and collect the fee throughout its lifespan.

<b>Table 8</b>		
<b>Derivation of Wastewater Capacity Charges</b>		
<b>Item</b>	<b>Derivation</b>	<b>Amount</b>
Total Capital Improvement Cost (TCIC)	Table 7	\$26,212,410
Administration (1.5% of Total Costs)		\$393,186
Total Wastewater Capacity Charge (TWWCC)		\$26,605,596
Total Wastewater Fixture Units	Table 6	128,399
<b>Unit Cost (UC) per DFU =</b>	<b>TWCC / TDFU</b>	<b>\$207.21</b>

**Table 9 - Wastewater Capacity Charges by Type** is shown below:

<b>Table 9</b>					
<b>Wastewater Capacity Charges By Zone Type</b>					
<b>Zone Designation</b>		<b>WWFU</b>	<b>Cost</b>	<b>Capacity Charge</b>	<b>Unit</b>
Residential Estate	Table 6	7,760	\$1,607,952	\$5,801.89	per dwelling unit
Low Density Residential	Table 6	21,750	\$4,506,824	\$5,801.89	per dwelling unit
Medium Density Residential	Table 6	57,120	\$11,835,853	\$5,801.89	per dwelling unit
High Density Residential	Table 6	0	\$0	\$5,801.89	per dwelling unit
Neighborhood Commercial	Table 6	120	\$24,865	\$207.21	per ww fixture unit
Downtown Commercial	Table 6	0	\$0	\$207.21	per ww fixture unit
Highway Commercial	Table 6	9,330	\$1,933,272	\$207.21	per ww fixture unit
Light Industrial	Table 6	4,125	\$854,743	\$207.21	per ww fixture unit
Heavy Industrial	Table 6	10,860	\$2,250,304	\$207.21	per ww fixture unit
Professional Office	Table 6	0	\$0	\$207.21	per ww fixture unit
Public Quasi Public	Table 6	0	\$0	\$207.21	per ww fixture unit
Artisan Ag. Visitor Serving	Table 6	9,450	\$1,958,137	\$207.21	per ww fixture unit
Recreation Open Space	Table 6	54	\$11,189	\$207.21	per ww fixture unit
Future Planning Area	Table 6	7,830	\$1,622,457	\$207.21	per ww fixture unit
<b>Total</b>	Table 6	128,399	\$26,605,596		

**Table 8** assumes a Standard Residential Dwelling Unit = 20 Wastewater fixture units (average). Dwelling units that exceed 20 wwfu shall have impact fees increased proportionately to the number of Wastewater fixture units.

Since the Wastewater capacity charges developed herein are estimates based on the best available information to date, it is recommended that adjustments to the Wastewater Capacity Charges be made every five years to determine if development projects and cost estimates are still appropriate. In any case, it is recommended that the Wastewater Capacity Charge be annually adjusted to account for inflation. It is recommended that the City use the Engineering News Record – Construction Cost Index (ENR - CCI) to reflect the costs of construction. In addition, the City may wish to consider adopting a policy that requires new development projects that propose changes to the City's General Plan to perform an analysis of impacts to the Wastewater Capacity Studies and to quantify corresponding impacts to the fees.

It is also recommended that the City adopt a policy that requires development that triggers the need for certain facilities to construct those facilities or otherwise advance the necessary funding for those facilities. When a developer is required to construct facilities or advance monies for the construction of such facilities, the developer should be provided a credit against the Wastewater Capacity Charge, which may be used to satisfy the developer's obligations and which may be transferred to other developers. The credit could also convert to a right of reimbursement after a specified period of time, provided that the City had sufficient fee revenues available.

**Figures**

DRAFT

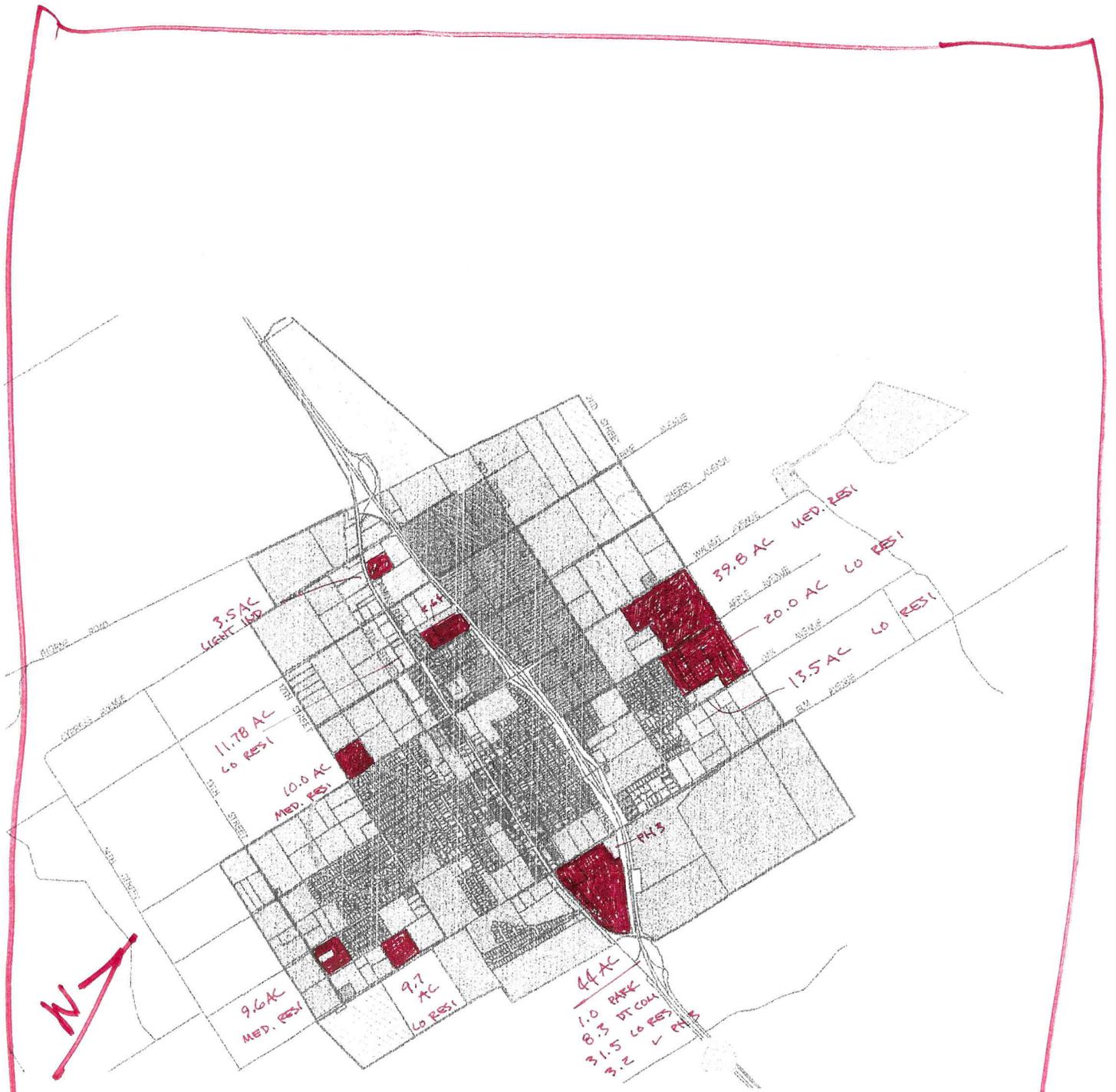
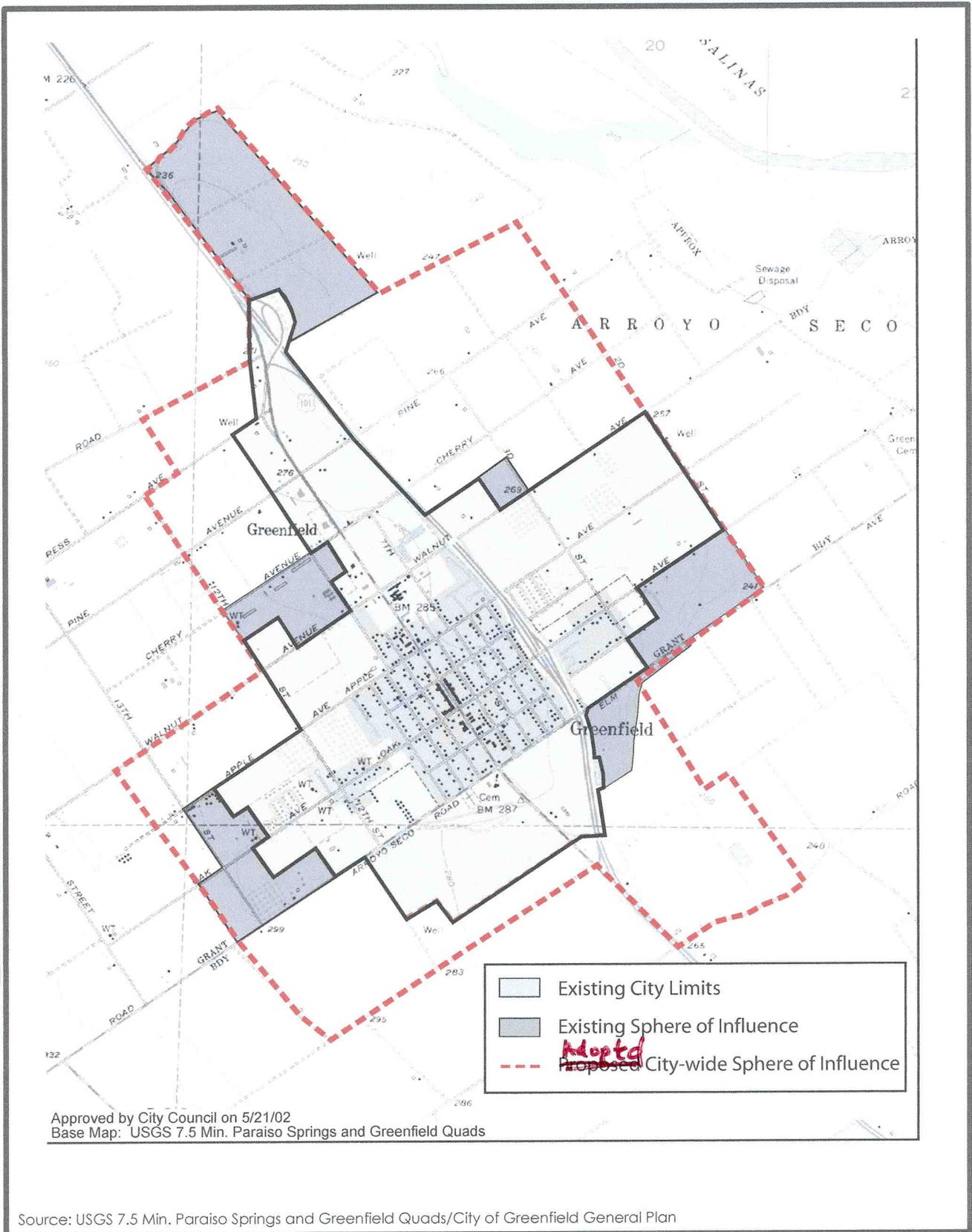


Figure 1  
 Completed Growth Projects  
 City of Greenfield

NW

C:\City of Greenfield\Graphic Development\Figures\Figure 2.5.d1 January 2006



0 1000 2000  
SCALE IN FEET

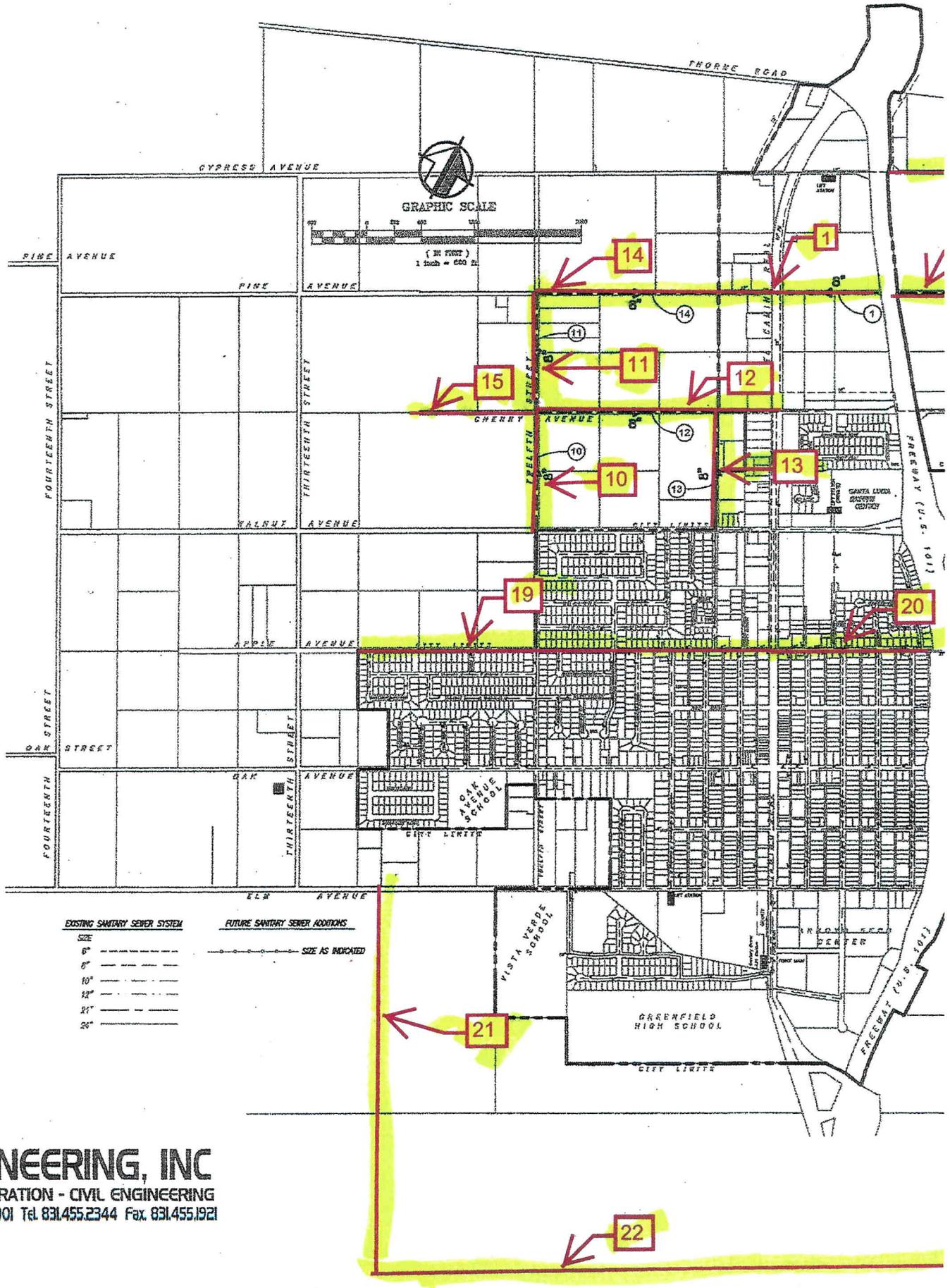
~~EXISTING AND PROPOSED SOI~~

Figure 2

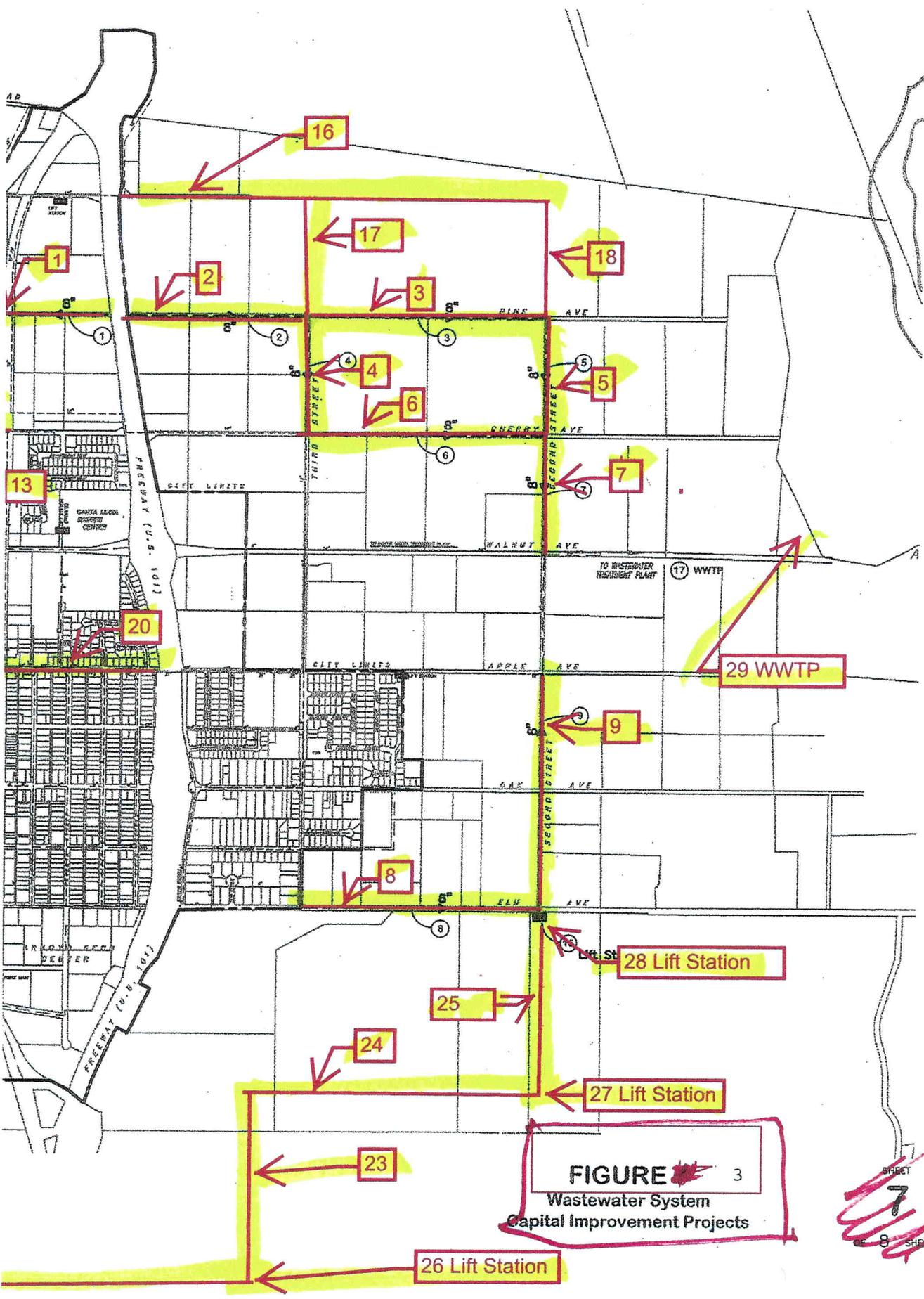
*Sphere of Influence  
City of Greenfield*

~~PNIC~~

*WU*



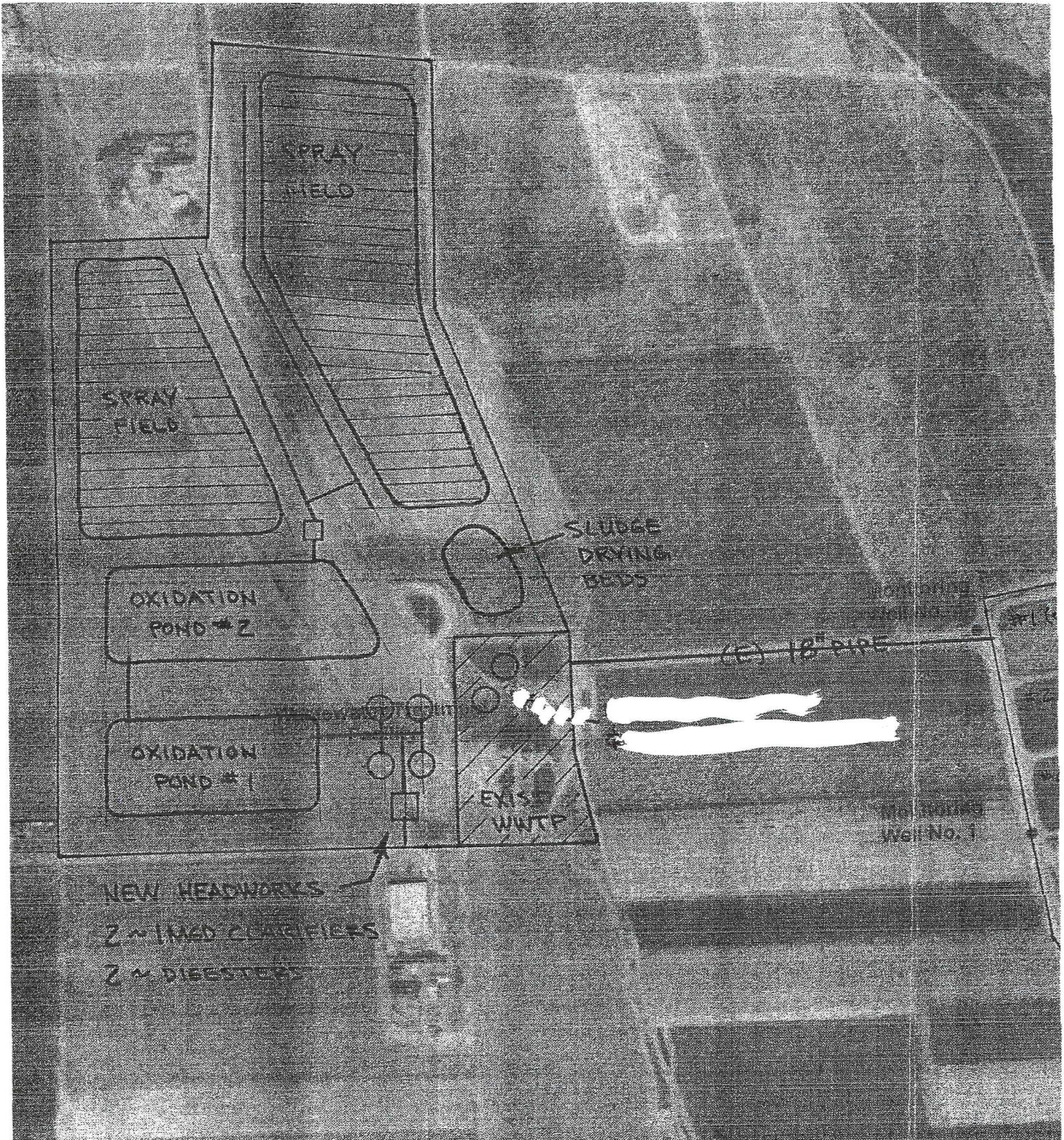
**RA ENGINEERING, INC**  
 UCTION ADMINISTRATION - CIVIL ENGINEERING  
 W #592 Salinas, CA 93901 Tel. 831.455.2344 Fax. 831.455.1921



**FIGURE 3**  
 Wastewater System  
 Capital Improvement Projects

SHEET  
 7  
 8 SHEETS

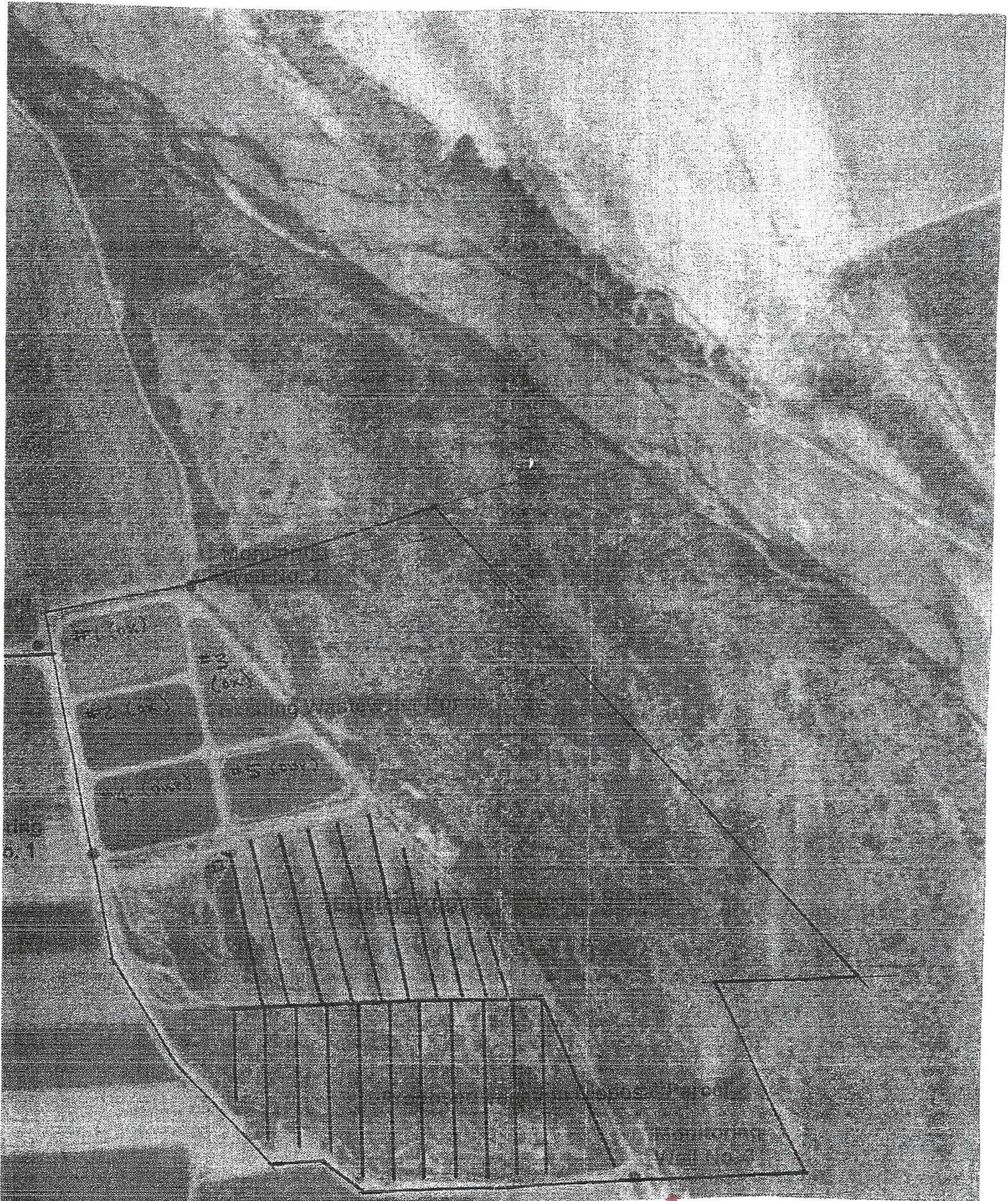
NW



**RRA ENGINEERING, INC**

CONSTRUCTION ADMINISTRATION - CIVIL ENGINEERING

1000 Row #592 Salinas, CA 93901 Tel. 831.455.2344 Fax. 831.455.1921



**FIGURE 8**

Proposed  
3.0 MGD Treatment  
Plant Expansion

SHEET  
**8**  
OF 8 SHEETS

WWTP

WW