CITY OF NEWMAN SIGN-IN SHEET
(Voluntary)

X City Council
____ Planning Commission
____ Other

Date 11-18-08

NAME	ADDRESS	PHONE
Roberta Davis		675-5677
Lourtie Allen Jr	1335 Main	862-3545
David Nemmin	1523 BROKHAVEN DR	

AGENDA
NEWMAN CITY COUNCIL/REDEVELOPMENT AGENCY
SPECIAL MEETING NOVEMBER 18, 2008
CITY COUNCIL CHAMBERS, 7:00 P.M., 1200 MAIN STREET

1. **Call To Order.**

2. **Pledge Of Allegiance.**

3. **Invocation.**

4. **Roll Call.**

5. **Declaration Of Conflicts Of Interest.**

6. **Ceremonial Matters.**
   - **a.** Proclamation Women's League 40th Anniversary.
   - **b.** Recognition Of Brett Short's Promotion To Sergeant.

7. **Items from the Public - Non-Agenda Items.**

8. **Consent Calendar**
   - **a.** Waive All Readings Of Ordinances And Resolutions Except By Title.
   - **b.** Approval Of Warrants.
   - **c.** Approval Of Minutes Of The October 28, 2008 Regular Meeting.

9. **Public Hearings**
   - **a.** Adopt Resolution No. 2008- , A Resolution Declaring The Existence Of A Public Nuisance Under Ordinance No. 95-4.
   - **b.** Accept Wastewater Collection System Master Plan And Wastewater Treatment And Disposal Master Plan.
   - **c.** Introduction And First Reading Of Ordinance No. 2008- , An Ordinance Regarding Maintenance, Security And Rehabilitation Of Abandoned And Vacant Property And Authorize Staff To Prepare And Publish A Summary Of Said Ordinance.

10. Regular Business

a. Continuance Of Appeal Of Planning Commission Decision Denying Variance No. 2008-02; Joe Winters Applicant

b. Consider An Amendment To The Consolidated Plan (Fiscal Years 2007-2012) And Annual Action Plan (Fiscal Year 2008-2009) To Include The Expenditure Of $9,744,482.00 In Housing And Urban Development Entitlement Grant Funds Under The Neighborhood Stabilization Program.

c. Introduction And First Reading Of Ordinance No. 2008- , An Ordinance Amending Title 11.05 Water Service Regulations Of The Newman City Code And Authorize Staff To Prepare And Publish A Summary Of Said Ordinance.

d. Authorize City Manger To Execute A Contract With The City Of Gustine For Animal Shelter Services.

e. Introduction And First Reading Of Ordinance No. 2008- , An Ordinance Amending Title 9 Police Regulations Of The Newman City Code, Modifying Section 9.02 Animal Control.

f. Introduction And First Reading Of Ordinance No. 2008- , An Ordinance Amending Title 8 Health And Sanitation Of The Newman City Code And Adding Chapter 8.01.180 Unauthorized Entry Into Waste Containers And Authorize Staff To Prepare And Publish A Summary Of Said Ordinance.

g. Adopt Resolution No. 2008- , Approving The Driskell Avenue Sidewalk Infill Project And Authorizing John Fantazia As Mayor, And Michael E. Holland, As City Clerk To Record A Notice Of Completion.

h. Report On The City Of Newman Sanitary Sewer Line Replacement Project And Award Bid To Lawrence Backhoe.

i. Authorize The City Manger To Execute A Contract With NTD Architecture For Aquatic Center Construction Plans.

11. Items From The City Manager And Staff.

12. Items From City Council Members.

13. Adjournment.

AGENDA
NEWMAN PLANNING COMMISSION
REGULAR MEETING OF NOVEMBER 20, 2008
CITY COUNCIL CHAMBERS, 7:00 P.M., 1200 MAIN STREET

1. **Call To Order**

2. **Pledge Of Allegiance**

3. **Roll Call**

4. **Approval Of The Agenda**

5. **Approval Of Minutes From September 18, 2008 Meeting**

6. **Items From The Public**

7. **New Business**

   a. **Public Hearing**
      Use Permit No. 08-04
      Applicant: Jose Medina
      Description: Allow Auto Repair Shop in a C-2 District, Where The Municipal Code Requires A Conditional Use Permit.
      Location: The Subject Property Is Located At 915 Yolo Street, More Specifically Described As Assessor's Parcel No. 128-013-014

   b. **Hurd Barrington Elementary School SPR**
      Applicant: NCLUSD
      Description: New Elementary School Site Plan Review (no public hearing required)
      Location: The Subject Property Is Located At 838 Eucalyptus Avenue, More Specifically Described As Assessor's Parcel No. 026-069-001

8. **Items From Commissioners**

9. **Items From Director And Staff**

10. **Adjournment**

Calendar of Events

November 11 – Veteran's Day
November 11 – City Council - Canceled
November 18– City Council – Special Meeting - 7:00 P.M.
November 19 – Planning Commission – 7:00 P.M.
November 25– City Council - Canceled
November 27– Thanksgiving Day

December 8 – NCLUSD Board Meeting - 7:15 P.M.
December 9 – City Council - 7:00 P.M.
December 18 – Planning Commission – 7:00 P.M.
December 23 – City Council – Canceled
December 25 – Christmas Day

January 1 – New Year's Day
January ? – NCLUSD Board Meeting - 7:15 P.M.
January 13 – City Council - 7:00 P.M.
January 16 – Planning Commission – 7:00 P.M.
January 19 – Martin Luther King Jr. Day
January 27 – City Council - 7:00 P.M.

MINUTES
NEWMAN CITY COUNCIL/REDEVELOPMENT AGENCY
OCTOBER 28, 2008
6:00 P.M.
CITY COUNCIL CHAMBERS
1200 MAIN STREET

1. **Call To Order** - Mayor a Fantazia 6:02 P.M.

2. **Roll Call PRESENT:** Kelly, Crinklaw, Martina and Mayor Fantazia
   ABSENT: Katen (Excused)

3. **Items From The Public- None.**

4. **Redevelopment Agency Workshop**

Marshall Linn, Urban Futures Inc., Explained The Basics Of The Redevelopment Agency's Responsibilities. He Reviewed Financing Tools And The Agency's Current Plan Limitations. Linn Mentioned That There May Be A Need To Expand The Project Area In Order To Increase The Agency's Collected Taxes. Linn Explained That The Agency Must Amend Its Existing Plan's Cap In Order To Collect Additional Monies. Linn Also Reviewed Recommendations For The Agency.

Michael Holland Reviewed Both The Plaza And The Aquatic Center Projects Funding Sources And Asked The Council For Their Concurrence With The Presented Preliminary Funding Sources.

The Council Agreed To Move Forward With The Funding Sources.

5. **Adjournment.**

ACTION: On Motion By Martina Seconded By Kelly And Unanimously Carried, The Meeting Was Adjourned At 7:15 P.M.

MINUTES
NEWMAN CITY COUNCIL/REDEVELOPMENT AGENCY
REGULAR MEETING OCTOBER 28, 2008
CITY COUNCIL CHAMBERS, 7:00 P.M., 1200 MAIN STREET

1. **Call To Order** Mayor Fantazia 7:25 P.M.

2. **Pledge Of Allegiance.**

3. **Invocation** – Council Member Crinklaw.

4. **Roll Call PRESENT:** Kelly, Crinklaw, Martina and Mayor Fantazia
   ABSENT: Katen (Excused)

5. **Declaration Of Conflicts Of Interest** – None.

6. **Ceremonial Matters** - None

7. **Items from the Public - Non-Agenda Items** –None.

8. **Consent Calendar**

   a. Waive All Readings Of Ordinances And Resolutions Except By Title.
   b. Approval Of Warrants.
   c. Approval Of Minutes Of The October 14, 2008 Meeting.
   d. Authorize Payment Of Claim For Automobile Accident Involving Police Vehicle In Which The Officer Was At Fault.

   ACTION: On Motion By Martina Seconded By Kelly And Unanimously Carried, The Consent Calendar Was Approved.

9. **Public Hearings**

   a. Adopt Resolution No. 2008-59, A Resolution Declaring The Existence Of A Public Nuisance Under Ordinance No. 95-4.

   Mayor Fantazia Opened The Public Hearing At 7:27 P.M.

   There Being No Public Comment Fantazia Closed The Public Hearing At 7:28P.M.

   ACTION: On Motion By Martina Seconded By Crinklaw And Unanimously Carried, Resolution No. 2008-59, A Resolution Declaring The Existence Of A Public Nuisance Under Ordinance No. 95-4 Was Approved.

b. Second Reading And Adoption Of Ordinance No. 2008-06, An Ordinance Amending Title 8 Health And Sanitation Of The Newman City Code And Adding Chapter 8.07, A Medical Marijuana Dispensary.

Mayor Fantazia Opened The Public Hearing At 7:29 P.M.

There Being No Public Comment Fantazia Closed The Public Hearing At 7:30 P.M.

ACTION: Ordinance No. 2008-06 , had its second reading by title only. A motion by Kelly seconded by Crinklaw dispensed with further reading of said ordinance. Ordinance was unanimously adopted upon roll call vote.

c. Public Hearing On Supplemental Law Enforcement Services Fund (SLESF)

Mayor Fantazia Opened The Public Hearing At 7:34 P.M.

There Being No Public Comment Fantazia Closed The Public Hearing At 7:35 P.M.

ACTION: On Motion By Crinklaw Seconded By Martina And Unanimously Carried, Council Approved List Of Needs As Presented

d. Appeal Of Planning Commission Decision Denying Variance No. 2008-02; Joe Winters Applicant.

Assistant Planner Ocasio Presented And Reviewed The Variance Application For The Council's Consideration.

Mayor Fantazia Opened The Public Hearing At 7:40 P.M.

Joe Winters, 544 Waxwing Court, Explained That His Original Intention Was To Have A Twelve Foot Tall Structure Installed But Due To The Angle Of Entry He Was Forced To Build A Fourteen Foot Tall Structure Instead. He Mentioned That He Needed The Structure To Protect His Motor Home From Vandalism And Sun Damage. Winters Told The Council That He Specifically Chose The Blue Colored Structure In An Effort To Match The Color Of His Home; Even Though He Incurred Additional Costs In Doing So.

There Being No Further Public Comment Fantazia Closed The Public Hearing At 7:50 P.M.

ACTION: On Motion By Crinklaw Seconded By Martina This Item Was Continued To The November 18th 2008 Council Meeting.

e. Introduction And First Reading Of Ordinance No. 2008-07, An Ordinance Regarding Maintenance, Security And Rehabilitation Of Abandoned And Vacant Property And Authorize Staff To Prepare And Publish A Summary Of Said Ordinance.

Mayor Fantazia Opened The Public Hearing At 7:55 P.M.

There Being No Public Comment Fantazia Closed The Public Hearing At 7:56 P.M.

ACTION: Ordinance No. 2008-07, An Ordinance Regarding Maintenance, Security And Rehabilitation Of Abandoned And Vacant Property Was Introduced By Council Member Kelly. The Council Authorized Staff To Prepare And Publish A Summary Of Said Ordinance. Ordinance Had Its First Reading By Title Only.

10. Regular Business

a. Adopt Resolution No. 2008-60, A Resolution Approving Redevelopment Agency Loan And Affordable Housing Agreement And Authorizing The Executive Director To Execute Said Agreement.

ACTION: On Motion By Martina Seconded By Crinklaw And Unanimously Carried, Resolution No. 2008-60, A Resolution Approving Redevelopment Agency Loan And Affordable Housing Agreement And Authorizing The Executive Director To Execute Said Agreement Was Adopted.

11. Items From The City Manager And Staff.

City Manager Holland Informed The Council That He Would Be Making A Presentation To The School Board Regarding The Aquatics Center Project On November 10, 2008. He Reminded Everyone That The November 11th & 23rd Council Meetings Would Be Canceled And That There Would Be A Special Meeting On November 18th. Holland Mentioned That The City Had Recently Received New Compressed Natural Gas Vehicles Which Were Purchased With CMAQ Funds. He Explained That The City Had Purchased New Signs For City Hall, The Police Department, The Fire Department, And Council Chambers With Monies From The Recycled Beverage Container Grant. Holland Also Mentioned That The City Is Currently Reviewing Its Animal Control Options. Holland Expressed Gratitude To Ernie Garza For His Twenty-One Years Of Service And Congratulated Him On His Retirement.

Chief McGill Reported That The Police Department Had Been Very Busy In Recent Weeks And Explained That There has been an Increase In Vehicle Thefts And Arsons.

Public Works Director Garza Had No Items To Report But He Stated That He Enjoyed His Time Working For The City Of Newman And Thanked Everyone For Their Kind Wishes.

Recreation Supervisor Heiberger Informed The Council That Soccer Season Ended On The Saturday, October 25th. Heiberger Also Mentioned That The Recreation Department Is Now Accepting Basketball Registration Forms And That The Basketball Games Will Begin In December.

12. Items From City Council Members – None

13. Adjourn To Closed Session 8:16 P.M.

a. Conference With Labor Negotiator - Operating Engineers Local No. 3 Miscellaneous Employees- G.C. 54957.6

b. Return To Regular Session 8:29 P.M.

Reportable actions announced by Mayor Fantazia

a. Resolution No. 2008-61 A Resolution Ratifying An Agreement Between The City Of Newman And Operating Engineers Local Unit No. 3 (Miscellaneous Employees).

ACTION: Resolution No. 2008-61, Was Introduced By Crinklaw Who Moved Its Adoption, Which Motion Was Seconded By Martina And Was Unanimously Adopted Upon Roll Call Vote. Said Resolution Is A Resolution Ratifying An Agreement Between The City Of Newman And Operating Engineers Local Unit No. 3 (Miscellaneous Employees).

14. Adjournment.

ACTION: On Motion By Kelly Seconded By Crinklaw And Unanimously Carried, The Meeting Was Adjourned At 8:32 P.M.

Date..: Oct 31, 2008
Time..: 2:24 pm
Run by: EMILY M. FARIA

CITY OF NEWMAN
CASH DISBURSEMENTS REPORT

List.: NEW1
Group: PYCPDP

Ck #	Check Date	CK Amount	Vendor Name	Description
034909	10/23/08	1125.40	BUSINESS CARD	COMPUTER UPGRADES/BLDG SUPPLIES/MEALS/DUES/GAS/PD
034910	10/31/08	14423.00	DAVE SILVEIRA CONSTRUCTION	REMOVE & REPLACE 2 PAIRS DOORS/MEM BLDG/YOUTH CNTR
Sub-Total:		15548.40		
Grn-Total:		15548.40		
Count:	2			

Date..: Nov 5, 2008
Time..: 11:40 am
Run by: EMILY M. FARIA

CITY OF NEWMAN
CASH DISBURSEMENTS REPORT

List.: NEW1
Group: PYCPDP

Ck #	Check Date	CK Amount	Vendor Name	Description
034911	11/07/08	563.91	AT&T/MCI	TELEPHONE SERVICE 10/1/08 TO 10/31/08
034912	11/07/08	48866.32	BERTOLOTTI DISPOSAL	GARBAGE SERVICE/OCT 2008
034913	11/07/08	788.84	BERTOLOTTI DISPOSAL	LANDFILL FEES/OCT 2008
034914	11/07/08	30.22	BIGELOW CHEVROLET, INC	BACKUP SWITCH
034915	11/07/08	440.00	BJ'S CONSUMER'S CHOICE IN	PEST CONTROL SERVICES/10/23/08
034916	11/07/08	6380.31	W.H. BRESHEARS, INC.	GASOLINE AND DIESEL PURCHASES/OCT 2008
034917	11/07/08	160.00	ANDRES BUENO	SOCCER REFEREE/SET-UP & TAKE D0WN/A. BUENO
034918	11/07/08	3500.00	BUSH,ACKLEY,MILICH,HALLIN	LEGAL RETAINER FEES/OCT & NOV 2008
034919	11/07/08	1706.00	CRA	2008/2009 DUES MEMBERSHIP RENEWAL/HOLLAND
034920	11/07/08	175.00	C.A.P.E. 2009 CONFERENCE	ANNUAL 2009 CAPE CONFERENCE REGIST/JIM BELL
034921	11/07/08	100.00	JEFF CARTER	PARKING LOT RENT/NOV 2008
034922	11/07/08	253.50	CBA (CALIFORNIA BENEFITS)	DENTAL-VISION BENEFITS/NOV 2008
034923	11/07/08	235.57	CHEVRON	GASOLINE PURCHASES SEPT/OCT 2008
034924	11/07/08	50.00	CARL J. COELHO (CHUCK)	Veh Operation FIRE/NOV 2008
034925	11/07/08	778.38	CORBIN WILLITS SYS, INC.	SERVICE & ENHANCEMENT FEE/NOV 2008
034926	11/07/08	672.96	GARY WHITE	HAY HAULING/PASTURE HAY/WWTP
034927	11/07/08	150.00	DAVE PIRES	DRAIN CLEANING/POLICE DEPT
034928	11/07/08	1372.33	ECO:LOGIC, INC	PROFESSIONAL SERVICES WELL MONITORING INSTALL
034929	11/07/08	1862.00	EMPLOYMENT DEV DEPT/SUI	UNEMPLOYMENT INS 7/1/08 TO 9/30/08
034930	11/07/08	200.00	AVELINA ESPINOZA	REFUND MEMORIAL BUILDING DEPOSIT/ESPINOZA
034931	11/07/08	40.53	EMILY FARIA (NT)	REIMBURSE BOOK (ESSENTIAL OF ACCOUNTS PAYABLE)FARI
034932	11/07/08	34.95	FIREtoWIRE, INC	WEB HOSTING 11/17/08 TO 12/17/08
034933	11/07/08	240.00	ELIZABETH GARCIA	SOCCER REFEREE/SET-UP & TAKE DOWN/E. GARCIA
034934	11/07/08	269.32	GCS WESTERN POWER & EQUIP	PARTS FOR STREET SWEEPER

Ck #	Check Date	CK Amount	Vendor Name	Description
034936	11/07/08	280.00	MARISSA GOMEZ	SOCCER REFEREE/SET-UP & TAKE DOWN/M. GOMEZ
034937	11/07/08	265.00	ULISES GONZALEZ	SOCCER REFEREE/SET-UP & TAKE DOWN/U. GONZALEZ
034938	11/07/08	137.74	HARD DRIVE GRAPHICS	10" BY 63.5" BLACK VINYL DOOR EMBLEM/#502/PD
034938	11/07/08	211.06	HARD DRIVE GRAPHICS	DIGITAL CINLY BADGE GRAPHIC EMBLEM/PD
034939	11/07/08	132.27	TERRY HEIBERGER (NT)	REIMBURSE FOR SOCCER & TEEN CENTER SNACK BAR
034940	11/07/08	585.77	HEWLETT-PACKARD FINANCIAL SERV	SOFTWARE RENTAL 10/18/08 TO 11/17/08/PD
034941	11/07/08	1750.00	DON HUTCHINS	CONTRACT SERV/INTERIM LT/11-1 TO 11-15-08/HUTCHINS
034942	11/07/08	1562.50	JOE'S LANDSCAPING &	WEED & JUNK ABATEMENT/601 RANEE COURT
034942	11/07/08	105.00	JOE'S LANDSCAPING &	GRAFFITI CLEAN-UP/748 BLACK MOUNTAIN
034943	11/07/08	58.90	MALLARD EXPRESS AUTO	LUBE AND OIL CHANGE/PD
034944	11/07/08	40.00	RAUDEL MENDEZ	SOCCER REFEREE/SET-UP & TAKE DOWN/R. MEMDEZ
034945	11/07/08	4625.84	MERCED COUNTY ASSESSOR	PROPERTY TAX/WWTP/54-40-02,09,12,13
034945	11/07/08	136.88	MERCED COUNTY ASSESSOR	PROPERTY TAX/NEWMAN BUSINESS PK 054-220-001
034946	11/07/08	8851.20	MID CAL PIPELINE & UTILITIES,	10% RETENTION OF PLAZA WATERLINE REPLACEMENT
034947	11/07/08	380.00	KRISTEN MOORE	SOCCER REFEREE/SET-UP & TAKE DOWN/K. MOORE
034948	11/07/08	320.00	KAHUA MOORE	SOCCER REFEREE/SET-UP & TAKE DOWN/K. MOORE
034949	11/07/08	255.00	JUAN MORENO	SOCCER REFEREE/SET-UP & TAKE DOWN/J. MORENO
034950	11/07/08	47.59	NOB HILL	SUPPLIES FOR PLANNERS DIR MTG/INTERVIEW PANEL/PW
034951	11/07/08	132.07	NORMAC, INC.	DC LATCHING SOLENDOID
034952	11/07/08	660.00	CITY OF PATTERSON	VIDEO REIMBURSEMENT/OCT 2008
034953	11/07/08	43503.73	P G & E	GAS AND ELECTRIC 09/05/08 TO 10/15/08
034954	11/07/08	20.46	PIONEER DRUG	BLEACH/WATER DEPT
034955	11/07/08	200.00	PRECISION INSPECTION CO.	CANCELLED MEM BLDG USE/REFUND DEPOSIT/PRECISION
034956	11/07/08	140.00	RANDHAWA MEDICAL GRP, IN	PRE-EMPLOYMENT PHYSICAL/PUBLIC WORKS DIRECTOR
034957	11/07/08	10.93	RELIABLE	COLORED COPY PAPER

Ck #	Check Date	CK Amount	Vendor Name	Description
034958	11/07/08	103.08	ROBIC REFRIGERATION	ICE MACHINE FILTER/FD
034959	11/07/08	32.00	JOCELYN ROLAND, Ph.D.	FILE COPIES
034960	11/07/08	42.62	SAFE-T-LITE	10 YARDS STRIPE TAPE/STREETS
034961	11/07/08	31.00	SAN JOAQUIN VALLEY AIR	PERMIT FEES/GASOLINE FUEL TANK/WWTP
034962	11/07/08	298.75	SIERRA DISPLAY, INC.	1000 C-7 STEADY BURN LAMPS/DOWNTOWN CHRISTMAS LIGH
034962	11/07/08	298.75	SIERRA DISPLAY, INC.	1000 C-7 CLEAR LAMPS/CHRISTMAS LIGHTS DOWNTOWN
034963	11/07/08	1488.42	GORDON B. FORD	PROPERTY TAX/MARIPOSA PARK LAND
034963	11/07/08	12.94	GORDON B. FORD	ASSESSMENT CHARGES/SHERMAN PARKWAY
034963	11/07/08	40.20	GORDON B. FORD	ASSESSMENT CHARGES/AQUATIC CENTER
034963	11/07/08	12007.66	GORDON B. FORD	PROPERTY TAX & ASSESSMENTS/WWTP
034964	11/07/08	395.00	STANISLAUS COUNCIL	2008/2009 FISCAL CONTRIBUTION/STANCOG
034965	11/07/08	522.00	STANISLAUS COUNTY DEPT	BUS TICKET SALES 7/1/08 THRU 10/30/08
034966	11/07/08	95.00	STATE WATER RESOURCES	AAPLICATION FOR WWTP OPERATOR EXAM/GRADE 1/SOUTHAR
034967	11/07/08	95.11	STOCKTON BLUE	9 SETS SEWER REPLACEMENT PLANS
034968	11/07/08	155.73	TRAVIS BORRELLI	PORTABLE RESTROOM RENTAL/SERVICE
034969	11/07/08	187.00	SUTTER GOULD MEDICAL FOUNDATIO	FIRST AID/JASON HUTCHINS
034969	11/07/08	81.00	SUTTER GOULD MEDICAL FOUNDATIO	FIRST AID/JASON HUTCHINS
034970	11/07/08	110.00	T&R ENTERPRISES	LABOR TO CUT SIGHT GLASSES
034971	11/07/08	807.08	UNIFIRST CORPORATION	UNIFORM CLEANING/TOWELS/MOP HEADS
034972	11/07/08	45.03	VALLEY PARTS SERVICE	OIL/TERMINAL/HITCHPIN/ANTIFREEZE
034972	11/07/08	83.90	VALLEY PARTS SERVICE	WIPER BLADES/FUSE KIT/HALOGEN LAMP/TOUCH-UP PAINT
034973	11/07/08	50.00	GEORGE VARGAS	VEH OPERATION FIRE/NOV 2008
034974	11/07/08	265.00	SALVADOR VILLALOBOS	SOCCER REFEREE/SET-UP & TAKE DOWN/S. VILLALOBOS
034975	11/07/08	10.16	ALCAUTER, BENITO	MQ CUSTOMER REFUND FOR ALC0010
034976	11/07/08	1200.00	GOLDEN BY-PRODUCTS SCRAP TIRE	PO #09-35

Ck #	Check Date	CK Amount	Vendor Name	Description
034977	11/07/08	52216.69	PACIFIC HONDA	PO #09-11

Sub-Total:		204202.34		

Grn-Total:		204202.34		
Count:	76			

Proclamation

of the Mayor of the City of Newman

Whereas, The Newman Women's League was established in 1968 to advance the interests of the citizens of the City of Newman; and

Whereas, the League has, through collected donations of over $1,200.00, has assisted in promoting the Newman Branch of the Stanislaus County Library; and;

Whereas, the Newman Women's League has donated approximately $10,000.00 towards the enhancement of the Newman Crows-Landing Unified School District and their athletic programs; and

Whereas, the Newman Women's League has donated approximately $10,000.00 towards Fall Festival activities such as the Miss Newman Pageant and other community sponsored events and activities; and

Whereas, the Newman Women's League has promoted advanced education by bestowing over $6,000.00 in scholarships to graduating seniors of Orestimba High School; and

Whereas, the Newman Women's League has partnered with the communities and businesses of Newman and Crows Landing through the years and assisted in raising over $40,000.00 in donations towards the Toys for Tots program for the children of those less fortunate; and

Whereas, the Newman Women's League has, over the past forty years, donated approximately $12,000.00 to miscellaneous endeavors through various organizations and agencies such as the Salvation Army, Newman Historical Society, American Heart Association, American Cancer Society, San Luis Convalescent Hospital, The United Way; and

Now, therefore, I, John Fantazia, Mayor, do hereby proclaim that the Newman Women's League has contributed to making Newman a better place through community involvement, do hereby proclaim Tuesday, November 18, 2008, as Women's League day in the City of Newman.

Dated this day of November 18th 2008.

Signed _____

CITY OF NEWMAN
NEWMAN
AGRICULTURE
DAIRY
1888

Agenda Item: 9.a.
City Council Meeting
of November 18, 2008

Honorable Mayor and Members
of the Newman City Council

REPORT ON NUISANCE ABATEMENT

RECOMMENDATION:

Adopt Resolution No. 2008-XX, Declaring The Existence Of A Public Nuisance Under Ordinance No. 95-4.

BACKGROUND:

Abatement notices for property maintenance were sent to several properties in accordance with Ordinance 95-4, Chapter 2, Title 8-2-3.

ANALYSIS:

This notice informs property owners of all nuisance abatement procedures, option and their right to object at a public hearing. It is anticipated that many property owners will comply with the abatement notices prior to the hearing date. A final compliance survey will be done on Tuesday, November 18, 2008. A list of properties that have not complied with the abatement notice will be handed out at the council meeting prior to the public hearing.

FISCAL IMPACT:

None

CONCLUSION:

This staff report is submitted for City Council consideration and possible future action.

Respectfully submitted,

Adam Mc Gill
Chief of Police

REVIEWED/CONCUR:

Michael E. Holland
City Manager

City of Newman
Abatement list

1. **437 Red Lion Way. (UNOCCUPIED)**

   Tall grass and weeds throughout front and backyard of property. Unkempt pool and large amounts of animal feces.

1ST 10/7/08 #1040
2ND 10/21/08
3RD 11/10/08

CODE CHECKLIST/SAFETY LIST

Violation Location: 437 RED LION **Case #:**
R/P Name: **Ph:** **Date:** 10/6/08
Report taken by: DAVIS **Dept:** POLICE

1. Property Maintenance
- ☑ Garbage
- ☐ Junk
- ☐ Dirt
- ☑ Debris
- ☐ Alley (garbage/debris)
- ☐ Graffiti
- ☐ Weed/Mistletoe
- ☑ Other FECES

2. Vehicles
- ☐ Inoperative/Dismantled Abatement
- ☐ Illegal Parking
- ☐ Working On (public right-of-way)
- ☐ RV Parking/Living
- ☐ Abandoned - Parked over 5 days
- ☐ Other _____

3. Street/Sidewalk
- ☐ Sidewalks - lifts/hole - 3/4"
- ☐ Sidewalk obstructions
- ☐ Alley - entrances
- ☐ Alley - large potholes
- ☐ Alley - soft spots
- ☐ Alley - obstruction (veh dumpster))
- ☐ Streets - glass
- ☐ Streets - oil spills
- ☐ Streets - potholes, manhole cover
- ☐ Signs - missing, down
- ☐ Sight Lines at intersections
- ☐ Street Lights
- ☐ Encroachment - working w/o permit
- ☐ Street tree removal/trimming

4. Signs
- ☐ Yard Sales
- ☐ Subdivision
- ☐ Dance/event sign
- ☐ Flyers/hand bills
- ☐ Obstructing vision
- ☐ Abandoned signs
- ☐ On utility poles, street trees, street/stop signs
- ☐ Vehicle - advertised signs
- ☐ Graffiti on
- ☐ Other _____

5. Construction
- ☐ Garage/accessory buildings conversion
- ☐ Construction - no visible permit
- ☐ Accessory buildings (> 120 sq ft)
- ☐ Fence - > 7' side, rear
- ☐ Fence - > 3 ½' front

6. Utilities
- ☐ Water
- ☐ Electrical connection
- ☐ Sewer
- ☐ Water conservation
- ☐ Anti-siphon valves - irrigation
- ☐ Leaks in Utilities

7. Business
- ☐ Transient - Sales from cars
  - Lots without permit
- ☐ Home Occupation
- ☐ Yard Sales - License
- ☐ Door to door sales

8. Safety
- ☐ Fires/burns
- ☐ Unsafe fuel storage
- ☐ Hazardous material
- ☐ Objects in ROW/BB hoops
- ☐ Other _____

9. Animal Control
- ☐ Loose dog/off leash
- ☐ Dog not licensed/vaccinated
- ☐ Missing dog/cat
- ☐ Illegal kennel
- ☐ Cat problem
- ☐ Animal Bites
- ☐ Farm animals/wrong zone
- ☐ Vicious animals
- ☐ Other _____
- ☐ Routing/Gustine Animal Control
- ☐ Routing/Stanislaus Co. Animal Control

Assessment Roll

General Information

Assessment	049-055-061-000	**Parcel Number**	049-055-061-000
Current Document	2007R0079160	**Current Document Date**	06/14/2007
Acres / Sq Ft	.00	**Tax Rate Area (TRA)**	003-039
Taxability	800 -- PROP 8 REDUCTION		
Land Use	101 -- SINGLE FAMILY RESIDENCE		
Assessment Description	SHERMAN RANCH UNIT #2 42M49 LOT 21		

Roll Values as of: January 1st, 2008

Land	$55,000	**Personal Property**	$0
Structure(s)	$165,000	**Personal Property (MH)**	$0
Fixtures	$0	**Exemption**	$0
Growing Improvements	$0	**Exemption**	$0
Total Land & Improvements	$220,000	**Net Assessment**	$220,000

Assessee

VARGAS MARIO & MARIA

Address

437 RED LION WAY
NEWMAN CA 95360

Ownership

Owner Name	Own %	Pri	Granting Doc No.	Title Type	RT Code
VARGAS MARIA	50.00%	Y	2007R0079160	JT	
VARGAS MARIO	50.00%	Y	2007R0079160	JT	

Situs

Street Address	City State Zip
437 RED LION WAY	Newman CA 95360

Parcel Description

Assessment	Description
No parcel description found	

Mario & Maria Vargas
437 Red Lion.
Newman, Ca 95360

NOTICE TO ABATE PUBLIC NUISANCE BY THE REMOVAL OF WEEDS, DIRT, RUBBISH AND/OR RANK GROWTH

NOTICE IS HEREBY GIVEN THAT:

Pursuant to the provisions of Chapter 2, Title 8 of the City Code of Newman, the following conditions, as declared in Section 8-2-3, constitutes a public nuisance
at: **437 Red Lion . APN No. 049-055-061-000**
Tall grass and weeds throughout front and backyard of property, which must be abated by the destruction, or removal thereof within **10** days of the date of the notice.

All responsible persons owning, managing or having control or change or occupancy of any such private property shall, without delay, destroy or remove such public nuisances, as defined above, from their property and from their half of the abutting street and alley between the lot lines, as extended, or such public nuisances will be destroyed or removed and such nuisances abated by City authorities, in which case the cost of destruction or removal will be assessed upon the lots and lands, from, or on which, or abutting the streets and alleys from, or on which, such nuisance was abated, and such costs will constitute a lien upon the lots or parcels until paid and will be collected on the next tax roll upon which Municipal taxes are collected.

All Property owners having objections to the proposed abatement of the nuisance are hereby notified to attend a meeting of the City Council of the City of Newman to be held on **October 14, 2008** at **7:00 p.m.**, at which time and place all objections will be heard and given due consideration.

Dated: October 7, 2008

William Davis
Community Service Officer

Mario & Maria Vargas
437 Red Lion.
Newman, Ca 95360

SECOND NOTICE

NOTICE TO ABATE PUBLIC NUISANCE BY THE REMOVAL OF WEEDS, DIRT, RUBBISH AND/OR RANK GROWTH

NOTICE IS HEREBY GIVEN THAT:

Pursuant to the provisions of Chapter 2, Title 8 of the City Code of Newman, the following conditions, as declared in Section 8-2-3, constitutes a public nuisance
at: **437 Red Lion . APN No. 049-055-061-000**
Tall grass and weeds throughout front and backyard of property, which must be abated by the destruction, or removal thereof within **10** days of the date of the notice.

All responsible persons owning, managing or having control or change or occupancy of any such private property shall, without delay, destroy or remove such public nuisances, as defined above, from their property and from their half of the abutting street and alley between the lot lines, as extended, or such public nuisances will be destroyed or removed and such nuisances abated by City authorities, in which case the cost of destruction or removal will be assessed upon the lots and lands, from, or on which, or abutting the streets and alleys from, or on which, such nuisance was abated, and such costs will constitute a lien upon the lots or parcels until paid and will be collected on the next tax roll upon which Municipal taxes are collected.

All Property owners having objections to the proposed abatement of the nuisance are hereby notified to attend a meeting of the City Council of the City of Newman to be held on **October 28, 2008** at **7:00 p.m.**, at which time and place all objections will be heard and given due consideration.

Dated: October 21, 2008

William Davis
Community Service Officer

CITY OF NEWMAN POLICE DEPARTMENT

ADAM MCGILL, CHIEF OF POLICE

Mario & Maria Vargas
437 Red Lion
Newman, Ca 95360

FINAL NOTICE

NOTICE TO ABATE PUBLIC NUISANCE BY THE REMOVAL OF WEEDS, DIRT, RUBBISH AND/OR RANK GROWTH

NOTICE IS HEREBY GIVEN THAT:

Pursuant to the provisions of Chapter 2, Title 8 of the City Code of Newman, the following conditions, as declared in Section 8-2-3, constitutes a public nuisance at: **437 Red Lion way. APN No. 049-055-061-000**
Tall grass and weeds throughout front and backyard of property, which must be abated by the destruction, or removal thereof within **10** days of the date of the notice.

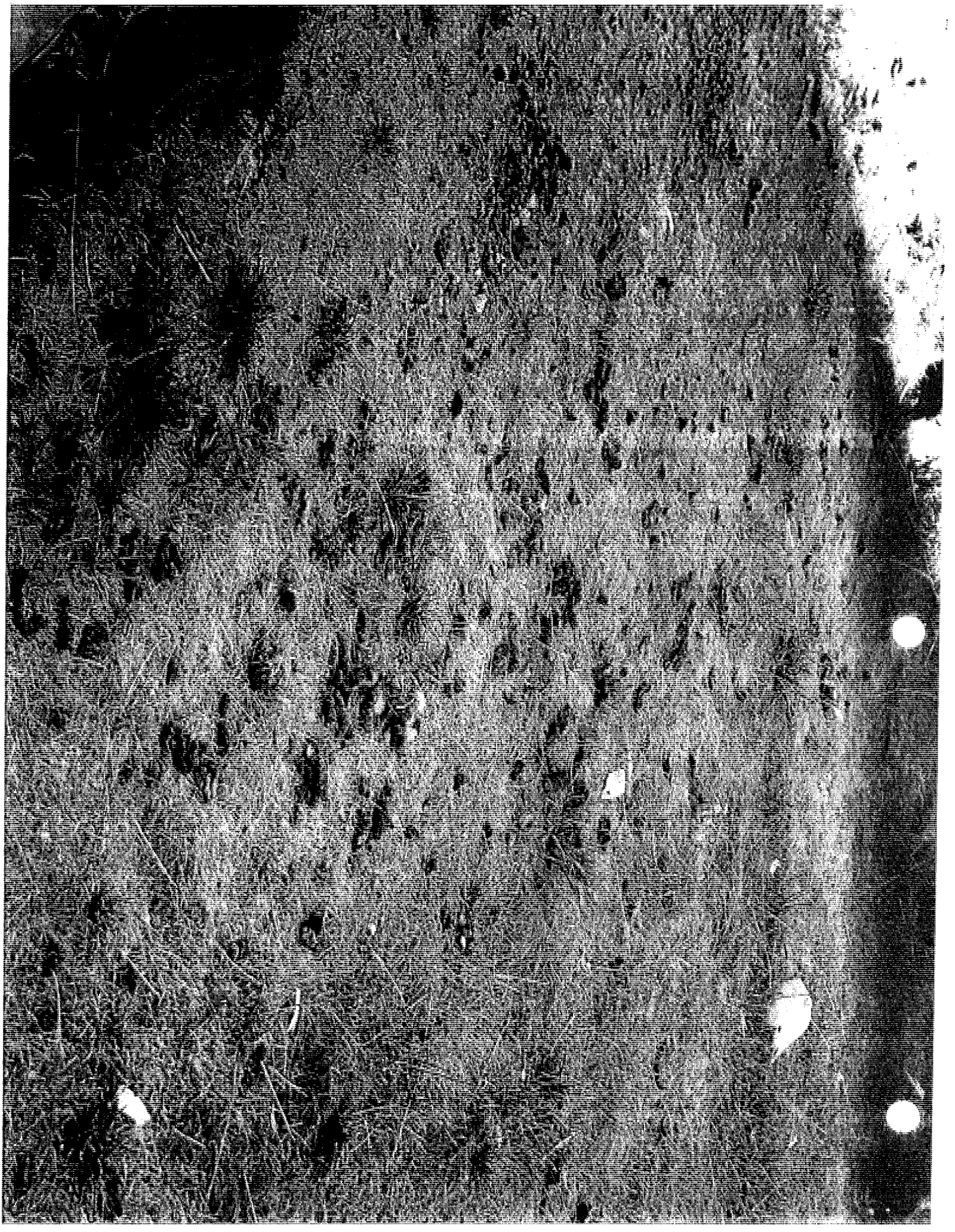
All responsible persons owning, managing or having control or change or occupancy of any such private property shall, without delay, destroy or remove such public nuisances, as defined above, from their property and from their half of the abutting street and alley between the lot lines, as extended, or such public nuisances will be destroyed or removed and such nuisances abated by City authorities, in which case the cost of destruction or removal will be assessed upon the lots and lands, from, or on which, or abutting the streets and alleys from, or on which, such nuisance was abated, and such costs will constitute a lien upon the lots or parcels until paid and will be collected on the next tax roll upon which Municipal taxes are collected.

All Property owners having objections to the proposed abatement of the nuisance are hereby notified to attend a meeting of the City Council of the City of Newman to be held on **November 18, 2008** at **7:00 p.m.**, at which time and place all objections will be heard and given due consideration.

Dated: November 10, 2008

William Davis
Community Service Officer

Adam Mcgill
Chief of Police



Agenda Item: 9.b.

Honorable Mayor and Members
of the Newman City Council

City Council Meeting
of November 18, 2008

ACCEPT THE FINAL DRAFTS OF THE WASTEWATER COLLECTION SYSTEM MASTER PLAN AND THE WASTEWATER TREATMENT PLANT EXPANSION AND DISPOSAL MASTER PLAN

RECOMMENDATION:

It is recommended that the Newman City Council:

1. Conduct a public hearing.
2. Accept the Final drafts of the Wastewater Collection System Master Plan and the Wastewater Treatment Plant Expansion and Disposal Master Plan as submitted by Eco:logic.

BACKGROUND:

At the regular meeting of February 26, 2008, Eco:logic project engineer Tiffany Knapp provided an oral presentation to the Newman City Council on the Wastewater Collection System Master Plan Study findings. The plan was then made available for public review and comments. Comments, questions and concerns were submitted by Claremont Homes, Hearthstone Builders and Associated Engineering. The letters are included in this report for your review and information. The responses from Eco:logic to these comments are also included with this report.

Eco:logic project engineer Tiffany Knapp provided an oral presentation to the City Council regarding the Wastewater Treatment and Disposal Master Plan to the City Council at their regular meeting of June 24, 2008. The Master Plan has undergone a public review and comment period since then. Letters with comments, questions and/or concerns have been submitted by Hearthstone Builders, Associated Engineering and F&A Dairy of California. These letters are also included with this report for your review and information. The responses from Eco:logic to these letters are also included with this report.

Project engineer Tiffany Knapp will be available at the council meeting to answer any questions and/or address any concerns.

ANALYSIS:

City staff members have met with Eco:logic staff to discuss proposed changes, corrections and to ensure informational accuracy.

FISCAL IMPACT:

None.

CONCLUSION:

The Final drafts of these Master Plans are complete and are submitted for acceptance by the Newman City Council.

Respectfully submitted,

Garner R. Reynolds
Director of Public Works

REVIEWED/CONCUR:

Michael E. Holland
City Manager

ASSOCIATED
ENGINEERING GROUP, INC.
Surveying · Design · Planning

March 24, 2008

Mr. Michael Holland
City Manager
City of Newman
1162 Main Street
Newman, CA 95360

Subject: Public Review of City of Newman Draft Master Plans:
"Wastewater Collection System Master Plan" (January 2008 Draft)
"Storm Drain Master Plan" (December 2007 Draft)

Michael:

I've been asked by Mr. Dave Romano to review the above referenced draft Master Plan documents as they relate to the City of Newman's 2030 General Plan, Master Plan Subarea Three (Figure LU-4, 2030 General Plan). After reviewing the Master Plan reports, as presented to the City Council on February 26, 2008, the following is offered as a summary of comments and questions for your consideration:

Wastewater Collection System Master Plan (January 2008 Draft – ECO:LOGIC)
The report identifies the sewer line in Sherman Parkway as having 3,371 EDUs of available capacity. How was that flow capacity determined? By modeling results? A quick check of the flowing-full capacities of the 15" and 18" truck lines reveal incrementally larger capacities than 3,371 EDU's (based upon 536 gallons per day per EDU – 7.3.1). A footnote to Table 7-3 suggests that pipes were evaluated at 100% capacity. Is this correct?

Has the Sherman Parkway / Hills Ferry Road pump station and 10" sewer force main been more closely evaluated for potential upgrade options? Section 7.3.1 states that the pump station "may have enough capacity to be used on an interim basis". Does that imply that EDUs identified in Figure 7-4 as "available interim capacity" can be served?

Have any solutions for serving near-term development in Master Plan Subarea Three with existing infrastructure been identified? At the time of development of Hearthstone Ranch it was understood that the 15" trunk line in Sherman Parkway was constructed at an approximate depth of 15 feet in order to serve areas West of Highway 33. Could this option be more closely evaluated?

How was the total number of EDUs determined for Hearthstone Ranch II? A footnote to Table 7-2 cites leakage rates as the basis to calculate peak flows for the Caton Property and Hearthstone Ranch II. It is also noticed that the conversion from Peak Flow to EDUs for "Near-Term Development" areas is not consistent with "Primary and Secondary Sphere of Influence Development" areas. Table 7-2 needs further clarification.

4206 Technology Drive · Modesto, CA 95356 · (209) 545-3390 · Fax: (209) 545-3875

Storm Drain Master Plan (December 2007 Draft – Boyle Engineering)
If adopted, would the Design Criteria presented in Table 3.1 become the standard by which future growth areas are developed? How do the "regulated Small MS4" requirements affect proposed storm drainage design criteria for water quality standards? Are those "additional regulations" that may affect the Storm Drainage Master Plan known (Section 3.1)? Will development within planning sub-areas be allowed to independently evaluate the merits of the various conveyance and detention options presented? For what reason is a storage area shown at the terminus of Conveyance Reach 22? Could this be consolidated with another regional detention facility or directly discharged to the lined channel?

Section 2, "Description of Project Area" indicates that the Sherman Parkway channel was not designed for Subarea 5 and portions of Subarea 4. Figure 8 identifies master planned infrastructure serving those areas will ultimately flow to the Sherman Parkway channel through Subarea 3. Will Subareas 4 and 5 be required to meter or otherwise attenuate peak discharge rates prior to routing through Subarea 3?

The Master Plan does not speak to interim capacity or interim drainage solutions for near-term growth areas. Will specific growth areas be required to demonstrate adequate "downstream" capacity on a project-by-project basis? More specifically, has the Sherman Parkway channel and Hills Ferry Road pump station been evaluated for interim conveyance and pumping capabilities? Conveyance Reaches 30, 130 and 31 were evaluated as a concrete-lined open channel. Does this assume that the extension of the Sherman Parkway channel will have a gravity outfall to the Newman Wasteway? Have grades been evaluated?

Could Drainage Subarea 3 (Figure 1) benefit from an interim storm drainage discharge to the adjacent CCID canal? Section 1, "Introduction" alludes to discussions between the City and CCID regarding joint use of facilities. Are those discussions expected to result in a near-term agreement?

Thank you for the opportunity to review the draft Master Plans. Both documents were comprehensive and easy to read. I look forward to discussing the issues listed above with you once you've had an opportunity to review these comments. If you have any questions regarding these items, please do not hesitate to contact me at (209) 545-3390.

Respectfully submitted,

Ryan D. Carrel, P.E.
Civil Engineer

cc: Mr. David O. Romano, Newman-Romano, LLC

Claremont Homes, Inc.
1[illegible] Francisco Lane, Suite 202
F[illegible]nont, CA 94539

Telephone: 510-623-6320
Fax: 510-623-6324

To: Michael Holland	From : Jill Taylor
Company : City of Newman	Company : Claremont Homes
Fax Number : 1-209-862-3199	Fax Number : 510-881-0777

Subject : Draft of the City of Newman Wastewater Collection System Master Plan

Pages including cover page: 3 Time : 9:44:38 AM Date : 3/24/2008

WARNING: This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable federal or state law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this [illegible]munication is strictly prohibited. If you have received this is communication in error, please notify us i[illegible]nediately by telephone, and please return the original message to us at the above address via regular U.S. mail; we will be happy to pay for any cost of such return. Thank you.

MESSAGE

Mike Conley asked me to send this to you.

Jill Taylor

CLAREMONT HOMES, INC.

A California Corporation

California Corporate Contractor's
License Number 694632
Arthur L. Lorenzini, Jr., President
Michael W. Conley, Exec. Vice President

194 Francisco Lane, Suite 202
Fremont, CA 94539
Phone: (510) 623-6320
Fax: (510) 623-6324

March 17, 2008

Mr. Michael Holland
City Manager
City of Newman
1162 Main St.
P.O. Box 787
Newman, CA 95360
Phone: 209-862-3725
Via fax to: 209-862-3199 and
Via email: mholland@cityofnewman.com

RE: Draft of the City of Newman Wastewater Collection System Master Plan dated January 2008

Dear Mike:

I recently completed reading the draft of the Wastewater Collection System Master Plan and had several comments I wanted to make:

1. Rather than enlarging the M Street sanitary sewer from 12 inches to 15 inches, possibly consider, as the properties along L Street develop, that they can install a new 15-inch main. With one shortened sanitary sewer from L Street to the Mattos Property, the existing problem on the southwest corner of the City could be corrected. The Caton Property could then utilize the sewer at the existing Prince Road sewer system, or the Caton Property could sewer through the Mattos Property; or the Caton Property could sewer to the south and stub a line to the proposed southern trunk line. That line could be left dry, to be used at a later date, if the two previous options are considered interim solutions.

2. How does Lucas Ranch II connect to the sewer system? I do not see a sewer main shown on the Master Plan and was wondering if a new sanitary sewer line could be installed with future development from M or L Streets, east on Inyo to Canal School Road. Possibly Lucas Ranch II had provided a sewer main that could be connected to and thus be utilized as part of this new sewer system. It would seem wise to have a sanitary sewer trunk line installed through the Mattos Property from Prince Road to L Street. A sketch can be prepared for your review if that would be helpful.

3. The existing conditions downstream of the Prince Road Pump Station should be corrected by the current users of those facilities. A sewer study for the sanitary

sewer system, downstream of the Prince Road pump station, was completed several years ago, and demonstrated adequate capacity in these lines for the development of the Caton Ranch residential subdivision A copy of that study should be available for your review and discussion.

Thank you for your attention to this matter, and we look forward to continuing to work with you in the future.

Best regards,

CLAREMONT HOMES, INC.

/s/ Michael W. Conley
Executive Vice President

MWC:jwt

Attch.

cc: Arthur L. Lorenzini, Jr.

con03-14-08 - Wastewater Collection System .doc

ECO:LOGIC
ENGINEERS · CONSULTANTS

3875 Atherton Road
Rocklin, CA 95765
916.773.8100
916.773.8448

April 24, 2008

Ernie Garza
Director of Public Works
City of Newman
1162 Main Street
P.O. Box 787
Newman, CA 95360

RE: Response to Comments Regarding City of Newman Wastewater Collection System Master Plan (Draft)

Dear Ernie:

We have reviewed the comments from Associated Engineering Group, Inc., Modesto, CA and Claremont Homes, Inc., Fremont, CA regarding the Draft Wastewater Collection System Master Plan (Master Plan). Our responses to these comments are provided below:

1. Response to Comments from Associated Engineering Group, Inc.

(Response to first paragraph)

The available capacity shown (in Figure 7-4) along the Sherman Parkway pipeline represents the most flow-limited segment of the Sherman Parkway pipeline. (The available capacity of this line ranges from approximately 5,300 EDUs to 3,371 EDUs.) These capacities were calculated using a hydraulic model simulation of the wastewater produced at build-out of the City Limits under a 10-year, 6-hour design storm condition. The available capacities of all lines shown in Figure 7-4 were calculated by subtracting the downstream flow (from model output) from the full pipe capacity (from model output), and converting the remaining flow (MGD) into EDUs (536 gpd/EDU). These capacities are not the full pipe capacities; they are the remaining available capacity of the most flow-limited segment of a line (not including at-capacity or over-capacity segments of a line).

(Response to second paragraph)

Force main capacity was not specifically evaluated. As shown in Figure 7-4, the existing system downstream of the Hills Ferry Road pump station cannot handle any additional flow. An upgrade to the Hills Ferry Road pump station may be considered an interim solution if either (1) the existing system downstream of the Hills Ferry Road pump station is upsized, or (2) a new sewer line is extended from the Hills Ferry Road pump station to an outfall line. Further analysis would be needed (for example, hydraulic model simulation of an upsized or new line and the maximum pump size for the existing wet well) to evaluate whether or not the existing Hill Ferry Road pump station can be adequately modified to provide an additional 3,371 EDUs of capacity (as an interim or ultimate solution). Currently, the Hills Ferry Road pump station does not have the capacity to meet the demand of an additional 3,371 EDUs.

(Response to third paragraph)

The available capacities shown in Figure 7-4 represent the most flow-limited segments of a line. This Master Plan does not determine exactly where flow from specific areas will discharge into the collection system. In the case of the Sherman Parkway pipeline, there is an available capacity of 3,371 EDUs and, for the purposes of this analysis, it was assumed that any developments within proximity to connect to this line (with approval from the City) may utilize the available capacity. The Hearthstone Ranch II development (3,063 EDUs) and developments West of Highway 33 (up to 308 EDUs) could utilize the remaining capacity in the Sherman Parkway line (3,371-3,063 = 308 EDUs). This Master Plan is a flexible capacity analysis tool that the City can use to plan for future sewer needs as they occur. The exact connection location and specific new developments that can connect to the sewer system is determined by the City.

(Response to fourth paragraph)

The total EDU count for the Hearthstone Ranch II development was calculated using land use data from the Newman 2030 General Plan. As shown in Figure 3-2 and Figure 7-4 of the draft Master Plan, the Hearthstone Ranch II development consists of three land use types: (1) Business Park, (2) Planned Mixed Residential and (3) Light Industrial. Based on the GIS data from the General Plan consultants (DC&E), the acreage of Business Park (in the Hearthstone Ranch II area) is approximately 34 acres, the acreage of Planned Mixed Residential is 305 acres, and the acreage of Light Industrial is 161 acres. As shown in Table 4-1, a unit flow value of 1,500 gpd/ac was applied to areas zoned "Business Park", a unit flow value of 1,650 gpd/ac was applied to "Light Industrial", and a unit flow value of 1,092 gpd/ac was used for "Planned Mixed Residential." By multiplying the acreage of each of these land use types by their respective unit flow value, the total flow (gpd) was determined. These flows were divided by 214 gpd/DU (Table 4-1) to represent the corresponding wastewater flows in terms of EDUs.

The acreage, Average Flow, Peak Flow and estimated EDUs for (1) Near-Term Developments, (2) areas in the Primary Sphere of Influence, and (3) areas in the Secondary Sphere of Influence are shown in Table 7-2. Footnote (b) states, "A peaking factor of 2.5 was applied to determine the future peak flows for Primary and Secondary SOIs. Caton and Hearthstone Ranch II peak flows were determined by using the leakage rates used in the model for the existing collection system." This footnote was added to explain the difference in calculating the peak flows for areas in the Primary and Secondary SOIs and the Near-Term Developments (Caton and Hearthstone Ranch II). Because the Caton and Hearthstone Ranch II properties were assumed to utilize available capacity in the existing sewer system, the leakage rates for the sewer basins these developments are part of was applied to their estimated Average Flow. For developments in the Primary and Secondary SOIs, it was assumed that new sewer infrastructure would be needed and a peaking factor of 2.5 was applied to all these areas.

2. Response to Comments from Claremont Homes, Inc.

(Response to comment #1)

The recommendation of upsizing the M Street sewer was a more cost effective option than constructing a new sewer line. The City can decide what option is best to achieve the needed

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capacity. The intent of this Master Plan was to evaluate the capacity of the City's sewer system and make the most cost effective recommendations. The proposed southern trunk line will mostly likely not be constructed before the Caton Property needs sewer service.

(Response to comment #2)

If the City chooses to accommodate the Caton Property within the existing system, there are many possible options for providing capacity to the Property. This Master Plan identified the most cost effective option; upsizing of capacity-limited sewer lines was recommended over installing new sewers. Other options for providing capacity to development outside the City limits can be explored further by developer and City agreement.

(Response to comment #3)

ECO:LOGIC was not provided with the sewer study referenced. Therefore, the basis of this study cannot be compared to this Master Plan. However, this Master Plan evaluated the capacity of the existing system using a dynamic flow-routing model and incorporating recent flow monitoring data, evaluation of inflow and infiltration for each modeled sewer basin, and analysis of the sewer system's response during a 10-yr, 6-hr Design Storm event. The suggested improvements listed in Table 7-1 (and shown in Figure 6-3) are recommended to accommodate the build-out of the City Limits and are expected to be paid by existing users and infill development. Any additional development will exceed the capacity of the existing system and additional improvements will be needed.

Please feel free to contact me or Tiffany Knapp at 916-773-8100 with any further questions, comments, or if you would like further clarification on these responses.

Sincerely,

ECO:LOGIC

Casey Yearout

Casey D. Yearout, P.E.
Project Engineer

Tiffany Knapp

Tiffany A. Knapp, P.E.
Project Manager

cc: Michael Holland, City of Newman, via email
Charlie Bunker, ECO:LOGIC, via email

NEWM06-005

HEARTHSTONE BUILDERS, INC.
Land Development and Construction

May 6, 2008

Mr. Michael Holland
City Manager
City of Newman
1162 Main St.
Newman, CA 95360

RE: Draft Wastewater Collection System Master Plan Comments

Dear Michael:

Hearthstone Builders Inc. has reviewed the City of Newman Wastewater Collection System Master Plan (Draft) prepared by ECO:LOGIC dated January 2008 and I have the following comment:

1. Page 6-8 Section 6.5.2 Build-out of City Limits + Near-Term Future Development.

This section discusses the simulation of peak flow with the addition of the (1) Caton property and (2) the Hearthstone Ranch II Development to the existing wastewater collection system. I do not dispute the outcome of the data as further studies will be necessary for final utility design. My question is what data did ECO:LOGIC use for the number of EDU's generated by the Hearthstone Ranch II Project? Their Figures 6-6, 7-3 and 7-4 all show the Hearthstone Ranch II Project including Light Industrial Area 10-I as part of the Hearthstone Ranch II Project.

I thank you for this opportunity to comment on the Wastewater System Collection Master Plan.

Respectfully Submitted,

Curtis

Curtis Nelson

1335 Main Street ✦ Suite 202 ✦ Newman, CA 95360 ✦ **(209) 862-3595** ✦ FAX (209) 862-3598

ECO:LOGIC
ENGINEERS · CONSULTANTS

3875 Atherton Road
Rocklin, CA 95765
916.773.8100 tel
916.773.8448 fax

May 7, 2008

Ernie Garza
Director of Public Works
City of Newman
1162 Main Street
P.O. Box 787
Newman, CA 95360

RE: Response to Comment from Hearthstone Builders, Inc. Regarding City of Newman Wastewater Collection System Master Plan (Draft)

Dear Ernie:

We have reviewed the comment from Hearthstone Builders, Inc., Newman, CA regarding the Draft Wastewater Collection System Master Plan (Master Plan). Our response to this comment is provided below:

Response to Comment from Hearthstone Builders, Inc.

The boundaries of the Hearthstone Ranch II development were outlined in the "Land Use / Circulation Plan" figure developed by William Hezmalhalch Architects Inc. These boundaries include: Area 2-R/BP, Area 1-R, and Area 10-I (Figure LU-4, Newman 2030 General Plan).

The total EDU count for the Hearthstone Ranch II development was calculated using land use data from the Newman 2030 General Plan. As shown in Figure 3-2 and Figure 7-4 of the draft Master Plan, the Hearthstone Ranch II development consists of three land use types: (1) Business Park, (2) Planned Mixed Residential, and (3) Light Industrial. Based on the GIS data from the General Plan consultants (DC&E), the acreage of Business Park (in the Hearthstone Ranch II area) is approximately 34 acres, the acreage of Planned Mixed Residential is 305 acres, and the acreage of Light Industrial is 161 acres. As shown in Table 4-1, a unit flow value of 1,500 gallons per day per acre (gpd/ac) was applied to areas zoned "Business Park", a unit flow value of 1,650 gpd/ac was applied to "Light Industrial", and a unit flow value of 1,092 gpd/ac was used for "Planned Mixed Residential." By multiplying the acreage of each of these land use types by their respective unit flow value, the total flow (gpd) was determined. These flows were divided by 214 gpd per dwelling unit (Table 4-1) to represent the corresponding wastewater flows in terms of EDUs.

Please feel free to contact me or Tiffany Knapp at 916-773-8100 with any further questions, comments, or if you would like further clarification on these responses.

Sincerely,
ECO:LOGIC

Casey D. Yearout, P.E., Project Engineer

Tiffany A. Knapp, P.E., Project Manager

cc: Michael Holland, City of Newman, via email
Charlie Bunker, ECO:LOGIC, via email

NEWM06-005

F & A DAIRY of CALIFORNIA, INC.

October 9, 2008

City of Newman
PO Box 787
1162 Main Street
Newman, CA 95360

Subject: Wastewater treatment and disposal master plan

We are currently in process of analyzing our current wastewater numbers, evaluating future needs and determining the best options to handle our flows and loads. To assist us in our analysis please provide information and answers to the following questions:

1. If F&A builds a wastewater treatment plant would F&A be allowed to discharge more flow to Newman WTTP?
2. Does the City want treatment plant at our facility or at their facility?
3. If groundwater degradation is found at Newman WTTP would F&A be phased out even after constructing pre-treatment facility?
4. What timeline would city give us for installing pretreatment plant?
5. Would city engineers want to plan treatment plant with our engineers?
6. Would our waste permit change; what would the standards be?

Sincerely,

John Cook
Quality Control Manager
F&A Dairy of California, Inc.

691 Inyo Street
Post Office Box 578
Newman, California 95360

209/862-1732
In California: 800/554-6455
Out of State: 800/626-6580
FAX: 209/862-1043

ECO:LOGIC
ENGINEERS · CONSULTANTS

3875 Atherton Road
Rocklin, CA 95765
916.773.8100
916.773.8448

October 20, 2008

Ernie Garza
Director of Public Works
City of Newman
1162 Main Street
P.O. Box 787
Newman, CA 95360

RE: Response to Comments from F&A Dairy Regarding City of Newman Wastewater Treatment and Disposal Master Plan (Draft; July 2008)

Dear Ernie:

We have reviewed the comments from F&A Dairy of California, Inc. regarding the Draft Wastewater Treatment and Disposal Master Plan (Master Plan). We recognize the complexity of issues addressed in this Master Plan and welcome the opportunity to respond to questions and comments from the public. Our responses to these comments are provided below:

Response to Question #1:

If F&A Dairy builds a pretreatment wastewater treatment plant, there is the potential to increase F&A Dairy discharge flow to the City of Newman wastewater system. A flow increase would require purchase of those additional EDUs of capacity. However, the capacity of the collection system and an increase in disposal land as well as the timing of any increase in F&A effluent flow would have to be considered. In addition, future effluent constituent levels would also have to be determined.

Response to Question #2:

The recommended location for a pretreatment plant would be at the F&A Dairy site.

Response to Question #3:

Groundwater degradation at the City's WWTP may necessitate a higher level of pretreatment or may dictate the type of pretreatment, but it would be unlikely to eliminate F&A Dairy from discharging to the WWTP.

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Response to Question #4:

The timeline for F&A Dairy constructing a pretreatment plant will depend on if/when F&A Dairy increases flow, the results of the groundwater degradation analysis (and/or the status of the analysis), and timing of future residential development.

Response to Question #5:

How F&A Dairy specifically complies with its effluent limits will be left to F&A Dairy. However, if effluent pretreatment is employed, ECO:LOGIC Engineering would want to provide input on any pretreatment plans, at a minimum.

Response to Question #6:

The F&A Dairy waste permit would change since pretreatment would reduce loads. The exact standards would need to be determined, but it is likely that constituents would be required to be similar to raw residential wastewater.

Please feel free to contact me or Rich Stowell at 916-773-8100 with any further questions, comments, or if you would like further clarification on these responses.

Sincerely,

ECO:LOGIC

Tiffany A. Knapp, P.E.
Project Manager

cc: Michael Holland, City of Newman, via email

NEWM06-004

ASSOCIATED
ENGINEERING GROUP, INC.
Surveying · Design · Planning

Dave L. Skidmore, L.S. 7126
Ryan D. Carrel, R.C.E. 51619
Kevin Waddell
Jim R. Flores
Nadine Coonce

September 30, 2008

Mr. Michael Holland
City Manager
City of Newman
1162 Main Street
Newman, CA 95360

Subject: Public Review of City of Newman Draft Master Plans:
"Wastewater Treatment and Disposal Master Plan" (July 2008 Draft)

Michael:

Once again I've been asked by Mr. Dave Romano to review the above referenced draft Master Plan document as it relates to the City of Newman's 2030 General Plan, Master Plan Subarea Three (Figure LU-4, 2030 General Plan). After reviewing the Master Plan report, as presented to the City Council on June 24, 2008, the following is offered as a summary of comments and questions for your consideration:

Wastewater Treatment and Disposal Master Plan (July 2008 Draft – ECO:LOGIC)

Does this Master Plan imply that all future users, both within existing City limits and Primary SOI, will be held to a higher level of treatment equally, or is this higher level of treatment intended for new growth areas outside of the current City limits (beyond the existing permitted capacity)?

The Master Plan assumes that new growth in the Primary SOI will need new trunks to convey wastewater to the WWTP (as previously discussed in the Wastewater Collection System Master Plan). Understandably, a "separate" collection system creates a logical separation of new users to a new treatment process. What if portions of new development in the Primary SOI can be routed through segments of the existing collection system? Ultimately, to what extent will the WWTP provide segregated levels of treatment?

Can the 1.44 Mgal/d (ASF) permitted capacity be translated or converted to a 'new development' threshold related to residential units? Are fees collected to fund the higher level of treatment until such time as the Regional Board requires implementation?

What alternate means of effluent disposal exist for the City of Newman beyond agricultural reclamation and [tertiary] effluent irrigation? If a level of treatment is dictated by effluent disposal, what discussions have the City had as it relates to future effluent disposal methods? Are future disposal scenarios determined by City Council?

The Master Plan mentions that 'the City and Regional Board agreed to construct a new monitoring well to assess groundwater quality'. Has that well been constructed? It is understood that groundwater data has been, and continues to be collected at the WWTP. What is the status of groundwater monitoring and degradation analysis? When does the City expect to have results? Will a supplemental report be issued once analysis is conducted? How will high levels of nitrogen degradation impact future expansion?

If future potable water sources will significantly reduce effluent salinity and if tertiary-level treatment reduces effluent salinity, will negative impacts from the WWTP on local groundwater increase measurably?

To what extent will existing ratepayers participate in the costs related to higher levels of treatment? Will City Council determine the existing ratepayers involvement in plan implementation?

Has the City evaluated costs and timing related to acquisition of additional disposal land at the WWTP? Is land that is compatible with expansion plans even available?

Are the costs that are summarized in Future Treatment and Effluent Disposal Analysis (Chapter 6) for build-out of the Primary SOI per the General Plan land uses? Tables 6.3, 6.4 & 6.5 indicate costs are for 2 Mgal/d. Is Primary SOI estimated at 2.3 Mgal/d?

Section 6.4 speaks to industrial pre-treatment alternatives. How would a possible *decline* in F&A Dairy production impact this Master Plan and its flexibility? Do [residential] ratepayers share in the cost of industrial pretreatment, once pretreatment requirements are determined?

Perhaps the biggest issue related to this Master Plan is equitable funding sources. The Master Plan encourages the City to develop a revenue program to fund future capital improvements. A detailed revenue program is needed to determine fair funding of WWTP expansion improvements. When would the City begin a financing plan?

Does this Master Plan provide enough flexibility for the City to consider future treatment and disposal scenarios/technologies that may prove more cost effective?

Overall, the Wastewater Treatment and Disposal Master Plan is a comprehensive assessment of treatment and disposal needs / options. As this is a city-wide Master Plan, there does not appear to be any particular bias toward one General Plan planning area over another. It is understood that further study, particularly groundwater degradation, will be necessary to determine final improvement requirements. Exact impact to new development areas would be determined at that time.

Thank you again for the opportunity to review this draft Master Plan. As with the other ECO:LOGIC Master Plans, this document was well prepared. I look forward to discussing the items listed above with you once you've had an opportunity to review these comments. If you have any questions, please do not hesitate to contact me at (209) 545-3390.

Respectfully submitted,

Ryan D. Carrel, P.E.
Civil Engineer

cc: Mr. David O. Romano, Newman-Romano, LLC

HEARTHSTONE BUILDERS, INC.
Land Development and Construction

September 10, 2008

Mr. Michael Holland
City of Newman
1162 Main St.
Newman, CA 95360

Re: Newman Wastewater Treatment and Disposal Master Plan Draft

Dear Michael:

Thank you for this opportunity to comment on the Wastewater Treatment and Disposal Master Plan Draft. Some of my comments will also relate to the Water Master Plan which has been previously adopted by the City Council without comment. As you know the recommendations by ECO:LOGIC for the wastewater treatment plant (WWTP) are contingent upon the City providing a surface water source in an effort to reduce salinity in the effluent going to the wastewater treatment plant and it's subsequent discharge.

My comments and questions are as follows:

1. Discuss the status of the monitoring well installed early in 2008 and test results to date. What is the timeframe needed to obtain sufficient test results to determine degradation (or not) to the groundwater from the WWTP? Have studies begun to determine nitrogen degradation in effluent reclamation areas?

2. What discussions have taken place with F&A Dairy with regards to organic loading and pretreatment of F&A Dairy effluent? Does pretreatment of effluent increase WWTP capacity? Who would be responsible for pretreatment of F&A Dairy effluent?

3. ECO:LOGIC has stated that "*The city should begin the process of securing future disposal land as soon as practical*", please discuss status of acquisition.

4. Table ES-2 shows treatment costs for three treatment alternatives with capital costs based on 2Mgal/d for treatment only. What relationship is 2Mgal/d to the General Plan?

1335 Main Street ✦ Suite 202 ✦ Newman, CA 95360 ✦ **(209) 862-3595** ✦ FAX (209) 862-3598

5. Please discuss the feasibility of progressive expansion of the WWTP (phasing capacity as growth dictates need) in minimum expansions.

6. Please discuss the progress status of surface water treatment facilities and acquisition of a surface water source.

As a general comment, the majority of projected General Plan growth is west of Highway 33. Costs associated with WWTP expansion do not include the cost of new sewer trunk lines to the WWTP or the cost of distribution of treated effluent. These costs along with the cost of the WWTP expansions and fee increases may be too much to bear without the City leaving an open door to new technology for wastewater treatment on those lands west of Highway 33 and locating them on land west of Highway 33.

If you have any questions regarding this transmittal or require further discussions please call me.

Sincerely,

Curtis Nelson

ECO:LOGIC
ENGINEERS · CONSULTANTS

3875 Atherton Road
Rocklin, CA 95765
916.773.8100
916.773.8448

October 20, 2008

Ernie Garza
Director of Public Works
City of Newman
1162 Main Street
P.O. Box 787
Newman, CA 95360

RE: Response to Comments Regarding City of Newman Wastewater Treatment and Disposal Master Plan (Draft; July 2008)

Dear Ernie:

We have reviewed the comments from Associated Engineering Group, Inc., Modesto, CA and Hearthstone Builders, Inc., Newman, CA regarding the Draft Wastewater Treatment and Disposal Master Plan (Master Plan). We recognize the complexity of issues addressed in this Master Plan and welcome the opportunity to respond to questions and comments from the public. Our responses to these comments are provided below:

1. Response to Comments from Associated Engineering Group, Inc.

(Response to first paragraph)

The level of treatment required of existing users and future users within the City limits is not fully known because the results of the groundwater study are not complete. Additionally, City planning related to the possibility of effluent reclamation on urban landscapes to reduce potable water use in summer is not complete. Best Practicable Treatment and Control (BPTC) dictates that new users outside the existing City limits will be need to have a higher level of treatment, possibly tertiary treatment with nitrification/denitrification. Interim use of existing capacity at the existing Wastewater Treatment Plant (WWTP) may be possible.

(Response to second paragraph)

If portions of new development (outside of the existing City Limits) can be routed through segments of the existing collection system, a percentage of the common influent wastewater flow (equivalent to the flow from outside the City Limits) will be routed to the new wastewater treatment process(es). Regardless of the collection system configuration, it has been assumed that all wastewater treatment will occur at the existing wastewater treatment plant site. In this case, two levels of treatment related

to BPTC and disposal method would be provided at the same wastewater treatment plant, with one common discharge permit, as opposed to two treatment systems with two permits.

(Response to third paragraph)

The existing permitted capacity of 1.44 Mgal/d (ASF) is equivalent to approximately 3,800 equivalent dwelling units (EDUs). Currently, the City has about 3,000 EDUs, leaving approximately 800 EDUs available to new residential development within the City. Conveniently, this corresponds to the amount of additional development identified within the existing City limits. Subsequent rate and fee impact studies will determine the future rates and fees, with approval of the City Council. Presumably, fees will be collected to fund a higher level of treatment for future users.

(Response to fourth paragraph)

The effluent disposal options identified in the Master Plan are the options most practicable to the City of Newman and its specific constraints. Alternatives, such as surface water disposal, have been considered (and employed) in the past, but are not warranted as viable alternatives at this time under the Regional Water Board's Basin Plan and related policies. The City Council will ultimately determine the disposal scenario most beneficial to the City of Newman based on the requirements of the Regional Board and City policy.

(Response to fifth paragraph)

The additional monitoring well was installed March 2008. Second and third quarter 2008 groundwater sampling, including this well, has occurred. However, a long-term analysis is needed to determine the extent (if any) of groundwater degradation. This analysis will likely take up to 5 years, possibly more, to complete. Initial analysis has begun using the existing monitoring well network. However, further, more extensive, quantification of background groundwater quality will be necessary to complete this task. The Wastewater Treatment and Disposal Master Plan recommends planning for the addition of denitrification to any new treatment process per BPTC in order to reduce the potential for nitrogen degradation.

(Response to sixth paragraph)

The future potable water source will significantly reduce effluent salinity. Tertiary-level treatment will have little effect on effluent salinity. (Very expensive treatment beyond tertiary-level would be required to reduce effluent salinity at the WWTP.) The change in potable water source will reduce effluent salinity to acceptable levels. Therefore, negative salinity impacts from the WWTP on local groundwater will be reduced.

(Response to seventh paragraph)

The extent with which existing ratepayers will participate in the costs related to higher levels of treatment depend on the outcome of the groundwater degradation analysis and the extent of any needed improvements to the existing WWTP. The City Council will determine the existing ratepayers' involvement in plan implementation.

(Response to eighth paragraph)

The City has begun the process to evaluate costs and timing related to acquisition of additional disposal land and is currently evaluating options.

(Response to ninth paragraph)

The costs for future treatment in Chapter 6 are provided for comparison purposes and do not directly relate to any specific anticipated growth areas within the General Plan. Build-out of the Primary SOI is estimated to produce approximately 0.9 Mgal/d bringing the total City flow of 2.3 Mgal/d. The Secondary SOI is estimated to produce approximately 2.5 Mgal/d for a total City flow of 4.8 Mgal/d.

The cost for wastewater treatment will depend on the size of the treatment capacity increments constructed at the WWTP site. Cost savings can be achieved due to the economies of scale of constructing larger capacity increments at one time. However, this cost savings can be lost if the capacity created is not utilized in a finite amount of time because of the annual cost to maintain capacity that is not utilized. Therefore, although the Primary SOI is estimated to produce just under 1.0 Mgal/d (half the flow of the estimate provided in Chapter 6), a 1.0 Mgal/d treatment plant would cost more than half the estimated construction cost provided. During the rate/fee study analysis, a balance will need to be determined between the benefits from economies of scale of constructing greater treatment capacity and the ability of the City to collect sufficient funds to build and maintain a larger treatment plant than needed near-term.

(Response to tenth paragraph)

A decline in F&A Dairy wastewater flow would increase disposal capacity at the WWTP available to other users. However, a reduction in flow does not necessarily free-up treatment capacity. The current WWTP has treatment capacity limitations. Therefore, it is expected that all new users will need to fund creation of treatment capacity. Pretreatment for F&A Dairy would not be funded by residential ratepayers.

(Response to eleventh paragraph)

The City will be beginning a financing plan after the acceptance of the Master Plans by the City Council.

(Response to twelfth paragraph)

This Wastewater Treatment and Disposal Master Plan provides a significant amount of flexibility for the City, and covers the range of treatment options currently available. This Master Plan also provides the flexibility to accommodate alternative treatment and/or disposal scenario/technologies if they were to become available in the future.

(Response to thirteenth paragraph)

Associated Engineering Group, Inc. states that "It is understood that further study, particularly groundwater degradation, will be necessary to determine the final improvement requirements. Exact impact to new development areas would be determined at that time." As noted in the Master Plan, we would strongly recommend that the City not wait until after the groundwater degradation study is complete to determine impact fees, since this study will likely take 5 years, or more, to complete considering the complexity of site-specific conditions, and the potential financial implications of the results.

2. Response to Comments from Hearthstone Builders, Inc.

(Response to comment #1)

The additional monitoring well was installed March 2008. Second and third quarter 2008 groundwater sampling, including this well, has occurred. However, a long-term analysis is needed to determine the extent (if any) of groundwater degradation. This analysis will likely take up to 5 years, possibly more, to complete. Initial analysis has begun using the existing monitoring well network. However, further, more extensive, quantification of groundwater quality on and around the WWTP site will be necessary to complete this task.

(Response to comment #2)

The City and F&A Dairy are continually in communication about the F&A Dairy effluent. Pretreatment of F&A Dairy effluent reduces the *organic load* on the WWTP. However, pretreatment does not reduce the *hydraulic* load on the WWTP. Pretreatment would reduce, but not eliminate, the need for (and cost of) treatment improvements at the existing WWTP. Pretreatment for F&A Dairy would not be funded by residential ratepayers.

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(Response to comment #3)

The City has begun the process to evaluate costs and timing related to acquisition of additional land and options are being considered.

(Response to comment #4)

The costs for future treatment provided in Table ES-2 are provided for comparison purposes and do not directly relate to any specific anticipated growth areas within the General Plan. Build-out of the Primary SOI is estimated to produce approximately 0.9 Mgal/d bringing the total City flow of 2.3 Mgal/d. The Secondary SOI is estimated to produce approximately 2.5 Mgal/d, for a total City flow of 4.8 Mgal/d.

(Response to comment #5)

As discussed above, economies of scale exist with constructing greater treatment capacity. Some WWTP components can be designed and built with expansion capabilities (e.g., filter cells). However, for other components (e.g., piping), it logically makes sense to design and build to accommodate anticipated maximum flow at WWTP build-out. Expansion of the WWTP in phases is very likely. However, the size of the phase will need to be determined conjunction with the rate/fee study analysis as more details about timing of growth are known.

(Response to comment #6)

Planning of the surface water treatment facilities and acquisition of a surface water source is ongoing.

Please feel free to contact me or Rich Stowell at 916-773-8100 with any further questions, comments, or if you would like further clarification on these responses.

Sincerely,

ECO:LOGIC

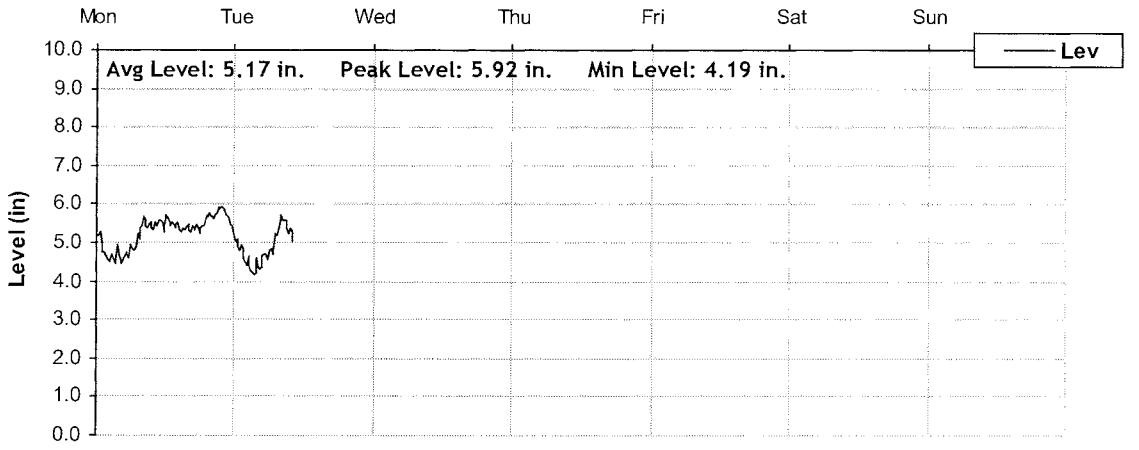
Tiffany A. Knapp, P.E.
Project Manager

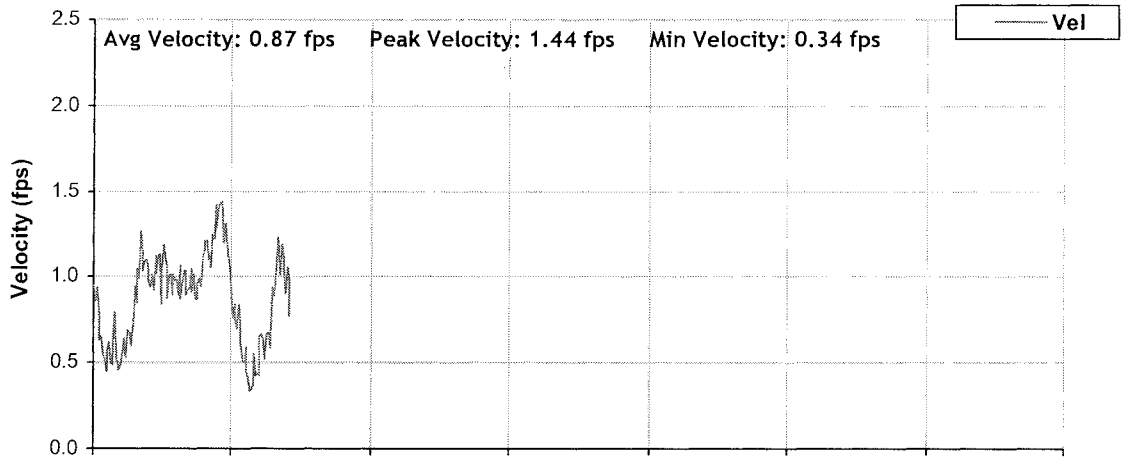
cc: Michael Holland, City of Newman, via email

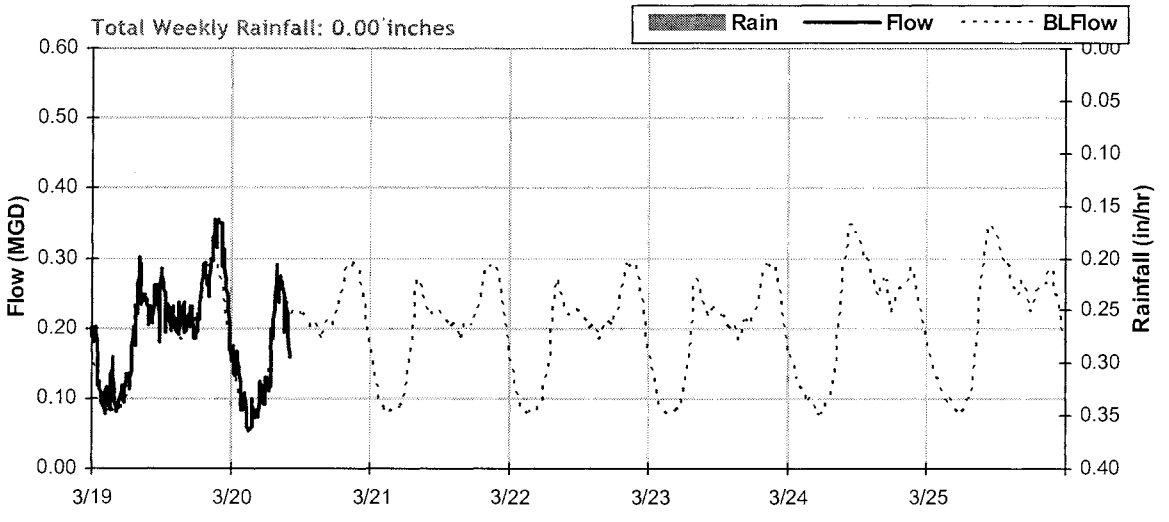
NEWM06-004

Level, Velocity and Flow
From 3/19/2007 to 3/26/2007

Monitoring Site:
Site D







Avg Flow: 0.19 MGD Peak Flow: 0.35 MGD Min Flow: 0.05 MGD

V&A

Temporary Flow Monitoring Study

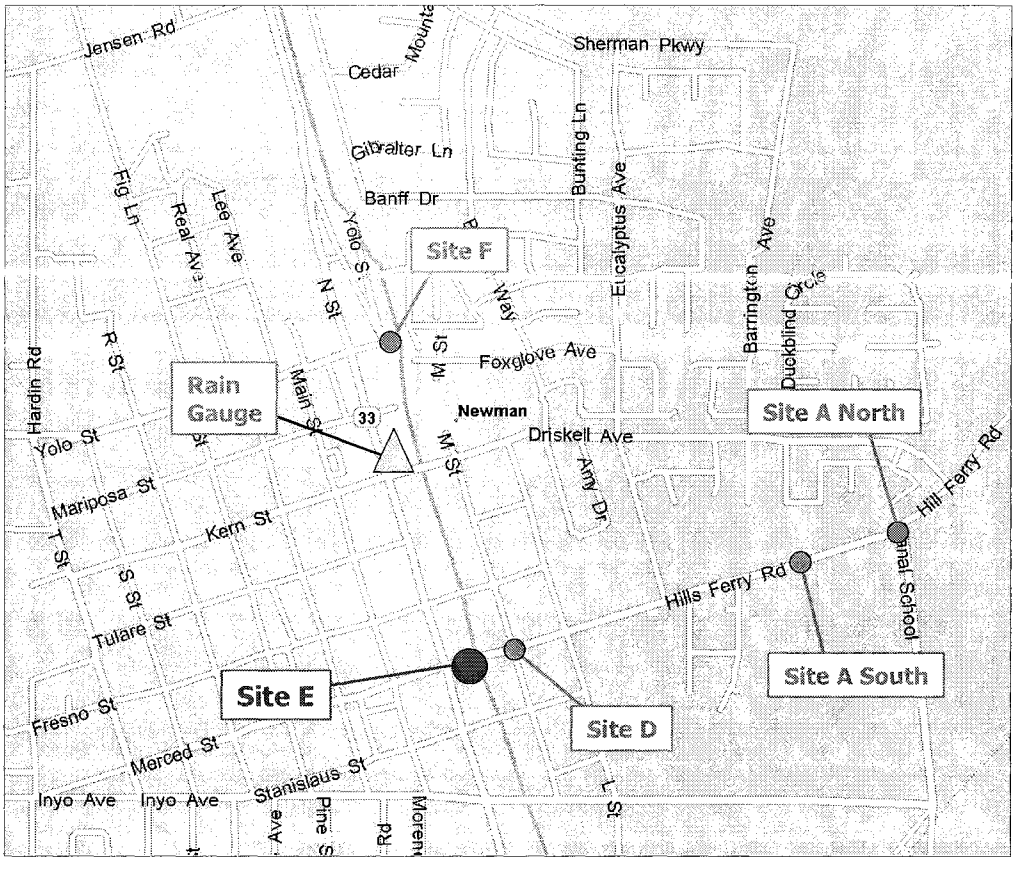
Sanitary Sewer Collection System

Monitoring Site: Site E

Manhole Address: Merced Street, east of N Street and west of railroad tracks

Size/Type of Line: 15-inch Sanitary Sewer Pipe

Data Summary Report



V&A

Site Information Report

Monitoring Site: Site E

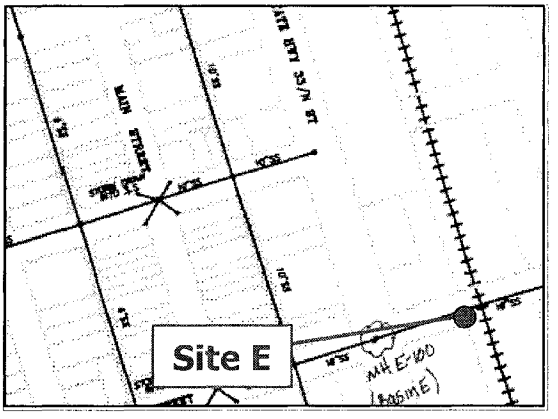
Location: Merced Street, east of N Street and west of railroad tracks

Diameter: 15 inches

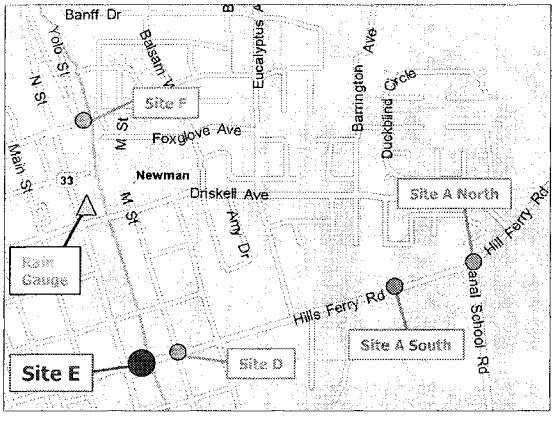
Average Dry Weather Flow: 0.223 *MGD*

Peak Measured Flow: 0.437 *MGD*

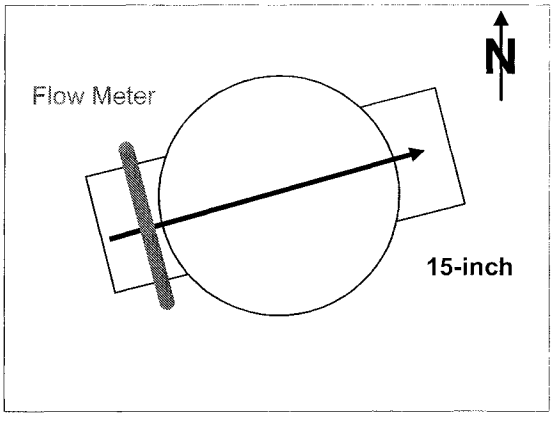
Sanitary sewer map:



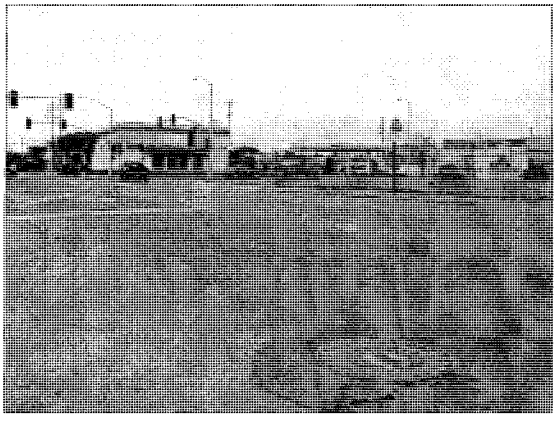
Street map:



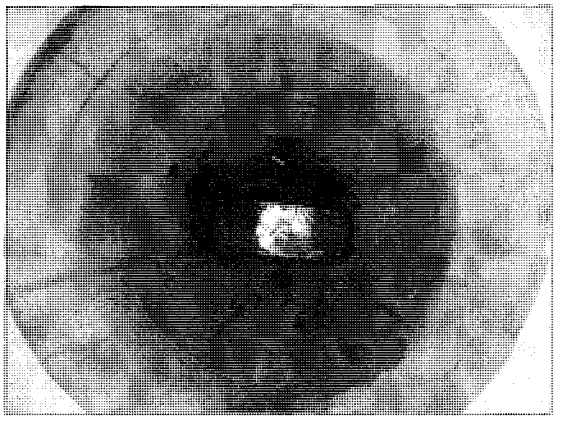
Flow sketch:



Street-level photo:



Plan view photo:

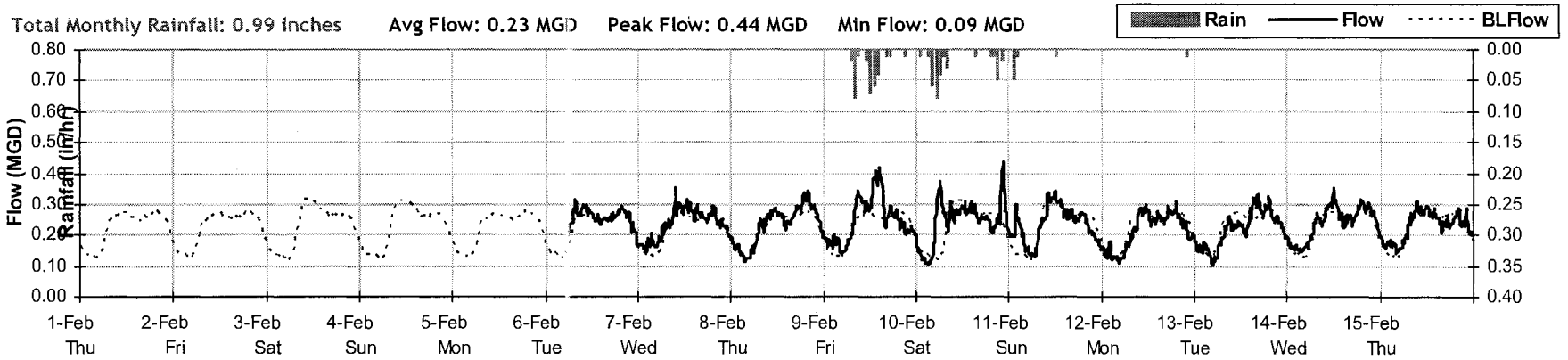


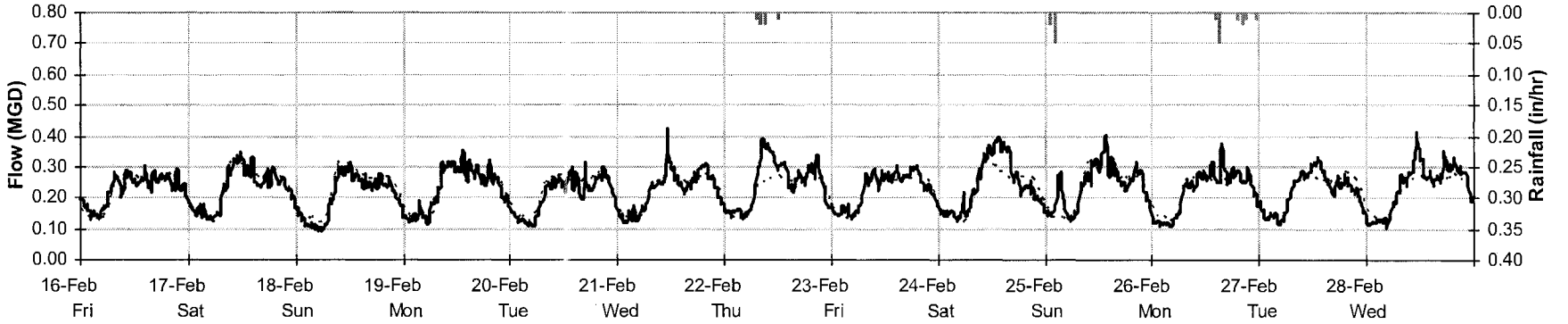
V&A

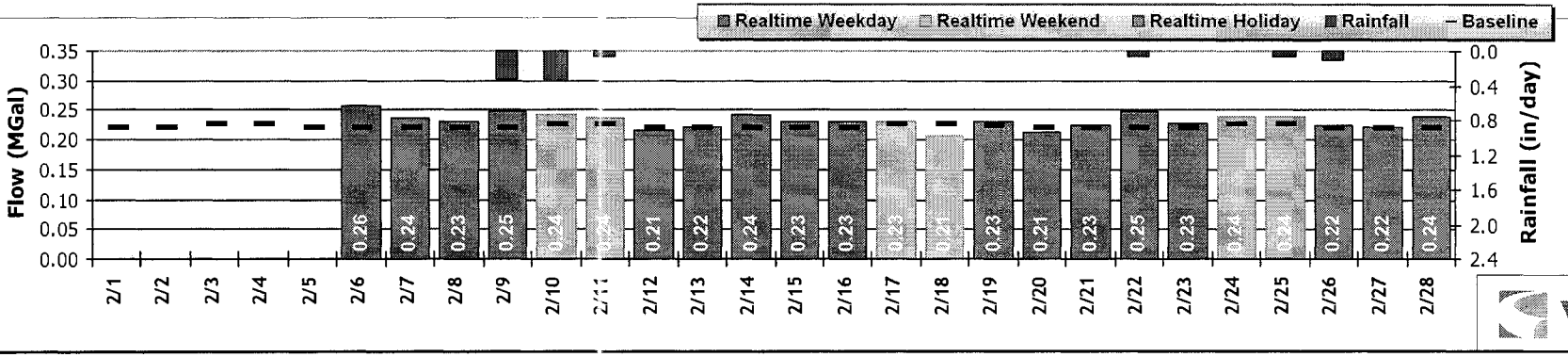
Monthly Flow Summary
February, 2007

Monitoring Site:
Site E

Total Monthly Rainfall: 0.99 inches Avg Flow: 0.23 MGD Peak Flow: 0.44 MGD Min Flow: 0.09 MGD





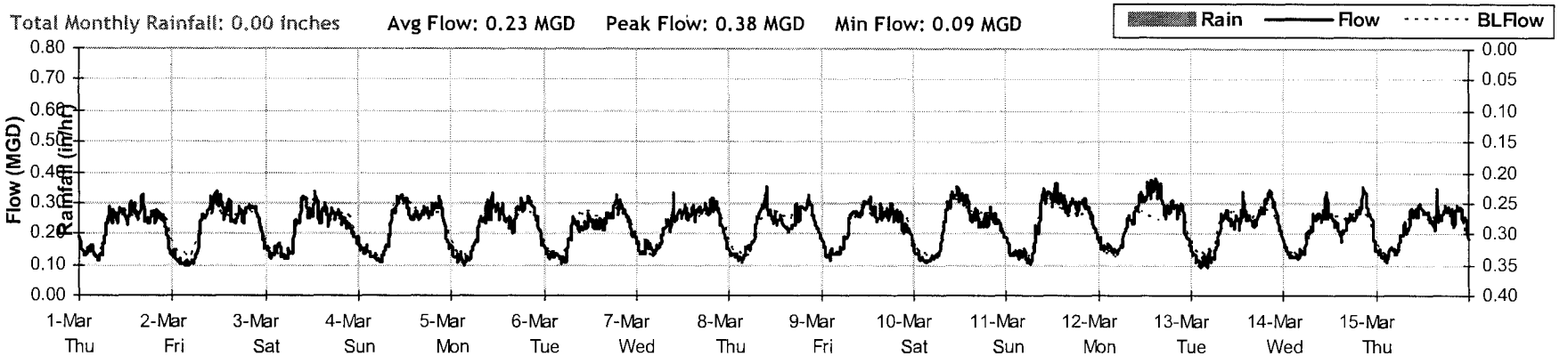


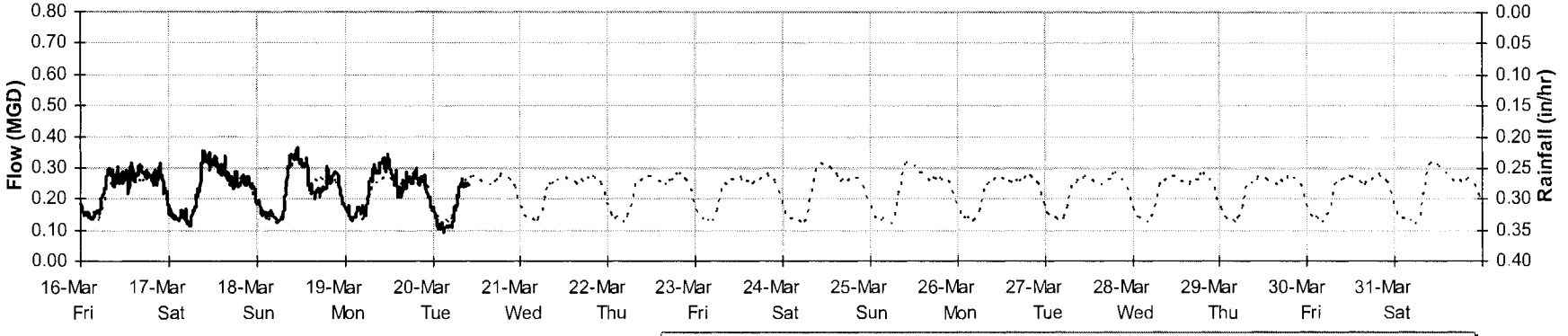
V&A

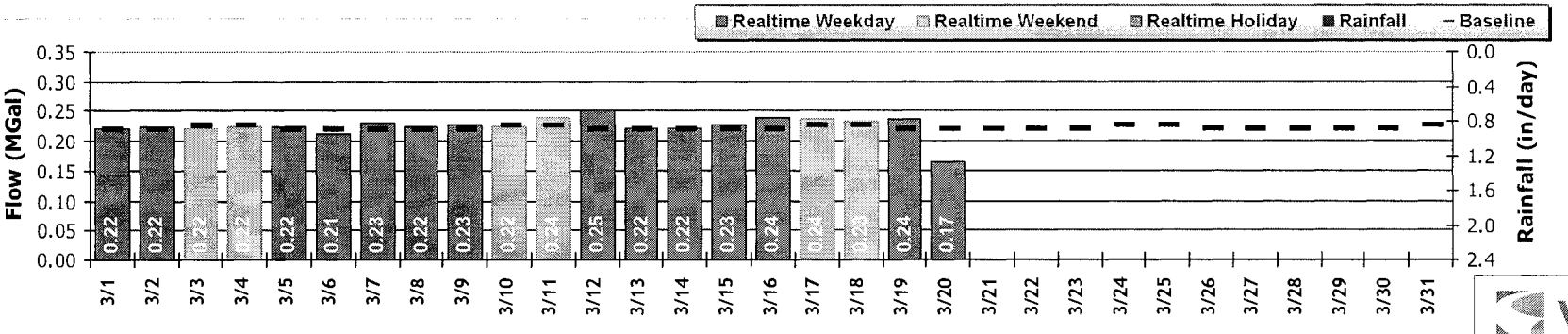
Monthly Flow Summary
March, 2007

Monitoring Site:
Site E

Total Monthly Rainfall: 0.00 inches Avg Flow: 0.23 MGD Peak Flow: 0.38 MGD Min Flow: 0.09 MGD





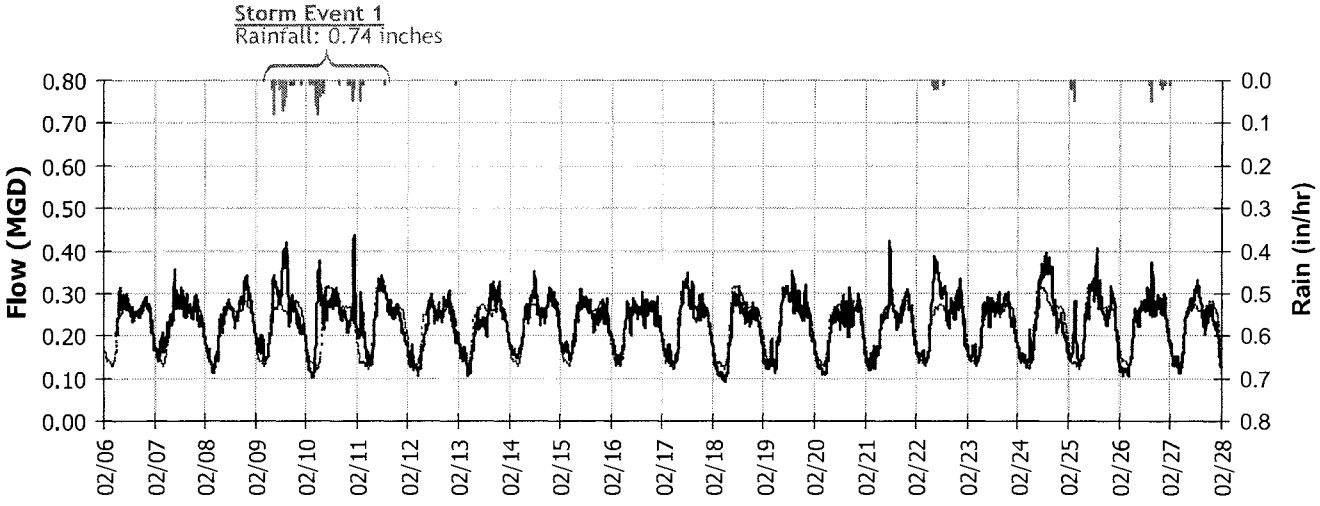


V&A

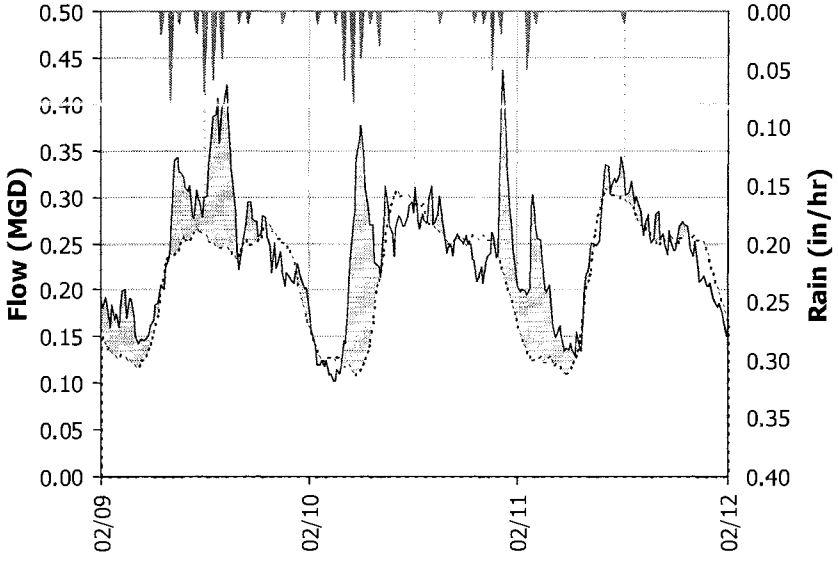
I/I Summary

Monitoring Site:
Site E

Baseline, Realtime, and I/I Flows over Monitoring Period:



Storm Event #1 Detail I/I Graph



Storm Event #1 I/I Analysis

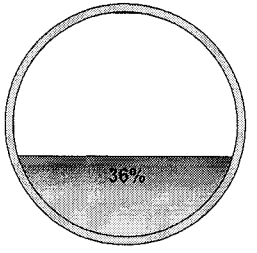
Rainfall:	0.74	*inches*
Peak Flow:	0.44	*MGD*
Peak I/I Rate:	0.25	*MGD*
PF:	1.95	
Pk I/I:ADWF:	1.12	
Peak Level:	7.19	*inches*
d/D Ratio:	0.48	
Total I/I:	76,000	*gallons*
R-Value:	1.9	*%*
IDM Analysis:	3,200	*gal/in-rain/IDM*

V&A

Average Dry Weather Flow

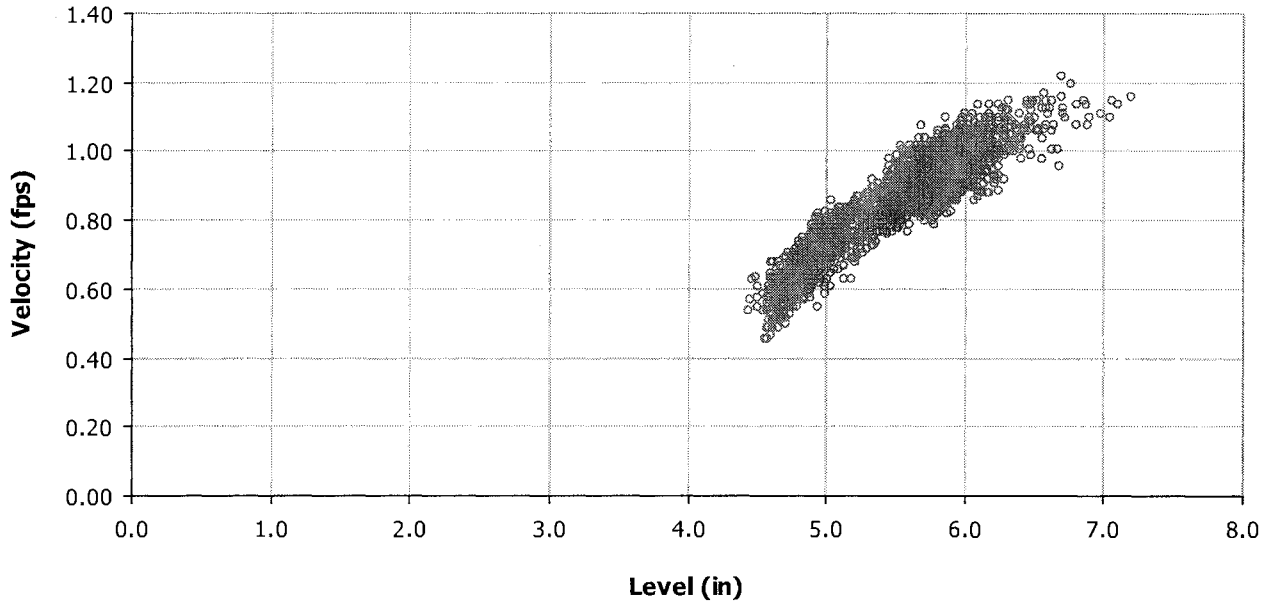
Monitoring Site:
Site E

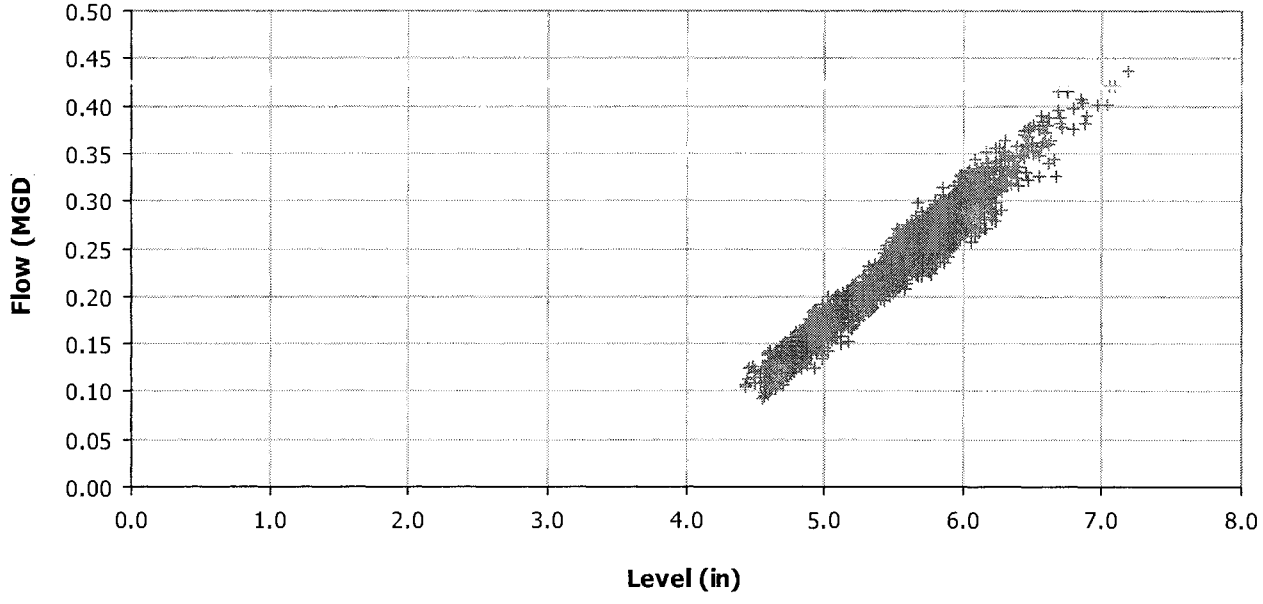
Average Dry Weather Flow:
0.22 *MGD*



Scatter Plots (Flow, Velocity vs. Depth)

Monitoring Site: Site E

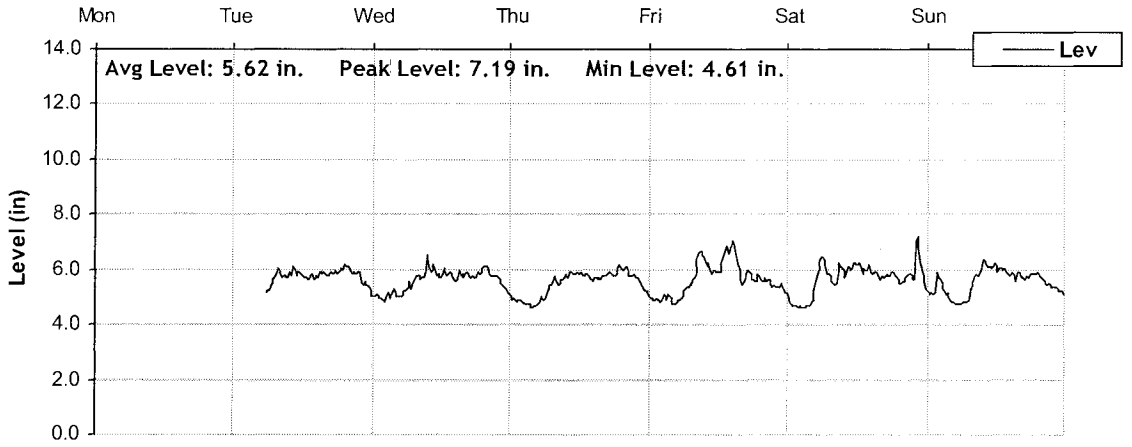


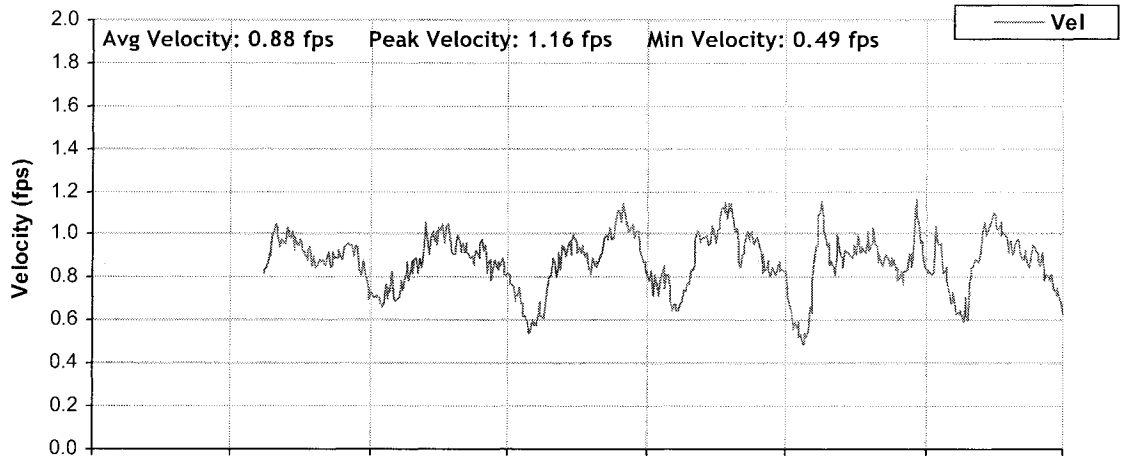


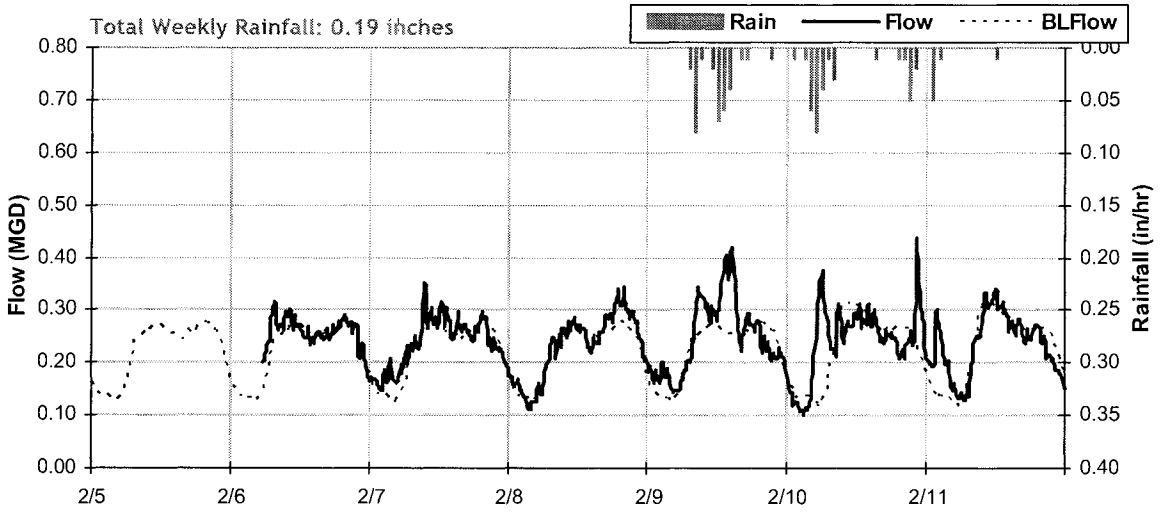
V&A

Level, Velocity and Flow
From 2/5/2007 to 2/12/2007

Monitoring Site:
Site E





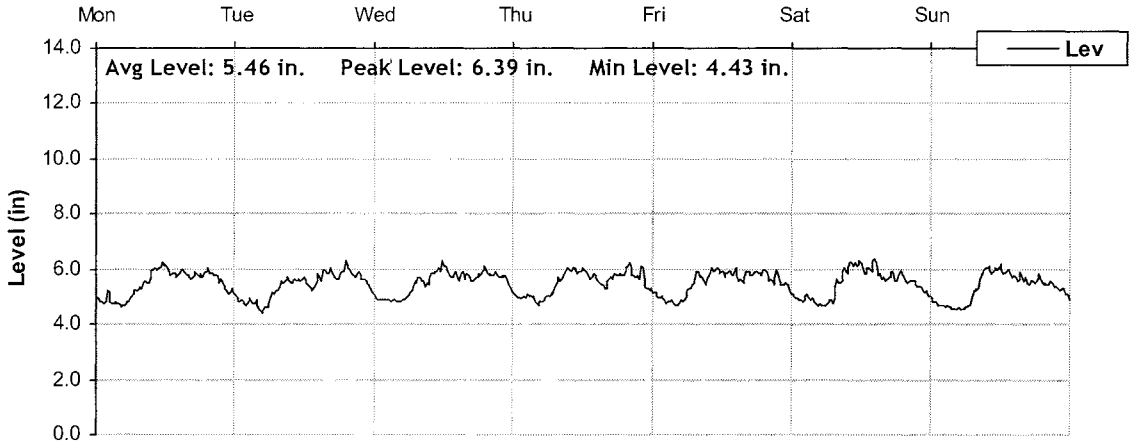


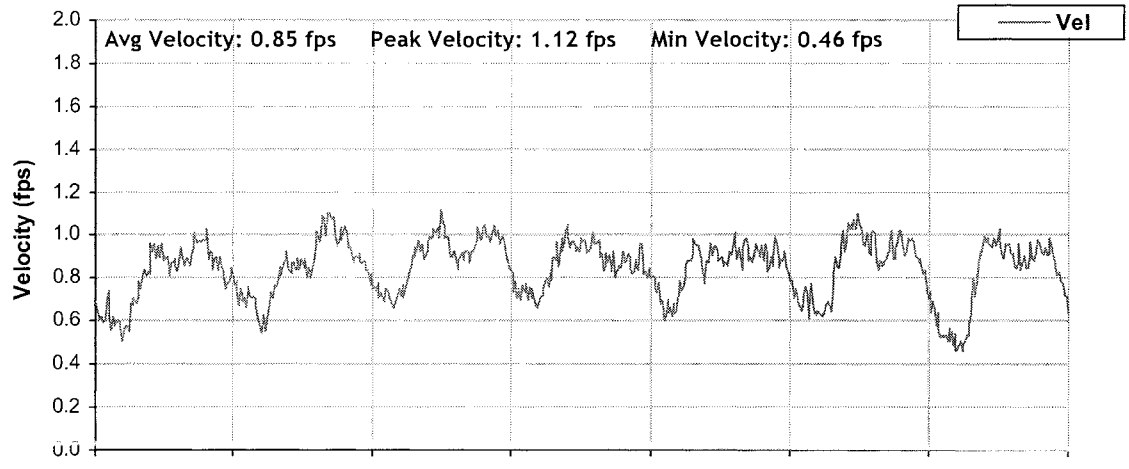
Avg Flow: 0.24 MGD Peak Flow: 0.44 MGD Min Flow: 0.1 MGD

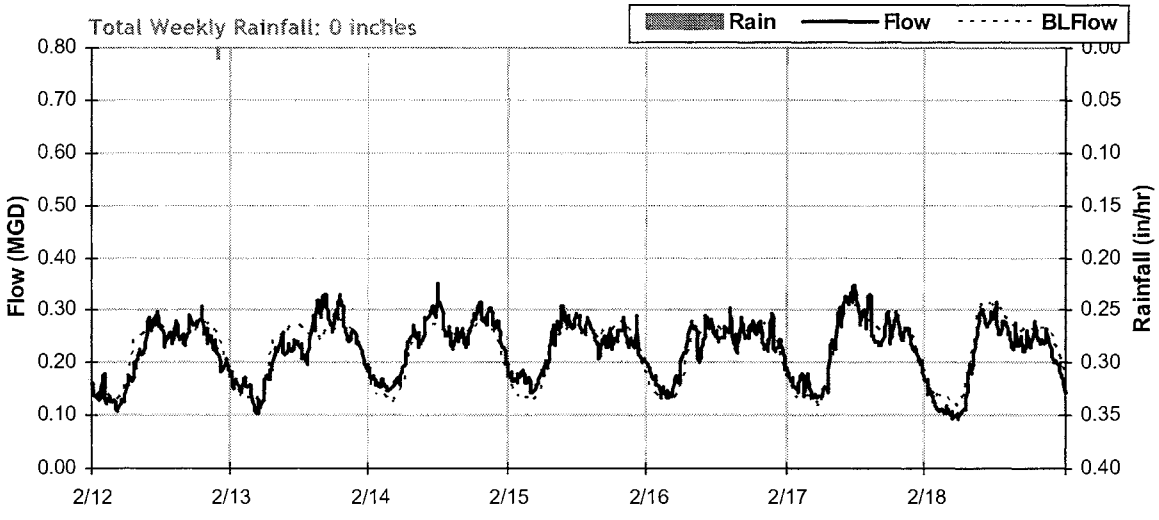
V&A

Level, Velocity and Flow
From 2/12/2007 to 2/19/2007

Monitoring Site:
Site E





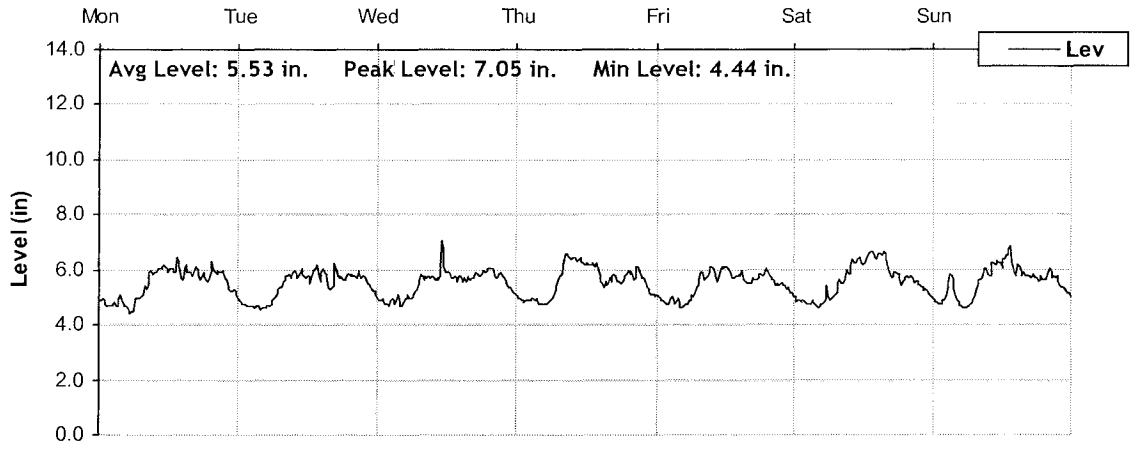


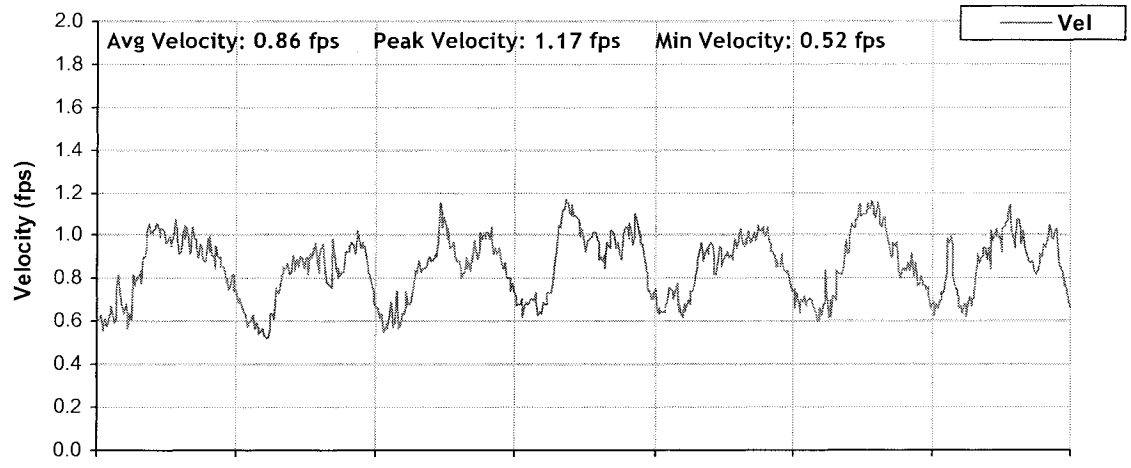
Avg Flow: 0.22 MGD Peak Flow: 0.35 MGD Min Flow: 0.09 MGD

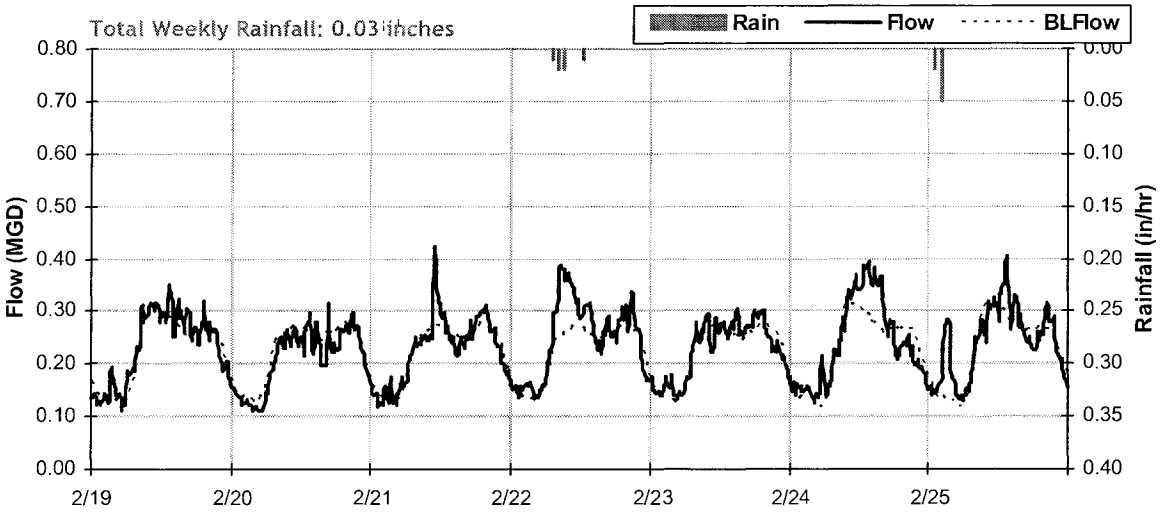
V&A

Level, Velocity and Flow
From 2/19/2007 to 2/26/2007

Monitoring Site:
Site E





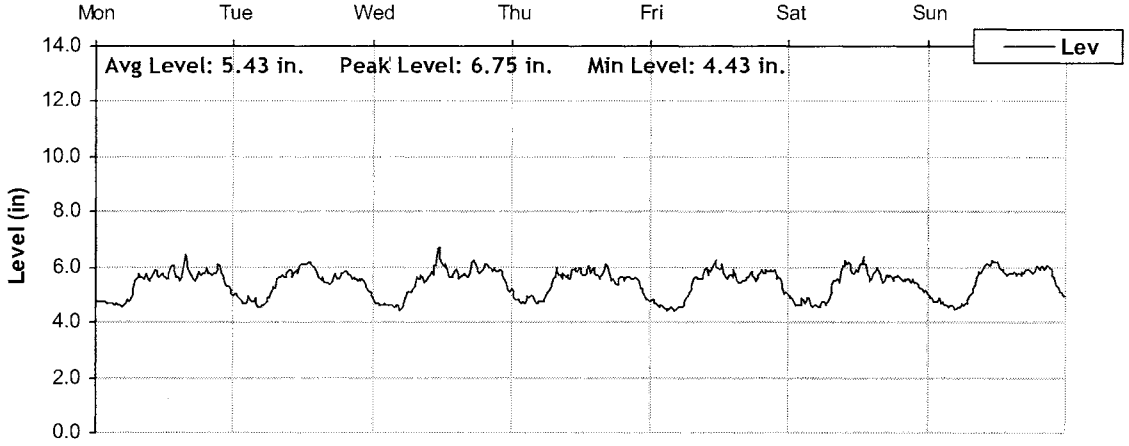


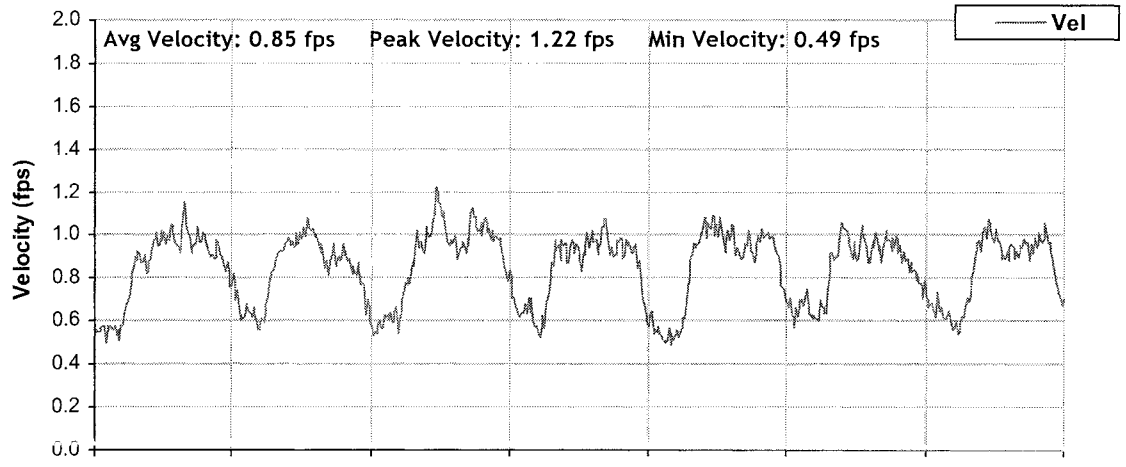
Avg Flow: 0.23 MGD Peak Flow: 0.42 MGD Min Flow: 0.11 MGD

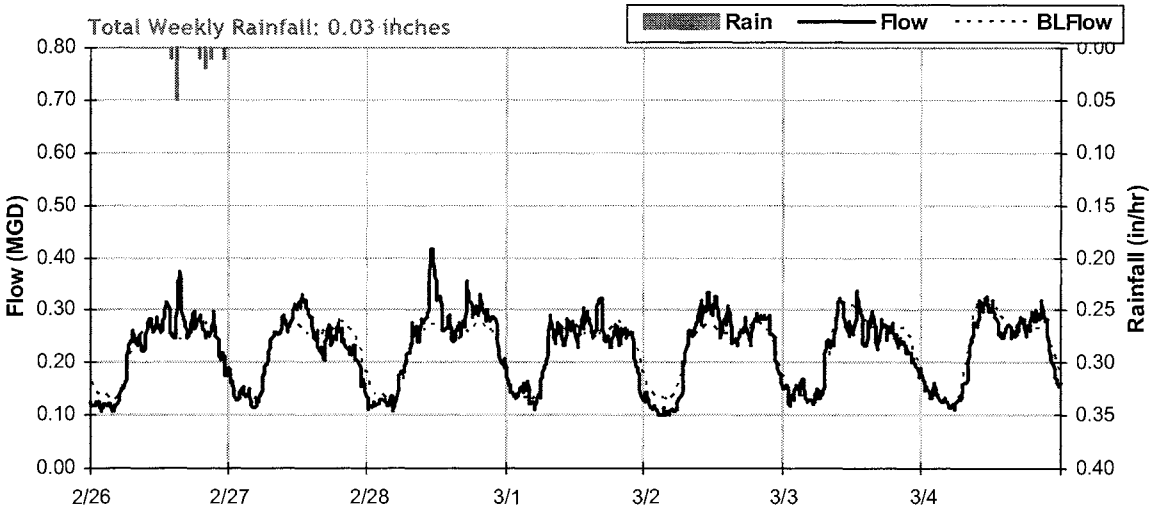
V&A

Level, Velocity and Flow
From 2/26/2007 to 3/5/2007

Monitoring Site:
Site E





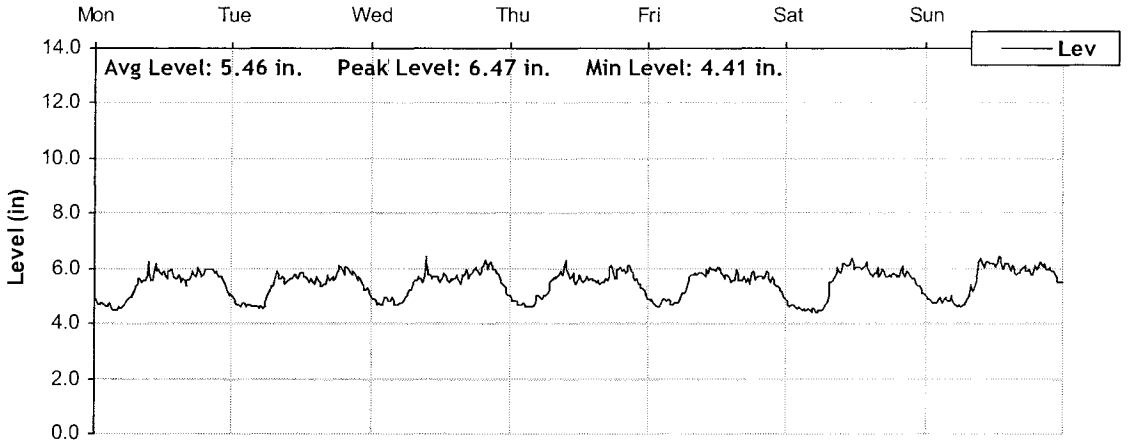


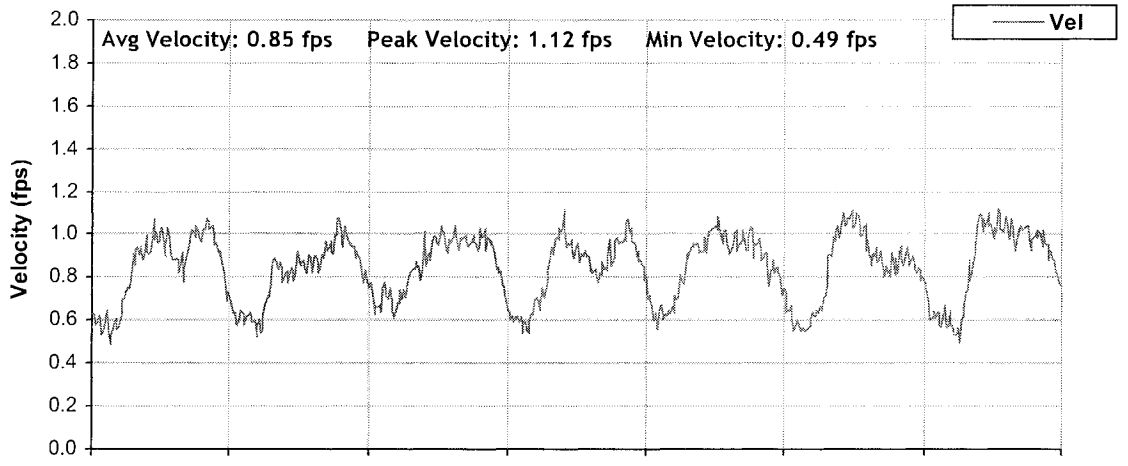
Avg Flow: 0.23 MGD Peak Flow: 0.42 MGD Min Flow: 0.1 MGD

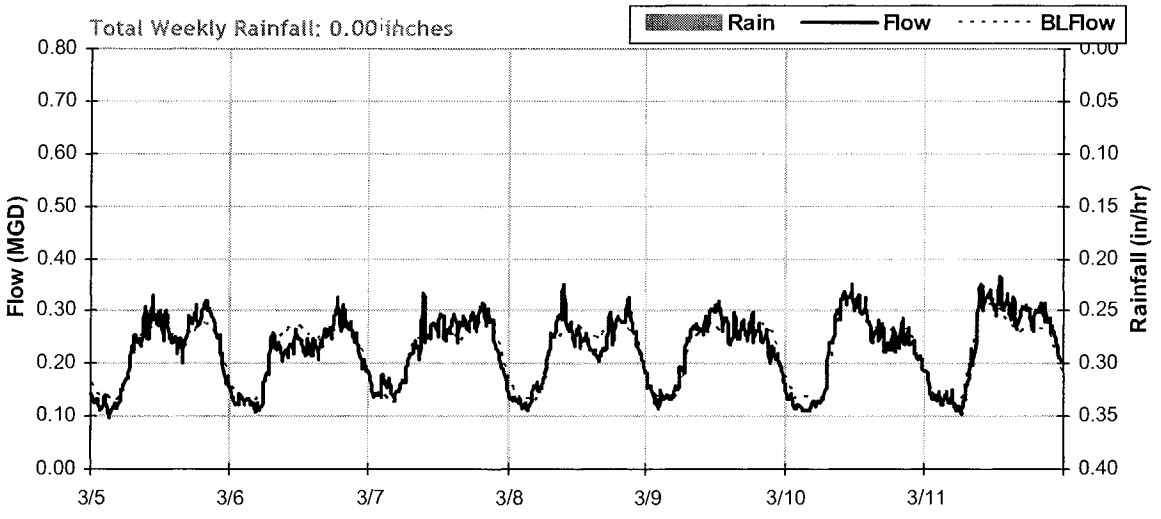
V&A

Level, Velocity and Flow
From 3/5/2007 to 3/12/2007

Monitoring Site:
Site E





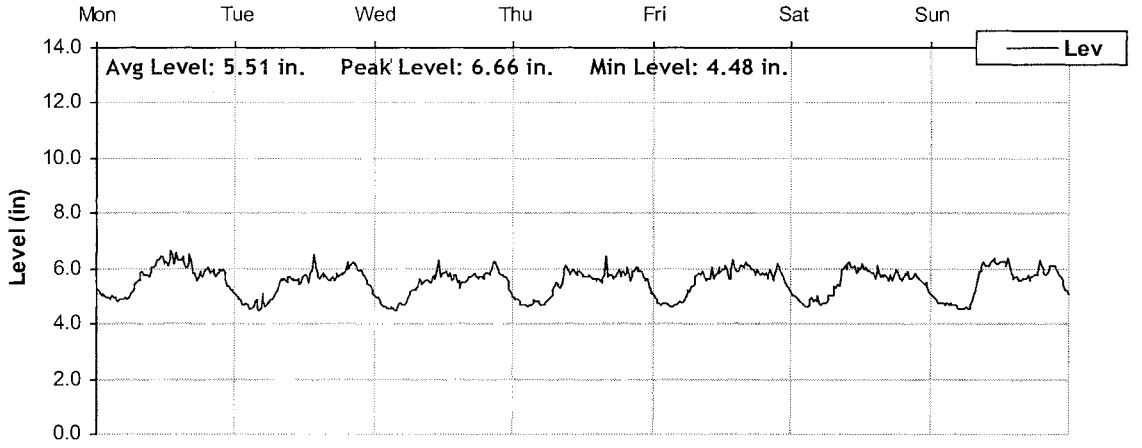


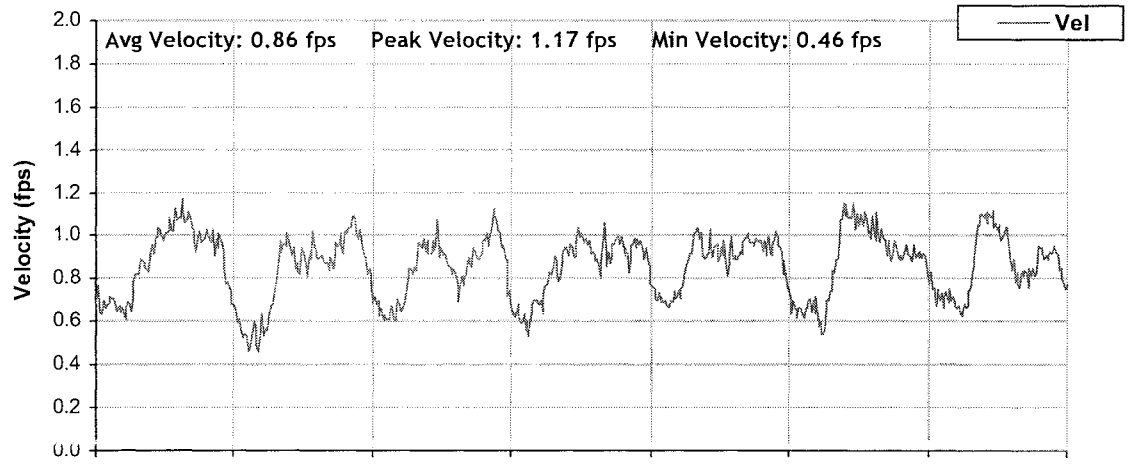
Avg Flow: 0.23 MGD Peak Flow: 0.36 MGD Min Flow: 0.1 MGD

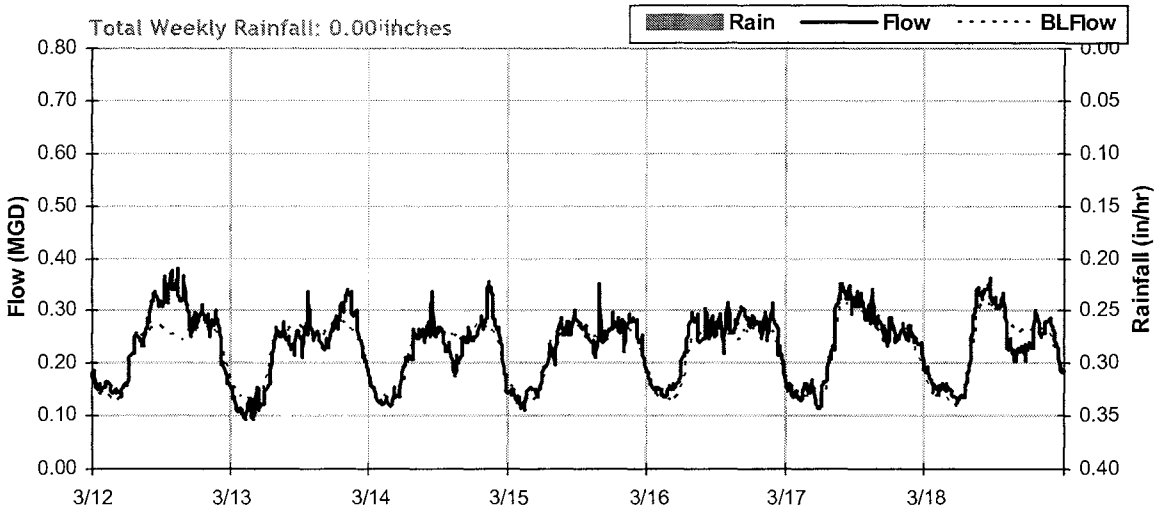
V&A

Level, Velocity and Flow
From 3/12/2007 to 3/19/2007

Monitoring Site:
Site E





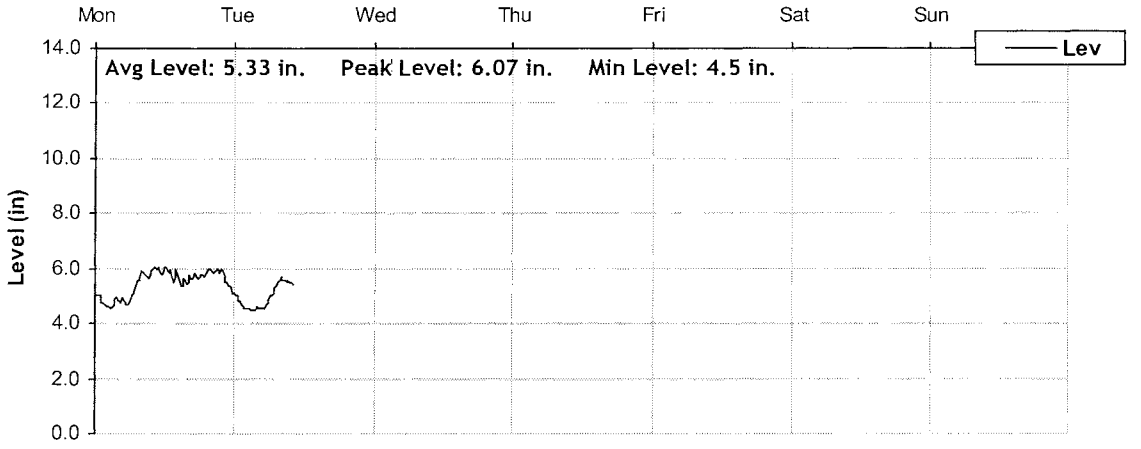


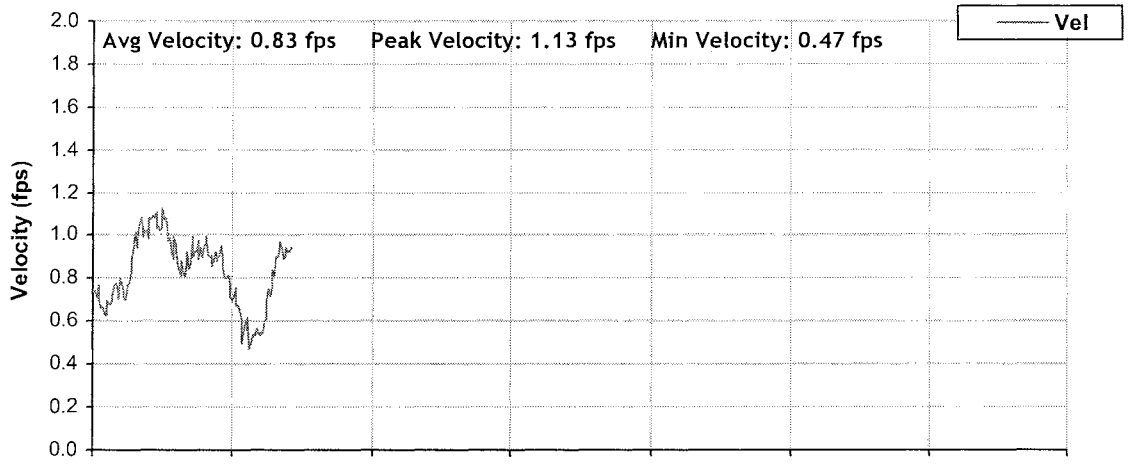
Avg Flow: 0.23 MGD Peak Flow: 0.38 MGD Min Flow: 0.09 MGD

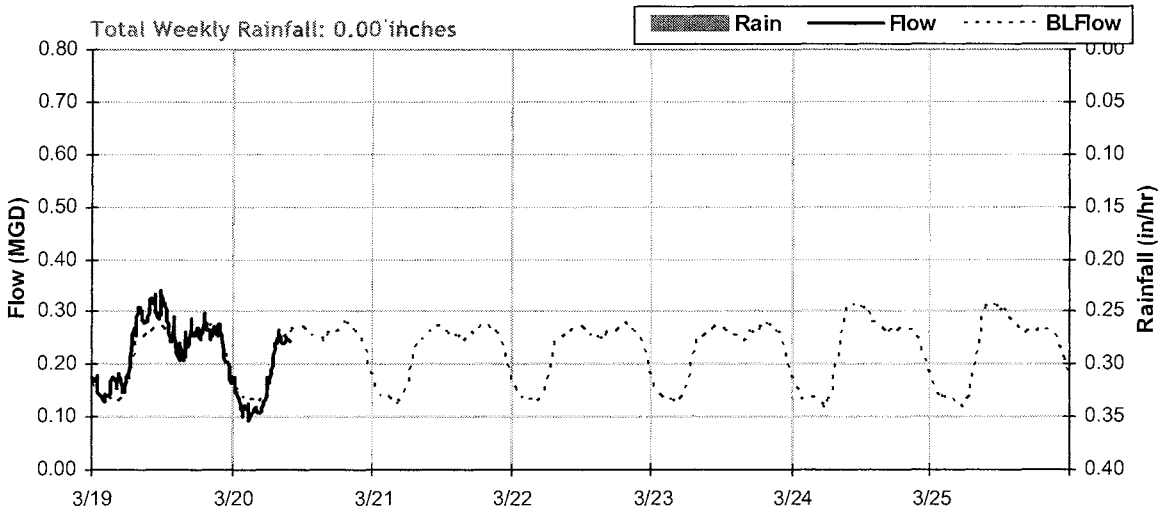
V&A

Level, Velocity and Flow
From 3/19/2007 to 3/26/2007

Monitoring Site:
Site E







Avg Flow: 0.21 MGD Peak Flow: 0.34 MGD Min Flow: 0.09 MGD

Temporary Flow Monitoring Study

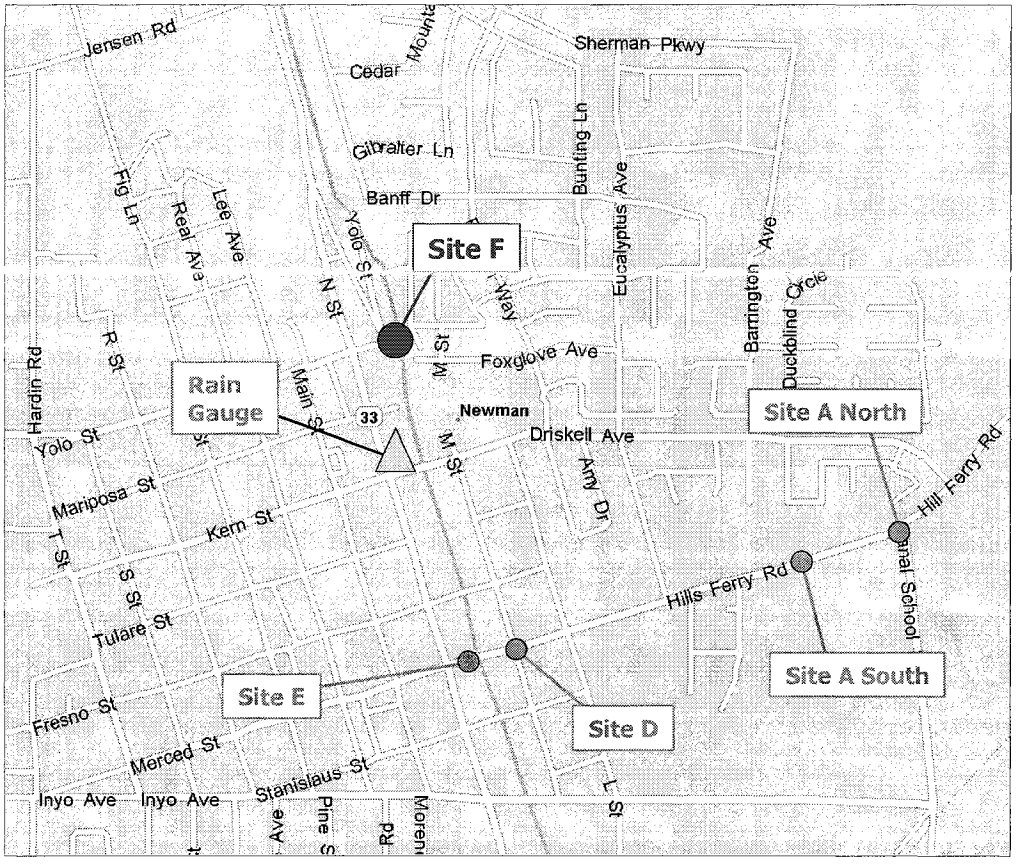
Sanitary Sewer Collection System

Monitoring Site: Site F

Manhole Address: Off road, east of Yolo Street, west of railroad tracks

Size/Type of Line: 12-inch Sanitary Sewer Pipe

Data Summary Report



Site Information Report

Monitoring Site: Site F

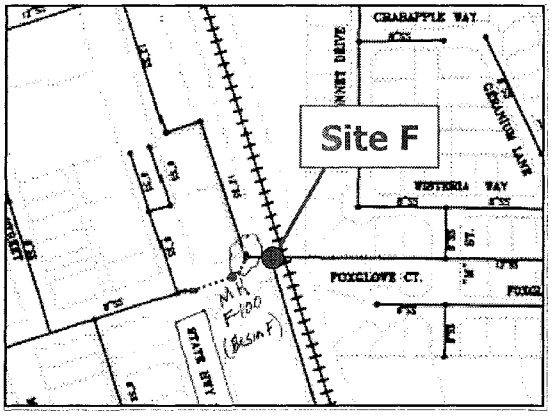
Location: Off road, east of Yolo Street, west of railroad tracks

Diameter: 12 inches

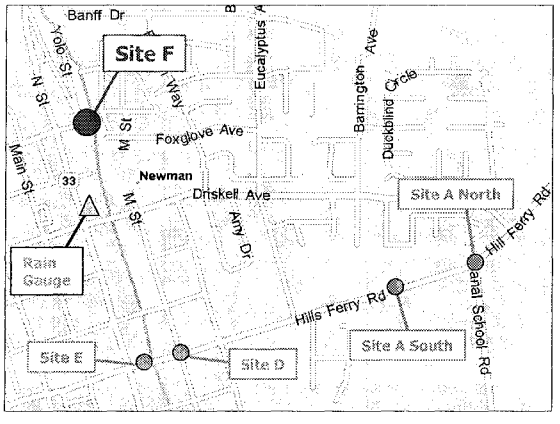
Average Dry Weather Flow: 0.142 *MGD*

Peak Measured Flow: 0.359 *MGD*

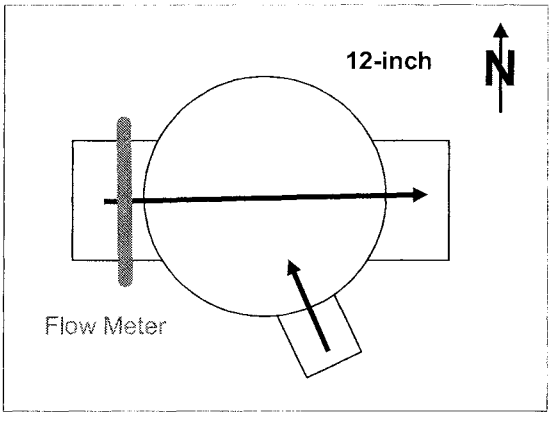
Sanitary sewer map:



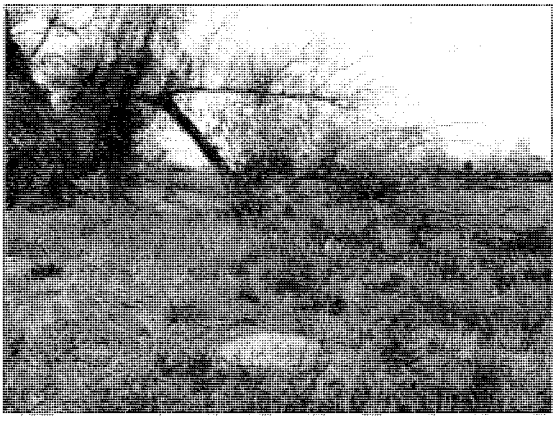
Street map:



Flow sketch:



Street-level photo:

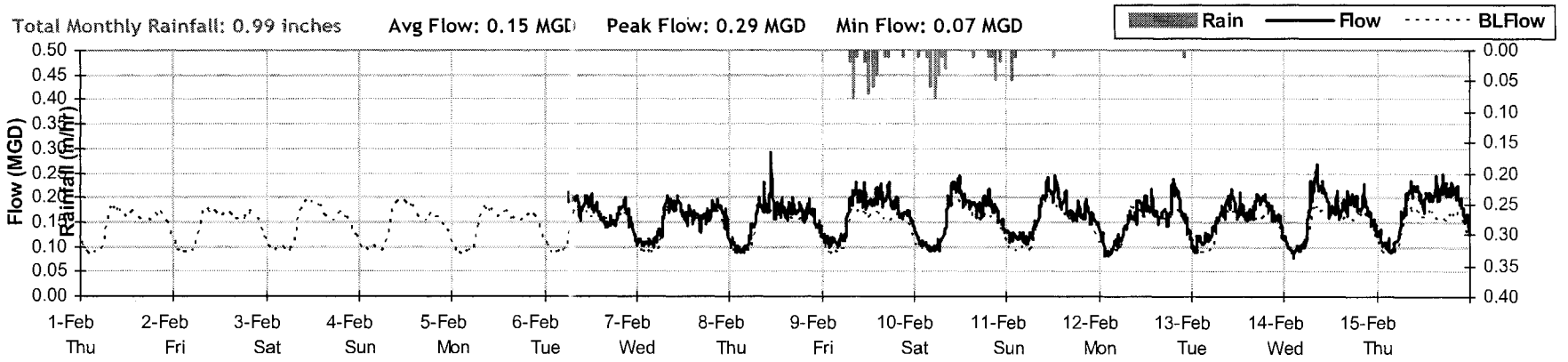


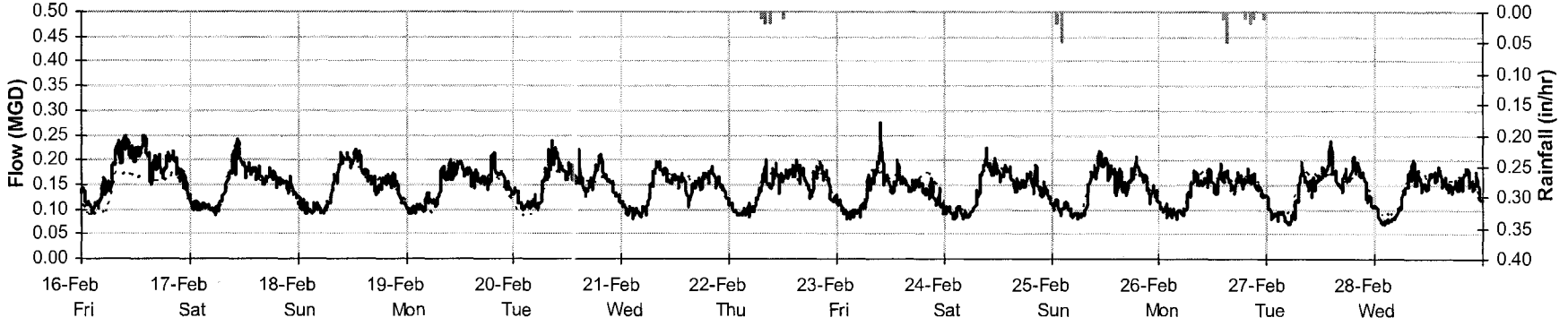
Plan view photo:

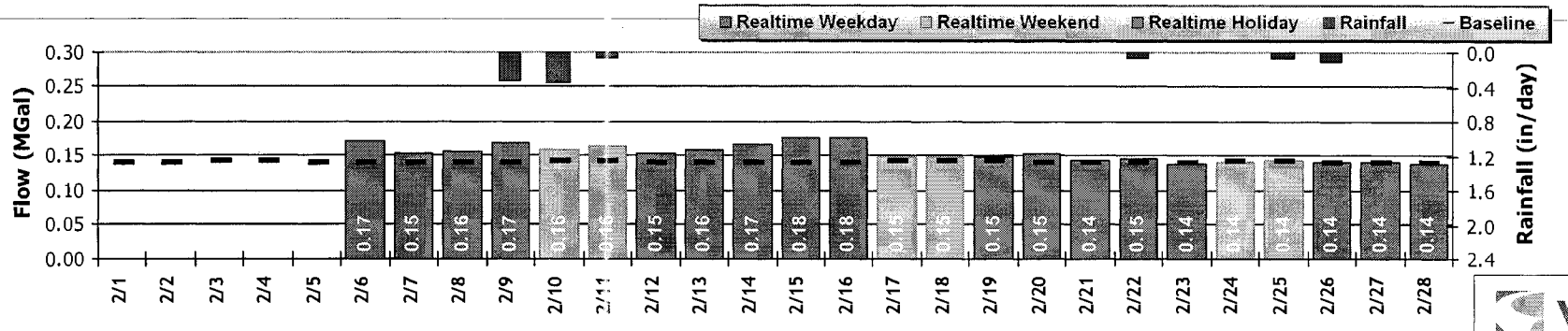
Monthly Flow Summary
February, 2007

Monitoring Site:
Site F

Total Monthly Rainfall: 0.99 inches Avg Flow: 0.15 MGD Peak Flow: 0.29 MGD Min Flow: 0.07 MGD





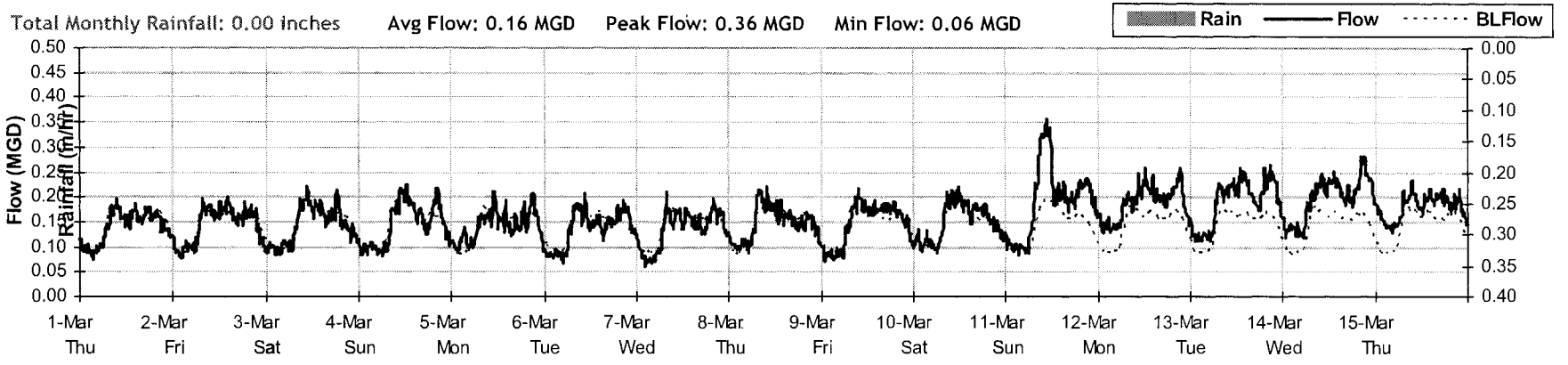


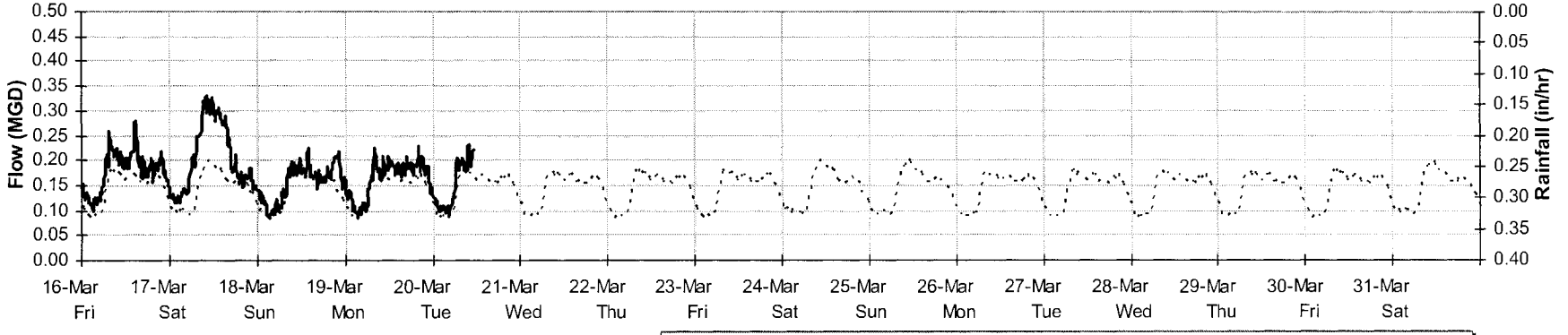
V&A

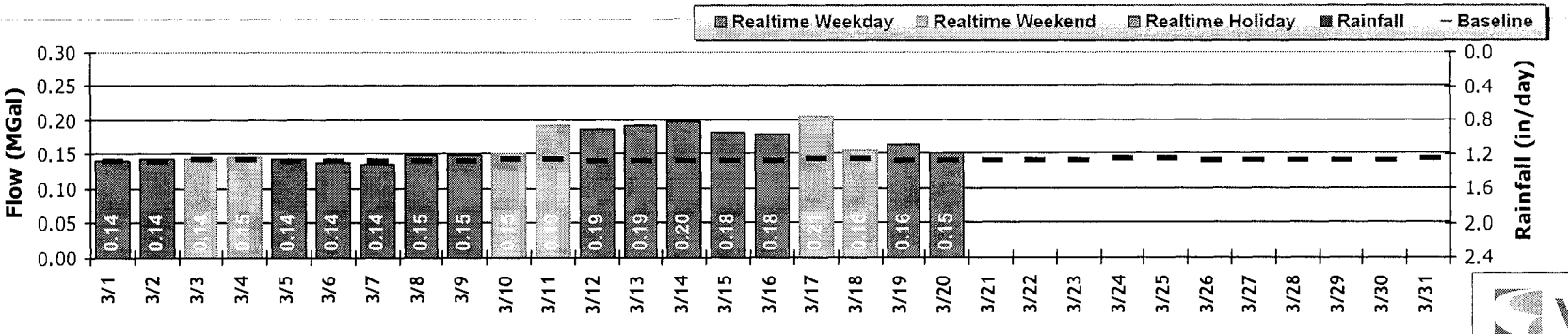
Monthly Flow Summary
March, 2007

Monitoring Site:
Site F

Total Monthly Rainfall: 0.00 inches Avg Flow: 0.16 MGD Peak Flow: 0.36 MGD Min Flow: 0.06 MGD



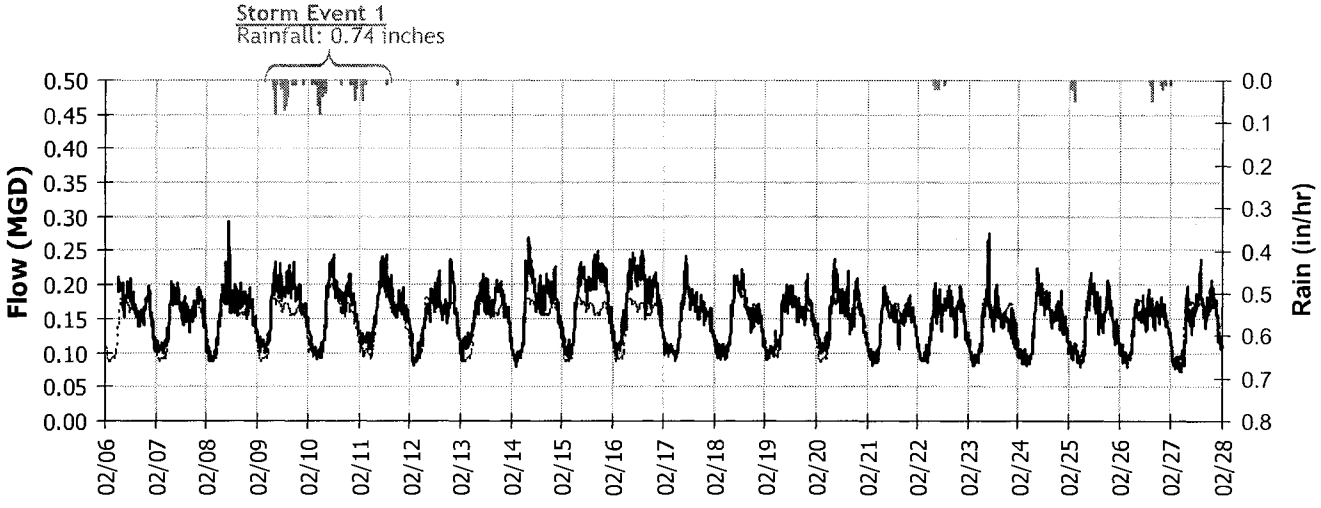




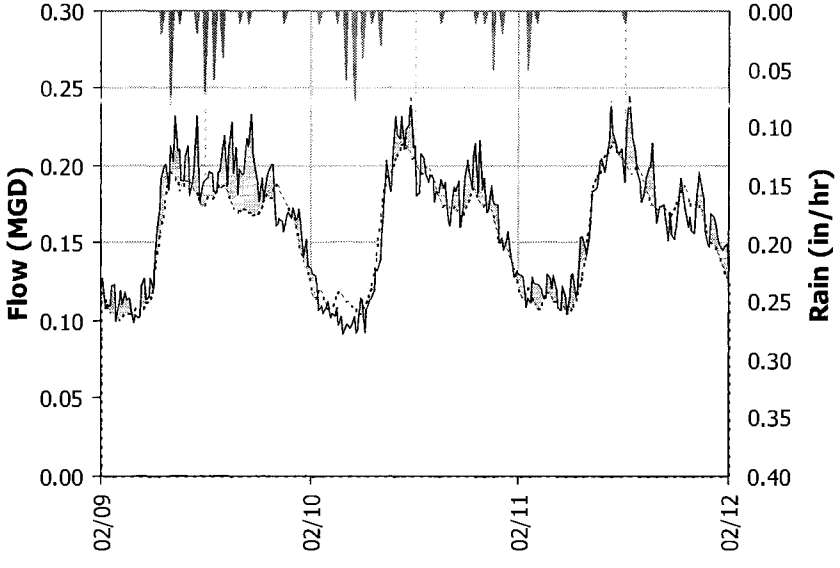
I/I Summary

Monitoring Site:
Site F

Baseline, Realtime, and I/I Flows over Monitoring Period:



Storm Event #1 Detail I/I Graph



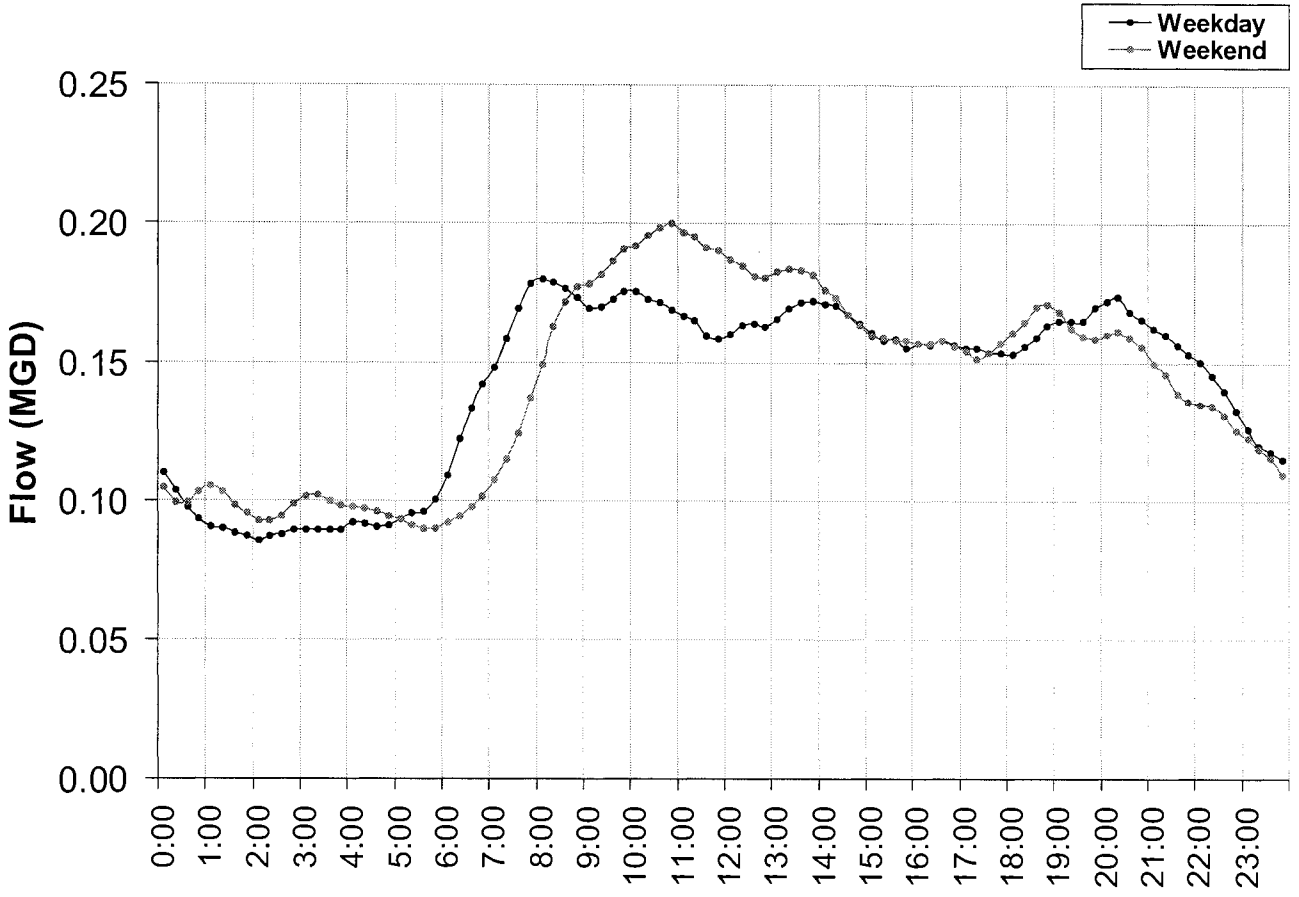
Storm Event #1 I/I Analysis

Rainfall:	0.74	*inches*
Peak Flow:	0.24	*MGD*
Peak I/I Rate:	0.08	*MGD*
PF:	1.71	
Pk I/I:ADWF:	0.54	
Peak Level:	5.37	*inches*
d/D Ratio:	0.45	
Total I/I:	15,000	*gallons*
R-Value:	0.5	*%*
IDM Analysis:	800	*gal/in-rain/IDM*

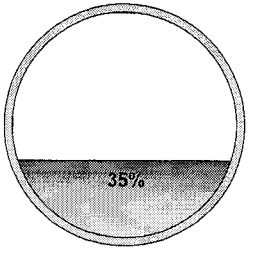
V&A

Average Dry Weather Flow

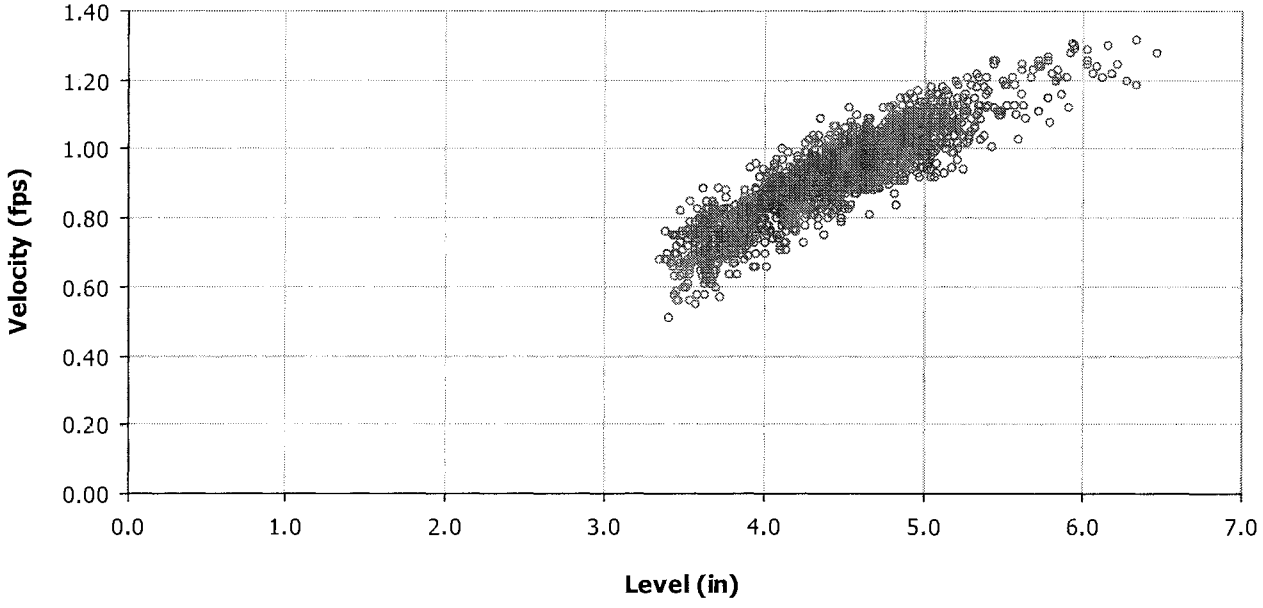
Monitoring Site:
Site F

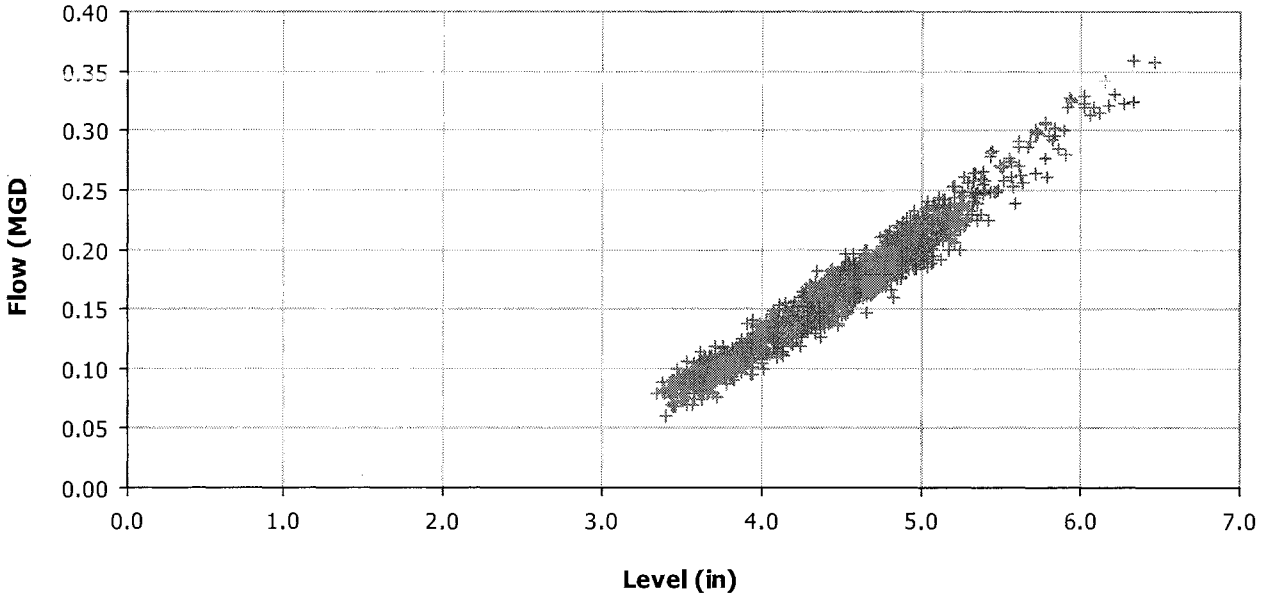


Average Dry Weather Flow:
0.14 *MGD*



	Scatter Plots (Flow, Velocity vs. Depth)	**Monitoring Site:** Site F

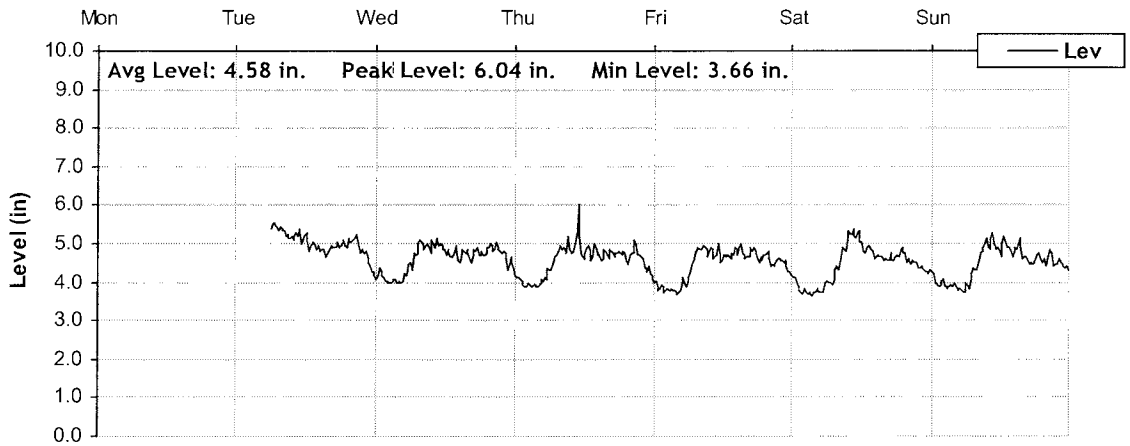


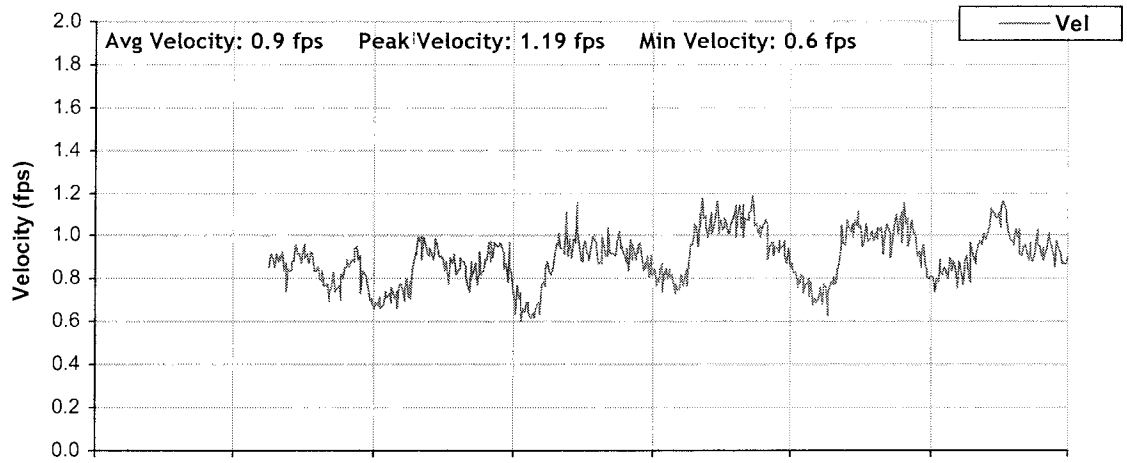


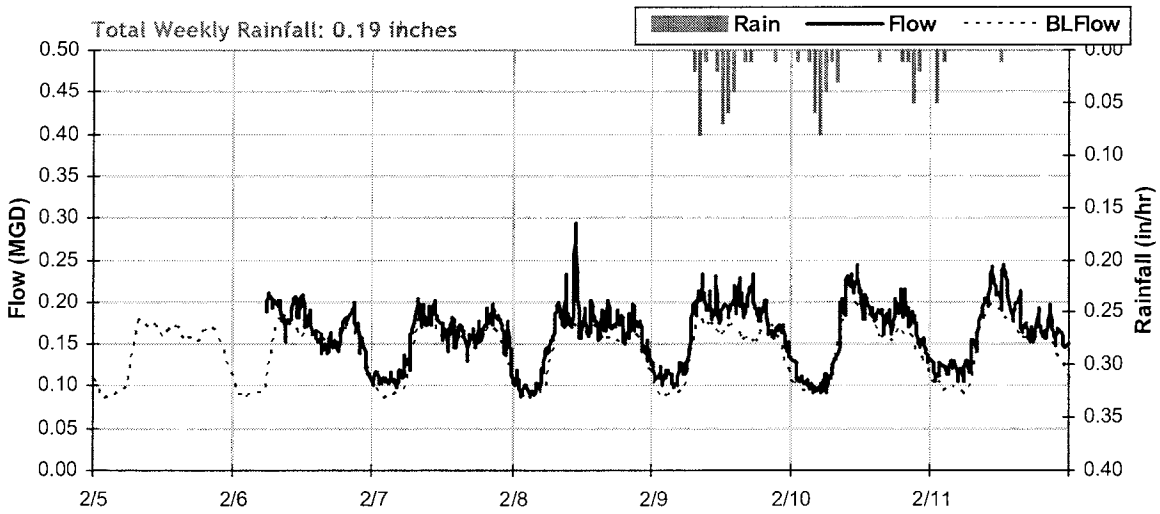
V&A

Level, Velocity and Flow
From 2/5/2007 to 2/12/2007

Monitoring Site:
Site F





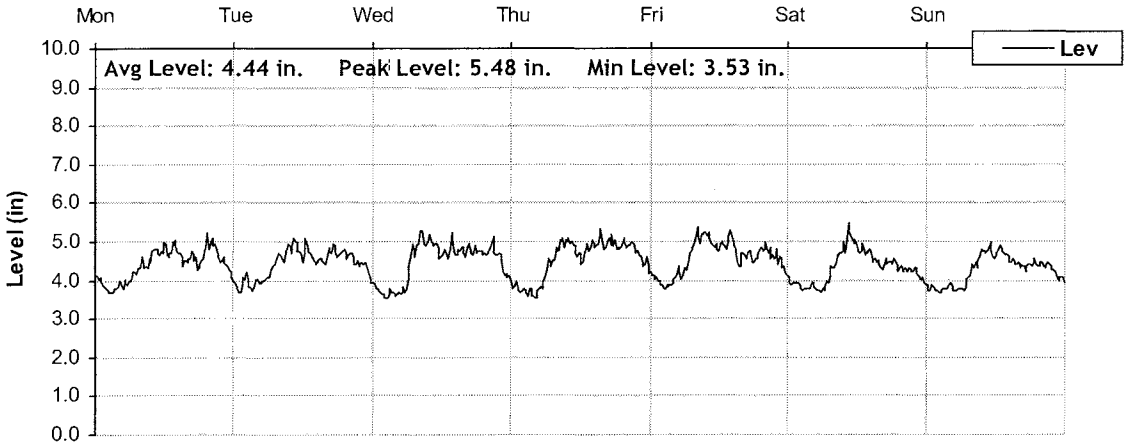


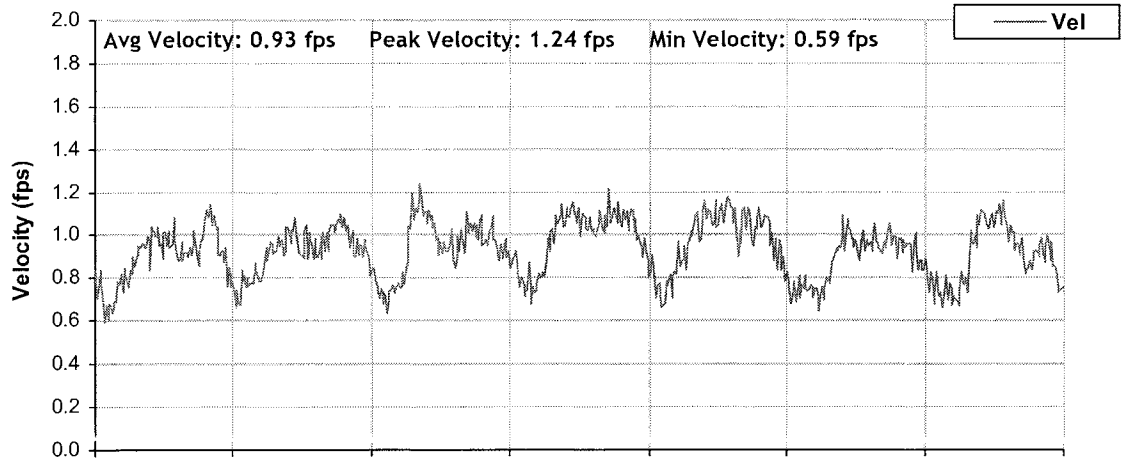
Avg Flow: 0.16 MGD Peak Flow: 0.29 MGD Min Flow: 0.09 MGD

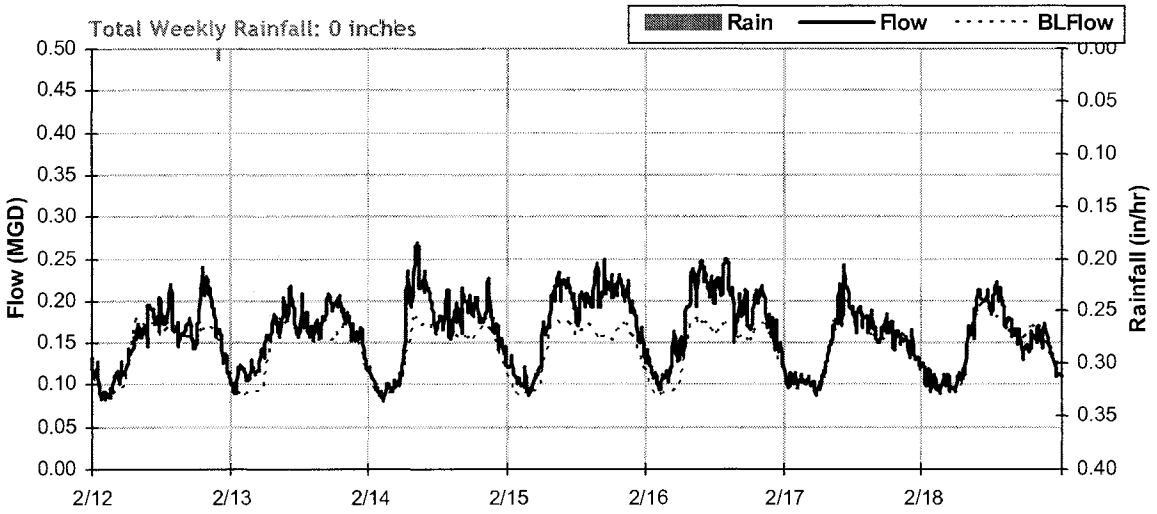
V&A

Level, Velocity and Flow
From 2/12/2007 to 2/19/2007

Monitoring Site:
Site F





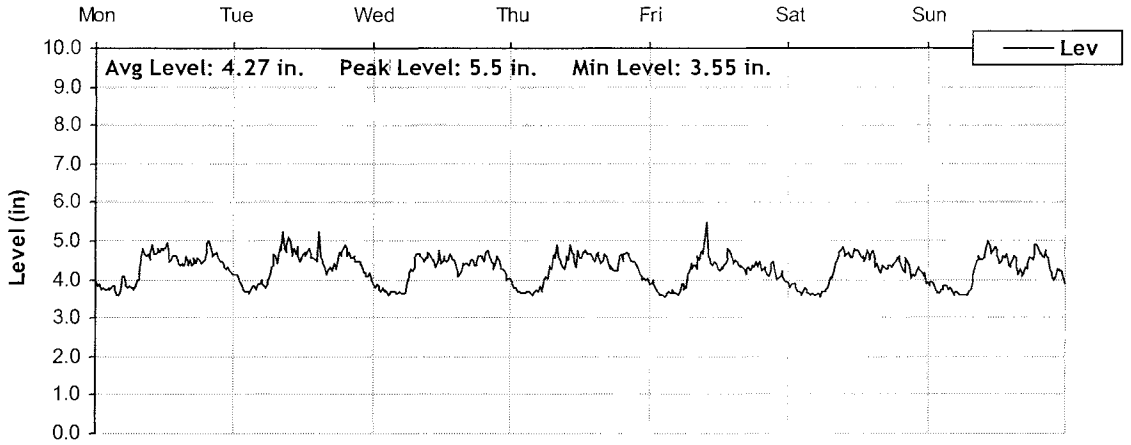


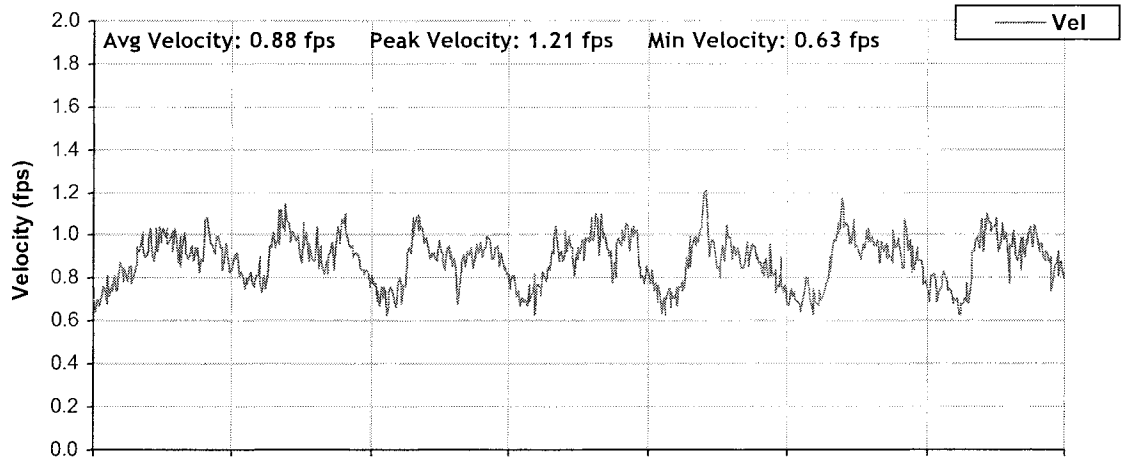
Avg Flow: 0.16 MGD Peak Flow: 0.27 MGD Min Flow: 0.08 MGD

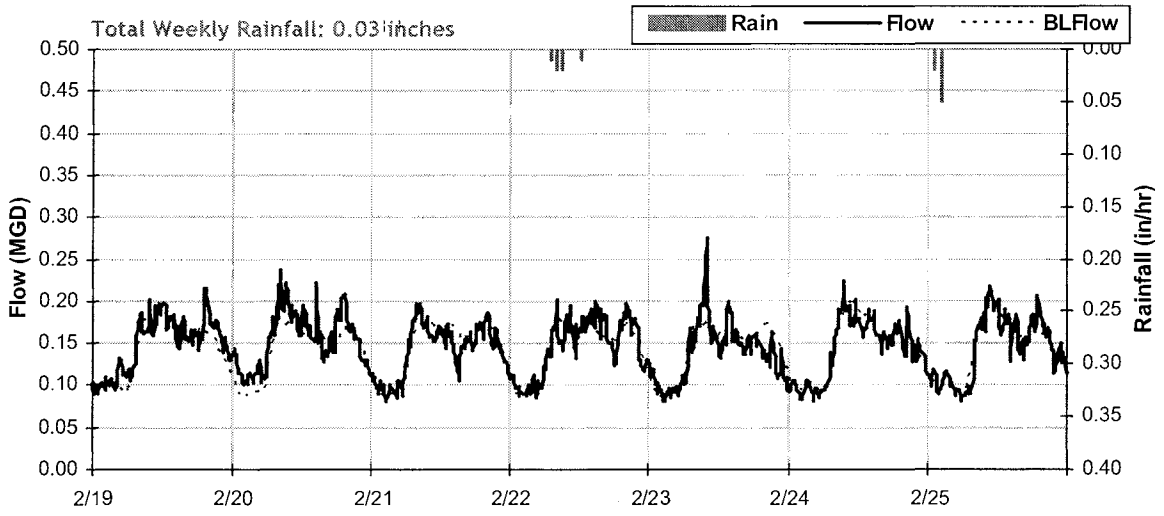
V&A

Level, Velocity and Flow
From 2/19/2007 to 2/26/2007

Monitoring Site:
Site F





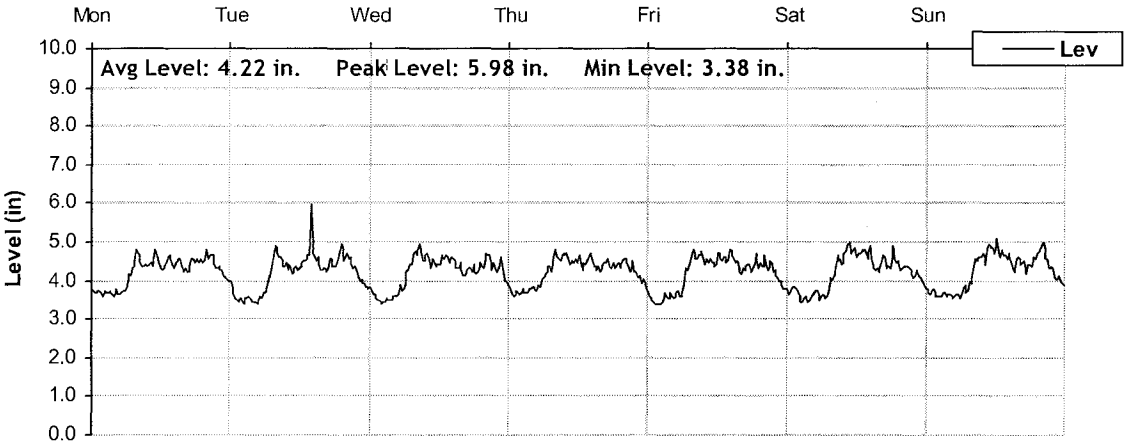


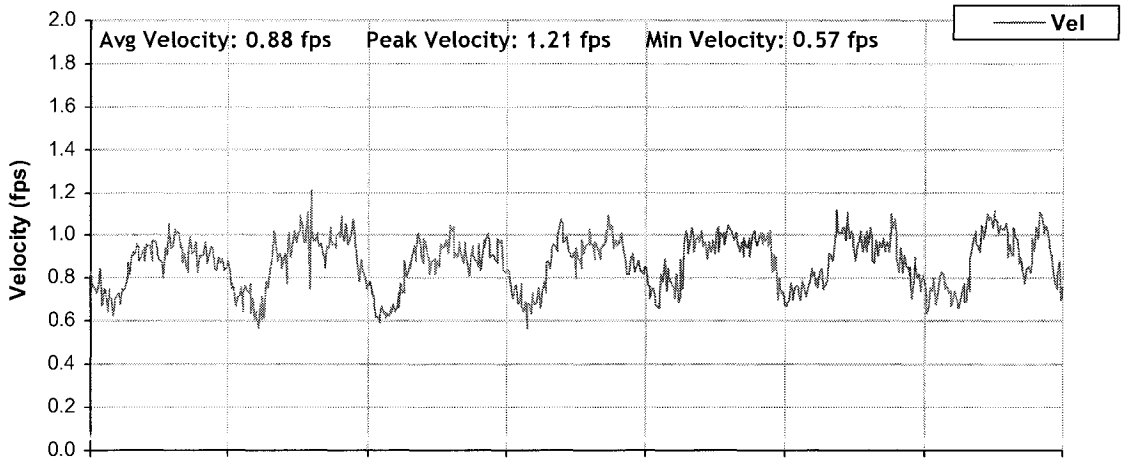
Avg Flow: 0.15 MGD Peak Flow: 0.27 MGD Min Flow: 0.08 MGD

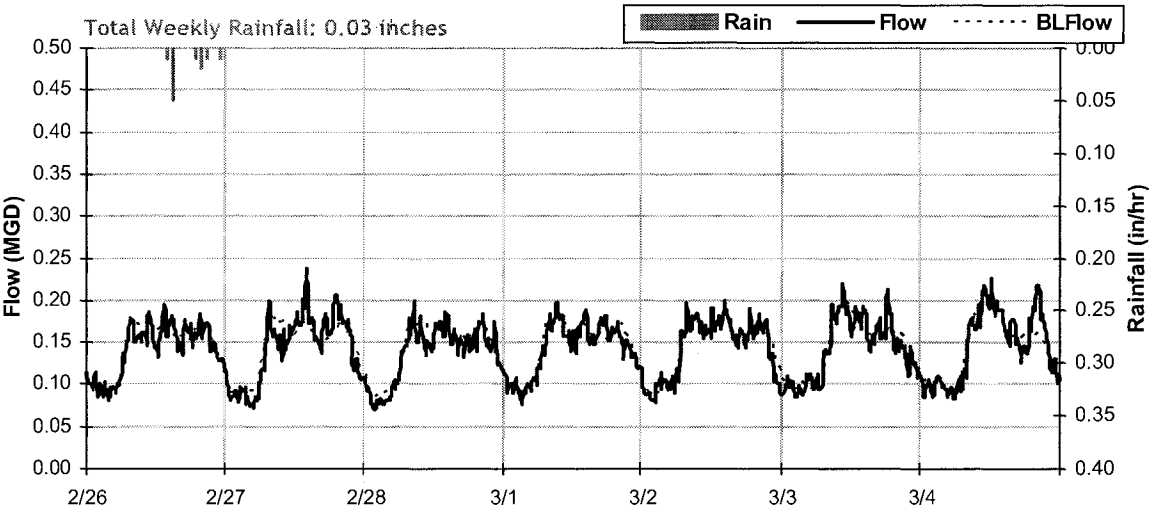
V&A

Level, Velocity and Flow
From 2/26/2007 to 3/5/2007

Monitoring Site:
Site F





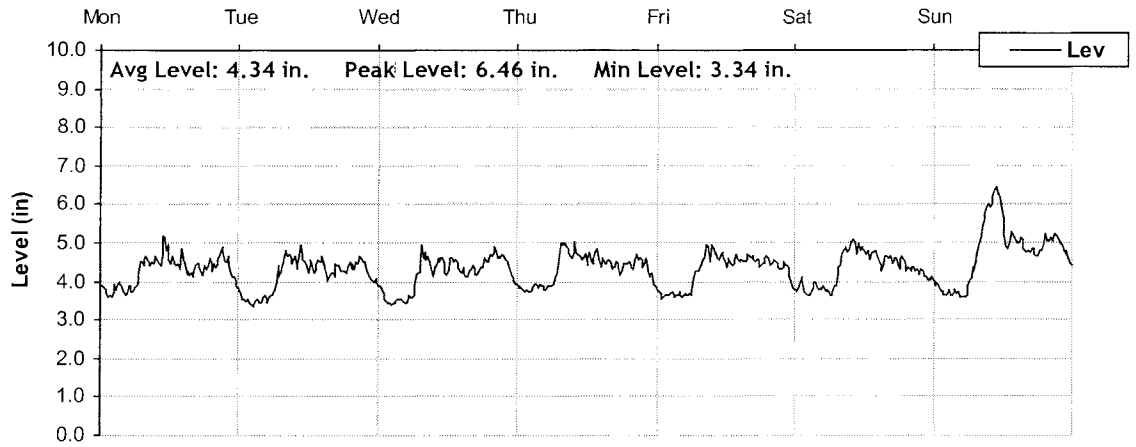


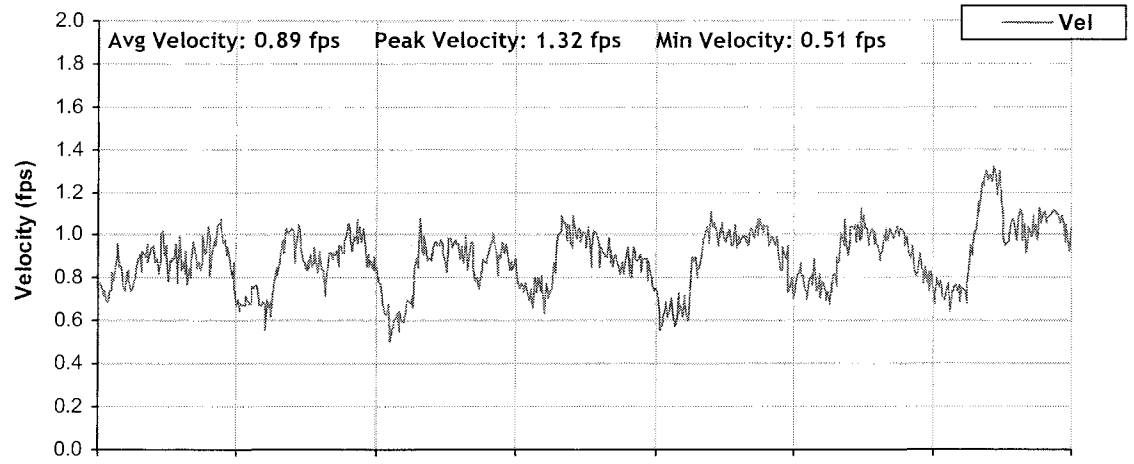
Avg Flow: 0.14 MGD Peak Flow: 0.24 MGD Min Flow: 0.07 MGD

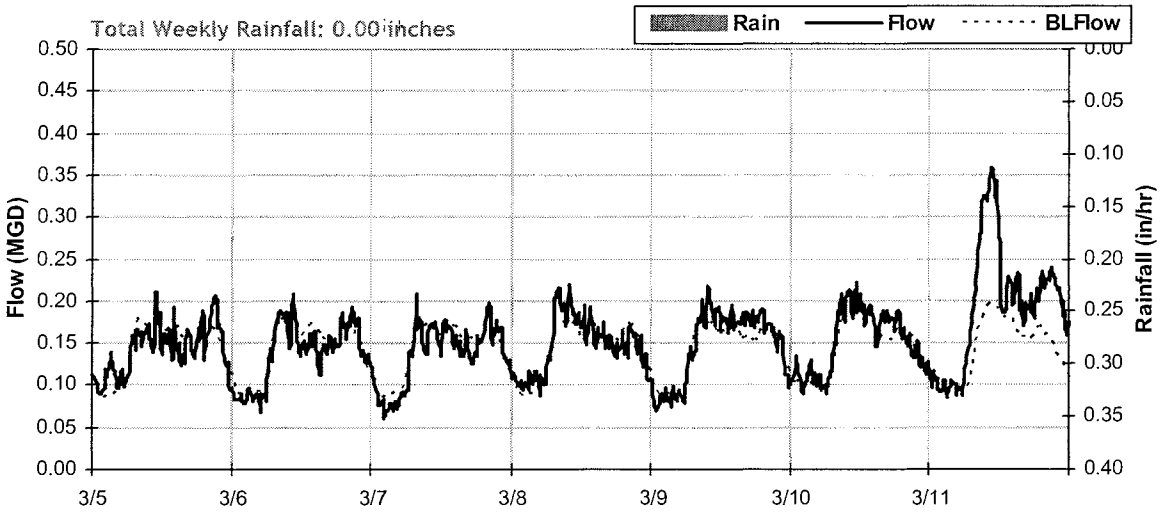
V&A

Level, Velocity and Flow
From 3/5/2007 to 3/12/2007

Monitoring Site:
Site F





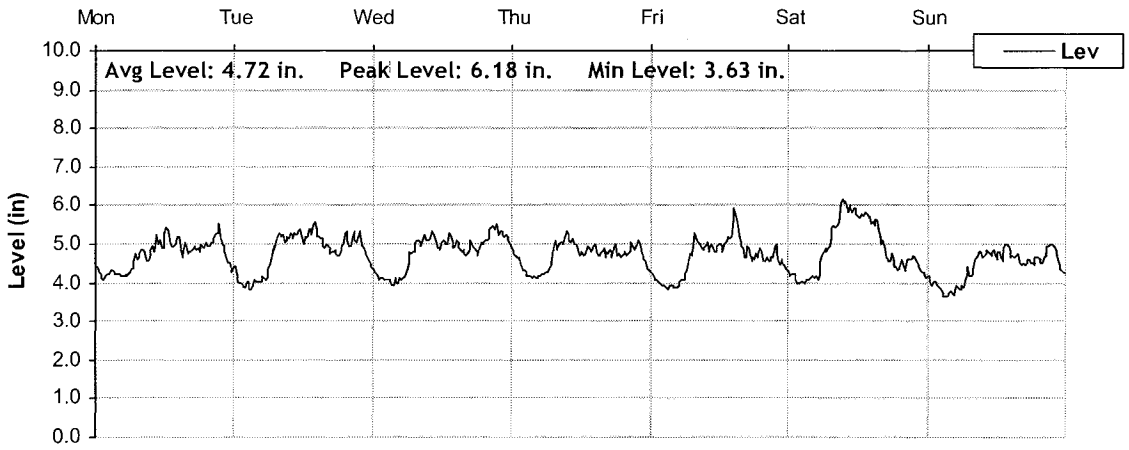


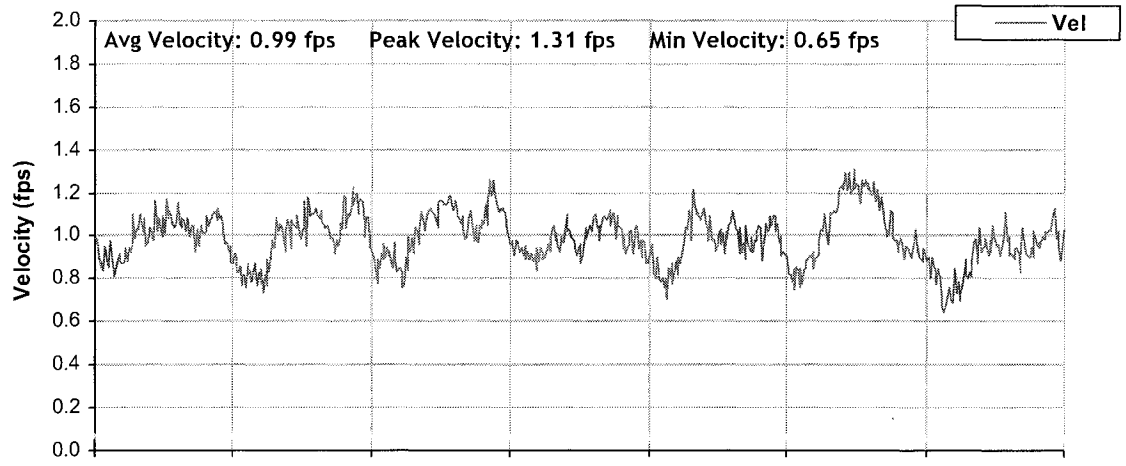
Avg Flow: 0.15 MGD Peak Flow: 0.36 MGD Min Flow: 0.06 MGD

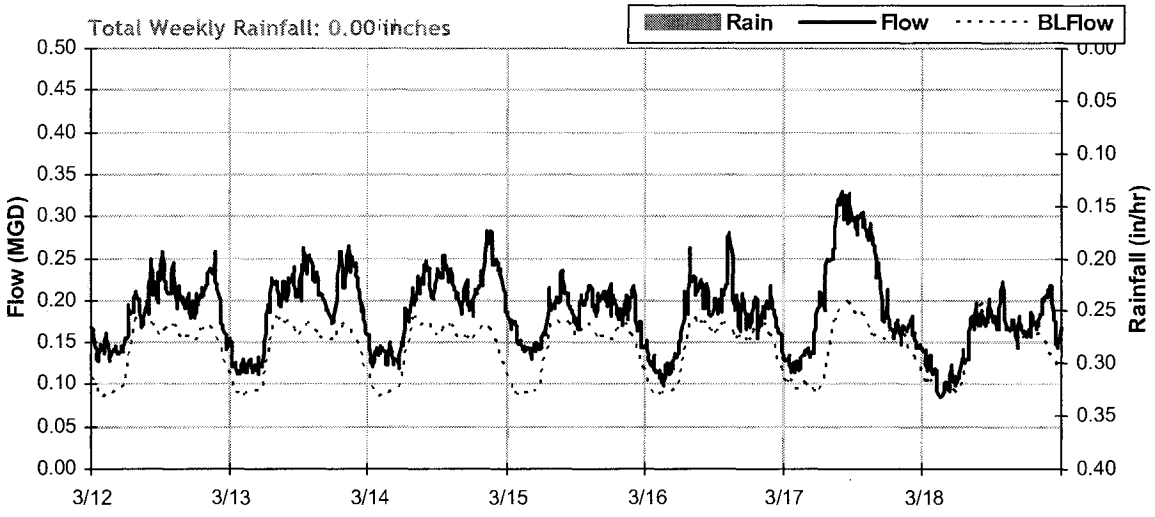
V&A

Level, Velocity and Flow
From 3/12/2007 to 3/19/2007

Monitoring Site:
Site F





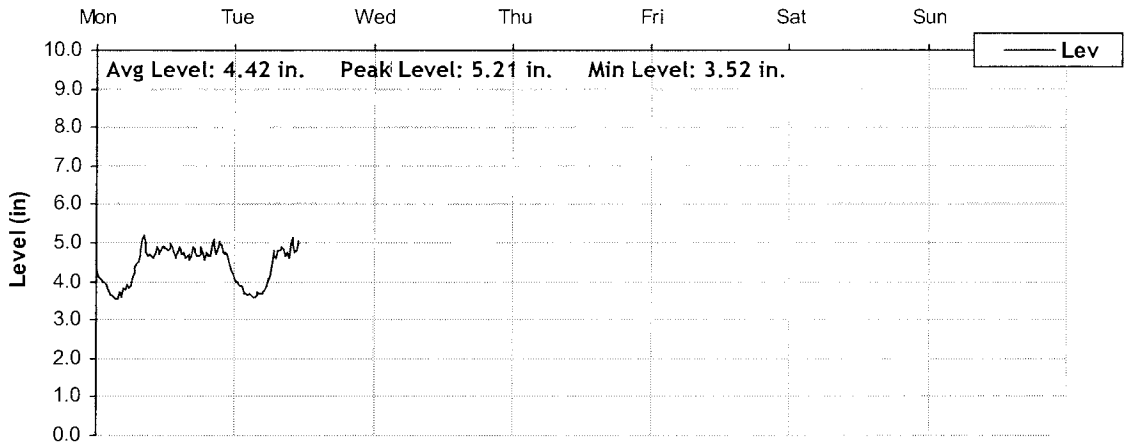


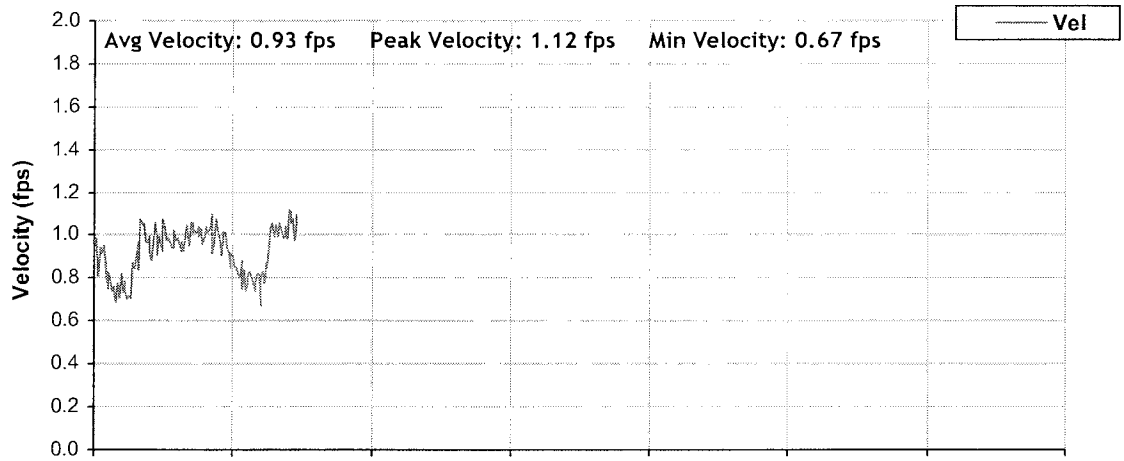
Avg Flow: 0.19 MGD Peak Flow: 0.33 MGD Min Flow: 0.08 MGD

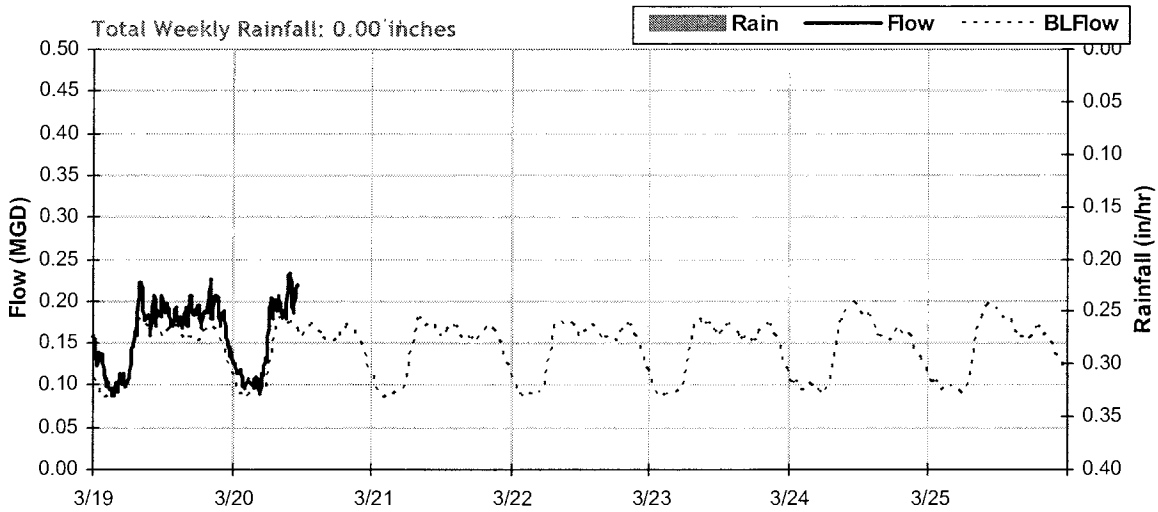
V&A

Level, Velocity and Flow
From 3/19/2007 to 3/26/2007

Monitoring Site:
Site F







Avg Flow: 0.16 MGD Peak Flow: 0.23 MGD Min Flow: 0.09 MGD

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Appendix B

City of Newman Wastewater Collection System Master Plan
Preliminary Cost Estimates

Table B-1
City of Newman Wastewater Collection System Master Plan
Preliminary Cost Estimate for Existing System Deficiencies - Improvements #1 and #2

ECO:LOGIC Engineering

PROJECT:	NEWMAN SEWER MASTER PLAN PRELIMINARY COST ESTIMATE	**DATE CREATED:**	1/18/2008
		UPDATED:	1/23/2008
		PREPARED BY:	CDY
JOB NUMBER:	NEWM06-005	**CHECKED BY:**	MCL
DESCRIPTION:	Existing System Deficiencies - Improvements #1 and #2	**CURRENT ENR CCI:**	8,090

ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT PRICE	TOTAL
1	**EXISTING SYSTEM - DESIGN STORM**				
	Upsize Pipe (MH D-1303 to MH D-1302) from 6" to 8"	127	LF	$185.00	$23,495
	Install 12-inch Flap Gate @ Yancey PS	1	EA	$10,000.00	$10,000
	SUBTOTAL				**$33,495**
	Estimating Contingency	30	%		$10,049
	SUBTOTAL CONSTRUCTION COSTS				**$43,544**
	Design/Administration	10	%		$4,354
	TOTAL CONSTRUCTION COSTS				**$47,898**

Notes:

Table B-2
City of Newman Wastewater Collection System Master Plan
Preliminary Cost Estimate for Interim Capacity Plan - Accommodating Area 1 in Existing System

ECO:LOGIC Engineering

		DATE CREATED:	1/18/2008
PROJECT:	NEWMAN SEWER MASTER PLAN PRELIMINARY COST ESTIMATE	**UPDATED:**	1/23/2008
		PREPARED BY:	CDY
JOB NUMBER:	NEWM06-005		
		CHECKED BY:	MCL
DESCRIPTION:	Interim Capacity Plan - Improvements to Accommodate Area 1	**CURRENT ENR CCI:**	8,090

ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT PRICE	TOTAL
1	**EXISTING SYSTEM - AREA 1**				
	Upsize Pipe (MH D-1300 to MH D-100) from 12" to 15"	3,027	LF	$200.00	$605,400
	Optional Improvement				
	Replace Manholes from MH D-1300 to MH D-100	13	EA	$20,000.00	$260,000
	SUBTOTAL				**$865,400**
	Estimating Contingency	30	%		$259,620
	SUBTOTAL CONSTRUCTION COSTS				**$1,125,020**
	Design/Administration	10	%		$112,502
	TOTAL CONSTRUCTION COSTS				**$1,237,522**

Notes:

Table B-3

City of Newman Wastewater Collection System Master Plan

Preliminary Cost Estimate for Build-out of Primary and Secondary SOIs - Proposed New Trunk Sewers

ECO:LOGIC Engineering

		DATE CREATED:	1/18/2008
PROJECT:	NEWMAN SEWER MASTER PLAN PRELIMINARY COST ESTIMATE	**UPDATED:**	1/23/2008
		PREPARED BY:	CDY
JOB NUMBER:	NEWM06-005		
		CHECKED BY:	MCL
DESCRIPTION:	Build-out of Primary and Secondary SOIs - Proposed New Trunk Sewers	**CURRENT ENR CCI:**	8,090

ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT PRICE	TOTAL
1	**BUILD-OUT NEW TRUNKS - NORTH ROUTE**				
	12" Sewers	3,518	LF	Variable	$633,240
	15" Sewers	2,040	LF	Variable	$459,000
	18" Sewers	18,090	LF	Variable	$4,884,300
2	**BUILD-OUT NEW TRUNKS - SOUTH ROUTE**				
	15" Sewers	2,669	LF	Variable	$600,525
	18" Sewers	7,024	LF	Variable	$1,896,480
	21" Sewers	15,095	LF	Variable	$4,754,925
	SUBTOTAL				**$13,228,470**
	Estimating Contingency	30	%		$3,968,541
	SUBTOTAL CONSTRUCTION COSTS				**$17,197,011**
	Design/Administration	10	%		$1,719,701
	TOTAL CONSTRUCTION COSTS				**$18,916,712**

Notes:

(a) Does not specifically include pump station costs or costs for easement acquisitions.

Wet Weather Flow Results

Preface

Wet weather flow is the combination of dry weather flow (Baseline Flow) with additional flows that enter the system during times of wet weather. The additional flow is called infiltration/inflow (I/I) and is calculated by subtracting the pre-determined dry weather flow from the real-time monitored flow. During a storm event, additional flow over the expected dry weather flow is considered to be I/I.

Infiltration sources are often defects in deteriorated sewer pipes and may include cracks, offset joints, root intrusion points, and broken pipes. Groundwater or rainwater in the vicinity typically enters the pipelines through these defects. Groundwater infiltration (GWI) depends on the depth of the groundwater table above the pipelines as well as the percentage of the system submerged, but is usually very steady and consistent. Rainfall dependent infiltration (RDI) is more significantly influenced by the size and duration of the storm event. Infiltration is often recognized graphically by a gradual increase in flow after a wet weather event. The increased flow typically sustains for a short period after rainfall has stopped and then gradually drops off.

Compared to infiltration sources, storm water inflow (SWI) locations are relatively easy to find and usually less expensive to correct. These sources include direct and indirect cross connections with storm drainage systems, roof downspouts, and various types of surface drains. Inflow is usually recognized graphically by large magnitude, short duration spikes immediately following a rain event.

Figure 8 illustrates the possible locations and components of I/I, and how they may be recognized graphically.

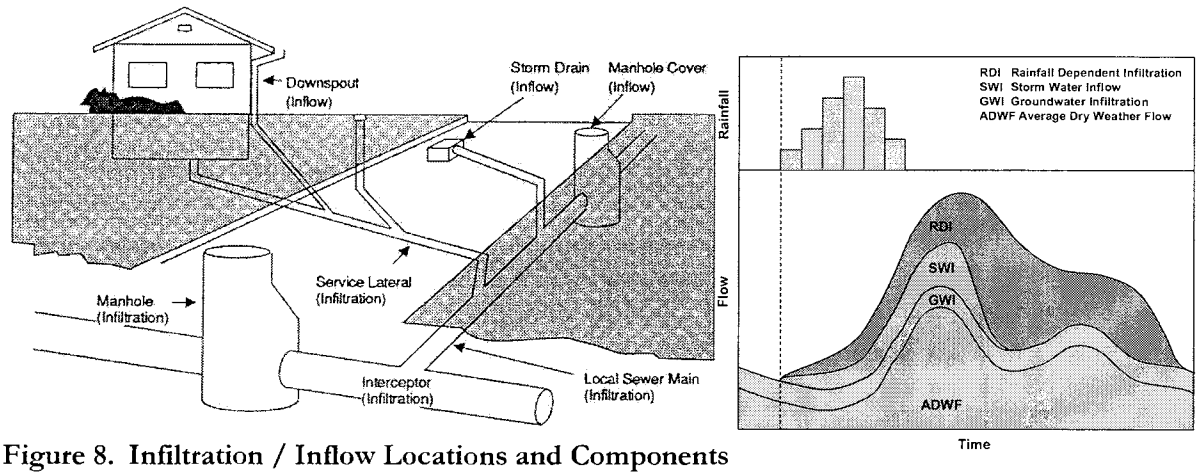


Figure 8. Infiltration / Inflow Locations and Components

Preliminary I/I Analysis

Note: V&A presents this preliminary analysis as only an initial "snapshot" view of the I/I results. V&A fully recognizes that there are multiple and varying factors that contribute to a complete I/I analysis as used for a master planning effort.

Realtime flow was plotted against the baseline flow and rainfall data to determine the I/I flow volume during each storm event. Figure 9 below shows a sample of the graphs that were generated. Similar graphs for each site and storm event are located in *Appendix A*.

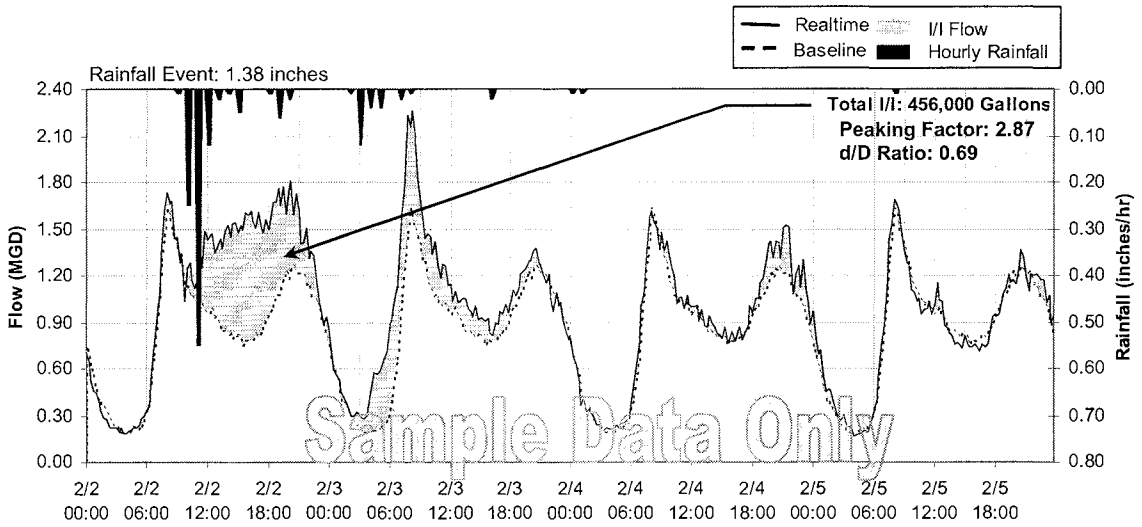


Figure 9. Sample I/I Flow Graph

The February 9 through 11, 2007 storm event was the largest and most responsive storm event that occurred during the flow monitoring period season and was analyzed for the following I/I indicators:

Infiltration Indicators

R-Value: With the acreages of each basin and total I/I attributable to a storm event, the percentage of rainfall that permeates into each basin can be calculated and is called the R-Value. The R-Value method provides a means to compare the relative magnitude and severity of I/I flow between different basins and different storm events. Systems with R-Values less than 5%[4] are often considered to be performing well and this criterion will be used for this study.

[4] Keefe, P.N. "Test Basins for I/I Reduction and SSO Elimination", 1998, WEF Wet Weather Specialty Conference, Cleveland, OH

I/I per IDM Method: The Inch-Diameter-Mile (IDM) method uses length of pipe within the basins to normalize relative magnitude and severity of I/I. The IDM within each basin is calculated by multiplying the length of pipe in miles by the diameter of the pipe in inches. There is no threshold value for this method[5]; it should be used as a comparative tool to other sites, and as a complement to the R-Value.

Inflow Indicators

Peaking Factor: Peaking Factor is defined as the Peak Wet Weather Flow divided by the Average Dry Weather Flow. Peaking factors can be used to determine the magnitude of the inflow component of I/I within a particular basin. It is more of an instantaneous measurement, therefore it should be noted and considered when a peaking factor is calculated from an addition or subtraction of flows, and is not directly monitored at a flow monitoring site. A peaking factor threshold value of 3.0 is commonly used for sanitary sewer design.

Peak I/I Rate to ADWF Ratio: Since the Peaking Factor is based on the peak measured flow which *includes* the baseline flow levels, depending on the time of the day that the storm even hits, the true I/I levels may not be accurately reflected in the Peaking Factor calculation[6]. It is useful to also look at the Peak I/I to ADWF ratio.

Table 3 summarizes the I/I data collected during the February 9 through 11, 2007 storm event. This was the largest and most responsive storm event that occurred during the flow monitoring period season. Figures 10 and 11 summarize the infiltration and inflow indicators graphically.

Table 3. Site I/I Summary, February 9 – 11 Storm Event (0.74 inches of rain)

Site Name	ADWF (MGD)	Total I/I (Gallons)	Peak Flow (MGD)	Peak I/I (MGD)	Peaking Factor	Peak I/I to ADWF	R-Value	I/I per IDM (gal/in-rain/IDM)
Site A North	0.699	131,000	1.39	0.34	1.98	0.49	0.8%	1,000
Site A South	0.446	N/A	0.76	N/A	1.70	N/A	N/A	N/A
Site D	0.197	26,000	0.37	0.10	1.88	0.52	0.6%	700
Site E	0.223	76,000	0.44	0.25	1.95	1.12	1.9%	3,200
Site F	0.142	15,000	0.24	0.08	1.71	0.54	0.5%	800

[5] From the WPCF Manual of Practice No. 9, "Design and Construction of Sanitary and Storm Sewers", a typical specification allowance for groundwater infiltration into new pipe is between 250 and 500 gallons per day per inch-diameter mile (gpd/IDM). However, this is for groundwater infiltration only, and not for rain dependent inflow and infiltration.

[6] For example, identical storms which yield a peak I/I rate of 1.0 MGD and occur at 3:00 a.m. in Scenario A, and 9:00 a.m. in Scenario B, will yield the same result using the Peak I/I Rate to ADWF Ratio calculation, but will yield much different results using the Peaking Factor calculation.

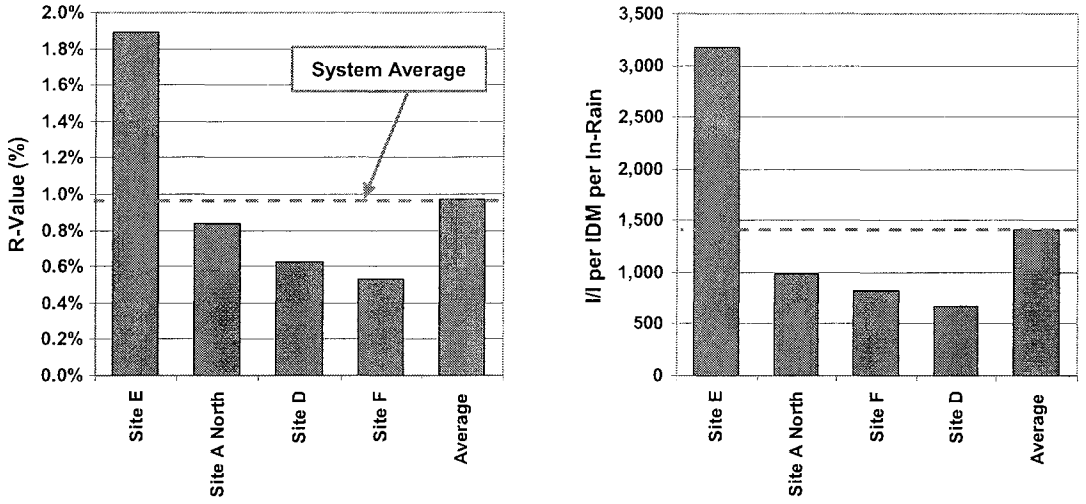


Figure 10. Bar Graph of Infiltration Indicators by Basin

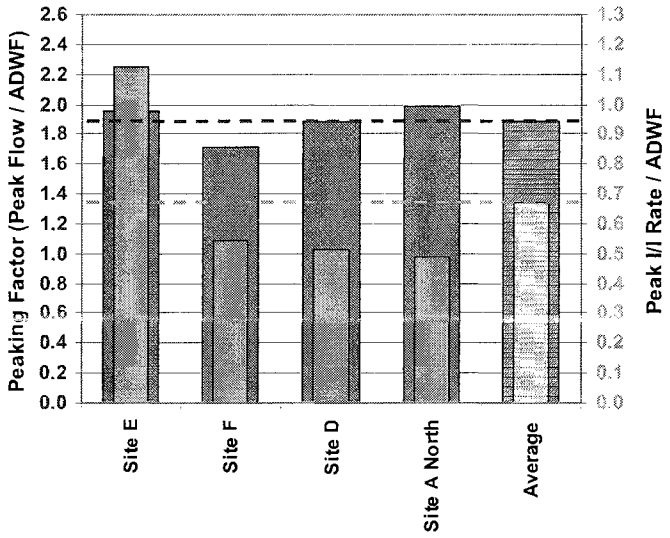


Figure 11. Bar Graph of Inflow Indicators by Basin

None of the sites had R-Values greater than the threshold value of 5%, or peaking factors higher than the threshold Peaking Factor of 3.0.

In all categories of I/I analysis, Site E had significantly higher I/I response to the February 9 through 11, 2007 storm event than the other sites.

Pipeline Capacity Analysis

The d/D ratio is the peak measured depth of flow divided by the pipe diameter. A d/D ratio less than 0.75 is a common threshold value used for pipe design. Table 4 summarizes the peak recorded d/D ratios per site during the February 8 through February 11, 2007 storm event.

Table 4. d/D Ratio per Site

Monitoring Site	d/D Ratio	Comments
Site A North	0.58	Did not exceed threshold of 0.75.
Site A South	0.49	Did not exceed threshold of 0.75.
Site D	0.50	Did not exceed threshold of 0.75.
Site E	0.48	Did not exceed threshold of 0.75.
Site F	0.45	Did not exceed threshold of 0.75.

None of the flow monitoring sites had a d/D ratio that exceeded the threshold d/D ratio 0.75.

RECOMMENDATATIONS

V&A advises that future I/I reduction plans consider the following recommendations:

1. **Determine I/I Reduction Program:** The City should examine its I/I reduction needs to determine a future I/I reduction program.
    a. If peak flows, sanitary sewer overflows, and pipeline capacity issues are of greater concern, then the program may be weighted to investigate and reduce sources of inflow within the basins with the greatest inflow problems.
    b. If total infiltration and general pipeline deterioration is of greater concern, then the program may be weighted to investigate and reduce sources of infiltration within the basins with the greatest infiltration problems.
    c. Basins to be investigated as a part of the I/I reduction program can be prioritized per the results shown in Table 3 and illustrated in Figures 10 and 11.
2. **I/I Reduction Methods:** Potential I/I reduction methods include the following:
    a. smoke testing
    b. mini-basin flow monitoring
    c. night-time reconnaissance work to (1) investigate and determine direct point sources of inflow, and (2) determine the areas and/or pipe reaches responsible for high levels of infiltration contribution.
    d. CCTV inspection. Future CCTV inspection as used for condition assessment of the collection system should be prioritized to inspect the pipes within the basins per the results shown in Table 3 and illustrated in Figures 10 and 11.
3. **I/I Reduction Cost Effective Analysis:** The City should conduct a study to determine which is more cost-effective: (1) locating the sources of infiltration and inflow and systematically rehabilitating or replacing the faulty pipelines; or (2) continued treatment of the additional storm water I/I flow.

APPENDIX A

Flow Monitoring Sites
Additional Graphs and Information

Temporary Flow Monitoring Study

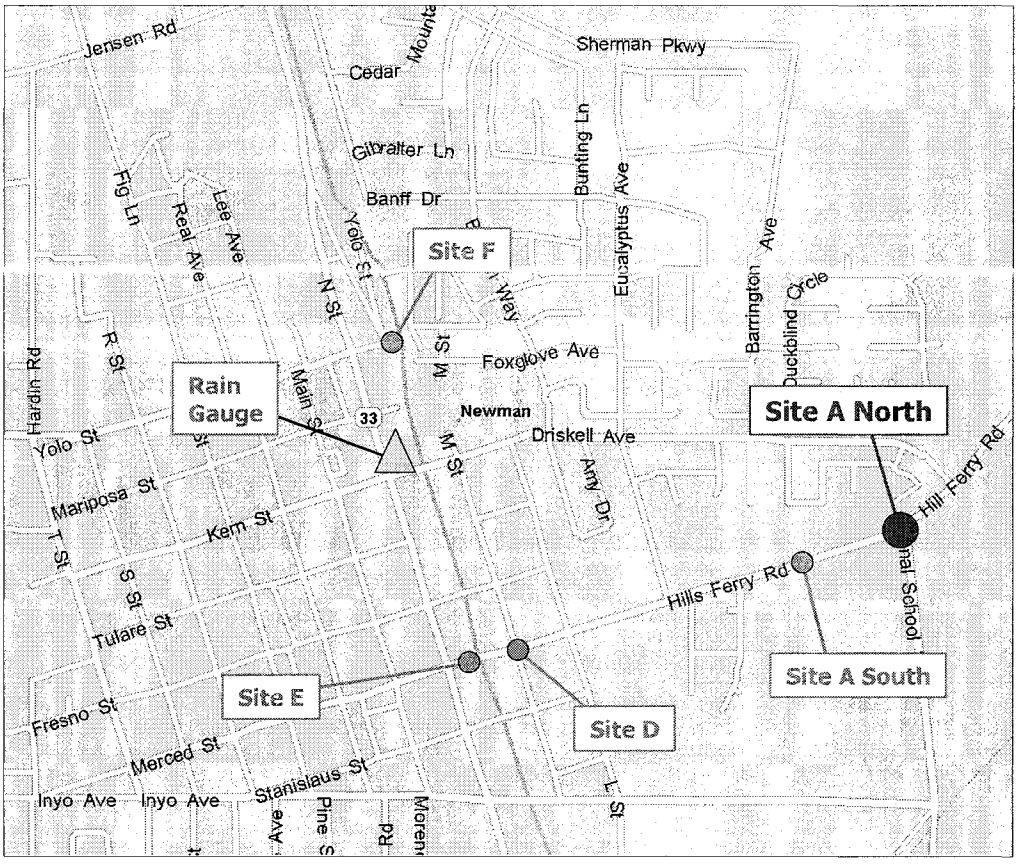
Sanitary Sewer Collection System

Monitoring Site: Site A North

Manhole Address: Hills Ferry Road at Canal School Road

Size/Type of Line: 21-inch Sanitary Sewer Pipe

Data Summary Report



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Site Information Report

Monitoring Site: Site A North

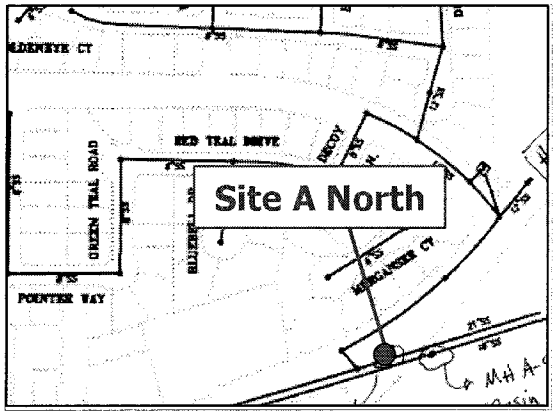
Location: Hills Ferry Road at Canal School Road

Diameter: 21 inches

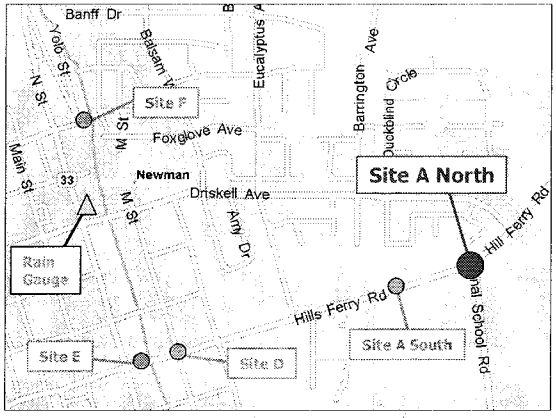
Average Dry Weather Flow: 0.699 *MGD*

Peak Measured Flow: 1.395 *MGD*

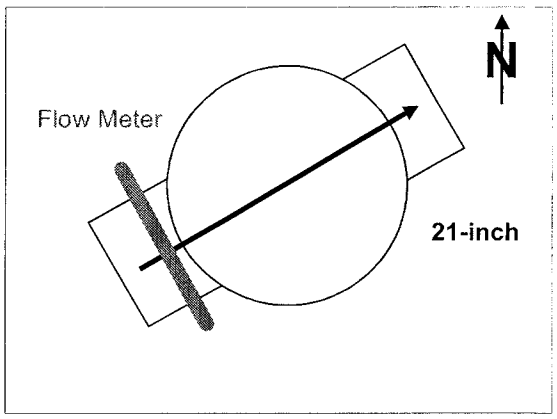
Sanitary sewer map:



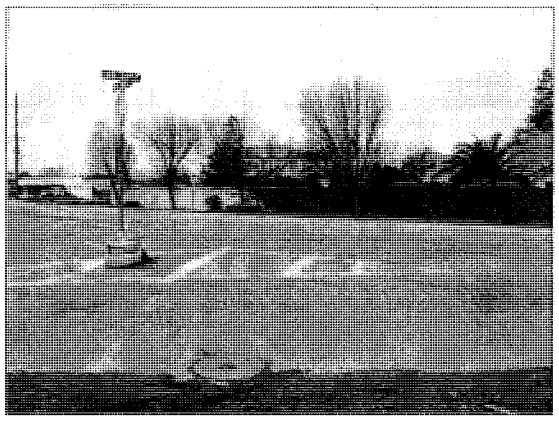
Street map:



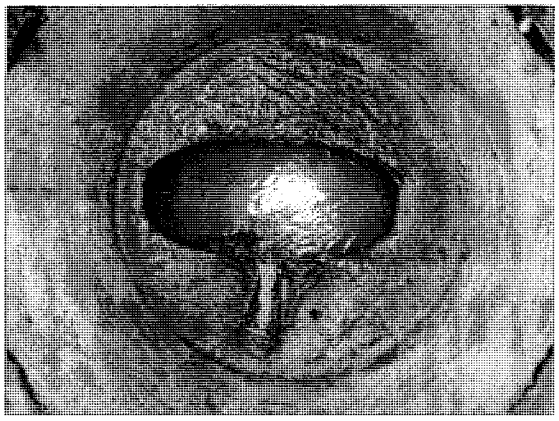
Flow sketch:



Street-level photo:



Plan view photo:



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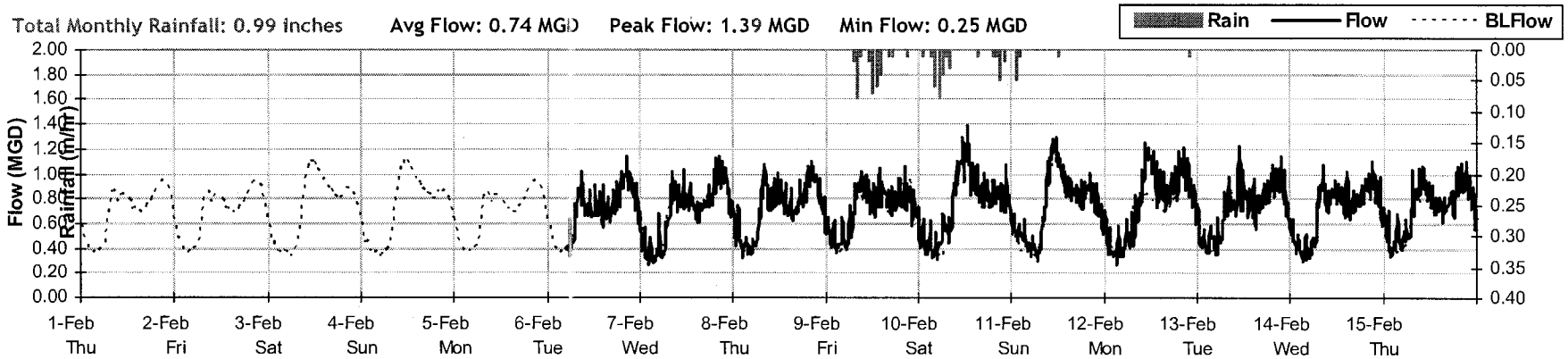
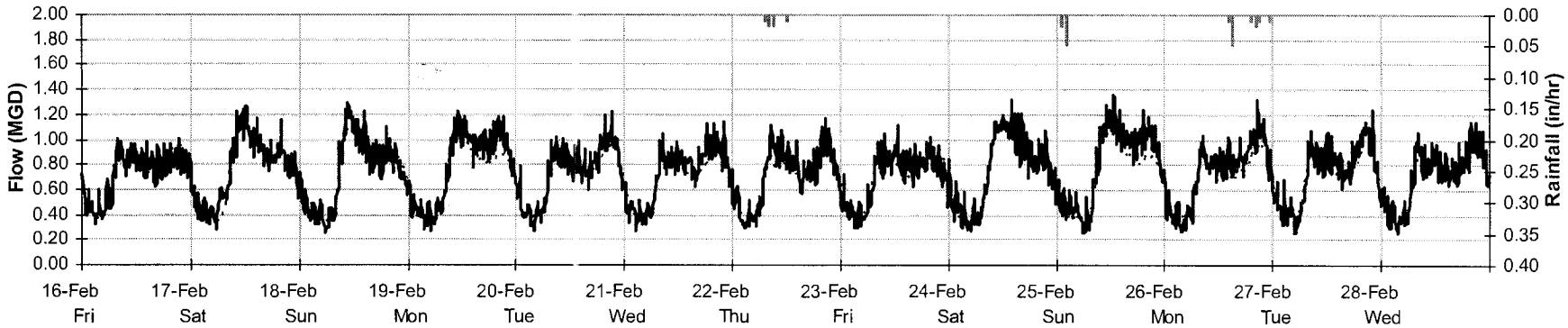
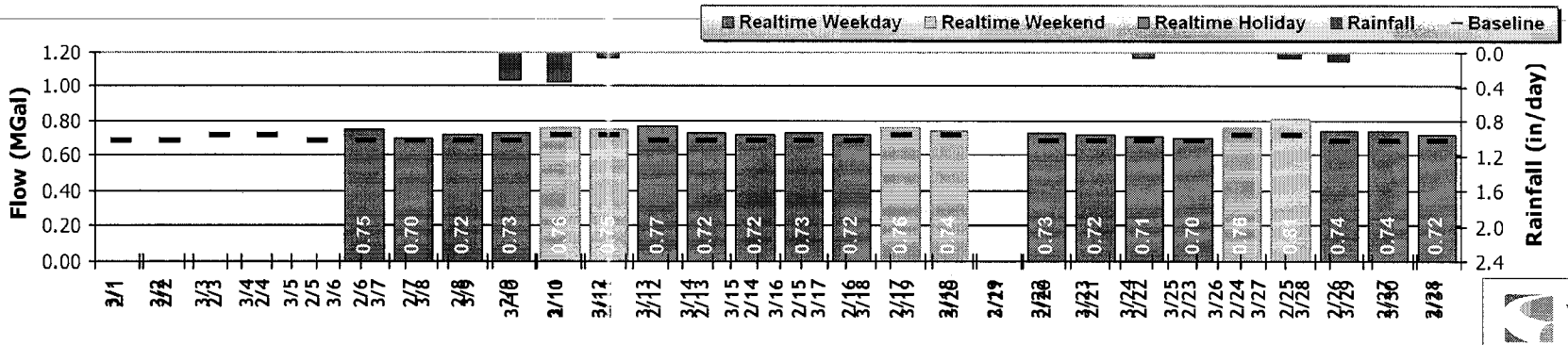
Monthly Flow Summary
February, 2007

Monitoring Site:
Site A North

Total Monthly Rainfall: 0.99 inches Avg Flow: 0.74 MGD Peak Flow: 1.39 MGD Min Flow: 0.25 MGD







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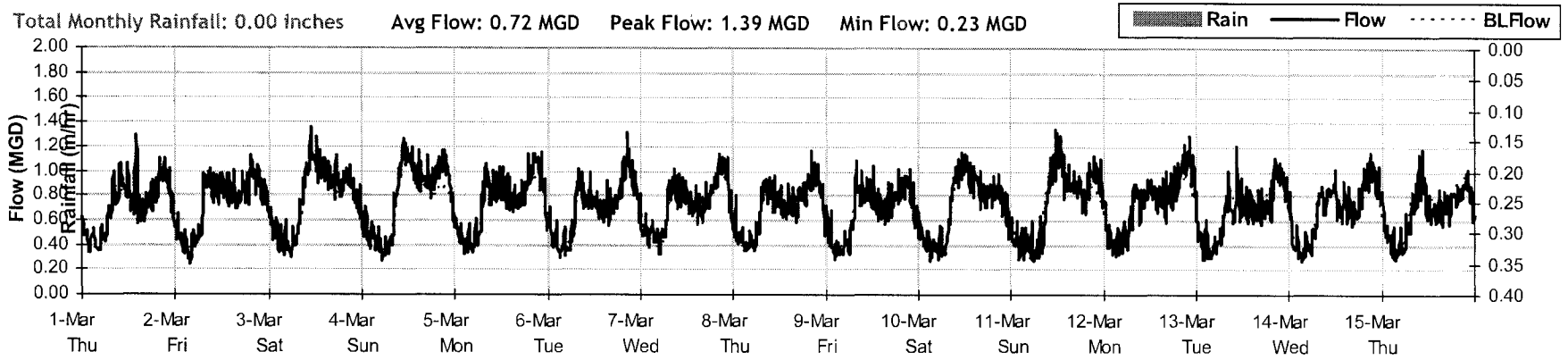
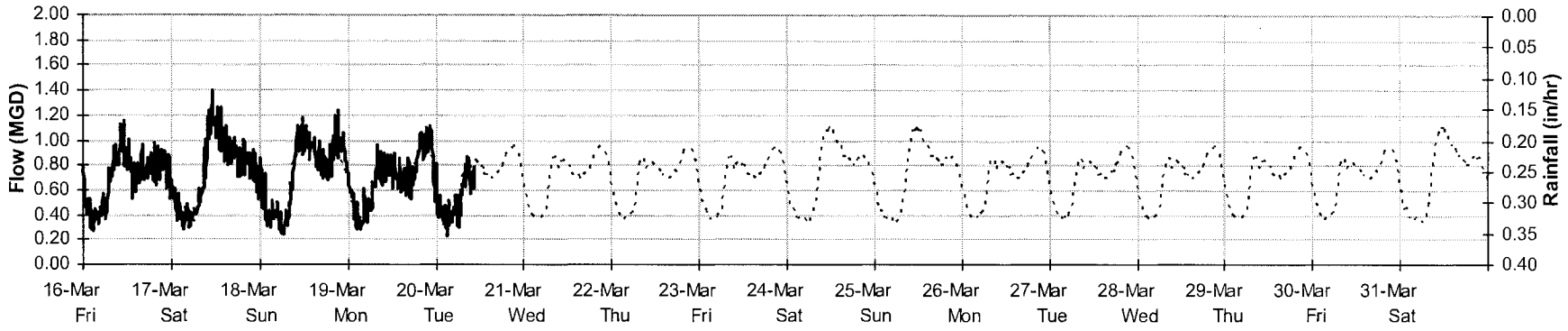
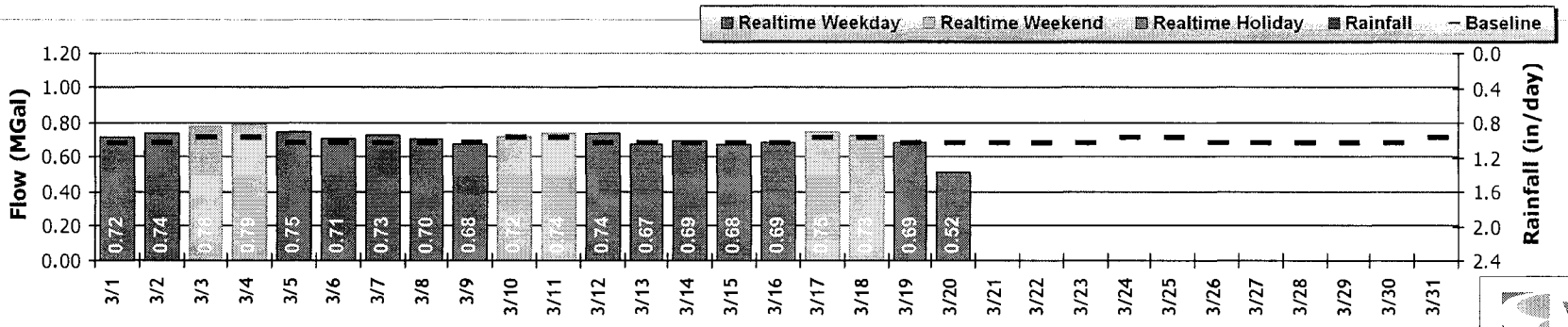
Monthly Flow Summary
March, 2007

Monitoring Site:
Site A North

Total Monthly Rainfall: 0.00 inches **Avg Flow: 0.72 MGD** **Peak Flow: 1.39 MGD** **Min Flow: 0.23 MGD**







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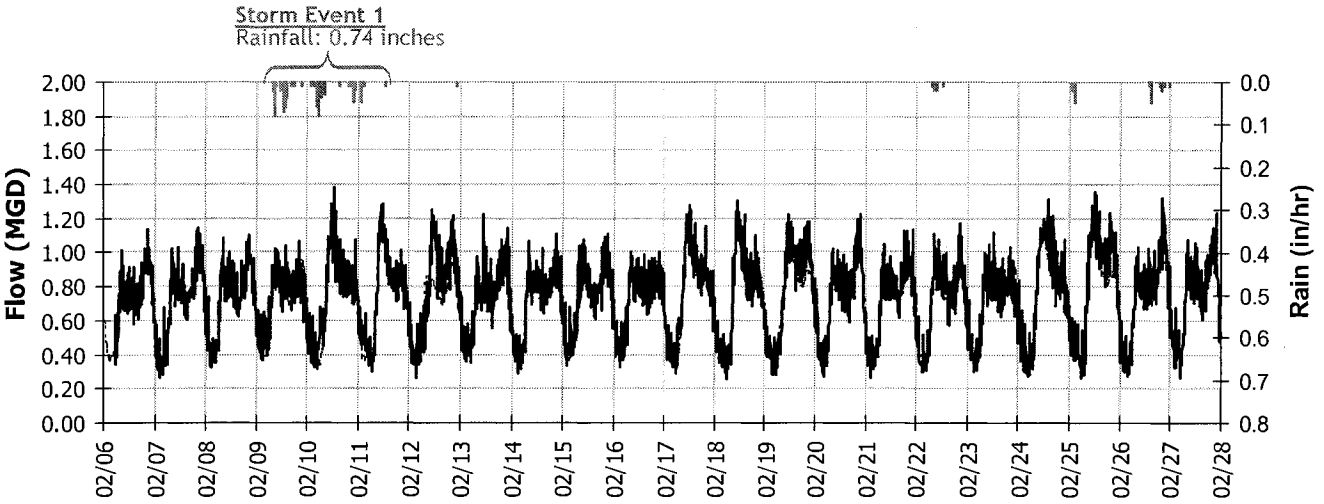
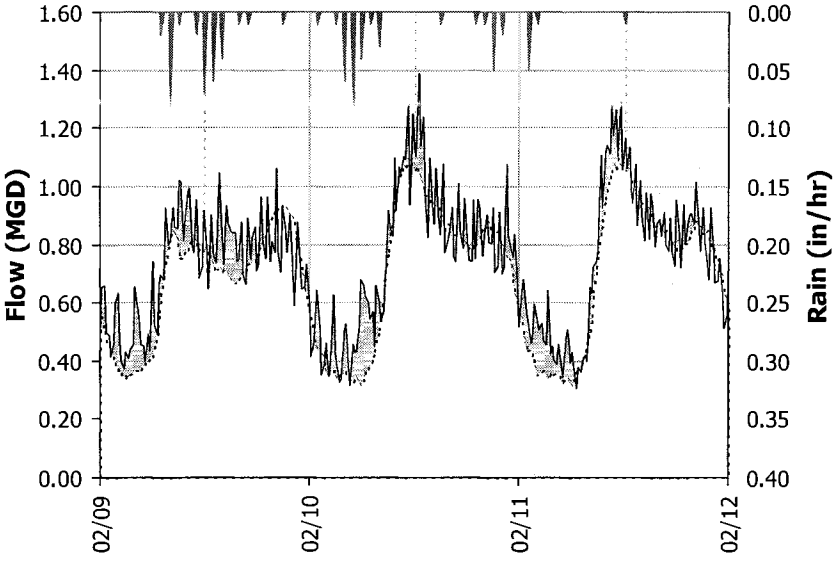
I/I Summary

Monitoring Site:
Site A North

Baseline, Realtime, and I/I Flows over Monitoring Period:



Storm Event #1 Detail I/I Graph



Storm Event #1 I/I Analysis

Rainfall:	0.74	*inches*
Peak Flow:	1.39	*MGD*
Peak I/I Rate:	0.34	*MGD*
PF:	1.98	
Pk I/I:ADWF:	0.49	
Peak Level:	12.13	*inches*
d/D Ratio:	0.58	
Total I/I:	131,000	*gallons*
R-Value:	0.8	*%*
IDM Analysis:	1,000	*gal/in-rain/IDM*

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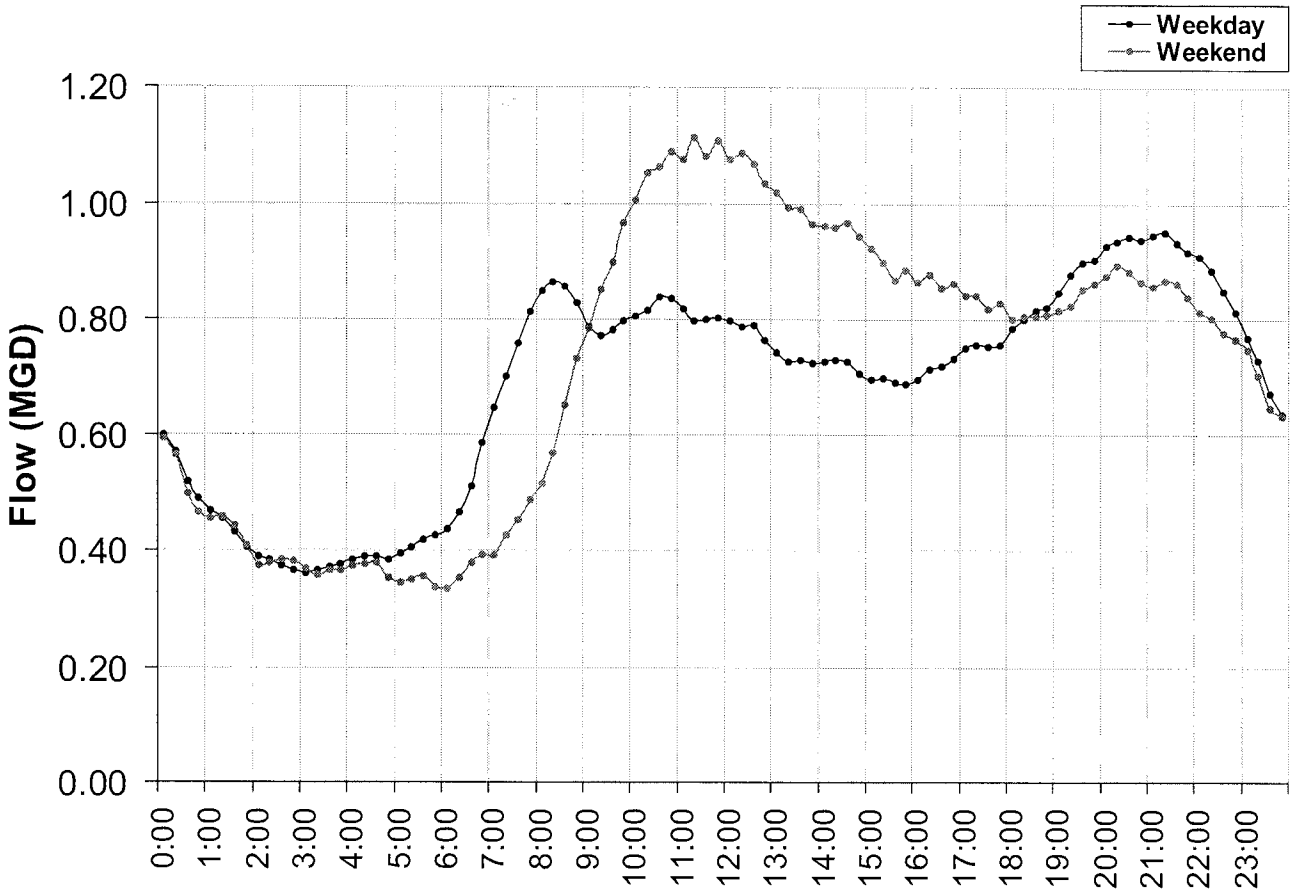
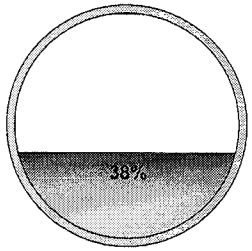
Average Dry Weather Flow

Monitoring Site:
Site A North

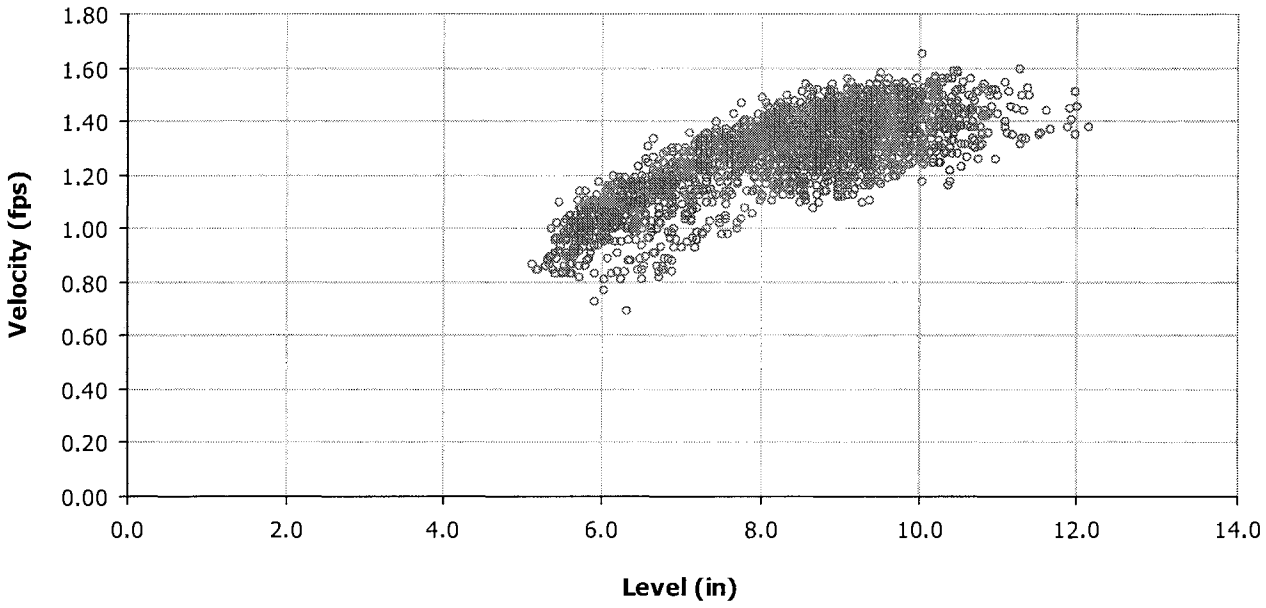


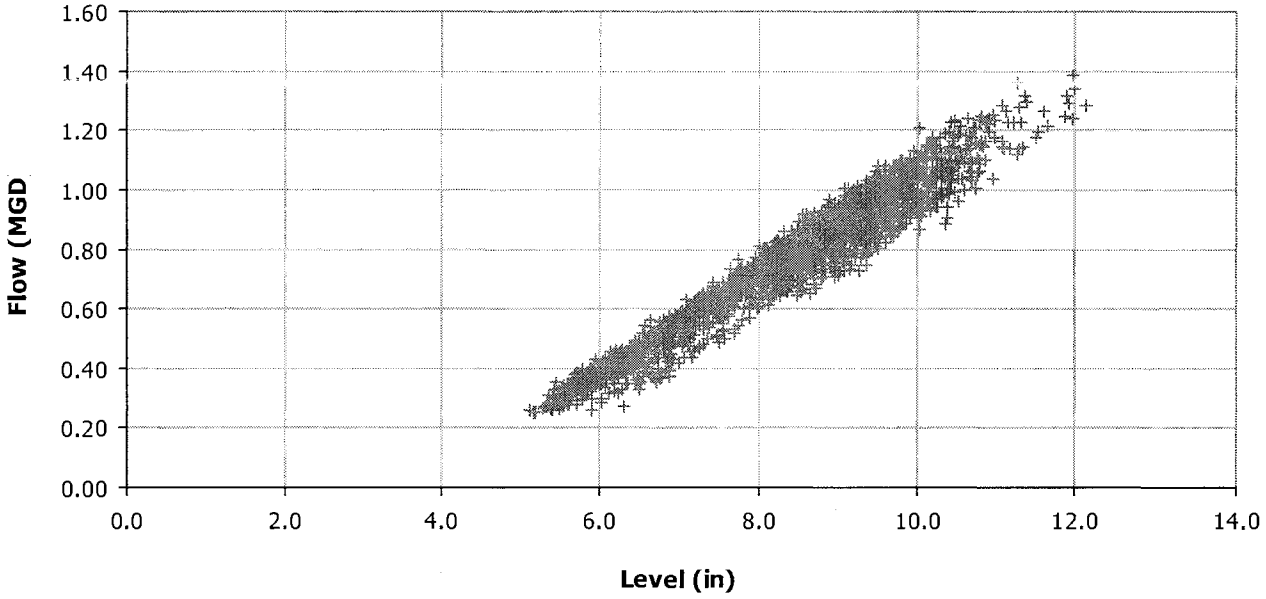
Average Dry Weather Flow:
0.70 *MGD*



Scatter Plots (Flow, Velocity vs. Depth)

Monitoring Site:
Site A North





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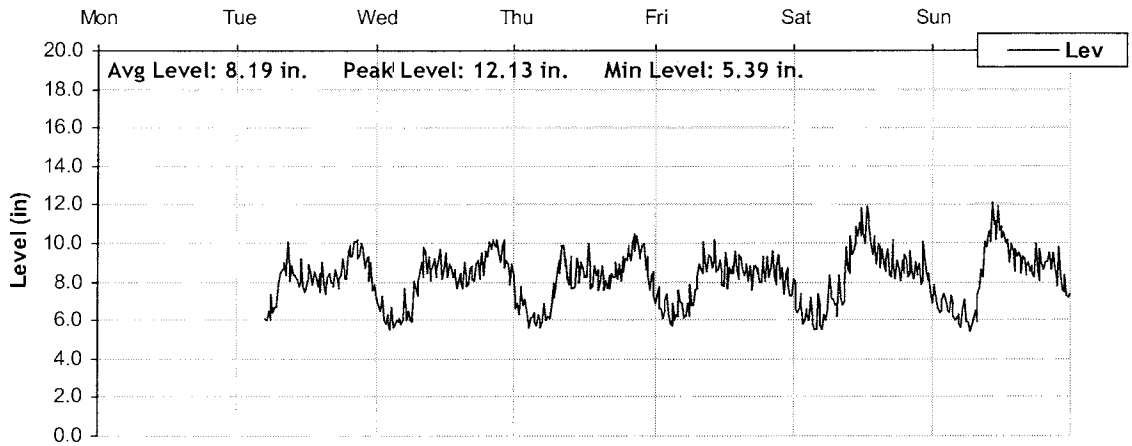
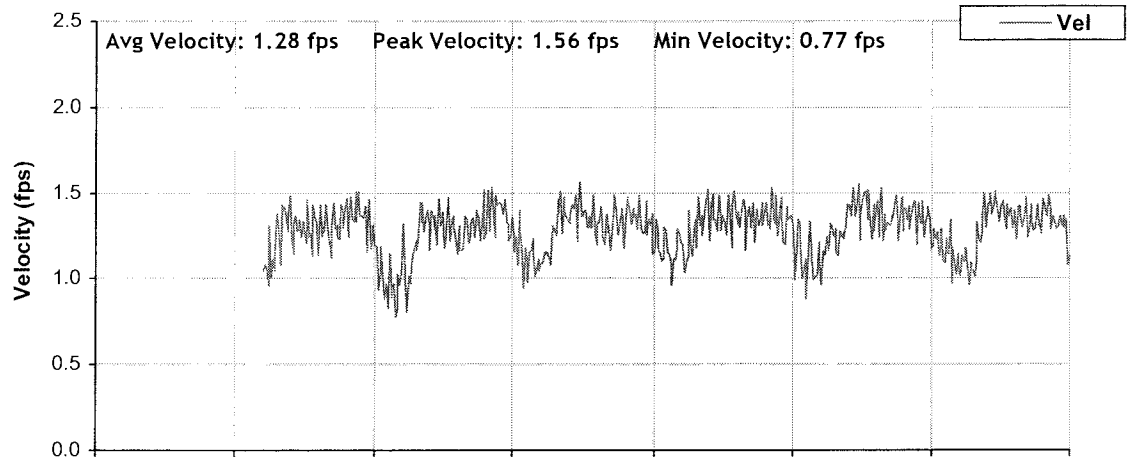
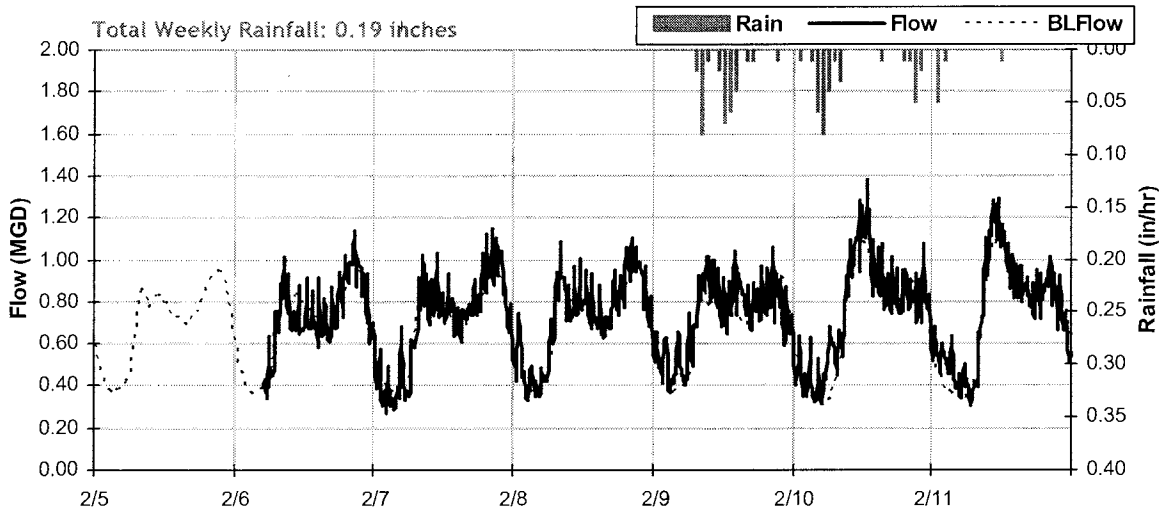
Level, Velocity and Flow
From 2/5/2007 to 2/12/2007

Monitoring Site:
Site A North







Avg Flow: 0.73 MGD Peak Flow: 1.39 MGD Min Flow: 0.27 MGD

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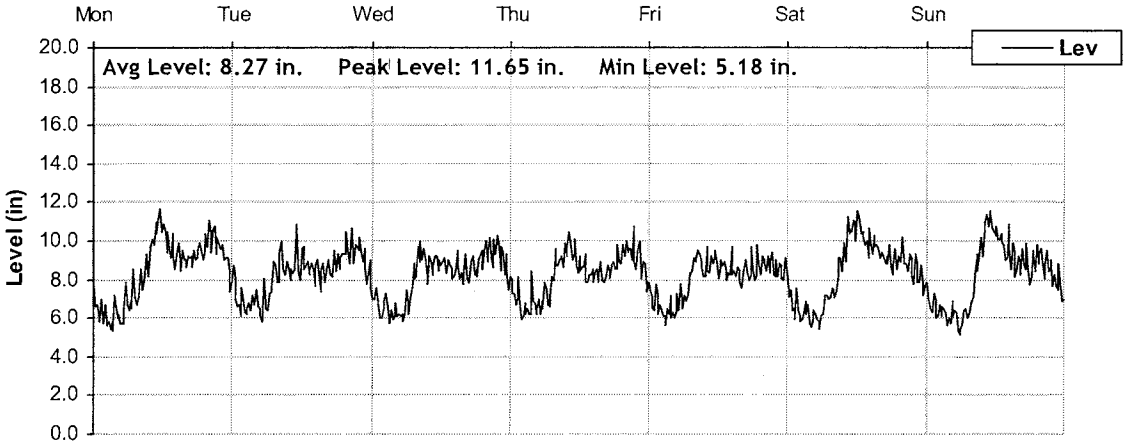
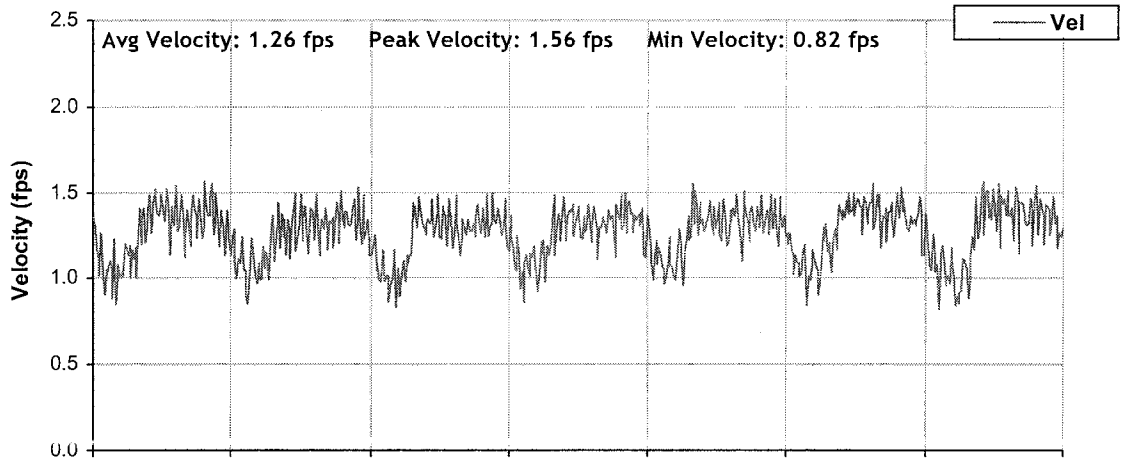
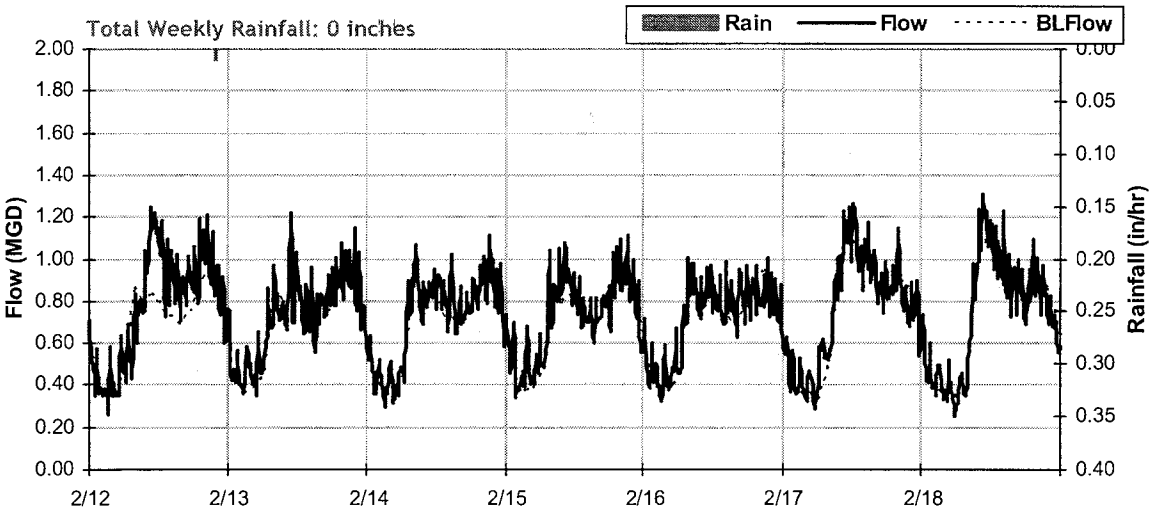
Level, Velocity and Flow
From 2/12/2007 to 2/19/2007

Monitoring Site:
Site A North



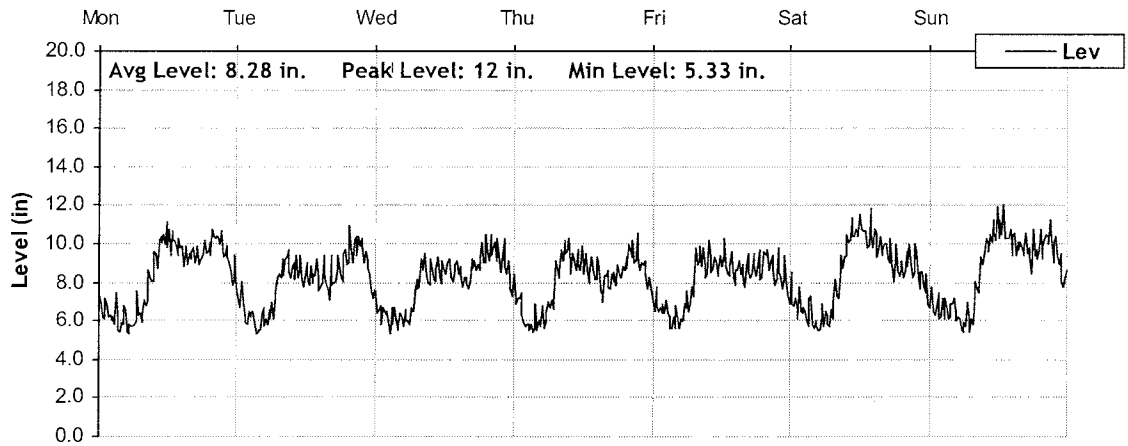


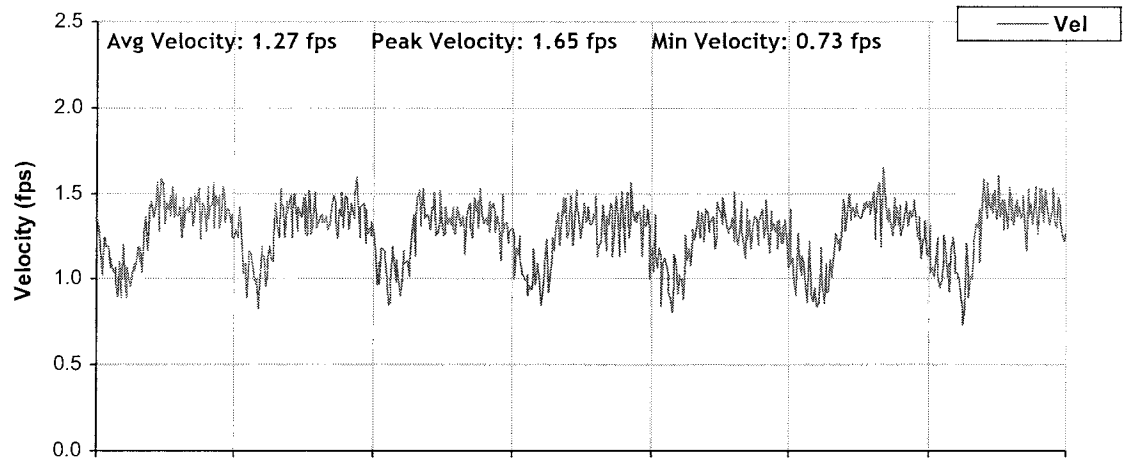


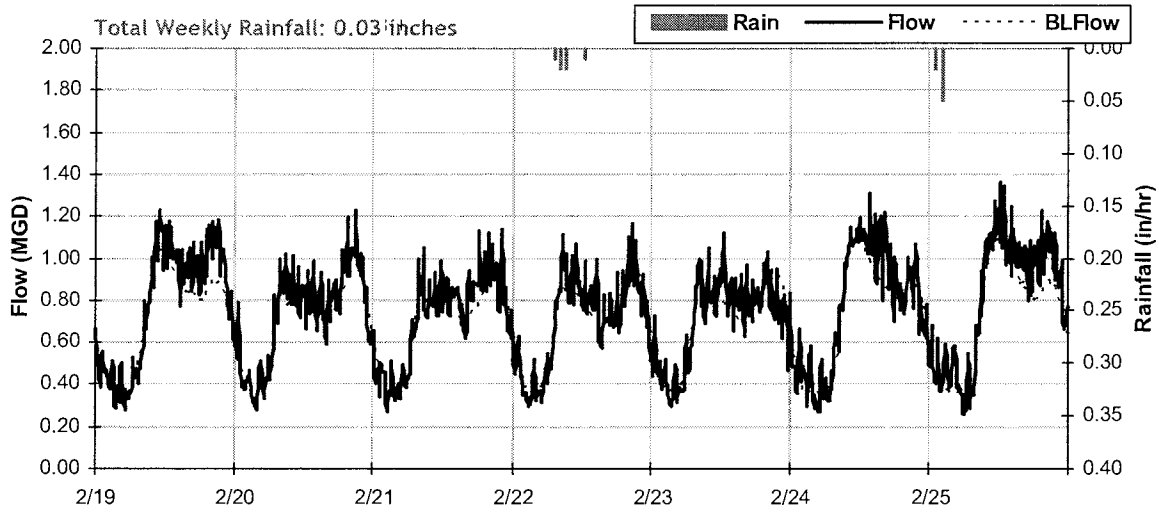
Avg Flow: 0.74 MGD Peak Flow: 1.3 MGD Min Flow: 0.25 MGD

V&A

	Level, Velocity and Flow From 2/19/2007 to 2/26/2007	**Monitoring Site:** Site A North





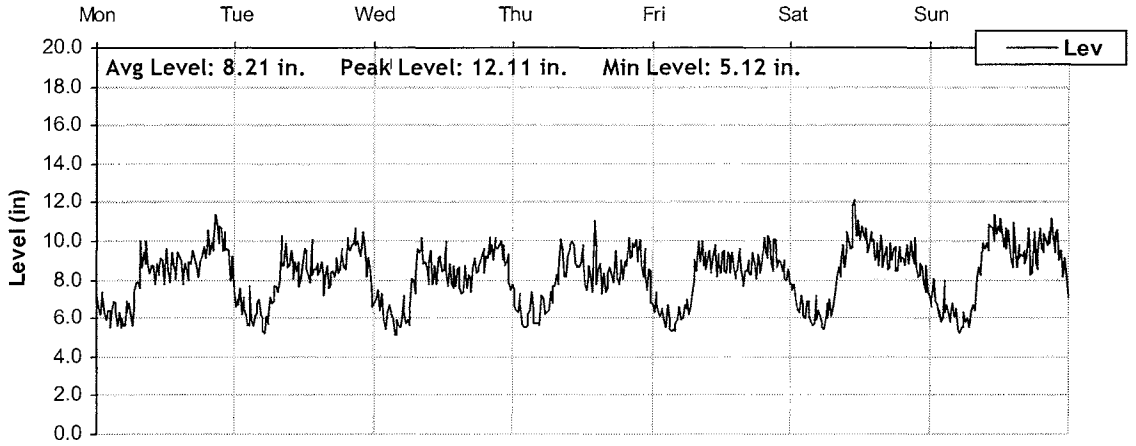


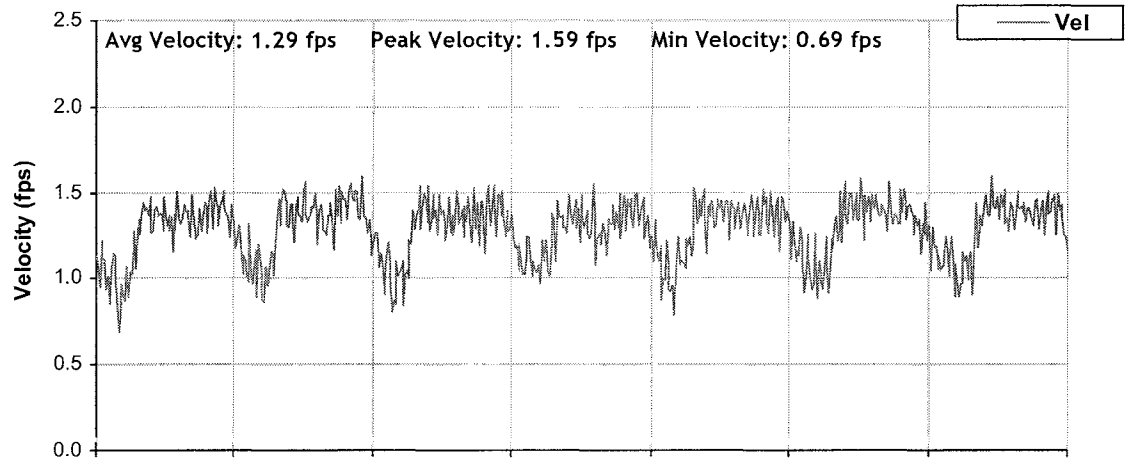
Avg Flow: 0.74 MGD Peak Flow: 1.36 MGD Min Flow: 0.26 MGD

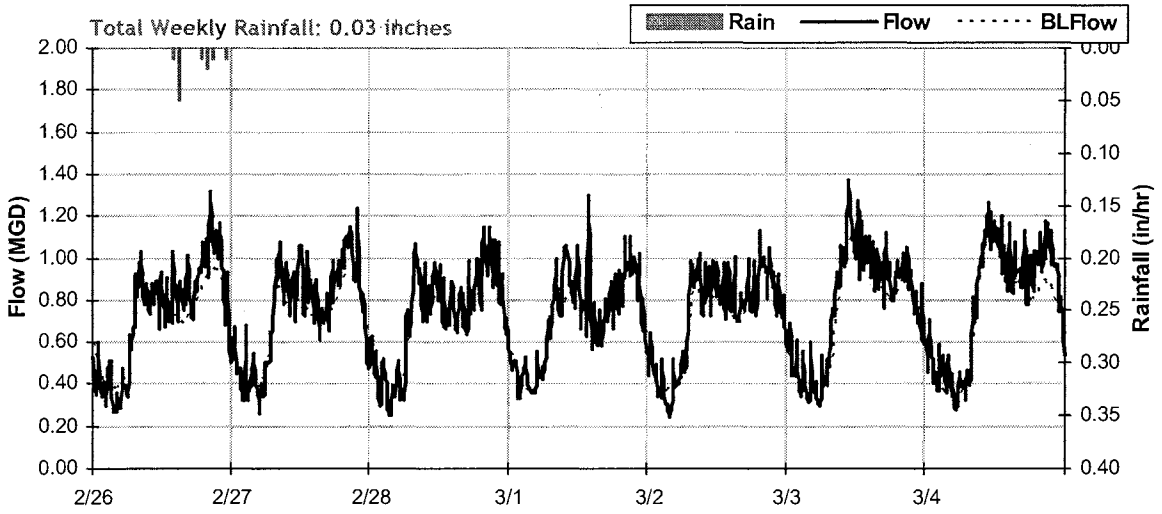
V&A

Level, Velocity and Flow
From 2/26/2007 to 3/5/2007

Monitoring Site:
Site A North





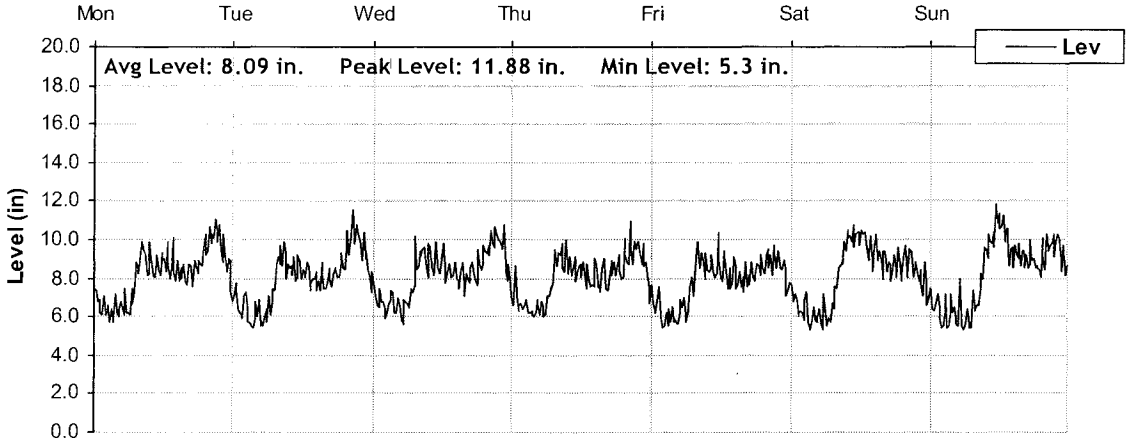


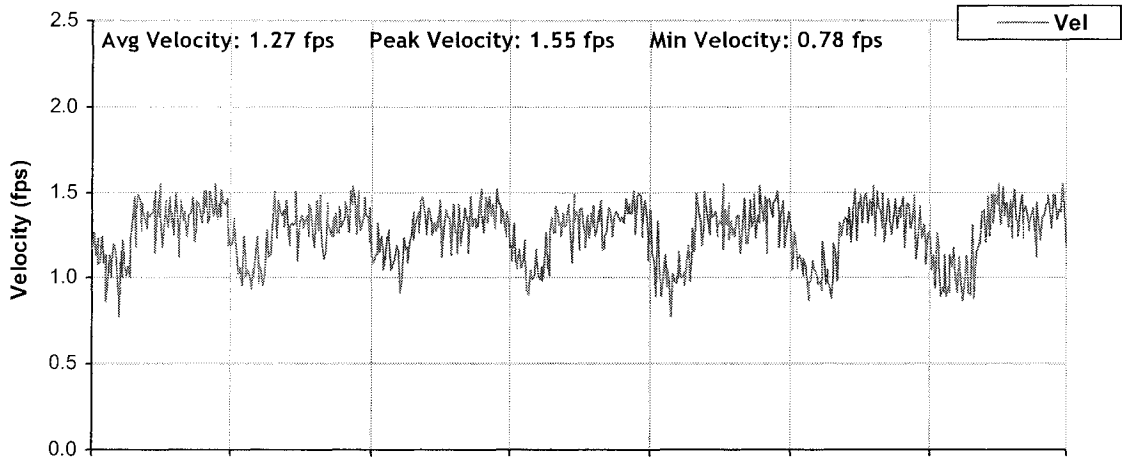
Avg Flow: 0.75 MGD Peak Flow: 1.36 MGD Min Flow: 0.24 MGD

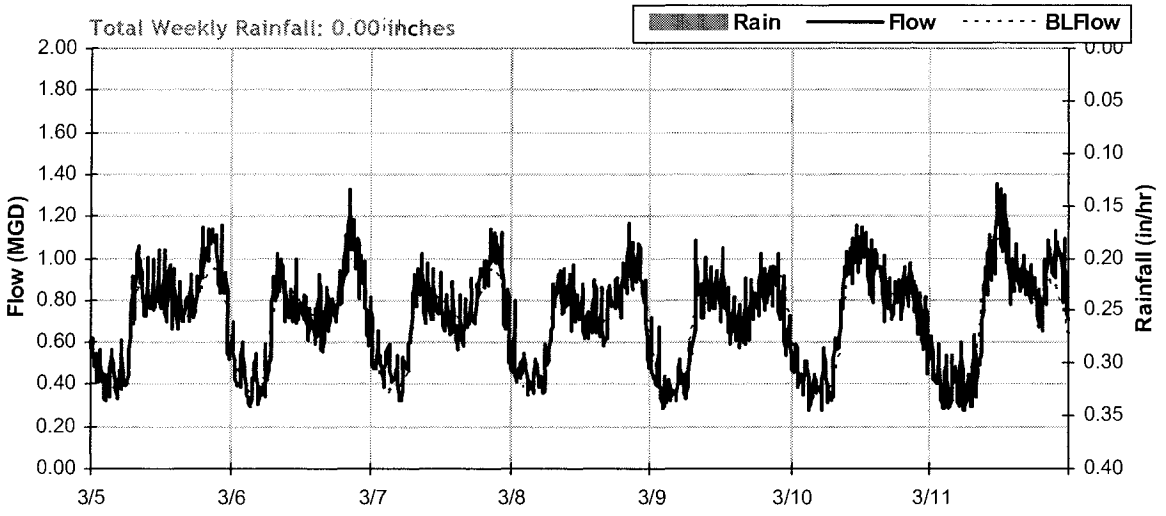
V&A

Level, Velocity and Flow
From 3/5/2007 to 3/12/2007

Monitoring Site:
Site A North





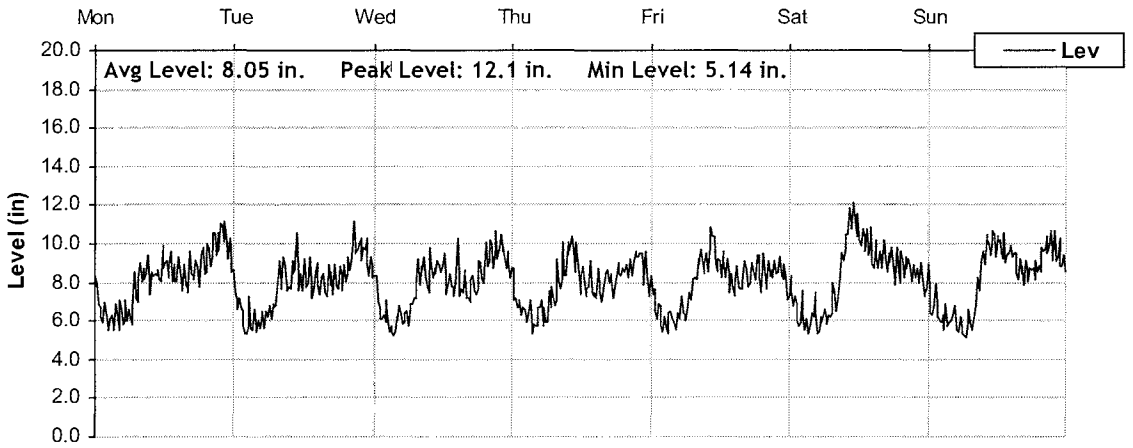


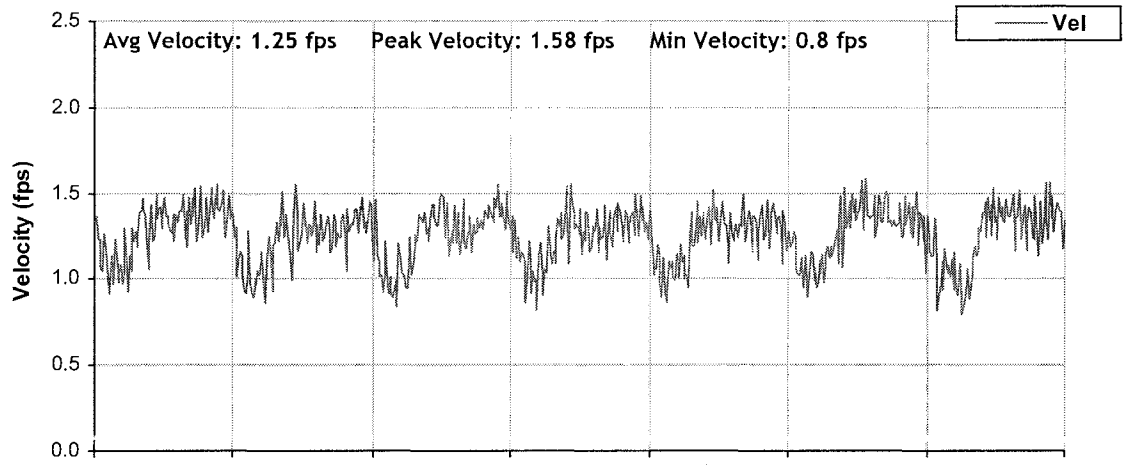
Avg Flow: 0.72 MGD Peak Flow: 1.35 MGD Min Flow: 0.27 MGD

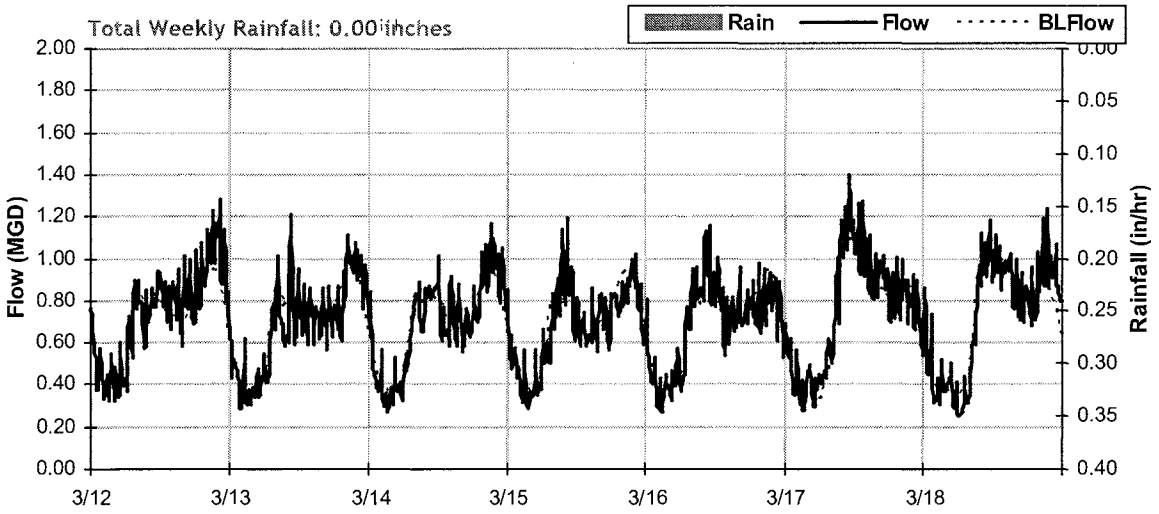
V&A

Level, Velocity and Flow
From 3/12/2007 to 3/19/2007

Monitoring Site:
Site A North





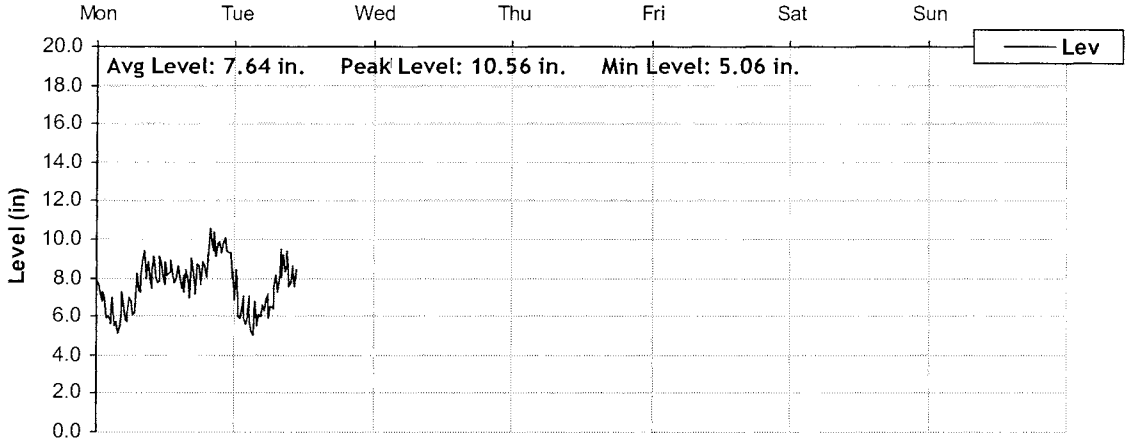


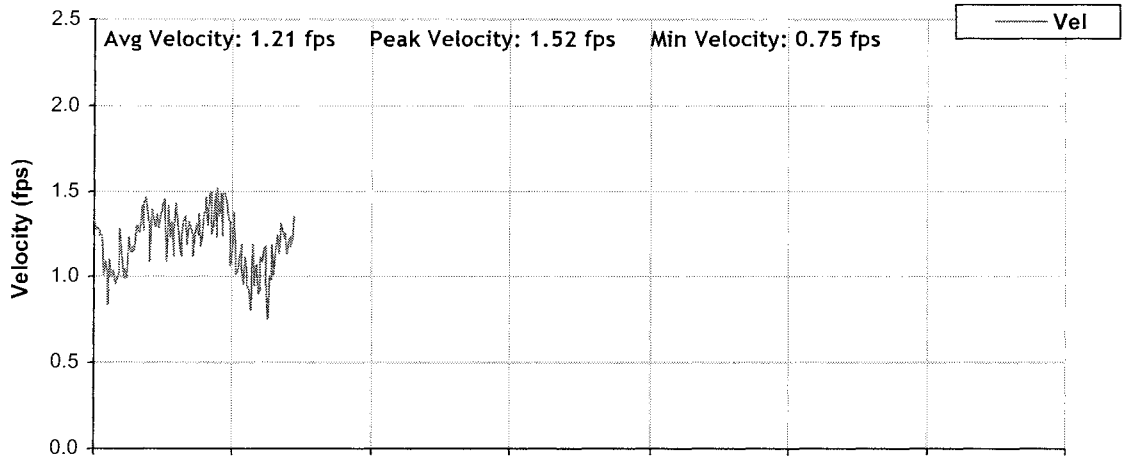
Avg Flow: 0.71 MGD Peak Flow: 1.39 MGD Min Flow: 0.25 MGD

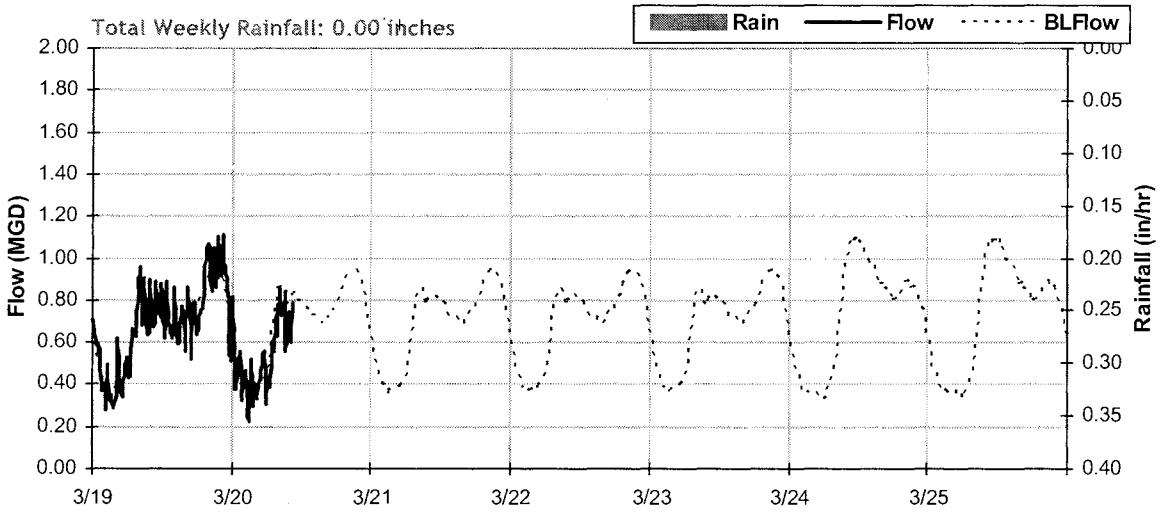
V&A

Level, Velocity and Flow
From 3/19/2007 to 3/26/2007

Monitoring Site:
Site A North







Avg Flow: 0.63 MGD Peak Flow: 1.11 MGD Min Flow: 0.23 MGD

V&A

Temporary Flow Monitoring Study

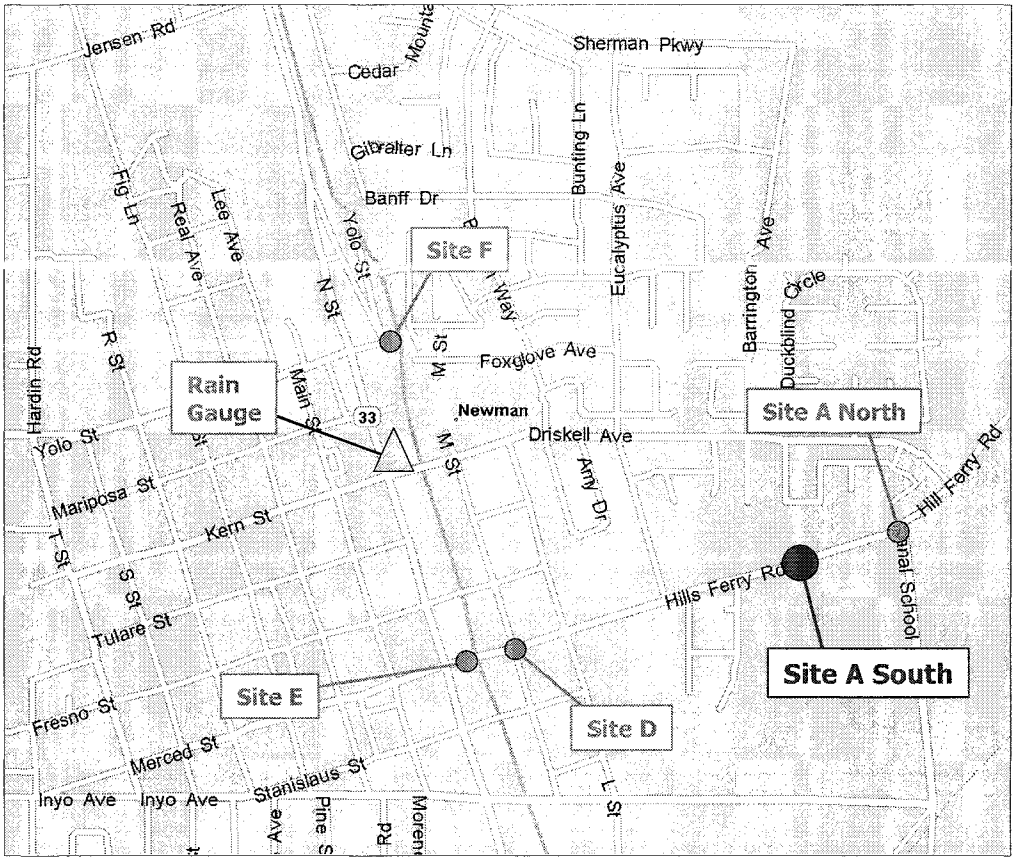
Sanitary Sewer Collection System

Monitoring Site: Site A South

Manhole Address: Hills Ferry Road, east of Brookhaven Drive and west of Canal School Road

Size/Type of Line: 18-inch Sanitary Sewer Pipe

Data Summary Report



V&A

Site Information Report

Monitoring Site: Site A South

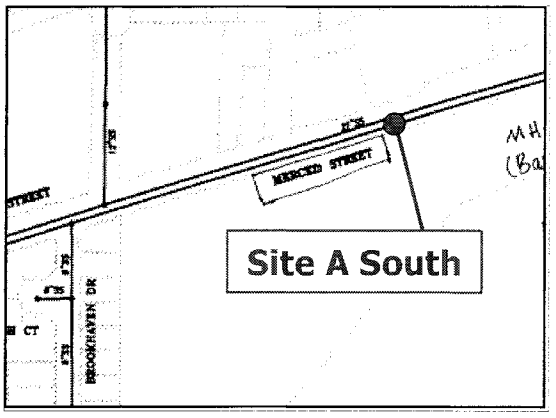
Location: Hills Ferry Road, east of Brookhaven Drive and west of Canal School Road

Diameter: 18 inches

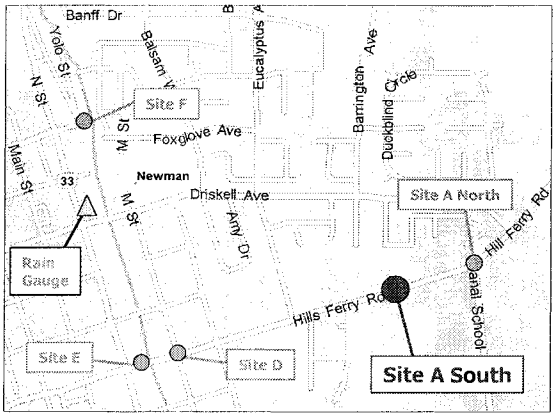
Average Dry Weather Flow: 0.446 *MGD*

Peak Measured Flow: 0.813 *MGD*

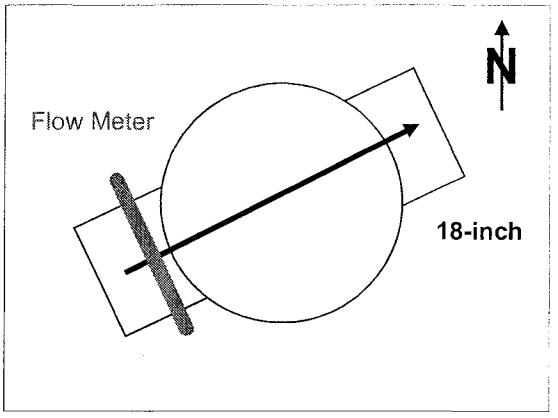
Sanitary sewer map:



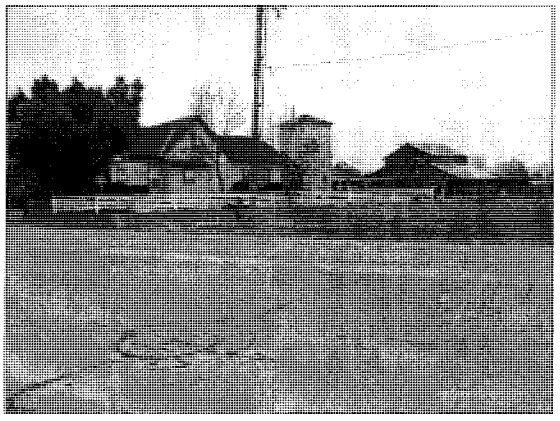
Street map:



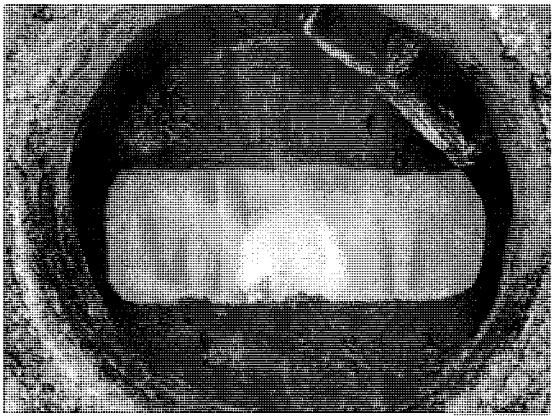
Flow sketch:



Street-level photo:



Plan view photo:

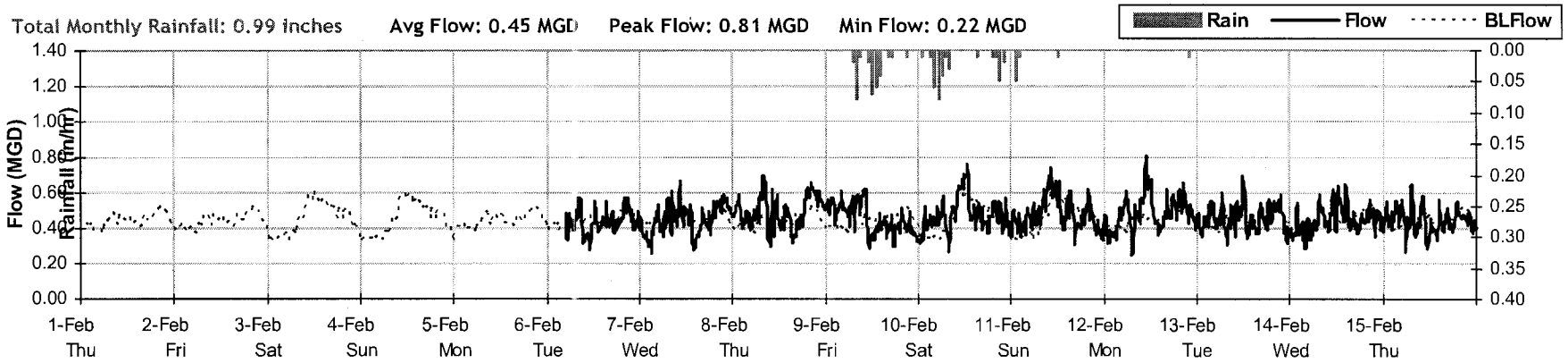


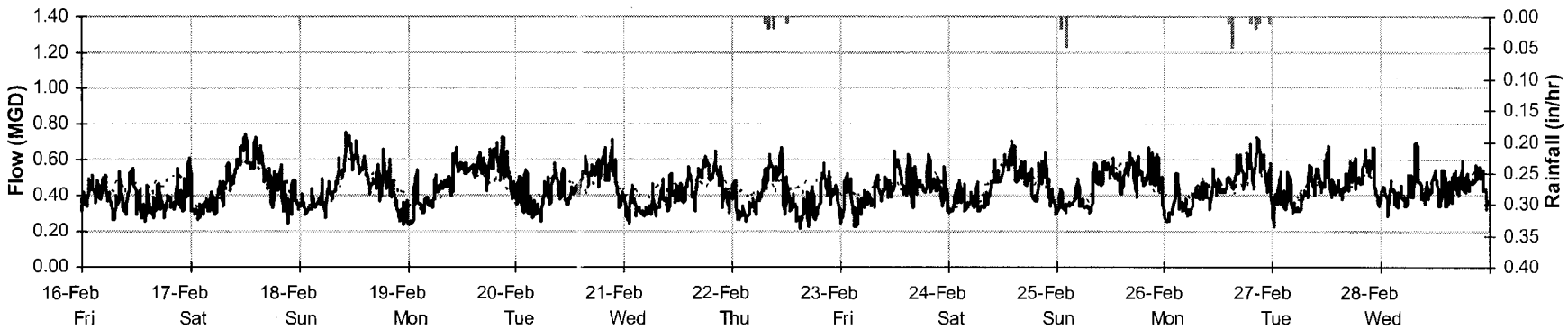
V&A

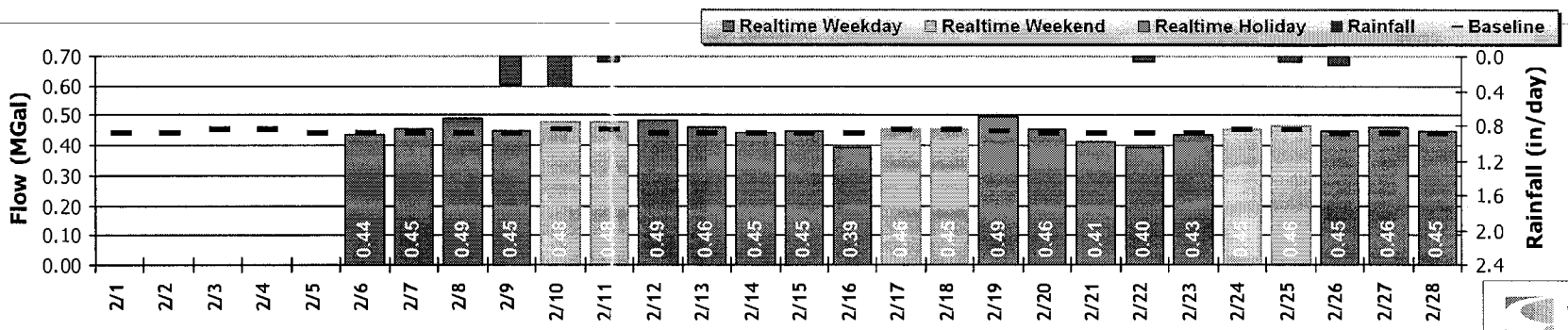
Monthly Flow Summary
February, 2007

Monitoring Site:
Site A South

Total Monthly Rainfall: 0.99 inches Avg Flow: 0.45 MGD Peak Flow: 0.81 MGD Min Flow: 0.22 MGD





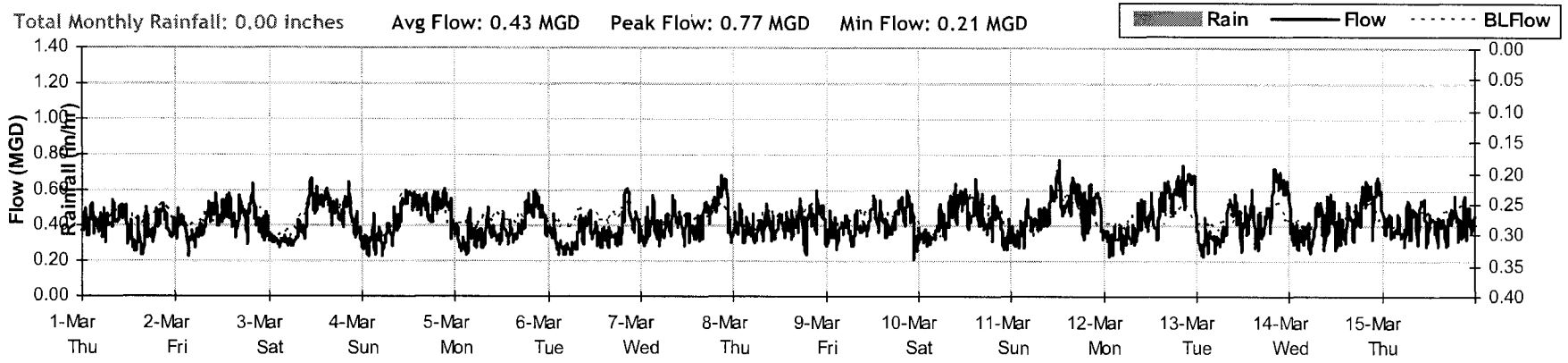


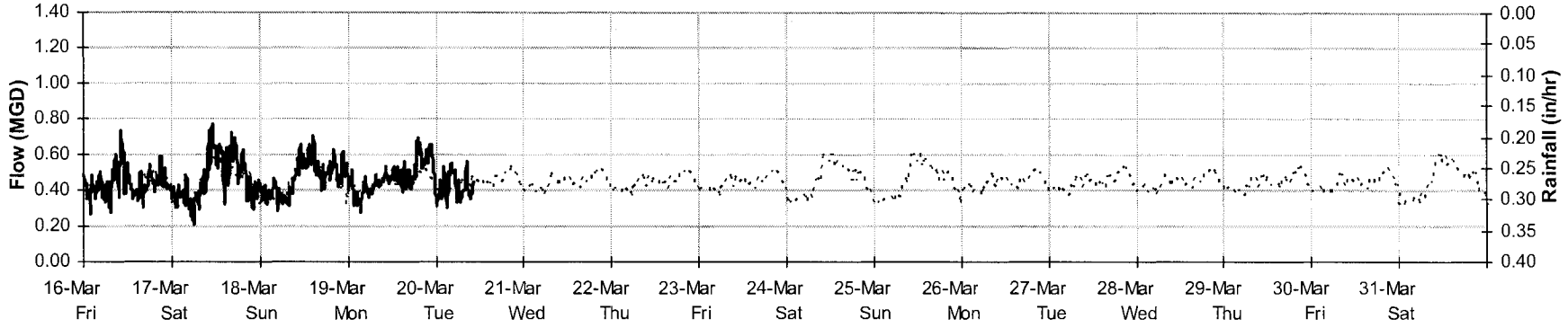
V&A

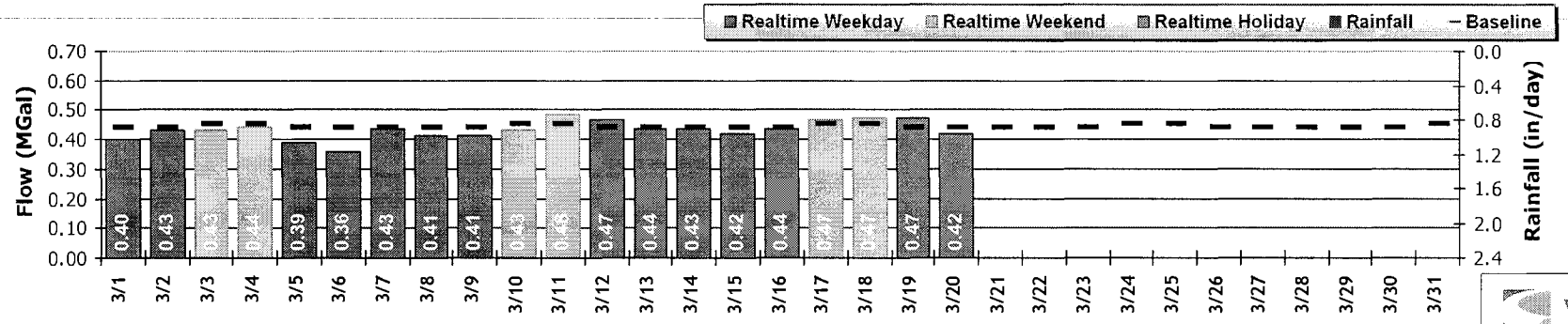
Monthly Flow Summary
March, 2007

Monitoring Site:
Site A South

Total Monthly Rainfall: 0.00 inches Avg Flow: 0.43 MGD Peak Flow: 0.77 MGD Min Flow: 0.21 MGD





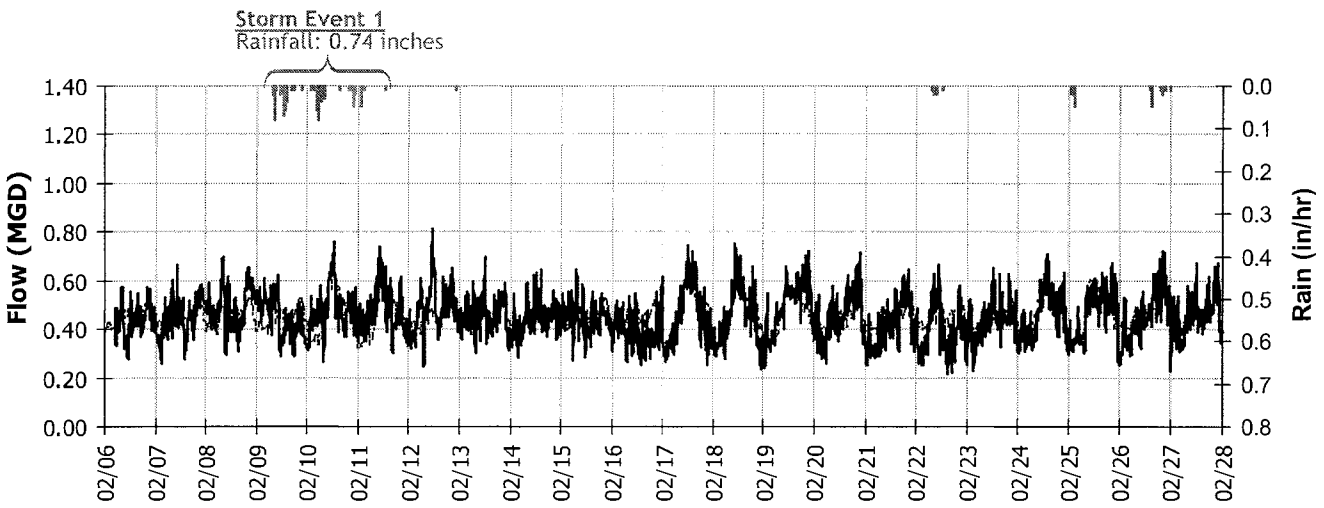


V&A

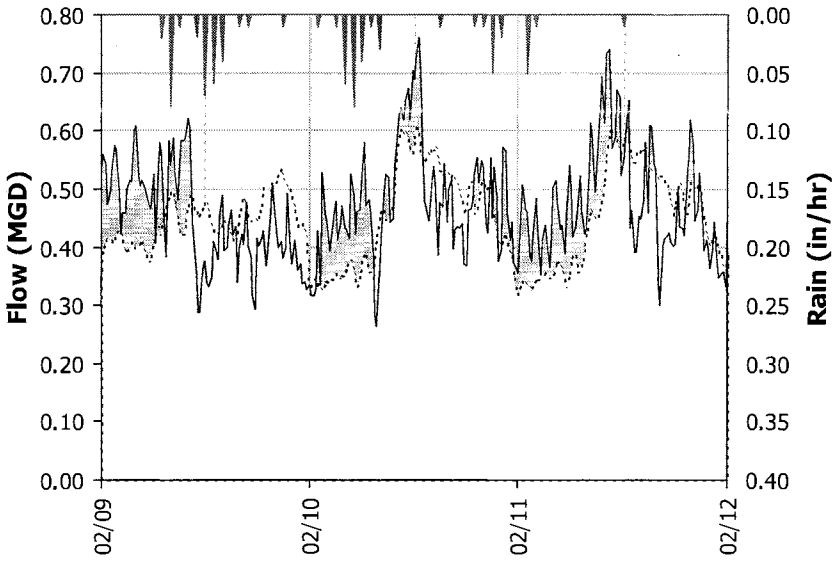
I/I Summary

Monitoring Site:
Site A South

Baseline, Realtime, and I/I Flows over Monitoring Period:



Storm Event #1 Detail I/I Graph



Storm Event #1 I/I Analysis

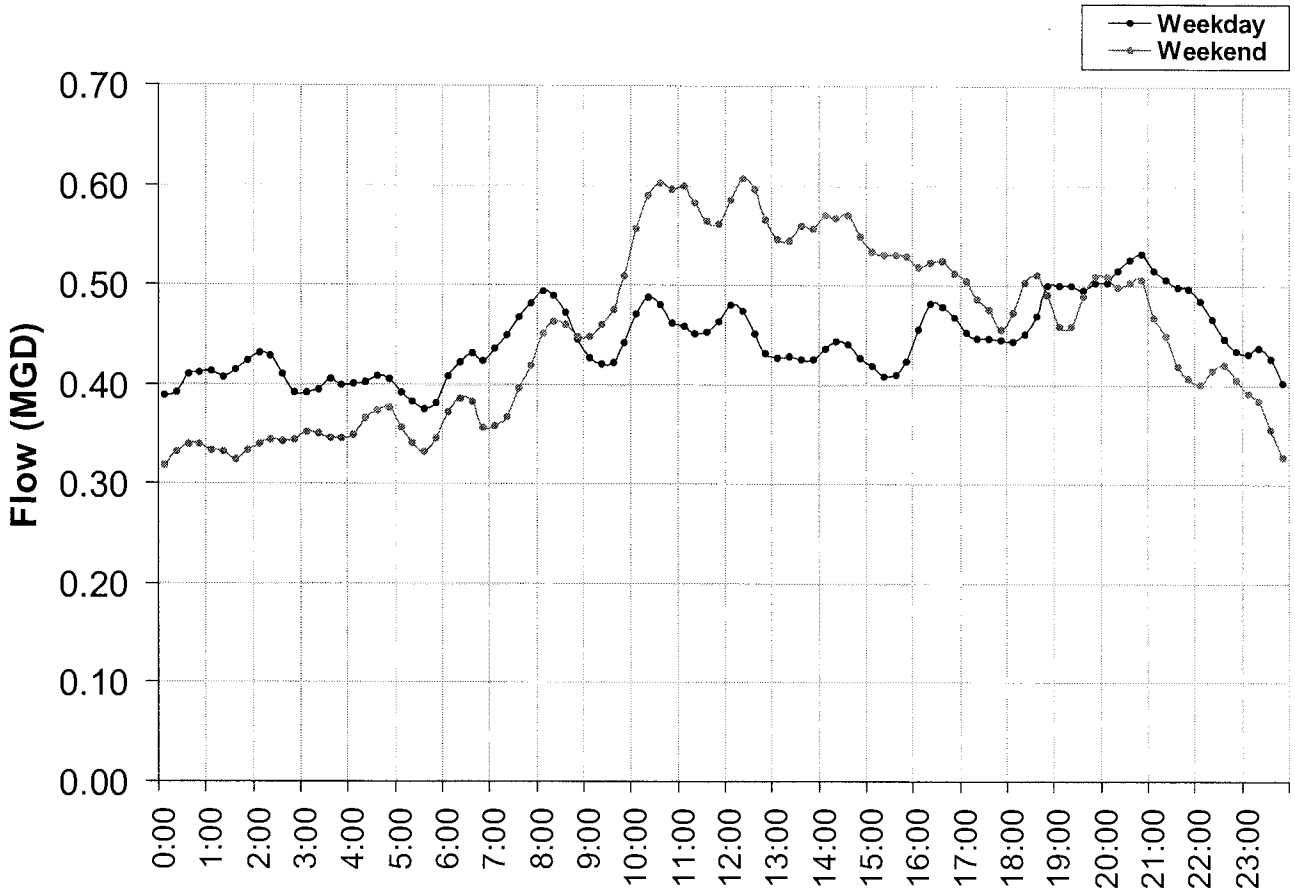
Due to the inconsistency of day-to-day flows at this site, and no obvious or discernible I/I response that was conclusively attributable to rainfall, no I/I Analysis calculations were run for this site. General flow information is shown below:

Rainfall:	0.74 *inches*
Peak Flow:	0.76 *MGD*
PF:	1.70
Peak Level:	8.87 *inches*
d/D Ratio:	0.49

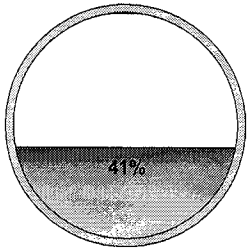
V&A

Average Dry Weather Flow

Monitoring Site:
Site A South

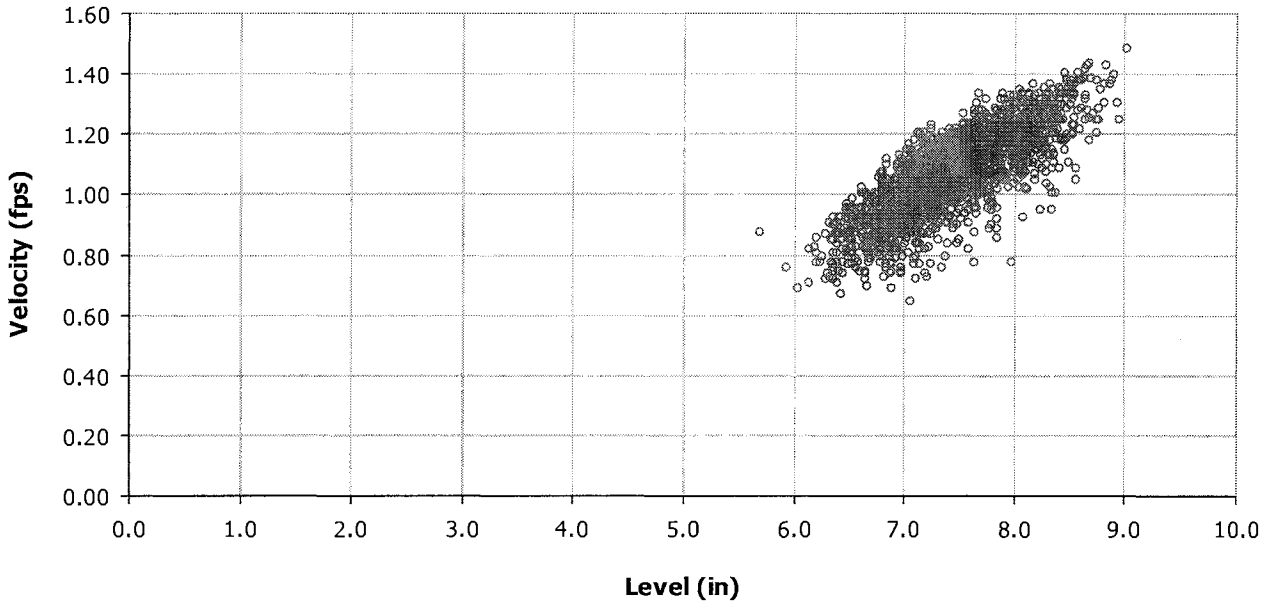


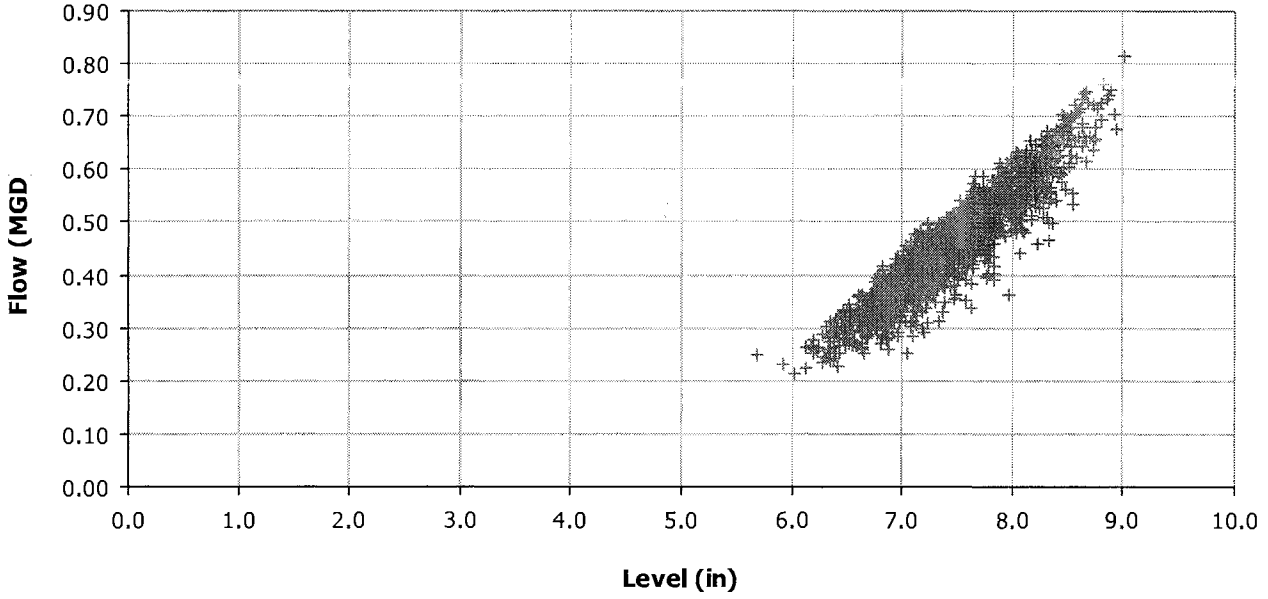
Average Dry Weather Flow:
0.45 *MGD*



Scatter Plots (Flow, Velocity vs. Depth)

Monitoring Site:
Site A South

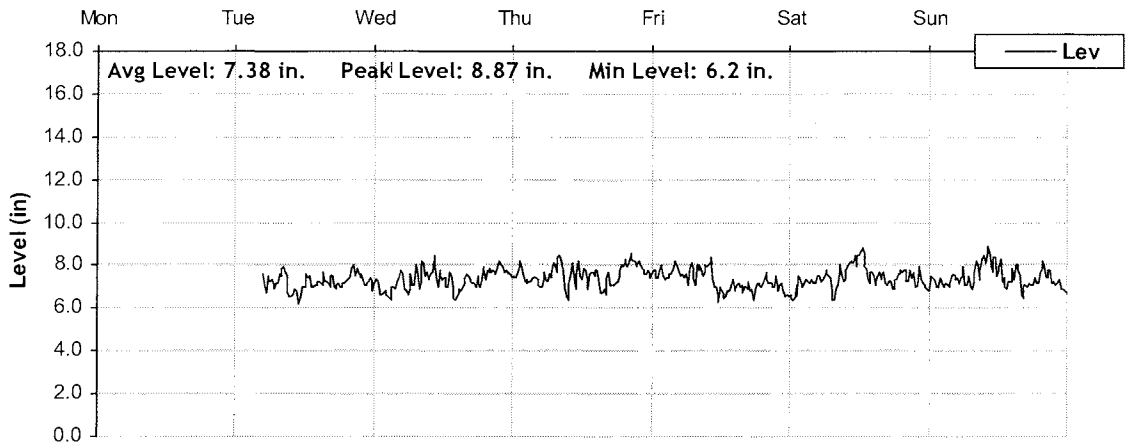


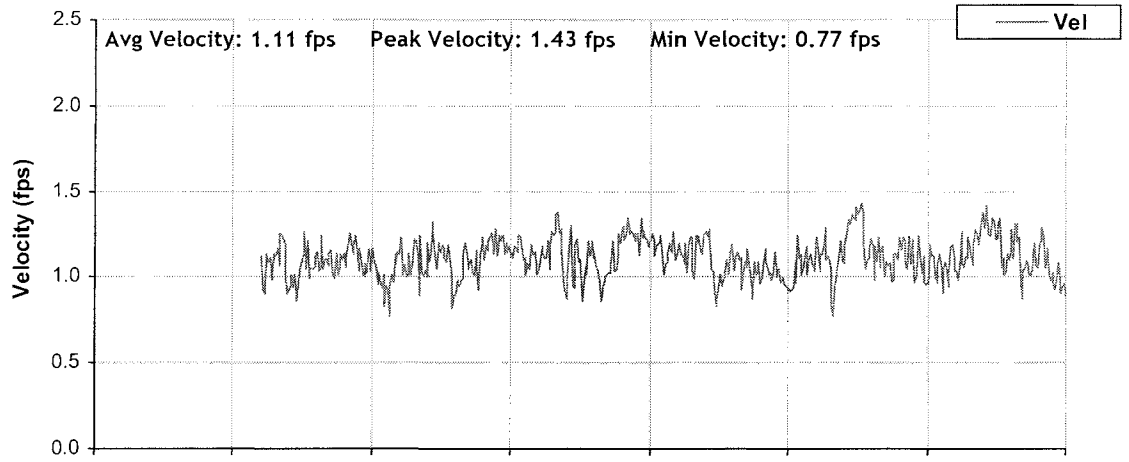


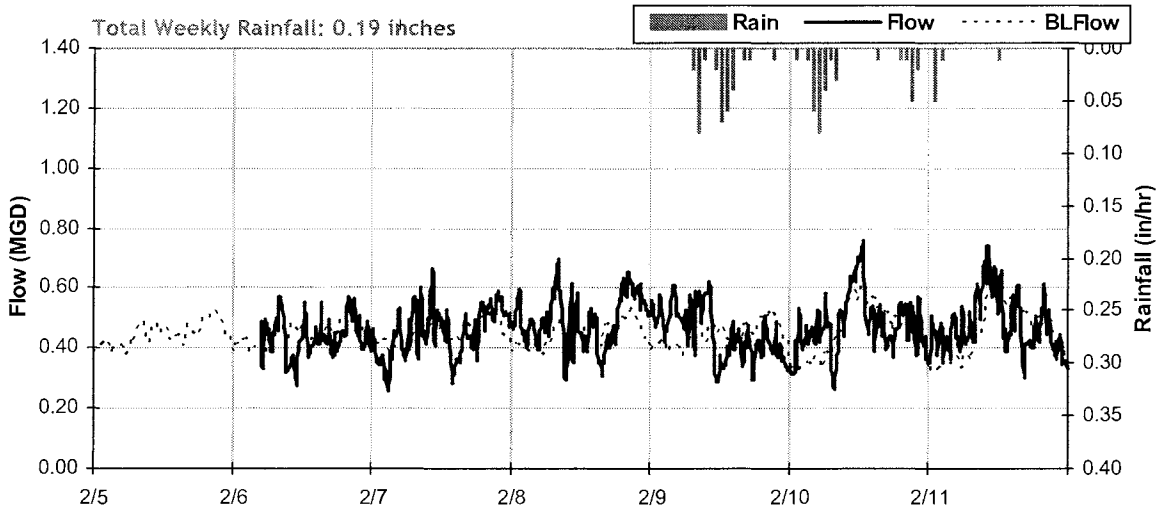
V&A

Level, Velocity and Flow
From 2/5/2007 to 2/12/2007

Monitoring Site:
Site A South





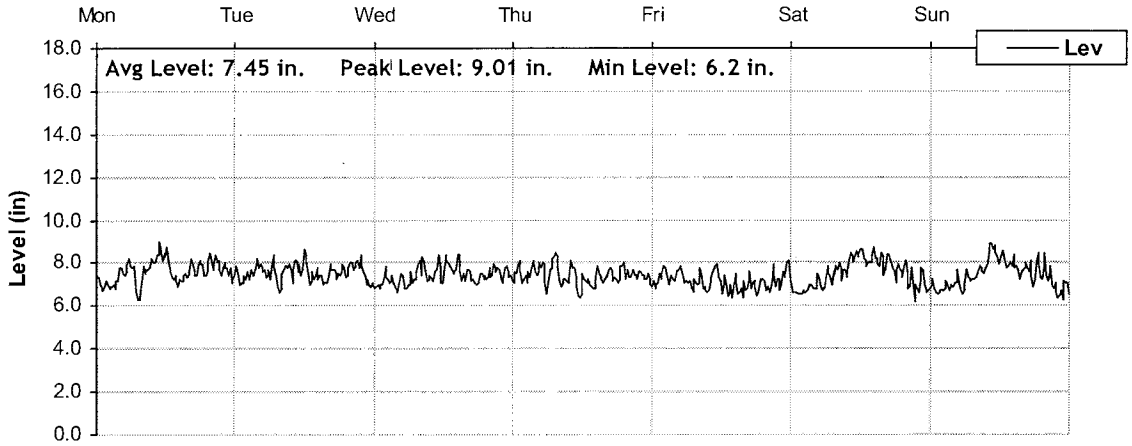


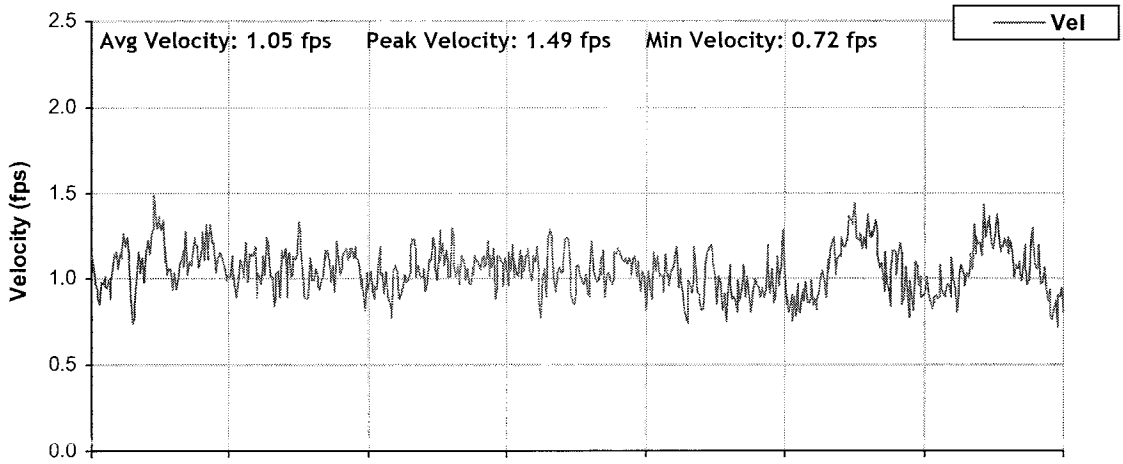
Avg Flow: 0.47 MGD Peak Flow: 0.76 MGD Min Flow: 0.26 MGD

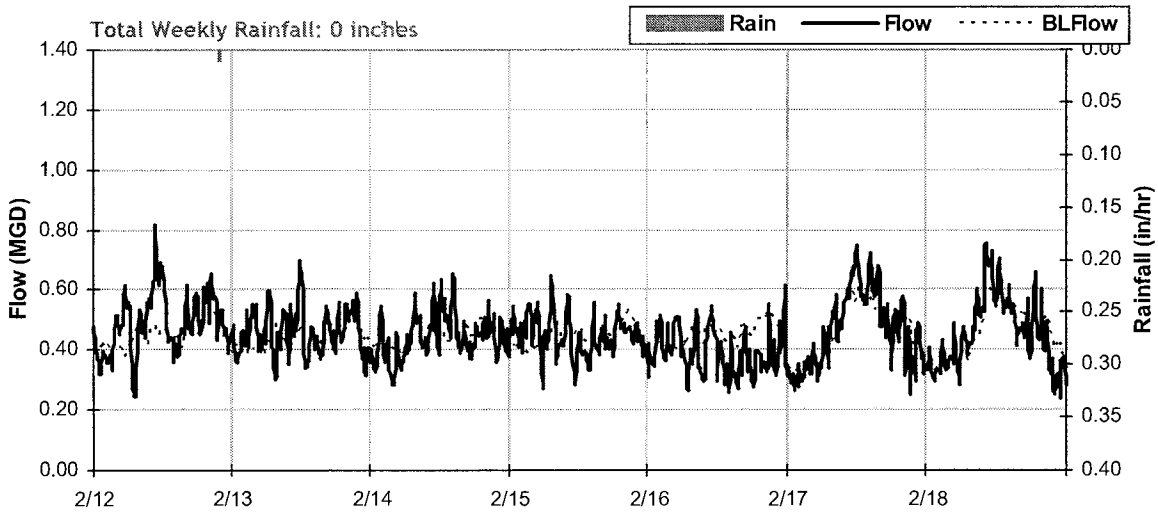
V&A

Level, Velocity and Flow
From 2/12/2007 to 2/19/2007

Monitoring Site:
Site A South





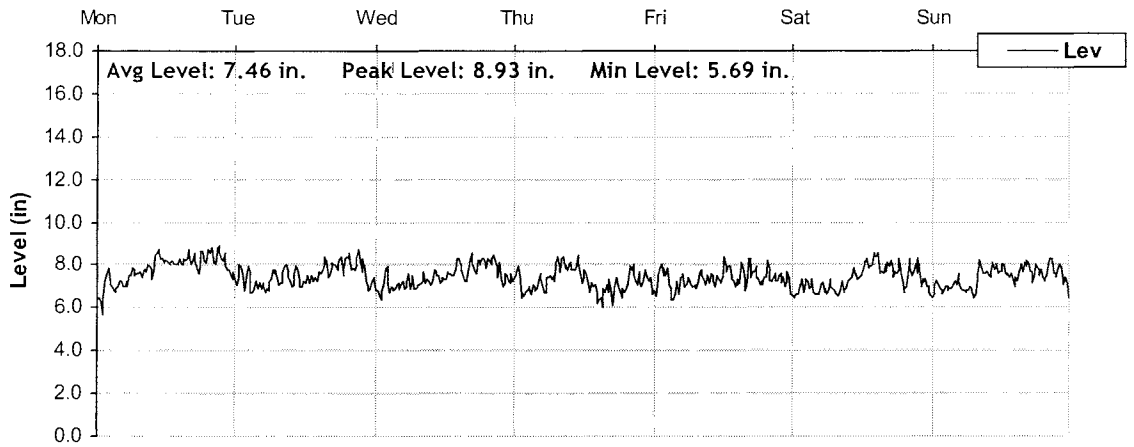


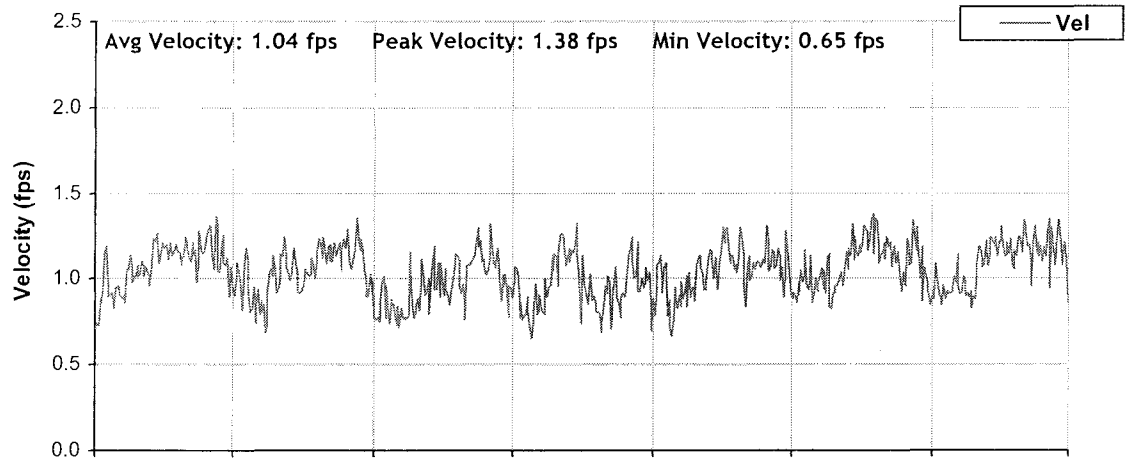
Avg Flow: 0.45 MGD Peak Flow: 0.81 MGD Min Flow: 0.24 MGD

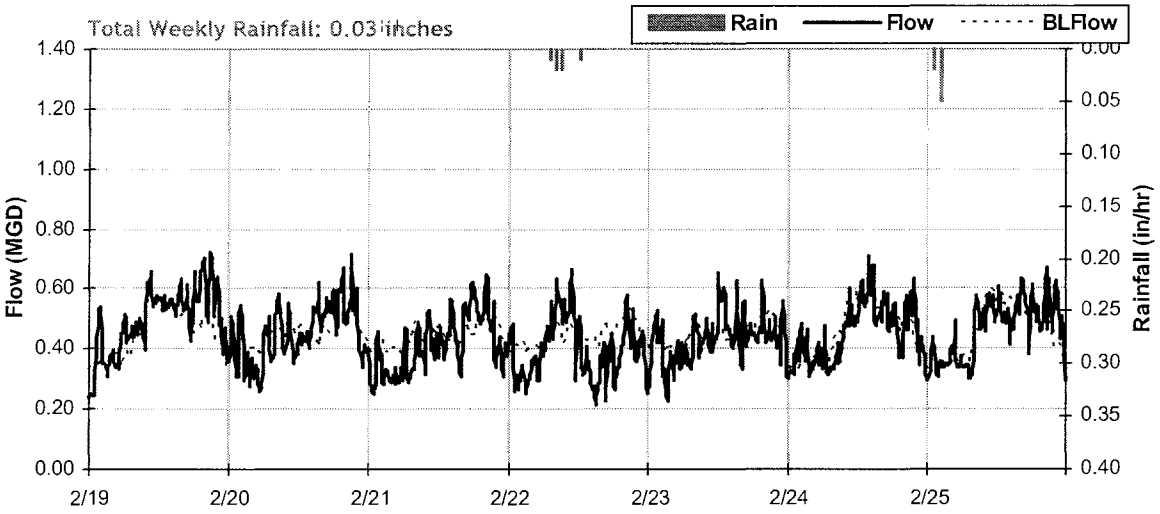
V&A

Level, Velocity and Flow
From 2/19/2007 to 2/26/2007

Monitoring Site:
Site A South





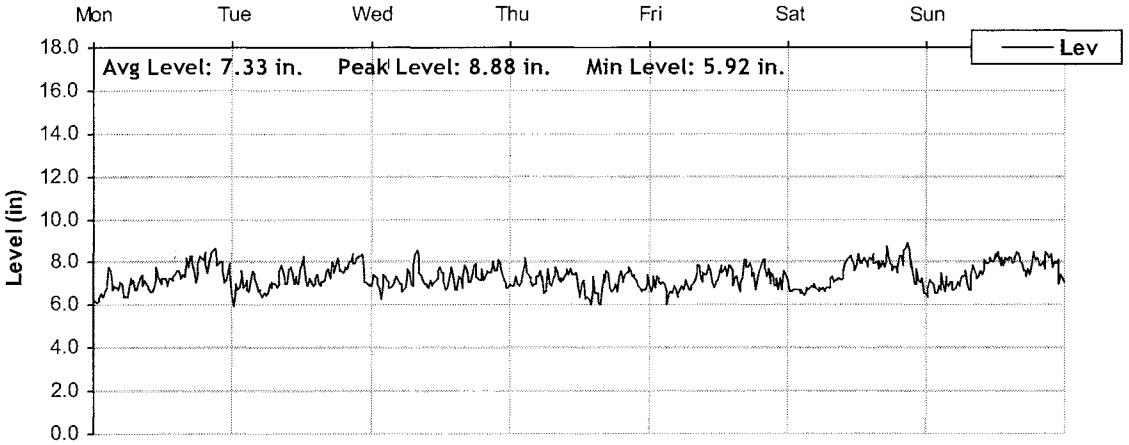


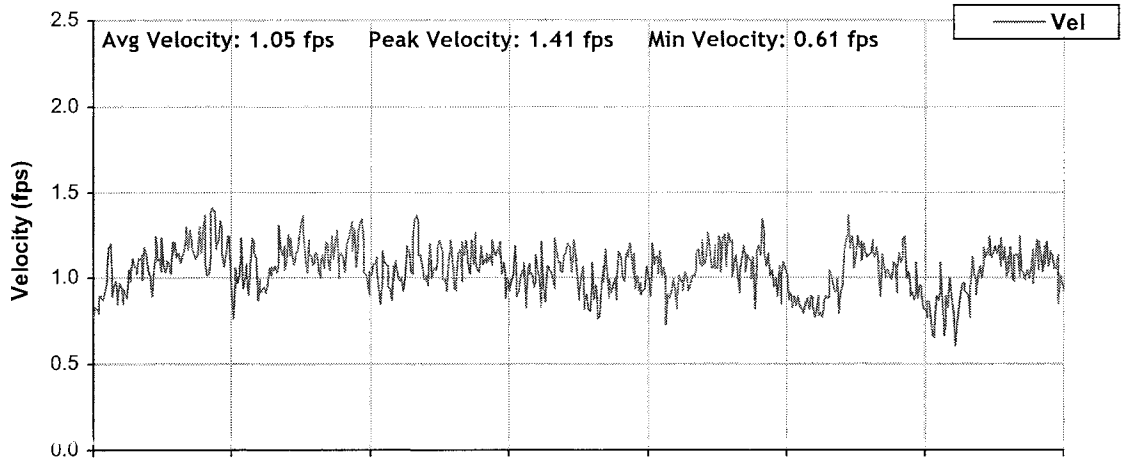
Avg Flow: 0.44 MGD Peak Flow: 0.72 MGD Min Flow: 0.22 MGD

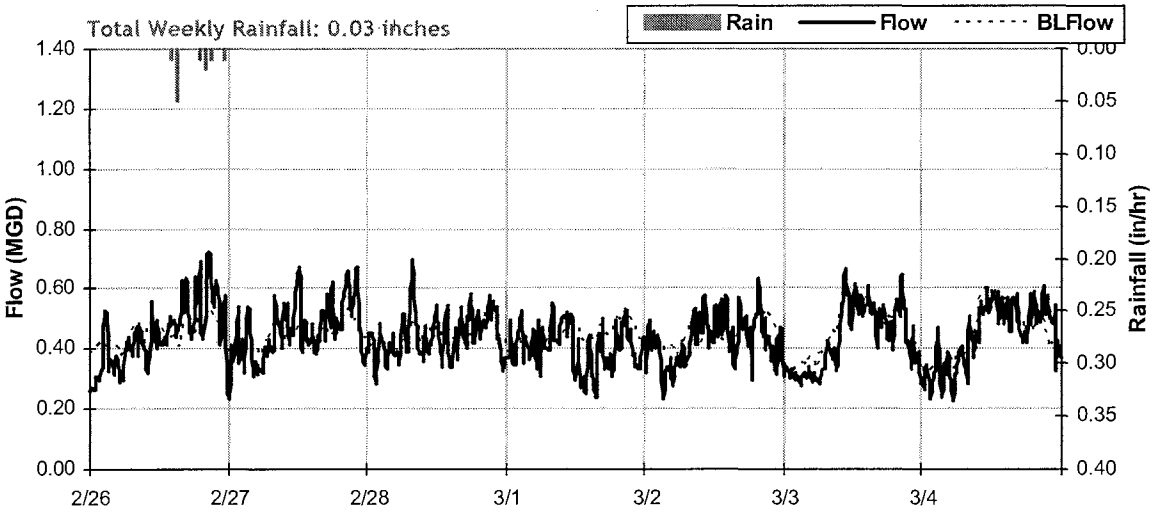
V&A

Level, Velocity and Flow
From 2/26/2007 to 3/5/2007

Monitoring Site:
Site A South



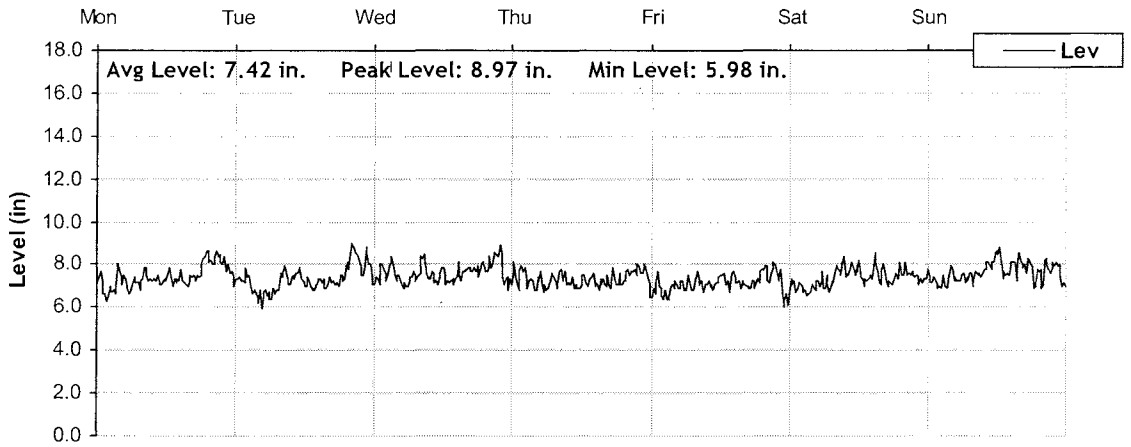


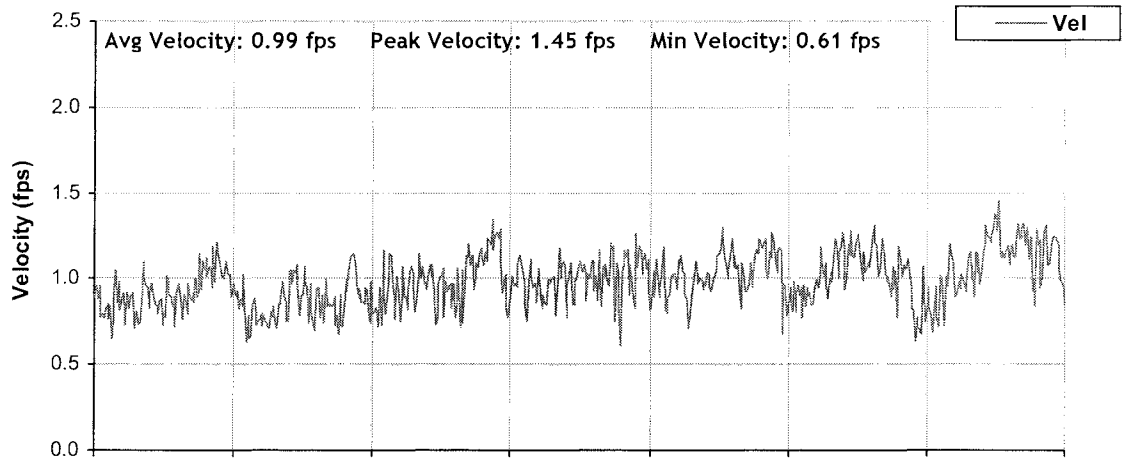


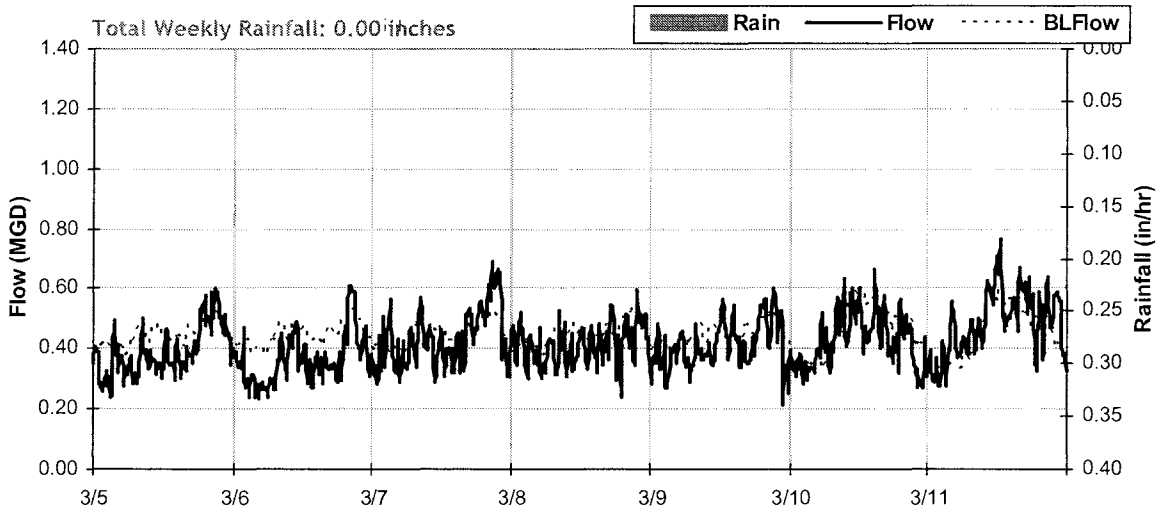
Avg Flow: 0.44 MGD Peak Flow: 0.72 MGD Min Flow: 0.22 MGD

Level, Velocity and Flow
From 3/5/2007 to 3/12/2007

Monitoring Site:
Site A South





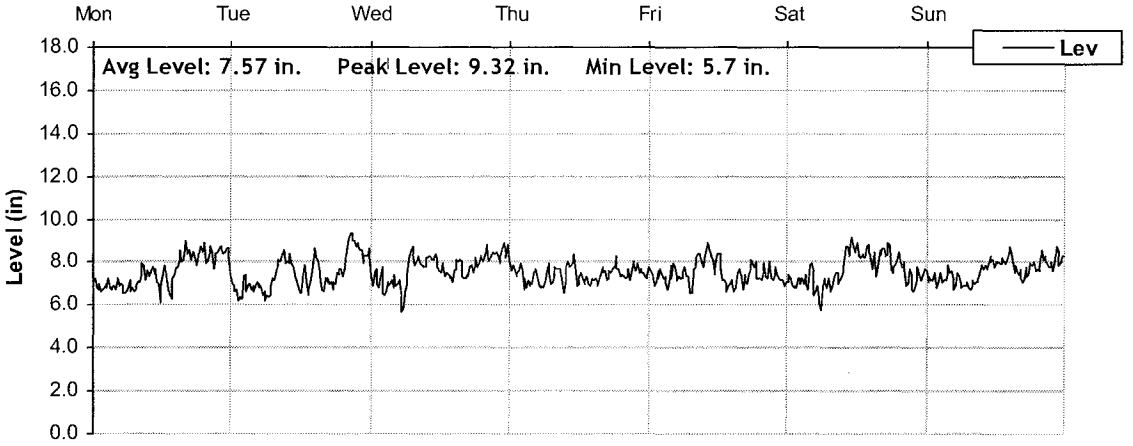


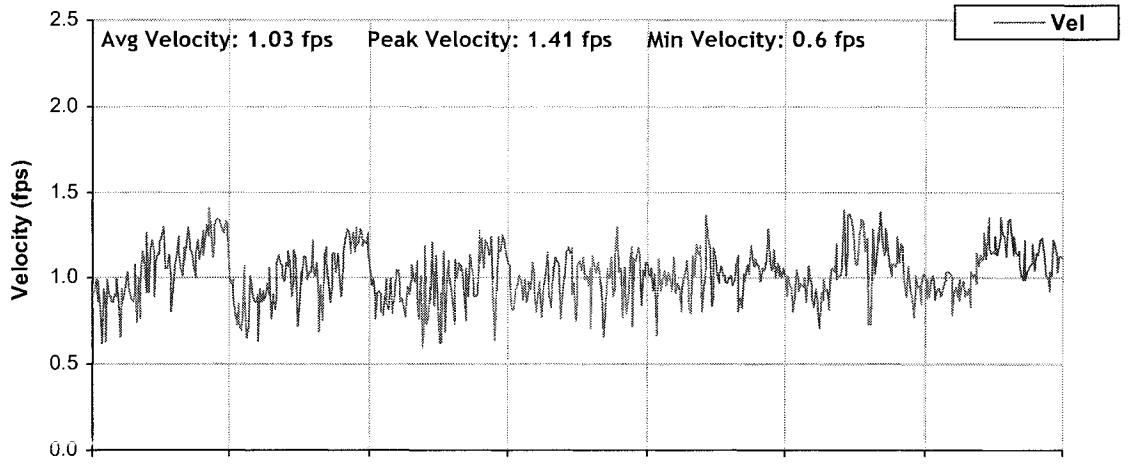
Avg Flow: 0.42 MGD Peak Flow: 0.77 MGD Min Flow: 0.21 MGD

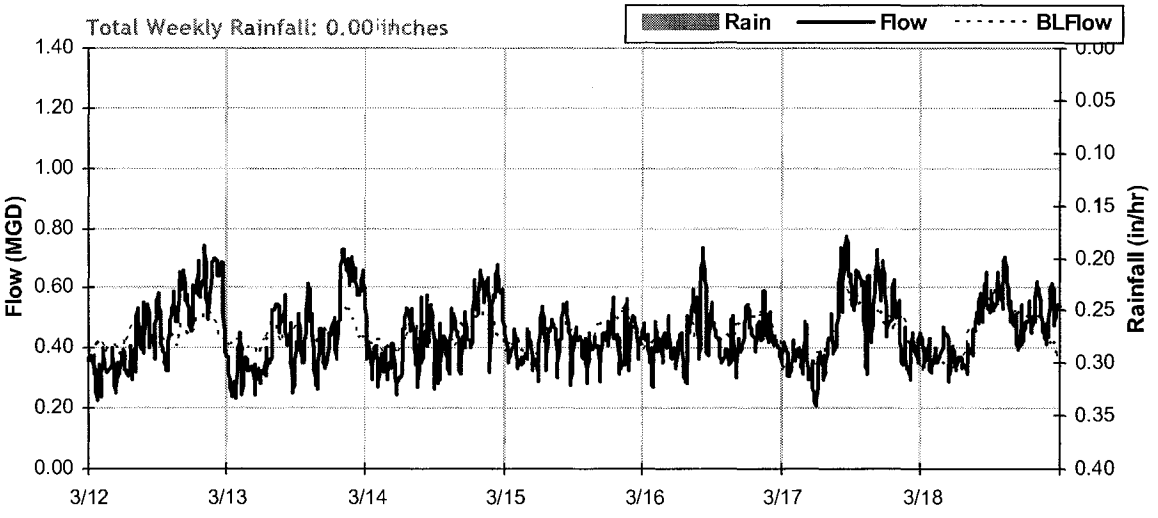
V&A

Level, Velocity and Flow
From 3/12/2007 to 3/19/2007

Monitoring Site:
Site A South





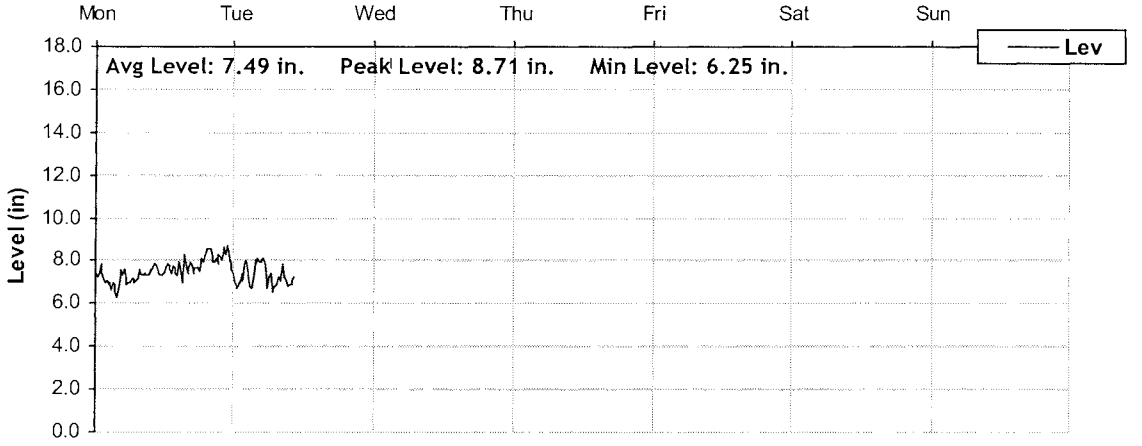


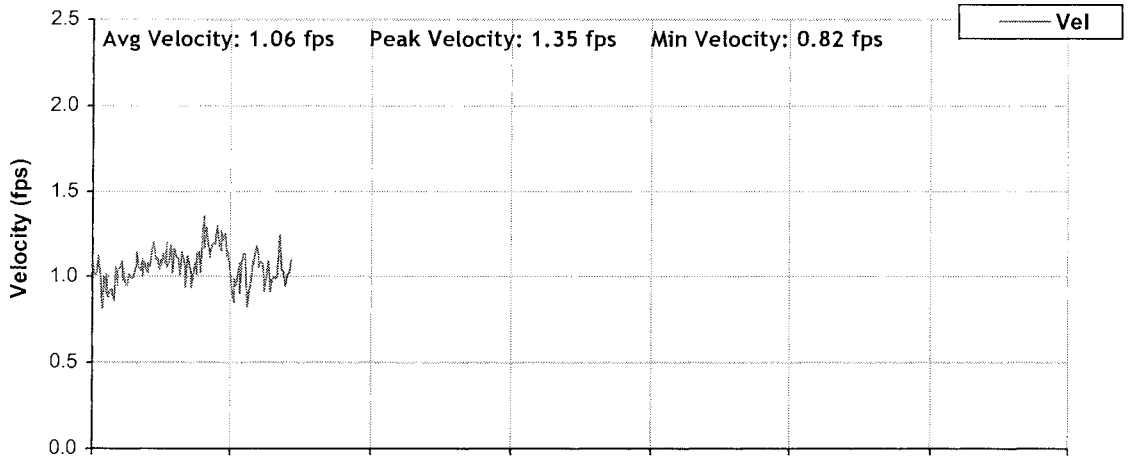
Avg Flow: 0.45 MGD Peak Flow: 0.77 MGD Min Flow: 0.21 MGD

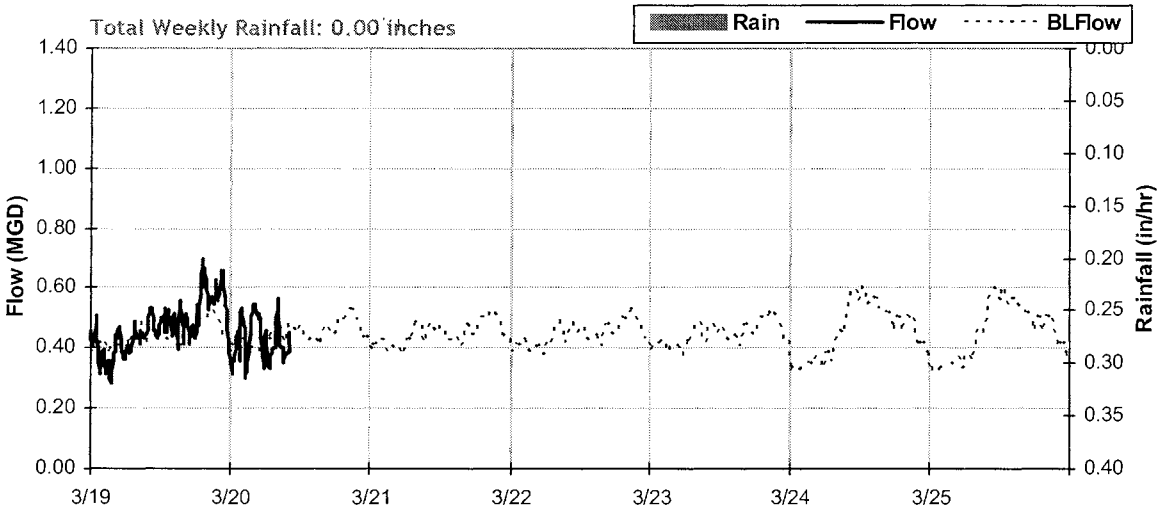
V&A

Level, Velocity and Flow
From 3/19/2007 to 3/26/2007

Monitoring Site:
Site A South







Avg Flow: 0.45 MGD Peak Flow: 0.69 MGD Min Flow: 0.28 MGD

V&A

Temporary Flow Monitoring Study

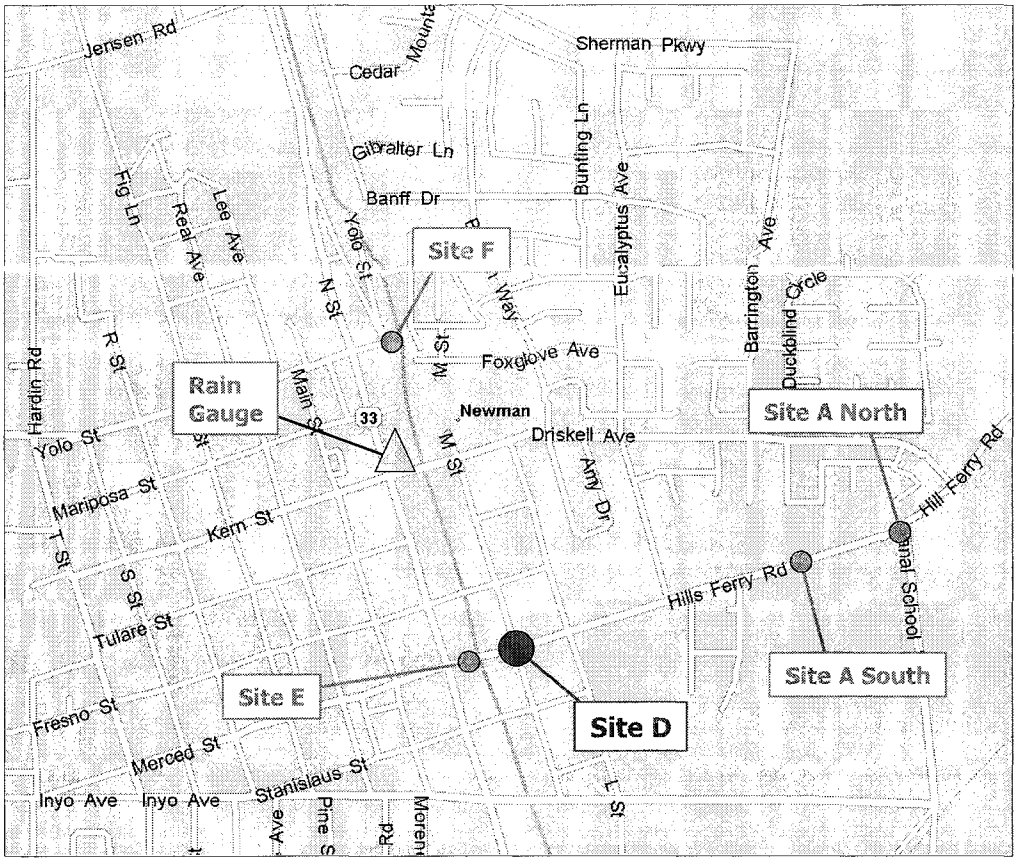
Sanitary Sewer Collection System

Monitoring Site: Site D

Manhole Address: Merced Street at M Street

Size/Type of Line: 12-inch Sanitary Sewer Pipe

Data Summary Report



V&A

Site Information Report

Monitoring Site: Site D

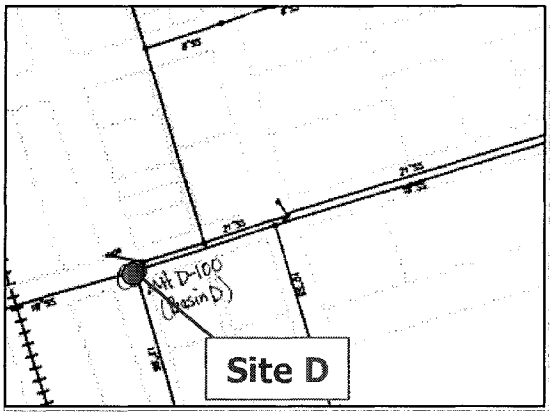
Location: Merced Street at M Street

Diameter: 12 inches

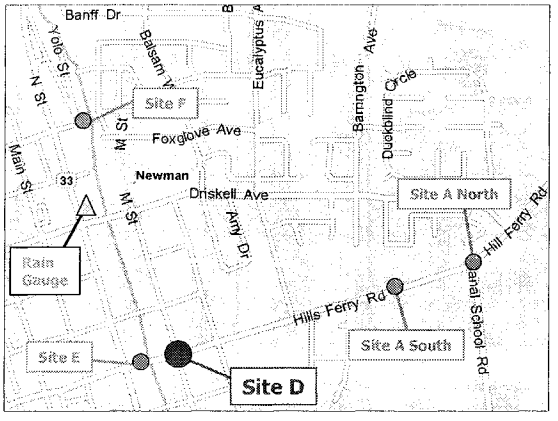
Average Dry Weather Flow: 0.197 *MGD*

Peak Measured Flow: 0.480 *MGD*

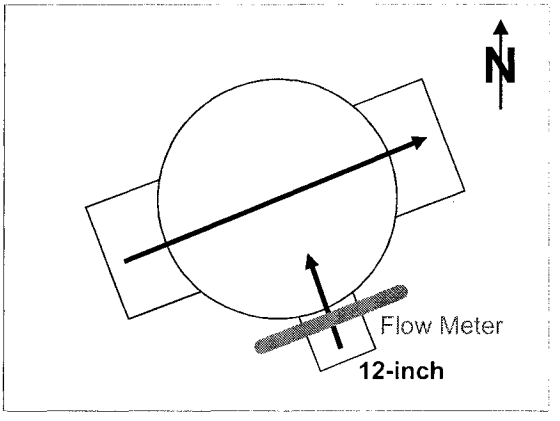
Sanitary sewer map:



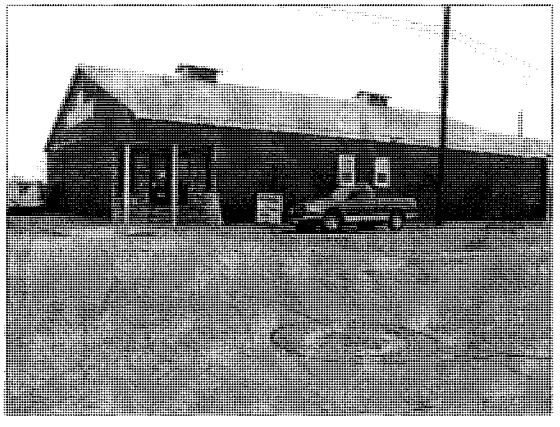
Street map:



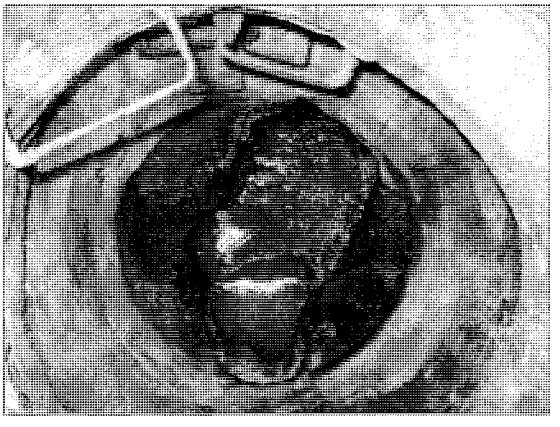
Flow sketch:



Street-level photo:



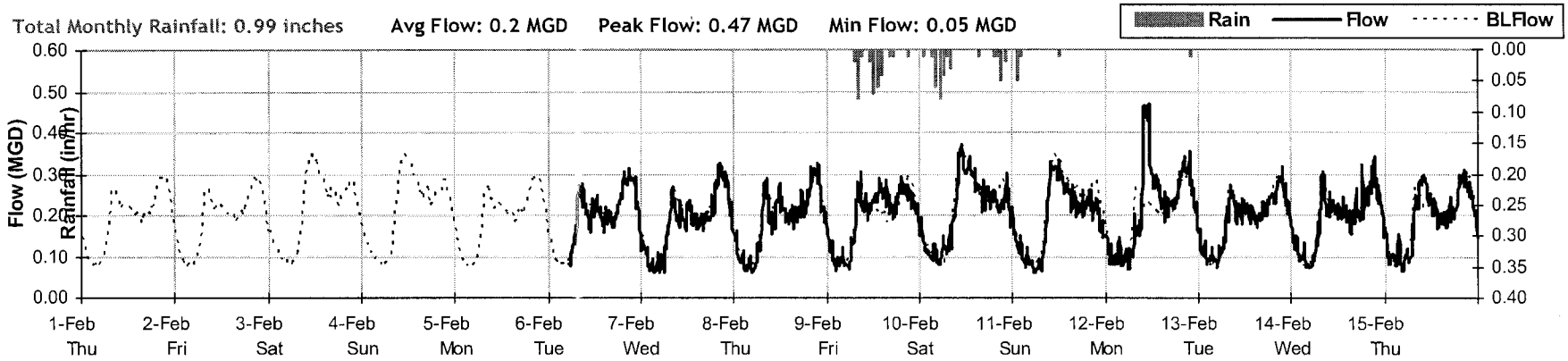
Plan view photo:

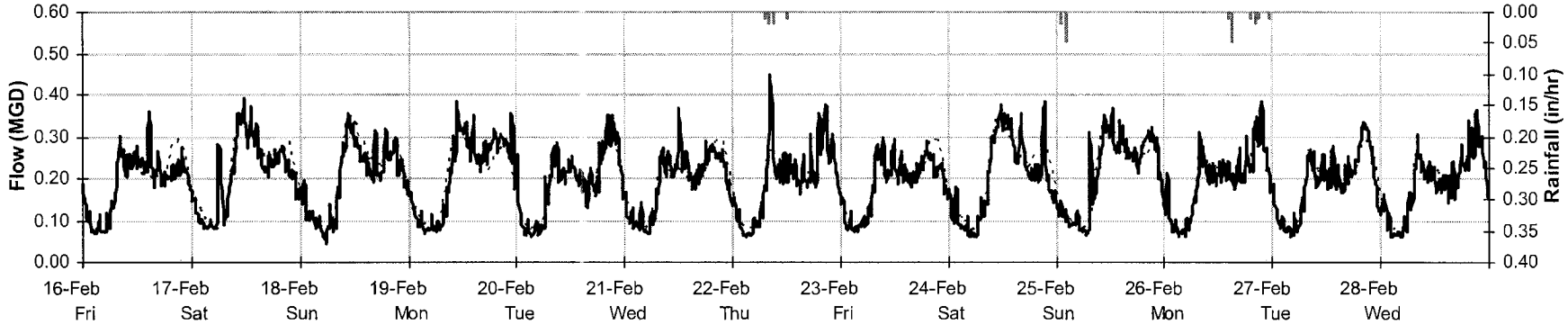


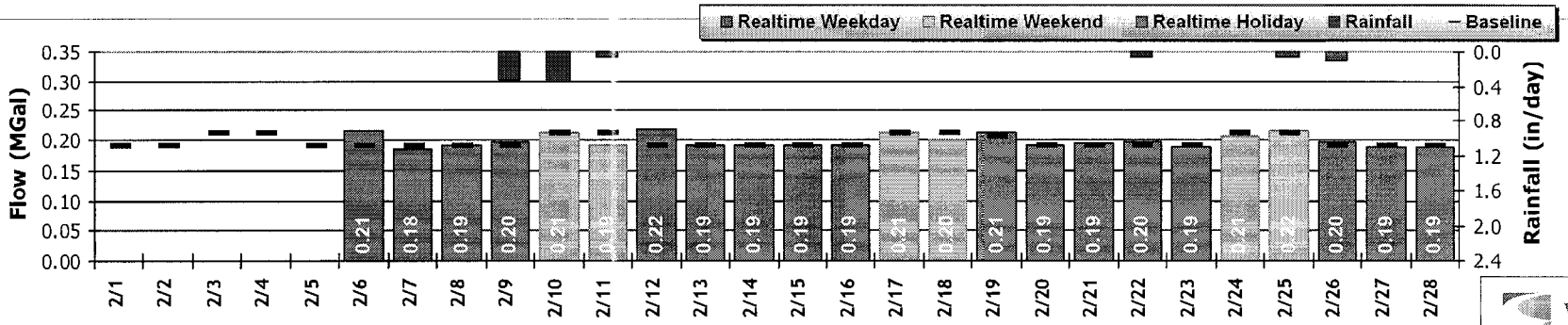
Monthly Flow Summary
February, 2007

Monitoring Site:
Site D

Total Monthly Rainfall: 0.99 inches Avg Flow: 0.2 MGD Peak Flow: 0.47 MGD Min Flow: 0.05 MGD





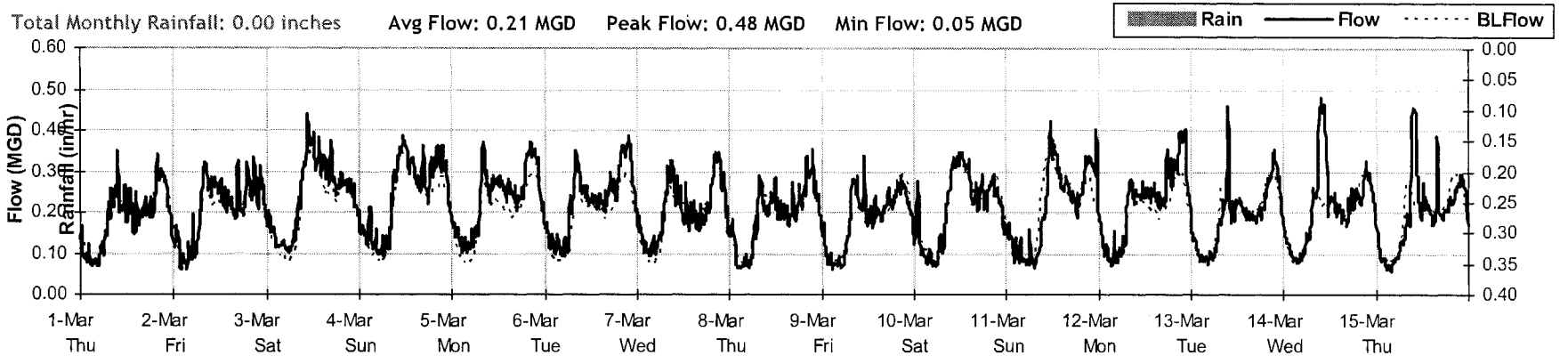


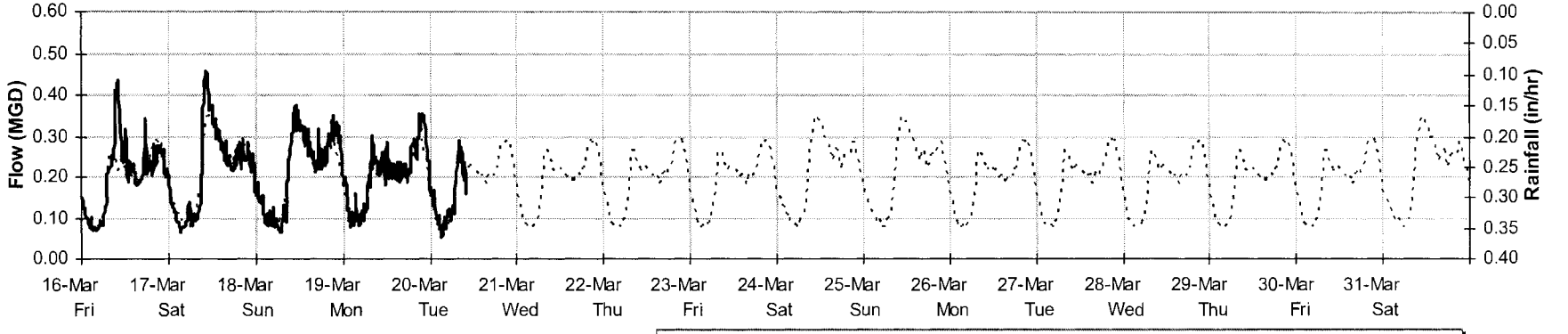
V&A

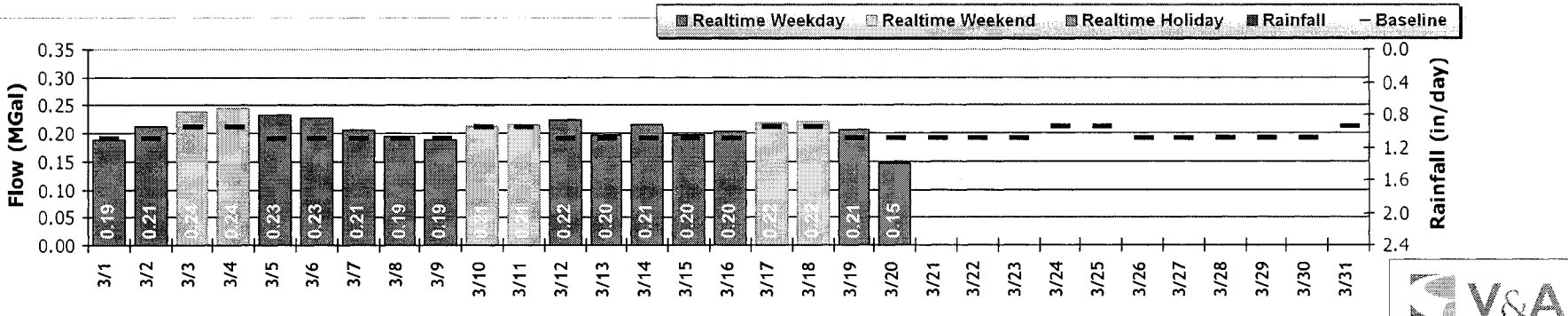
Monthly Flow Summary
March, 2007

Monitoring Site:
Site D

Total Monthly Rainfall: 0.00 inches Avg Flow: 0.21 MGD Peak Flow: 0.48 MGD Min Flow: 0.05 MGD



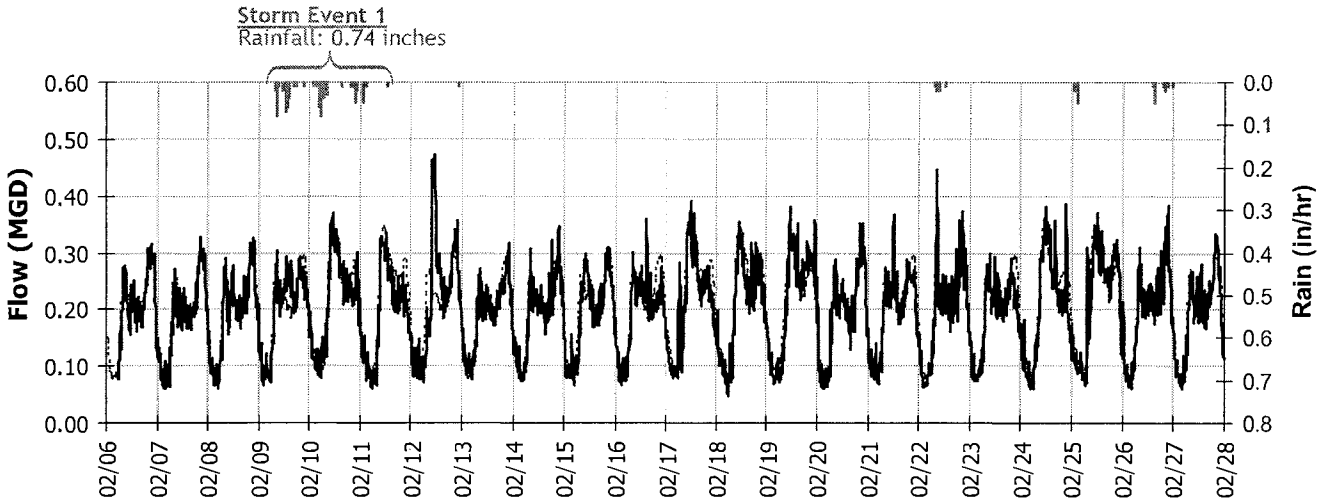




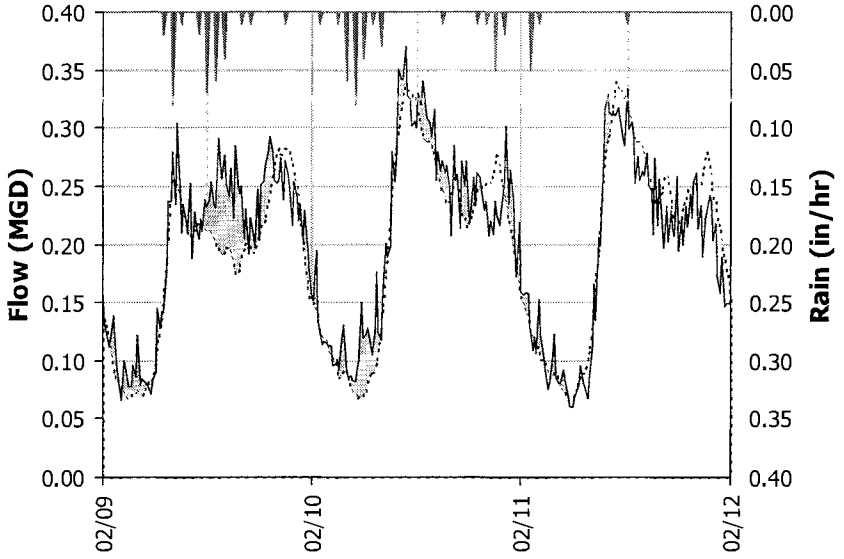
I/I Summary

Monitoring Site:
Site D

Baseline, Realtime, and I/I Flows over Monitoring Period:



Storm Event #1 Detail I/I Graph



Storm Event #1 I/I Analysis

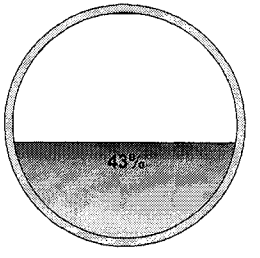
Rainfall:	0.74	*inches*
Peak Flow:	0.37	*MGD*
Peak I/I Rate:	0.10	*MGD*
PF:	1.88	
Pk I/I:ADWF:	0.52	
Peak Level:	6.00	*inches*
d/D Ratio:	0.50	
Total I/I:	26,000	*gallons*
R-Value:	0.6	*%*
IDM Analysis:	700	*gal/in-rain/IDM*

V&A

Average Dry Weather Flow

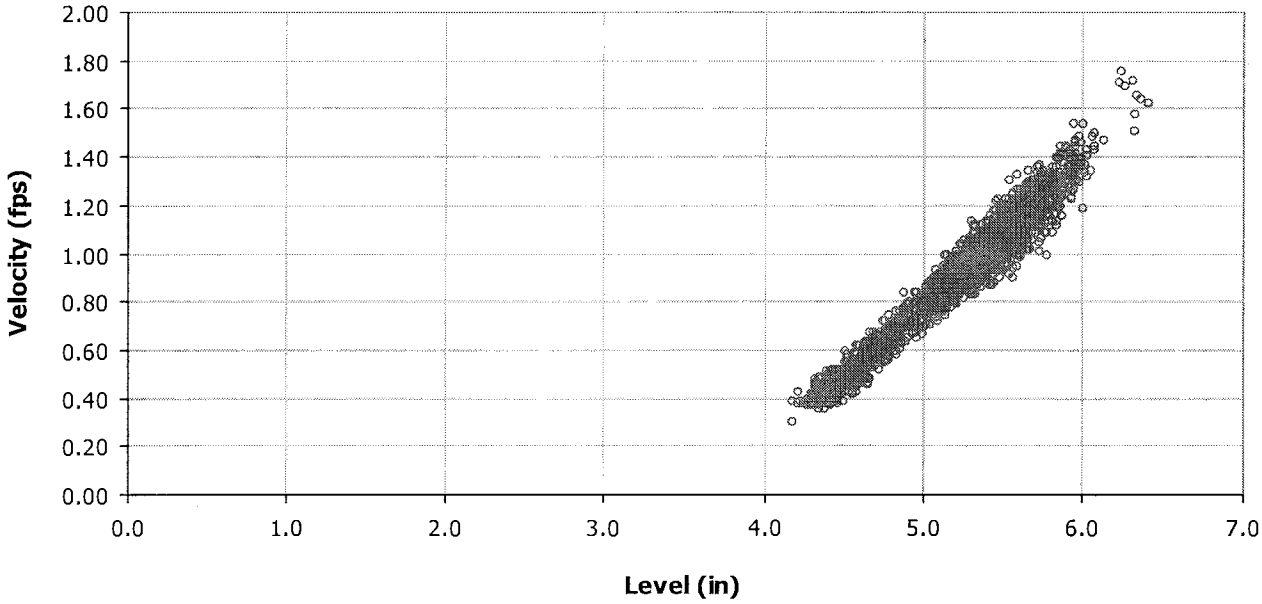
Monitoring Site:
Site D

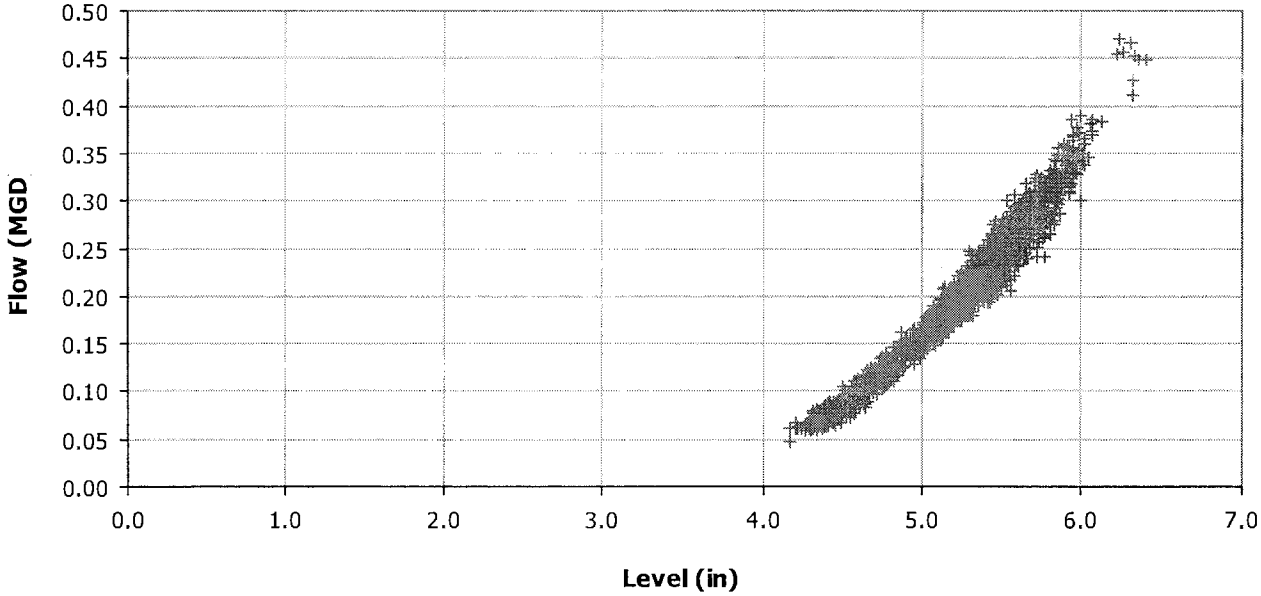
Average Dry Weather Flow:
0.20 *MGD*



V&A

	Scatter Plots (Flow, Velocity vs. Depth)	**Monitoring Site:** Site D

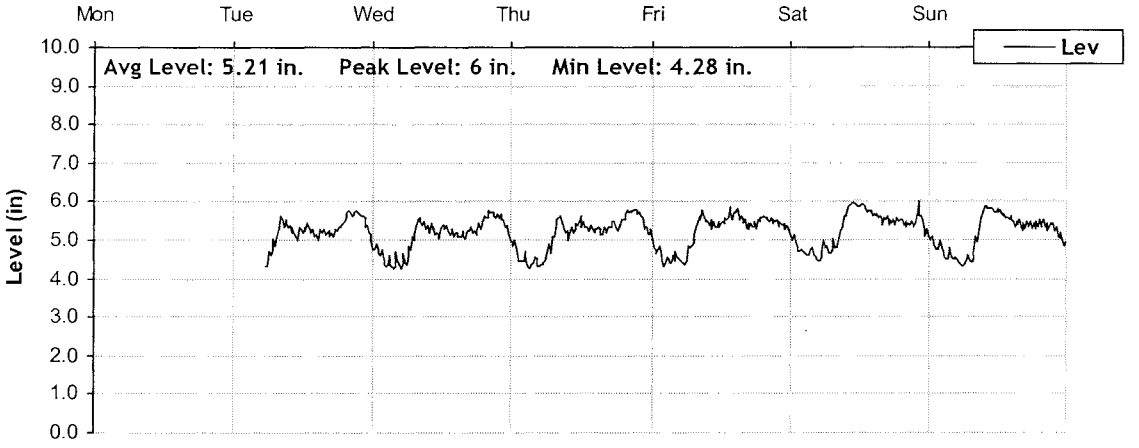


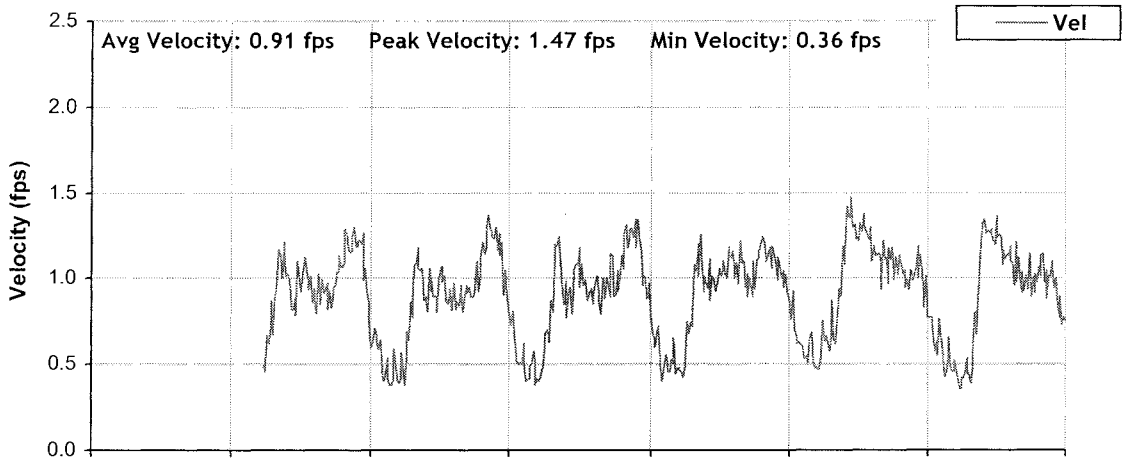


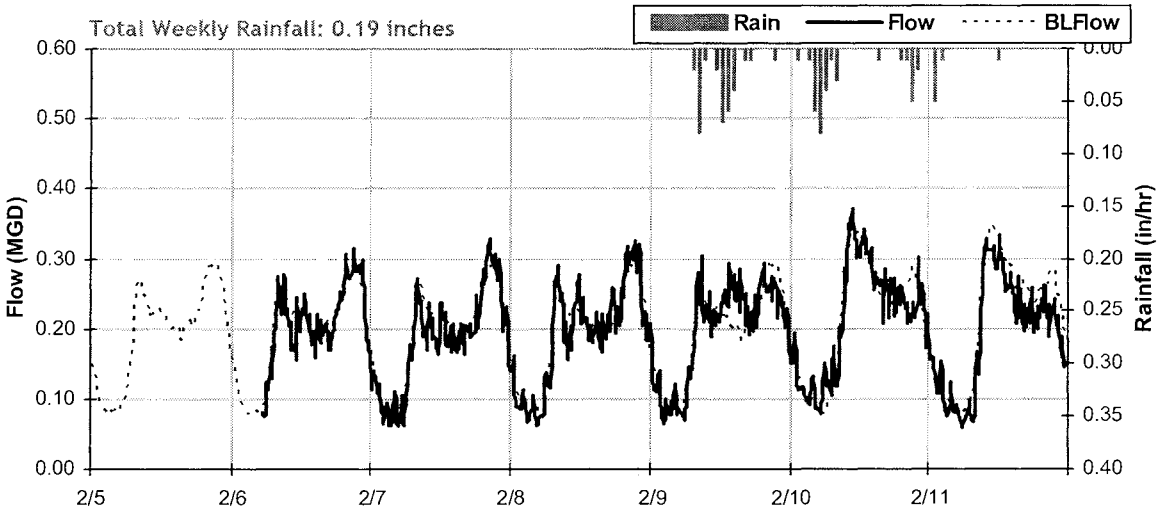
V&A

Level, Velocity and Flow
From 2/5/2007 to 2/12/2007

Monitoring Site:
Site D





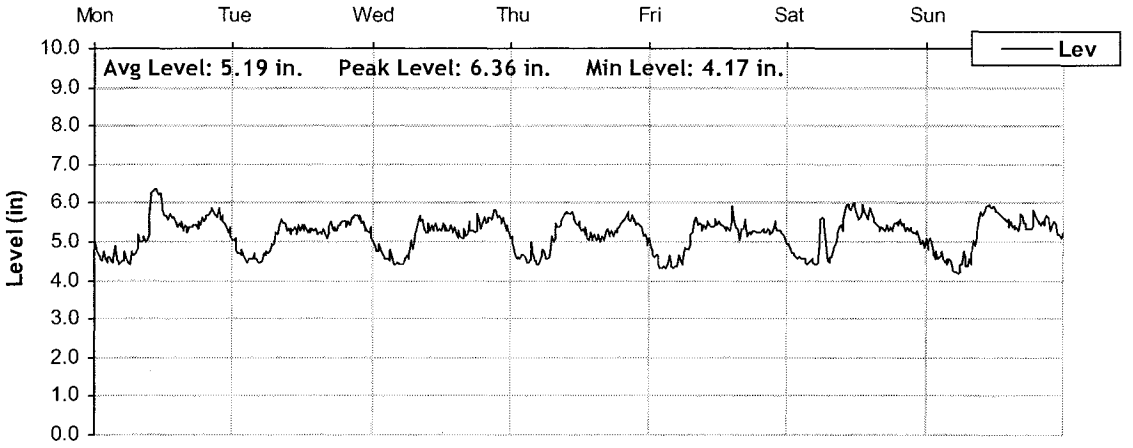


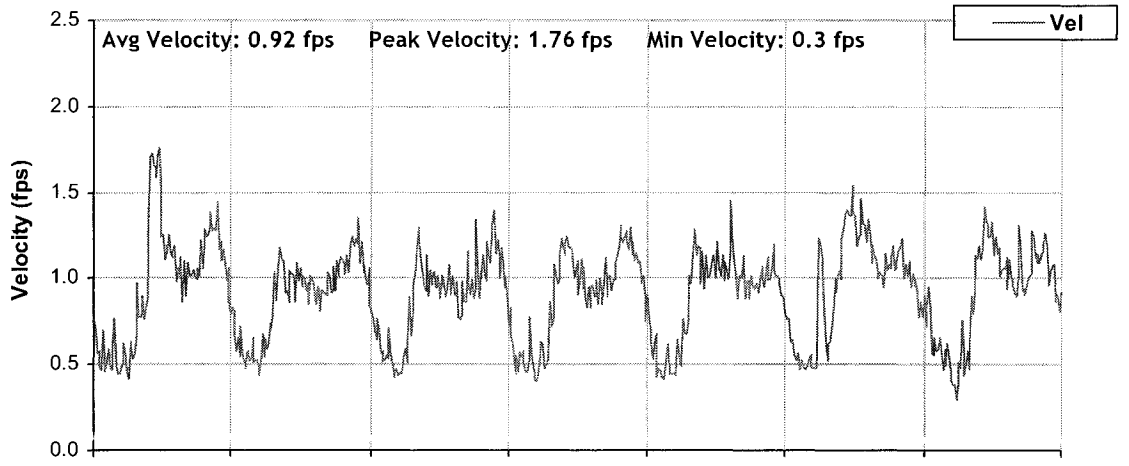
Avg Flow: 0.2 MGD Peak Flow: 0.37 MGD Min Flow: 0.06 MGD

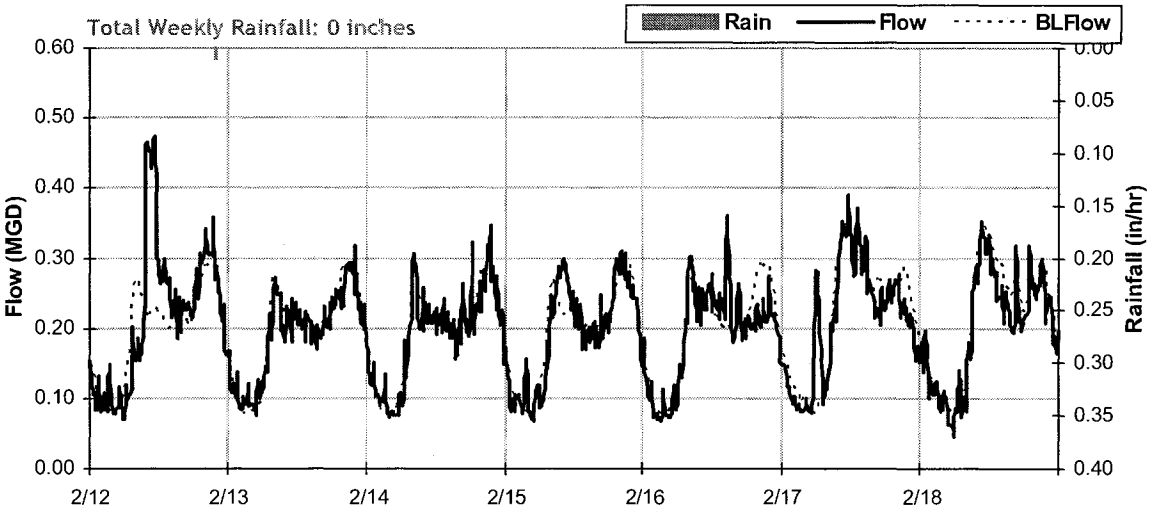
V&A

Level, Velocity and Flow
From 2/12/2007 to 2/19/2007

Monitoring Site:
Site D





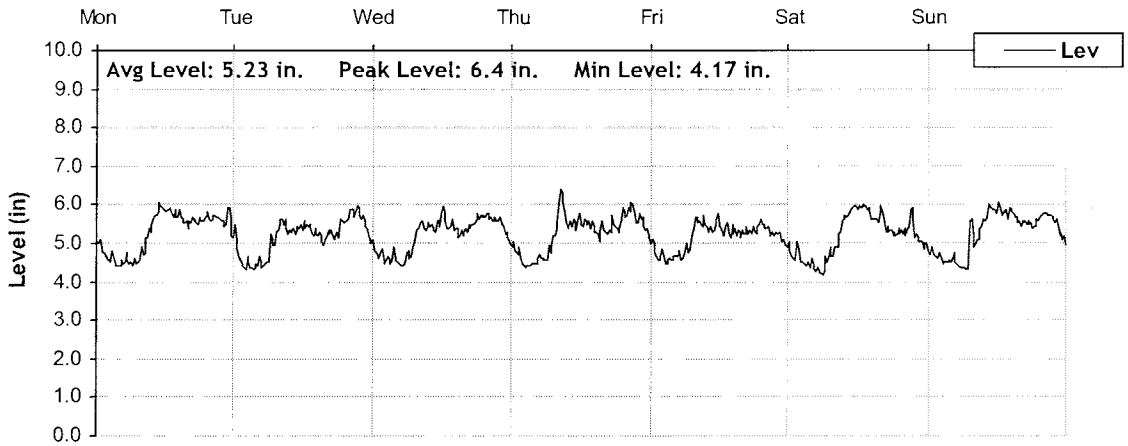


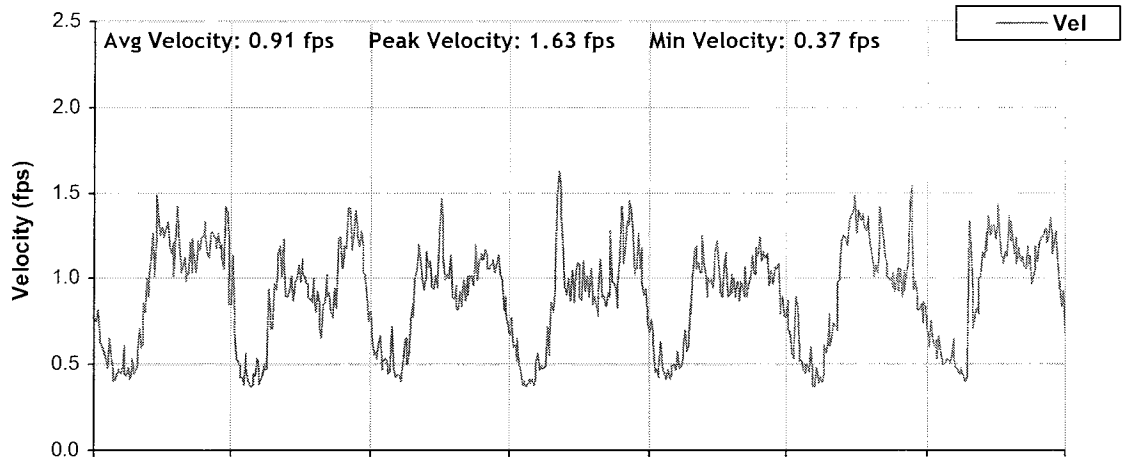
Avg Flow: 0.2 MGD Peak Flow: 0.47 MGD Min Flow: 0.05 MGD

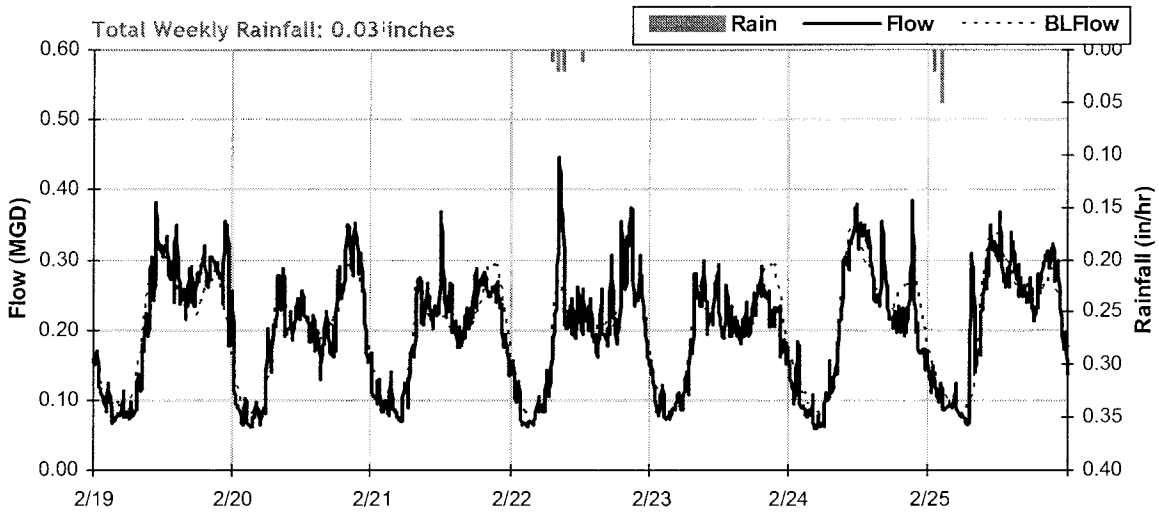
V&A

Level, Velocity and Flow
From 2/19/2007 to 2/26/2007

Monitoring Site:
Site D





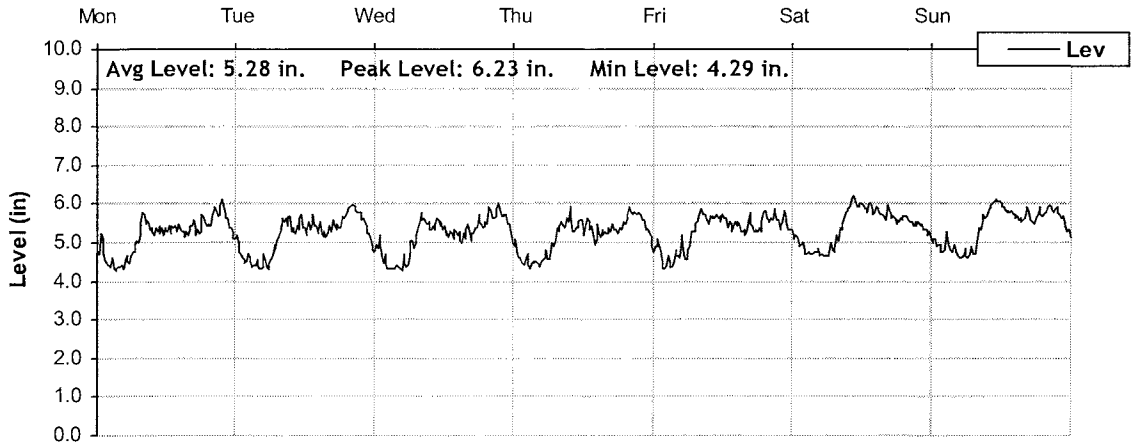


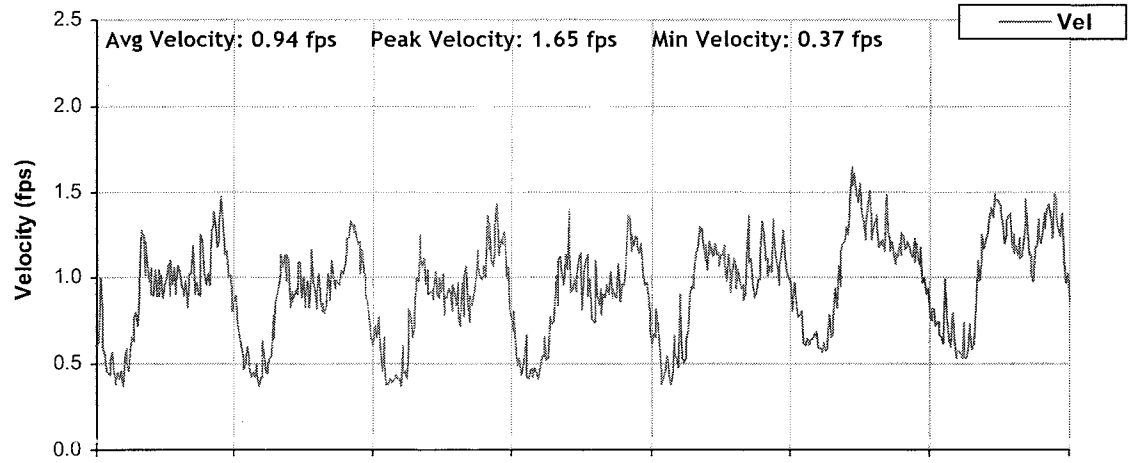
Avg Flow: 0.2 MGD Peak Flow: 0.45 MGD Min Flow: 0.06 MGD

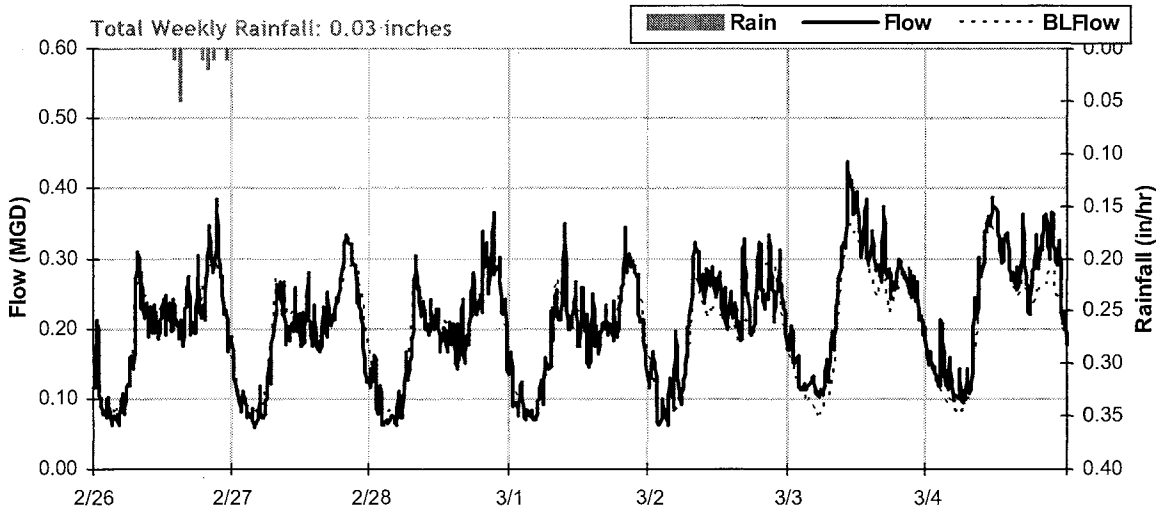
V&A

Level, Velocity and Flow
From 2/26/2007 to 3/5/2007

Monitoring Site:
Site D





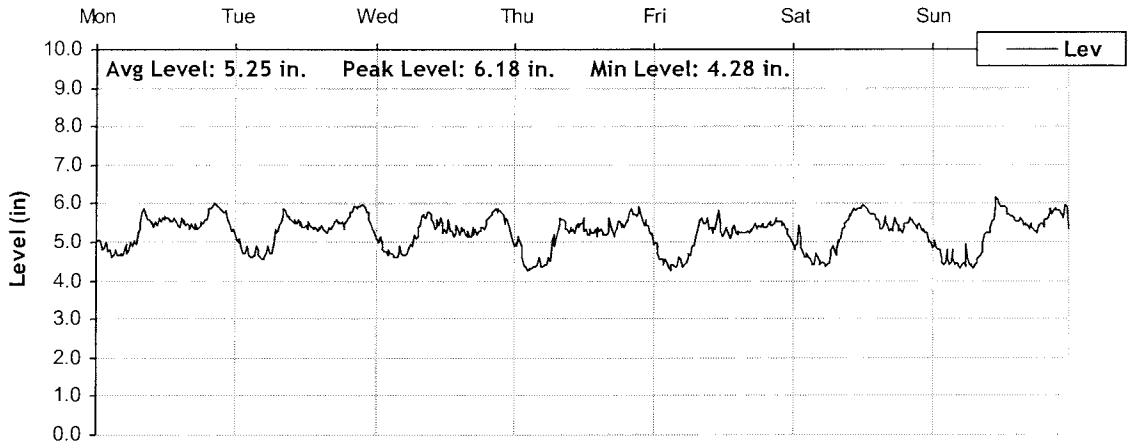


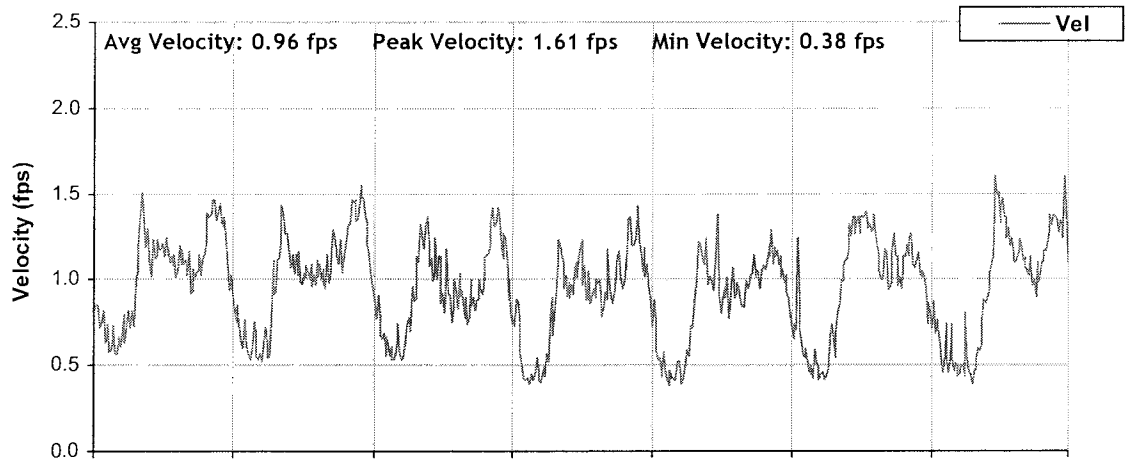
Avg Flow: 0.21 MGD Peak Flow: 0.44 MGD Min Flow: 0.06 MGD

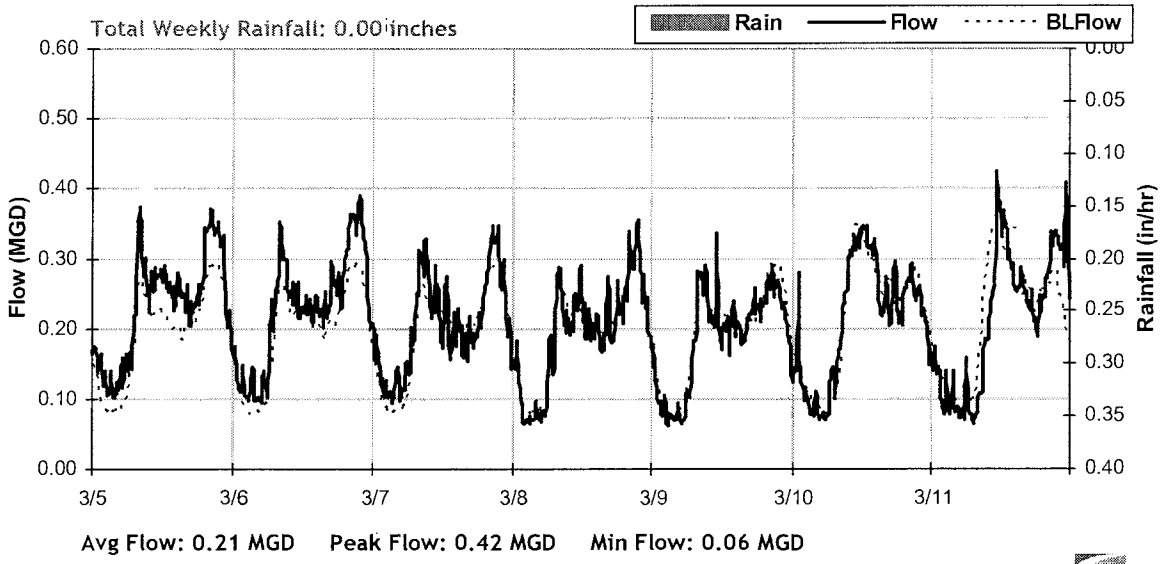
V&A

Level, Velocity and Flow
From 3/5/2007 to 3/12/2007

Monitoring Site:
Site D



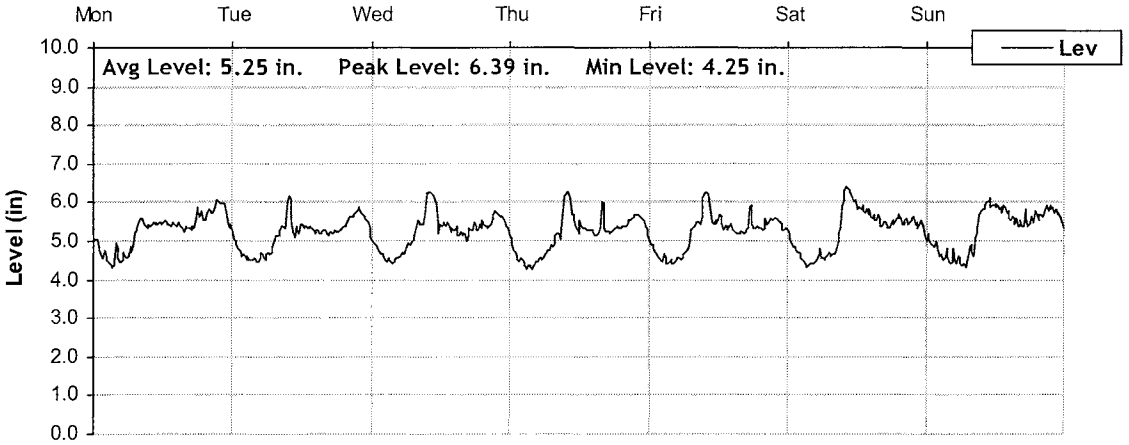


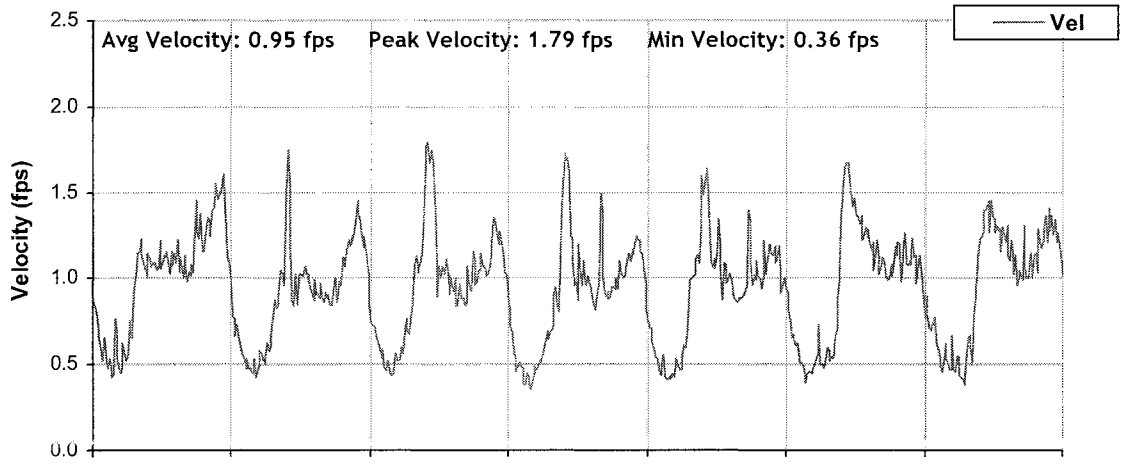


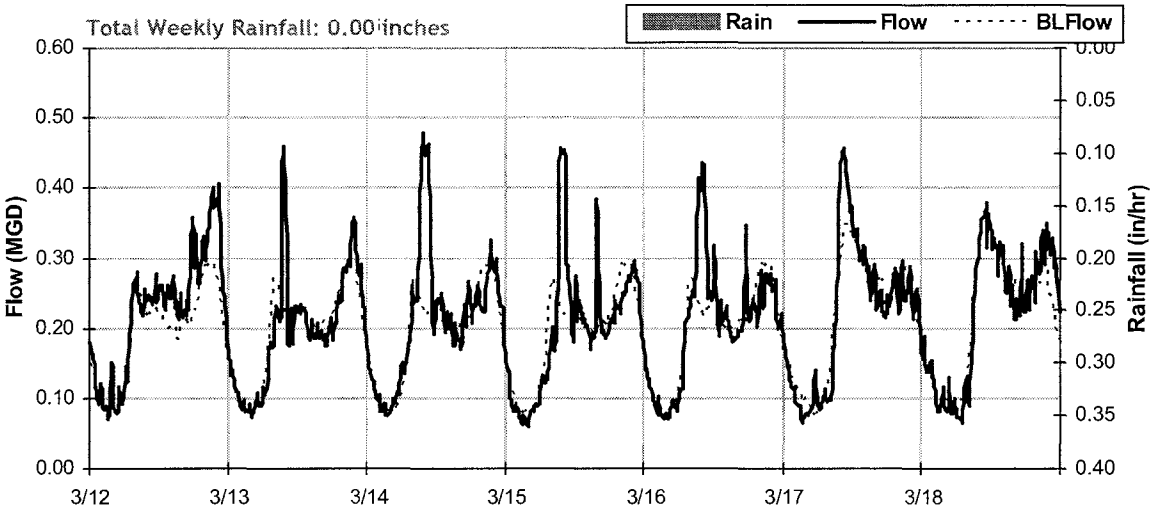
V&A

Level, Velocity and Flow
From 3/12/2007 to 3/19/2007

Monitoring Site:
Site D







Avg Flow: 0.21 MGD Peak Flow: 0.48 MGD Min Flow: 0.06 MGD

V&A

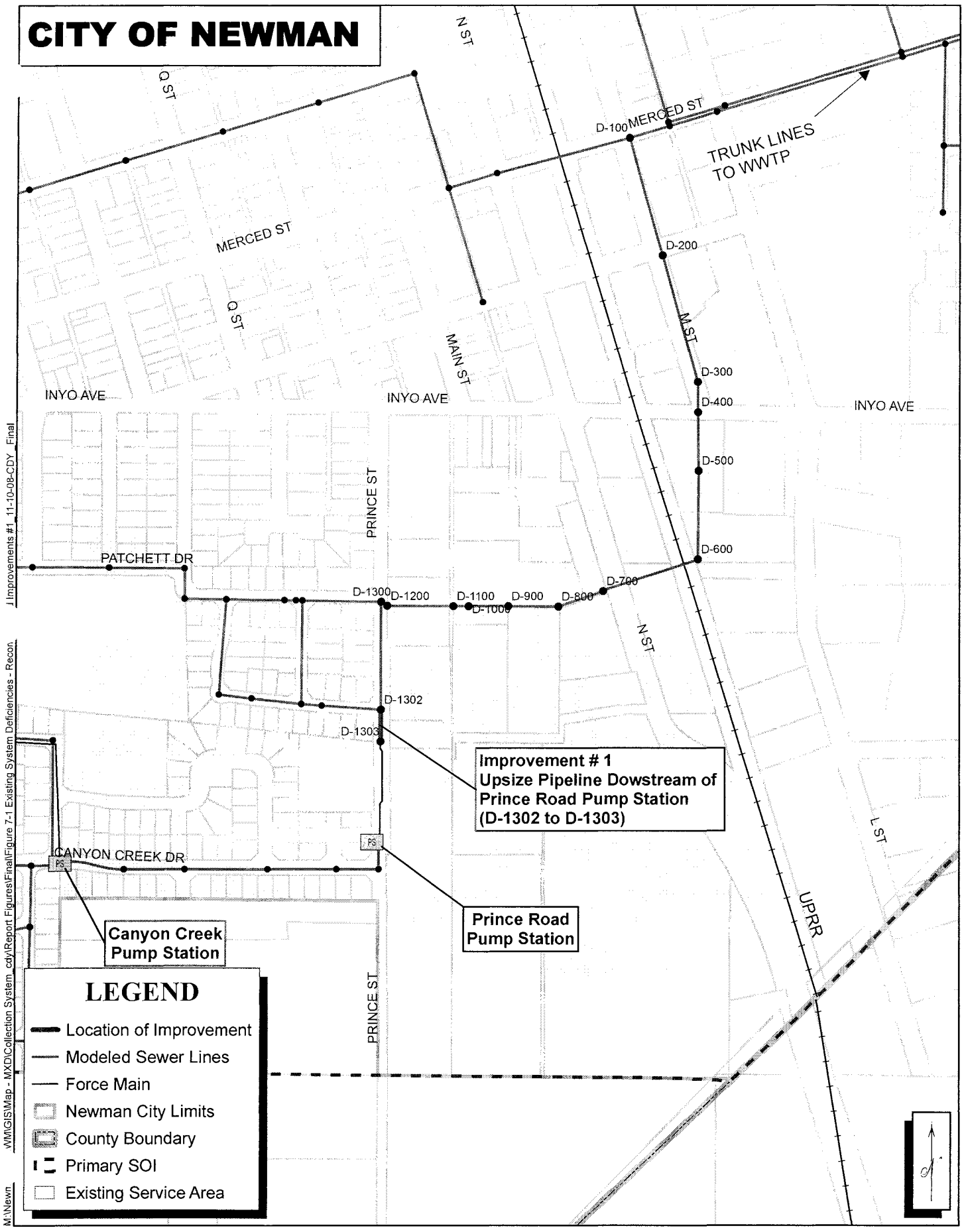


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Figure 7-1
Existing System Deficiencies - Recommended Improvement #1

RECOMMENDED IMPROVEMENT #2 – RELIEF LINE AT YANCEY PUMP STATION

During modeled simulations, flow from the discharge of the outfall of the Sherman Parkway and Hills Ferry Pump Station force main enters the Yancey Pump Station overflow/relief line. This results in excessive pumping at the Yancey Pump Station and surcharging, which exceeds capacity criteria identified in Table 6-1, of the manhole at the discharge of the Yancey Pump Station force main (manhole A-103). To alleviate this condition, it is recommended that a 12-inch flap gate be installed at the discharge of the relief line at manhole A-103. The flap gate would prevent flow from entering the overflow line, while allowing the overflow line to discharge into the downstream sewer. The location of this improvement is shown in Figure 7-2.

Recommended Improvements #1 and #2 are summarized in Table 7-1. As noted, it is highly recommended that improvements be implemented only subsequent to the surveying described in Table 7-1.

Table 7-1
City of Newman
Summary of Recommended Improvements for Existing System Deficiencies at Build-out of the City Limits

Development Scenario	Priority	Suggested Improvement	Purpose
Existing System through Build-out of City Limits – 10-year, 6-hour Design Storm	1	Survey invert elevation of Yancey Pump Station overflow line at manhole A-103 and survey manhole D-1302	To confirm invert elevation used in model (originally from as-built drawings)
	2	Upsize the pipe segment from manhole D-1303 to D-1302 from 6-inches to 8-inches diameter	To increase capacity and reduce manhole surcharging to within acceptable limits
	2	Install a 12-inch flap gate at the end of the Yancey Pump Station overflow line (manhole A-103)	To prevent flow from the discharge of the Sherman Parkway and Hills Ferry Road Pump Station from entering the Yancey Pump Station overflow line

7.3 CAPITAL IMPROVEMENT PROJECTS

The following section outlines strategies to accommodate future development areas in the Primary and Secondary SOIs, which may require interim solutions for collecting wastewater prior to construction of new large trunk sewers. In addition, this section proposes routing plans for new trunk lines to provide long-term service for the ultimate build-out of the Primary and Secondary SOIs.

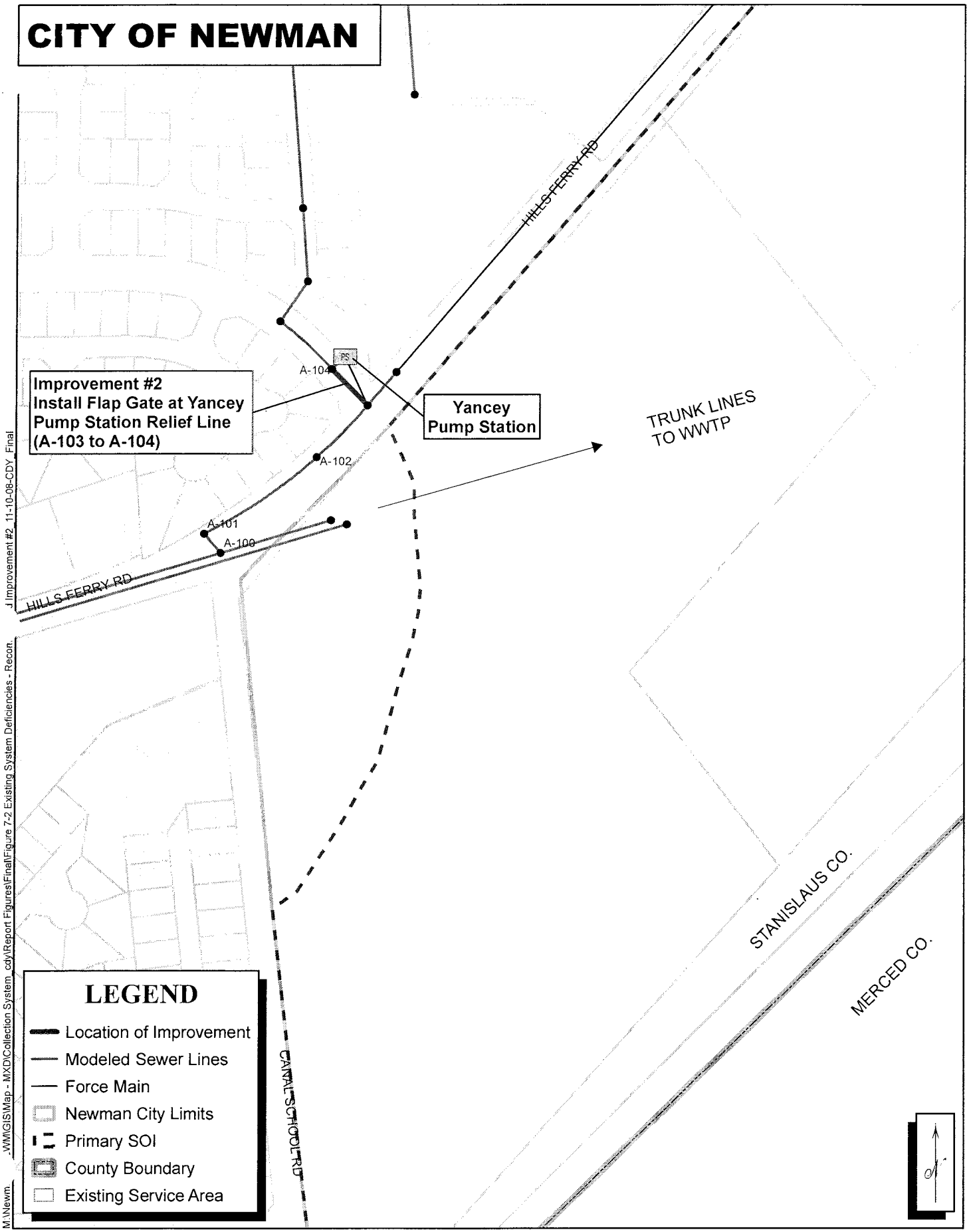

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Figure 7-2
Existing System Deficiencies - Recommended Improvement #2

7.3.1 INTERIM CAPACITY PLAN

Through the modeling process, it was determined that the City of Newman's existing wastewater collection system does not have the capacity to handle wastewater flows from build-out of the Primary and Secondary SOIs. Serving all of these areas will require the construction of two large trunk sewers. Building large trunk sewers involves long-term planning, which makes these sewers unavailable to development occurring within the next few years.

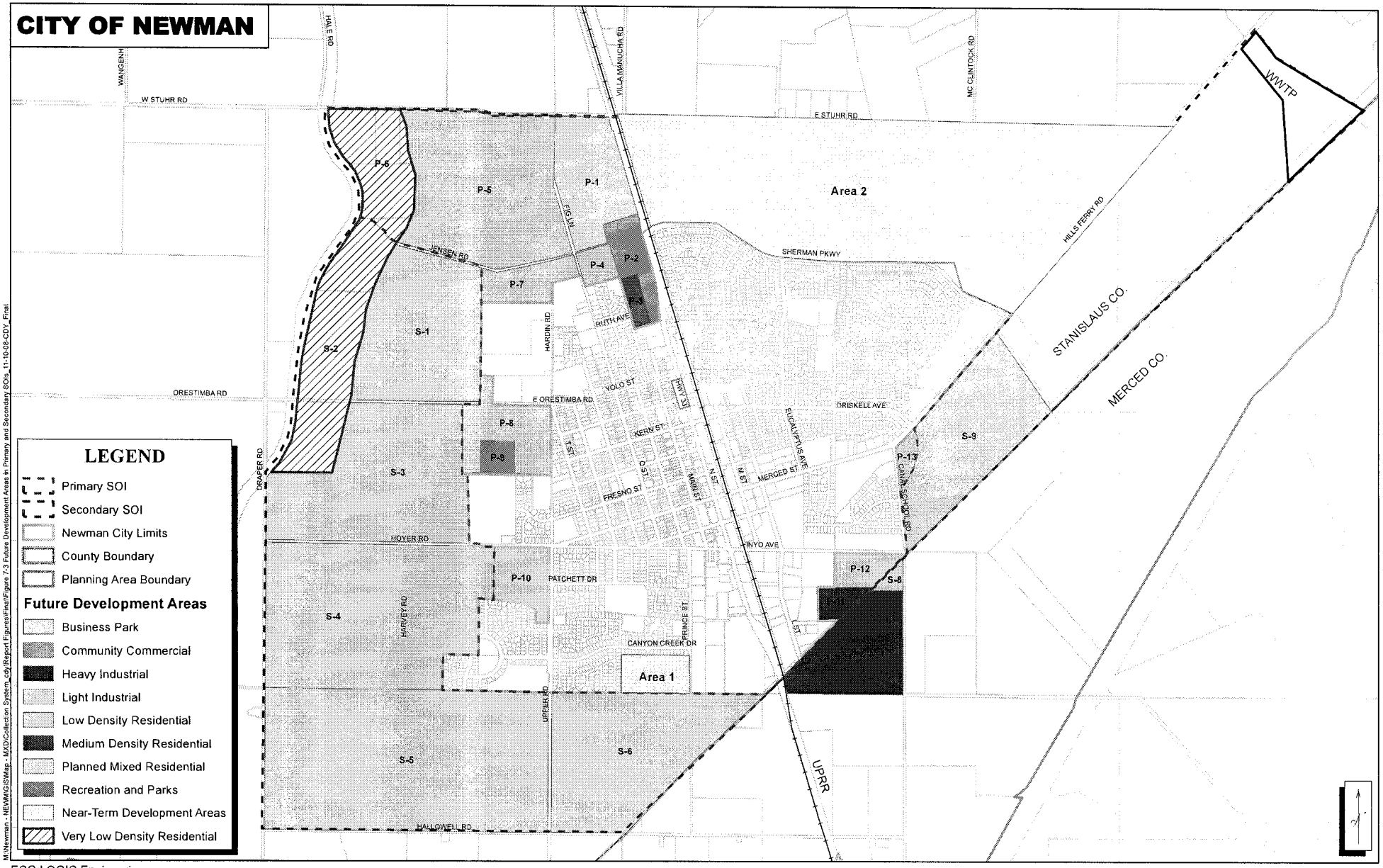
This section outlines interim solutions for serving near-term development with existing infrastructure. Examples of development within the Primary and Secondary Spheres of Influence, which may develop within 3 to 5 years, are identified in Chapter 6 as Areas 1 and 2. Specific interim solutions for these areas are discussed. All the interim solutions provided in this section assume that the existing system deficiency improvements identified in Section 7.2 have been completed.

Some future development areas within the Primary SOI that may require interim capacity are shown in Figure 7-3. These areas are incorporated in the Long-Term System Needs (Section 7.3.2), but depending on the timing of the development, interim solutions may be needed prior to construction of large trunk sewers. To serve peak flow from future developments, the available capacity, as well as the most capacity limited pipelines for each major route, is shown in Figure 7-4. The capacity shown is available for interim use by future development, including Area 1 and Area 2. As noted above, it was assumed that the improvements recommended in Table 7-1 were implemented. To confirm available capacity, it is recommended that prior to allowing developments to connect to the existing system, a more detailed analysis and surveying be performed of the impacted pipelines.

The available capacity shown in Figure 7-4 is expressed in terms of equivalent dwelling units (EDUs). An EDU is a normalized value representing the wastewater generation from a single-family residential house in the City of Newman. For instance, an office complex may generate the equivalent amount of wastewater as 17 single family residences. The office complex is then said to be equivalent to 17 EDUs. Peak wastewater flow generated from each of the future development areas was estimated by multiplying the average projected flow by a peaking factor of 2.5. Using this method, the peak flow from one EDU is estimated to be about 536 gallons per day (gpd). Available capacity in collection system (shown in Figure 7-4) was converted from flow to EDUs based on this value.

Area 1

To accommodate Area 1 (located just south of the City Limits) in the existing collection system, the pipe sections from manhole D-1300 to manhole D-100 (approximately 3,027 linear feet) will require upsizing the existing 12-inch diameter pipeline to a 15-inch diameter pipeline. This upsizing will increase pipe capacity and reduce manhole surcharging, relieving the overall capacity issues in this pipeline. The recommended improvements to accommodate Area 1 are shown in Figure 7-5.



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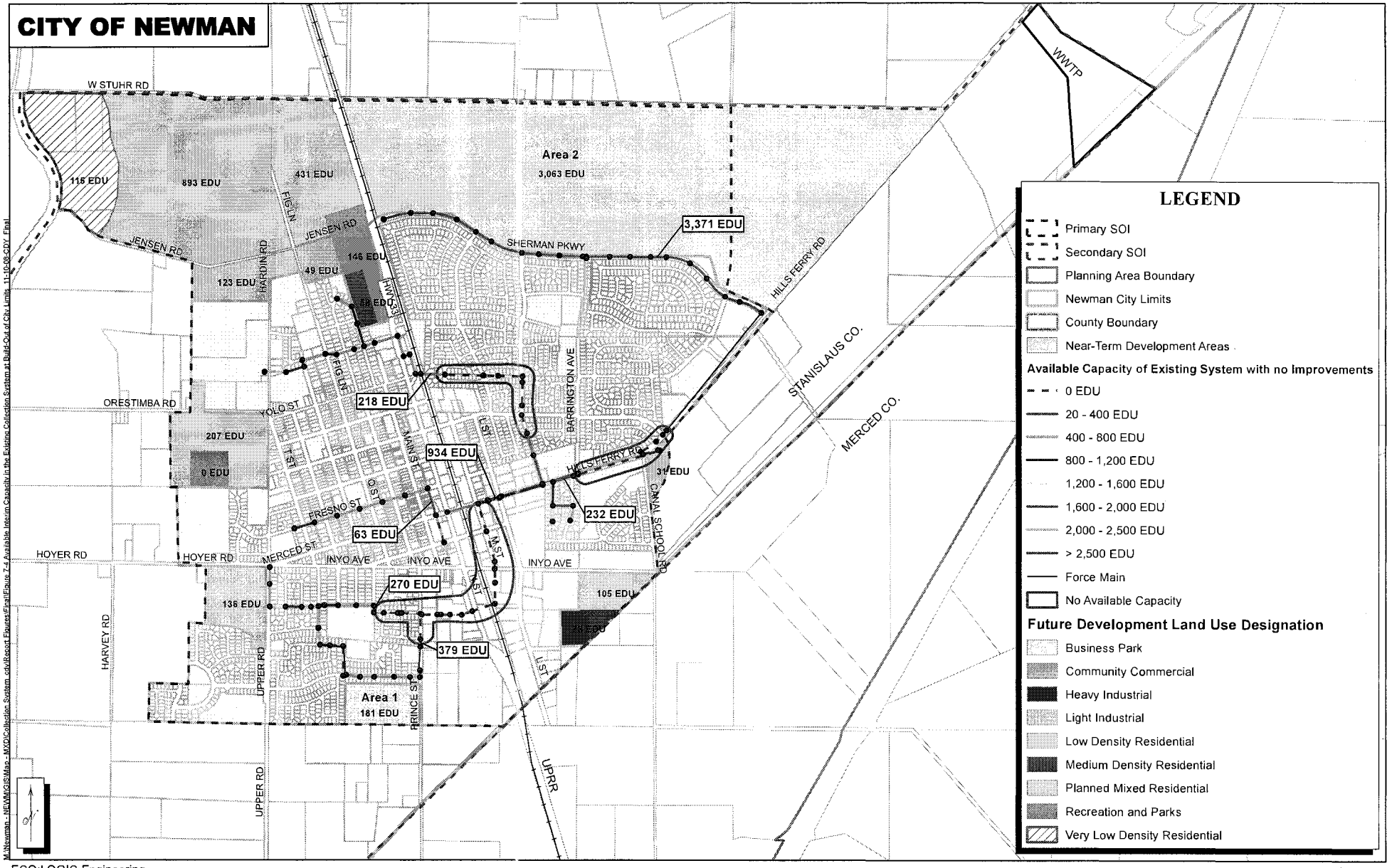
City of Newman Collection System Master Plan

Figure 7-3
Future Development Areas in Primary and Secondary SOIs

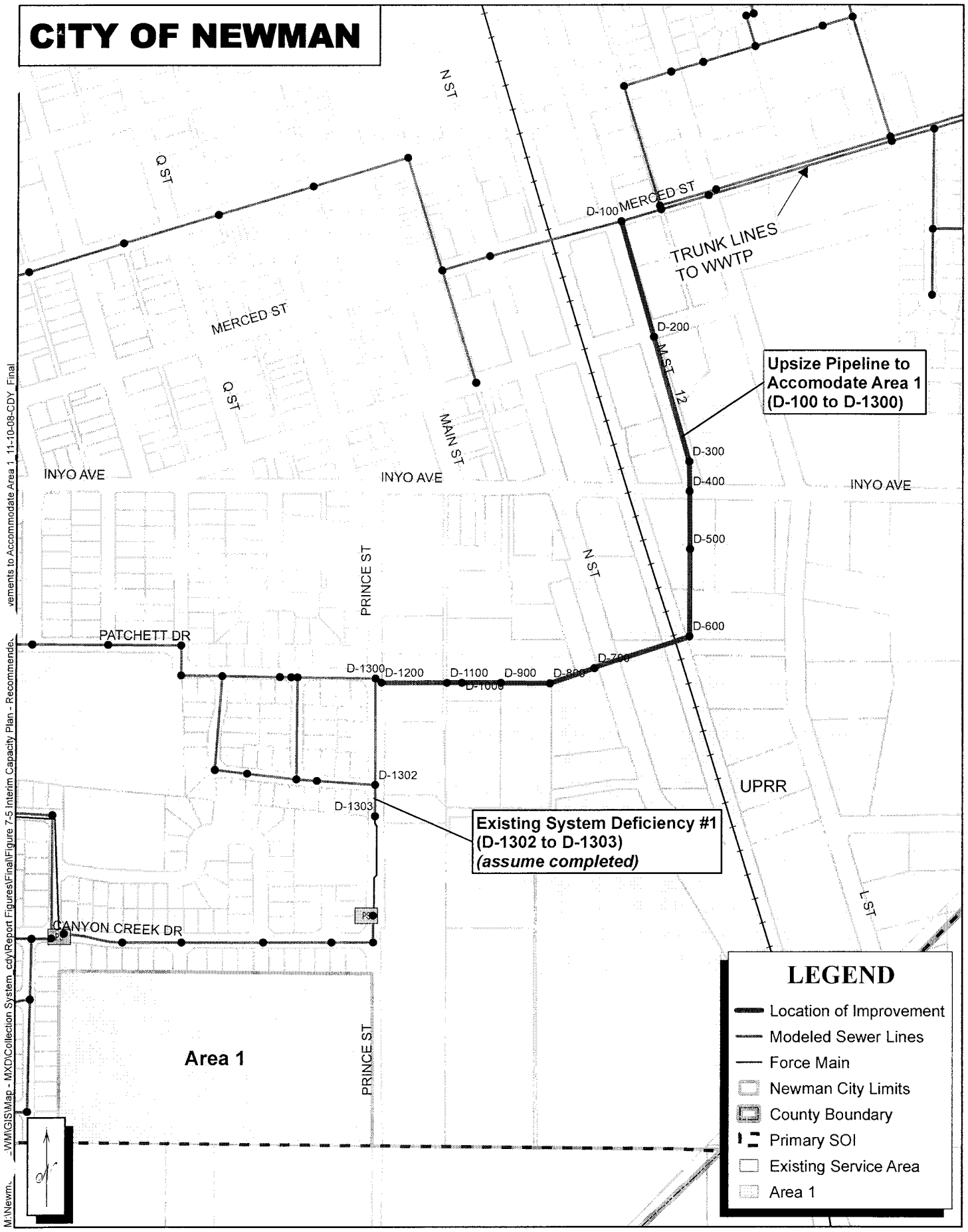
M:\Newman - NEWM\GIS\Map - MXD\Collection System_cdy\Report Figures\Final\Figure 7-3 Future Development Areas in Primary and Secondary SOIs_11-10-08-CDY_Final



M:\Newman - NEW\MXD\GIS\Map - MXD\Collection System - cov\Report Figures\Final\Figure 7-4 Available Interim Capacity in the Existing Collection System at Build-Out of City Limits 11-10-06-COY Final

ECO:LOGIC Engineering
City of Newman Collection System Master Plan

Figure 7-4
Available Interim Capacity in the Existing Collection System at Build-Out of City Limits (with Recommended Existing System Deficiency Improvements)



ECO:LOGIC Engineering
City of Newman Collection System Master Plan

Figure 7-5 **Interim Capacity Plan - Recommended Improvements to Accommodate Area 1**

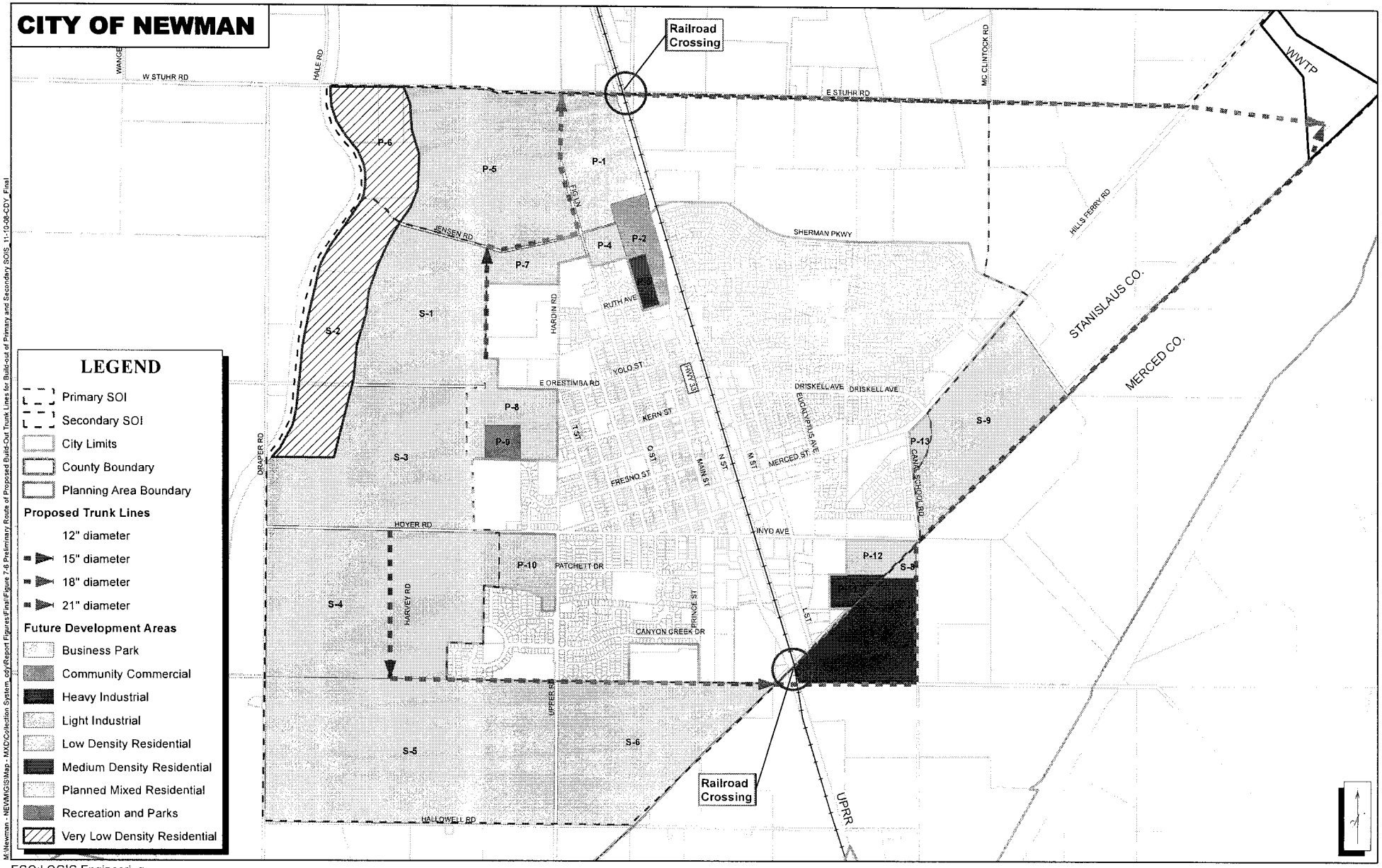
Area 2

According to modeling results, sufficient capacity exists in the pipeline on Sherman Parkway to accommodate Area 2. However, this development cannot be accommodated in the remainder of the existing system without upgrades to the pump station at Sherman Parkway and Hills Ferry Road, and upsizing the pipeline downstream of the pump station outlet. Although the Sherman Parkway and Hills Ferry Road Pump Station may have enough capacity to be used on an interim basis, any additional flow downstream of the pump station outlet will cause an exceedance in the capacity criteria (Table 6-1). In order for any of Area 2 to be accommodated in the existing system, the upgrades and upsizing mentioned above would need to be constructed, or the pipeline from Sherman Parkway would need to be extended east of Hills Ferry Road to the main trunk lines. Further analysis is recommended prior to implementation of either of these strategies.

7.3.2 Long-Term System Needs

As seen in Figure 7-4, the existing system cannot accommodate all flows from future development areas without significant improvements throughout the system. Such improvements would be costly and require major construction in high population areas, such as downtown Newman. Therefore, this section includes a plan for serving build-out areas in the SOIs with new trunk sewers to the wastewater treatment plant (WWTP).

Anticipated development areas within the Primary and Secondary SOIs are shown in Figure 7-6. The estimated average and peak wastewater generation rates for these future developments are presented in Table 7-2. To serve the wastewater needs for these future development areas, two new trunk lines are proposed. Preliminary routes are presented in Figure 7-6. A northern trunk would collect wastewater north of Hoyer Road and a southern trunk would collect wastewater south of Hoyer Road. This alignment would allow the majority of the flow in future areas to be accommodated by gravity. For developments south of Hoyer Road, a new sewer trunk could be routed along the southern boundary of the City Limits and then northeast along the Stanislaus/Merced County boundary to discharge at the WWTP. For developments north of Hoyer Road, flows could be routed north along the western edge of the City Limits and then roughly east along East Stuhr Road to the WWTP. It should be noted that both of these proposed trunk line routes would need to cross the Union Pacific Railroad, which would require the acquisition of easements. The proposed trunk lines were sized to convey peak flows (as shown in Table 7-2) to the WWTP. Peak flows and estimated pipe sizes for both the north and south trunks are shown in Table 7-3. It was assumed that Area 2 would be accommodated in the pipeline along Sherman Parkway with one of the improvements identified above being constructed.



ECO:LOGIC Engineering
City of Newman Collection System Master Plan

Figure 7-6
Preliminary Routes of Proposed Build-Out Trunk Lines for Build-out of Primary and Secondary SOIS

M:\Newman - NEW\MGIS\Map - MXD\Collection System_cdy\Report Figures\Final\Figure 7-8 Preliminary Route of Proposed Build-Out Trunk Lines for Build-out of Primary and Secondary SOIS_11-10-08-CDY_Final

Table 7-2
City of Newman
Estimated Wastewater Flow from Future Development Areas in Primary and Secondary Spheres of Influence

Future Development Area	Area (Acre)	Average Flow (Mgal/d) [a]	Peak Flow (Mgal/d) [b]	EDUs
Near-Term Development				
Area 1	20.09	0.039	0.115	181
Area 2	500.08	0.656	1.397	3,063
TOTAL (rounded)	**520**	**0.70**	**1.51**	**3,244**
Primary Sphere of Influence				
Area P-1	61.73	0.093	0.231	431
Area P-2	20.75	0.031	0.078	146
Area P-3	6.37	0.012	0.031	58
Area P-4	9.46	0.011	0.026	49
Area P-5	171.64	0.191	0.478	893
Area P-6	57.71	0.025	0.062	115
Area P-7	23.68	0.026	0.066	123
Area P-8	39.85	0.044	0.111	207
Area P-9	8.81	--	--	--
Area P-10	26.18	0.029	0.073	136
Area P-11	9.44	0.016	0.039	73
Area P-12	13.58	0.022	0.056	105
Area P-13	6.15	0.007	0.016	31
TOTAL (rounded)	**455**	**0.51**	**1.27**	**2,367**
Secondary Sphere of Influence				
Area S-1	132.12	0.147	0.368	687
Area S-2	101.84	0.044	0.109	204
Area S-3	174.10	0.194	0.485	905
Area S-4	237.35	0.264	0.661	1234
Area S-5	314.91	0.351	0.877	1638
Area S-6	157.47	0.175	0.438	819
Area S-7	67.96	0.112	0.280	524
Area S-8	4.31	0.007	0.018	33
Area S-9	115.26	0.190	0.475	888
TOTAL (rounded)	**1,305**	**1.48**	**3.71**	**6,932**

[a] Future average flows for these developments were estimated using the General Plan land use designation, total area, and corresponding wastewater generation rate.

[b] A peaking factor of 2.5 was applied to determine the future peak flows for Primary and Secondary SOIs. Area 1 and Area 2 peak flows were determined by using the leakage rates used in the model for the existing collection system.

Table 7-3
City of Newman
Proposed Sizing for Future Sewer Trunk Lines

New Trunk Line Route	Total Peak Flow (Mgal/d)[a]	Proposed Trunk Size[b]
Route North	2.05	12-18 inches in diameter
Route South	2.93	15-21 inches in diameter

(a) Mgal/d = million gallons per day.
Total peak flow = sum of peak flows for all areas assigned to specific route
(b) Trunks were sized assuming pipes could run at 100% capacity. Capacity calculated using Mannings equation with a roughness value of 0.013 and a slope of 0.001.

7.4 CAPITAL COST ESTIMATES

Planning level costs for recommended improvements to the existing system for build-out of the City Limits (as described in Section 7.2) are provided in Table 7-4. Interim improvement costs to accommodate Area 1 within the existing collection system (as described in Section 7.3.1) are provided in Table 7-5. Planning-level cost estimates for the major trunk lines shown in Figure 7-6 were also developed and are provided in Table 7-5. A detailed cost breakdown for all of these estimates is provided in Appendix B.

The pipe costs include pipe material, excavation, laying and joining, backfill, manholes, testing, cleanup, and contractor's overhead and profit. This estimate also includes a 30% contingency for unknown conditions and a 10% allowance for design and administration. These costs do not include any pump stations that may be required along the routes or costs for easement acquisitions. All costs have been estimated at a current Engineering News-Record Construction Cost Index (ENRCCI) of 8,090 (January 2008).

Depending on the growth rate of the City, the build-out of the Primary and Secondary SOIs might represent a 50 year or more development horizon. As a result, the City may elect to phase all or a portion of the trunk sewers to better match capacity needs with cash flows from development. Phasing options typically involve construction of two smaller parallel sewers in place of one large one.

Table 7-4
City of Newman
Preliminary Cost Estimate for Existing System Deficiencies - Improvements #1 and #2

Improvement Description	Cost, $ [(a)]
Improvement #1 - Upsize Pipeline (Manhole D-1303 to D-1302) from 6-inch to 8-inch	$23,500
Improvement #2 - Install 12-inch Flap Gate at Yancey Pump Station	$10,000
Estimating Contingency (30%)	$10,000
SUBTOTAL – CONSTRUCTION COSTS (rounded)	$43,500
Design/Administration (10%)	$4,300
TOTAL (rounded)	**$48,000**

(a) January 2008 Costs; ENRCCI = 8,090.

Table 7-5
City of Newman
Preliminary Cost Estimate for Interim Capacity Plan - Accommodating Area 1 in Existing System

Improvement Description	Cost, $ [(a)]
Upsize Pipeline (Manhole D-1300 to D-100) from 12-inch to 15-inch	$605,000
Optional Improvement – Replace Manholes D-1300 to D-100	$260,000
Estimating Contingency (30%)	$260,000
SUBTOTAL – CONSTRUCTION COSTS (rounded)	$1,250,000
Design/Administration (10%)	$113,000
TOTAL (rounded)	**$1,240,000**

(a) January 2008 Costs; ENRCCI = 8,090.

Table 7-6
City of Newman
Preliminary Cost Estimate for Build-out of Primary and Secondary SOIs - Proposed New Trunk Sewers

Improvement Description	Cost, $ [(a)]
Build-out Trunk Sewer – North Route	$6,000,000
Build-out Trunk Sewer – South Route	$7,300,000
Estimating Contingency (30%)	$4,000,000
SUBTOTAL – CONSTRUCTION COSTS (rounded)	$17,300,000
Design/Administration (10%)	$1,700,000
TOTAL (rounded)	**$19,000,000**

(a) January 2008 Costs; ENRCCI = 8,090.

Chapter 8

Sewer System Management Plan (SSMP) Development Plan and Schedule

8.1 PURPOSE

On May 2, 2006, the California State Water Resources Control Board (SWRCB) issued statewide general waste discharge requirements (WDRs) for all publicly owned sanitary sewer systems greater than one mile in length. Guidelines and requirements for WDRs are described in the State Water Resources Control Board Order No. 2006-0003 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, herein referred to as WDR 2006-0003. A significant requirement outlined in WDR 2006-0003 is the completion of a Sewer System Management Plan (SSMP).

The purpose of this chapter is to assess the City of Newman's (City) current sewer system management, operation, and maintenance procedures and to recommend actions to produce a complete SSMP in compliance with the WDR requirements. This chapter also fulfills the requirement for an SSMP Development Plan and Schedule as described in WDR 2006-0003.

This document is organized into the following major parts:

(1) Description of each SSMP element including the minimum requirements discussed in WDR 2006-0003,

(2) Assessment of the City of Newman's compliance with these requirements for each SSMP element,

(3) A scope of work for completion of procedure elements the City needs to develop or improve, and

(4) An implementation schedule for completion of each element.

8.2 SEWER SYSTEM MANAGEMENT PLAN (SSMP) ELEMENTS

The SSMP is a general compilation of information about the management, operation and maintenance of the municipality's sanitary sewer collection system. The SSMP has 11 primary components:

1. Goals
2. Organization

3. Legal Authority
4. Operation and Maintenance Program
5. Design and Performance Provisions
6. Overflow Emergency Response Plan (OERP)
7. Fats, Oil and Grease (FOG) Control Program
8. System Evaluation and Capacity Assurance Plan (SECAP)
9. Monitoring, Measurement, and Program Modifications
10. SSMP Program Audits
11. Communication Program

A brief explanation of each of the eleven elements and the minimum requirements as outlined in WDR 2006-0003 is discussed below. The full WDR 2006-0003 is located in Appendix A.

8.2.1 Goals

Program goals are an important aspect of the SSMP because they provide focus for the municipality's staff to continue to implement improvements in their management of the sanitary sewer collection system. The goals will determine steps that must be undertaken to establish and define the purpose and anticipated results of the program. Goals should reflect performance, safety, customer service, resource use, compliance, and other considerations, including the Sanitary Sewer Overflow (SSO) policy goals of reducing and mitigating the impacts of SSO's.

8.2.2 Organization

An organizational chart should be developed that identifies administrative and management positions responsible for implementing the SSMP program. The organizational chart also includes operations and maintenance personnel that will be involved in developing and implementing the program. The employees involved with the SSMP program should be provided with the necessary training required to perform their assigned SSMP duties.

A chain of communication for reporting SSO events is also required. The chain of communication encompasses all those affected by the SSO event, including the initial receipt of a complaint to the notification of permitting authorities, other agencies, and the public.

8.2.3 Legal Authority

Sufficient legal authority must be provided to implement an effective SSMP program. Legal authority can be provided through sewer use ordinances, service agreements, discharge permits, or other legally binding documents.

8.2.4 Operations and Maintenance Program

A collection system needs to be properly operated and maintained. The SSMP requires that the following elements (and person or position responsible) of the municipality's operation and maintenance (O&M) program be addressed:

- Maintain an up-to-date map of the collection system.
- Perform routine O&M activities, including regularly scheduled maintenance and cleaning with more frequent maintenance and cleaning in known problem areas. The O&M activities should be listed within a system that tracks work orders and can assess the effectiveness of the program.
- Develop and implement short and long-term rehabilitation and replacement plans.
- Provide training on a regular basis for O&M staff.
- Keep an inventory of general and critical equipment and replacement parts.

8.2.5 Design and Performance Provisions

The design and performance provisions should identify minimum design and construction standards and specifications for the installation of new sewer systems, and for rehabilitation and repair of existing sewers. An effective program that ensures new sewers are properly designed and installed can minimize system deficiencies that could create or contribute to future overflows and/or operations and maintenance problems. Design criteria should include specifications such as pipe materials, minimum sizes, minimum cover, strength, minimum slope, trench and backfill, structure standards, flow factors, and other relevant parameters as necessary. Also, procedures and standards are required for inspecting and testing the installation of new sewers, pump stations, and other facilities and for rehabilitation and repair projects.

8.2.6 Overflow Emergency Response Plan (OERP)

An Overflow Emergency Response Plan (OERP) provides a standardized course of action to be followed by collection system personnel during an SSO event. An up-to-date OERP is necessary to ensure that a municipality is adequately prepared to respond to an SSO event. The OERP should describe protocols for the response, remediation, and notification of an SSO event under varying scenarios.

The OERP should identify measures to protect the public health and the environment from a broad range of potential collection system failures that could lead to an SSO. The OERP should also include procedures to mitigate the effects of an SSO, when they do occur.

Lastly, to ensure successful implementation of the OERP during an SSO, appropriate staff and contractors should have adequate training.

8.2.7 Fats, Oils, and Grease (FOG) Control Program

A robust fats, oils, and grease (FOG) source control program is required for the SSMP. The FOG control program needs to include legal authority to prohibit and enforce grease discharges (as from restaurants), require installation of grease removal devices, provide design standards and maintenance requirements for the grease removal devices, establish Best Management Practice (BMP) requirements, and establish record keeping and reporting requirements for grease producing facilities.

The FOG control program also needs to establish legal authority to inspect and enforce the requirements of the program, as well as provide sufficient staff to perform these tasks.

Finally, the FOG program needs to develop an outreach program to educate the public on proper disposal of fats, oils and grease.

8.2.8 System Evaluation and Capacity Assurance Plan (SECAP)

The collection system should be evaluated to determine where hydraulic deficiencies exist. Based on the hydraulic deficiencies, a capital improvement program should be developed and implemented to ensure adequate capacity for dry and wet weather flow conditions.

Capacity enhancement measures should establish short and/or long-term actions to correct each identified hydraulic deficiency. Short and long term actions should include alternative analyses, a prioritization of recommended projects, an implementation schedule, and source of funding.

8.2.9 Monitoring, Measurement, and Program Modifications

During implementation of the SSMP program, the program elements should be monitored for their effectiveness. If the elements are not effective, the program elements should be modified or updated to increase their effectiveness.

8.2.10 SSMP Program Audits

Internal audits should be performed at a frequency of every two years or less, as appropriate. The internal audits will assess the effectiveness of the SSMP. They are also intended to identify and correct any deficiencies within the SSMP.

8.2.11 Communication Program

As part of developing and implementing the SSMP, a public outreach program should be established to inform the public of the process. The public outreach program will provide a means of incorporating public input into the SSMP development.

8.3 NEWMAN SSMP ASSESSMENT RESULTS

An assessment was conducted on how the City of Newman's current practices comply with the eleven elements described above. Information pertaining to the City's current policies for

management, operation and maintenance of their collection system was gathered through the completion of a Collection System Initial Assessment Form. The Collection System Initial Assessment Form was used to evaluate the level to which the City complies with each of the SSMP program elements (Table 8-1). The elements are assessed for level of completion and rated as:

- Completed or nearly completed,
- In-progress,
- Need to be initiated to comply with SSMP requirements.

Table 8-1
City of Newman
SSMP Assessment

Program Element	Program Completed or Nearly Completed	Program In-Progress	Program Needed
1. Goals			X
2. Organization			
a. SSMP Organization Chart		X	
b. Chain of Communication for Reporting SSO Events			X
3. Legal Authority			
a. Illicit Discharges	X		
b. Proper Design and Construction	X		
c. Access for Maintenance, Inspection and Repairs	X		
d. Limit FOG and debris	X		
e. Enforcement	X		
4. Operation & Maintenance Program			
a. Maintain Up-to-Date Map		X	
b. Perform Routine Preventative Maintenance			X
c. Rehabilitation and Replacement Plan			X
d. Training Program		X	
e. Parts & Equipment Inventory			X
5. Design and Performance Provisions			
a. Design and Construction Standards	X		
b. Inspection and Testing Standards	X		
6. Overflow Emergency Response Plan			
a. Notification Procedures			X
b. Overflow Response			X

Program Element	Program Completed or Nearly Completed	Program In-Progress	Program Needed
c. SSO Notification			X
d. Training			
e. Emergency Operations		X	X
f. SSO Mitigation		X	
7. Fats, Oils & Grease (FOG) Control Program			
a. Develop a Public Outreach Program to Promote Proper Disposal of FOG			X
b. Establish a Plan and Schedule for Disposal of FOG Generated within System			X
c. Exercise Legal Authority to Prohibit FOG Discharges			X
d. Require the Implementation of Grease Removal Devices and other BMPs			X
e. Enforce FOG Ordinances and Inspect Grease Producing Facilities			X
f. Identify Problem Areas & Establish Cleaning Schedule			X
g. Source Control Measures			X
8. System Evaluation & Capacity Assurance Plan			
a. Evaluation			X
b. Capacity Enhancement Measures			X
c. Capital Improvement Program Schedule			X
9. Monitoring, Measurement, and Program Modifications			
a. Implementation and Effectiveness of SSMP			X
b. Update SSMP Program Elements			X
c. Identify and Track SSO Trends			X
10. SSMP Program Audits			X
11. Communications Program			X

8.4 NEWMAN SSMP SCOPE OF WORK

As shown in Table 8-1, the City of Newman has several of the SSMP elements either in-place or currently being developed. However, there are also several elements that will need to be developed or added to the programs in order to comply with the minimum SSMP requirements. These program elements are:

1. **Goals** – The City of Newman will need to develop goals for their collection system which are aimed at the proper management, operation, and maintenance of the sanitary sewer system which result in the prevention of SSO's.

2. **Organization** – The City currently has an organizational chart, but a documented chain-of-communication for reporting SSO's needs to be developed. In addition, the existing organizational chart should be updated to show lines of authority, identify key staff members who are responsible for implementing various elements of the SSMP, and document the names and contact information for these staff members.

3. **Legal Authority** – The City of Newman's legal authority is defined in Newman City Code Ordinance No. 90-4, 6-26-90. This ordinance appears consistent with the SSMP requirements; however, the ordinance will be reviewed and updated if necessary.

4. **Operations & Maintenance Program** – To comply with the requirements established in the WDR, the following improvements are recommended:

    a. Update the City's GIS database to include the existing storm water infrastructure. This database will allow the City to easily maintain an up-to-date map of the sewer system showing manholes, gravity sewers, force mains, pump stations, and storm water collection systems. The City's storm water system needs to be shown on the sewer system map to identify locations where potential SSO's could enter the storm water system.

    b. Develop a Preventative Maintenance (PM) program to document routine operation and maintenance activities. This program should incorporate a system that schedules preventative maintenance activities and also targets known problem areas, which need more frequent maintenance. Activities of this program include: develop pump station maintenance checklists, establish written instructions for managing and tracking operation and maintenance practices, incorporate internal TV inspection into routine maintenance, implement a manhole inspection and assessment program, and formalize Standard Operating Procedures (SOPs) for sewer system appurtenances.

    c. Formalize a rehabilitation and replacement plan that identifies and prioritizes deficiencies, establishes a short and long-term schedule, and includes a capital improvement plan.

    d. Establish a standardized training program for the operation and maintenance of the City's collection system. Develop annual training goals and include methods for assessing the effectiveness of the training programs. Require any contractors who perform operation or maintenance activities on the system, such as internal TV inspection, be properly trained. In addition, the City's Safety Manual should be updated.

    e. Identify critical equipment and replacement parts and create an inventory of these parts.

5. **Design and Performance Review** – The City of Newman has design and construction standards for installation, rehabilitation, and repair of new and existing sewer systems. The City also has inspection and testing standards for new and existing sewers. These current standards should be reviewed and, if necessary, modified.

6. **Overflow Emergency Response Plan (OERP)** – The City of Newman does not currently have an Overflow Emergency Response Plan (OERP). To be consistent with the SSMP requirements the following improvements are recommended:

   a. Establish procedures for notifying key responders and regulatory agencies in a timely manner.

   b. Outline methods for ensuring proper response to any SSO.

   c. Develop procedures for reporting of SSO's that effect public heath or discharge into waters of the State to all regulatory agencies and other involved agencies. These procedures should identify the officials who receive immediate notification.

   d. Produce procedures that guarantee all appropriate staff and contracts are aware of the Overflow Emergency Response Plan and are properly trained on how to respond to SSO's.

   e. Update procedures currently used to address emergency situations such as traffic and crowd control. If applicable, other agencies such as the police and fire departments may take responsibility during these situations.

   f. Update existing practices which are used to contain and prevent SSO's from discharging into the waters of the United States and limit the impact of any discharge.

7. **Fats, Oils and Grease (FOG) Control Program** – The City of Newman does not currently have a fats, oils and grease (FOG) control program. If the discharge of FOG is not a problem in the City of Newman, the City must provide justification that a FOG program is not needed.

8. **System Evaluation and Capacity Assurance Plan (SECAP)** – The City of Newman does not currently have a System Evaluation and Capacity Assurance Plan (SECAP). However, a capital improvement plan that includes system capacity evaluation, short and long-term solutions for hydraulic deficiencies, and a schedule for completion is currently being developed as part of the City's Collection System Master Plan.

   SSMP Elements 9, 10 & 11
   The last three SSMP elements are focused on measuring and reviewing the effectiveness of an existing SSMP as well as communicating its performance to the public. Once the City of Newman has an implemented SSMP, the requirements for these elements, as outlined in WDR 2006-0003, must be addressed.

8.5 NEWMAN SSMP PROGRAM IMPLEMENTATION SCHEDULE

The SRWCB has provided an initial timeframe upon which to complete each of the program components based on population. For collection systems serving populations between 10,000 and 100,000, the minimum required program implementation schedule, as outlined in WDR 2006-0003, is presented in Table 8-2. The proposed progress schedule for completion of each of the City's SSMP elements as well as the responsible staff member for each element is also provided in Table 8-2.

Table 8-2
City of Newman
Completion of SSMP Elements Schedule

SSMP Element	WDR Schedule	City of Newman's Schedule	Responsible Staff Member
Application for Permit Coverage	11/02/06	11/02/06	Ernie Garza
Reporting Program	09/02/07	09/02/07	Ernie Garza
SSMP Development Plan and Schedule	11/02/07	11/02/07	Ernie Garza
Goals and Organization Structure	11/02/07	11/02/07	Ernie Garza
Overflow Emergency Response Plan	05/02/09	04/01/09	Ernie Garza
Legal Authority	05/02/09	04/01/09	Ernie Garza
Operation and Maintenance Program	05/02/09	04/01/09	Ernie Garza
FOG Control Program	05/02/09	04/01/09	Ernie Garza
Design and Performance	08/02/09	07/01/09	Ernie Garza
System Evaluation and Capacity Assurance Plan	08/02/09	01/01/08	Ernie Garza
Final SSMP, incorporating all SSMP requirements	08/02/09	07/01/09	Ernie Garza

Appendix A

City of Newman Sanitary Sewer Flow Monitoring and Inflow/Infiltration Study

CITY OF NEWMAN

SANITARY SEWER FLOW MONITORING
and
INFLOW / INFILTRATION STUDY

Prepared for:

ECO:LOGIC CONSULTING ENGINEERS
3875 Atherton Road
Rocklin, CA 95765

Prepared By:

V&A CONSULTING ENGINEERS
Lake Merritt Plaza
1999 Harrison Street, Suite 975
Oakland, CA 94612

May 2007

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APPENDIX A – Flow Monitoring Sites, Graphs, and Information

EXECUTIVE SUMMARY

V&A Consulting Engineers (V&A) has completed sanitary sewer flow monitoring and inflow and infiltration (I/I) analysis within the City of Newman (City). Flow monitoring was conducted over a 6-week period from February 6, 2007 to March 20, 2007 at five flow monitoring sites, as chosen by Eco:Logic Consulting Engineers. The five flow monitoring sites are shown in Figure 1 on Page 2 of this report.

Table 1 summarizes the flow monitoring results and infiltration and inflow results for each flow monitoring site. The I/I results presented in Table 1 are from the storm event that occurred from February 9 through February 11, 2007.

Table 1. Summary of Flow Monitoring and I/I Results

Site Name	ADWF (MGD)	Total I/I (Gallons)	Peak Flow (MGD)	Peak I/I (MGD)	Peaking Factor	Peak I/I to ADWF	R-Value	I/I per IDM (gal/in-rain/IDM)
Site A North	0.699	131,000	1.39	0.34	1.98	0.49	0.8%	1,000
Site A South	0.446	N/A	0.76	N/A	1.70	N/A	N/A	N/A
Site D	0.197	26,000	0.37	0.10	1.88	0.52	0.6%	700
Site E	0.223	76,000	0.44	0.25	1.95	1.12	1.9%	3,200
Site F	0.142	15,000	0.24	0.08	1.71	0.54	0.5%	800

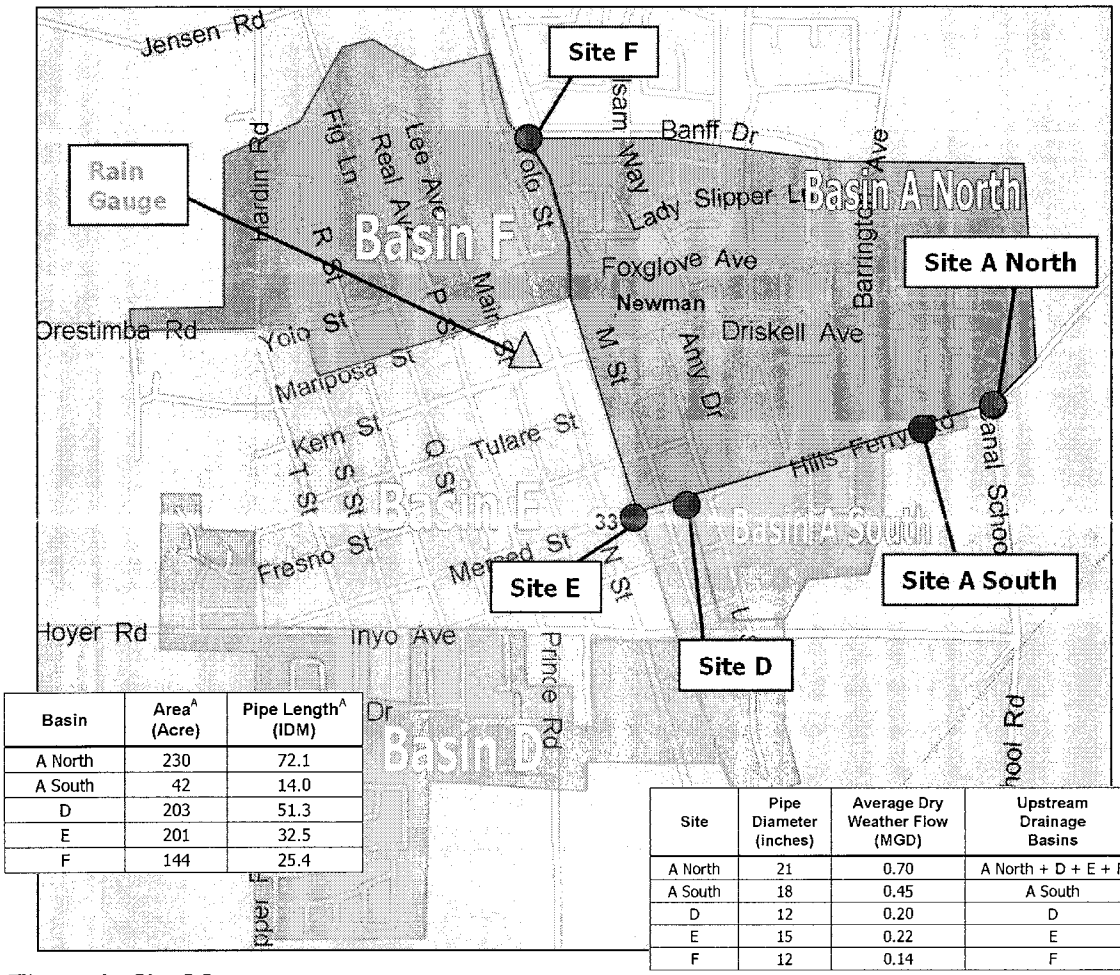
The following results are noted:

- **Storm Event I/I Response:** In all categories of I/I analysis, **Site E** had significantly higher I/I response to the February 9 through 11, 2007 storm event than the other sites.
- **Groundwater Infiltration:** There appears to be higher-than-normal groundwater infiltration occurring in the basins upstream from **Site D** and **Site E** during periods of dry weather flow.
- **d/D Ratio:** None of the flow monitoring sites had a d/D ratio that exceeded the threshold levels. There did not appear to be hydraulic capacity issues at any of the flow monitoring sites over the course of the flow monitoring period.

INTRODUCTION

V&A Consulting Engineers (V&A) has completed sanitary sewer flow monitoring at five sanitary sewer flow monitoring sites and rain gauge monitoring at one location within the City of Newman (City). The monitoring was conducted over a 6-week period from February 6, 2007 to March 20, 2007.

Figure 1 illustrates the five flow monitoring site locations and one rain gauge location, as chosen by Eco:Logic Consulting Engineers (Eco:Logic). Also shown are some of the details of the flow monitoring sites and drainage basins. Detailed descriptions of the individual flow monitoring sites, including photographs, are included in *Appendix A*.



Basin	Area[A] (Acre)	Pipe Length[A] (IDM)
A North	230	72.1
A South	42	14.0
D	203	51.3
E	201	32.5
F	144	25.4

Site	Pipe Diameter (inches)	Average Dry Weather Flow (MGD)	Upstream Drainage Basins
A North	21	0.70	A North + D + E + F
A South	18	0.45	A South
D	12	0.20	D
E	15	0.22	E
F	12	0.14	F

Figure 1. Site Map

[A] Basin Areas and Pipe Lengths were scaled from maps provided by Eco:Logic and are considered to be estimates.

METHODS AND PROCEDURES

Meter Installation

Five Isco 2150 flow meters were installed by V&A in the sewer lines shown in Figure 1. Isco meters use a pressure transducer to collect depth readings, and ultrasonic Doppler sensors on the probe to determine the average fluid velocity. Figure 2 shows a sketch of a typical flow meter installation.

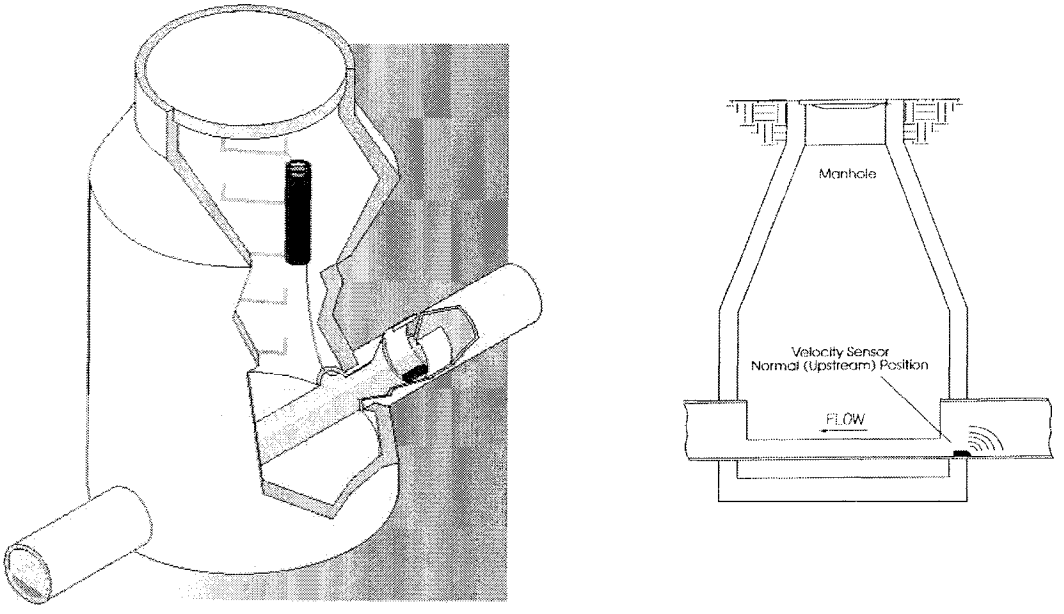


Figure 2. Flow Meter Installation

Continuous depth and velocity readings were recorded by the flow meters in 15-minute increments and downloaded into a computer spreadsheet program where the data could be analyzed and made report ready. Manual level and velocity readings were taken in the field during the flow meter installation and again when removed, and compared to the readings of the flow meters to ensure proper calibration and accuracy.

RAINFALL RESULTS

One rain gauge was installed on the roof of the fire station located on 1162 N Street to capture the rain events over the course of this study. Figure 3 graphically displays the rainfall recorded over the flow monitoring period. Figure 4 shows the rain accumulation plot of the rain gauge, as well as the historical average rainfall (shown for comparison), during this project duration. Rainfall totals were 32% of normal levels over the flow monitoring period.

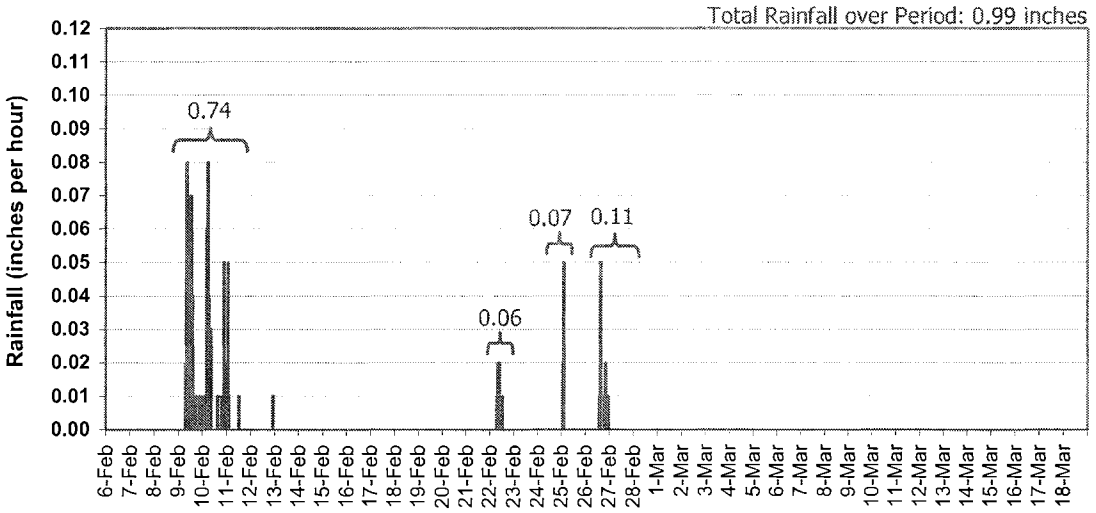


Figure 3. Rainfall Activity over Flow Monitoring Period

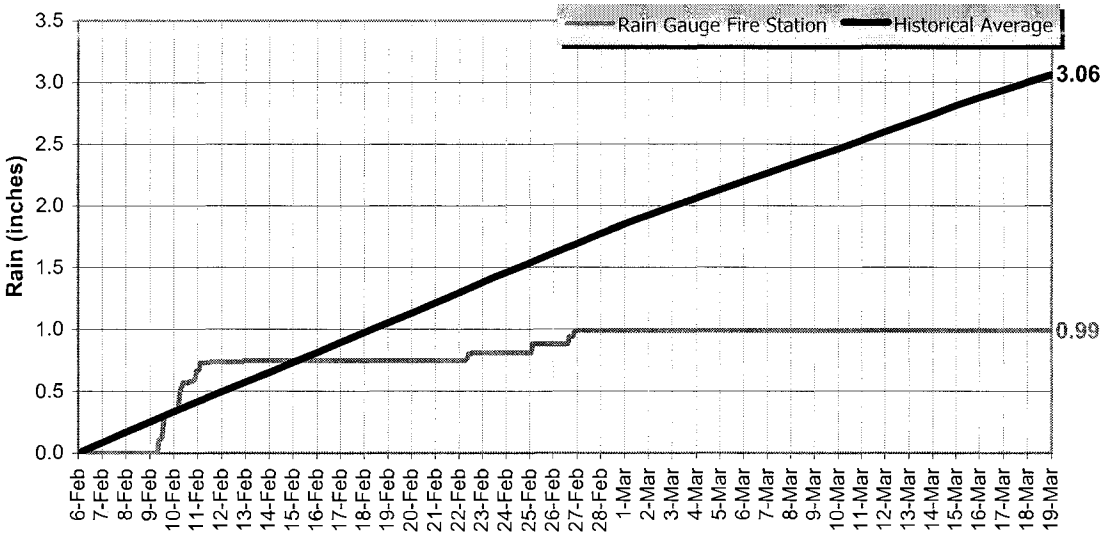


Figure 4. Rainfall Accumulation Plots

Historical data was taken from the Western Regional Climate Center (WRCC) at Station 046168 in Newman, California

RESULTS

Dry Weather Flow Results

Weekday and weekend flow patterns vary and must be separated when determining average dry weather flows. For this project, the following days were least affected by rainfall and were used to determine weekend and weekday average flows:

- Weekdays: March 10, 11, 17, 18
- Weekends: March 12, 13, 14, 15, 16

Figure 5 shows a sample of the average dry weather flow graph that was generated for each flow monitoring site. Graphs for each site are located in *Appendix A*.

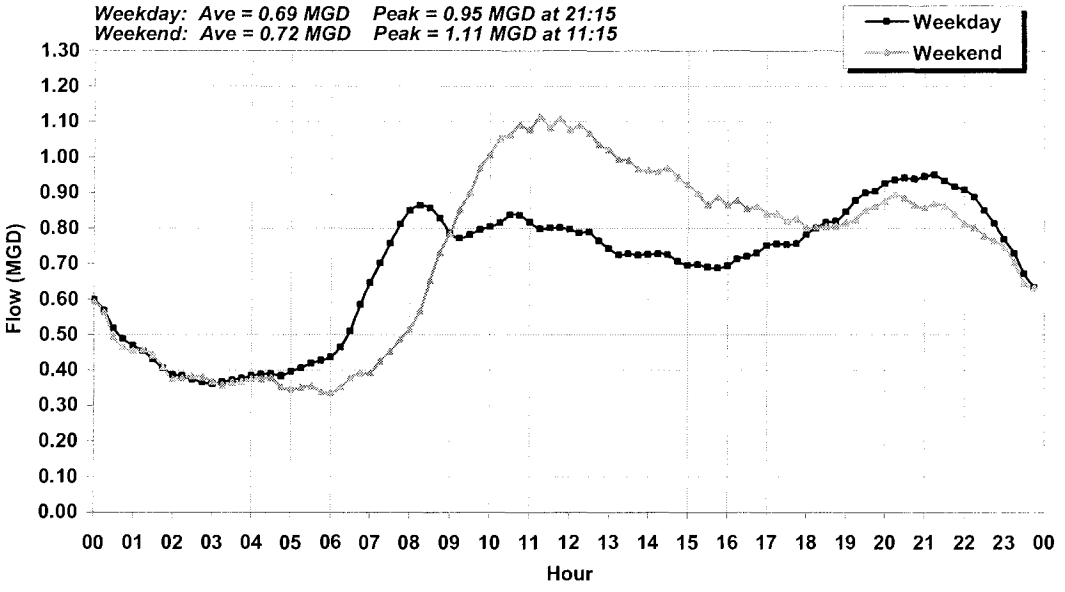


Figure 5. Site A North: Average Dry Weather Flow

Table 2 lists the average dry weather flow (ADWF) and average peak dry weather flows (PDWF) recorded during this study for the sites that were directly monitored.

Table 2. Dry Weather Flows

Location	Average Dry Weather Flow (MGD)		Weekend/ Weekday Ratio	Average Peak Dry Weather Flow (MGD)		PDWF/ADWF Ratio	
	Weekday	Weekend		Weekday	Weekend	Weekday	Weekend
Site 1	0.69	0.72	1.05	0.95	1.11	1.38	1.54
Site 2	0.44	0.45	1.02	0.53	0.61	1.20	1.34
Site 3	0.19	0.21	1.11	0.29	0.35	1.53	1.65
Site 4	0.22	0.23	1.02	0.28	0.32	1.27	1.40
Site 5	0.14	0.14	1.00	0.18	0.20	1.26	1.40

Dry Weather Ground Water Infiltration Analysis

Dry weather (baseline) flow can be expected to have a predictable diurnal flow pattern. While each site is unique, experience has shown that, given a reasonable volume of flow and typical loading conditions, the daily peaks and lows fall into a predictable range when compared to the daily average flow. If a site has a large percentage of ground water infiltration occurring during the periods of dry weather flow measurement, the amplitudes of the peak and low flows will be dampened[1]. Figure 6 shows a sample of two flow monitoring sites, both with nearly the same average daily flow, but with considerably different peak and low flows. In this *sample* case, Site B1 may have a considerable volume of ground water infiltration.

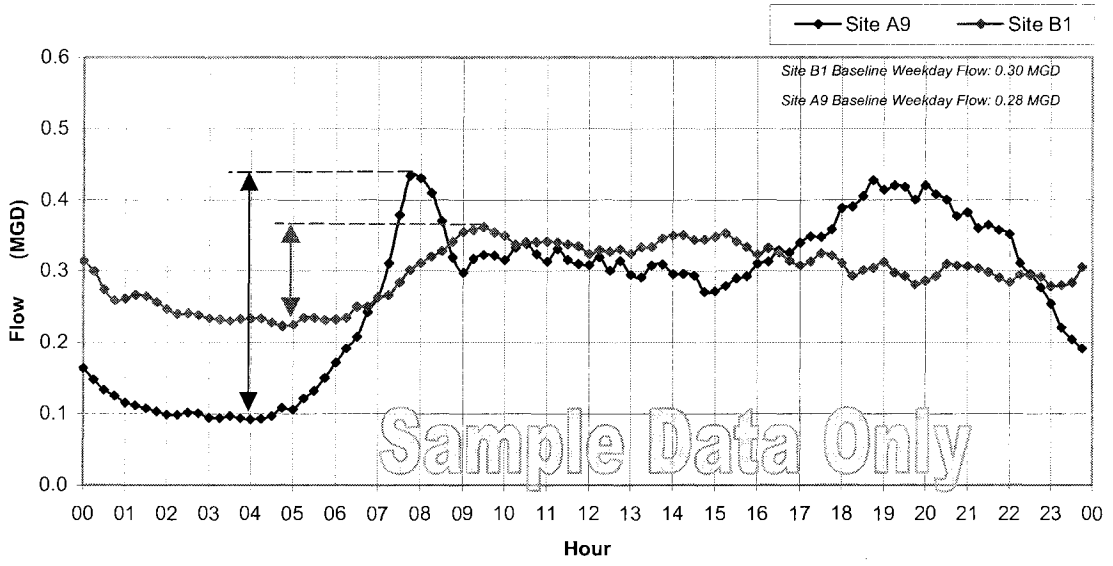


Figure 6. Ground Water Infiltration Sample Figure

It can be useful to compare the peak-to-baseline and low-to-baseline flow ratios for all flow metering sites. A site with abnormal ratios, and with no other reasons to suspect abnormal flow patterns (such as proximity to pump station, treatment facilities, etc.), has a distinct possibility of higher levels of ground water infiltration in comparison to the rest of the collection system. Figure 7 plots the peak-to-baseline and min-to-baseline flow ratios against the baseline flows for all sites monitored during this study. The dotted line shows "typical" min-to-baseline flow ratios

[1] Theoretically imagining an extreme case, if there were 0.2 MGD of baseline flow and 2.0 MGD of groundwater infiltration, the peaks and lows would be barely recognizable; the baseline flow would be nearly a straight line.

per the Water Pollution Control Federation[2]. There are no established peak-to-baseline ratios, but a system trendline has been drawn to better distinguish sites that fall outside the system trends. The min-to-baseline ratio should be taken with more weight as low flows during early morning hours are generally more predictable than peak flows.

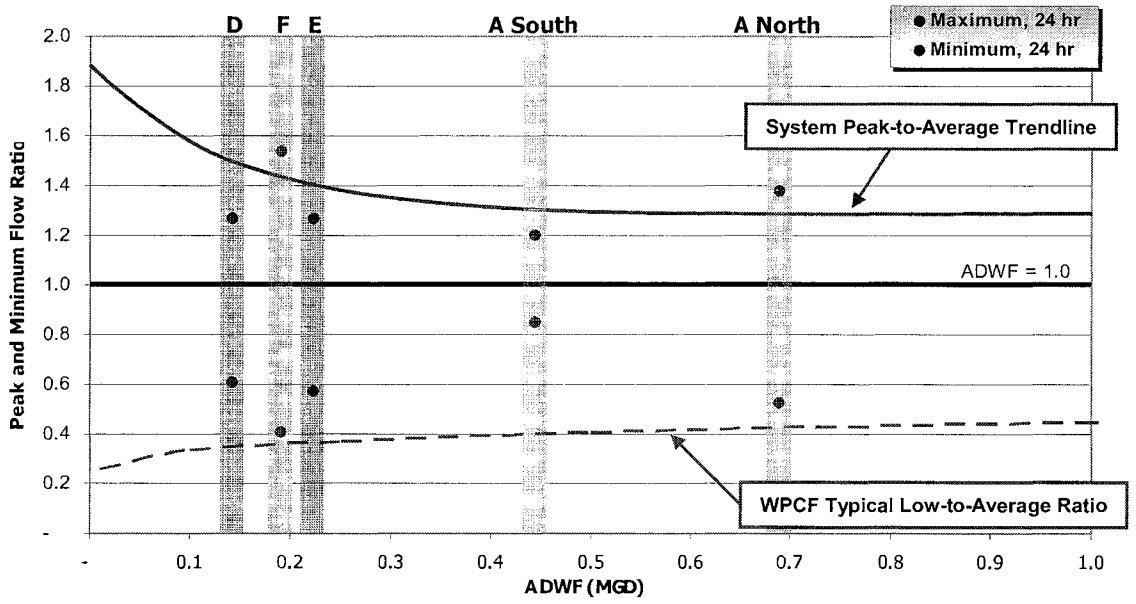


Figure 7. Peak and Minimum Flow Ratios vs. ADWF[3]

Sites D and E had min-to-baseline ratios that fell notably outside of the typical min-to-baseline ratios as defined by WPCF. Please note, as Site A South collects primarily process flow and not residential flow, Site A South values, though shown on the graph above, are not considered in this analysis. There appears to be higher-than-normal groundwater infiltration occurring in the basins upstream from Sites D and E during periods of dry weather flow.

[2] WPCF Manual of Practice No. 9 "Design and Construction of Sanitary and Storm Sewers"

[3] Due to attenuation, it should be expected that sites with larger flow volumes should not have quite the peak-to-average and low-to-average flow ratios as sites with lesser flow volumes, which is why the typical and system trend lines slope closer to 1.0 as the ADWF increases, as shown in the figure.

Chapter 4

Future Flow Estimation

4.1 PURPOSE

The purpose of this chapter is to present an overview of the methods used to estimate wastewater flows for both existing and future build-out conditions. Estimated flows were used in the hydraulic model and to size interim and build-out trunk sewers.

4.2 FUTURE WASTEWATER FLOWS

The *City of Newman 2030 General Plan* (General Plan) (Design, Community & Environment, April 2007) provides information on infill development and phased development beyond the City Limits (in the Primary Sphere of Influence (SOI) and the Secondary SOI, shown in Figure 1-1). The General Plan establishes land use designations for planned future developments, including residential densities and commercial and industrial acreages. Average unit wastewater generation rates for new development were compiled based on a review of flow monitoring data and wastewater generation rates used by other similar communities. Recommended values are shown in Table 4-1. These unit wastewater generation values were used to estimate flows from future developments.

4.2.1 AVERAGE FLOWS

Land use designations from the General Plan (discussed in Chapter 3) and the future land use unit flows shown in Table 4-1 were used to estimate future flows for three build-out scenarios: 1) Build-out of City Limits, 2) Build-out of the Primary SOI, and 3) Build-out of the Secondary SOI. Land use designations, the total area of each land use type, and the corresponding estimated wastewater flow for each build-out scenario is shown in Table 4-2. These scenarios are discussed in more detail in Chapter 6.

4.2.2 PEAK FLOWS

The flows estimated in the tables discussed above represent average wastewater flow generated by users and do not include additional flow from storm events that cause peak flows.

Two methods were used to determine peak flows: 1) peaking average flows with a design storm event in the model and 2) applying a peaking factor.

For new development occurring within the City Limits, it was assumed that peak flows would be consistent with peaks occurring within existing development. Therefore, peaks were determined

within the modeling process itself by using leakage rates determined during calibration and a design storm (described in more detail in Chapter 5).

For the future development areas in the Primary SOI and Secondary SOI, a peaking factor was applied to the average wastewater flows in Table 4-2. Since the City does not have an established peaking factor for sizing of new sewer infrastructure, a peaking factor was developed using the Babbitt Formula (Modern Sewer Design, 1980). At an increase in population of 34,000 residents in these future development areas (as provided in the General Plan), this method produced a peaking factor of 2.5.

Table 4-1
City of Newman
Recommended Planning Wastewater Unit Flows

Land Use Designations [a]	Future Land Use Unit Flow [a]
Commercial	
Community Commercial	1,500 gpd/ac
Downtown Commercial	1,500 gpd/ac
Service Commercial	1,500 gpd/ac
Business Park	1,500 gpd/ac
Industrial	
Light Industrial	1,650 gpd/ac
Heavy Industrial	1,650 gpd/ac
Industrial Reserve [b]	1,650 gpd/ac
Public Use	
Public Buildings	1,200 gpd/ac
Open Space	
Recreation and Parks	0 gpd/ac
Residential [c]	
If number of dwelling units (DU) IS NOT known:	
Very Low Density Residential	428 gpd/ac
Low Density Residential	1,071 gpc/ac
Planned Mixed Residential	1,092 gpd/ac
Central Density Residential	1,714 gpd/ac
Medium Density Residential	1,928 gpd/ac
High Density Residential	4,498 gpd/ac
If number of dwelling units (DU) IS known:	
All Residential Categories	214 gpd/DU

(a) gpd/ac = gallons per day per acre; gpd/DU = gallons per day per dwelling unit.
(b) Flows from areas with Industrial Reserve land use designation were not included in the modeled scenarios for build-out of the Secondary SOI.
(c) Unit generation values for residential are based on residential densities as defined in the General Plan and shown in Table 3-2, an occupancy rate of 3.4 persons/DU, and a per capita flow of 63 gpd.

Table 4-2
City of Newman
Estimated Acreage and Average Wastewater Flow for each Land Use Designation for Build-out Scenarios

Land Use Definitions	Build-out of City Limits [a]		Build-out of Primary SOI [a]		Build-out of Secondary SOI [a]	
	Area (Acres)	Flow (Mgal/d) [b]	Area (Acres)	Flow (Mgal/d) [b]	Area (Acres)	Flow (Mgal/d) [b]
Commercial						
Community Commercial	26.93	0.040	18.71	0.028	--	--
Downtown Commercial	3.66	0.005	--	--	--	--
Service Commercial	4.14	0.006	--	--	--	--
Business Park	--	--	95.55	0.143	--	--
Industrial						
Light Industrial	25.57	0.042	13.58	0.022	280.13	0.462
Heavy Industrial	14.99	0.025	9.44	0.016	67.96	0.112
Industrial Reserve [c]	--	--	--	--	309.89	0.511
Public Use						
Public Buildings	9.99	0.012	--	--	46.79	0.056
Open Space						
Recreation and Parks	2.98	0	9.39	0	--	--
Residential						
Very Low Density Residential	--	--	57.71	0.025	101.84	0.044
Low Density Residential	37.39	0.040	6.15	0.007	--	--
Planned Mixed Residential	--	--	576.14	0.629	1,015.95	1.109
Central Density Residential	2.11	0.004	--	--	--	--
Medium Density Residential	31.66	0.061	26.46	0.051	--	--
High Density Residential	5.57	0.025	--	--	--	--
TOTAL (rounded)	**165**	**0.26**	**813**	**0.92**	**1,823**	**2.29**

(a) Includes incremental flows only.
(b) Mgal/d = million gallons per day.
(c) Flows from areas with Industrial Reserve land use designation were not included in the modeled scenarios for build-out of the Secondary SOI.

Chapter 5

Hydraulic Model

5.1 PURPOSE

The purpose of this chapter is to present an overview of the construction (including inputs) and calibration of the hydraulic model of the City of Newman's wastewater collection system.

This chapter is divided into the following sections:

- Modeling Software
- Model Inputs and Construction
- Model Calibration

5.2 MODELING SOFTWARE

Wastewater collection system capacity was evaluated using a dynamic flow routing model, Wallingford Software's *InfoWorks*. Dynamic flow routing models are considered one of the most sophisticated means to assess sewer system capacity. The model simulates sewer system hydraulic response during peak flow events resulting from a combination of peak diurnal sanitary flows, groundwater infiltration, and rainfall dependent infiltration and inflow.

5.3 MODEL CONSTRUCTION

The following inputs were used in construction of the hydraulic model and are described in more detail below:

- Pipes and Manholes
- Pump Stations
- Subcatchments
- Design Storm

5.3.1 PIPES AND MANHOLES

All sewer lines with a diameter of 8-inches and greater were modeled. In addition, smaller critical lines were modeled when necessary. The modeled portions of the sewer are shown in Figure 5-1.

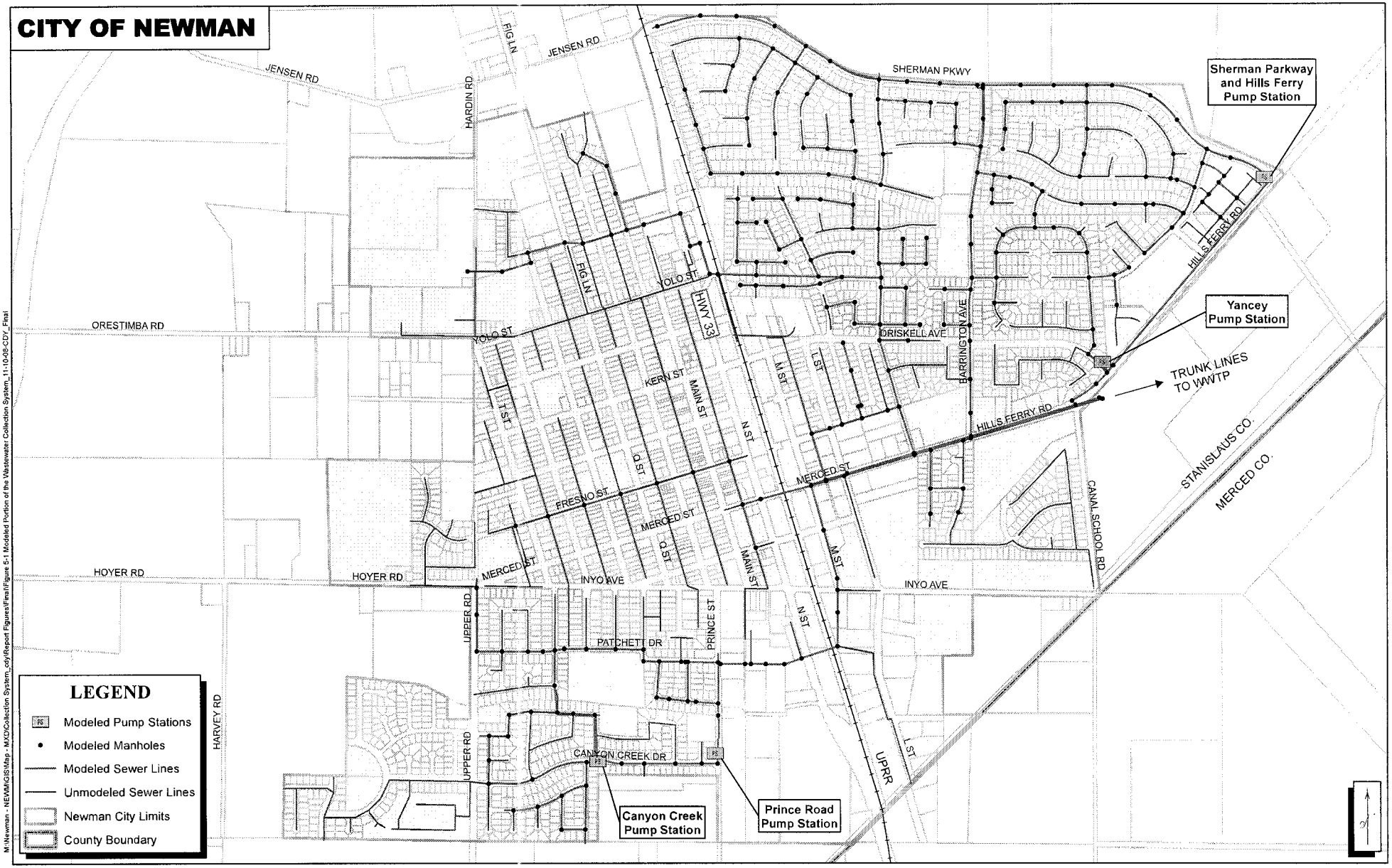


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Figure 5-1
Modeled Portion of the Wastewater Collection System

5.3.2 Pump Stations

Pump stations that were considered to have a significant impact on the system were modeled. Modeled pump stations include:

- Sherman Parkway and Hills Ferry Road (Capacity: 1,440,000 gallons per day (gpd))
- Yancey (Capacity: 864,000 gpd)
- Canyon Creek (Capacity: 504,000 gpd)
- Prince Road (Capacity: 475,200 gpd)

5.3.3 Subcatchments

Subcatchments are geographic areas within a sewer basin that represent a composite of land uses (such as residential, commercial and industrial) and discharge to a common manhole. A population based on acreage and General Plan population density is assigned to each subcatchment to account for residential flow. The population is multiplied by a per capita wastewater generation rate to determine total residential flow. The per capita generation rate for existing development is determined during the dry weather calibration. For subcatchments containing existing commercial, industrial, and publicly zoned parcels, flows are calculated on an acreage basis and modified during the calibration process. Separate subcatchments were developed for elementary/middle schools and high schools. Current enrollment numbers were compiled using the California Board of Education's web site (http://data1.cde.ca.gov/dataquest/). As with residential flows, a unit flow factor was assigned per student and modified in the calibration process. Flows for future subcatchments were determined using the process outlined in Chapter 4.

5.3.4 Design Storm

Design storms are developed from statistical analysis of local precipitation records and represent the distribution of rainfall depths over a time increment for a given storm duration and frequency. The design storm concept assumes that a precipitation event of a particular frequency will produce rainfall-dependent infiltration and inflow (peak flows) of the same magnitude as a naturally occurring storm of the same duration and frequency.

The storm frequency is typically expressed in terms of the storm return period. Storm duration is expressed in hours or days of precipitation. Storms with long return periods and short durations result in large flows. Design storms are selected based on the level of protection desired for the wastewater collection system while considering the likelihood of the event. Based on experience with other similarly sized communities, it is recommended to provide adequate system capacity to convey peak flows during a 10-year return period storm (at a minimum) occurring over a 6-hour period (a 10-year 6-hour storm).

Because design storms are developed based on local precipitation records, data from rainfall gauges in and around the Newman area were analyzed. According to the California Department

of Water Resources (http://cdec.water.ca.gov/), a 10-year, 6-hour design storm in the Newman area produces a total of 1.14 inches of rain. In comparison to recent storms observed in Newman, the storm event in mid-February 2005 produced 0.57 inches of rain in 6 hours (approximately a 1-year, 6-hour storm) and the storm event in early January 2006 produced 0.76 inches of rain in 6 hours (approximately a 2.5-year, 6-hour storm).

A rainfall pattern (or hyetograph) was developed to distribute total rainfall over the storm's 6-hour duration. The hyetograph selected for this design storm is based on the Sacramento Method (Sacramento City and County Drainage Manual, December 1996), which assumes the highest intensity of rainfall occurs in the middle of the storm. The hyetograph used for Newman's 10-year, 6-hour design storm is provided in Figure 5-2.

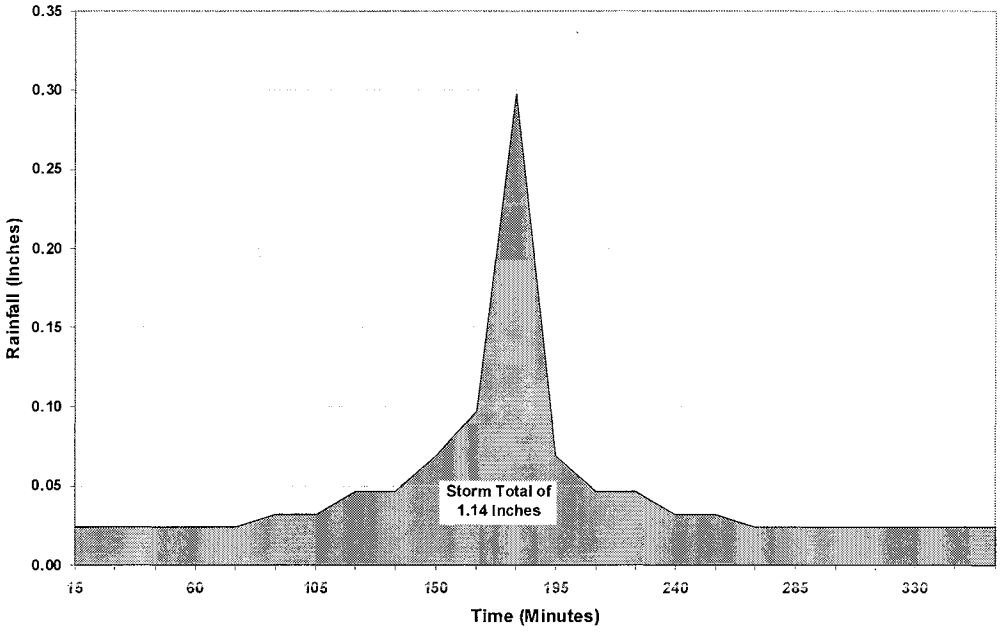

Figure 5-2
City of Newman
10-Year, 6-Hour Design Storm Hyetograph

5.4 MODEL CALIBRATION

Calibration is the process of matching hydraulically modeled results with observed results to assure a model accurately reflects actual conditions. Hydraulic models are calibrated for both dry weather and wet weather conditions.

5.4.1 DRY WEATHER CALIBRATION

The estimated wastewater flow generated from each sewer basin was calculated by multiplying the area or population of each land use type by an initial unit flow factor (Table 4-1). To calibrate the model, simulated flows were graphically compared to observed flows in *InfoWorks*

at each flow monitoring location and unit flow factors adjusted until simulated flows sufficiently matched observed flows. An example of well calibrated dry weather flow for flow monitor A is shown in Figure 5-3. Observed flow is the flow recorded at Sewer Basin A's flow monitoring sites. The simulated flow is the model prediction of flow at the City's Wastewater Treatment Plant (WWTP). Due to the distance between Sewer Basin A's flow monitoring sites and the WWTP, and the travel time of wastewater between these two locations, there is a time shift in the flow pattern of approximately 3 hours. In addition, the fluctuations in the simulated flow are caused by the site's proximity to a pump station. These fluctuations are absent in the observed flow because of averaging of the data.

5.4.2 Wet Weather Calibration

Once the dry weather flow calibration is completed for each flow monitoring site, the wet weather calibration is performed using a significant storm event. Ideally, a significant storm event occurs during the flow monitoring study so that a response is measured in the system. Although flow monitoring was conducted during the wet season, no significant storm event occurred in the City of Newman during the flow monitoring period (February 6 through March 20, 2007 and, thus, no significant response was observed in the collection system. Therefore, rainfall data and flow measurements from the wastewater treatment plant (WWTP) during past storm events were obtained to determine the overall system response to rainfall. Two events were examined, a storm in mid-February 2005 and another in early January 2006. These storms were simulated in the hydraulic model and the total flow produced by the system was determined. This simulated flow was compared to the maximum flow at the WWTP during the February 2005 storm event (3.0 Mgal/d). The simulated peak flow was modified to match the measured peak flow at the WWTP by adjusting the leakage rate of the system. Because the peak flow at the WWTP was the only point to calibrate to, there was little room to accommodate varying leakage rates throughout the system. However, the oldest parts of town were assumed to have a slightly higher leakage rate than newer parts of the system because collection systems leak more with age. Wet weather calibration using WWTP data is shown in Figure 5-4.

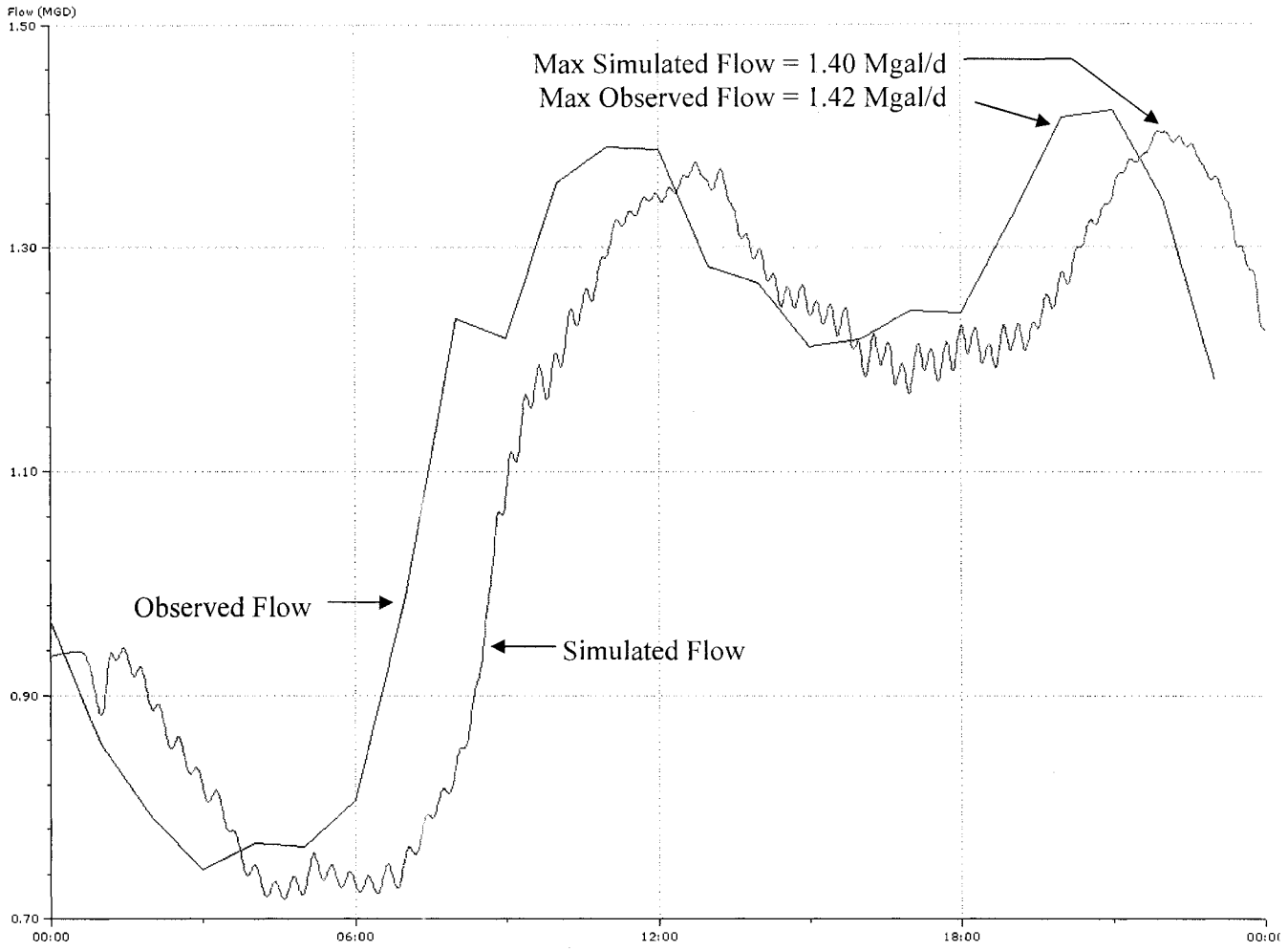

Figure 5-3
City of Newman
Dry Weather Calibration for Flow Monitor A

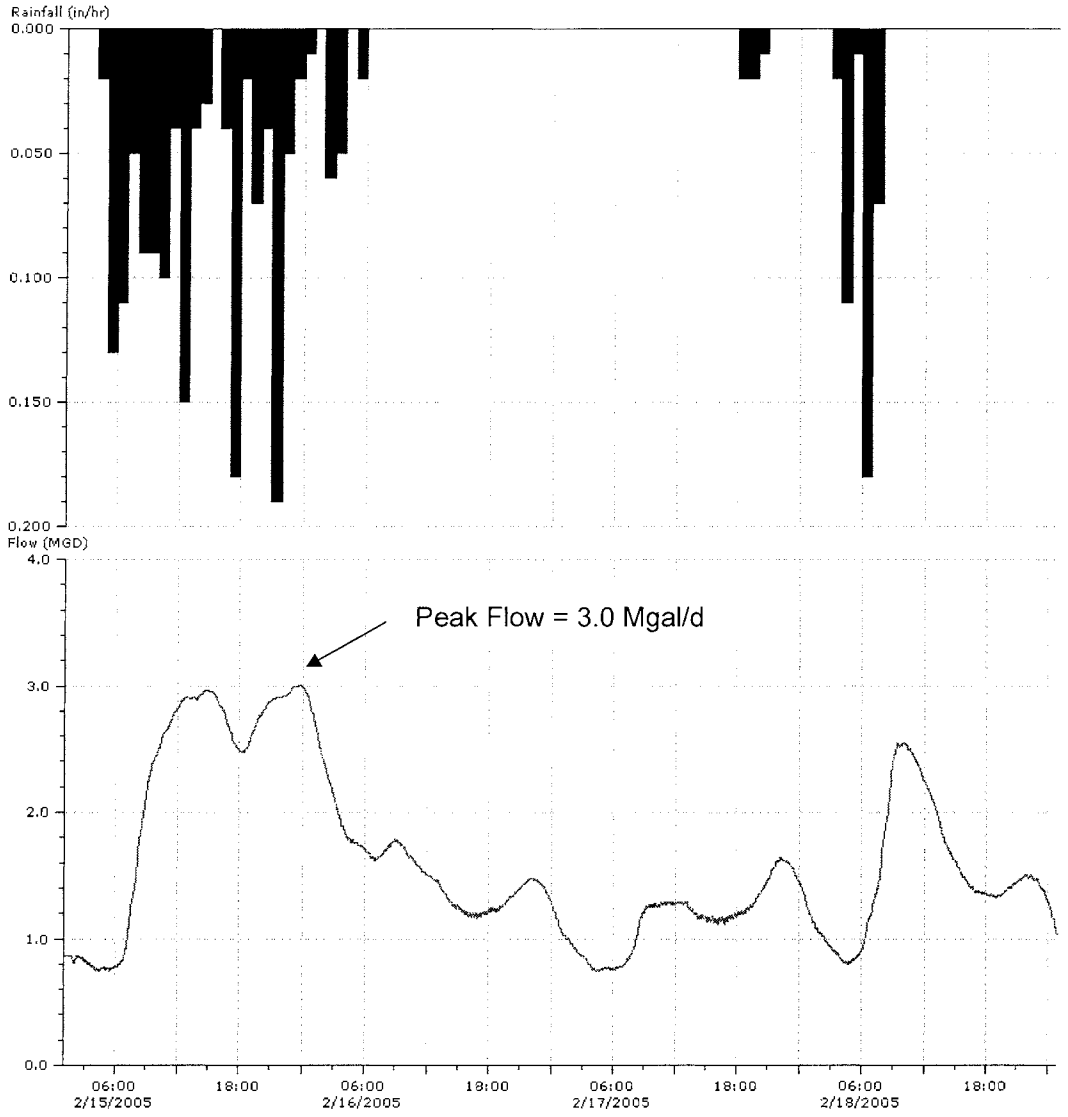

Figure 5-4
City of Newman
Wet Weather Flow Calibration for WWTP

Chapter 6

Capacity Evaluation Results

6.1 PURPOSE

The purpose of this chapter is to provide a summary of the results of the model simulations. Modeling was conducted for dry weather flow, observed peak flows, and a 10-year, 6-hour storm event for (1) the existing level of development, (2) build-out of the City Limits, and (3) build-out of the City Limits plus near-term future development.

This chapter is divided into the following sections:

- Capacity Criteria
- Modeled Scenarios
- Model Results – Existing Level of Development
- Model Results – Future Conditions

6.2 CAPACITY CRITERIA

Wastewater collection systems can generally accommodate some degree of surcharging during peak flow conditions. However, once a manhole surcharges, it takes very little extra flow for an overflow to occur. Criteria for acceptable levels of maximum surcharging were developed with input from City of Newman (City) staff. These criteria are presented in Table 6-1. These acceptable levels were used as criteria in evaluating capacity in flow limited segments of sewer pipelines in all modeled scenarios.

Table 6-1
City of Newman
Acceptable Manhole Surcharging
During Design Storm (10-year, 6-hour) Conditions

Manhole Depth [(a)]	Acceptable Level of Manhole Surcharging
Less than 4 feet	None
4 feet to 7 feet	Not to exceed 2 feet below ground surface
7 feet and greater	Not to exceed 4 feet below ground surface

(a) Manhole depth as measured from the crown of the pipe to the rim of the manhole.

6.3 MODELED SCENARIOS

Several scenarios were modeled to evaluate capacity at differing levels of development in the existing system. The following simulations are described in more detail in the remainder of this chapter:

- Existing system with existing level of development (dry weather flow)
- Existing system with existing level of development during February 2005 storm event (calibration event)
- Existing system with existing level of development during design storm (10-year, 6-hour) event
- Build-out of City Limits during design storm (10-year, 6-hour) event
- Build-out of City Limits with near-term future developments during design storm (10-year, 6-hour) event

6.4 MODEL RESULTS – EXISTING LEVEL OF DEVELOPMENT

6.4.1 EXISTING SYSTEM - DRY WEATHER FLOW

At the existing level of development, during dry weather flows, the model simulated all pipes to be flowing at less than 80% capacity.

6.4.2 EXISTING SYSTEM - FEBRUARY 2005 STORM EVENT

The capacity of the existing system was evaluated during the February 2005 storm event. This storm is classified as a 1.2-year, 6-hour event. During the February 2005 storm event, no capacity issues were observed in the system and model results indicate that all but a few pipe segments were flowing less than 80% capacity. The pipe segments flowing at greater than 80% capacity did not exceed full pipe capacity and the manholes were not surcharged.

6.4.3 EXISTING SYSTEM - DESIGN STORM (10-YEAR, 6-HOUR)

Under existing conditions, a 10-year, 6-hour design storm is predicted to generate a peak flow of 4.6 million gallons per day (Mgal/d). Existing dry weather flow is 1.1 Mgal/d. This peak flow is predicted to cause several capacity bottlenecks and some manhole surcharging (Figure 6-1). Pipelines shown in blue are near full pipe conditions (over 80% full). Pipes shown in purple are capacity impacted by a downstream bottleneck or are flowing at full-pipe capacity. The surcharged locations are shown in pink and numbered in Figure 6-1. These pipeline sections include:

1. Manhole A-103 to A-102 (Intersection of Driskill Avenue and Hills Ferry Road)
2. Manhole B-160 to B-130 (Eucalyptus Avenue from Foxglove Avenue to Driskill Avenue)

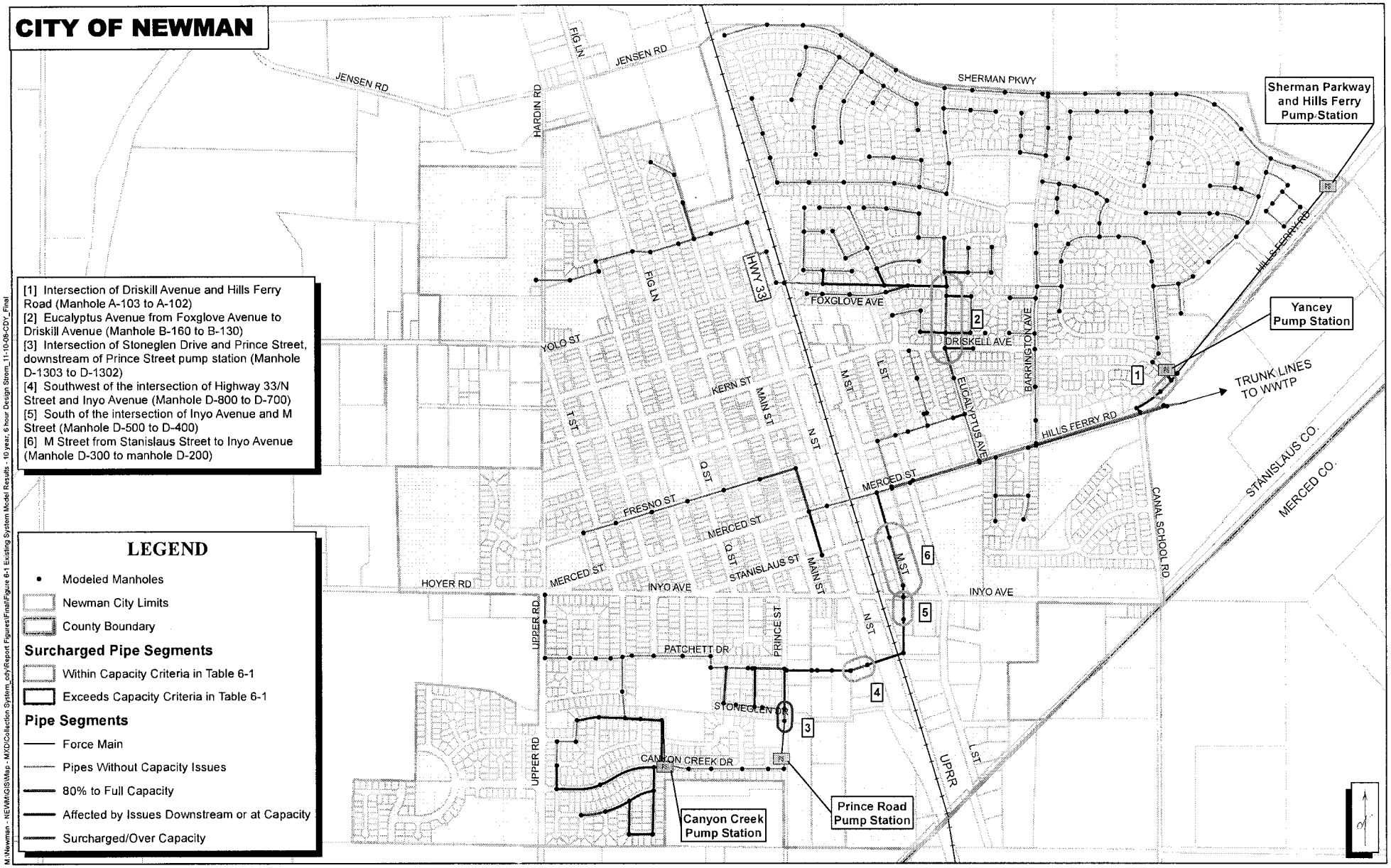

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Figure 6-1
Existing System Model Results - 10 year, 6 hour Design Storm

3. Manhole D-1303 to D-1302 (Intersection of Stoneglen Drive and Prince Street, downstream of Prince Street pump station)
4. Manhole D-800 to D-700 (Southwest of the intersection of Highway 33/N Street and Inyo Avenue)
5. Manhole D-500 to D-400 (South of the intersection of Inyo Avenue and M Street)
6. Manhole D-300 to manhole D-200 (M Street from Stanislaus Street to Inyo Avenue)

Of the sewer segments listed above, only the segment downstream of the Prince Street Pump Station (manhole D-1303 to D-1302) was predicted to exceed the surcharging criteria outlined in Table 6-1. From these results, it appears that this pipeline may be under-sized. A profile of this pipe segment is shown in Figure 6-2. The green line represents ground level and the blue line represents the hydraulic grade line (HGL). The pipes floors and crowns are shown in pink and manholes are represented by two vertical black lines. As shown in Figure 6-2, manhole D-1303 is less than 4 feet deep and any surcharging is unacceptable by the criteria stated in Table 6-1.

6.5 MODEL RESULTS – FUTURE CONDITIONS

6.5.1 BUILD-OUT OF CITY LIMITS

Build-out of the City Limits is assumed to occur when all the currently vacant parcels have been developed. These "infill" developments are zoned in accordance with the General Plan as discussed in Chapter 3. Their corresponding wastewater generation is discussed in Chapter 4. With the addition of peak flows from infill developments, the peak flow at the system's outfall during the 10-year, 6-hour design storm event was estimated to be 5.0 Mgal/d. This peak flow resulted in an increase in capacity-limited pipelines and more manhole surcharging. The predicted surcharged locations during a 10-year, 6-hour design storm at build-out of City Limits are shown in Figure 6-3. These pipeline segments include:

1. Manhole A-103 to A-100 (Hills Ferry Road from Driskill Avenue to Merced Street)
2. Manhole B-160 to B-120 (Eucalyptus Avenue from Foxglove Avenue to Cinnamon Lane)
3. Manhole D-1600 to D-1500 (Intersection of Strawbridge Drive and Stockbridge Drive)
4. Manhole D-1303 to D-1302 (Intersection of Stoneglen Drive and Prince Street, downstream of Prince Street pump station)
5. Manhole D-800 to D-700 (Southwest of the intersection of Highway 33/N Street and Inyo Avenue)
6. Manhole D-600 to D-400 (South of the intersection of Inyo Avenue and M Street)
7. Manhole D-300 to D-200 (M Street from Inyo Avenue to Stanislaus Street)

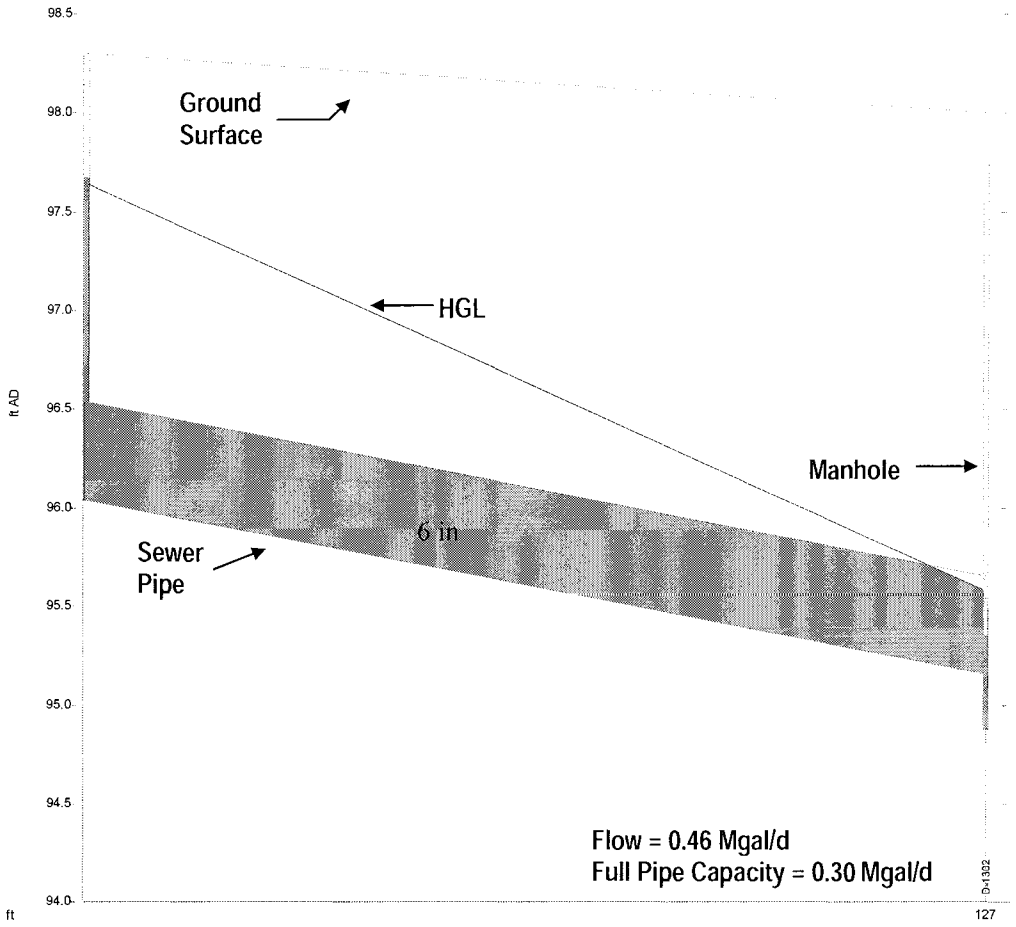
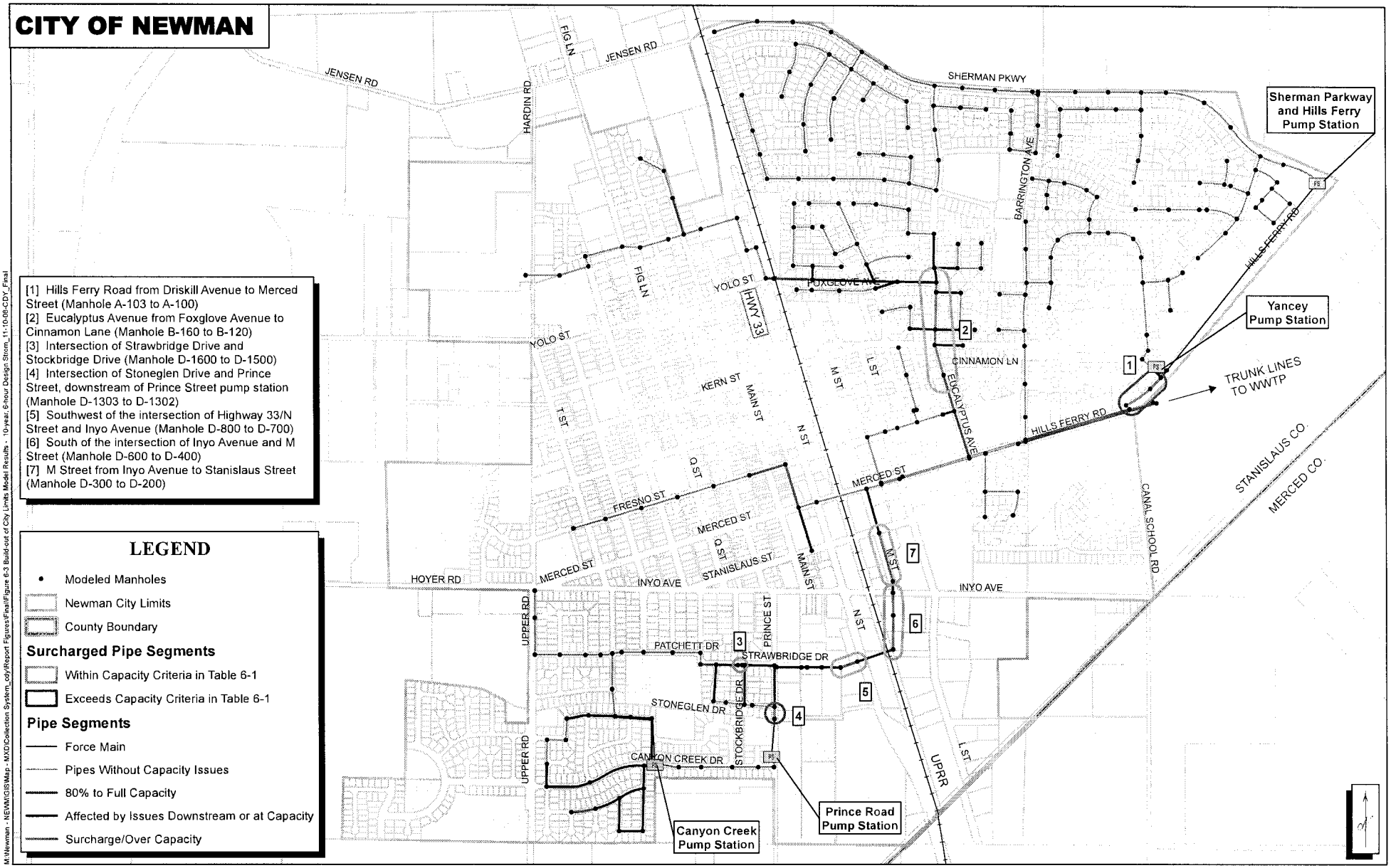


Figure 6-2
City of Newman
Existing System – 10-year, 6-hour Design Storm
Profile of Surcharged Sewer Segment Downstream of Prince Street Pump Station
(Manhole D-1303 to D-1302)



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City of Newman Wastewater Collection System Master Plan

Figure 6-3
Build-out of City Limits Model Results - 10-year, 6-hour Design Storm

Of the sewer segments listed above, the segments downstream of the Prince Street Pump Station (number 4 –manhole D-1303 to D-1302) and on Hills Ferry Road (number 1 – manhole A-103 to A-100) were predicted to exceed the surcharging criteria outlined in Table 6-1. Profiles of these two pipeline segments are shown in Figure 6-4 and Figure 6-5, respectively. As shown in Figure 6-4, manhole D-1303 is less than 4 feet deep and any surcharging is unacceptable by the criteria stated in Table 6-1.

The surcharging predicted on Hills Ferry Road (number 1) is occurring because the 12-inch sewer pipes are undersized for peak flow. In addition, at the connection of this pipeline to the main trunk sewer on Merced Street, the flow depth of the 21-inch trunk is greater than the smaller pipeline along Hills Ferry Road. These two conditions contribute to the predicted surcharging.

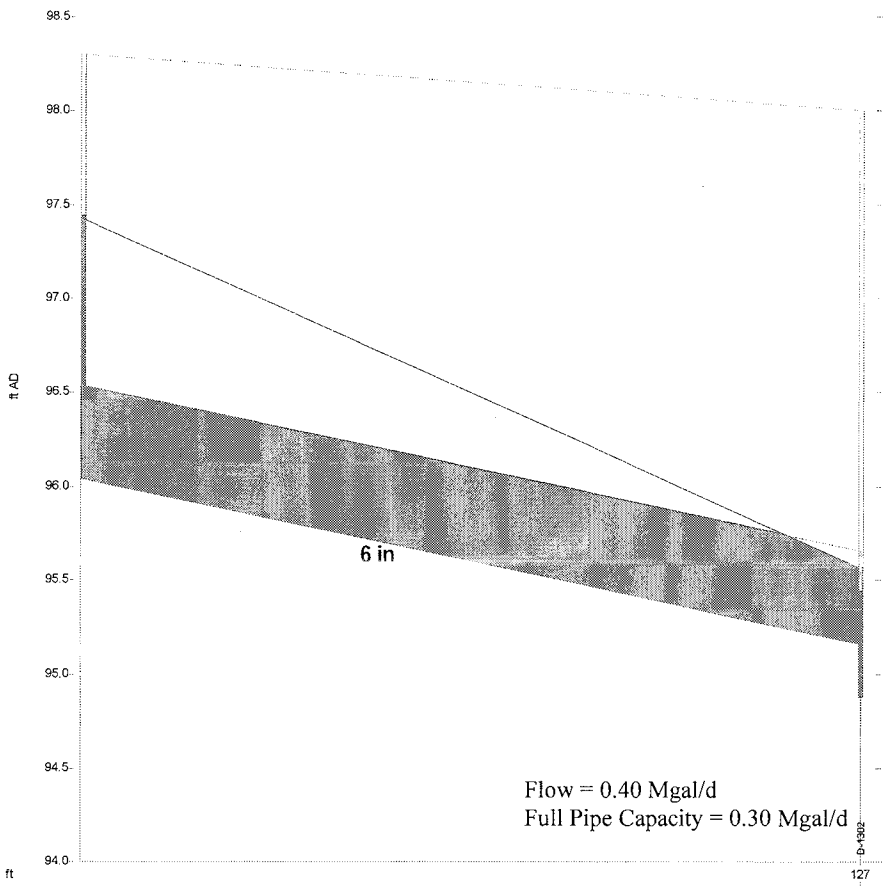

Figure 6-4
City of Newman
Build-out of City Limits – 10-year, 6-hour Design Storm
Profile of Surcharged Sewer Segment Downstream of Prince Street Pump Station
(Manhole D-1303 to D-1302)

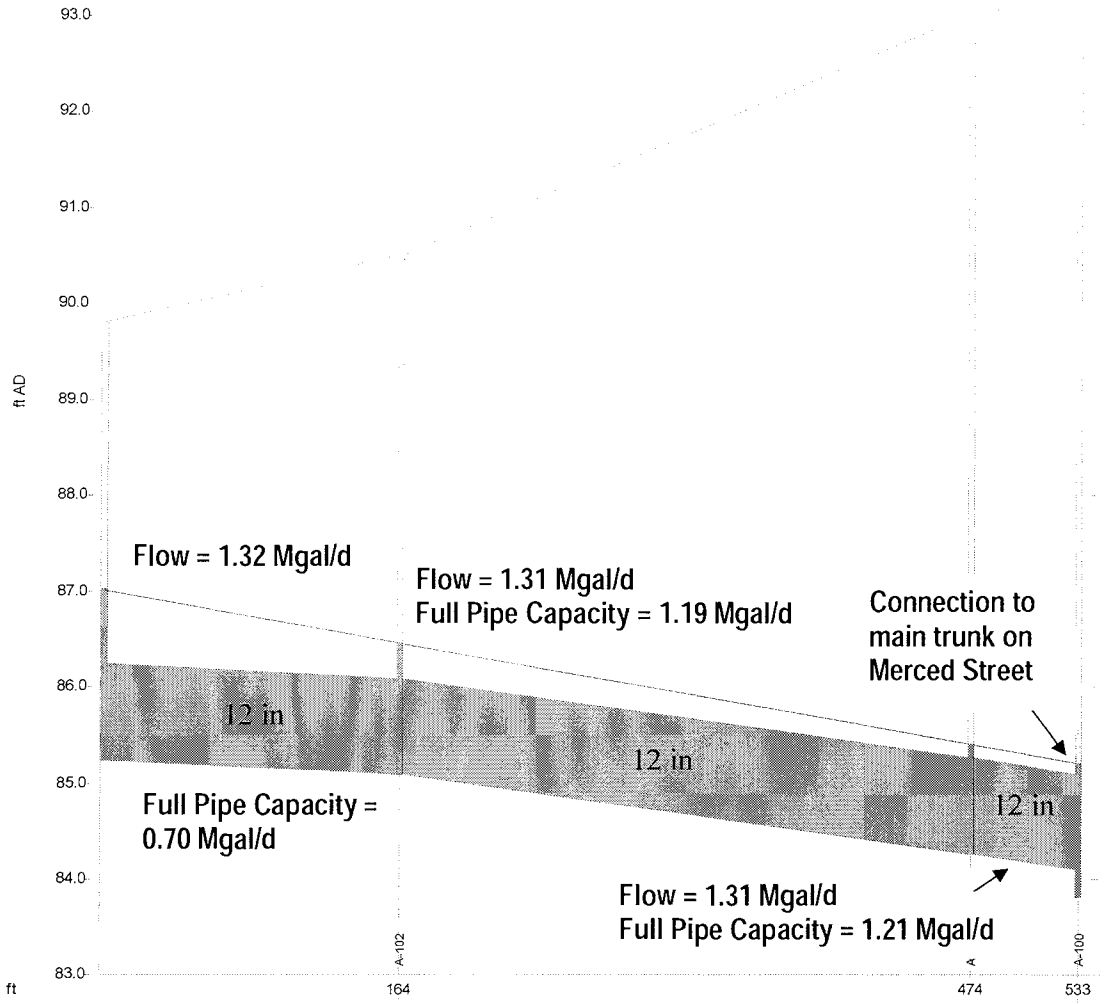

Figure 6-5
City of Newman
Build-out of City Limits – 10-year, 6-hour Design Storm
Profile of Surcharged Sewer Segment – Hills Ferry Road from Driskill Avenue to Merced Street (Manhole A-103 to A-100)

6.5.2 Build-out of City Limits + Near-Term Future Development

The existing system was modeled under 10-year, 6-hour design storm conditions at build-out of the City Limits plus potential near-term new development. Examples of development within the Primary and Secondary Spheres of Influence which may develop within 3 to 5 years are identified as Areas 1 and 2 in Figure 6-6. Because of the proximity of these areas to the existing wastewater collection system and the potential for their near-term growth, the ability of the existing collection system to handle the peak flow from these developments was simulated.

The developer of Hearthstone Ranch I indicated that the pipeline along Sherman Parkway Road (currently providing service to the Hearthstone Ranch I and Sherman Parkway developments) was sized to accommodate estimated flows from Area 2. However, the pumps in the Sherman Parkway and Hills Ferry Road Pump Station were not sized to accommodate these flows.

With the addition of flows from Area 1 and Area 2, the peak flow at the system outfall was estimated at 5.7 Mgal/d. Area 1 was assumed to discharge to manhole D-2373, just upstream of the Prince Street Pump Station. Area 2 was assumed to discharge to several manholes in the pipeline along Sherman Parkway. The areas impacted by the addition of these two potential developments are shown in Figure 6-6. The following areas were either newly impacted by near-term future developments or were further impacted:

1. Manhole A-103 to A-100 (Hills Ferry Road from Driskill Avenue to Merced Street)
2. Manhole A-104 to A-104a (Driskill Avenue at the Yancey Pump Station)
3. Manhole D-1600 to D-1500 (Intersection of Strawbridge Drive and Stockbridge Drive)
4. Manhole D-1303 to D-1302 (Intersection of Stoneglen Drive and Prince Street, downstream of the Prince Street Pump Station)
5. Manhole D-1300 to D-1200 (Intersection of Strawbridge Drive and Prince Street)
6. Manhole D-800 to D-400 (South of the intersection of Highway 33/N Street and Inyo Avenue to the intersection of Inyo Avenue and M Street)
7. Manhole D-300 to D-100 (M Street from Inyo Avenue to Merced Street)
8. Manhole B-600 to B-120 (Eucalyptus Avenue from Foxglove Avenue to Cinnamon Lane)

With the exception of numbers 7 and 8, surcharging in all of the areas listed above exceeded the capacity criteria shown in Table 6-1. The areas identified in numbers 3 through 7 were impacted by the addition of flow from Area 1. Surcharging in several of these sections is due to bottlenecks beginning at Merced Street. A profile of the surcharging downstream of the Prince Street Pump Station (number 4 – manhole D-1303 to D-1302) is shown in Figure 6-7. The surcharging identified in numbers 3 and 5 and in numbers 6 and 7 are shown in Figures 6-8 and 6-9, respectively.

The areas identified in numbers 1 and 2 were impacted by the addition of flow from Area 2. The surcharging along Hills Ferry Road from Driskill Avenue to Merced Street is caused by the connection of the pipeline to the main trunk on Merced Street. The depth of wastewater in this larger sewer is causing the water to backup into the smaller pipeline along Hills Ferry Road. Surcharging on Driskill Avenue at the Yancey Pump Station is due to an overflow connection used for the Yancey Pump Station. This surcharging and flow from the discharge of the outfall

of the Sherman Parkway and Hills Ferry Pump Station force main is entering the Yancey Pump Station overflow/relief line. This condition results in excessive pumping at the Yancey Pump Station and contributes to surcharging, which exceeds capacity criteria identified in Table 6-1, of the manhole at the discharge of the Yancey Pump Station force main (manhole A-103). All these areas would be further impacted by any increase in pump station capacities.

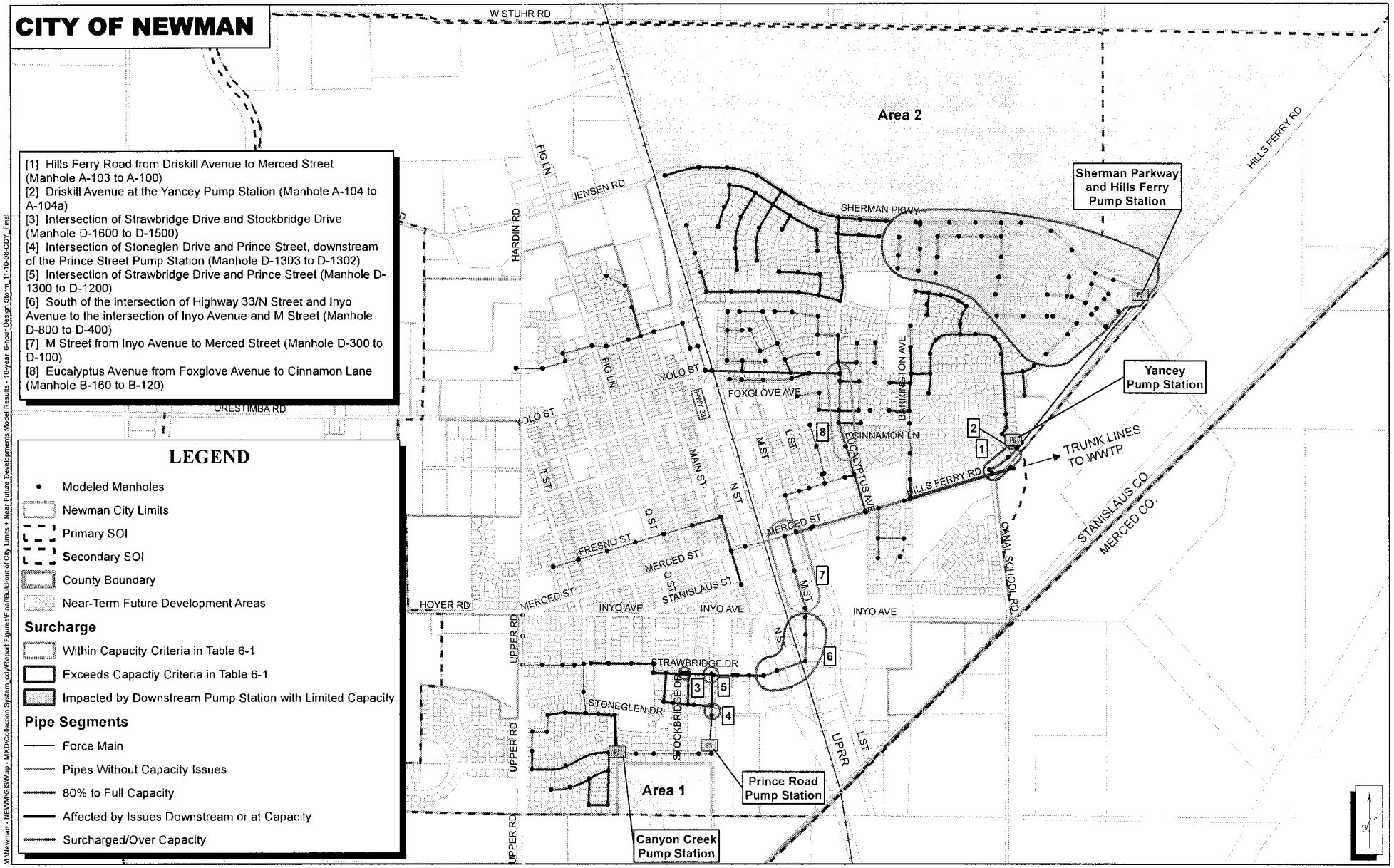

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Figure 6-6
Build-out of City Limits + Near-Term Future Developments Model Results - 10-year, 6-Hour Design Storm

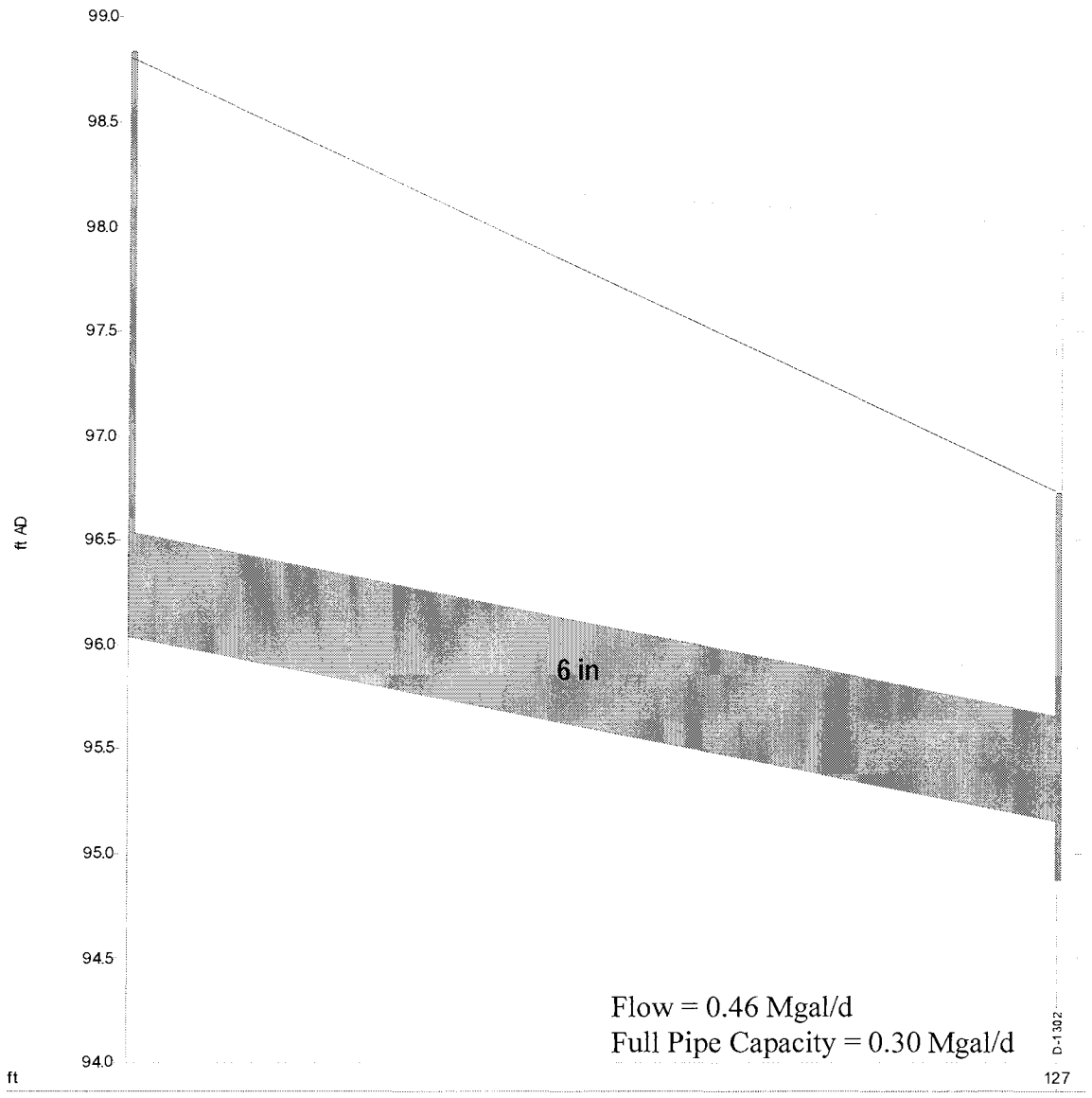
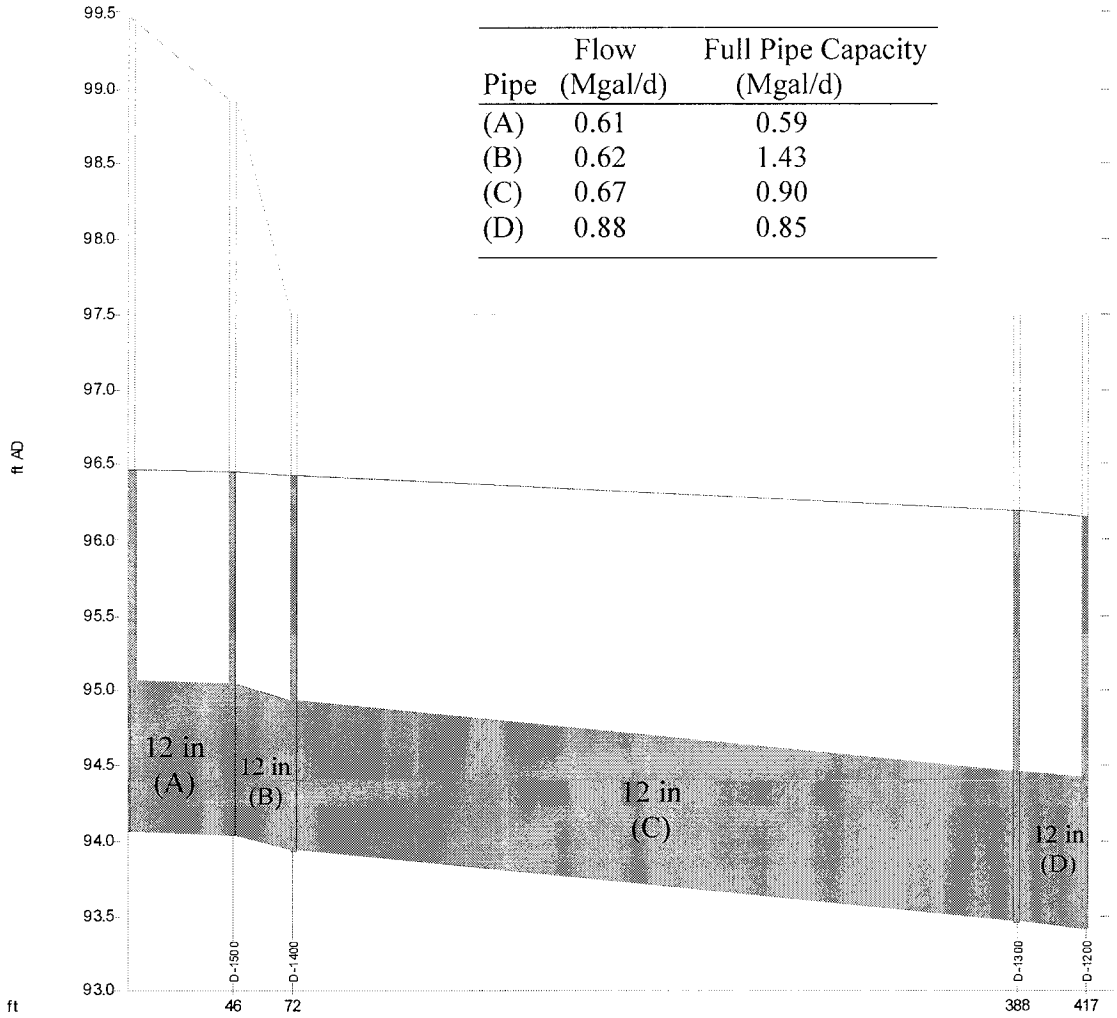


Figure 6-7
City of Newman
Build-out of City Limits + Near-Term Development – 10-year, 6-hour Design Storm
Profile of Surcharged Sewer Segment Downstream of Prince Street Pump Station
(Manhole D-1303 to D-1302)



Pipe	Flow (Mgal/d)	Full Pipe Capacity (Mgal/d)
(A)	0.61	0.59
(B)	0.62	1.43
(C)	0.67	0.90
(D)	0.88	0.85

Figure 6-8
City of Newman
Build-out of City Limits + Near-Term Development – 10-year, 6-hour Design Storm
Profile of Surcharged Sewer Segment at the Intersection of Strawbridge Drive and Stockbridge Drive (Manhole D-1600 to D-1200)

Pipe	Flow (Mgal/d)	Full Pipe Capacity (Mgal/d)
(A)	0.89	0.67
(B)	1.08	1.01
(C)	1.27	1.15
(D)	1.27	0.91
(E)	1.35	1.36
(F)	1.35	1.05
(G)	1.36	1.29

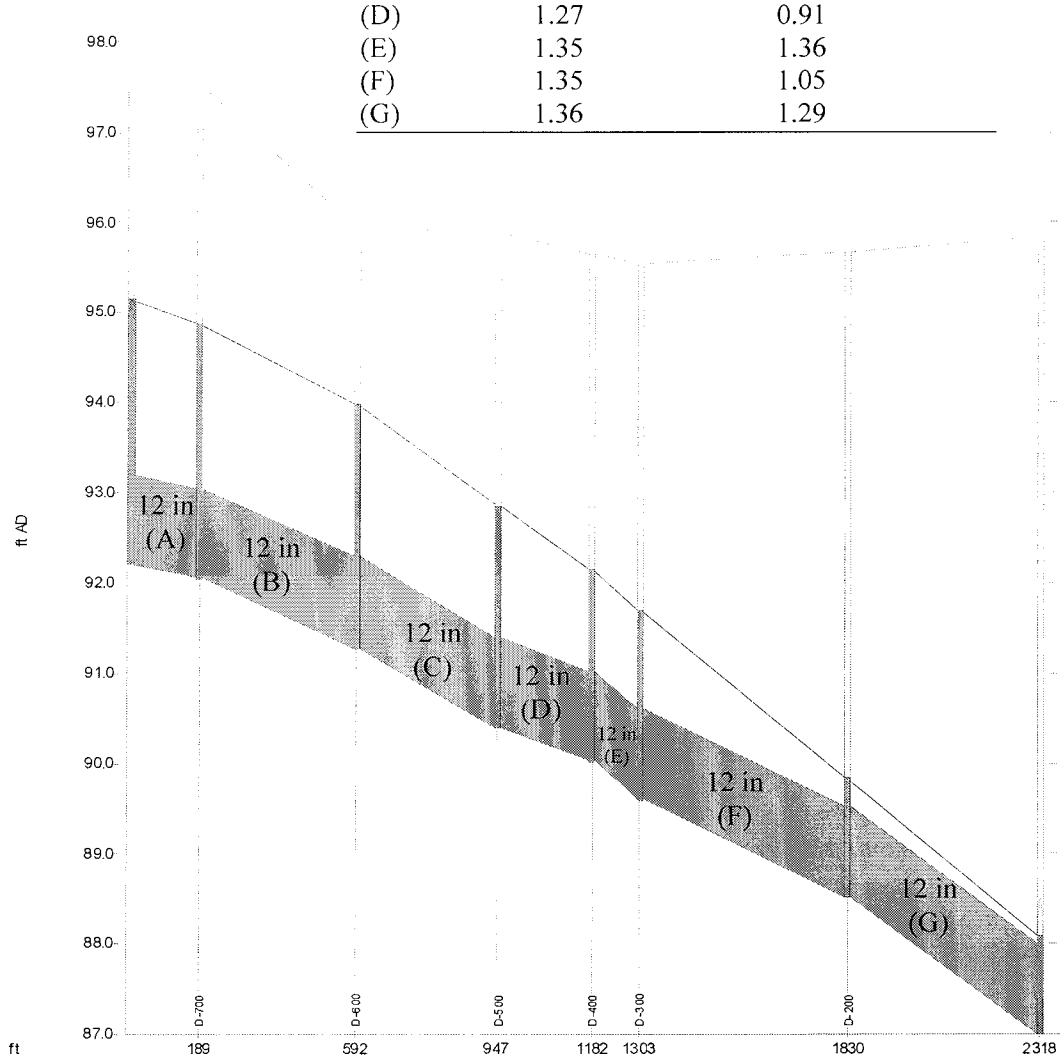


Figure 6-9
City of Newman
Build-out of City Limits + Near-Term Development – 10-year, 6-hour Design Storm
Profile of Surcharged Sewer Segment from Highway 33/N Street to Inyo Avenue and M Street (Manhole D-800 to D-100)

Chapter 7

Recommendations

7.1 PURPOSE

The purpose of this chapter is to provide recommendations for mitigating capacity issues based on the model results detailed in Chapter 6. This chapter also includes an interim plan for future development prior to construction of large trunk sewers and a build-out plan for accommodating full development of the Primary and Secondary Spheres of Influence (SOIs). Planning level cost estimates for capacity mitigation strategies and build-out trunk sewers are also included.

This chapter is divided into the following sections:

- Mitigation Strategies for Existing System Deficiencies
- Phased Capital Improvement Plan
- Capital Cost Estimates

7.2 MITIGATION STRATEGIES FOR EXISTING SYSTEM DEFICIENCIES

During a 10-year, 6-hour design storm and the existing level of development, the only pipeline predicted to exceed recommended capacity criteria is the pipeline segment downstream of the Prince Street Pump Station (Section 6.4.3). This pipeline may require mitigation to provide adequate protection during a design level storm. At build-out of the City Limits, the relief line at the Yancey Pump Station (on Hills Ferry Road from Driskill Avenue to Merced Street) is also predicted to be a potential area of concern. Strategies for mitigating these areas are described in more detail below. *However, prior to implementing any mitigation strategies or improvements, it is highly recommended that surveys be performed to confirm existing inverts, rims, and slopes.*

RECOMMENDED IMPROVEMENT #1 – DOWNSTREAM OF PRINCE STREET PUMP STATION

The pipeline downstream of the Prince Street Pump Station is predicted to surcharge during design storm conditions. Therefore, it is recommended that this pipe segment (manhole D-1303 to D-1302) be upsized from 6-inches to 8-inches in diameter. The location of this improvement is shown in Figure 7-1. Prior to implementation, it is highly recommended these manholes (particularly manhole D-1302) be professionally surveyed.

ES.3 RECOMMENDED CAPITAL IMPROVEMENT PROJECTS

Recommended capital improvement projects and planning level cost estimates for the following scenarios are discussed below:

1. Accommodating build-out of the City Limits in the existing system.
2. Accommodating near-term development and interim solutions for future development areas in the Primary SOI, prior to construction of new large trunk sewers.
3. Providing long-term service for build-out areas (Primary and Secondary SOIs).

Prior to implementing any mitigation strategies or improvements, it is highly recommended that surveys be performed to confirm existing inverts, rims, and slopes.

ES.3.1 EXISTING COLLECTION SYSTEM AT BUILD-OUT OF CITY LIMITS

During a 10-year, 6-hour design storm at the existing level of development, the only pipeline predicted to exceed recommended capacity criteria is the pipeline segment downstream of the Prince Street Pump Station. To provide adequate protection during a design level storm, it is recommended that this pipeline (manhole D-1303 to D-1302) be upsized from 6-inches to 8-inches in diameter.

At build-out of the City Limits, the relief line at the Yancey Pump Station (on Hills Ferry Road from Driskill Avenue to Merced Street) is also predicted to be an area of concern. Flow from the discharge of the outfall of the Sherman Parkway and Hills Ferry Pump Station force main appears to enter the Yancey Pump Station overflow/relief line. This results in excessive pumping at the Yancey Pump Station and surcharging, which exceeds capacity criteria. To alleviate this condition, it is recommended that a 12-inch flap gate be installed at the discharge of the relief line at manhole A-103. The flap gate would prevent flow from entering the overflow line, while allowing the overflow line to discharge into the downstream sewer.

Recommended improvements and costs are summarized in Table ES-2. It is highly recommended that improvements be implemented only subsequent to detailed surveying of these areas.

Table ES-2
City of Newman
Recommended Improvements and Preliminary Costs for Existing System Deficiencies at Build-out of the City Limits

Improvement Description	Cost, $ [(a)]
Improvement #1 - Upsize Pipeline (Manhole D-1303 to D-1302) from 6-inch to 8-inch	$23,500
Improvement #2 - Install 12-inch Flap Gate at Yancey Pump Station	$10,000
Estimating Contingency (30%)	$10,000
SUBTOTAL – CONSTRUCTION COSTS (rounded)	$43,500
Design/Administration (10%)	$4,300
TOTAL (rounded)	**$48,000**

[(a)] January 2008 Costs; ENRCCI = 8,090.

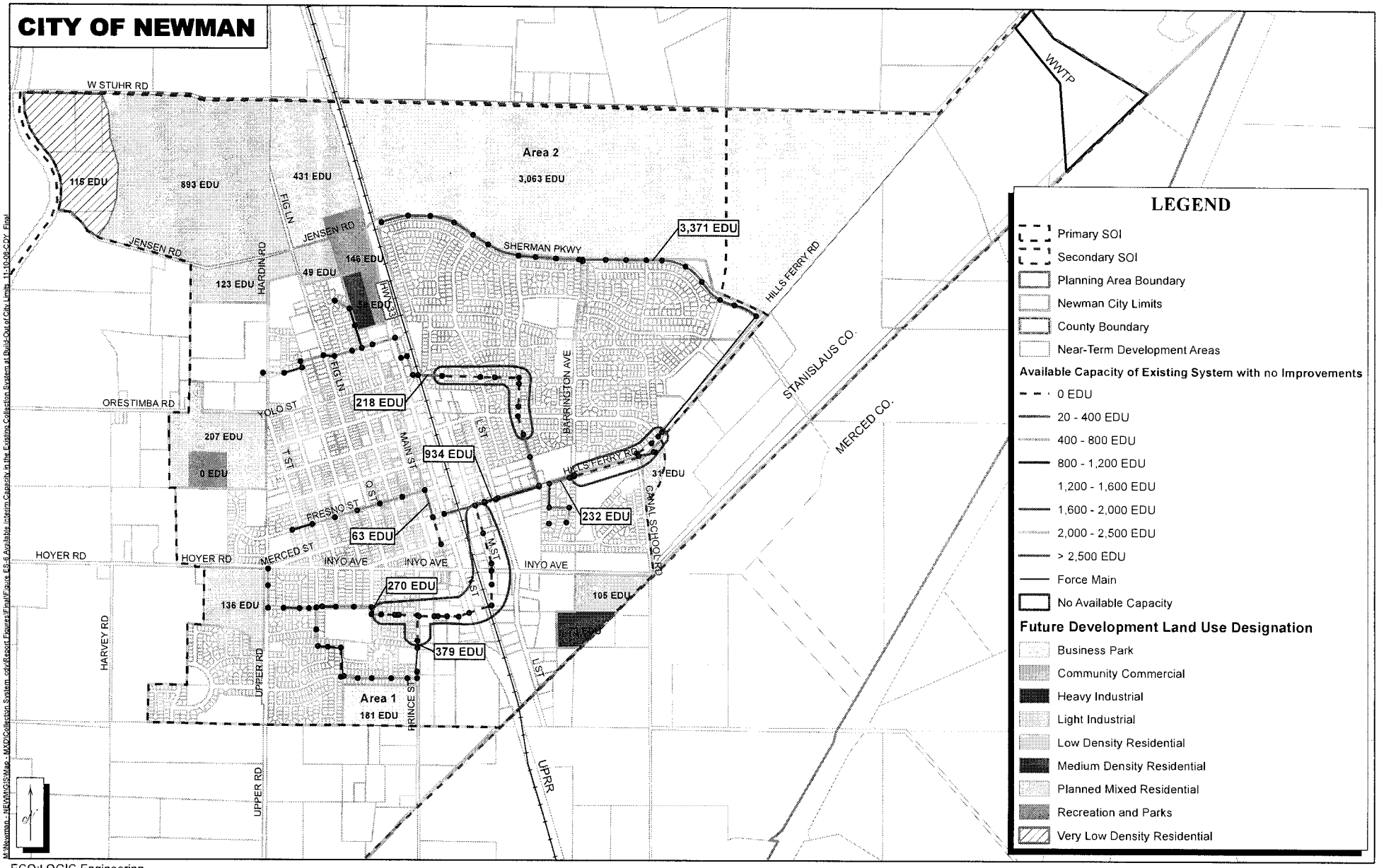
ES.3.2 INTERIM CAPACITY PLAN

Through the modeling process, it was determined that the City of Newman's existing wastewater collection system does not have the capacity to handle wastewater flows from build-out of the Primary and Secondary SOIs. Serving all of these areas will require the construction of two large trunk sewers. Building large trunk sewers involves long-term planning, which makes these sewers unavailable to development occurring within the next few years. Therefore, interim solutions for serving some potential near-term development areas with existing infrastructure were identified. All the interim solutions provided assume that the improvements recommended previously for the existing system deficiencies have been completed.

Future development areas within the Primary SOI may require interim capacity prior to construction of large trunk sewers, depending on the timing of development. To serve peak flow from future developments, the available capacity, as well as the most capacity limited pipelines for each major route, is shown in Figure ES-6. The capacity shown is available for interim use by future development, including Areas 1 and 2. To confirm available capacity, it is recommended that prior to allowing developments to connect to the existing system, a more detailed analysis and surveying of the impacted pipelines be performed.

Area 1

To accommodate Area 1 (located just south of the City Limits) in the existing collection system, the pipe sections from manhole D-1300 to manhole D-100 (approximately 3,027 linear feet) will require upsizing from a 12-inch to a 15-inch diameter pipeline. This upsizing will increase pipe capacity and reduce manhole surcharging, relieving the overall capacity issues in this pipeline. A preliminary cost estimate for this project is provided in Table ES-3.



M:\Newman - NEW\MGS\Maps - MXD\Collection System.mxd\Report Figures\Final\Figure ES-6 Available Interim Capacity in the Existing Collection System at Build-Out of City Limits 11-10-08-CDY Final

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City of Newman Collection System Master Plan

Figure ES-6
Available Interim Capacity in the Existing Collection System at Build-Out of City Limits (with Recommended Existing System Deficiency Improvements)

Table ES-3
City of Newman
Preliminary Cost Estimate for Interim Capacity Plan - Accommodating Area 1 in Existing System

Improvement Description	Cost, $ [(a)]
Upsize Pipeline (Manhole D-1300 to D-100) from 12-inch to 15-inch	$605,000
Optional Improvement – Replace Manholes D-1300 to D-100	$260,000
Estimating Contingency (30%)	$260,000
SUBTOTAL – CONSTRUCTION COSTS (rounded)	$1,250,000
Design/Administration (10%)	$113,000
TOTAL (rounded)	**$1,240,000**

[(a)] January 2008 Costs; ENRCCI = 8,090.

Area 2

According to modeling results, sufficient capacity exists in the pipeline on Sherman Parkway to accommodate Area 2. However, this development cannot be accommodated in the remainder of the existing system without upgrades to the pump station at Sherman Parkway and Hills Ferry Road and upsizing of the pipeline downstream of the pump station outlet. Although the Sherman Parkway and Hills Ferry Road Pump Station may have enough capacity to be used on an interim basis, any additional flow downstream of the pump station outlet will cause an exceedance in the capacity criteria. For any of Area 2 to be accommodated in the existing system, the upgrades and upsizing mentioned above would need to be implemented, or the pipeline from Sherman Parkway would need to be extended east of Hills Ferry Road to the main trunk lines. Further analysis is recommended prior to implementation of either of these strategies.

ES.3.3 LONG-TERM SYSTEM NEEDS

The existing wastewater collection system cannot accommodate all flows from future development areas without significant improvements throughout the system. Such improvements would be costly and require major construction in high population areas, such as downtown. Therefore, a plan for serving build-out areas in the SOIs with new trunk sewers to the WWTP was developed.

To serve the wastewater needs for anticipated development areas within the Primary and Secondary SOIs, two new trunk lines are proposed. Preliminary routes are presented in Figure ES-7. A northern trunk would collect wastewater north of Hoyer Road and a southern trunk would collect wastewater south of Hoyer Road. This alignment would allow the majority of the flow in future areas to be accommodated by gravity. For developments south of Hoyer Road, a new sewer trunk could be routed along the southern boundary of the City Limits and then northeast along the Stanislaus/Merced County boundary to eventually discharge at the WWTP. For developments north of Hoyer Road, flows could be routed north along the western edge of the City Limits and then roughly east along East Stuhr Road to the WWTP.

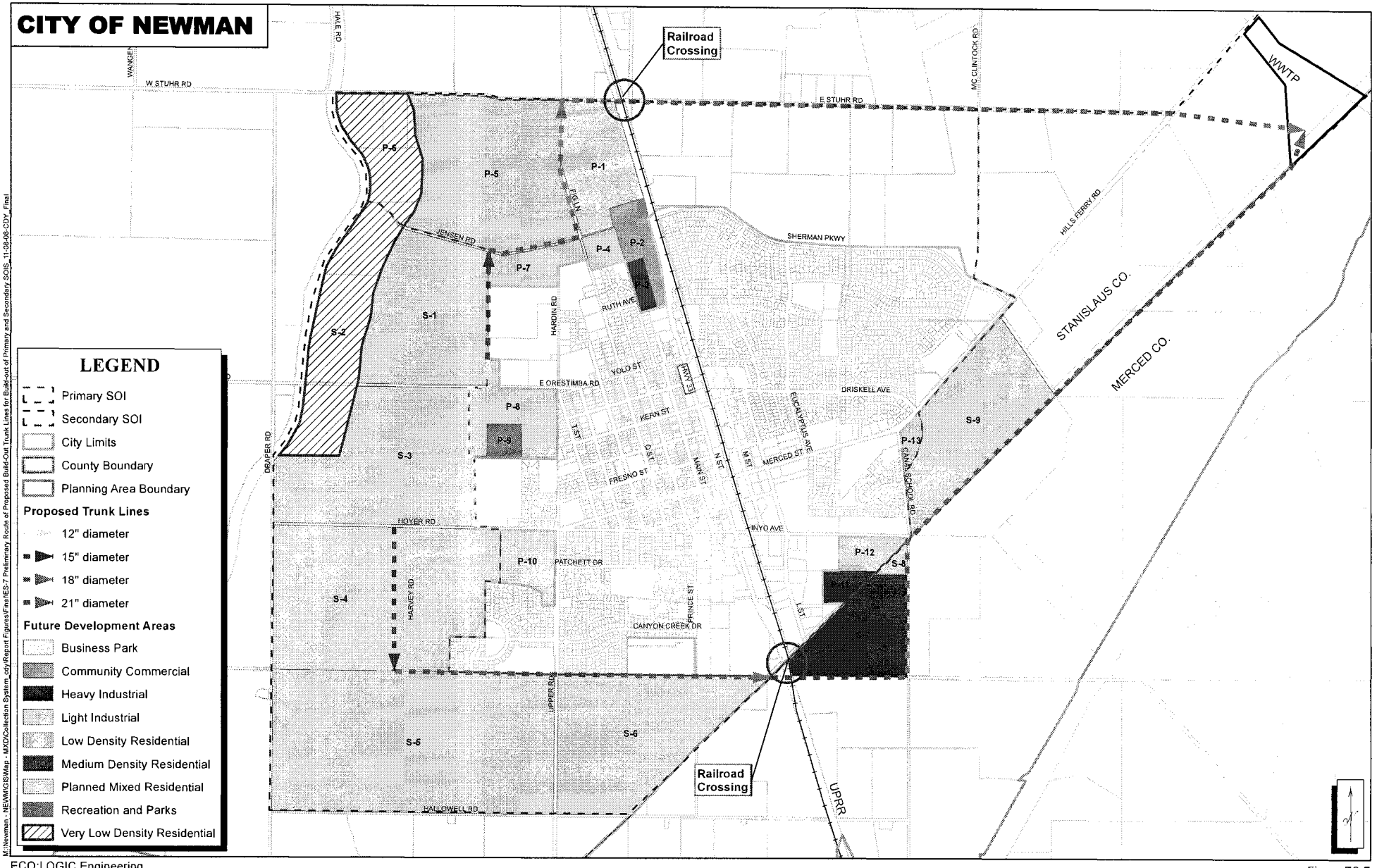

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Figure ES-7
Preliminary Routes of Proposed Build-Out Trunk Lines for Build-out of Primary and Secondary SOIS

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It should be noted that both of these proposed trunk line routes would need to cross the Union Pacific Railroad, which would require the acquisition of easements. In addition, trunk sewer capacity was calculated assuming that Area 2 would be accommodated in the existing pipeline along Sherman Parkway, with one of the improvements identified above being constructed.

A preliminary cost estimate to construct trunk sewers to accommodate the Primary and Secondary SOIs is provided in Table ES-4.

Table ES-4
City of Newman
Preliminary Cost Estimate for Build-out of Primary and Secondary SOIs - Proposed New Trunk Sewers

Improvement Description	Cost, $ [(a)]
Build-out Trunk Sewer – North Route	$6,000,000
Build-out Trunk Sewer – South Route	$7,300,000
Estimating Contingency (30%)	$4,000,000
SUBTOTAL – CONSTRUCTION COSTS (rounded)	$17,300,000
Design/Administration (10%)	$1,700,000
TOTAL (rounded)	**$19,000,000**

[(a)] January 2008 Costs; ENRCCI = 8,090.

Chapter 1

Introduction

1.1 PURPOSE

The City of Newman (City) Wastewater Collection System Master Plan (Master Plan) is intended to provide guidance to the City on their existing wastewater collection system and options for future development. Specific objectives of the Master Plan include:

- Evaluation of the capacity of the existing wastewater collection system.
- Identification of capital improvements needed to correct any identified existing deficiencies.
- Identification of capital improvements needed to accommodate future development, as identified in the *City of Newman 2030 General Plan* (General Plan) (Design, Community & Environment, April 2007).

In addition, in May 2006, the California State Water Resources Control Board (SWRCB) issued statewide general waste discharge requirements (WDRs) for all publicly owned sanitary sewer systems greater than one mile in length. With the adoption of new WDRs, municipalities are now required to document system capacities and maintenance procedures to minimize overflows and failures. A key element of the WDR is the completion of a Sewer System Management Plan (SSMP). Within the SSMP, municipalities are required to complete a System Evaluation and Capacity Assurance Plan (SECAP). The SECAP determines where hydraulic deficiencies exist and outlines a capital improvement program to ensure adequate capacity for dry and wet weather flow conditions.

This Collection System Master Plan provides the City with a plan that is consistent with its new General Plan as well as fulfills the requirements of the SSMP and SECAP.

This report is divided into the following chapters:

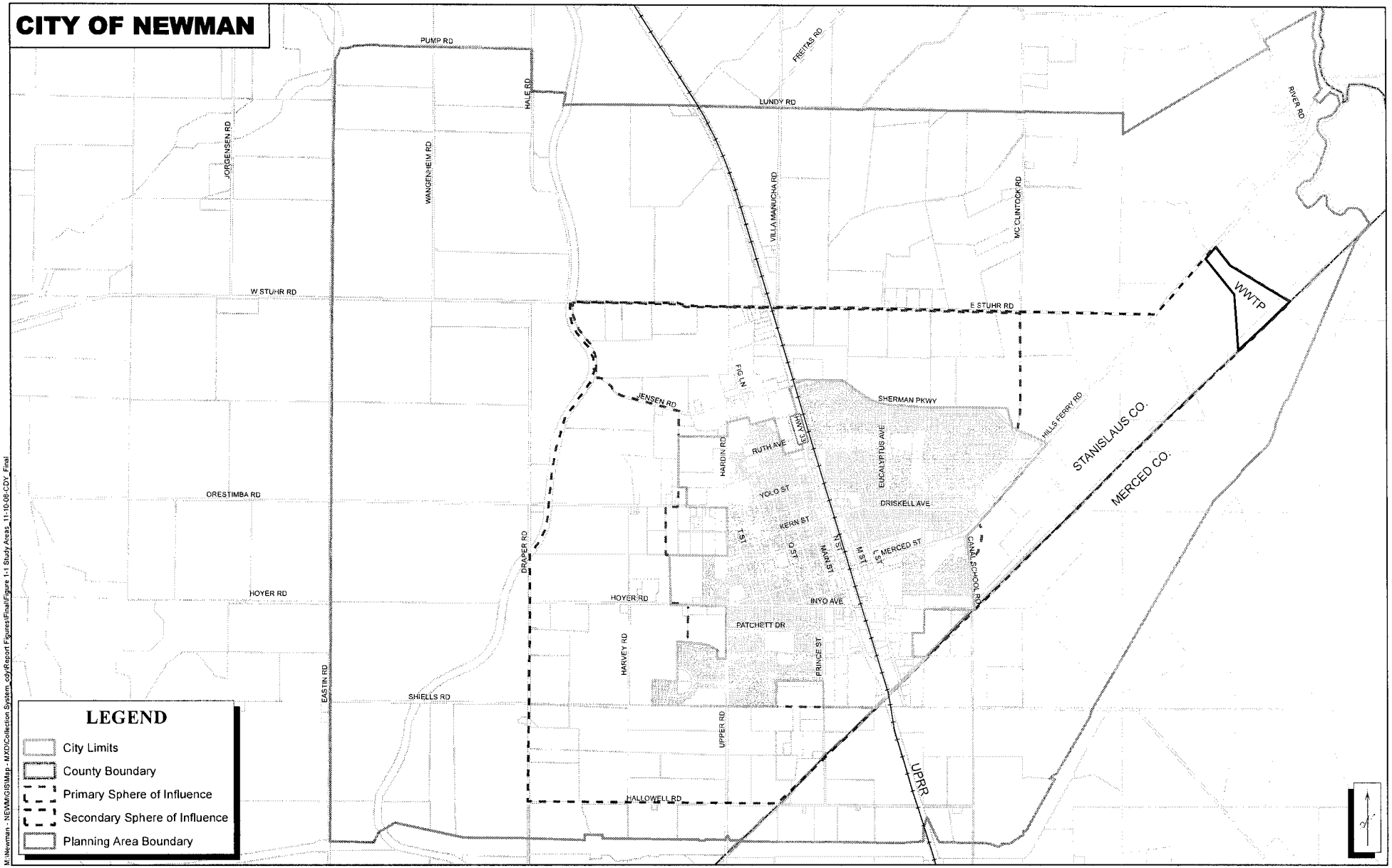
- Chapter 1 – Introduction
- Chapter 2 – Existing Collection System
- Chapter 3 – Land Use Data
- Chapter 4 – Flow Estimation
- Chapter 5 – Collection System Hydraulic Model
- Chapter 6 – Capacity Evaluation Results
- Chapter 7 – Recommendations
- Chapter 8 – SSMP Development Plan and Schedule

1.2 STUDY AREAS

The City of Newman is located at the southern border of Stanislaus County, near Merced County, approximately 100 miles southeast of San Francisco. The City currently has a population of approximately 10,000 and is located in a generally agricultural area of the San Joaquin Valley.

As mentioned above, the City recently completed an update to their General Plan. The General Plan identifies growth within the current City Limits as well as two major areas for future growth: the Primary Sphere of Influence (SOI) and the Secondary SOI. This Master Plan evaluates the ability of the existing wastewater collection system to provide capacity for the projected growth within the City Limits and evaluates alternatives for providing capacity to areas outside the City Limits (the Primary and Secondary SOIs).

The City Limits, Planning Area, Primary SOI, and Secondary SOI boundaries are shown in Figure 1-1.



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City of Newman Wastewater Collection System Master Plan

Figure 1-1
Study Areas

Chapter 2

Existing Wastewater Collection System

2.1 PURPOSE

The purpose of this chapter is to describe the City's existing wastewater collection system, which currently provides service to users within the City Limits.

This chapter is divided into the following sections:

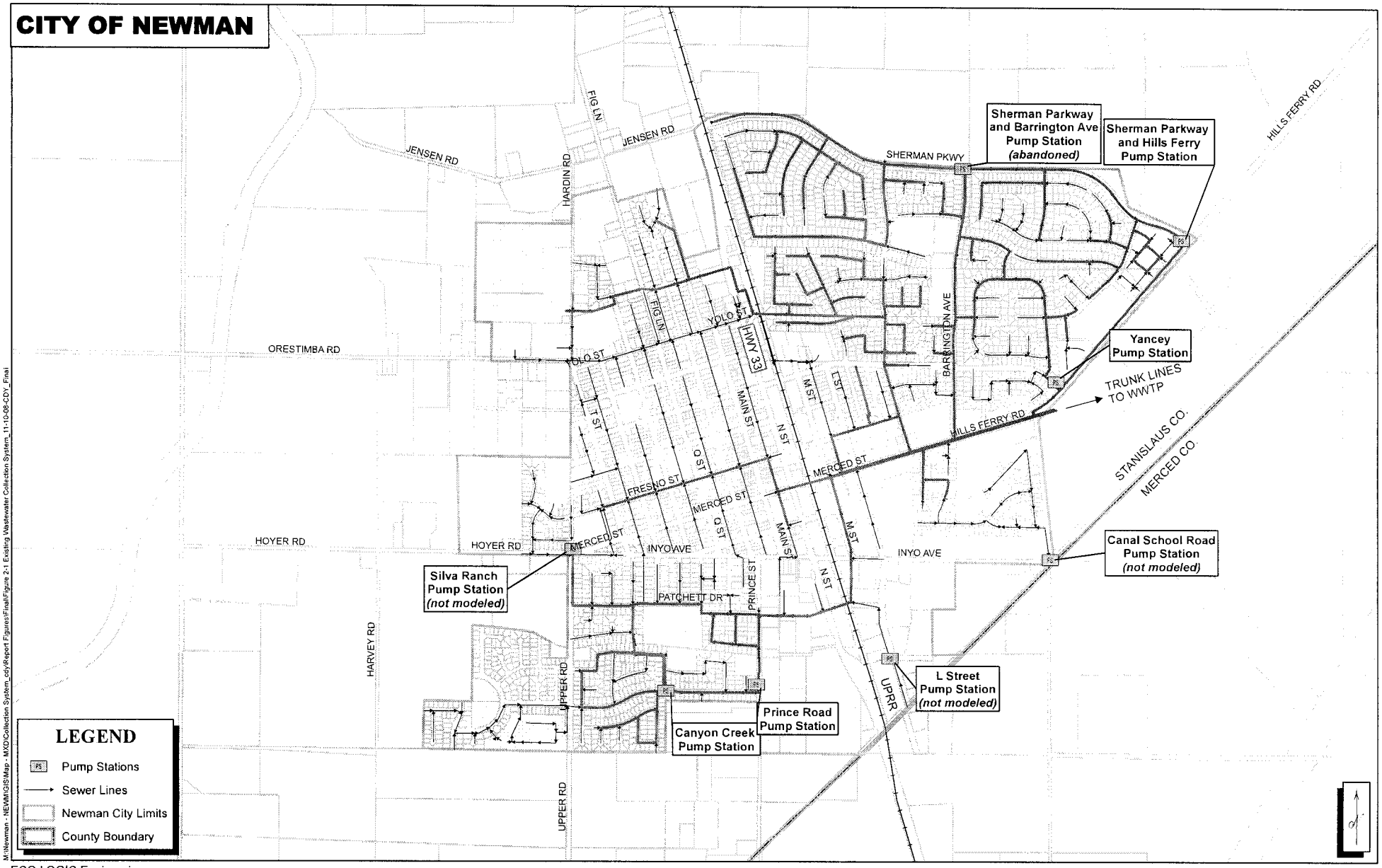
- Description of Existing Wastewater Collection System
- GIS Database
- Existing Wastewater Flows

2.2 DESCRIPTION OF EXISTING WASTEWATER COLLECTION SYSTEM

The City's existing wastewater collection system covers an area of approximately 1,000 acres and provides service to over 10,000 residential, commercial, and industrial users. The wastewater generated by these users is collected and conveyed to the City's wastewater treatment plant (WWTP) by a network of sewer pipelines, force mains, and pump stations. The City owns, operates, and maintains this network of over 34 miles of pipelines (ranging in size from 6 to 36 inches in diameter) and 8 pump stations (7 active and 1 abandoned).

The City is located in the western portion of the Central Valley and the terrain is relatively flat, sloping slightly to the east. The City's existing collection system generally follows this natural slope, flowing from west to east. A network of smaller sewer pipelines route flow from throughout the City to two main trunk lines along Merced Street, which eventually discharge into the City's WWTP.

The two trunk lines run parallel to each other along Merced Street, from Highway 33 to Canal School Road, and then through agricultural fields to the WWTP. The older trunk is 18 inches in diameter and the newer trunk is 21 inches in diameter. There are three locations along the two trunks where cross-connections exist. These cross-connections allow flow to be distributed between the two trunks. Flow from throughout the City is conveyed to these trunks by smaller diameter pipelines and pump stations. The City operates seven pump stations, each with a pair of constant speed pumps, ranging in total pumping capacity from 300 to 1,000 gallons per minute (gpm). The City's largest and newest pump station, at the intersection of Sherman Parkway and Hills Ferry Road, has a total pumping capacity of 1,000 gpm and serves developments along Sherman Parkway Road. The City's existing wastewater collection system and its significant attributes are shown in Figure 2-1.



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City of Newman Wastewater Collection System Master Plan

Figure 2-1
Existing Wastewater Collection System

2.3 GIS DATABASE

Pipe and manhole data for the majority of the wastewater collection system was provided by the City in AutoCAD format and in the form of as-built drawings. Both sources of data were consolidated into Geographic Information System (GIS) format for future use in the hydraulic model.

Pipe information included:

- Location
- Pipe size (diameter)
- Pipe slope
- Pipe material

Manhole information included:

- Location
- Rim elevations
- Invert elevations

Any data gaps (such as missing inverts or rims) or inconsistent slope information were completed through field surveys and interpolation of the nearest surrounding values.

2.4 EXISTING WASTEWATER FLOWS

The following sections describe typical wastewater flow characteristics and a description of the flow monitoring program used to determine existing wastewater flow in the system.

2.4.1 WASTEWATER FLOW CHARACTERIZATION

Wastewater collection systems are designed to convey peak wet weather flows. Peak wet weather flows are generally comprised of three elements: base sanitary flow, groundwater infiltration (GWI), and rainfall-dependent infiltration and inflow (RDI/I). Each component is described in more detail below.

Sanitary Flow

Sanitary flow is the component of wastewater generated directly by residential, commercial, and industrial users throughout a community. It is also referred to as base flow.

The majority of base flow is generated by residential and commercial users (i.e. restaurants, grocery stores, shops, etc.). Additional base flow is also generated by industrial users through process wastewater. The most significant industrial contributor in the City is F&A Dairy.

Groundwater Infiltration

Groundwater infiltration is groundwater that enters the collection system through cracks in sewer pipes, leaky joints, damaged sewer lateral connections, and poorly sealed manhole walls. Groundwater infiltration tends to vary seasonally depending on groundwater depth in relation to the depth of the sewer pipes. Typically, groundwater infiltration is more significant during the wet season when groundwater elevations can rise due to rainfall. However, the City of Newman is an agricultural community and crop irrigation in the dry season can also result in a rise in the groundwater elevation. During the flow monitoring study (discussed in Section 2.4.2), it was determined that groundwater infiltration was highest in the older portions of the City.

Rainfall Dependent Infiltration and Inflow

Rainfall-dependent infiltration and inflow (RDI/I) is rainfall that enters the collection system. Infiltration is an indirect introduction of rainfall into the collection system through cracked sewer pipes, leaky joints, and manhole walls. Inflow directly enters the sewer system through leaky manholes covers, roof leaders, and clean-outs.

Diurnal Patterns

A diurnal flow pattern is the variation in flow occurring over the course of a full day. In a 24-hour period, wastewater flow varies significantly with maximum flows typically occurring in the morning and early evening, and minimum flow occurring in the late evening/early morning. During the flow monitoring study (described below), flow was measured every 15 minutes, providing detailed data to evaluate these daily patterns. Each area of the City has its own unique pattern, which varies between weekdays and weekends. The typical diurnal patterns for Sewer Basins D, E, and F are shown in Figure 2-2.

2.4.2 Flow Monitoring

Existing wastewater flow during dry and wet weather conditions within the City's system was determined by monitoring flow for a six-week period from February 6, 2007 to March 20, 2007. The detailed flow monitoring report is included in Appendix A. Since a large rainfall event was not observed during this period, data on the collection system's response to wet weather was not obtained. Peak flows at the WWTP from a historical rain event were used to determine system response to wet weather (Section 5.3.4).

Five monitoring sites were chosen to divide the City's collection system into the sewer basins shown in Figure 2-3. A flow schematic of the sites and basins is included as Figure 2-4. As seen in this figure, the five temporary flow monitors divided the collection system into four basins: Basin A, Basin D, Basin E and Basin F. Cross-connections between the two main trunk lines leading to the WWTP required two monitors to isolate flows from Basin A (Site A North and Site A South).

Average and peak flows observed at each flow monitoring site during the flow monitoring period are shown in Table 2-1.

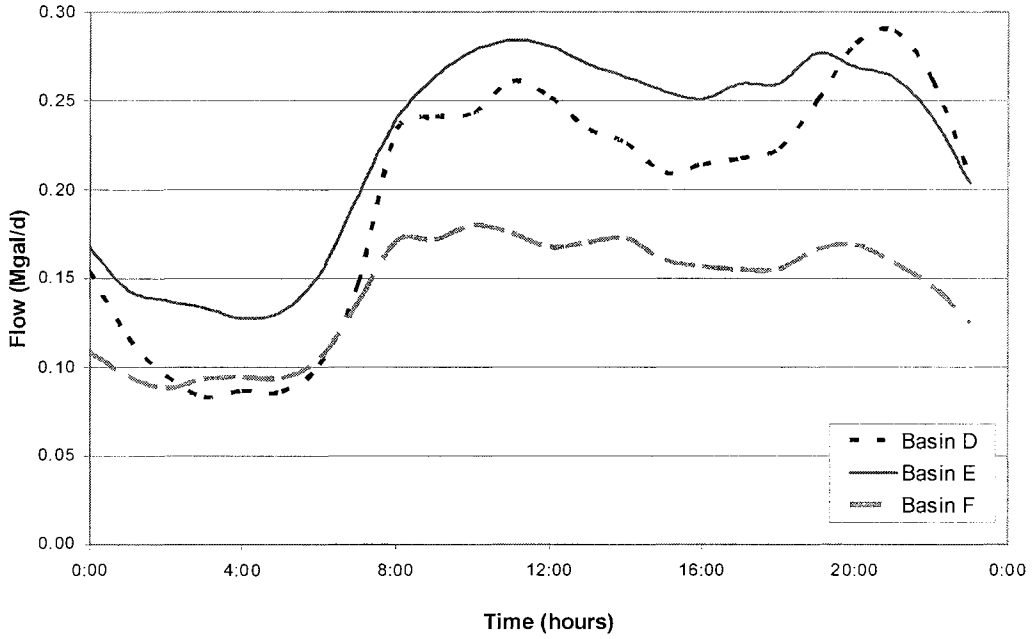

Figure 2-2
City of Newman
Diurnal Flow Patterns

Table 2-1
City of Newman
Summary of Existing Average and Peak Flows
February 6 to March 20, 2007

Flow Monitoring Site	Average Flow (Mgal/d) [a]	Peak Flow (Mgal/d) [a, b]
A (North)	0.70	1.40
A (South)	0.45	0.81
D	0.20	0.48
E	0.22	0.44
F	0.14	0.36
Total Flow [c]	1.15	3.00

[a] Mgal/d = million gallons per day.
[b] Flow monitoring did not capture a significant storm event. Therefore, peak flows for monitoring sites are diurnal peaks rather than storm-related peaks and total peak flow is from February 2005 storm event.
[c] Total average flow determined from flow monitoring (addition of A (North) and A (South)). Total peak flow determined from February 2005 storm event.

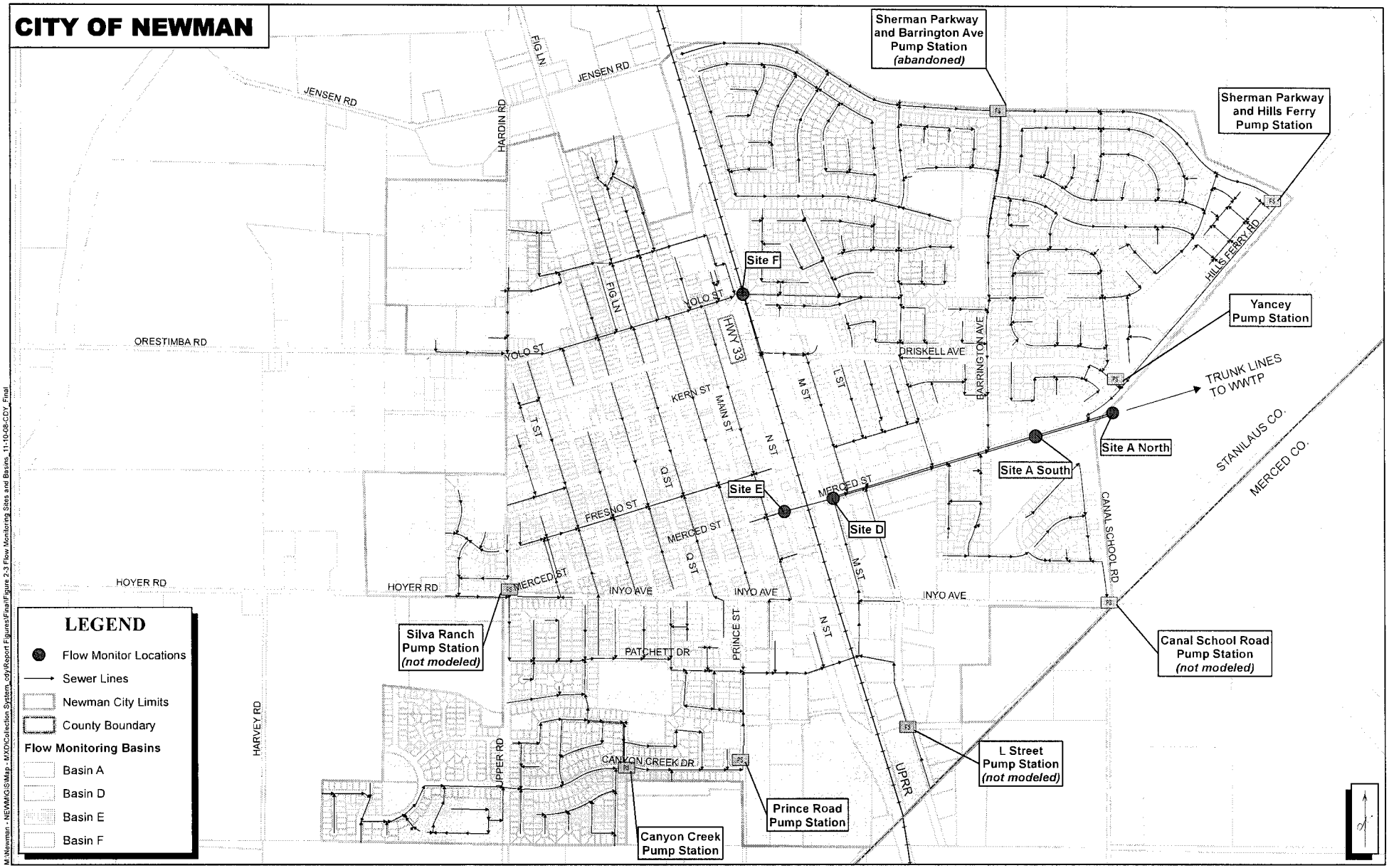

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Figure 2-3
Flow Monitoring Sites and Basins

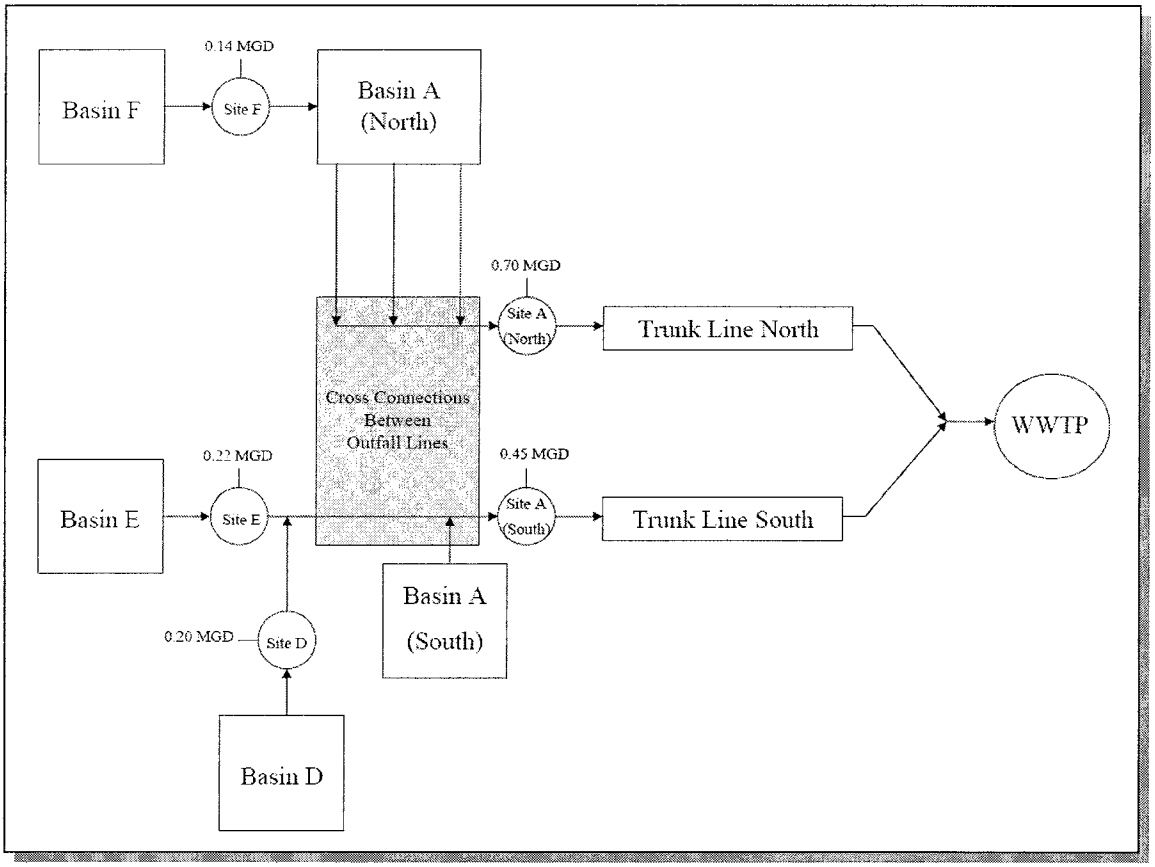

Figure 2-4
City of Newman
Wastewater Collection System Flow Schematic

Chapter 3

Land Use Data

3.1 PURPOSE

This purpose of this chapter is to provide an overview of existing and future land use designations. Existing land use designations were provided in the recently adopted *City of Newman 2030 General Plan* (General Plan) (Design, Community & Environment, April 2007).

This chapter is divided into the following sections:

- Existing Land Use Data
- Future Land Use Data

3.2 LAND USE DATA

Existing and future land use designations, as provided in the General Plan, were used to derive the residential densities and populations used in this analysis.

3.2.1 EXISTING LAND USE DATA

Land uses for existing developments are shown in Figure 3-1. These land use designations were compiled by Design, Community & Environment (DC&E) from data from the Stanislaus County Assessor, Merced County GIS data, the City of Newman, 2002 aerial photography, and field visits by DC&E. For each existing land use designation, the total acreages are shown in Table 3-1.

For the purposes of this Master Plan, areas zoned as Commercial, Commercial/Industrial, and Office were combined into one category and identified as commercial. Areas zoned as Light Industrial, Heavy Industrial and Industrial/Commercial were combined into one category and identified as industrial. These general categories were used to calculate wastewater generation quantities.

Population densities were used to determine residential wastewater generation in the hydraulic model. Commercial and industrial flows were estimated on an acreage basis. These estimates are discussed in more detail in Chapters 4 and 5.

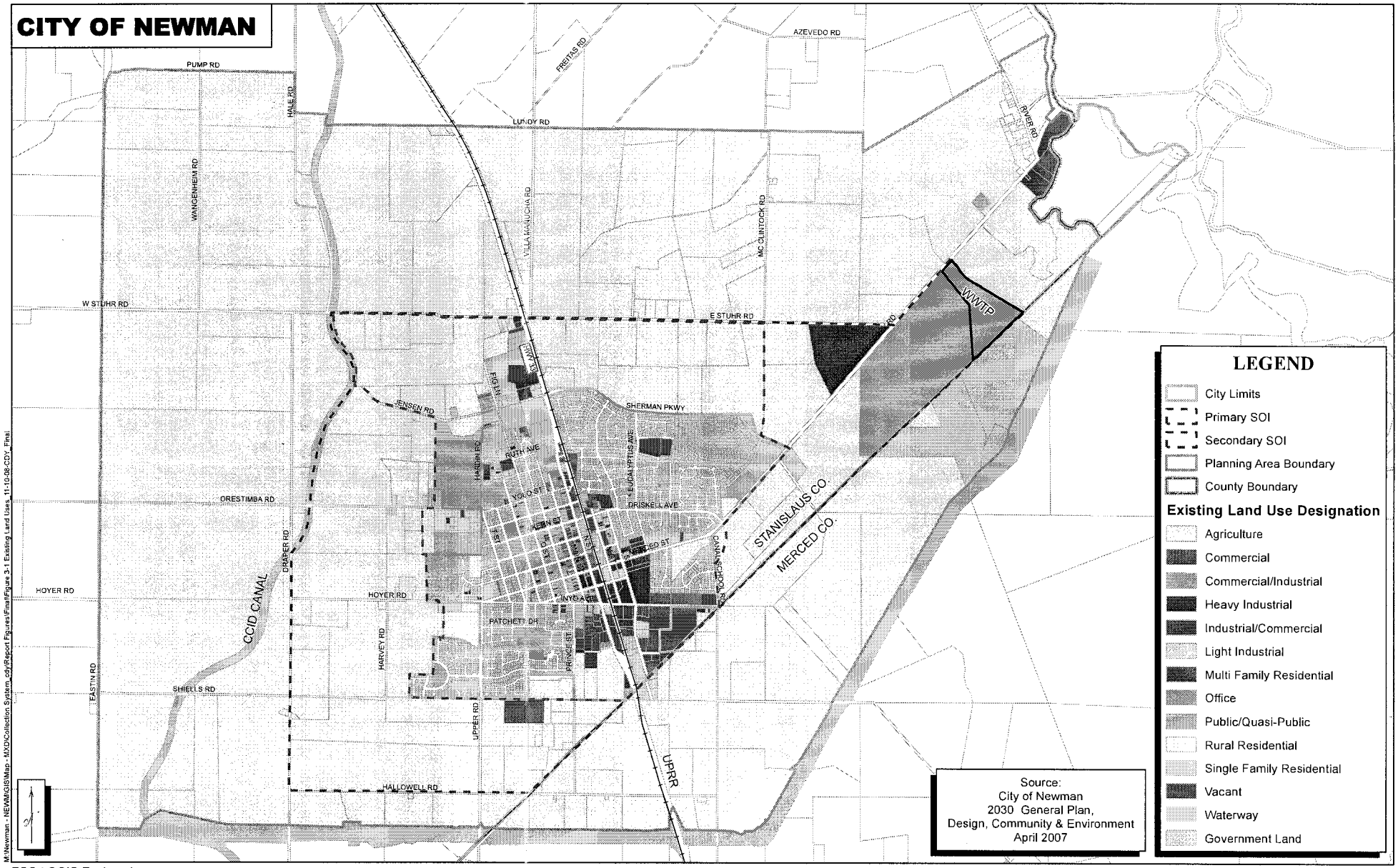

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Figure 3-1
Existing Land Uses

Table 3-1
City of Newman
Existing Land Use Designations and Acreage

Land Use	Total Acreage (Acres) [a]
Single Family Residential	595.5
Multi-Family Residential	26.8
Rural Residential	46.4
Commercial	30.7
Commercial/Industrial	4.3
Office	2.3
Light Industrial	35.7
Heavy Industrial	7.0
Industrial/Commercial	14.1
F&A Dairy	11.6
Elementary/Middle schools	42.8
High schools & Other	54.0
Public Buildings	4.9
Recreation and Parks	22.3
Agricultural	13.1
Vacant	111.9

[a] Total acreage calculated for each land use designation only includes parcels within the City Limits.

3.2.2 Future Land Use Data and Population Estimates

Future land use designations, as defined by the City of Newman General Plan, for the build-out of the City Limits and the Primary and Secondary Spheres of Influence (SOIs) are shown in Figure 3-2. For the purposes of this analysis, it was assumed that existing developments would not be rezoned as shown in the General Plan. Future residential land use designations and their respective densities are shown in Table 3-2. The General Plan provided a range of densities for each residential land use designation. For flow estimation purposes, a single value for each residential density was selected from these ranges, generally the average of each range.

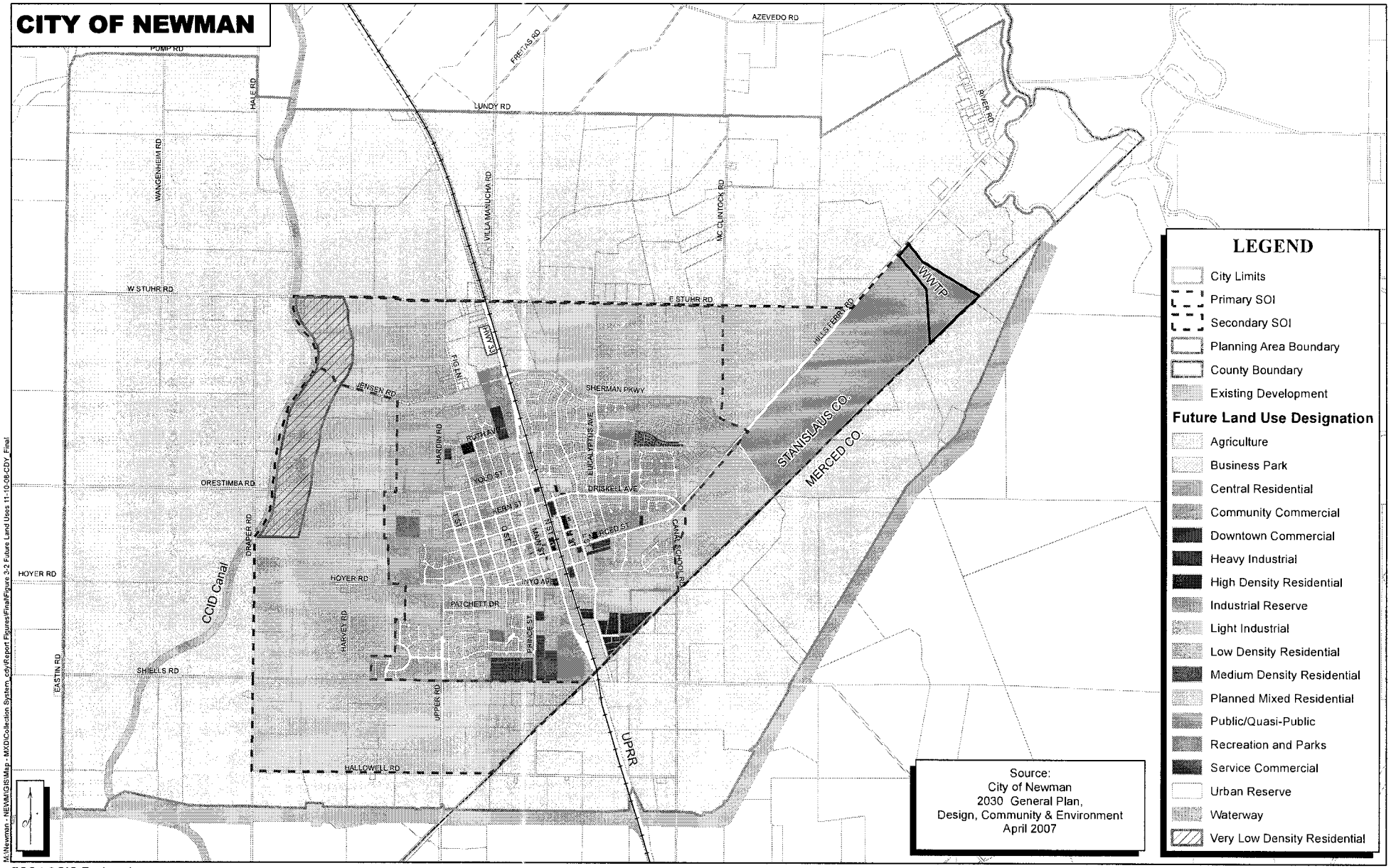

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Figure 3-2
Future Land Uses

Table 3-2
City of Newman
General Plan Residential Density Definitions and Population Estimates

Residential Land Use	General Plan Residential Density (unit/acre)	Residential Density Used in Analysis (units/acre)	Estimated Population (per acre)[a]
Very Low Density Residential	1.0 to 3.0	2.0	6.8
Low Density Residential	3.0 to 6.0	5.0	17.0
Planned Mixed Residential	No more than 75% @ (1.0 - 6.0) and at least 10% @ (12.0)	75% @ 4.0 and 17.5% @ 12.0 = 5.1	17.3
Central Residential	3.0 to 12.0	8.0	27.2
Medium Density Residential	6.0 to 12.0	9.0	30.6
High Density Residential	12.0 to 30.0	21.0	71.4

[a] Residential population per unit = 3.4 people/unit (City of Newman, General Plan, 2007).

The total acreages for each future land use designation for each of the three build-out scenarios are shown in Table 3-3.

Table 3-3
City of Newman
Estimated Acreage for each Land Use Designation for Build-out Scenarios

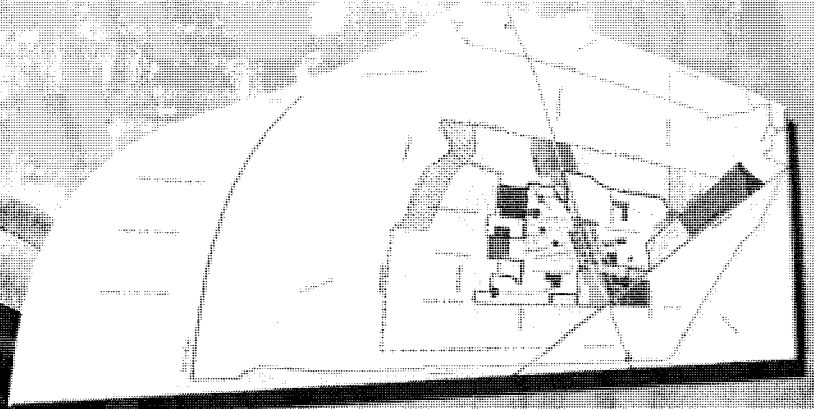
Land Use Definitions	Build-out City Limits Additional Area (Acres) [a]	Build-out Primary SOI Additional Area (Acres)	Build-out Secondary SOI Additional Area (Acres)
Commercial			
Community Commercial	26.93	18.71	--
Downtown Commercial	3.66	--	--
Service Commercial	4.14	--	--
Business Park	--	95.55	--
Industrial			
Light Industrial	25.57	13.58	280.13
Heavy Industrial	14.99	9.44	67.96
Industrial Reserve	--	--	309.89
Public Use			
Public Buildings	9.99	--	46.79
Open Space			
Recreation and Parks	2.98	9.39	--
Residential			
Very Low Density Residential	--	57.71	101.84
Low Density Residential	37.39	6.15	--
Planned Mixed Residential	--	576.14	1,015.95
Central Density Residential	2.11	--	--
Medium Density Residential	31.66	26.46	--
High Density Residential	5.57	--	--
TOTAL (rounded)	**165**	**813**	**1,823**

[a] Acreages provided for build-out of City Limits only include areas for infill development.

CITY OF NEWMAN

Wastewater Collection System Master Plan

November 2008



Prepared for
City of Newman

Prepared by
ECO:LOGIC Engineering

CITY OF NEWMAN

Wastewater Collection System Master Plan

November 2008

Prepared for:
City of Newman

Prepared by:
ECO:LOGIC Engineering

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Consulting Engineers

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Appendix B – City of Newman Wastewater Collection System Master Plan Preliminary Cost Estimates

Executive Summary

The City of Newman (City) Wastewater Collection System Master Plan (Master Plan) is intended to provide guidance to the City on their existing wastewater collection system capacity. It also includes options for providing additional capacity for potential future development identified in the *City of Newman 2030 General Plan* (General Plan) (Design, Community & Environment, April 2007). Specific objectives of the Master Plan include:

- Evaluation of the capacity of the existing wastewater collection system.
- Identification of capital improvements needed to correct any identified existing deficiencies.
- Identification of capital improvements needed to accommodate future development (Primary and Secondary Spheres of Influence (SOIs)).

In addition, in May 2006, the California State Water Resources Control Board (SWRCB) issued statewide general waste discharge requirements (WDRs) for all publicly owned sanitary sewer systems greater than one mile in length. With the adoption of new WDRs, municipalities are now required to document system capacities and maintenance procedures to minimize overflows and failures. A key element of the WDR is the completion of a Sewer System Management Plan (SSMP). Within the SSMP, municipalities are required to complete a System Evaluation and Capacity Assurance Plan (SECAP). The SECAP determines where hydraulic deficiencies exist and outlines a capital improvement program to ensure adequate capacity for dry and wet weather flow conditions. This Wastewater Collection System Master Plan provides the City with a plan that is consistent with its new General Plan as well as fulfills the requirements of the SSMP and SECAP.

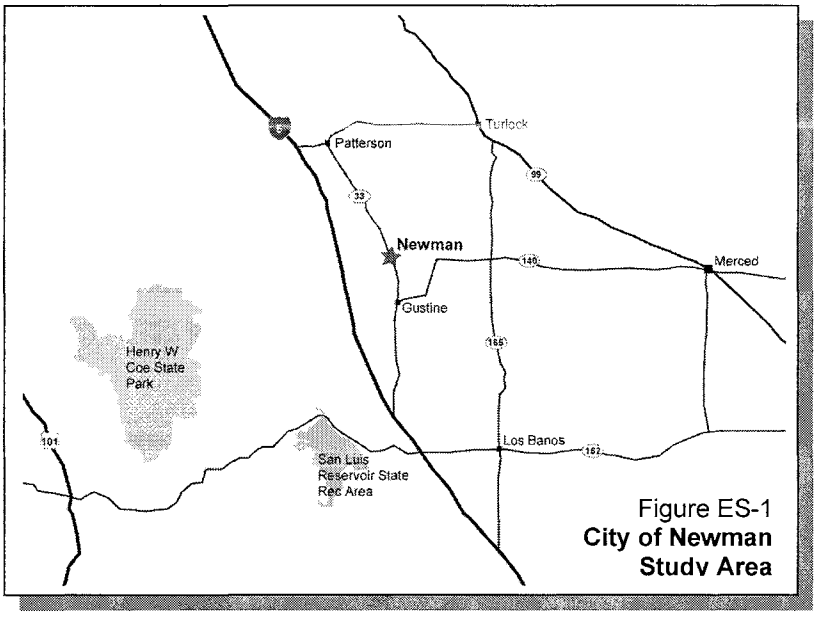

Figure ES-1
City of Newman Study Area

ES.1 PROJECT OVERVIEW

The City of Newman is located in the western portion of the Central Valley, at the southern border of Stanislaus County, near Merced County (Figure ES-1). The City's existing wastewater collection system covers an area of approximately 1,000 acres and provides service to over 10,000 residential, commercial, and industrial users (Figure ES-2). The wastewater generated by these users is collected and conveyed to the City's wastewater treatment plant (WWTP) by over 34 miles of sewer pipelines, force mains, and seven active pump stations.

Wastewater collection system capacity was assessed using a dynamic flow routing model, Wallingford Software's *InfoWorks*. The dynamic model simulates backwater, looped connections, surcharging, and pressure flow that may occur within the City's collections system and is considered the one of the most sophisticated means to assess sewer system capacity. The *InfoWorks* model simulates sewer system hydraulic response during peak flow events resulting from a combination of peak diurnal sanitary flows (the peak wastewater flow from residences and businesses throughout the day), groundwater infiltration, and rainfall dependent infiltration and inflow (extraneous flow entering the system during or directly after a rain event).

Design storms are developed from statistical analysis of local precipitation records and represent the distribution of rainfall depths over a time increment for a given storm duration and frequency. Design storms are selected based on the level of protection desired for the wastewater collection system while considering the likelihood of the event. Wastewater flows resulting from a 10-year frequency storm occurring over a 6-hour period (10-year, 6-hour design storm) were identified as a minimum City design service objective. Capacity improvements are recommended to provide adequate system capacity to convey peak flows during a 10-year 6-hour storm.

Wastewater collection systems can generally accommodate some degree of surcharging during peak flow conditions. However, once a manhole surcharges, it takes very little extra flow for an overflow to occur. Criteria for acceptable levels of maximum surcharging were developed with input from City staff. These criteria are presented in Table ES-1. These levels were used as criteria in evaluating capacity in flow limited segments of sewer pipelines in all modeled scenarios.

Table ES-1
City of Newman
Acceptable Manhole Surcharging
During Design Storm (10-year, 6-hour) Conditions

Manhole Depth [a]	Acceptable Level of Manhole Surcharging
Less than 4 feet	None
4 feet to 7 feet	Not to exceed 2 feet below ground surface
7 feet and greater	Not to exceed 4 feet below ground surface

[a] Manhole depth as measured from the crown of the pipe to the rim of the manhole.

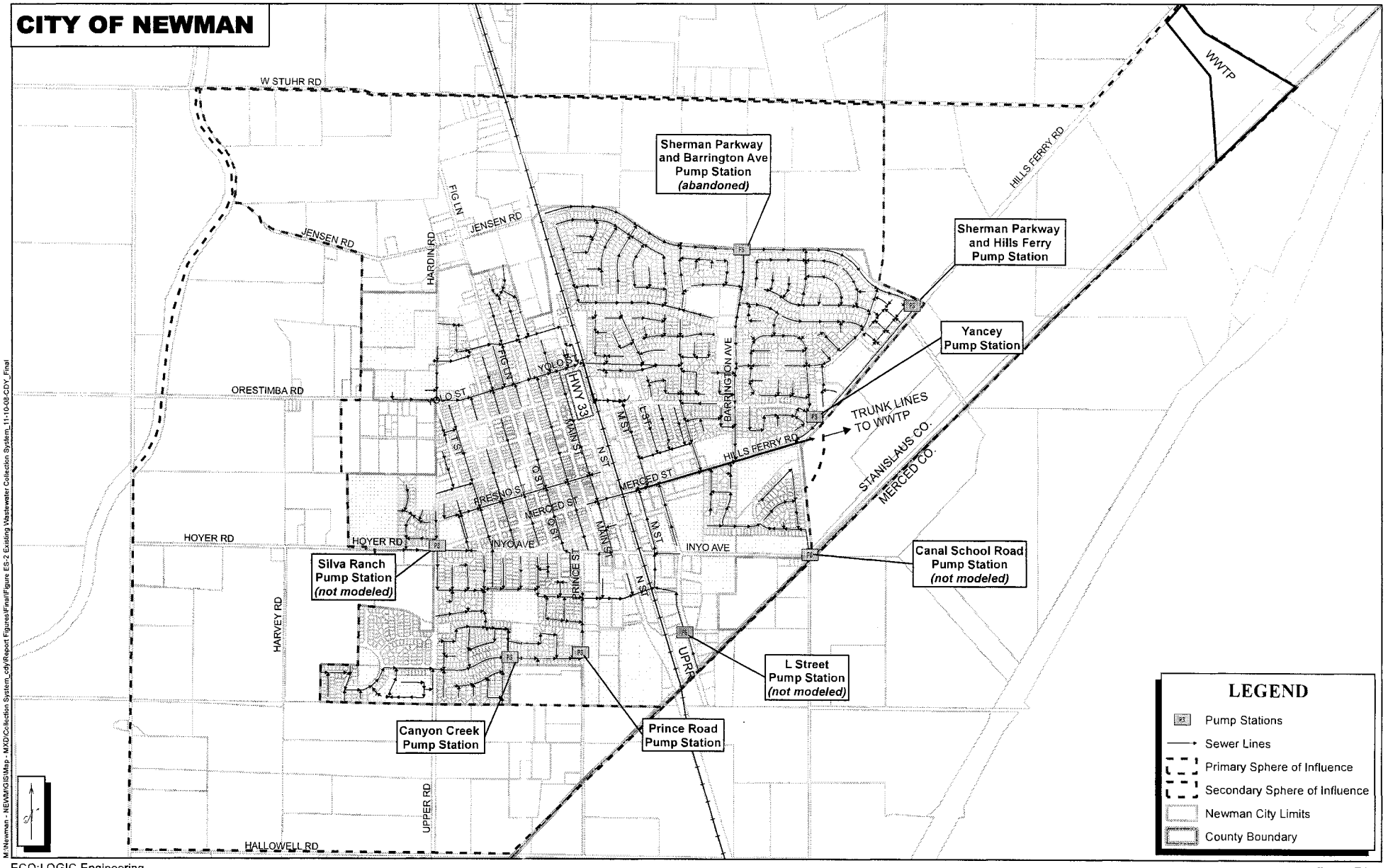

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Figure ES-2
Existing Wastewater Collection System

ES.2 STUDY CONCLUSIONS

The Newman collection system was modeled and analyzed at a 10-year, 6-hour design storm for the existing level of development, build-out of the City Limits, and build-out of the City Limits plus near-term future development. In addition, the ability of the collection system to accommodate interim and long-term system needs from the Primary and Secondary SOIs was evaluated and plans were developed for serving these areas.

ES.2.1 EXISTING CONDITIONS

Under existing conditions, a 10-year, 6-hour design storm is predicted to generate a peak flow of 4.6 million gallons per day (Mgal/d). (Average flow is currently 1.1 Mgal/d.) This peak flow is predicted to cause several capacity bottlenecks and some manhole surcharging. However, only one pipeline (downstream of the Prince Street Pump Station – manhole D-1303 to D-1302) was predicted to exceed the surcharging criteria outlined in Table ES-1.

ES.2.2 BUILD-OUT OF CITY LIMITS

Build-out of the City Limits is assumed to occur when all the currently vacant parcels within the City Limits have been developed. With the addition of peak flows from infill developments, the peak flow at the system's outfall during the 10-year, 6-hour design storm event was estimated to be 5.0 Mgal/d. This peak flow resulted in an increase in capacity-limited pipelines and more manhole surcharging. The predicted surcharged locations during a 10-year, 6-hour design storm at build-out of City Limits are shown in Figure ES-3. In this scenario, two pipeline segments (downstream of the Prince Street Pump Station – manhole D-1303 to D-1302 and Hills Ferry Road – manhole A-103 to A-100) were predicted to exceed the surcharging criteria outlined in Table ES-1.

ES.2.3 BUILD-OUT OF CITY LIMITS + NEAR-TERM FUTURE DEVELOPMENT

The existing system was modeled under 10-year, 6-hour design storm conditions at build-out of the City Limits plus known near-term new development. Examples of developments within the Primary and Secondary SOIs that may develop within 3 to 5 years are identified as Area 1 and Area 2 in Figure ES-4. Because of the proximity of these areas to the existing wastewater collection system and the potential for their near-term growth, the ability of the existing collection system to handle the peak flow from these areas was simulated. With the addition of flows from Area 1 and Area 2, the peak flow at the system outfall was estimated at 5.7 Mgal/d. The areas impacted by the addition of flow from these areas are shown in Figure ES-4. Several areas were impacted by the addition of flow from Area 1. Surcharging in many of these sections is due to bottlenecks beginning at Merced Street. A profile of the surcharging downstream of the assumed addition of Area 1 to the existing system is shown in Figure ES-5. For Area 2, capacity exists in the main pipeline along Sherman Parkway. However, the pump station at Sherman Parkway and Hills Ferry Road, as well as pipelines at the discharge of the force main from this pump station, do not have the capacity to accommodate this property.

CITY OF NEWMAN

[1] Hills Ferry Road from Driskill Avenue to Merced Street (Manhole A-103 to A-100)
[2] Eucalyptus Avenue from Foxglove Avenue to Cinnamon Lane (Manhole B-160 to B-120)
[3] Intersection of Strawbridge Drive and Stockbridge Drive (Manhole D-1600 to D-1500)
[4] Intersection of Stoneglen Drive and Prince Street, downstream of Prince Street pump station (Manhole D-1303 to D-1302)
[5] Southwest of the intersection of Highway 33/N Street and Inyo Avenue (Manhole D-800 to D-700)
[6] South of the intersection of Inyo Avenue and M Street (Manhole D-600 to D-400)
[7] M Street from Inyo Avenue to Stanislaus Street (Manhole D-300 to D-200)

LEGEND

- Modeled Manholes
- Newman City Limits
- County Boundary

Surcharged Pipe Segments

- Within Capacity Criteria in Table 6-1
- Exceeds Capacity Criteria in Table 6-1

Pipe Segments

- Force Main
- Pipes Without Capacity Issues
- 80% to Full Capacity
- Affected by Issues Downstream or at Capacity
- Surcharge/Over Capacity

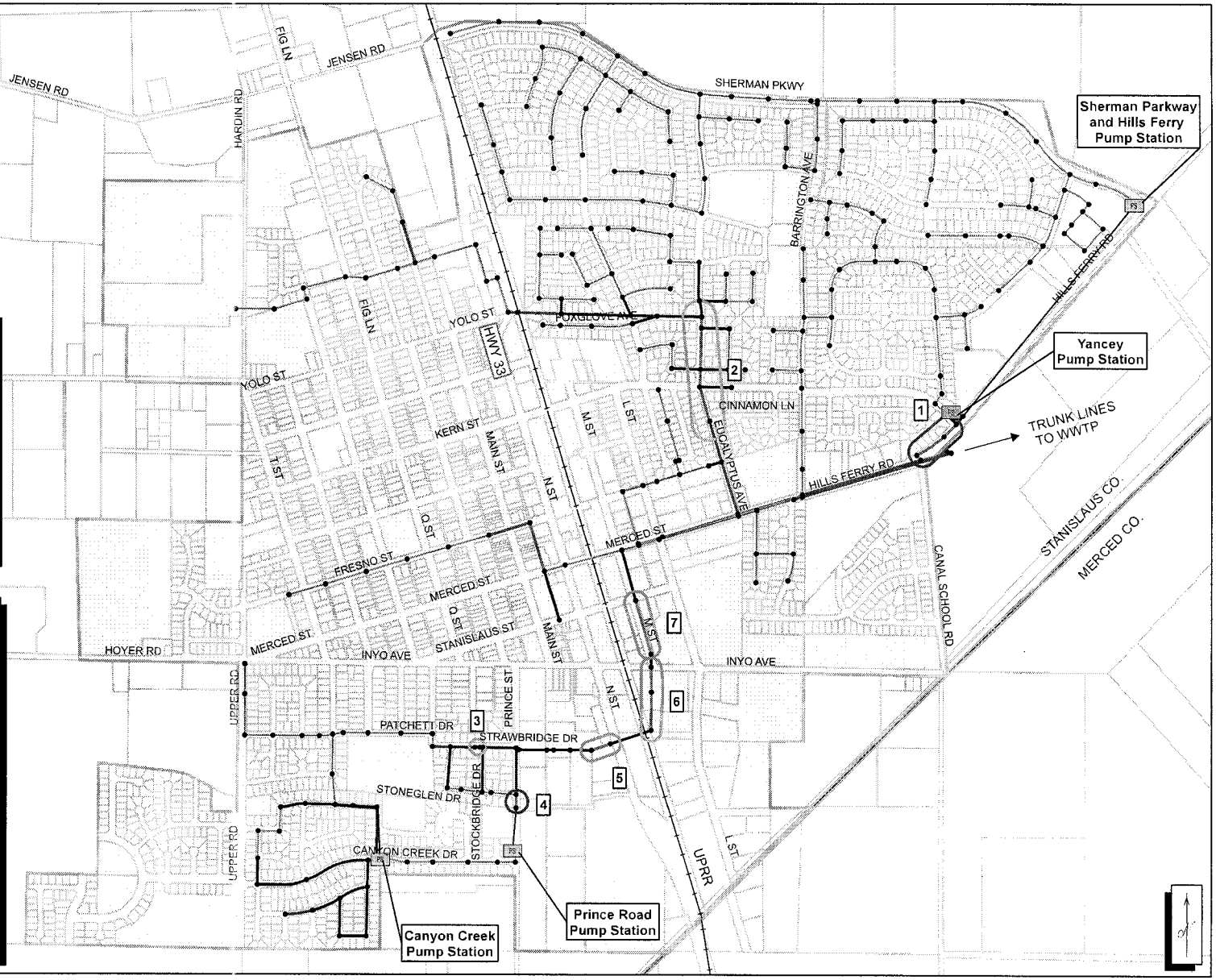

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Figure ES-3
Build-out of City Limits Model Results - 10-year, 6-hour Design Storm

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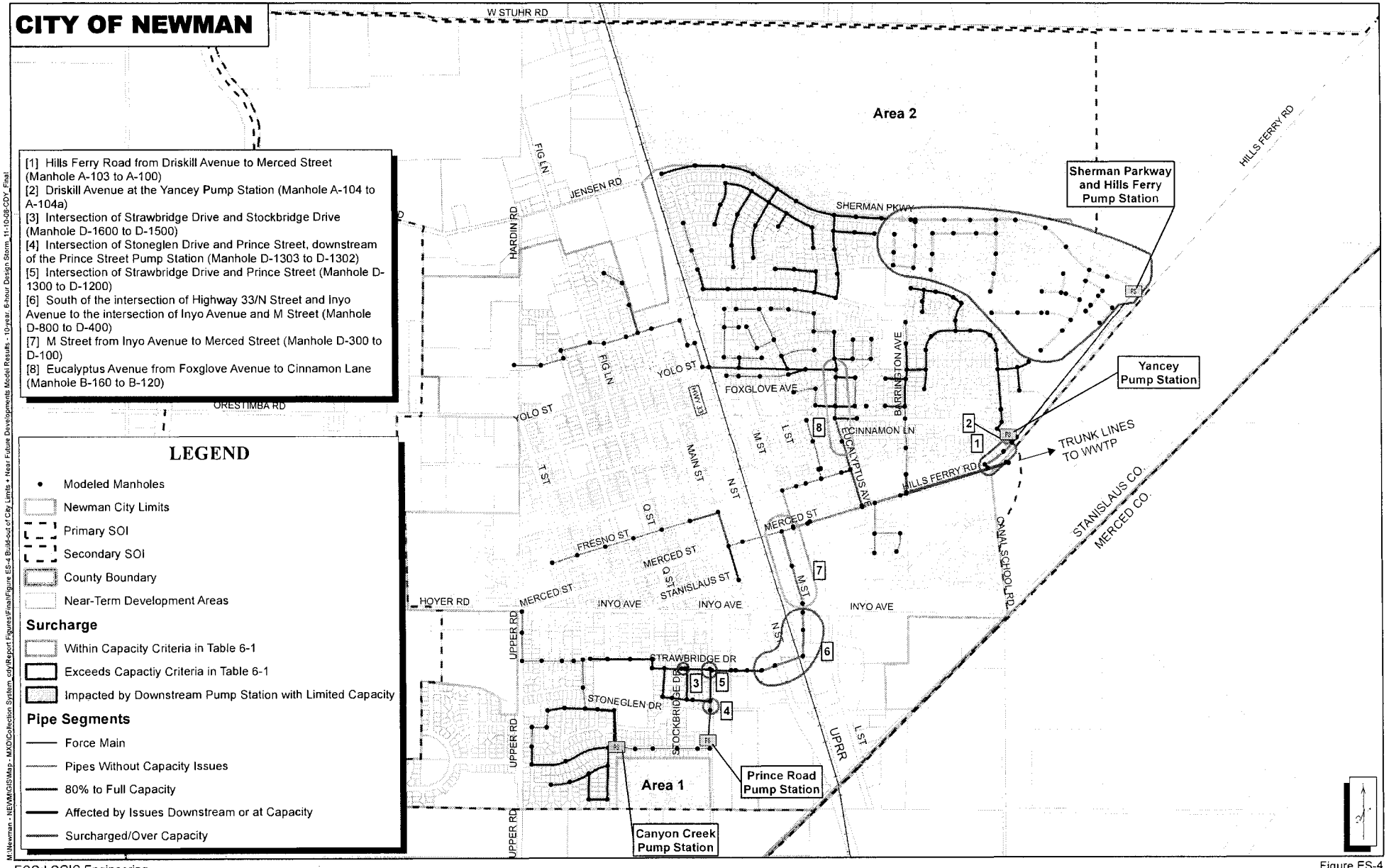

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Figure ES-4
Build-out of City Limits + Near-Term Future Developments Model Results - 10-year, 6-Hour Design Storm

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Pipe	Flow (Mgal/d)	Full Pipe Capacity (Mgal/d)
(A)	0.89	0.67
(B)	1.08	1.01
(C)	1.27	1.15
(D)	1.27	0.91
(E)	1.35	1.36
(F)	1.35	1.05
(G)	1.36	1.29

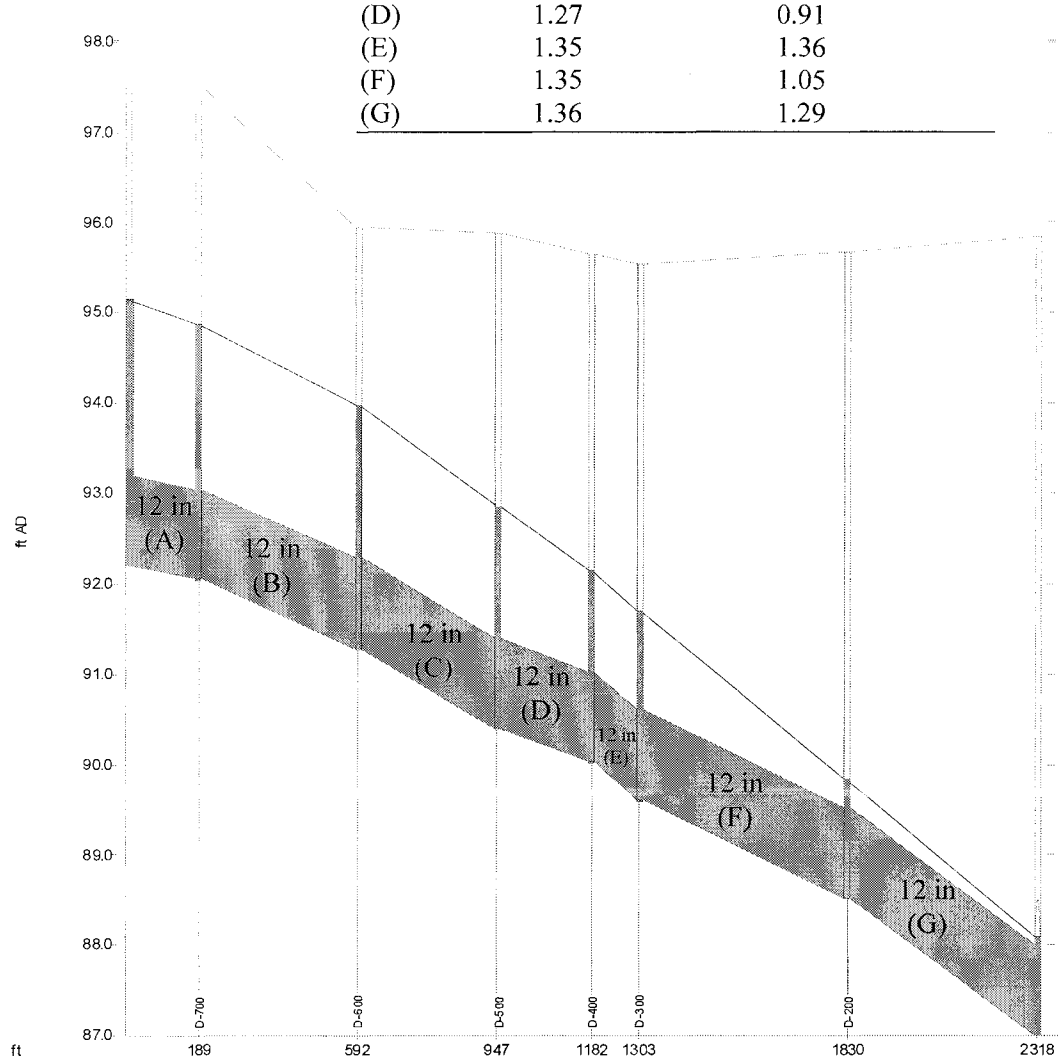

Figure ES-5
City of Newman
Build-out of City Limits + Near-Term Development – 10-year, 6-hour Design Storm
Profile of Surcharged Sewer Segment from Highway 33/N Street to Inyo Avenue and M Street (Manhole D-800 to D-100)

Use of conventional construction equipment is usually suitable for this purpose.

Seepage collars should be provided around any pipes penetrating the dike (4) (5). The seepage collars should extend a minimum of 0.6 m (2 ft) from the pipe. Proper installation of transfer pipes can be assured by building up the dike at least 0.6 m (2 ft) above the pipe elevation, digging a trench for the pipe and seepage collar, backfilling the trench, and compacting the backfill.

In some circumstances it may be necessary to control seepage and ensure bank stability at the exterior toe. A filter blanket material can be used (6). Another method of preventing seepage where embankment material cannot be adequately compacted is placement of an impervious core in the levee with imported material.

4.3 Pond Sealing

4.3.1 Introduction

The need for a well-sealed stabilization pond has impacted modern pond design, construction, and maintenance. The primary motive for sealing ponds is to prevent seepage. Seepage effects treatment capabilities by causing fluctuation in the water depth and can cause pollution of groundwater. Although many types of pond sealers exist, they can be classified into one of three major categories: (1) synthetic and rubber liners, (2) earthen and cement liners, and (3) natural and chemical treatment sealers. Within each category also exists a wide variety of application characteristics. Choosing the appropriate lining for a specific site is a critical issue in pond design and seepage control. Detailed information is available from manufacturers, and in other publications (4)(6).

4.3.2 Seepage Rates

Stander et al. (7) presented a summary of information (Table 4-1) on measured seepage rates in wastewater stabilization ponds. Seepage is a function of so many variables that it is impossible to anticipate or predict rates even with extensive soils test. The importance of controlling seepage to protect groundwater dictates that careful evaluations be conducted before construction of ponds to determine the need for linings and the acceptable types.

The Minnesota Pollution Control Agency (8) initiated an intensive study to evaluate the effects of stabilization pond seepage from five municipal systems.

The five communities were selected for study on the basis of geologic setting, age of the system, and past operating history of the pond. The selected ponds were representative of the major geomorphic regions in the state, and the age of the systems ranged from 3 to 17 years.

Estimates of seepage were calculated by two independent methods for each of the five pond systems. Water balances were calculated by taking the difference between the recorded inflows and outflows, and pond seepage was determined by conducting in-place field permeability tests of the bottom soils at each location. Good correlation was obtained with both techniques.

Field permeability tests indicated that the additional sealing from the sludge blanket was insignificant in locations where impermeable soils were used in the construction process. In the case of more permeable soils, it appeared that the sludge blanket reduced the permeability of the bottom soils from an initial level of 10^{-4} or 10^{-5} cm/sec to the order of 10^{-6} cm/sec. At all five systems evaluated, the stabilization pond was in contact with the local groundwater table. Local groundwater fluctuations had a significant impact on seepage rates. Reduced groundwater gradient resulted in a reduction of seepage losses at three of the sites. Contact with groundwater possibly explains the reduction in seepage rates in many ponds; in the past this reduction in seepage rates has been attributed totally to a sludge buildup. In an area underlain by permeable material where little groundwater mounding occurs, there is probably little influence from the water table on seepage rates. The buildup of sludge on the bottom of a pond appears to improve the quality of the seepage water leaving the pond. Sludge accumulation apparently increases the cation exchange capacity of the bottom of the pond.

Groundwater samples obtained from monitoring wells did not show any appreciable increases in nitrogen, phosphorus, or fecal coliform over the background levels after 17 years of operation. The seepage from the ponds did show an increase in soluble salts as great as 20 times over background levels. Concentrations of 25 mg/l to 527 mg/l of chloride were observed.

A comparison of observed seepage rates for various types of liner material is presented in Table 4-2 (4). If an impermeable liner is required, it appears that one of the synthetic materials must be used.

4.3.3 Natural and Chemical Treatment Sealing

The most interesting and complex techniques of pond sealing, either separately or in combination, are natural pond sealing and chemical treatment sealing (5)(9).

Natural sealing of ponds has been found to occur from three mechanisms: (1) physical clogging of soil pores by settled solids, (2) chemical clogging of soil pores by ionic exchange, and (3) biological and organic clogging caused

Attachment B

Mountain House Pre-Reclamation Groundwater Monitoring Results

ANNUAL REPORT

SOIL, GROUNDWATER, AND AGRICULTURAL DRAIN MONITORING

MOUNTAIN HOUSE WASTEWATER RECLAMATION FACILITY

Prepared for
Trimark Communities
3120 Tracy Blvd., Suite A
Tracy, CA 95376

Prepared by
Condor Earth Technologies, Inc.
21663 Brian Lane
Sonora, CA 95370
(209) 532-0361

January 22, 2003
Condor Project No. 1587X2

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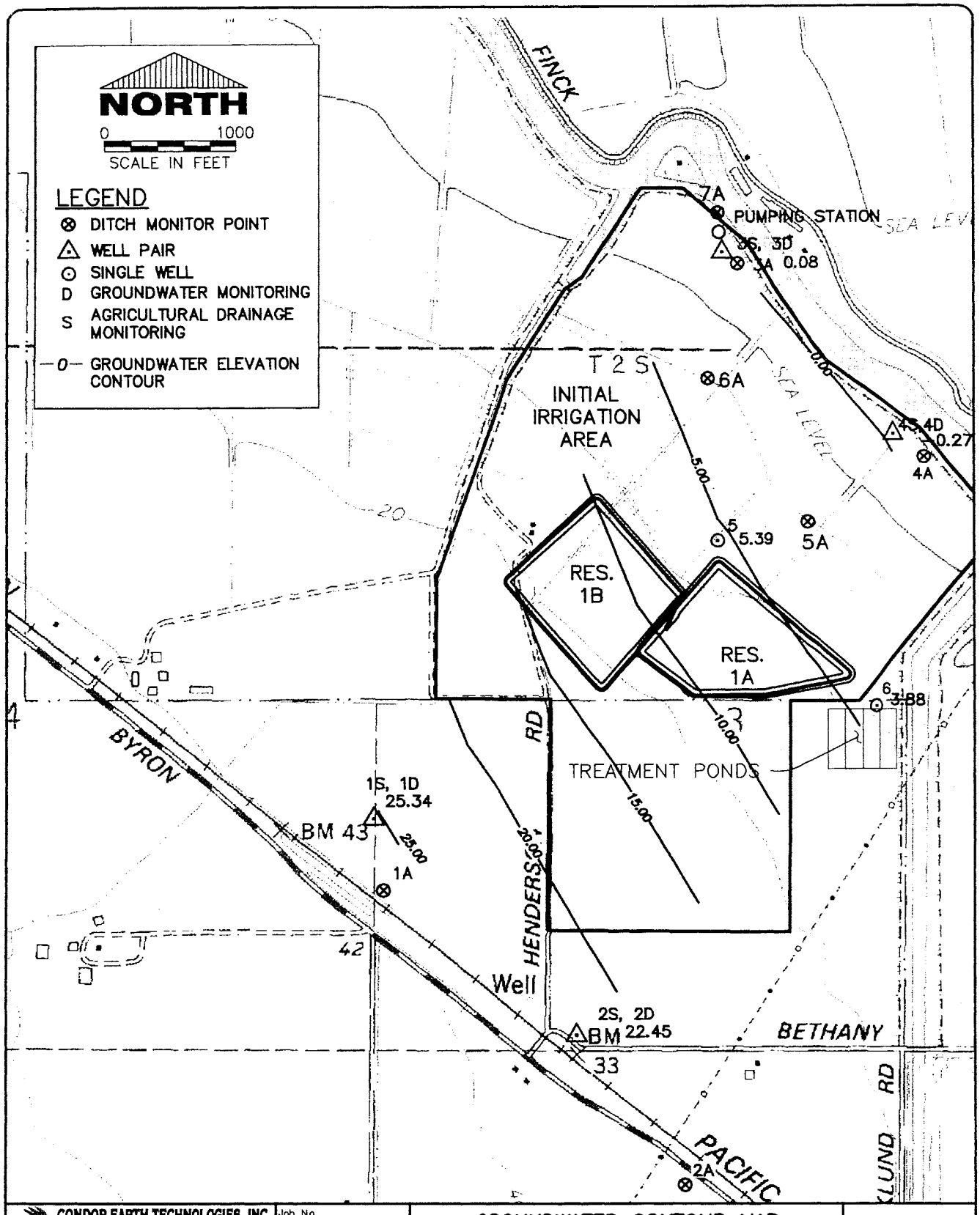

CONDOR EARTH TECHNOLOGIES, INC.
188 Frank West Circle, Ste
Stockton, CA 95206
(209) 234-0518
f(209) 234-0538
www.condorearth.com
stockton@condorearth.com
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Job No.	1587X2
Date	12/23/02
Scale	AS SHOWN
Drawn	AWA
Chk'd	TKH

GROUNDWATER CONTOUR MAP
OCTOBER 30, 2002
MOUNTAIN HOUSE, CALIFORNIA

FIGURE 4

File No. 1587X2F4

P:\Mountain House\1587Trimark\1587X2 GW Monitoring\1587X2L00\dwg\1587X2F4.dwg 1-23-03 10:11:40 AM aarnold

Table 6: Historical Groundwater Monitoring Data

SITE	DATE COLLECTED	Total Coliform MPN/100ml	Total Dissolved Solids mg/L	Depth to Water (feet)	Groundwater Elevation ft (MSL)	Nitrates (NO3) mg/L	Electrical Conductivity (E.C.) umhos/cm	Field E.C. (uS/cm)	Field pH (SU)	Field Temp (oC)
1D										
Measuring pt.	02/28/2001	<2	1930	9.14	29.63	24	1770	1562	7.61	17.7
38.77	04/03/2001	<2	1460	9.24	29.53	23	1566	1501	7.71	18.6
ft msl	05/02/2001	<2	1490	7.86	30.91	22	2230	2250	7.6	19.0
	06/07/2001	<2	1910	8.75	30.02	26	2340	2180	7.6	21.6
	07/02/2001	<2	1570	10.84	27.93	1.7	2450	1980	7.65	22.1
	08/06/2001	<2	1620	14.32	24.45	31	1626	2520	7.67	16.1
	09/04/2001	<2	1630	15.55	23.22	25	2520	2410	7.82	18.7
	10/03/2001	<2	1600	15.88	22.89	28	2540	2190	7.64	22.2
	11/05/2002	<2	1780	16.80	21.97	25	2439	1950	7.61	20.0
	12/13/2001	<2	1676	15.25	23.52	6.3	2199	2410	7.51	17.6
	01/14/2002	<2	1780	13.41	25.36	24	1896	2390	7.69	16.4
	02/04/2002	<2	1720	13.79	24.98	28	2130	1513	7.63	19.7
2D										
Measuring pt.	02/28/2001	<2	3230	8.64	25.94	45	3730	4990	7.47	18.2
34.58	04/02/2001	<2	2950	8.95	25.63	21	4370	3910	7.48	18.9
ft msl	05/02/2001	4	3100	8.27	26.31	43	4480	4470	7.45	20.6
	06/07/2001	<2	3010	8.97	25.61	41	4800	4360	7.44	22.2
	07/02/2001	<2	3140	9.92	24.66	<1.0	5020	3770	7.42	21.4
	08/06/2001	<2	3090	11.22	23.36	26	3540	5070	7.4	17.1
	09/04/2001	<2	3100	12.13	22.45	23	5900	4930	7.55	20.4
	10/03/2001	<2	3060	12.76	21.82	47	5280	4710	7.42	24.3
	11/05/2002	<2	3180	13.22	21.36	44	5460	4890	7.35	21.0
	12/13/2001	<2	3087	13.39	21.19	11	5256	4990	7.39	19.5
	01/14/2002	<2	3210	12.49	22.09	35	4424	5020	7.47	16.7
	02/04/2002	<2	3240	12.26	22.32	41	5040	4780	7.38	20.1
3D										
Measuring pt.	02/28/2001	<2	810	4.95	-0.2	<1.0	888	822	7.72	15.1
4.75	04/02/2001	<2	630	4.79	-0.04	<1.0	1120	959	7.73	16.2
ft msl	05/02/2001	<2	750	4.34	0.41	<1.0	1198	1145	7.67	18.8
	06/07/2001	<2	800	4.38	0.37	1.2	1304	1341	7.63	21.0
	07/02/2001	<2	990	4.95	-0.20	<1.0	1318	1239	7.47	20.2
	08/06/2001	<2	880	4.58	0.17	<1.0	939	1144	7.64	17.4
	09/04/2001	<2	850	4.64	0.11	<1.0	1300	1403	7.7	18.0
	10/03/2001	<2	970	4.79	-0.04	<1.0	1350	1439	7.63	22.3
	11/05/2002	<2	714	4.70	0.05	1.2	1181	989	7.52	19.2
	12/13/2001	<2	594	5.82	-1.07	0.3	1007	932	7.56	17.0
	01/14/2002	<2	650	4.59	0.16	<1.0	983	970	7.62	14.9
	02/04/2002	<2	740	4.94	-0.19	<1.0	1190	795	7.62	18.7
4D										
Measuring pt.	02/28/2001	<2	5310	6.31	-0.26	3.2	5560	6420	7.33	16.5
6.05	04/02/2001	<2	4760	6.16	-0.11	<1.0	6270	5300	7.39	17.2
ft msl	05/02/2001	<2	4940	6.37	-0.32	5.2	6180	6250	7.34	19.8
	06/07/2001	<2	4930	6.93	-0.88	ND	6380	6220	7.28	19.1
	07/02/2001	<2	5240	7.40	-1.35	<1.0	7220	5140	7.33	20.3
	08/06/2001	<2	5100	7.40	-1.35	<1.0	5360	7210	7.36	15.8
	09/04/2001	<2	4940	7.06	-1.01	<1.0	7750	7130	7.38	17.0
	10/03/2001	<2	4960	7.02	-0.97	<1.0	7590	6490	7.28	22.9
	11/05/2002	<2	4910	5.19	0.86	<1.0	7725	6850	7.36	18.8
	12/13/2001	<2	4884	7.35	-1.3	2.1	7233	7020	7.33	16.6
	01/14/2002	<2	5060	6.93	-0.88	<1.0	7570	6790	7.37	14.7
	02/04/2002	<2	5030	7.07	-1.02	9.6	7560	6540	7.31	18.9
5										
Measuring pt.	02/28/2001	<2	7000	8.39	5.41	54	7340	9700	7.35	17.3
13.80	04/03/2001	<2	8010	8.50	5.3	45	8250	8130	7.38	15.5
ft msl	05/02/2001	<2	3580	8.40	5.4	45	9620	10080	7.37	19.8
	06/07/2001	<2	8390	8.33	5.47	57	11170	9810	7.28	21.1
	07/02/2001	<2	8220	8.29	5.51	<1.0	11860	8220	7.30	21.3
	08/06/2001	<2	8200	9.30	4.5	31	9140	11770	7.32	17.3
	09/04/2001	<2	8830	9.90	3.9	<1.0	14650	12380	7.3	18.6
	10/03/2001	<2	8860	10.85	2.95	40	15800	12240	7.27	21.3
	11/05/2002	<2	9810	10.25	3.55	45	14100	11290	7.31	18.7
	12/13/2001	NC	NC	NC	NC	NC	NC	NC	NC	NC
	01/14/2002	<2	11320	9.07	4.73	49	15730	14520	7.22	15.0
	02/04/2002	<2	11000	9.26	4.54	44	16600	14110	7.18	19.0
6										
Measuring pt.	02/28/2001	<2	4400	12.49	4.59	53	4830	6500	7.43	15.7
17.08	04/03/2001	<2	4130	12.85	4.23	43	4800	4780	7.52	16.1
ft msl	05/02/2001	<2	3730	13.46	3.62	40	5630	5700	7.48	19.4
	06/07/2001	<2	4010	13.34	3.74	52	6040	5320	7.40	21.5
	07/02/2001	<2	4070	14.08	3.00	<1.0	6315	4800	7.45	20.3
	08/06/2001	<2	3920	15.80	1.28	61	4840	6180	7.42	18.2
	09/04/2001	<2	4170	17.04	0.04	27	5570	6240	7.45	17.3
	10/03/2001	<2	4020	17.49	-0.41	39	6940	5880	7.38	21.1
	11/05/2002	<2	4230	16.33	0.75	52	6968	6130	7.31	18.2
	12/13/2001	<2	4005	15.93	1.15	13	5796	5980	7.36	16.8
	01/14/2002	<2	3960	13.89	3.19	60	5520	5910	7.33	15.7
	02/04/2002	<2	4030	14.09	2.99	56	6890	5640	7.29	17.9

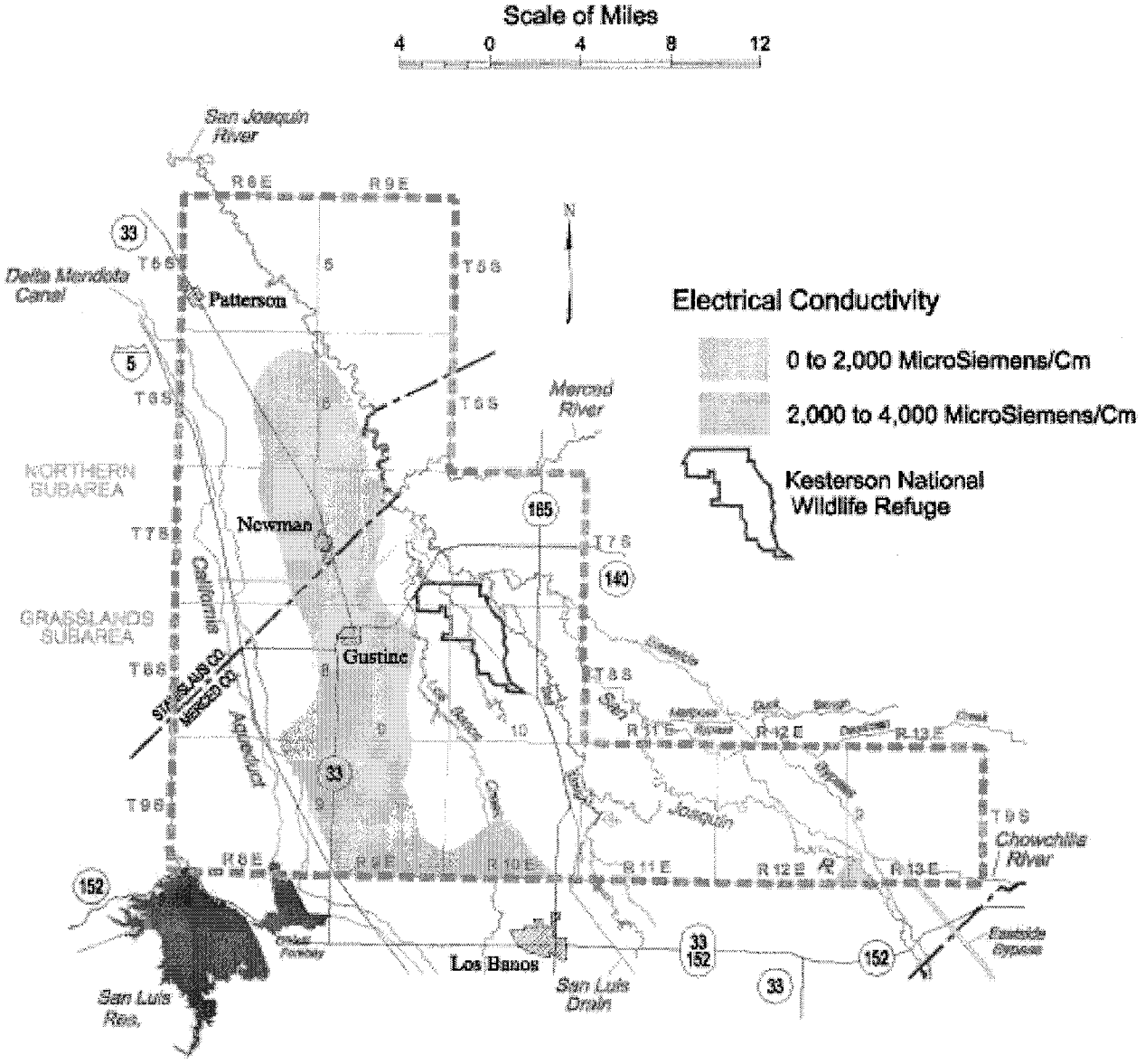
Note: NC = Not collected

Attachment C

DWR 2001 Map of Shallow Groundwater EC Trends

Kesterson

2001, Electrical Conductivity in Shallow Groundwater



Source: California Department of Water Resources, San Joaquin District

http://www.sjd.water.ca.gov/drainage/groundecmaps/maps/kest_ec01/index.cfm
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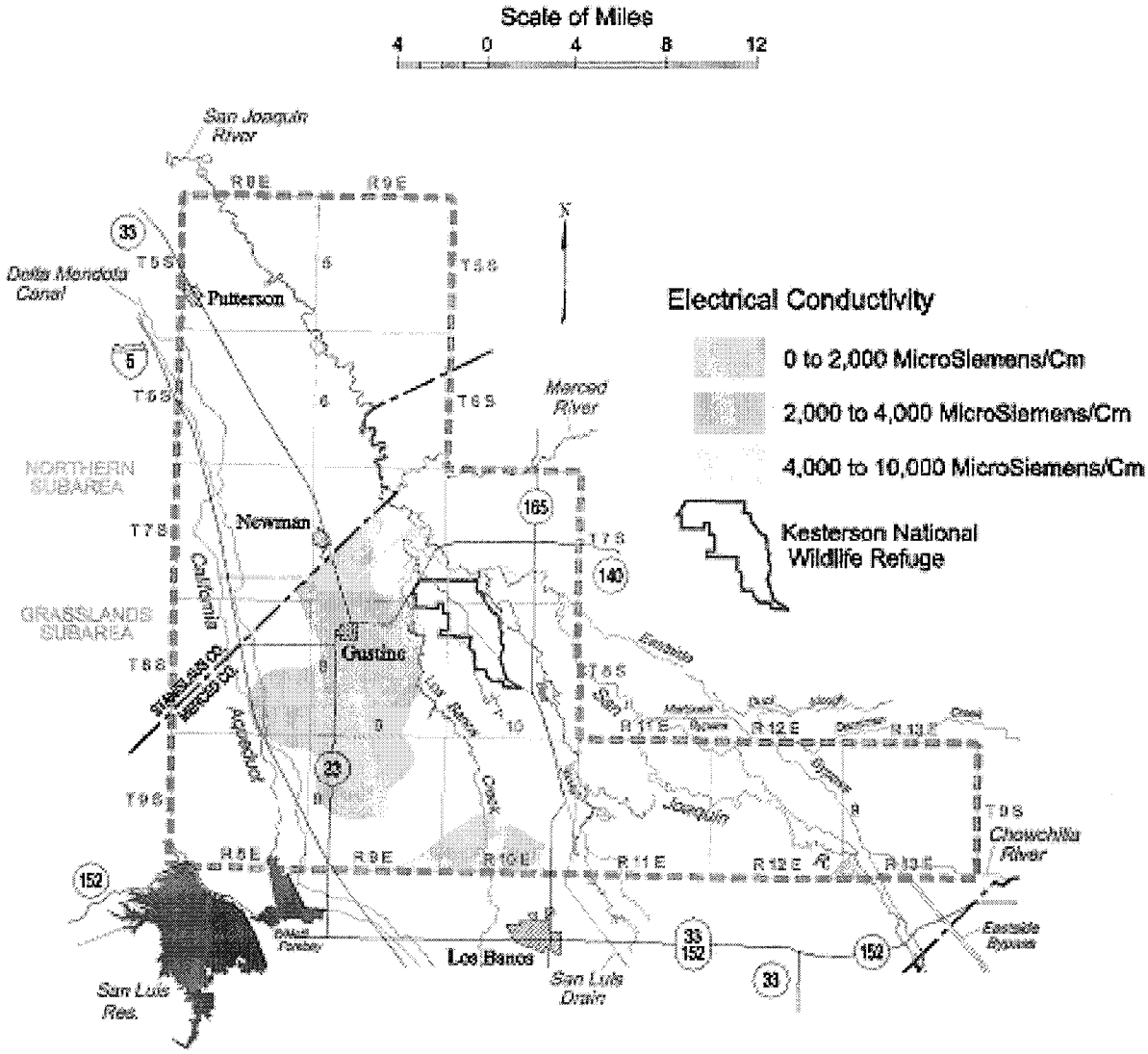
Attachment D

DWR 1995 Map of Shallow Groundwater EC Trends

Kesterson

1995, Electrical Conductivity in Shallow Groundwater



Source: California Department of Water Resources, San Joaquin District

http://www.sjd.water.ca.gov/drainage/groundecmaps/maps/kest_ec95/index.cfm
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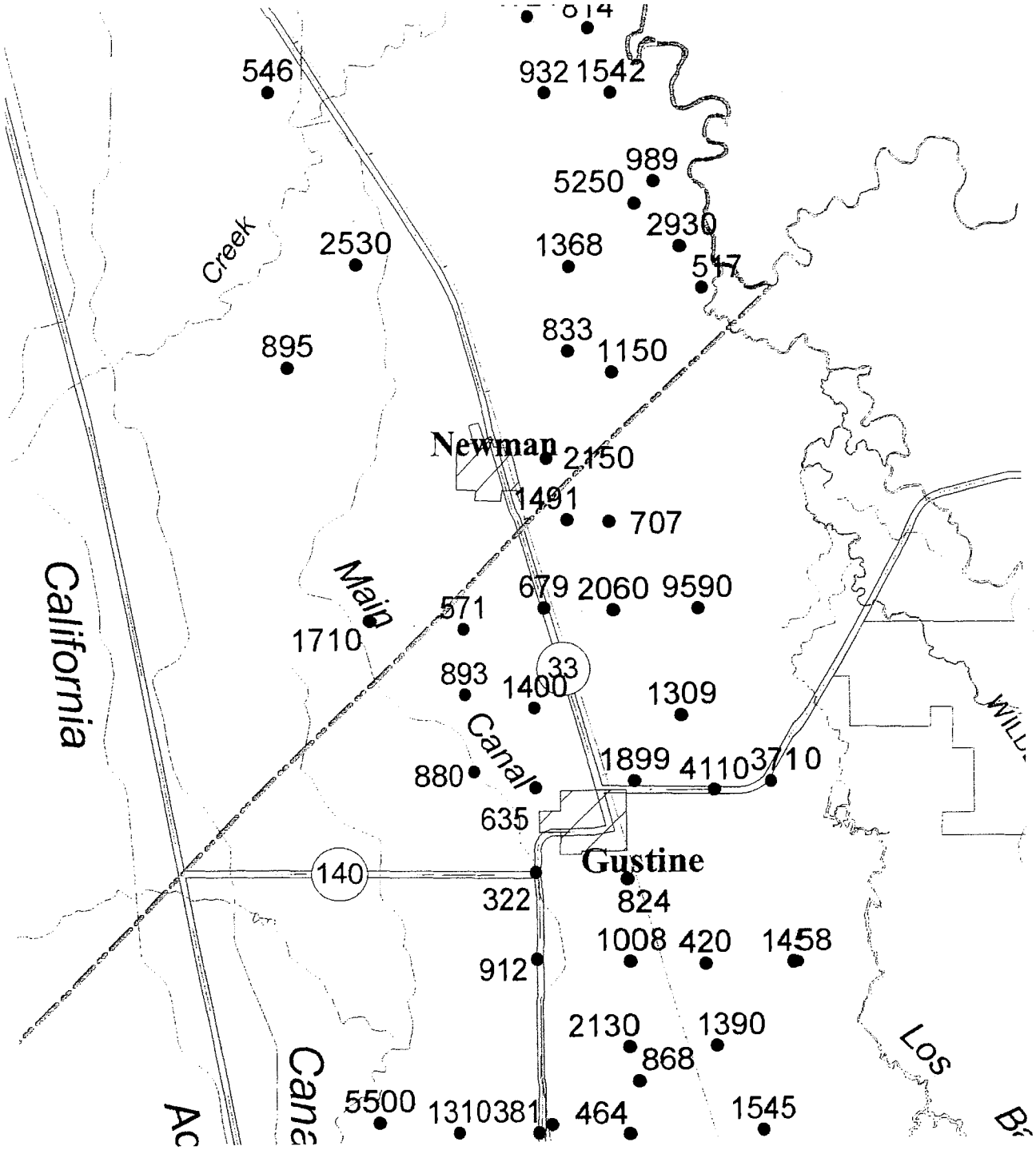
Attachment E

DWR Data Showing Variability in Groundwater EC

DWR Groundwater Data in the Vicinity of the City of Newman



Data from Kurt Kovac DWR

6/24/05

addressed include the potential for groundwater degradation due to the unlined ponds and nitrogen degradation due to the existing reclamation practices. In addition, the other major concern will be creating WWTP capacity to accommodate City growth beyond the existing City limits (as discussed in Chapter 2).

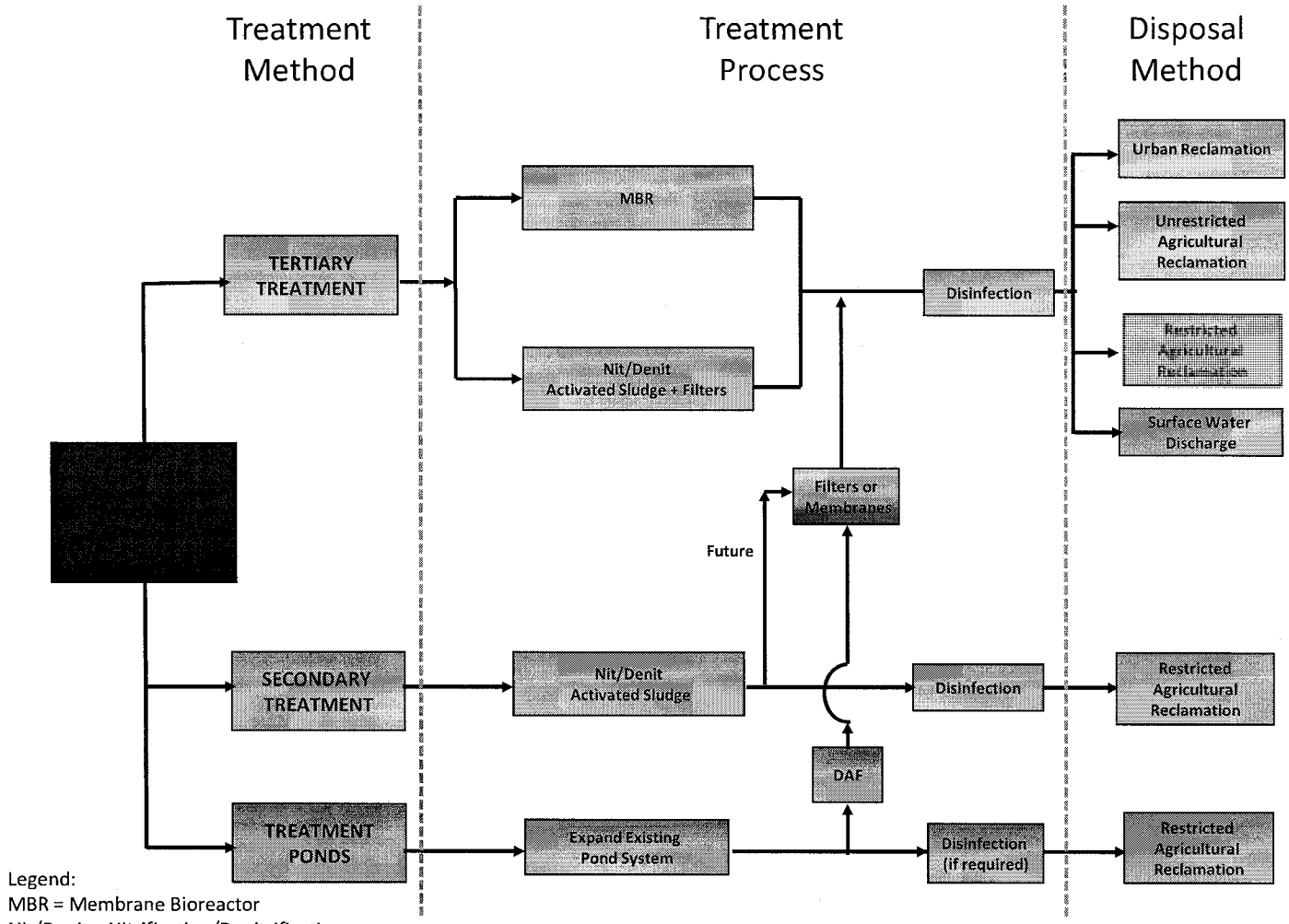
A fundamental aspect of any future WWTP expansion is that disposal governs treatment. The level of treatment required is dictated by where and how the effluent will be disposed. If more flexibility is needed or desired, or if degradation potential exists, then a higher level of treatment is required. The level of treatment required and other considerations for various effluent disposal methods are described in Table 6-1. As shown, for most disposal options besides current practices, tertiary treatment is required. A more detailed flowchart of the specific treatment processes needed for different disposal options is provided in Figure 6-1. Of particular importance is that all treatment methods, except for pond treatment, allow the process to be upgraded as necessary to include nitrogen removal, conventional or membrane filtration, and/or disinfection. The disadvantage of this flexibility is that there is an additional capital and operational cost associated with mechanical treatment. Technological advantages continue to improve nitrogen removal with pond treatment, but reliable removal is still uncertain with ponds.

Table 6-1
Level of Treatment Required and Considerations for Effluent Disposal Methods

Effluent Disposal Method	Level of Treatment	Additional Considerations
Urban Reclamation (e.g., Irrigation of parks, schools, greenbelts, parkways, commercial landscaping, front yards, and/or back yards)	Tertiary	▫ Significant costs for distribution ▫ Community input/perception ▫ Needs to be incorporated early into the General Planning process ▫ Reduces potable water demands and, therefore, potable water supply capital and annual costs
Unrestricted Agricultural Reclamation (e.g., food crops)	Tertiary	▫ City typically buys the land to assure the long-term viability of this method
Restricted Agricultural Reclamation (e.g, fodder crops; current practice)	Secondary (or equivalent secondary)	▫ Disinfection needed unless all stormwater is contained on-site

6.2 RECLAMATION

The Regional Board encourages the reclamation and reuse of wastewater, where practicable, and requires as part of a Report of Waste Discharge (RWD) an evaluation of reuse and land disposal options as alternative disposal methods. Use of effluent for reclamation purposes (also called recycled water) is governed by the California Department of Health Services Title 22, Chapter 4, of the California Code of Regulations (Title 22). Title 22 defines four



Legend:
MBR = Membrane Bioreactor
Nit/Denit = Nitrification/Denitrification
DAF = Dissolved Air Floatation

Figure 6-1
Level of Treatment Required for Various Disposal Option

types of recycled water, determined by the treatment process and certain effluent requirements. The four categories of recycled water are:

- Undisinfected Secondary Recycled Water
- Disinfected Secondary-23 Recycled Water
- Disinfected Secondary-2.2 Recycled Water
- Disinfected Tertiary Recycled Water

A description of the type of treatment required and the type of irrigation allowed for each of these categories is provided in Table 6-2. The first three categories are generally referred to as "restricted reclamation". The fourth category is referred to as "unrestricted reclamation". These two types of reclamation are discussed below. For all reclamation systems that store water seasonally and apply the water in the irrigation season, the system must contain all flow and rainwater resulting from a 1-in-100 year wet season. Monitoring of local groundwater is also required.

6.2.1 Restricted Reclamation

Currently, the City uses ponds to provide equivalent secondary level treatment for disposal on alfalfa used for nonhuman consumption on City owned lands (Figure 6-2). Because the water is not disinfected, the treatment system is designed and operated to prevent runoff of effluent irrigation water and prevents public access to the disposal area. The City currently falls under the category of "Undisinfected Secondary Recycled Water" (Table 6-2) and has restricted effluent disposal options.

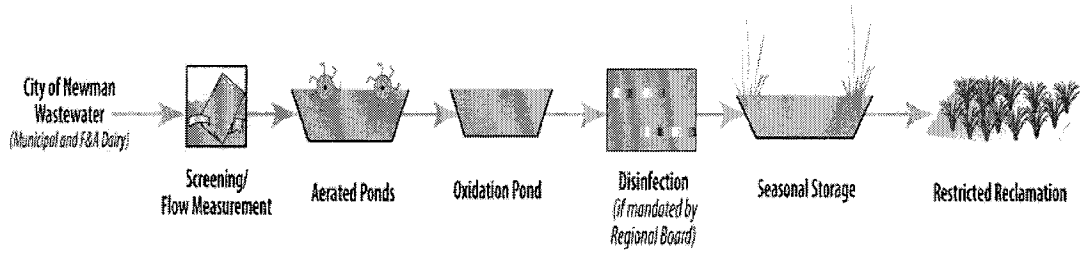


Figure 6-2
City of Newman Existing Wastewater Treatment and Disposal Process

6.2.2 Unrestricted (and Urban) Reclamation

For wastewater effluent to be used for unrestricted reclamation, tertiary level treatment and effluent disinfection is required. Tertiary treatment includes a biological treatment process followed by filtration or membrane filtration. Tertiary level treatment could be accomplished through a secondary level aerated treatment process followed by filtration and disinfection or through a combined process, such as a membrane bioreactor (MBR). Disinfection can be either through the use of chlorine or ultraviolet light (UV) disinfection. Wastewater treated to tertiary standards (as defined by Title 22), can be reclaimed in an urban or agricultural setting. As shown in Table 6-2, the types of crops that can be irrigated with tertiary treated

Table 6-2
Title 22 Uses of Recycled Water for Irrigation

	Disinfected Tertiary Recycled Water	Disinfected Secondary-2.2 Recycled Water	Disinfected Secondary-23 Recycled Water	Undisinfected Secondary Recycled Water
	Unrestricted Reuse →			**Restricted Reuse**
Treatment Description	Aerated mechanical treatment, filtration or membrane filtration, with UV or chlorine disinfection	Aerated mechanical treatment with chlorine disinfection	Facultative ponds or aerated ponds or aerated mechanical treatment with chlorine disinfection	Facultative ponds or aerated ponds with no disinfection
Irrigation Type	❒ Food crops, including all edible root crops where recycled water comes into contact with the edible portion of the crop ❒ Parks and playgrounds ❒ School yards ❒ Residential landscaping ❒ Unrestricted access golf courses	❒ Food crops where the edible portion is produced above ground and NOT contacted by the recycled water	❒ Any nonedible vegetation with controlled access so that area can NOT be used as park, playground, or school yard. ❒ Ornamental nursery stock and sod farms where access to the public is NOT restricted ❒ Pasture for animals producing milk for human consumption ❒ Freeway landscaping ❒ Restricted access golf course ❒ Cemeteries	❒ Orchards where recycled water does NOT come into contact with edible portion of the crop ❒ Vineyards where recycled water does NOT come into contact with edible portion of the crop ❒ Non food-bearing trees including Christmas tree farms [(a)] ❒ Fodder and fiber crops and pasture for animals not producing milk for human consumption ❒ Seed crops not eaten by humans ❒ Food crops that must undergo commercial pathogen destroying processes prior to human consumption ❒ Ornamental nursery stock and sod farms

[(a)] Provided irrigation does not occur for a period of 14 days prior to harvesting, retail sale, or allowing access by the general public.

water are much more expansive compared to secondary treated water. In addition, tertiary treated water can be used on parks and playgrounds, residential and commercial landscaping, and golf courses. The same amount of acreage is needed for storage and disposal. However, the City would have the added flexibility of reclaiming the water on discrete parcels, the ability to use the water on different types of crops, and may be able to enter into a long-term lease instead of a land purchase.

6.3 SUMMARY OF TREATMENT ALTERNATIVES

This section provides a summary of the treatment options and their various advantages and disadvantages. Generally, three levels of treatment are available for the City of Newman, including equivalent secondary level treatment using ponds, secondary level treatment using a mechanical activated sludge process, and tertiary level treatment using an activated sludge process in conjunction with membranes or filters.

6.3.1 POND TREATMENT

The City's existing wastewater treatment ponds are unlined and in direct contact with shallow groundwater. Due to this contact, there is concern that salts, nitrates, pathogens, pesticides, and/or metals may be causing groundwater contamination. The potential exists for groundwater degradation due to the unlined ponds and nitrogen degradation due to the existing reclamation practices. The implementation of the State's Anti-Degradation policies is technology driven and requires that a discharge be regulated to meet Best Practicable Treatment and Control (BPTC) to assure that pollution or nuisance will not occur (i.e., beneficial uses will not be unreasonably affected) and the highest water quality consistent with the maximum benefit to the people of the state is maintained. For new construction, the use of lined ponds is well precedented. Lined treatment ponds may be an acceptable long-term alternative for new development if the City can demonstrate that agricultural reclamation of the resulting effluent is not causing excessive nitrogen application rates to the crops, resulting in unacceptable nitrogen degradation of groundwater. However, even if groundwater degradation is not occurring, the City should evaluate the risks verses benefits of continuing to expand the pond system. Pond treatment does not offer reliable nitrogen removal at this time without going to the added expense of dissolved air flotation (DAF) and a separate nitrification/denitrification step (Figure 6-1). The potential need for these steps verses the cost (and cost effectiveness) of nitrification/denitrification activated sludge need to be considered by the City. These and other factors are discussed further below.

If groundwater degradation due to nitrogen is occurring under the reclamation fields, then the City would need to plan to provide treatment via a nitrification / denitrification secondary or tertiary treatment process. Upgrading treatment for existing residents would need to be negotiated with the Regional Board. For new growth (and possibly existing residents), some effluent disinfection prior to irrigation of the fodder crops appears likely to be necessary when the current WDRs are renewed based on current Regional Board policy. However, that policy is in conflict with other Regional Board policies being implemented at this time. Therefore, the

proper course of action for the City at this time is to plan for disinfection, but not implement it until mandated by the Regional Board.

A summary of the pond treatment alternatives and their costs is provided in Table 6-3. As shown, synthetic liners for large, unaerated treatment ponds add a significant capital cost and would likely drive the City to higher rate aerated ponds constructed with synthetic liners if expansion of the treatment ponds is pursued.

Table 6-3
City of Newman Pond Treatment Alternatives Summary

	Lined, Unaerated	Lined, Aerated
Description	Synthetic lining to prevent leakage to groundwater; No mechanical aeration	Synthetic lining to prevent leakage to groundwater; Addition of mechanical aeration
Disposal	Restricted agricultural reclamation (unless treatment is upgraded with at least DAF, filtration, and disinfection. A post DAF nitrogen removal process may be necessary)	Restricted agricultural reclamation (unless treatment is upgraded with at least DAF, filtration, and disinfection. A post DAF nitrogen removal process may be necessary)
Advantages	❑ Familiar treatment and operation process ❑ Lowest O&M cost	❑ Addition of aerators reduces size of treatment ponds
Disadvantages	❑ Restricted disposal option compared to other types of treatment ❑ Separate location required for treatment [a] ❑ Lining of ponds is very expensive ❑ Very large treatment area required ❑ May be inconsistent with long-term growth plans of City ❑ Upgradable only at significantly higher overall cost than other options. Generally not considered upgradable.	❑ Restricted disposal option compared to other types of treatment ❑ Separate location required for treatment [a] ❑ May be inconsistent with long-term growth plans of City ❑ Upgradable only at significantly higher overall cost than other options. Generally not considered upgradable.
Capital Cost (2 Mgal/d; 2008$) [b]	$49.1 million	$21.2 million
Additional O&M Cost (2010$) [c]	$0	$270,000

[a] Insufficient space exists at current site for additional treatment ponds. New treatment ponds would need to be sited at another location.
[b] Capital cost is for a 2 Mgal/d treatment plant, costs do NOT including storage and disposal capital costs.
[c] Operation and Maintenance (O&M) costs are per year in addition to current O&M costs, at full capacity.

6.3.2 SECONDARY TREATMENT

If it is determined that groundwater degradation is occurring in the reclamation fields due to nitrogen in the effluent, a nitrification / denitrification secondary treatment process (Figure 6-3)

would be required at least for new growth. The Regional Board should give existing residents time to upgrade their treatment process, if needed. Secondary treatment, alone, does not significantly expand the disposal options available to the City. Secondary treatment would facilitate upgrading the WWTP in the future to a higher level of treatment, if regulations and/or disposal methods dictate. Because the capital and annual costs of secondary treatment are not significantly different from lined, unaerated treatment ponds and require a fraction of the land for treatment, the City should pursue secondary treatment if it does not want to embark on more extensive groundwater degradation studies or take the risk that groundwater degradation would cause a shift in treatment processes in the future. It is also possible that a nitrification / denitrification secondary treatment process could handle either all of the City's wastewater or a portion, if only a partial reduction in nitrogen is necessary to protect groundwater quality and still satisfy crop nitrogen needs.

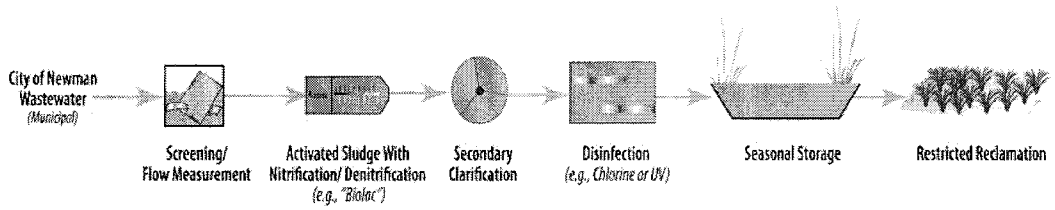


Figure 6-3
Example Secondary Treatment Process

Activated sludge is a form of secondary treatment, which uses a high rate biological process in which wastewater is treated with microorganisms. It can be divided into two processes: the aeration tank and the clarifier. Within the aeration tank, the wastewater comes in contact with a mixed, aerated culture of microorganisms. During this contact period, the dissolved organics are removed and transported into the microbial cells. In the clarifier, the activated sludge is separated from the liquid phase by sedimentation and recycled to the aeration tank to maintain a high concentration of biomass for treatment. The activated sludge will continue to build up until it is necessary to waste some of the activated sludge to a solids treatment process. The active sludge process can also be configured to biologically remove nitrogen and phosphorus from the wastewater. Activated sludge has the distinct advantage over pond treatment in that the amount of space needed for treatment is greatly reduced and the process can be upgraded in the future by adding tertiary processes for turbidity removal and enhanced disinfection. A summary of a secondary level treatment alternative is provided in Table 6-4.

Table 6-4
City of Newman
Overview of Secondary Treatment Using Activated Sludge Process Alternative

	Secondary Level Treatment
Description	"Biolac" nitrification/denitrification activated sludge treatment process with chlorine disinfection
Disposal	Restricted agricultural reclamation (unless upgraded with filtration and enhanced disinfection)
Advantages	• Upgradeable treatment system • Consistent with current disposal practices • BPTC with respect to nitrogen and salinity • All treatment could occur on existing wastewater treatment plant site
Disadvantages	• Restricted disposal options • More costly than aerated ponds • Separation of industrial flows is likely cost effective
Capital Cost (2 Mgal/d; 2008$) [(a)]	$38.7 million
Additional O&M Cost (2010) [(b)]	$500,000

(a) Capital cost is for a 2 Mgal/d treatment plant, costs do NOT including storage and disposal capital costs.
(b) Operation and Maintenance (O&M) costs are per year in addition to current O&M costs, at full capacity.

6.3.3 TERTIARY TREATMENT

If the City prefers to 1) have the most flexibility in terms of effluent disposal options, and/or 2) reduce potable water supply costs, then tertiary treatment should be planned for new development – either for near-term new development or as a future treatment option. For wastewater effluent to be used for unrestricted reclamation, tertiary level treatment and effluent disinfection are required (as shown in Figure 6-1). Tertiary treatment (Figure 6-4) includes a biological treatment process followed by filtration or membrane filtration. Disinfection can be either through the use of chlorine or ultraviolet light (UV) disinfection. Wastewater treated to tertiary standards (as defined by Title 22 of the California Code of Regulations) can be reclaimed in an urban or agricultural setting. Tertiary treatment would give the City the ability to reclaim water in an urban setting, which would either reduce the capital and annual costs of the new surface water supply system (if it is sized to allow reclamation to meet some to all urban irrigation use demands), or reduce the input of poor quality groundwater into the potable water supply system when urban irrigation demands are greatest. The City would have the added flexibility of reclaiming the water on discrete parcels (such as urban landscaping, parks, greenbelts, commercial landscaping, etc), the ability to use the water on different types of crops, and may be able to enter into a long-term lease instead of a land purchase with an area farmer.

Tertiary treatment could be accomplished through a secondary treatment process followed by filtration or through a combined process, such as a membrane bioreactor (MBR). Tertiary treatment removes pathogenic bacteria and viruses so the water can be used in "unrestricted reuse" applications. Although both processes are considered tertiary treatment, the use of membranes (microfiltration or nanofiltration) provides an order of magnitude better treatment

than conventional filtration (particle filtration). The range of removal provided by different types of filtration is provided in Figure 6-5. Tertiary treatment using membranes often is accomplished through the use of membrane bioreactors (MBR). MBRs are a treatment process where the membranes are submerged in the activated sludge and the effluent is extracted through the membrane, leaving the solids behind. MBRs eliminate the need for secondary clarifiers and are more modular compared to separate secondary and tertiary treatment steps. For either of these treatment options, treatment is further followed by UV disinfection. The same amount of acreage is needed for storage and disposal. A summary of the tertiary treatment alternatives is provided in Table 6-5.

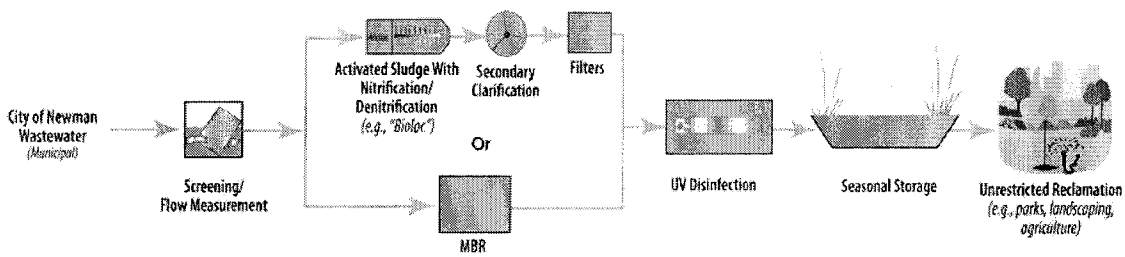
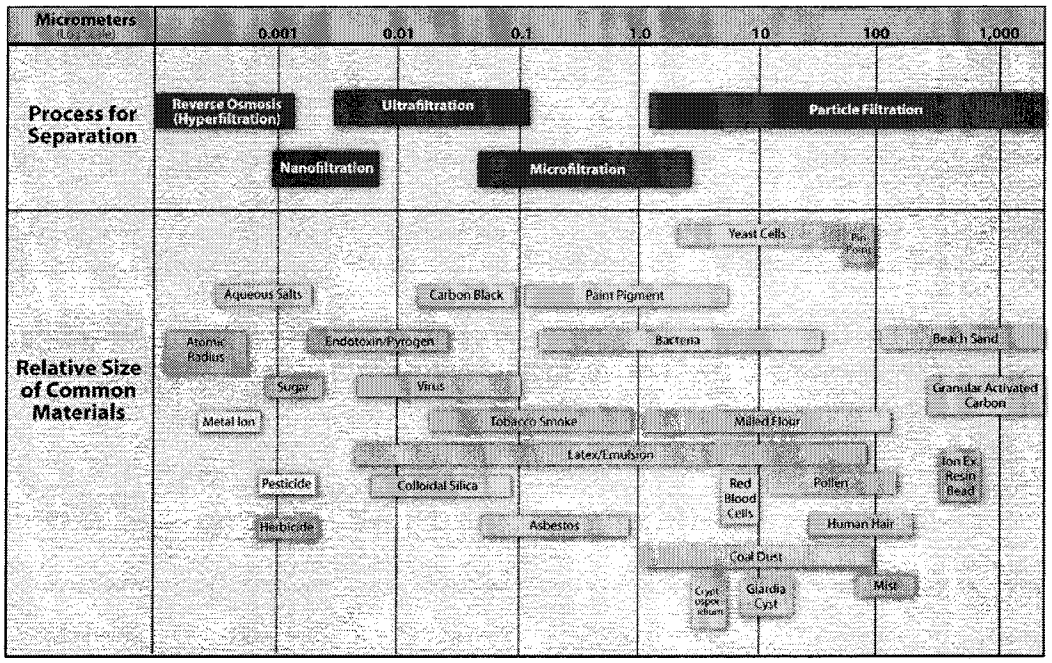


Figure 6-4
Example Tertiary Treatment Process

Figure 6-5



Comparison of Filtration Technologies

Table 6-5
City of Newman
Tertiary Treatment Alternatives Summary

	Secondary Treatment with Filters and UV Disinfection	MBR with UV Disinfection
Description	"Biolac" biological treatment process with conventional filters (disk filtration) and UV disinfection	Membrane bioreactor with UV disinfection
Disposal	❒ Urban reclamation ❒ Unrestricted agricultural reclamation ❒ Restricted agricultural reclamation ❒ Limited surface water discharge may be possible to reduce storage costs in wet winters	❒ Urban reclamation ❒ Unrestricted agricultural reclamation ❒ Restricted agricultural reclamation ❒ Limited surface water discharge may be possible to reduce storage costs in wet winters
Advantages	❒ High level of treatment ❒ Opportunities for multiple disposal options ❒ BPTC with respect to nitrogen and salinity ❒ All treatment could occur on existing wastewater treatment plant site	❒ Highest level of treatment ❒ Modular treatment system ❒ Opportunities for multiple disposal options ❒ BPTC with respect to nitrogen and salinity ❒ All treatment could occur on existing wastewater treatment plant site
Disadvantages	❒ Provides higher level of treatment than currently needed ❒ More costly than aerated ponds ❒ Separation of industrial flows is likely cost effective	❒ Provides higher level of treatment than currently needed ❒ Highest capital cost ❒ Highest O&M cost ❒ Separation of industrial flows is likely cost effective
Capital Cost (2 Mgal/d; 2008$) [b]	$45.0 million	$55.1 million
Additional O&M Cost (2010) [c]	$640,000	$710,000

[a] Capital cost is for a 2 Mgal/d treatment plant, costs do NOT including storage and disposal capital costs.
[b] Operation and Maintenance (O&M) costs are per year in addition to current O&M costs, at full capacity.

6.4 INDUSTRIAL PRE-TREATMENT ALTERNATIVES

In addition to future treatment of residential wastewater, the future treatment of F&A Dairy wastewater also needs to be considered. The higher strength food process wastewater from F&A Dairy represents over half the total organic load currently entering the WWTP. Pond systems are generally well suited for food processing wastewater due to the fact that the systems can tolerate large swings in organic load on a daily, weekly, or monthly basis. Analysis of the existing WWTP capacity (described in Chapter 5) assumes that F&A Dairy flows and loads remain the same. Given this assumption and with the existing system improvements completed, the current WWTP should be able to accommodate the current flow and load from F&A Dairy.

When considering future treatment, it is assumed that F&A Dairy will not increase production and, therefore, their flow and load contribution will not change. The size and associated capital cost as well as the operation and maintenance cost of activated sludge treatment processes are greatly affected by the influent organic loading. Therefore, if activated sludge secondary or tertiary treatment is used for future growth, it will be most cost effective only to treat municipal wastewater with this process. If F&A Dairy increases its loading to the City's WWTP or if results of the groundwater assessment indicate that the existing users (including F&A) are required to phase out of the existing ponds, it will be more cost effective to provide a separate pretreatment process for F&A Dairy wastewater to reduce the amount of organic load to municipal strength.

Generally, high organic strength wastewater (with a 5-day biochemical oxygen demand (BOD_5) of greater than 1,000 milligrams per liter (mg/l)) is better suited to be treated using an anaerobic process instead of an aerobic process (such as activated sludge). There are many reasons to consider anaerobic pretreatment of the F&A Dairy wastewater, including:

- Low sludge yield - Anaerobic systems typically produce a small fraction of the sludge generated by aerobic systems.
- Lower electrical requirements - Because an anaerobic system does not require oxygen, the high horsepower requirements of surface aerators or blowers are avoided.
- Higher organic loading - Anaerobic systems are capable of providing high treatment efficiencies at BOD concentrations ranging from 1,000 mg/l to 20,000 mg/l. These systems are also typically more effective than aerobic systems at BOD_5 removal.
- Energy production - A byproduct of anaerobic degradation of organics is the production of a methane-rich biogas which can be used to supplement or replace natural gas for fueling plant boilers, engine generators, and other energy systems.
- Good process stability - The anaerobic process is very stable under varying hydraulic and organic loadings and other conditions that may cause upsets in other types of biological systems.
- Lower nutrient requirements - Anaerobic systems require a fraction of the nitrogen and phosphorus that an aerobic system does.

- Lower operating costs - Because anaerobic systems require less nutrients and electrical input and generate less sludge than aerobic systems, they have inherently lower operating costs than an aerobic system.
- Pretreated industrial wastewater can be discharged to the municipal sewers and the combined municipal sewage flows can then be treated aerobically.

Two options for anaerobic pretreatment of F&A Dairy wastewater include anaerobic ponds and an anaerobic digester.

Anaerobic ponds reduce the organic matter content of wastewater by enhancing the activity of gas-producing microbes. Anaerobic ponds function much like open septic tanks where solids settle and are broken down by bacteria which thrive in the absence of oxygen. Under warm, neutral pH conditions in the absence of oxygen, methane producing bacteria's predominate and release methane and carbon dioxide. Under more acidic conditions, other bacteria producing sulphur-containing and other gases predominate. Any gases produced escape to the atmosphere, while the microbial sludge settles in the bottom of the pond. Anaerobic pond can achieve up to 70% BOD_5 removal. To treat the existing F&A Dairy effluent to a municipal strength of 300 mg/l, an anaerobic pond of about 0.5 acre would be needed with a detention time of approximately 20 days. Due to the odor generation potential and land restrictions near F&A Dairy, pretreatment of effluent with an anaerobic pond would require separate effluent conveyance of the industrial wastewater to the City's WWTP. Potential conveyance pipeline routes are shown in Figure 6-6.

Industrial wastewater biological strength can also be reduced by an anaerobic digester. In this process, organic waste is digested in a controlled process that limits access to oxygen and encourages the generation of methane and carbon dioxide by microbes. Due to the variations in flow and loads of F&A Dairy, an equalization tank would be needed. Anaerobic digesters typically achieve 80 to 90% BOD_5 removal. An example anaerobic digester is a process called the upflow anaerobic sludge blanket process (UASB). The UASB has been used extensively for the treatment of higher strength industrial wastewaters, including milk and cheese processing water. The system would likely include a chemical conditioning tank followed by the UASB reactor itself. F&A Dairy wastewater could be pretreated at F&A and then conveyed to the WWTP in the municipal sewers for eventual aerobic treatment.

A summary of pretreatment alternatives for F&A Dairy is provided in Table 6-6.

Table 6-6
City of Newman
F&A Dairy Industrial Pretreatment Alternatives

	Anaerobic Pond	Anaerobic Digester (e.g., UASB)
Percent Removal	❒ Approximately 70% of influent BOD_5	❒ Approximately 90% of influent BOD_5
Advantages	❒ Simple construction ❒ Lower Capital and O&M cost ❒ Simple, non-mechanical system to operate	❒ Odors and flies significantly reduced or eliminated ❒ Less space required ❒ Treatment can occur near F&A Dairy site and effluent can be conveyed in the existing municipal sewer ❒ Methane and carbon dioxide (greenhouse) gas emissions are reduced ❒ Biogas is produced which can be used to generate heat or electrical power ❒ Pathogens are substantially reduced ❒ Treatment usually occurs quicker
Disadvantages	❒ Very high odor potential ❒ Larger land requirement ❒ Treatment usually takes longer ❒ Treatment is affected by seasonal variations in temperature ❒ Large volumes of sludge are removed every 2-5 years that can be costly to dispose	❒ Higher capital cost ❒ Higher O&M cost ❒ Requires skilled operations staff
Conveyance Costs (2008$)	$2.4 to 3.4 million	Within existing municipal sewers
Capital Cost (2008$) [(a)]	$1.8 million	$2.2 million

[(a)] Capital cost is to treat existing F&A Dairy flow (0.18 Mgal/d).

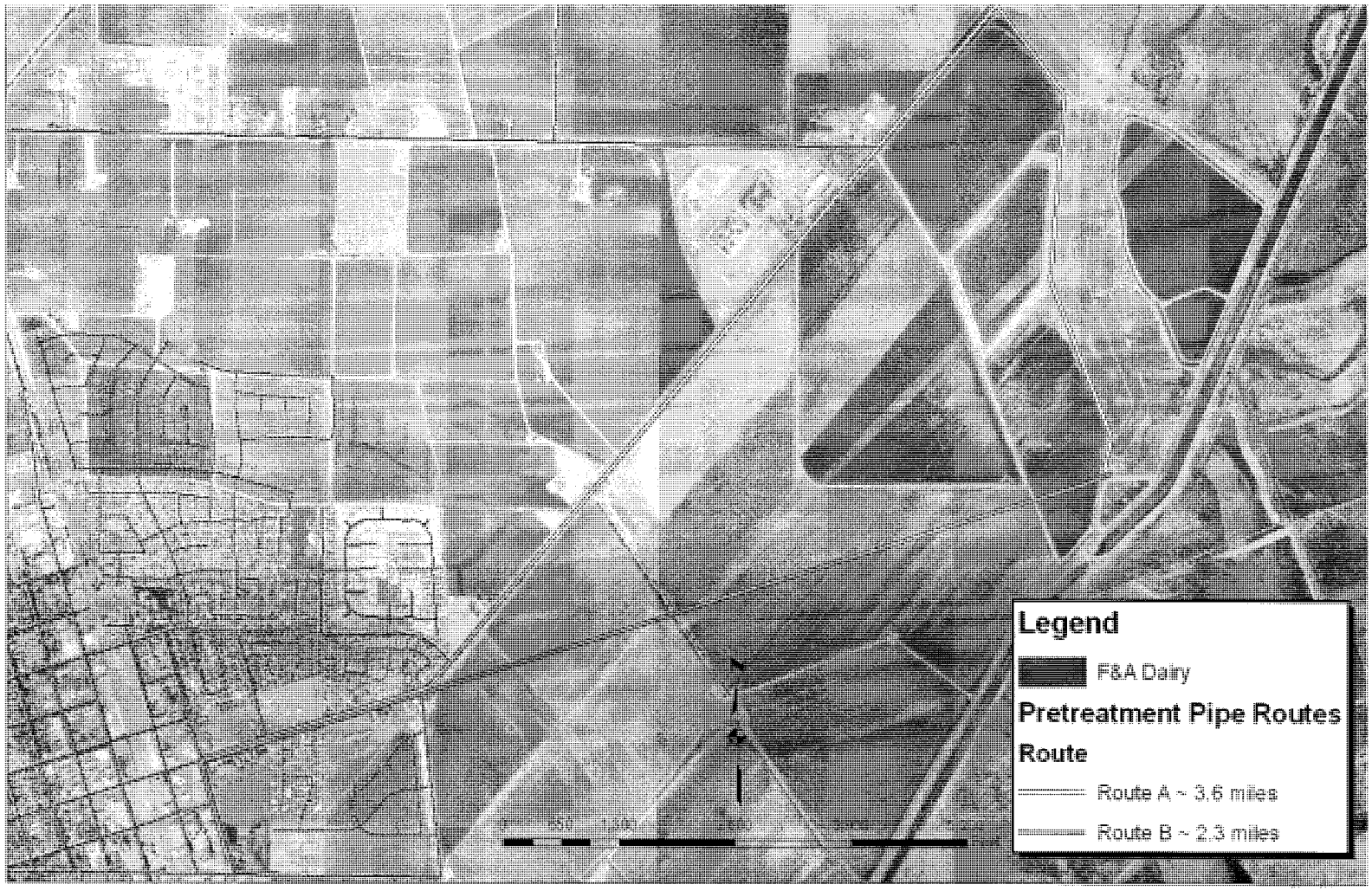


Figure 6-6
City of Newman – F&A Dairy Potential Conveyance Pipeline Routes for Pretreatment at Newman WWTP

6.5 FUTURE EFFLUENT STORAGE AND DISPOSAL REQUIREMENTS

Future storage needs are independent of the treatment and reclamation disposal method used. Storage must be designed to accommodate the wastewater generated during the wet season as well as 1-in-100 year precipitation. For the Primary SOI, approximately 33 acres beyond the existing WWTP are needed. At full buildout of the Secondary SOI, approximately 150 total acres are needed (117 additional acres). Reclamation disposal land depends on the amount of urban reclamation used. If only restricted agricultural reclamation is employed, 208 acres of land is needed for the Primary SOI and an additional 570 acres is needed for the Secondary SOI. A schematic of the land area that will be required for storage and restricted reclamation at full buildout of the Secondary SOI is shown in Figure 6-7. The areas identified in Figure 6-7 are not intended to be the exact parcels, but instead to demonstrate the amount of land area needed. Also, these areas do not include additional land for treatment, if needed.

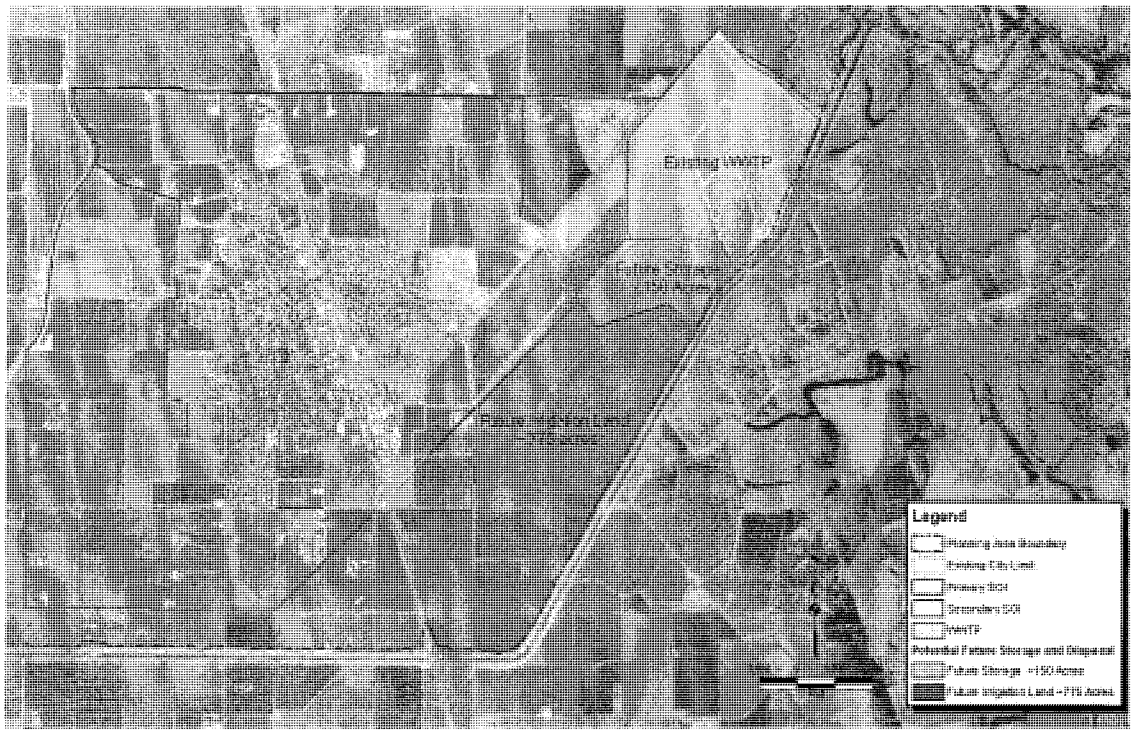


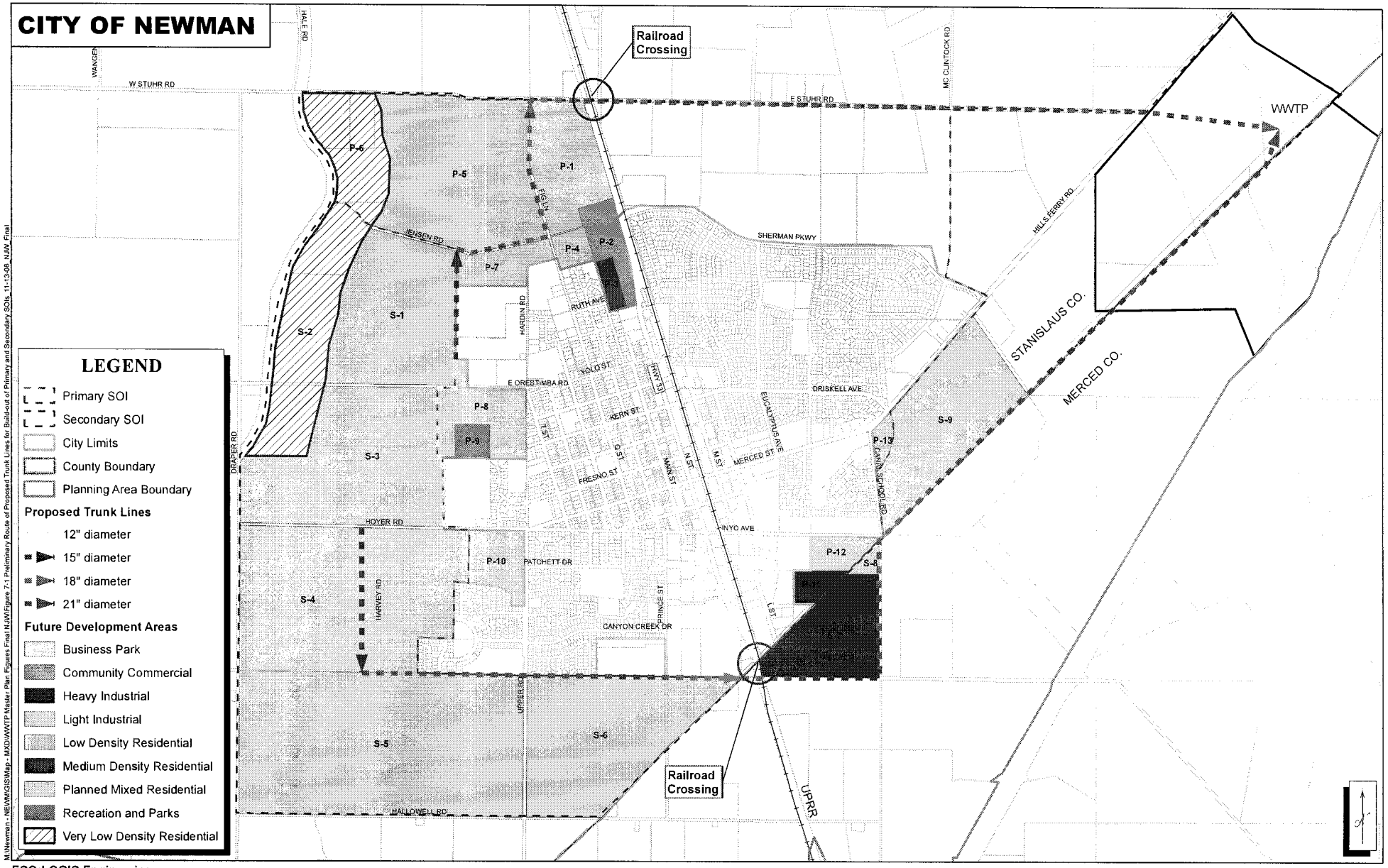
Figure 6-7
City of Newman Future Storage and Disposal Land Requirements – Full Buildout of Secondary SOI

Chapter 7

Recommended Plan

The preceding chapters outline the regulatory concerns, treatment and disposal options, and unknowns related to the potential for groundwater degradation. Given this information, it is recommended that the City of Newman (City) follow a plan that allows for the most flexibility in the future. The City has a unique, one-time opportunity to create a plan that is both consistent with regulations and also conserves resources.

Growth within the existing City Limits can be accommodated in the existing WWTP with some near-term, and possibly long-term, upgrades. Growth in the Primary SOI and Secondary SOI that wishes to annex to the City will need to fund construction infrastructure (including water and wastewater utilities) to serve these annexations. As discussed in the companion Wastewater Collection System Master Plan, these areas will need new trunk sewers to accommodate future wastewater flow to the WWTP (Figure 7-1). This "separate" collection system creates a distinction between new and existing users. There is a logical separation of new users to a new treatment process compared to the existing users who have already put a significant investment into their existing WWTP. F&A Dairy's wastewater is also limited to flowing to the existing pond system, which is better able to accommodate the high and variable strength wastewater than activated sludge or an MBR. This flexibility of separation of the new and existing users exists in very few Cities. In addition, if a higher level of treatment is selected for new growth, there is a nexus between that higher cost and the beneficiaries of the infrastructure being created. With a higher level of treatment being funded by the annexed areas, these areas can be required to be plumbed to use tertiary effluent on parks, school yards, commercial landscaping, etc., including consideration of residential front yard irrigation in all years, and back yard irrigation in drought years when the City's surface water allocation from the California Aqueduct may be reduced. It is prohibitively expensive to retrofit the existing City with urban reclamation "purple pipes" to allow the level of reclamation and water supply security possible for the annexed areas.



ECO:LOGIC Engineering
City of Newman Wastewater Treatment and Disposal Master Plan

Figure 7-1
Preliminary Wastewater Collection System Routes of Proposed Trunk Lines for Build-out of Primary and Secondary SOIs

M:\Newman - NEW\GIS\Map - MXD\WWTP Master Plan Figures Final N JW\Figure 7-1 Preliminary Route of Proposed Trunk Lines for Build-out of Primary and Secondary SOIs_11-13-08_NJW_Final

Based on the foregoing concepts, the following major actions are recommendations as part of this Master Plan:

- **Plan for diversifying effluent disposal options in the future.** Continued expansion of the City's pond system to serve future growth is based on the ability of the City to acquire large parcels of land suitable for treatment and disposal ponds and restricted reclamation and, more importantly, the demonstration that the existing WWTP does not degrade groundwater either from the unlined ponds and/or from the reclamation practices. It is essentially impossible to predict if either of these concerns will surface in the future. Other communities that use secondary or tertiary treatment processes instead of pond treatment have the distinct advantage of being able to construct add-on processes to remove nitrogen, turbidity, pathogens, and even trace pollutants that allow the effluent to be disposed or reclaimed for other uses. For this reason, it is recommended that new development 1) treat its wastewater to a higher level, and 2) provide alternative means of effluent disposal.

- **Acquire more disposal reclamation land.** Concurrent with planning for diversified effluent disposal options, it is also prudent planning to secure suitable disposal land (ideally near the WWTP). This land can be used on either an interim basis and/or for long-term future reclamation needs and will allow the WWTP to expand as needed to accommodate growth, regardless of the treatment and disposal methods pursued on a long-term basis.

- **Assume new development in the Primary and Secondary SOIs will be required to treat their wastewater to tertiary standards.** As noted above, diversifying effluent disposal options requires a higher level of wastewater treatment. Current BPTC is a lined wastewater treatment process that removes total effluent nitrogen to less than 10 milligrams per liter, unless the effluent discharger specifically demonstrates that the level of treatment is not needed to prevent degradation of underlying groundwater. The burden of proof rests with the City for new growth beyond the 1.44 Mgal/d (average sanitary flow basis) permitted capacity of the existing facility. Coupling BPTC with the need to diversify effluent disposal results in the recommendation that annexations to the City fund tertiary level treatment providing pathogen-free effluent that can be applied in an unrestricted manner to agricultural crops and urban landscaping. While there are several types of treatment processes that produce tertiary quality effluent, fiscal planning around a new membrane bioreactor (MBR) facility is recommended. MBRs have comparable costs to conventional tertiary systems and many of the new WWTPs built in California today are MBRs.

- **Plan future City parks, schoolyards, landscape medians, greenbelts, etc. for irrigation with tertiary effluent.** This recommendation implements diversifying effluent disposal and takes steps to either reduce the size and cost of the new potable water supply and/or maintain the quality of that water supply by reducing the need to operate existing potable water wells (with poor quality water) during maximum potable water demand days driven by landscape irrigation water needs. As discussed previously, this plan can only be implemented to any great extent in new development areas because of the high cost to retrofit existing developed areas with dual "purple pipe" systems needed for effluent reclamation. The City may wish also to consider effluent reclamation in residential front yards, and possibly in back yards during severe

drought when the City's allocation of California Aqueduct Water may be reduced. With modern, reliable tertiary wastewater treatment facilities, front and back yard effluent irrigation is becoming increasingly common in prestigious communities. The "perception problem" is diminishing and since this practice would only be occurring in new areas, the people buying the home would be accepting the use as evidenced by the fact that they bought the home. This is a very different perspective than a forced retrofit where existing people have no choice.

- Under this plan, the layout of the new water, wastewater, and reclaimed water (i.e., effluent) pipes in the annexed areas would be consistent with California Department of Public Health "Title 22" requirements. This includes use of "purple pipe" to designate non-potable uses, addition of backflow preventers from the City's potable water lines, separate water lines to bathrooms/ drinking fountains, and selection of certain types of sprinkler heads to minimize overspray in public areas. Many communities have amended their city design standards to include the Title 22 provisions, even before reclaimed water is available. The new UC Merced campus is an example of such planning where the irrigation system is designed to switch over to reclaimed water when sufficient wastewater is generated by the students. Since it is very expensive to retrofit existing areas, it is recommended that city design standards be modified so that the City has options for how new urban landscaping could be watered in the future.

- **Develop a revenue program that equably funds wastewater treatment and disposal for both existing and new users.** Funding these initiatives will impact both the City's monthly wastewater rates (for capital projects related to achieving the permitted capacity of the existing WWTP and new operational costs benefiting existing users) and wastewater capital fees (for capital projects benefiting City growth, including expansion of the WWTP beyond the current permitted capacity). A detailed revenue program is needed to determine funding of the items discussed above. Depending on the outcome of the groundwater monitoring, input from the Regional Board, and evaluation of the ability to off-set potable water demands, the City may desire to construct a new tertiary WWTP for new development and recycle that water on new urban and agricultural areas. Since funding major facility upgrades through monthly sewer rates is expensive and difficult to implement equitably across all users, it is recommended to base capital fees for development of the Primary and Secondary SOIs on the costs for constructing a new tertiary MBR treatment facility. A new MBR facility with a capacity of 1.0 Mgal/d and accommodations for future growth is estimated to cost $33 million (for treatment only) in 2008 dollars. Capital fees based on this amount would be adjusted each year to an inflation index tied to the construction industry. At this point, the plan recommends only <u>collecting</u> fees associated with the tertiary WWTP as a means to minimize risk to the City. If the various unknowns related to treatment and disposal practices can be resolved with some surety, then a portion of the collected money could be refunded to parties who funded the construction of the actual facilities.

Appendix A

BOD/COD/TOC Special Testing Results Summary

Appendix A

City of Newman BOD/COD/TOC Special Testing Results Summary

This summary discusses some of the results and conclusions of the special wastewater testing conducted by the City of Newman on August 22nd, 2007 and September 12th, 2007. Wastewater samples were collected from three locations: F&A Dairy effluent, a manhole in the City prior to F&A Dairy discharge, and the influent to the wastewater treatment plant (WWTP). In addition, a sample of the "City without the Dairy" wastewater was blended with the Dairy effluent in approximate proportion to the flows (85 percent City wastewater to 15 percent F&A Dairy effluent). Time-composite samples were collected by the City at the manhole and at the WWTP. The F&A Dairy samples were collected by the Dairy's flow proportional composite sampler. Samples were analyzed for 5-day biochemical oxygen demand (BOD_5), 20-day biochemical oxygen demand (BOD_{20}), chemical oxygen demand (COD), and total organic carbon (TOC). Results and conclusions from the testing are shown in Table 1 and discussed below.

1. The BOD_5 of the F&A Dairy waste varies substantially. On August 22nd, F&A Dairy BOD_5 was 1,130 mg/L (a load of 1,610 lb/day) and on September 12th, the BOD_5 was 4,460 mg/L (5,660 lb/day). Historical F&A Dairy BOD_5 data indicates that the BOD_5 load has been as high as 7,250 lb/d (March 2006). BOD load affects WWTP costs in two ways:

    a. The cost of the treatment facilities.

    b. The monthly cost to maintain and operate those treatment facilities.

    This variability in BOD load raises the question as to whether F&A Dairy has paid for 7,250 lb/d of BOD treatment facilities, or is using facilities paid for by others, and paying only for the maintenance and operation of those facilities.

2. The BOD_5/BOD_{20} ratios for the Dairy samples were 0.74 and 0.84 on August 22nd and September 12th, respectively. Milk waste should be readily biodegradable and have a very high BOD_5/BOD_{20} ratio. The lower ratio values of the samples suggest the possibility that there may be residual disinfection agents (or other limiting compounds) in the Dairy waste, which slow the BOD_5 test kinetics. Slow kinetics cause the reported BOD_5 concentrations to be lower than if the BOD_5 test were free of disinfectants. The hypothesis of slow kinetics from disinfectants in the Dairy wastewater is supported by the 85 percent/15 percent blend data where the "actual" BOD_5/BOD_{20} ratio (and therefore kinetics) is greater than the "theoretical" BOD_5/BOD_{20} ratio. The greater ratio (and therefore kinetics) in the actual blend could be a result of the greater quantity City wastewater (1.038 Mgal/d) diluting the disinfectant in the smaller quantity of Dairy wastewater (0.171 Mgal/d), thus, reducing the effect of the disinfectant on the BOD_5 test.

Table 1
City of Newman
BOD/COD/TOC Special Study Results

August 22, 2007 Flow Data:			**September 12, 2007 Flow Data:**		
WWTP flow	1.209	Mgal/d	WWTP flow	1.293	Mgal/d
Dairy flow	0.171	Mgal/d	Dairy flow	0.152	Mgal/d
City flow w/o Dairy	1.038	Mgal/d	City flow w/o Dairy	1.141	Mgal/d

			85%:15% Blend Before Outfall		85.9%:14.1% Blend after Outfall	
	City w/o Dairy	Dairy	Actual (combined sample)	Theoretical (Calculated)	Actual (measured at WWTP)	Theoretical (Calculated)
August 22, 2007 Results						
BOD_5, mg/L	303	1,130	405	427	771	420
BOD_{20}, mg/L	490	1,530	544	646	795	637
BOD_5/BOD_{20}	0.62	0.74	0.74	0.66	0.97	0.66
COD, mg/L	593	2,260	684	843	965	828
BOD_{20}/COD	0.83	0.68	0.80	0.77	0.82	0.77
TOC	1,080	509	1,500	994	206	999
BOD_5/COD	0.51	0.50	0.59	- - -	0.80	- - -
August 22, 2007 Results						
BOD_5, mg/L	206	4,460	827	844	866	806
BOD_{20}, mg/L	350	5,330	1,010	1,097	1,080	1,052
BOD_5/BOD_{20}	0.59	0.84	0.82	0.77	0.80	0.77
COD, mg/L	370	7,080	1,380	1,376	1,490	1,316
BOD_{20}/COD	0.96	0.75	0.73	0.80	0.72	0.80
TOC	57.1	2,330	355	398	268	378
BOD_5/COD	0.56	0.63	0.60	- - -	0.58	- - -

3. Since Dairy waste is typically both organic and readily biodegradable, the relatively low ratio of BOD_{20}/COD for the Dairy waste on August 22nd (0.68) is somewhat surprising. This ratio suggests that the Dairy waste contains a substantial amount of compounds (presumably organic compounds) that are not biodegradable over 20 days. Two questions arise from this observation:

    a. What are the compounds that make up the difference between BOD_{20} and COD observed in the Dairy waste?

    b. Is the oxygen demand of these compounds truly refractory (i.e., never expressed) in the WWTP or are they an oxygen demand on the WWTP that adds cost to the design and operation?

    A credible guess is that some fats in the Dairy waste may take more than 20 days to degrade, but that ultimately they will degrade. These compounds would show up in a COD analysis, but not the BOD_{20} test. Since the WWTP retention time is greater than 20 days, these compounds would add cost to the design and operation of the WWTP.

4. Another observation of interest is the difference between the actual BOD_5 concentration measured after the outfall conveyed the blended wastes to the WWTP headworks (771 mg/L) and the theoretical BOD_5 concentration (420 mg/L) on August 22nd. This difference was not measured on September 12th. The differences observed could be a result of one or more factors that include:

    a. Warmer wastewater temperatures on August 22nd could cause more biodegradation in the outfall to the WWTP. This "pre-treatment" in the outfall pipe by bacteria growing in the pipe can accelerate BOD_5 kinetics.

    b. The major differences in Dairy wastes between August 22nd and September 12th could cause the differences observed.

    c. Natural seeding of the wastewater by bacteria growing on the walls of the outfall piping, which could accelerate BOD_5 kinetics, particularly if the Dairy waste contains organics (such as fats) that may not be readily biodegradable by common wastewater bacteria.

    From available data, a best guess is that fats in the Dairy wastewater may tend to collect in the outfall pipe downstream of where Dairy wastewater enters the City's collection system (and any residual disinfectants in the Dairy wastewater are neutralized by dilution by the much larger City flow). The collected fat on the outfall piping walls begins to decay bacterially and sheds into the wastewater (1) bacteria evolved to metabolize Dairy waste fats and (2) shorter chain organics from that metabolic process that are readily biodegradable by a wide spectrum of wastewater bacteria. These effects of the outfall pipe on wastewater BOD kinetics would be greater with higher wastewater temperatures.

5. The BOD_5/BOD_{20} ratio for typical municipal wastewater is generally in the 0.6 to 0.7 range. City waste was 0.62 and 0.59 on the two sampling dates (i.e., on the low end of "typical"). At the WWTP (after the outfall), the BOD_5/BOD_{20} ratios were 0.97 and 0.80, both well above the typical range. Although the actual total organic load at the WWTP (as measured by BOD_{20}, or possibly COD) may not change from the City to the WWTP, the "apparent" organic load as measured by the BOD_5 test appears to increase.

    For example, if the BOD_5/BOD_{20} ratio is 0.6 and the "true" biodegradable organic load (as measured by the BOD_{20} test) is 400 mg/L, then the "apparent" load on a BOD_5 basis would be 240 mg/L (400 mg/L x 0.6 = 240 mg/L). If the BOD_5/BOD_{20} ratio is 0.8, the "apparent" load on a BOD_5 basis would be 320 mg/L (400 mg/L x 0.8 = 320 mg/L). This change in BOD_5/BOD_{20} ratio from the City to WWTP headworks may be the explanation for the "mystery" BOD load. In other words, the "mystery" BOD load was never there, but rather was a relic of using the BOD_5 test and the BOD_5/BOD_{20} ratio changing from the City to the WWTP, apparently as a result of both the Dairy and the outfall.

These results are preliminary because they are based on only two observations. However, the results are significant and need to be considered by both the City and F&A Dairy in how they conduct business with each other. Specific points appearing to need discussion and resolution between the City and F&A Dairy include:

1. The BOD_5 test may not be a representative indicator of the oxygen demand placed on the WWTP by the F&A Dairy waste. COD appears to be the superior indicator. Because the

Dairy monthly operational billing basis is BOD_5 load, the relationship between COD and BOD_5 needs to be established. This relationship should be based on the typical BOD_5/COD ratio for City waste. For the two sampling events in the study, the typical (i.e., average) City wastewater BOD_5/COD ratio is 0.534. Based on this very preliminary value, the August 22nd BOD_5 "billing value" for F&A Dairy would be 1,210 mg/L (2,260 mg/L COD x 0.534 = 1,210 mg/L BOD_5), not 1,130 mg/L. For September 12nd, the BOD_5 "billing value" would be 3,780 mg/L (7,080 mg/L COD x 0.534 = 3,780 mg/L BOD_5), not 4,460 mg/L.

2. If F&A Dairy wastewater strength (i.e., organic load) will to continue to vary, the funding of the construction, maintenance, and operation of the treatment facilities needed/reserved for Dairy use needs to be evaluated. As an example, if the Dairy will have months producing 7,200 lb/d BOD_5, then the City needs to have facilities built and reserved to treat those Dairy loads when they occur, even if they only occur periodically. BOD treatment capacity reserved for occasional "on-demand" use by the Dairy is not available for other uses, such as City growth.

3. If it is determined that Dairy waste, either immediately or after passing through the outfall pipe, is causing an unusually high immediate oxygen demand at the WWTP then modifications to the WWTP to address this high immediate oxygen demand are needed and the source of funding needs to be determined.

Although only two sets of tests were concluded, the results of these tests provide an explanation for the "mystery" BOD load that prompted the study. The results also suggest that F&A Dairy is a significant and varying organic load on the WWTP.

Appendix B

March 14, 2006 Water/Wastewater Planning Letter to Regional Board

ECO:LOGIC

Consulting Engineers

March 14, 2006

JoAnn Kipps, PE
California Regional Water Quality Control Board
Central Valley Region
Fresno Branch Office
1685 "E" Street
Fresno, CA 93706-2007

Re: City of Newman Wastewater/Water Planning

The purpose of this letter is to provide the Regional Board with an update on City of Newman wastewater and water planning. The City's planning effort is intended to be comprehensive and transparent so that all involved parties (from residents, to businesses, to the Regional Board) understand what the City is doing as a responsible public entity, and why. All parties are being included in the planning process to maximize understanding and consensus.

Overview of the Problem

The City's groundwater potable water supply has a salinity of about 1,700 μS/cm. The recommended upper limit for water supply salinity is 900 μS/cm. Reducing the salinity of the City's water supply is desirable, though not essential, from a consumer use perspective.

Based on the 1,700 μS/cm water supply, the wastewater influent to the wastewater treatment plant (WWTP) site has a salinity of about 2,800 μS/cm. This 1,100 μS/cm salinity increase is relatively high (a typical value is less than about 500 μS/cm), and is a result of water conservation measures, industrial/commercial discharges, and extensive use of water softeners in town to compensate for the 450 mg/L hardness of the water supply. The residential salinity increase may be about 900 μS/cm; therefore, control of industrial/commercial dischargers, alone, will not resolve the salinity problem.

The 2,800 μS/cm wastewater is treated in unlined ponds. This poses two potential problems:

- Pond treatment may evaporatively concentrate more salt than the aeration equipment of a nitrification/denitrification activated sludge process. An activated sludge process also achieves some net transport of salt off-site via landfill disposal of dried sludge.

- The unlined ponds leak some wastewater into area shallow groundwater. Carollo Engineers estimated the overall average leakage to be 2.1 ft/yr (2 x 10-6 cm/sec under roughly 6 feet of hydrostatic head which translates into an equivalent one-foot thick pond liner with a permeability of 3.4 x 10-7cm/sec). This leakage rate is comparable to that from clay lined ponds. In other words, the ponds have "de facto" clay liners, which is in agreement with EPA observations regarding leakage from ponds.

3875 Atherton Road ▪ Rocklin, California 95765 ▪ Phone (916) 773-8100 ▪ Fax (916) 773-8448

Regardless of semantics, there is leakage; and therefore there is the potential for groundwater degradation. Potential groundwater degradation problems include salinity, pathogens, nitrogen compounds, and soil redox related problems (e.g., mobilization of iron, manganese, and arsenic). Further study of all potential problems is necessary, based on our experiences, and the experiences reported by EPA (see Attachment A), if there is to be an actual understanding of what specific shallow groundwater quality transformations are occurring under the WWTP site relative to the immediate environs. Of these potential problems, it is known that salinity leakage is occurring. Whether this leakage is causing degradation depends on shallow groundwater salinity in the area, which currently is ill-defined in our opinion.

As a result of tailwater return from the effluent reclamation area as well as evaporation from the ponds, the City's effluent prior to reclamation has a salinity of about 3,500 μS/cm. This 3,500 μS/cm water is applied to land to grow crops. Since no other farmer is believed to be using 3,500 μS/cm water for surface irrigation or flushing purposes in the area, it would appear by inspection that the WWTP operation should be degrading shallow groundwater. However, this is not necessarily the case because the Newman-specific situation gets complex with regards to what constitutes "natural" or "background" shallow groundwater salinity between the City of Newman and the San Joaquin River, and whether "natural" or "background" salinity is the basis for compliance assessment. In this letter, "natural" conditions refer to pre-irrigation conditions for the general area, i.e., prior to the Delta-Mendota Canal and Central California Irrigation District. "Background" conditions refer to conditions as they exist today, i.e., as impacted by man and in a state of flux based on land uses, irrigation water supplies and practices, crops grown, fertilizer use, subsurface drainage, etc., as will be discussed. For compliance assessment purposes, "natural" conditions are superior to "background" conditions because background conditions are not the natural state of things; and background conditions are in a constant state of flux which implies that compliance could also be in a constant state of flux depending on the uncontrolled actions of others. Unfortunately, natural conditions no longer exist in the area. These complexities are discussed below.

Natural and Background Shallow Groundwater Concentrations and Gradients

Whether the WWTP operation is causing degradation (salinity, nitrogen, or otherwise) can only be determined based on knowledge of natural or background shallow groundwater concentrations, and gradients specific to the site. Natural concentrations and gradients no longer exist on site, but may be discernable from historical records, soils types, and more natural sites in the greater area. Background concentrations and gradients could have been determined before the site was used to reclaim effluent as was done at Mountain House (see Attachment B); but, background concentrations were not a concern of the Regional Board at the time that the site was converted to effluent reclamation. However, background concentrations can be estimated; and the Mountain House data are an important example of possible relevance to the Newman situation. This is because, at Mountain House, if background groundwater data had not been collected before the fact of reclamation, it would have been concluded erroneously that the change in shallow groundwater salinity from up-gradient to down-gradient on the site was caused by reclamation when in fact the salinity gradient was a background phenomenon.

At Newman, the preponderance of data as summarized by DWR (see Attachment C) is that there is both a natural and background salinity gradient across the WWTP site as observed at Mountain House. Consequently, a critical factor to the entire compliance issue at Newman is establishing a credible estimate of natural and/or background salinity concentrations and gradients for the WWTP site prior to reclamation occurring. This is complex, as will be discussed, because of the variability in shallow groundwater salinities and gradients in the area (see Attachments D and E, and compare D to C).

At the Newman WWTP site, current up-gradient shallow groundwater salinities (i.e., background salinities as measured by MW#1 and MW#4) suggest that shallow groundwater flowing easterly under the WWTP site may have an average salinity of about 3,600 μS/cm. The City's irrigation records suggest that this groundwater is sufficiently shallow that it is being tapped (directly or via capillary action) by the alfalfa once it is well rooted. If this is the case on the WWTP site as well as on adjacent properties, then evapotranspiration of water by plants (crops or native vegetation) tapped into the shallow groundwater can cause the shallow groundwater salinity to increase relatively quickly. As an example, DWR's database (Attachment D) shows groundwater salinity at 9,590 μS/cm south of the WWTP. This high shallow groundwater salinity would reduce the yield of most crops; therefore, it is probably a result of evapotranspiration by salt tolerant vegetation and/or evaporation of capillary water rising up from shallow groundwater, i.e., natural conditions. Typically, a farmer would irrigate his crop to keep the salinity of water in his crop's root zone well below 9,590 μS/cm. In other words, in shallow groundwater settings, farmers may need to irrigate, not to meet the water demands of their crops, but rather to control the buildup of salts in the crop's root zone. Irrigation of crops overlying naturally shallow groundwater to control root zone salinity results in the need to artificially drain the soil. Drain lines and other artificial drainage practices are common in the Newman/Gustine area.

The preponderance of evidence is that shallow groundwater exists in the area, which can lead to high natural salinity concentrations and gradients, which are reduced/controlled by irrigation, which exacerbates shallow groundwater conditions, which results in the need to drain area soils by man-made means. The net effect of 1) irrigation to control salinity buildup, and 2) soil drainage to prevent water buildup, typically, is a reduction in shallow groundwater salinity concentrations compared to natural conditions. With all of the irrigation and drainage in the Newman area, "natural" shallow groundwater salinities probably no longer exist. "Background" salinities do exist, but are variable as a result of parcel-specific irrigation and soil drainage practices.

The foregoing raises the question of what constitutes background or natural shallow groundwater salinity for compliance assessment purposes. By natural forces, shallow groundwater salinity would increase by plant evapotranspiration and capillary evaporation. The 9,590 μS/cm salinity measured south of the WWTP site is an indication of the salinity concentration potential of natural forces. At the City of Woodland adjacent to the westside of the Sacramento River flood plain, tritium dated "pre-modern" shallow groundwater had a salinity of 15,000 μS/cm. At Mountain House, shallow groundwater salinities as high as 16,600 μS/cm were observed. Thus, the natural evapotranspirative/ evaporative potential of the Newman site appears to be such that the "natural" unflushed salinity of

shallow groundwater on the west side of the San Joaquin River flood plain could be about 10,000 μS/cm. However, with irrigation and soil drainage practices in the Newman area the current "background" salinity should be maintained at a much lower concentration by area agriculturalists to maximize crop yields. Considering the 2001 (post-drought) DWR map of the area's shallow groundwater salinity (Attachment C), the "A-line" drain salinity data, and the MW #1 and MW #4 data, it appears that background shallow groundwater salinity in the area based on current irrigation and soil drainage practices is probably maintained in the 2,000 μS/cm to 4,000 μS/cm range. There may be a general trend of shallow groundwater salinity in the Newman area increasing from west to east (i.e., towards the historical flood plain of the San Joaquin River) based on the 2001 DWR salinity map (Attachment C).

As stated earlier, a critical question to be answered is whether the basis for groundwater degradation compliance assessment is the "natural" high salinity resulting from root and capillary extraction of pure water from shallow groundwater, or the current "background" shallow groundwater salinity that is a function of local irrigation and drainage practices? While it may be possible to estimate "natural" shallow groundwater salinity by researching early agricultural studies of the Newman area, current "background" salinity will vary from parcel-to-parcel as a function of parcel-specific crops, irrigation practices, irrigation water supply, shallow groundwater levels, subsurface drainage practices, etc.

An example of the variability in background shallow groundwater salinity is provided by the "A-line" with a salinity of about 2,400 μS/cm at the WWTP property line versus the roughly 3,600 μS/cm salinity of the City's up-gradient monitoring wells. The "A-line" water represents irrigation water that has percolated through the soil to the drain line relatively quickly and directly. Therefore, the "A-line" water has experienced relatively little of the natural salt concentrating effects operative on shallow groundwater in poorly drained soil. This is different from the poorly drained shallow groundwater slowly approaching the WWTP site (and up-gradient monitoring wells) from the west. This slow moving shallow groundwater would be expected to experience more of the salt concentrating effects, and therefore have a higher salinity as indicated by available data.

Because of these spatial and temporal variabilities in "natural" and "background" shallow groundwater salinity in the Newman area, the City hopes to avoid attempting to establish a "natural" or "background" salinity when such a salinity may not exist. The City has conceived an alternative compliance assessment protocol that is presented under "The City Plan". If the alternative compliance assessment protocol is not acceptable to the Regional Board, then the City will begin the process of estimating a most probable number for both the "natural" and "background" salinities for the Newman area based on 1) historical records, and 2) construction of additional monitoring wells.

To estimate current area background salinity concentrations and gradients on the WWTP site after many years of effluent reclamation on the WWTP site requires construction of background up-gradient and background down-gradient monitoring wells on properties north and south of the WWTP site. Results from these wells would be used to estimate salinity concentrations and gradients on the WWTP site as if the WWTP operation did not exist. The down-gradient background

salinity estimated for the WWTP site would then become the long-term, average, salinity water quality objective (WQO) for the WWTP site. This WQO would be the basis for determining what water salinities can be contained in unlined ponds, and what water salinities can be evapotranspiratively concentrated by effluent reclamation (unless sections of the California Water Code are invoked to permit water reclamation independent of salinity issues, as will be discussed).

The City Plan

The following is the overall wastewater facilities compliance plan that the City is pursuing. Aspects of the plan are beyond City control; therefore, the plan may need to change as development of the plan progresses.

Correcting the Basic Problem. The basic problem is that the water supply is very salty (1,700 μS/cm) by drinking water standards, and has a lot of hardness which results in the use of water softeners in town. Based on preliminary contact with the Central California Irrigation District (CCID), the City is seriously pursing a $20 million potable water supply and treatment project to convert the City from bulk groundwater (1,700 μS/cm) to Delta Mendota Canal (DMC) surface water (500 μS/cm average annual salinity in the post-Delta Barriers Project era). This project will reduce average potable water supply salinity (and therefore average wastewater salinity) by 1,200 μS/cm, and is estimated to increase the combined monthly water and sewer bill by $50/month. This increase is substantial and may prompt initiation of "lifeline" water and/or sewer base rates for limited income residents. Such a subsidy program will increase the fees paid by all other dischargers to something more than a $50/month fee increase.

Converting the water supply from groundwater to surface water should reduce influent wastewater salinity from the current 2,800 μS/cm concentration down to about 1,600 μS/cm. A 1,600 μS/cm influent wastewater salinity would evaporatively increase on an average annual concentration basis to about 2,000 μS/cm after pond treatment and storage based on the 25 percent increase in salinity currently occurring from influent to storage. Effluent in this salinity range could leak from unlined ponds and not cause degradation based on all available data.

To reduce wastewater salinity to the extent feasible, another aspect of the City plan is public education to try to reduce the use of water softeners in the community once water softeners are no longer needed because of the relatively "soft" DMC surface water supply. The public education effort will be complemented with a careful review of City ordinances regulating the salinity of commercial/industrial discharges to the sewer system. The City's objective is to reduce the influent wastewater salinity to less than 1,600 μS/cm to the extent feasible over time, though with increased water conservation as the City grows, a long-term decrease in salinity may not be observed.

Addressing the "Unlined" Treatment Ponds. If the Carollo Engineering estimates of pond leakage are correct (2.1 feet per year), this leakage rate under 6 feet of head is equivalent to the ponds having an intact one foot thick clay liner with a permeability of roughly 3.4×10^{-7} cm/sec. De facto clay liner or not, the real issue is whether the ponds are causing groundwater degradation/pollution. This

is not known because background groundwater quality concentrations specific to the WWTP site have not been established for salinity or any other contaminant; and there are no monitoring wells hydraulically down-gradient from the treatment ponds to measure their impact on shallow groundwater quality. Regarding degradation/pollution, what can be said is the following:

1. Salinity: If influent salinity is reduced to roughly 1,600 μS/cm by switching to a DMC potable water supply, it is highly unlikely that the treatment ponds will be degrading the groundwater with salinity. Once the conversion to DMC water is made, it may take several years for the effect of the change to be detectable in monitoring wells because of slow horizontal flow rates in area shallow groundwater, and the long-term integrating effect of monitoring well screens more than a few feet long.

2. Nitrogen: The current "best guess" is that background total nitrogen concentrations are at or below the 10 mg/L water quality objective (WQO). Therefore the down-gradient wells will probably need to have total nitrogen concentrations not exceeding 10 mg/L on a long-term average basis for the ponds to remain in service. Based on our experience and EPA's report, we do not expect nitrogen to be a problem in this particular situation; but, this needs to be confirmed by down-gradient monitoring well results.

3. Pathogens: The more we learn about the site, the more complex meaningful pathogen testing becomes. Coliform bacteria are too large to move far in the fine-grained, poorly drained soils, even if those soils are saturated. The presence of coliform bacteria in any of the down-gradient wells to be constructed will most likely be an indicator that the well was contaminated during construction, has a faulty sanitary seal (a common problem with shallow monitoring wells in clay soils with shrink/swell potential), or was sampled without use of sterile techniques. It is possible that if groundwater is within a few feet of ground surface at the well site, coliform could be migrating down from the ground surface at the well site, rather than horizontally from the treatment ponds.

   The actual indicator of potential virus movement from the treatment ponds into shallow groundwater was expected to be a virus of coliform. Unfortunately, if shallow groundwater is within a few feet of ground surface at the well site, then soil coliform and their virus naturally could be in the soil and groundwater immediately around the well site, and flow into the well during purging and sampling.

   Based on the City of Brentwood experience of the 1980's and 1990's, coliform may be living in shallow groundwater on particles or on the surfaces of pipes and well casings, but not in the water. If coliform bacteria are present locally, then coliform virus will be present locally right in the monitoring well casing and sand pack. In this particular situation, it appears that neither coliform nor coliform virus testing, alone, will answer the question of whether virus leakage from the ponds is occurring. It appears that coliform virus concentrations in the down-gradient treatment pond monitoring wells will have to be compared to coliform virus concentrations in wells constructed in similar soil and hydrogeologic conditions in the area. Additionally, the

wells may need to be cleaned, super chlorinated, and gently purged immediately prior to each coliform virus sampling event to reduce the influence of well casing coliform and virus growths on groundwater monitoring results.

The proper approach to resolve this complex matter is to carefully site, construct, and test the wells, first. If there are no coliform virus present, then there is no pathogen leakage problem from these ponds. If coliform virus are present, the City needs to take the additional coliform virus monitoring steps identified above before concluding whether the ponds do (or do not) have a detectable pathogen leakage problem.

4. Iron, Manganese, and Arsenic: Mobilization of soil iron, manganese, and/or arsenic is believed to be a potential problem with the ponds. The reason for this is two-fold:

   - The Oxidation Pond is large and effectively cuts off all atmospheric molecular oxygen transfer to the underlying groundwater. Without atmospheric molecular oxygen transfer, even a relatively small organic load to the underlying groundwater has the potential to reduce the reduction/oxidation potential (i.e., redox potential) of this environment. A low redox can mobilize naturally occurring iron, manganese, and/or arsenic.

   - Though leakage from the Oxidation Pond is quite low (estimated to be 2.1 feet/year), this leakage water is believed to contain more BOD than molecular oxygen; thus, a reduction of redox potential in groundwater underlying the Oxidation Pond is likely.

   Whether a serious iron, manganese, and/or arsenic problem exists can only be determined via monitoring down-gradient shallow groundwater quality, and comparing those results to background concentrations.

If all of the foregoing testing shows that the "de facto lined" treatment ponds are not degrading or polluting groundwater, then the ponds will remain in service. If only salinity degradation/pollution is a problem, then the ponds will remain in service if the DMC water supply is obtained. Groundwater pollution from nitrogen, pathogens, or iron/ manganese/ arsenic probably necessitates replacing the treatment ponds at some point. The cost of replacing the treatment ponds, in-kind, with above ground, lined, aerated treatment ponds is estimated to cost roughly $18 million. Conversion to the lowest cost form of activated sludge would cost nearly $30 million considering the high BOD of current City wastewater.

The cost of replacing the current treatment ponds (which does not address potential salinity degradation caused by the reclamation area) would almost certainly preclude the DMC potable water supply project on a near-term basis because implementing both projects would result in a monthly fee increase of roughly $80 to $100, or more, depending on final construction and operational costs. Such a fee increase is not believed to be viable with the Newman electorate. Consequently, the most cost effective plan appears to be to implement the DMC water supply, now, and to address the treatment pond problem, if necessary, when financially feasible.

If there is pollution from the current treatment ponds, there is some rational technical basis for deferring pond replacement (in addition to economic reality). That basis is that background shallow groundwater salinity is roughly 3,000 μS/cm, or more, which places this water in the category of being brackish. Brackish water is not used as a potable water supply (without extensive treatment or dilution). If the water does not have domestic water supply beneficial use, then WQOs protecting potable use have bearing via the Basin Plan and tributary rule, but not directly on-site in a technical sense. If hydraulically down-gradient where this brackish shallow groundwater enters a receiving water, the problem has corrected itself by additional soil treatment, then it is technically feasible to allow the ponds to remain in current service (but not expanded service) until existing dischargers realistically can fund the pond replacement project or alternative mitigation measure.

In this regard, part of the overall City plan is to allow infill within the existing City limits to connect to the existing WWTP because these properties are as much a part of the existing City as existing homes and businesses. This infill would not necessitate any increase in the existing treatment plant capacity beyond the permitted 1.69 million gallons per day. These existing properties will participate in the revenue bonds which is how existing residents and businesses will fund improvements needed for themselves, but not for new growth. Annexations to the City, which is how all major City growth will occur, will be required to build new treatment and disposal facilities. Though the new treatment facilities may be at the existing WWTP site, the new disposal facilities will not be at the existing WWTP site because of the soil drainage problems on this site. However, additional reclamation fields may be added to the existing site for the dual purposes of 1) adding capacity for near-term use by new growth while an entirely new reclamation site is located and acquired, and 2) reducing the long-term effluent load to area groundwater by the existing users who will use any lands added to the WWTP site once the new reclamation site for new growth is operable.

Resolving Reclamation Degradation Issues. Agronomic irrigation (including effluent reclamation) evapotranspiratively concentrates salt, potentially by a factor of up to about 3 to 4 depending on crop, irrigation method, rainfall, and averaging period. Effluent typically has a greater salinity than other irrigation water supplies; therefore, agronomic irrigation with effluent typically results in greater salinity degradation of underlying shallow groundwater than would occur with use of other irrigation water supplies. Salinity degradation resulting from effluent reclamation runs contrary to State Board Resolution No. 68-16 which was adopted in 1968. However, the California legislature superseded this resolution relative to salinity degradation from water reclamation projects by adopting California Water Code (CWC) Section 13523.5. This law facilitated the legislature's desire to encourage wastewater reclamation as stated in CWC Sections 13510, 13511, 13512, etc. The legislature appears to be saying in CWC Section 13523.5 that the need to reclaim wastewater is a higher priority that the salinity degradation that results from wastewater reclamation at this time. The City supports the legislature's intent, but believes that interpretation of Section 13523.5 needs to be balanced with judgment to avoid abuses and actions not consistent with maximum, long-term benefit to the people.

In this context the City plans to continue effluent reclamation but needs to involve the Regional Board in the development of that plan. The City plan, as currently envisioned, involves the following elements:

- CWC Section 13523 states, "(a) Each regional board...shall... prescribe water reclamation requirements for water which is used... as reclaimed water." The City reclaims its wastewater and requests that the current permit be revised to include "water reclamation requirements" (WRRs) as required by CWC Section 13523.

- CWC Section 13523.5 states, "A regional board may not deny issuance of water reclamation requirements to a project which violates only a salinity standard in the basin plan." The City requests that the Groundwater Limitations in the requested WRR's reflect CWC Section 13523.5.

- To avoid abuses under the foregoing, the City proposes the following approach, which is simple to implement, is as protective as current laws related to agricultural use of groundwater, passes the "reasonable man" test, and is economically feasible.

  - Bulk groundwater under the City (as evidenced by the City's current municipal water supply) as a long-term average salinity of about 1,700 μS/cm.

  - Bulk groundwater should become somewhat more saline to the east of the City as the historical alkali flats of the San Joaquin River are approached, and as suggested by DWR groundwater salinity maps for the area. Based on these state maps and the associated City data, a credible estimate for bulk groundwater salinity at the current WWTP site is about 2,000 μS/cm.

  - This groundwater could be used by local farmers for irrigation purposes without regulation.

  - The City requests that the WRR's require a flow-weighted, average annual salinity for water applied to the effluent reclamation areas of no more than 2,000 μS/cm .

  - Because of the evaporative salt concentrating effect of pond evaporation and tailwater return, a reclaimed water salinity limit of 2,000 μS/cm represents an equivalent influent wastewater average annual salinity limit of about 1,600 μS/cm. This is a 1,100 μS/cm increase over the 500 μS/cm DMC water supply. This increase is comparable to the current salinity increase, and therefore should be achievable after the change in the potable water source. Achieving this level of compliance is an important milestone for City residents who will be funding the improvements. Having achieved this milestone of reduced wastewater salinity, the City's salinity reduction program would seek means to reduce the salinity increase further over time via education and regulation.

- The foregoing approach avoids the almost impossible task of establishing an actual (as opposed to a negotiated) "natural/background" salinity for this site. The situation at Newman is more complex than at Mountain House because at Newman it appears that in the absence of irrigation, lands immediately west of the San Joaquin River could be alkaline flats caused by evapotranspiration of salt-tolerant vegetation, evaporation of capillary groundwater, and

evaporation of flood water from the San Joaquin River. In other words, the WWTP site has probably been reclaimed for agricultural production by the introduction of irrigation to the area.

- The City's approach of using the quality of the bulk natural water resource for the area as the basis for establishing compliance appears to be in agreement with CWC Section 13551 and the California Supreme Court's recent construction of the legislature's intent in the case of City of Burbank v. State Board.

Summary

The foregoing is a reasonable representation of City staff planning relative to improving conditions at the existing WWTP. The major planned tasks include:

- Converting to a DMC potable water supply to reduce water supply salinity and hardness if 1) CCID can provide the needed water, and 2) the City has adequate funds after making any urgently needed WWTP pond improvements.
- Working with residents, businesses, and industry to reduce salinity increases to the extent feasible.
- Revising the WDRs to include WRRs for the water reclamation activities, with limitations being included to avoid abuses.
- Determining "natural" and "background" shallow groundwater contaminant concentrations and gradients only to the extent needed based on the foregoing results and negotiations.
- Requiring annexations to the City to fund new treatment and disposal facilities.

This is an ambitious plan, and the City wants to start as quickly as possible. One of the first steps is receiving comments from the Regional Board so that Newman residents and businesses know their City government is acting responsibly on their behalf by working with the Regional Board.

If you have any questions about the proposed plan, please feel free to give me or Michael Holland at the City a call. We are already in negotiation with CCID because this is such an important element of the plan.

Sincerely,

ECO:LOGIC ENGINEERING

Rich Stowell, PE, PhD

cc: Michael Holland, City of Newman
Robert W. Emerick, PE, PhD, ECO:LOGIC Engineering
Gerry LaBudde, PE, ECO:LOGIC Engineering

Attachments:

	A	Excerpts from EPA Manual on Ponds
	B	Mountain House Background Groundwater Data
	C	2001 DWR Shallow Groundwater EC Map
	D	1995 DWR Shallow Groundwater EC Map
	E	DWR Shallow Groundwater EC Data Near Newman

Attachment A

EPA Data Regarding Pond Leakage and Degradation

EPA-625/1-83-015

DESIGN MANUAL

MUNICIPAL WASTEWATER STABILIZATION PONDS

U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Research and Development
Municipal Environmental Research Laboratory
Center for Environmental Research Information

Office of Water
Office of Water Program Operations

October 1983

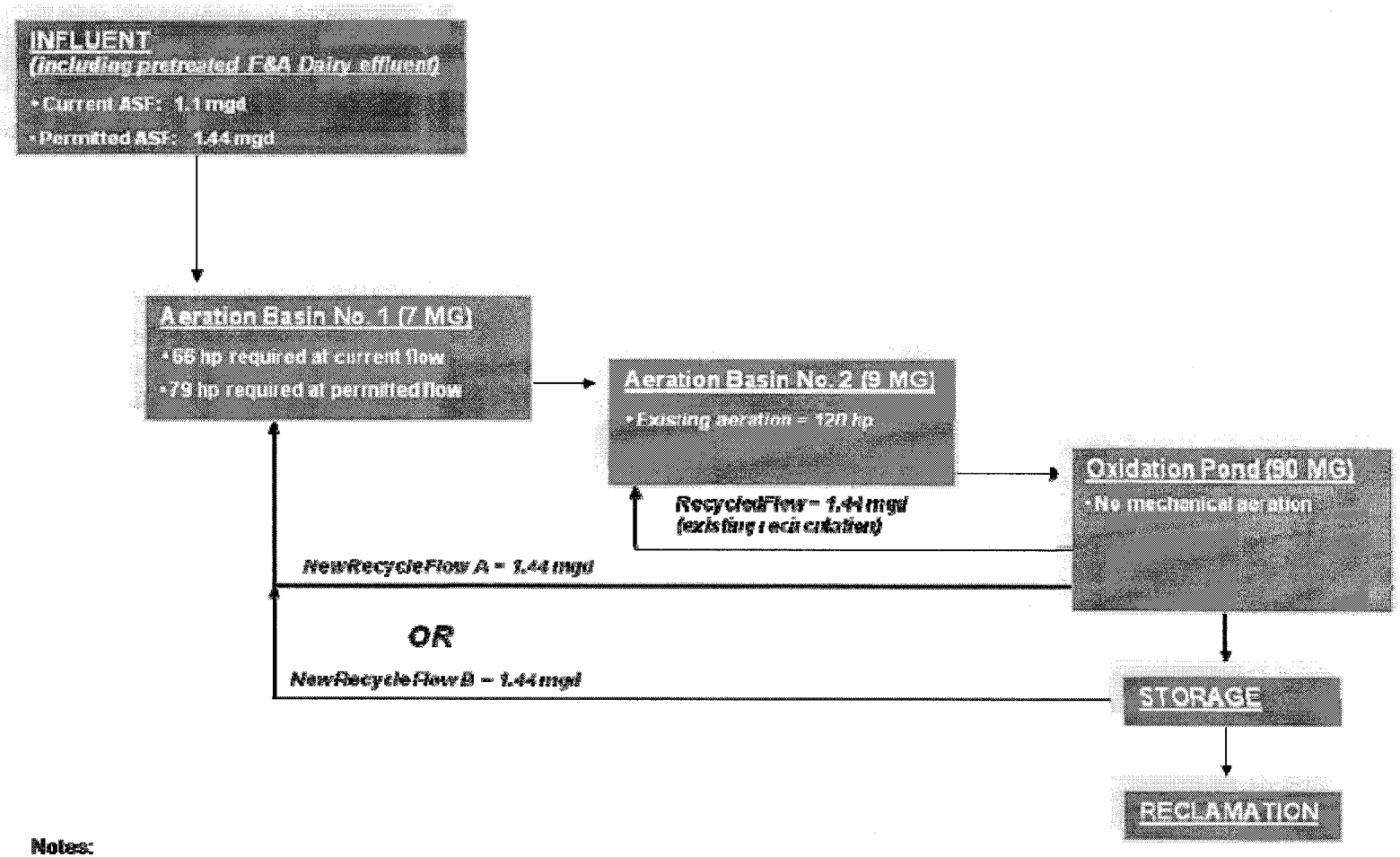
permitted flow conditions. However, recirculation to AB No. 1 would be necessary, and could be provided by extending the existing recirculation channel or by extending the pipeline from the new effluent storage basin. A schematic of this option is presented in Figure 5-2.

The estimated cost for Option 2 is $3.7 to $4.1 million for existing conditions and $4.2 to $4.6 million for permitted flow conditions (Table 5-3). Costs associated with pretreating F&A Dairy wastewater are presented in Chapter 6 and include $1.8 million for an anaerobic pond system and $2.2 million for an anaerobic digester. Since F&A dairy discharges directly into the municipal sewer the pretreatment must take place on the F&A Dairy site unless the F&A Dairy wastewater can also be conveyed separately to the wastewater treatment plant for pretreatment before combining with the municipal wastewater at the plant. With this option, there is a conveyance cost of $2.4 to $3.4 million depending on the conveyance route.

Table 5-3
City of Newman Planning Level Capital Cost Estimates for Option 2

	Current Conditions 1.10 Mgal/d [a]	Permitted Flow Conditions 1.44 Mgal/d [a]
Distribution & Piping	$75,000	$75,000
Recirculation Pump Station No. 2 & 3	$50,000	$50,000
Aeration Equipment [b]		
Aeration Basin No. 1(Replacement)	$90,000	$160,000
New Electrical Service		
Electrical Service Extension	$75,000	$75,000
Conduits & Conductors	$25,000	$35,000
Transformer		$150,000
Switchgear	$175,000	$225,000
Allowance for Sitework & Dewatering	$300,000	$300,000
Rehabilitation / Cleaning of Aeration Basin No. 1	$350,000	$350,000
Subtotal Treatment Ponds	**$1,140,000**	**$1,420,000**
Contingency (30%)	$342,000	$426,000
Subtotal Construction	**$1,482,000**	**$1,846,000**
Allowance for Engineering/ Admin/ CM/ Inspection (30%)	$445,000	$554,000
Subtotal WWTP Project Cost	**$1,927,000**	**$2,400,000**
Pretreatment Cost **at F&A Dairy Facility** [c]	$1,800,000 - $2,200,000	$1,800,000 - $2,200,000
Total Project Cost [d]	$3,700,000 - $4,100,000	$4,200,000 - $4,600,000

(a) Mgal/d = million gallons per day.
(b) 20 horsepower (hp) brush aerators in incremental sizing at $40,000 per aerator installed.
(c) If pretreatment occurs at WWTP site, an additional $2-3 million would be needed for conveyance.
(d) 2008 Dollars.



Notes:

MG = volume in million gallons
mgd = million gallons per day
hp = horsepower
ASF = average sanitary flow

Figure 5-2
City of Newman WWTP
Option 2: Pretreatment of F&A Dairy Effluent and Recirculation into AB No.1

5.2.3 Option 3: Construction of New Aeration Basins

Option 3 includes constructing two new aeration basins (AB No. 1A and No. 1B) and cleaning and decommissioning the existing AB No. 1. A schematic layout of how the new aeration basins could be incorporated into the WWTP is provided in Figure 5-3.

The new basins would be lined with a depth of 6 feet to provide a total volume of 18 MG of treatment and configured so that they could be taken out of service for periodic cleaning. Oxidation Pond effluent would be recirculated to each of the basins to distribute BOD_5 load across the ponds, minimize odor, and provide additional re-aeration; thereby reducing the surface aerator horsepower for each basin. Effluent could also be recirculated from the new storage basin.

For this option, a total of 152-hp of aeration would be required for the two new basins (AB No. 1A and AB No. 1B) for existing conditions and 166-hp to meet permitted flow conditions. Approximately 13-hp of additional mechanical aeration would also be required in the Oxidation Pond during winter months.

The planning level cost estimates for Option 3 are provided in Table 5-4.

Table 5-4
City of Newman Planning Level Capital Cost Estimates for Option 3

	Current Conditions 1.10 Mgal/d [a]	Permitted Flow Conditions 1.44 Mgal/d [a]
New Lined Aeration Basins No. 1A & 1B	$1,800,000	$1,800,000
Recirculation Pump Stations	$70,000	$70,000
Distribution & Piping	$100,000	$100,000
Aeration Equipment [b]		
New Aeration Basin 1A	$200,000	$240,000
New Aeration Basin 1B	$80,000	$90,000
Oxidation Pond		$40,000
New Electrical Service		
Electrical Service Extension	$75,000	$75,000
Conduits & Conductors	$40,000	$50,000
Transformer	$150,000	$150,000
Switchgear	$225,000	$250,000
Allowance for Sitework & Dewatering	$350,000	$400,000
Cleaning & Decommissioning of Old Aeration Basin No. 1	$350,000	$350,000
Subtotal Treatment Ponds	**$3,440,000**	**$3,615,000**
Contingency (30%)	$1,032,000	$1,084,500
Subtotal Construction	**$4,472,000**	**$4,699,500**
Allowance for Engineering/ Admin/ CM/ Inspection (30%)	$1,341,600	$1,409,850
Total Project Cost [c]	**$5,900,000**	**$6,200,000**

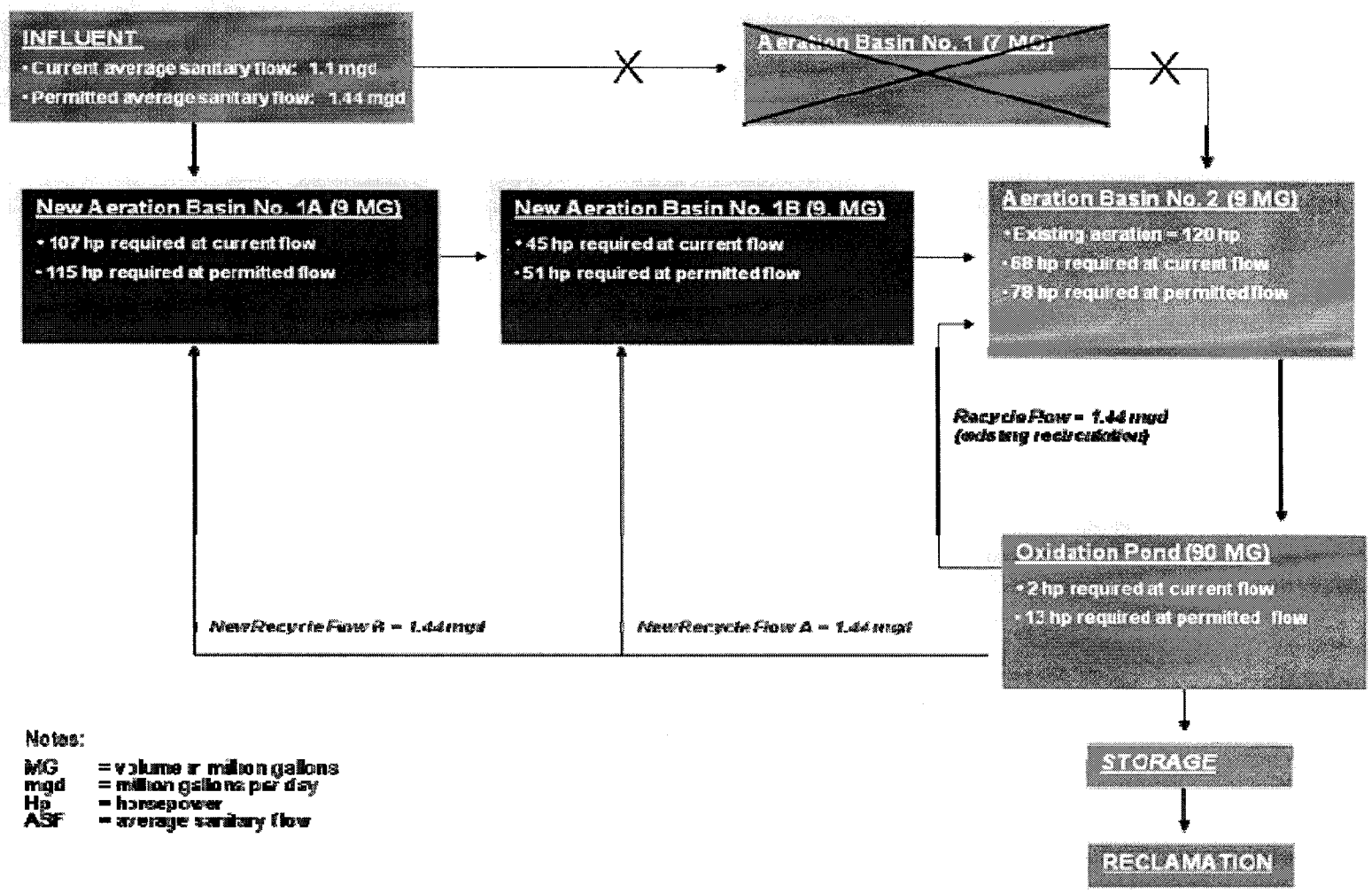
[a] Mgal/d = million gallons per day.
[b] 20 horsepower (hp) brush aerators in incremental sizing at $40,000 per aerator installed.
[c] 2008 Dollars.

5.3 SUMMARY

Descriptions of the three options proposed for each influent condition, including associated costs, advantages, and disadvantages are summarized in Table 5-5.

Option 1 appears to offer the most flexibility, least capital cost (though slightly higher operation and maintenance cost than the other options), and least investment in infrastructure. Least investment in infrastructure is an important consideration should significant groundwater degradation be found from on-going studies, which require the existing users to phase out of the existing WWTP and into mechanical treatment in the long-term.

In addition to existing treatment requirement, the effluent storage and disposal requirements are also a consideration. With construction of the previously designed supplemental storage basin, the existing WWTP will be able to store effluent and 1-in-100 year precipitation events and has sufficient storage capacity up to the permitted flow. However, since this basin will be built on existing reclamation area, an additional approximately 100 acres of effluent reclamation area will be needed. The cost of this additional land will depend on the specific area identified, but will likely be on the order of $2 million, including land, effluent conveyance to the land, and on-site improvements. The City should begin the process of securing future disposal land as soon as practical.



Notes:

MG = volume in million gallons
mgd = million gallons per day
Hp = horsepower
ASF = average sanitary flow

Figure 5-3
City of Newman WWTP
Option 3: Construction of New Aeration Basins

Table 5-5
Summary of City of Newman WWTP Improvement Options

Description	Option 1 Baffle 5 acres of Oxidation Pond to create new Aeration Basin (AB No. 3) and split influent flow into all aeration basins.		Option 2 Pretreat F&A dairy wastewater and extend recirculation to Aeration Basin No. 1 (AB No 1)		Option 3 Construct new Aeration Basins No. 1A & 1B and Decommission AB No. 1	
Additional Horsepower Required	**Existing Flow**	**Permitted Flow**	**Existing Flow**	**Permitted Flow**	**Existing Flow**	**Permitted Flow**
AB No. 1	46-hp	51-hp	66-hp	79-hp	AB No. 1A: 107-hp AB No. 1B: 45-hp	AB No. 1A: 115-hp AB No. 1A: 51-hp
AB No. 2	No Additional Aeration Required	No Additional Aeration Required	No Additional Aeration Required	No Additional Aeration Required	No Additional Aeration Required	No Additional Aeration Required
AB No. 3	72-hp	79-hp	N/A [a]	N/A [a]	N/A [a]	N/A [a]
Oxidation Pond	26-hp	41-hp	None Required	None Required	None Required	13-hp
Total Horsepower Required (including existing) [b]	227-hp	263-hp	142-hp	173-hp	220-hp	257-hp
Costs						
WWTP Capital Cost	$3.8M	$4.0M	$ 2.6M	$ 3.0M	$5.9M	$6.2M
Pretreatment Capital Cost	--	--	$1.8M [c] to $2.2M	$1.8M [c] to $2.2M	--	--
Total Capital Cost	$3.8M	$4.0M	$3.7M to $4.1M	$4.2M to $4.6M	$5.9M	$6.2M
Total Annual Electrical Cost for Aeration Only [d]	$180,000	$210,000	$110,000	$140,000	$170,000	$200,000
Advantages and Disadvantages						
Advantages	❐ Maximizes existing treatment system ❐ Requires less construction ❐ Lowest capital cost ❐ No additional operations and maintenance skill required		❐ Reduction of wastewater strength ❐ Reduced variability in influent strength ❐ Lowest annual electrical cost (excluding pretreatment) ❐ Lowest capital cost at WWTP		❐ Decommissioning existing aeration basin (AB No.1) ❐ No additional operations and maintenance skill required	
Disadvantages	❐ Requires more aeration and energy ❐ Highest annual electrical cost ❐ Reduces oxidation pond volume ❐ Requires maintenance of baffle		❐ Requires additional treatment process and cost for F&A dairy discharge ❐ Additional operations and maintenance skills may be required for pretreatment system		❐ More construction required ❐ Potential for more land acquisition to be required for new aeration basins ❐ Highest capital cost	

(a) Options 2 and 3 do not contain a third aeration basin.
(b) Total horsepower required is at peak aeration needs and includes existing aeration in AB No. 2 (splash aerators) and replacing existing aeration in AB No. 1 with brush aerators.
(c) Does not include conveyance cost of an additional $2-3 million.
(d) Based on $0.15 per kilowatt-hour and 80% efficiency. Does not include pretreatment energy costs for Option 2.

Chapter 6

Future Treatment and Effluent Disposal Alternatives

The purpose of this chapter is to describe the future treatment and effluent disposal alternatives available to City of Newman (City). Treatment and disposal options are typically evaluated together since the method of disposal dictates the type of treatment needed. Alternatives to the current practice of unlined ponds and restricted reclamation on agricultural land are being considered because the current treatment and disposal practices have the potential to impact local groundwater.

Since the potential impact of the wastewater treatment plant (WWTP) on groundwater cannot be predicted at this time, this Master Plan addresses the long-term potential wastewater treatment needs by bracketing the two extremes of options. This approach gives the City a plan which can easily be adjusted based on the results of groundwater monitoring and degradation analysis. The actual path the City pursues will be dictated by the results of the groundwater monitoring and input from the Regional Water Quality Control Board (Regional Board) as well as policy decisions of the City Council on what type of resource it views the City's wastewater. This Master Plan assumes that effluent reclamation will continue to be the City's primary disposal method. Treatment options range from the current unlined treatment ponds to tertiary-level mechanical treatment and are not mutually exclusive. The extremes of the range of options include:

- Continue to use the existing, unlined treatment ponds for existing residents and future residents to permitted capacity. Expand the WWTP pond system for new development. This option presumes that the existing ponds and disposal practices do not have an impact on local groundwater.
- Construct a new mechanical WWTP for new development and phase the existing residents out of the existing ponds and into mechanical treatment over time. This option presumes that the existing unlined ponds show some degree of impact on the local groundwater.

The remainder of this chapter is organized into the following major sections:

- Introduction
- Summary of Reclamation Disposal Alternatives
- Summary of Treatment Alternatives
- Industrial Pre-Treatment Alternatives
- Future Effluent Storage and Disposal Requirements

6.1 INTRODUCTION

As discussed in Chapter 5, the existing WWTP is a series of ponds where necessary oxygen for treatment is provided by both mechanical aerators and surface reaeration from the atmosphere. Wastewater effluent is stored during the wet season and reclaimed as irrigation water on City-owned agricultural lands during the dry season. Emerging concerns related to the operation and expansion of the existing WWTP include:

- The City's effluent has higher salinity than other irrigation water used in the vicinity. Therefore, the City's effluent reclamation practice has the potential to cause salinity degradation of underlying groundwater. The major source of salinity in the City's effluent is the City's potable water supply. This City's Water Master Plan provides a plan for a potable water supply improvement project to address this concern.

- The City's wastewater treatment ponds are unlined and in direct contact with shallow groundwater. Due to this contact, there is concern that salts, nitrates, pathogens, pesticides, and/or metals may be causing groundwater contamination. As discussed in Chapter 4, although a wastewater treatment pond in direct contact with groundwater has the potential to contaminate that groundwater, it has generally been observed that contamination does not occur. The City currently is studying whether its treatment pond system acts in a similar manner. Also in need of study is whether unacceptable nitrogen degradation is occurring in the effluent reclamation areas.

- The City's potable water shift from groundwater to a high quality, more expensive surface water may put the City in a position to offset potable water with reclaimed effluent for some to all urban landscape irrigation water in new development areas. This is common practice in Southern California and is becoming more common in areas of Northern California where potable water is becoming more expensive and/or difficult to reliably obtain.

- Once the potable water supply improvement project is complete, effluent salinity concentrations should be acceptable to the Regional Board. The remaining concern includes determining whether nitrogen degradation of groundwater is occurring under the reclamation area due to the pond effluent. Pond treatment (as compared to nitrification/ denitrification activated sludge) is generally not considered a reliable method for removing nitrogen from wastewater.

- The City's effluent reclamation areas are on lands with naturally high groundwater levels, which also tend to be areas of naturally high salinity. To control shallow groundwater levels and soil salinity so as to allow agriculture to occur, much of the land immediately east of the City has been "reclaimed" by 1) the addition of subsurface shallow groundwater drainage pipes that drain to the San Joaquin River, and 2) flushing the historically accumulated salinity via application of surface water and/or groundwater to the soil. Although effluent reclamation on soils needing subsurface drainage is not prohibited, it is not encouraged if alternative effluent reclamation lands are feasible.

Once the potable water supply improvement project is completed, effluent salinity concentrations should be acceptable to the Regional Board. As mentioned above, the remaining concerns to be

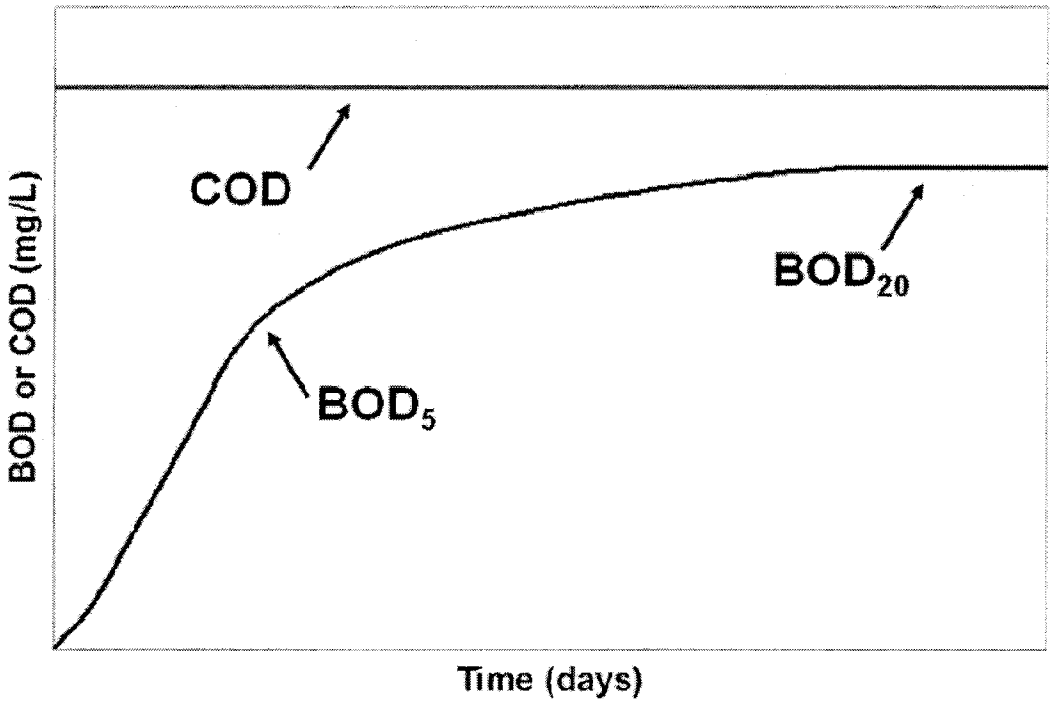
Table 2-3
City of Newman Anticipated BOD_5 Load

	Biochemical Oxygen Demand (BOD_5) in pounds per day (lbs/d)
F&A Dairy BOD_5	5,200
Estimated BOD_5 for 10,000 people	1,800
Total Anticipated BOD_5 Load	**7,000**
Current Average WWTP BOD_5 Load	8,300
Difference (Unaccounted for BOD_5)	**1,300**

Special testing was conducted on August 22nd and September 12th, 2007 to determine the source of this "mystery" BOD. Wastewater samples were collected from three locations: F&A Dairy effluent, a manhole in the City prior to F&A Dairy discharge, and the influent to the WWTP. Samples were analyzed for 5-day biochemical oxygen demand (BOD_5), 20-day biochemical oxygen demand (BOD_{20}), chemical oxygen demand (COD), and total organic carbon (TOC). The 5-day BOD test provides a measure of the readily biodegradable organics in the wastewater. The 20-day BOD test provides a measure of the ultimate biodegradable organics and the COD is an actual measure of organic demand (Figure 2-3). Sampling (two samples) of City wastewater prior to F&A Dairy discharge indicated that the municipal wastewater for the City of Newman has an average BOD_5 concentration of approximately 255 mg/l. Municipal BOD_5 is generally between 250 and 300 mg/l when I&I is low. Therefore, the City's municipal wastewater appears to be to be typical. Conclusions from the special testing are described in detail in Appendix A and summarized below.

Special testing conclusions include:

- The organic loading of F&A Dairy effluent is highly variable. Samples collected on the two special testing days were 1,610 lbs/d and 4,460 lbs/d and have been measured as high as 7,250 lbs/d (March 2006).
- F&A Dairy wastewater is not readily biodegradable.
- F&A Dairy BOD_5 results are probably low at times due to microbial inhibition due to disinfectants and/or inadequate seed in the BOD test bottle.
- F&A Dairy and City residential wastewaters synergistically become very biodegradable wastewater in the collection system.
- Unaccounted for BOD may be a result of transformations in the collection system pipes leading to the WWTP.
- Some organics remain in the collection system and are degraded by organisms in the collection system, which produce more readily biodegradable wastes. These show up at the WWTP and increase in the influent BOD_5.
- BOD_5 (alone) is not a good indicator of overall organic oxygen demand.



Note:
BOD_5 = 5-day Biochemical Oxygen Demand
BOD_{20} = 20-day Biochemical Oxygen Demand
COD = Chemical Oxygen Demand

Figure 2-3
General Relationship Between BOD_5, BOD_{20}, and COD

Based on the special testing results, a summary of the current and permitted future influent flow and loading conditions is provided in Table 2-4.

Table 2-4
City of Newman WWTP Current and Permitted Influent Flows and Load

	Average Sanitary Flow (Mgal/d) [a]	BOD_5 (mg/l) [b]	BOD_5 (lbs/d) [a]
Existing Conditions			
Municipal	0.92	300	2,300
F & A Dairy	0.18	2,000	3,000
Total at WWTP	**1.1**	**580**	**5,300**
Permitted Conditions			
Municipal	1.26	300	3,200
F & A Dairy	0.18	2,000	3,000
Total at WWTP	**1.44**	**514**	**6,200**

(a) Mgal/d = million gallons per day; mg/l = milligrams per liter; lbs/d = pounds per day
(b) Municipal BOD_5 is based on historical data and typical composition of untreated domestic wastewater of 110mg/l – 350mg/l (Metcalf & Eddy 4th Edition)

2.2 PROJECTED WASTEWATER FLOW AND LOADS

The *City of Newman 2030 General Plan* (General Plan) (Design, Community & Environment, April 2007) establish three areas for future development. These areas include: infill within the existing city limit (i.e., Buildout of existing City Limits), the Primary Sphere of Influence (SOI), and the Secondary Sphere of Influence (SOI) (Figure 2-4). The General Plan established land use designations for planned future developments, including residential densities and commercial and industrial acreages. Land use designations are shown in Figure 2-5.

2.2.1 PROJECTED CITY GROWTH

The General Plan assesses delineated land use areas referred to as the Sphere of Influence (SOI), which are larger than the proposed City limits. The SOI includes land over which the City does not have complete jurisdiction. However, the City has the option to annex the land and develop it in the future. The SOI is divided into two areas: the Primary SOI and the Secondary SOI. The Primary SOI depicts areas that are anticipated to be developed within ten years after the adoption of the General Plan. The Secondary SOI includes lands that are anticipated to be developed through 2030.

The General Plan provides land use designations for each of the development area, including residential densities (expressed in equivalent dwelling units, or EDUs), commercial, industrial and public area acreage, as shown in Figure 2-5. The total residential EDUs and acreage for the land use designations for each of the development area are summarized in Table 2-6. The population projections have been estimated based on 3.4 people per equivalent dwelling unit, as stated in the General Plan.

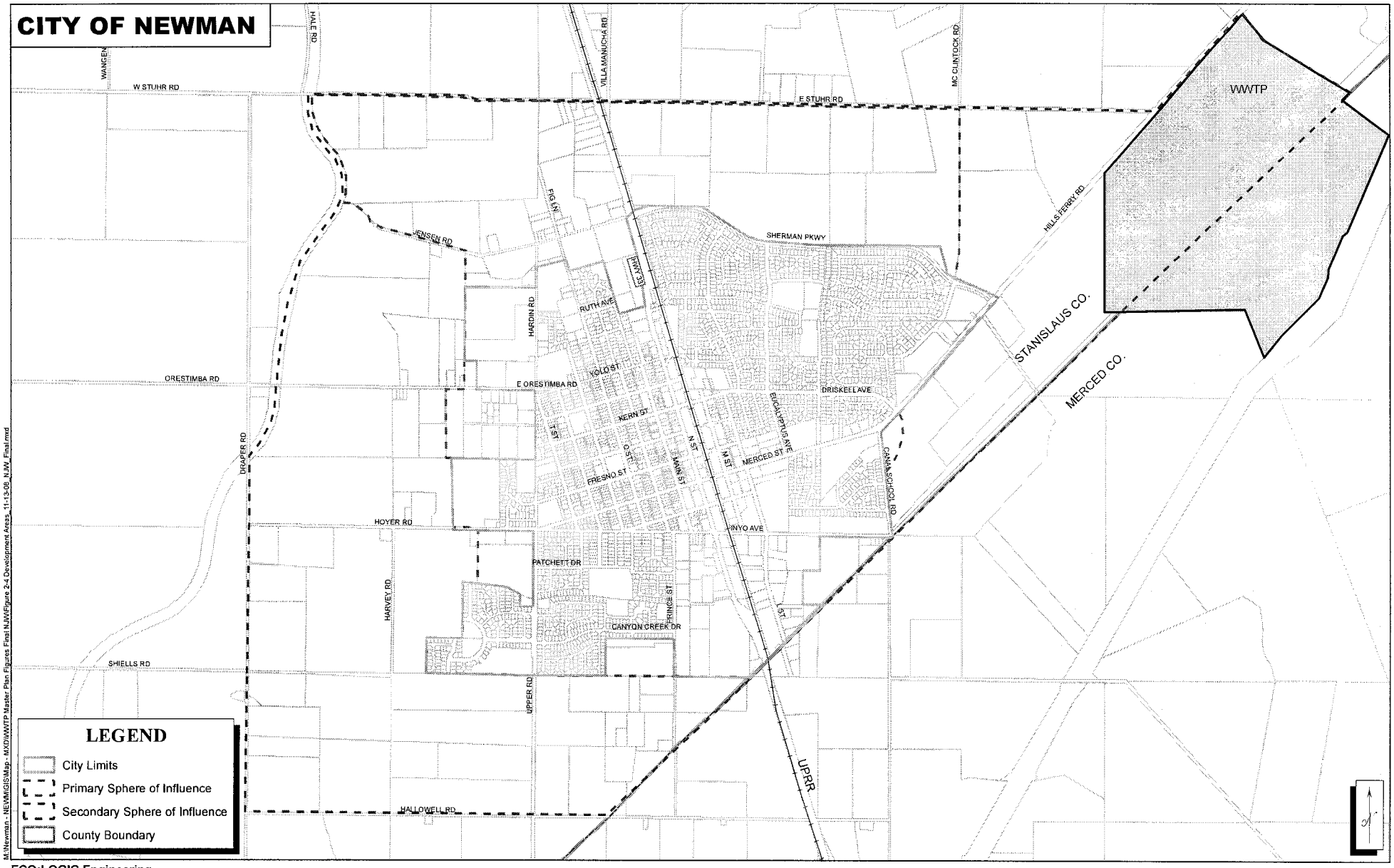
2.2.2 PROJECTED FUTURE WASTEWATER FLOW & LOADS

Projected influent flow and loads were developed based on the per capita and EDU information provided in the General Plan as described above. Wastewater unit flows used to develop total flows for the various land use types are shown in Table 2-5.

Table 2-5
City of Newman
Recommended Planning Wastewater Unit Flows

Land Use Designations	Future Land Use Unit Flow [a]
Residential [b]	63 gpdpc
Commercial	1,500 gpd/ac
Industrial	1,650 gpd/ac
Public / Quasi Public	1,200 gpd/ac

(a) gpdpc = gallons per day per capita; gpd/ac = gallons per day per acre.
(b) Unit generation values for residential are based on residential densities as defined in the General Plan and an occupancy rate of 3.4 persons/EDU.



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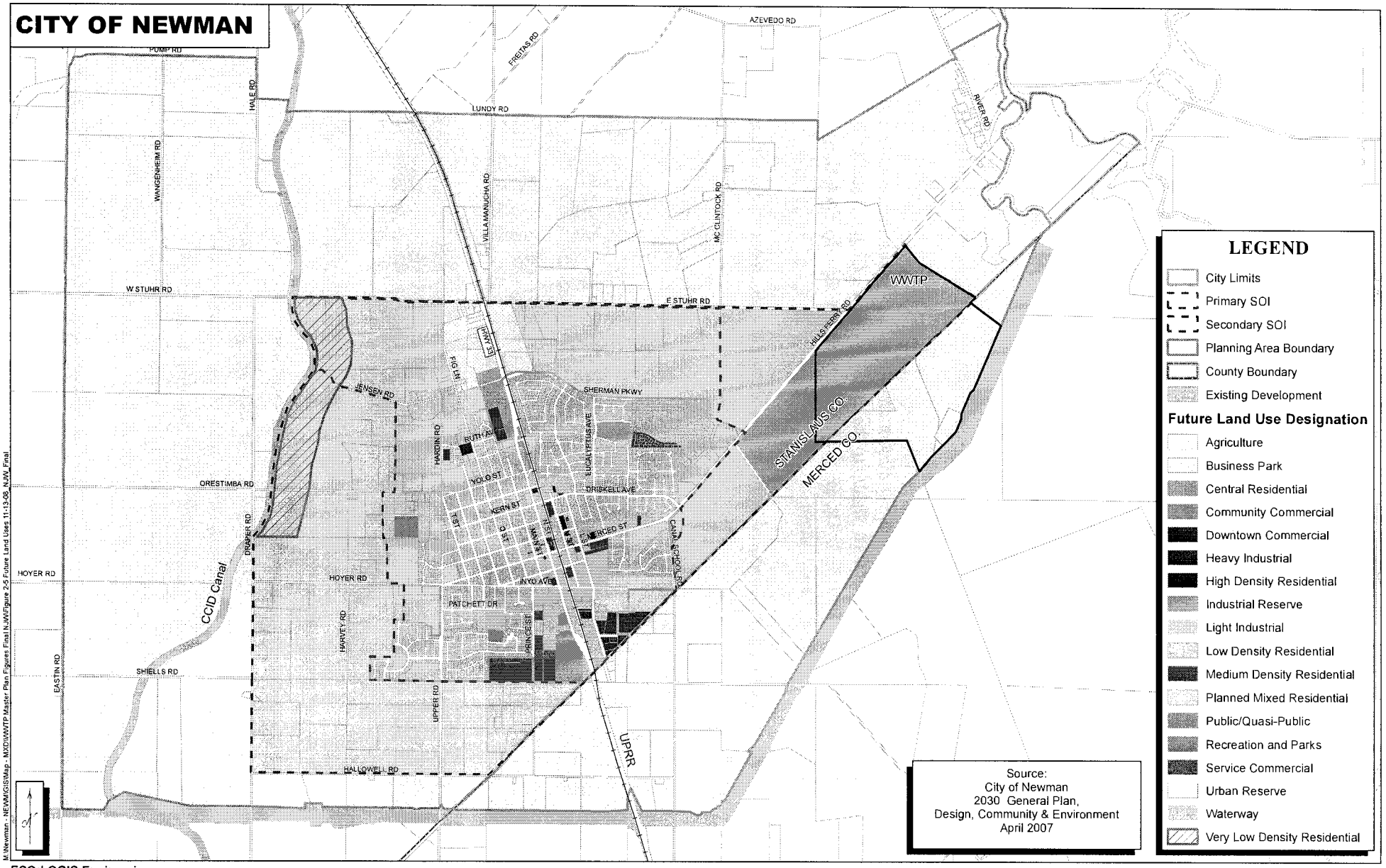
City of Newman Wastewater Treatment and Disposal Master Plan

Figure 2-4
City of Newman Development Areas



ECO:LOGIC Engineering
City of Newman Wastewater Treatment and Disposal Master Plan

Figure 2-5
Future Land Uses

A summary of the existing and projected flows for each development area by land use type is provided in Table 2-6. Within the current City Limits, the additional residential developments, commercial facilities, and industrial facilities are estimated to produce an additional average flow of approximately 0.3 Mgal/d. Combining this flow with the current ASF of 1.1 Mgal/d will result in a flow of 1.4 Mgal/d for build-out of the existing City Limits. For the Primary SOI, the additional development will produce a total average flow of 2.3 Mgal/d. At build-out of the entire development area the total average influent flow is projected to be 4.8 Mgal/d.

Projected influent loading conditions were also determined based on historical loads and the following assumptions:

1. The City of Newman municipal wastewater BOD_5 concentration will remain at typical strength, approximately 300 mg/l.

2. F&A Dairy will not experience significant growth and will, therefore, continue to contribute an average of 0.18 Mgal/d to the total flow of the City, with a BOD_5 concentration of 2,000 mg/l. Or, any additional flow produced by F&A Dairy will be pre-treated to municipal strength.

A summary of the projected flows and loads for each future development area is also provided in Table 2-6.

Table 2-6
City of Newman Estimated Flows and Load for each Land Use Designation

	Existing [a], [b]	Additional within Existing City Limit	Additional within Primary SOI	Additional within Secondary SOI	Cumulative Total at Buildout
Population [b]	10,140	1,972	11,118	22,168	45,398
Residential [c] (EDUs)	2,805	580	3,270	6,520	13,175
Commercial [d] (acres)	37	35	116	--	188
Industrial [e] (acres)	57	41	25	660	783
Public/Quasi-Public [f] (acres)	102	10	--	47	159
Flow, gallons per day (gpd)					
Residential	0.64	0.12	0.70	1.40	2.86
Commercial	0.06	0.05	0.17	--	0.28
Industrial	0.09	0.07	0.04	1.09	1.29
Public/Quasi-Public	0.12	0.01	--	0.06	0.19
F& A Dairy [g]	0.18	--	--	--	0.18
Total ASF, (Mgal/d), rounded	**1.1**	**0.3**	**0.9**	**2.5**	**4.8**
Biochemical Oxygen Demand (BOD_5) Load, lbs/day					
Average BOD_5 [h]	2,279	641	2,291	6,360	11,600
F& A Dairy [g]	3,019	--	--	--	3,019
Total Average BOD_5 Load, lbs/day	5,298	641	2,291	6,360	14,590

(a) Existing population and units information obtained from the City of Newman and City of Newman Public Review 2030 General Plan EIR (October 2006).

(b) Projected population at 3.4 people/EDU (City of Newman 2030 General Plan).

(c) Projected units represent the potential number of units that could be added through build-out. Source: City of Newman 2030 General Plan (April 2007), Public Review Newman 2030 General Plan EIR (October 2006), Geographical Information System (GIS) database provided by DC&E.

(d) Includes Business Park, General Commercial, Downtown Commercial, and Office uses.

(e) Additional industrial acres within the Secondary SOI includes 310 acres of Industrial Reserve.

(f) Includes Schools and Public Buildings areas.

(g) Assumes F&A Dairy industrial wastewater will continue to contribute an average 0.181 Mgal/d to the total wastewater flow and BOD_5 concentration of 2,000 mg/l.

(h) Existing and projected flows and BOD_5 loads are calculated values based on special testing done in August and September 2007.

Chapter 3

Existing Wastewater Treatment and Disposal Facilities

This chapter describes the existing treatment and disposal facilities at the City of Newman Wastewater Treatment Plant (WWTP).

3.1 EXISTING TREATMENT AND DISPOSAL FACILITIES

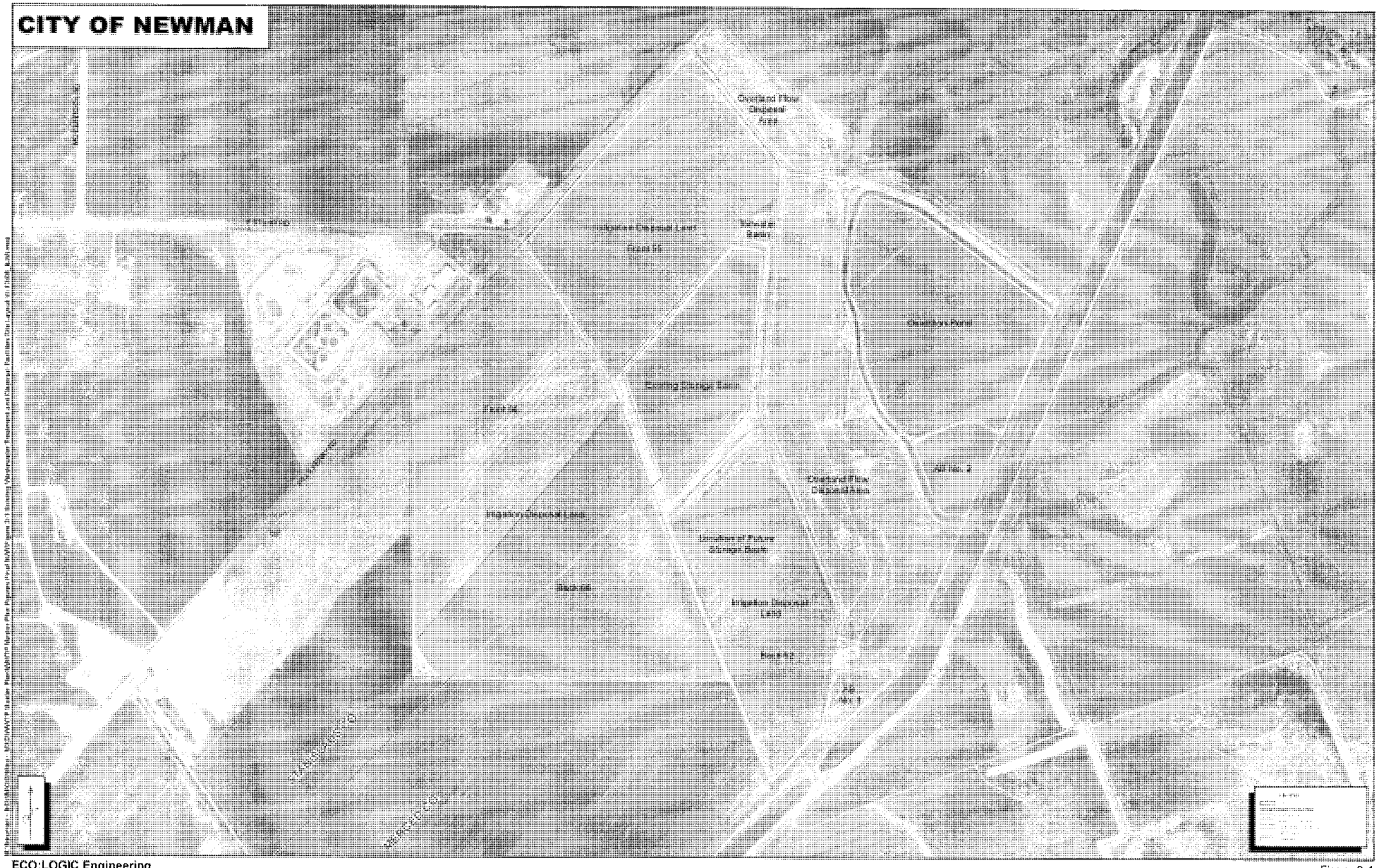
The City of Newman (City) WWTP is located approximately one mile northeast of the City, west of the San Joaquin River and southeast of Hills Ferry Road. The Stanislaus County and Merced County line runs through the WWTP and disposal fields. The WWTP was originally constructed in 1908 and has undergone several expansions, modifications, and/or improvements since.

The City WWTP uses an aerated pond system to treat all wastewater generated within the City, including municipal wastewater and wastewater generated from the F&A dairy, which discharges into the municipal sewer. The treated effluent is stored in the winter and used to irrigate alfalfa, pasture grass, and sudan in the summer on City owned agricultural lands. A layout of the treatment plant site is provided in Figure 3-1.

The WWTP consists of a headworks, two aeration basins, an oxidation pond, a recirculation channel, and a recirculation pump station. Disposal facilities include a storage basin and reclamation fields. Treatment wastewater is reclaimed on overland flow terraces and by flood irrigation on agricultural fields. Tailwater from the fields is collected in a tailwater pond and returned to the storage basin.

Combined municipal and industrial wastewater flows by gravity from the City and enters the headworks through an 18-inch and a 21-inch pipeline. The existing headworks consists of a manual bar screen and a Parshall flume. Influent wastewater passes through the bar screen which removes particles larger than two inches. After the bar screen, the influent flow is measured by a 9-inch Parshall flume before entering a junction box that diverts flow to the first aeration basin for treatment.

Aeration pond systems are designed to oxidize organic material in the wastewater by providing oxygen to microbiological organisms through three means: 1) transfer of oxygen across the pond surface, 2) production of oxygen by algal photosynthesis, and/or 3) oxygenation supplemented by mechanical aeration equipment. In the case of Newman, all of these means of oxygenation are employed. Ponds using mechanical aeration equipment (aerators) are called "aerated ponds,"


CITY OF NEWMAN
Overland Flow Disposal Area
Wetlands Basin
Existing Storage Basin
Overland Flow Disposal Area
Location of Future Storage Basin
Irrigation Disposal Land
Irrigation Disposal Land
Irrigation Disposal Land
Pond 1B
Pond 1C
Pond 1D
Pond 1E
Pond 1F
Pond 1G
Pond 1H
Pond 1I
Pond 1J
Pond 1K
Pond 1L
Pond 1M
Pond 1N
Pond 1O
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while ponds without mechanical aerators are called "facultative ponds". The first two ponds (Aeration Basin (AB) No. 1 and AB No. 2) are equipped with mechanical aeration to provide oxygen for wastewater treatment.

After passing through the aerated treatment ponds, effluent is conveyed to a facultative pond, the Oxidation Pond. To assist in providing more oxygen to the treatment process, higher dissolved oxygen water is recirculated from the Oxidation Pond via a recirculation channel to the head of AB No. 2.

From the Oxidation Pond, effluent is transferred to the irrigation storage reservoir via the transfer pump station. During the wet season, the Oxidation Pond also provides some storage. Effluent is pumped from the storage reservoir and reclaimed during the dry season (generally April through October) by flood irrigation of the City-owned disposal fields. Effluent is also pumped from the Oxidation Pond to be reclaimed on the overland flow terraces by spray irrigation.

The reclamation fields include 58 acres of pasture grass overland flow terraces and a total of 239 acres of agricultural fields. The agricultural fields consist of the Front 66 (66 acres), the Front 55 (55 acres), the Back 66 (66 acres) and the Back 52 (52 acres). These fields grow alfalfa, oats, and sudan. Excess tailwater from the fields is collected in a tailwater pond of approximately 1 acre and returned to the storage reservoir.

Existing design criteria for the City of Newman WWTP are provided in Table 3-1.

Table 3-1
City of Newman WWTP Existing Design Criteria [(a)]

Item	Design Value
Design Flows and Loads	
Average Day Weather Flow (ADWF), MGD	1.14
Peak Flow (PF), mgd	1.71
Design Constituent Loadings	
BOD_5, lbs/d	9,430
TSS, lbs/d	4,290
Ammonia, lbs/d	590
Parshall Flume	
Throat Width, in	9
Discharge Head at AAF, in	8.3
Discharge Head at PF, in	10.9
Bar Screen	
Channel Width, ft	4
Bar Spacing, in	1.5
Bar Width, in	3/8
Bar Depth, in	2.0

Item	Design Value
Aeration Basin No. 1	
Area, ac	2.7
Water Depth, ft	8.0
Volume, MG	7.0
Aeration Blower & Diffuser System[C]	
Blower Type	Regenerative
Number of Blowers	9
Horsepower, ea	10
Diffuser Type	Membrane Porous Pipe
Aeration Basin No. 2	
Area, ac	5.0
Water Depth, ft	5.5 - 9.0
Volume, MG	9.0 - 14.7
Surface Mechanical Aerators (Splash Type)	
Number	3
Horsepower, ea	40
Aeration Blower & Diffuser System	
Blower Type	Regenerative
Number of Blowers	1
Horsepower, ea	11.5
Diffuser Type	Membrane Porous Pipe
Oxidation Pond	
Area, ac	50
Water Depth (min to max), ft	5.5 - 9.0
Volume (min to max), MG	90 – 147
Maximum Organic Loading, lbs/d/ac	30 to 50 (winter to summer)
Recirculation Pumps	
Number	2
Capacity, ea, gpm	3,000
TDH, ft	4.0
Horsepower, ea	7.5
Overland Flow Pumps	
Number	2
Capacity, ea, gpm	50
TDH, ft	150
Horsepower, ea	25
Overland Flow System	
Area, ac	58
Slope Grade, %	2.5 - 5.5
Storage Reservoir No. 1	
Maximum Surface Area, ac	29
Maximum Water Depth, ft	12
Maximum Volume, MG	95

Item	Design Value
Irrigation System	
Area, ac	239
Crops	Alfalfa, Winter Oats, Sudan, Pasture Grass
Irrigation Pumping System	
Pump Type	Mixed Flow
Number	2
Capacity, ea, gpm	1,000
TDH, ft	19
Horsepower, ea	10
Tailwater Return System	
Reservoir Depth, ft	5.0
Maximum Volume, MG	1.6
Pumps	
Type	Mixed Flow
Number	2
Capacity, ea, gpm	700
TDH, ft	21
Horsepower, ea	7.5
Tailwater Return System B	
Pumps	
Type	Mixed Flow
Number	2
Horsepower, ea	5
Transfer Pump Station	
Pump Type	Mixed Flow
Number	2
Capacity, ea, gpm	1,000
TDH, ft	36
Horsepower, ea	10

(a) Based on TM No. 2 – Existing Wastewater Facilities, Carollo Engineers (August 2003)
(b) MGD = million gallons per day; MG = million gallons; gpm = gallons per minute; lbs/d/ac=pounds per day per acre.
(c) According to plant staff, 3 additional blowers were added after 2003.

3.2 NEAR-TERM TREATMENT AND DISPOSAL FACILITIES

The City has designed and is planning on constructing a new storage basin for supplemental storage on an existing irrigation field, the Back 52. The new storage basin will occupy approximately 39 acres of the existing 52 acres of crop land and will have depth of 12 feet with a capacity of 135 million gallons. This supplemental basin will hold effluent in wetter years. Since this storage basin will be constructed on existing irrigation disposal land, additional land will be needed in the future.

Chapter 4

Regulatory Review and Permit Compliance

The City of Newman (City) Wastewater Treatment Plant (WWTP) is regulated under Waste Discharge Requirements (WDRs) Order No. 98-163, which is issued and enforced by the California Regional Water Quality Control Board (Regional Board). WDRs describe wastewater treatment, effluent disposal requirements (water quality, disposal method, and disposal location) and allowable wastewater flow. Typically, WDRs are updated approximately every 5 to 15 years, unless more frequent updates are requested by the discharger (e.g., to increase permitted flow capacity). One of the purposes of this updating process is to keep the WDRs up to date with Regional Board regulations, which are constantly evolving. Consequently, specific permit requirements are unknown until the permit is adopted.

The City's WWTP currently is permitted to discharge 1.69 million gallons per day (Mgal/d) Maximum Dry Weather Monthly Flow (MDWMF) of "equivalent secondary" treated effluent to the City's effluent reclamation facilities, which consist of agricultural fields and seasonally used effluent storage ponds. This 1.69 Mgal/d MDWMF limit corresponds to an average sanitary flow (ASF) limit of approximately 1.44 Mgal/d. The City's WDRs were last updated in 1998.

Under the current WDRs, concerns to either the City or the Regional Board include facility capacity, the ability of the facility to operate during 100-year wet season conditions, effluent quality, and the potential for groundwater degradation. Regional Board concerns regarding effluent quality include:

- The possibility of wastewater pathogens traveling offsite via groundwater or surface waters,
- Wastewater salinity impacting groundwater quality,
- Naturally occurring metals, specifically arsenic, iron, and manganese, being mobilized in the groundwater by WWTP operations, and
- Wastewater nitrogen and nitrate impacting groundwater quality.

The City's current regulatory compliance strategy and permitting issues related to capacity and groundwater degradation are summarized in this chapter along with a discussion of probable future regulations related to potential future disposal options. The remainder of this chapter is organized into the following major sections:

- Summary of Current Regulatory Assessment
- Future Regulatory Permit Compliance Issues

4.1 SUMMARY OF CURRENT REGULATORY ASSESSMENT

As mentioned above, WDRs are typically updated every 5 to 10 years unless the City requires additional capacity for new development. WDRs can also be updated if the operation of the facility is determined to cause environmental degradation and does not to satisfy what the State considers "best practicable treatment and control" (BPTC). An assessment of whether the facility needs to implement BPTC typically involves comparing local groundwater water quality data to State water quality objectives. If degradation exists, the Board generally directs the discharger to propose BPTC mitigation measures and a compliance schedule for implementing those measures.

In correspondence to the Regional Board in late 2005 and 2006, several BPTC policy-related questions and interpretations of local groundwater quality data were addressed. On March 14th, 2006, the City submitted a letter to the Regional Board which provided information on system performance and local groundwater quality, summarized the City's wastewater and water planning activities, identified regulatory issues of concern, and provided a plan for compliance, particularly with regards to salinity (Appendix B). This letter and a subsequent meeting with the Regional Board on June 15th, 2006 identified the major wastewater issue as high effluent salinity. Other potential issues included the possibility of groundwater degradation due to the unlined storage ponds and the facility's ability to accommodate permitted flows under 100-year wet season conditions. With regards to groundwater degradation and salinity, the following permit issues and approaches were discussed:

1. Impacts from the WWTP on local groundwater quality are difficult to assess because the area has naturally high saline groundwater and no down-gradient monitoring well exists. The City and Regional Board agreed to construct a new monitoring well down-gradient of the Oxidation Pond and collect data to determine if specific impacts from the pond system could be determined. As additional groundwater data are compiled, the City and the Regional Board will re-evaluate whether the WWTP is causing degradation.
2. The Regional Board is concerned about wastewater salinity impacts to local groundwater. The City plans to change the potable water supply from saline groundwater to California Aqueduct surface water to reduce effluent salinity from the current value of about 3,500 microsiemens per centimeter (μS/cm) to about 2,000 μS/cm. The costs of purchasing raw surface water, constructing a new surface water treatment plant, and modifying the existing groundwater well-based water distribution system are significant and will be financed principally by increases to monthly water/wastewater rates. Preliminary estimates show that rates may increase by over $50 per month for typical single family homes. Such a magnitude of increase will likely limit the City's ability to fund other improvements to the WWTP in the next several years. The Regional Board recognized the dual benefit of focusing available funds on improving the potable water supply and encouraged the City to pursue this course of action.

The following sections describe the overall wastewater facilities compliance plan that the City is pursuing. It is important to note that, since aspects of the plan are beyond City control, the plan may need to change as regulatory negotiations progress related to evolving Regional Board policies.

4.1.1 SALINITY ISSUES

The basic issue related to salinity is that the water supply is very salty (about 1,700 μS/cm) by drinking water standards and has a lot of hardness, which results in the use of water softeners in town. As described in the companion *City of Newman Water Master Plan* (March 2008), the City is seriously pursing a potable water supply and treatment project to convert the City from bulk groundwater (1,700 μS/cm) to surface water (500 μS/cm average annual salinity). This project will reduce average potable water supply salinity (and therefore average wastewater salinity) by about 1,200 μS/cm.

Converting the water supply from groundwater to surface water should reduce influent wastewater salinity from the current 2,800 μS/cm concentration down to about 1,600 μS/cm. A 1,600 μS/cm influent wastewater salinity would evaporatively increase on an average annual concentration basis to about 2,000 μS/cm after pond treatment and storage, based on the 25 percent increase in salinity currently occurring from influent to storage. Effluent in this salinity range could leak from unlined ponds and not cause degradation based on all available data.

To reduce wastewater salinity to the extent feasible, another aspect of the City plan is public education to try to reduce the use of water softeners in the community once water softeners are no longer needed because of the relatively "soft" surface water supply. The public education effort will be complemented with a careful review of City ordinances regulating the salinity of commercial/industrial discharges to the sewer system. The City's objective is to reduce the influent wastewater salinity to less than 1,600 μS/cm to the extent feasible over time, though with increased water conservation as the City grows, a long-term decrease in salinity may not be observed.

4.1.2 POTENTIAL GROUNDWATER DEGRADATION DUE TO PONDS

The City's existing wastewater treatment ponds are unlined and in direct contact with shallow groundwater. However, previous engineering estimates of pond leakage have indicated a permeability of approximately 3.4 x 10^{-7} centimeters per second (cm/sec), or equivalent to the ponds having an intact one foot thick clay liner. A wastewater treatment pond in direct contact with groundwater has the potential to release a wide range of wastewater contaminants to groundwater, but often does not as evidenced by the following assessment from EPA's Design Manual (for) Municipal Wastewater Stabilization Ponds (EPA-625/1-83-015):

> *The five communities were selected for study and the age of the systems ranged from 3 to 17 years.*
>
> *Field permeability tests indicated that the additional sealing from the sludge blanket was insignificant in locations where impermeable soils were used in the construction process. In the case of more permeable soils, it appeared that the sludge blanket reduced the permeability of the bottom soils from an initial level of 10^{-4} or 10^{-5} cm/sec to the order of 10^{-6} cm/sec. At all five systems evaluated, the stabilization pond was in contact with the local groundwater table. The buildup of sludge on the bottom of a pond appears to*

improve the quality of the seepage water leaving the pond. Sludge accumulation apparently increases the cation exchange capacity of the bottom of the pond.

Groundwater samples obtained from monitoring wells did not show any appreciable increases in nitrogen, phosphorus, or fecal coliform over the background levels after 17 years of operation. The seepage from the ponds did show an increase in soluble salts over background levels.

The reason widespread contamination does not occur is that wastewater treatment ponds tend to "seal" themselves to reduce leakage of wastewater to groundwater, and that wastewater which does leak out is generally well treated by the sludge, soil, and associated microbes. Regardless of the above information, the City is studying whether its ponds are causing any site-specific groundwater degradation. To complete a site-specific study requires establishing background groundwater quality concentrations and installing monitoring wells hydraulically down-gradient from the treatment ponds to measure pond impacts on shallow groundwater quality relative to the background concentrations. Four main concerns related to groundwater are:

1. Salinity: If influent salinity is reduced to roughly 1,600 µS/cm by switching to a surface water potable water supply, it is highly unlikely that the treatment ponds will be degrading groundwater with salinity. Once the conversion to surface water is made, it may take several years for the effect of the change to be detectable in monitoring wells because of slow horizontal flow rates in area shallow groundwater, and the long-term integrating effect of monitoring well screens more than a few feet long.

2. Nitrogen: The current "best guess" is that background total nitrogen concentrations are at or below the 10 milligrams per liter (mg/l) water quality objective (WQO). Therefore, the down-gradient wells will probably need to have total nitrogen concentrations not exceeding 10 mg/l on a long-term average basis for the ponds to remain in service. Nitrogen is not expected to be a problem in this particular situation, but this assumption needs to be confirmed by down-gradient monitoring well results.

3. Pathogens: Meaningful pathogen testing is a complex issue. Coliform bacteria are too large to move far in fine-grained, poorly drained soils, even if those soils are saturated. The presence of coliform bacteria in any down-gradient wells will most likely be an indicator that the well was contaminated during construction, has a faulty sanitary seal (a common problem with shallow monitoring wells in clay soils with shrink/swell potential), or was sampled without use of sterile techniques. It is possible that if groundwater is within a few feet of ground surface at the well site, coliform could migrate down from the ground surface at the well site, rather than horizontally from the treatment ponds. The actual indicator of potential virus movement from the treatment ponds into shallow groundwater is expected to be a virus of coliform. Unfortunately, if shallow groundwater is within a few feet of ground surface at the well site, then soil coliform and their virus naturally could be in the soil and groundwater immediately around the well site, and flow into the well during purging and sampling. Based on previous experience with similar sites over the last 20 years, coliform may be living in shallow groundwater on particles or on the surfaces of pipes and well casings, but not in the water. If coliform bacteria are present locally, then coliform virus will be present locally right in the monitoring well casing and sand pack. In this particular situation, it appears that neither coliform nor coliform virus testing, alone, will answer the question of whether virus

leakage from the ponds is occurring. It appears that coliform virus concentrations in the down-gradient treatment pond monitoring wells will have to be compared to coliform virus concentrations in wells constructed in similar soil and hydrogeologic conditions in the area. Additionally, the wells may need to be cleaned, super chlorinated, and gently purged immediately prior to each coliform virus sampling event to reduce the influence of well casing coliform and virus growths on groundwater monitoring results. The proper approach to resolve this complex matter is to carefully site, construct, and test the wells, first. If there are no coliform virus present, then there is no pathogen leakage problem from these ponds. If coliform virus are present, the City needs to take the additional coliform virus monitoring steps identified above before concluding whether the ponds do (or do not) have a detectable potential pathogen leakage problem.

4. Iron, Manganese, and Arsenic: Mobilization of soil iron, manganese, and/or arsenic is believed to be a potential problem with the ponds. Two reasons for this potential are:

   - The Oxidation Pond is large and effectively cuts off all atmospheric molecular oxygen transfer to the underlying groundwater. Without atmospheric molecular oxygen transfer, even a relatively small organic load to the underlying groundwater has the potential to reduce the reduction/oxidation potential (i.e., redox potential) of the groundwater environment. A low redox can mobilize naturally occurring soil iron, manganese, and/or arsenic into groundwater.

   - Though leakage from the Oxidation Pond is quite low (estimated to be 2.1 feet/year), this leakage water is believed to contain more biochemical oxygen demand than molecular oxygen. Thus, a reduction of redox potential in groundwater underlying the Oxidation Pond is likely.

Whether a serious iron, manganese, and/or arsenic problem exists can only be determined via monitoring down-gradient shallow groundwater quality and comparing those results to background concentrations.

To determine the degradation potential of the ponds with regard to the above concerns, a down-gradient indicator monitoring well was installed in early 2008. It is presumed that if testing from this well shows that the "de facto lined" treatment ponds are not degrading or polluting groundwater, then the ponds will remain in service. If only salinity is a problem, then the ponds will remain in service if the new surface water potable water supply is obtained. Groundwater degradation from nitrogen, pathogens, or iron/manganese/arsenic probably necessitates either lining the treatment ponds or replacing the ponds with a mechanical treatment process at some point at significant expense. The cost of replacing the current treatment ponds (which does not address potential salinity degradation caused by the reclamation area) would almost certainly preclude the potable water supply improvement project on a near-term basis because implementing both projects would result in a monthly fee increase of roughly $80 to $100, or more, depending on final construction and operational costs. Such a fee increase is not believed to be viable with the City's electorate. Consequently, the most cost effective, feasible plan appears to be to implement the water supply improvement project to reduce wastewater salinity and to address the treatment pond problem, if necessary, when financially feasible.

If there is pollution from the current treatment ponds, there is some rational technical basis for deferring pond replacement until financially feasible. That basis is that background shallow groundwater salinity is roughly 3,000 μS/cm, or more, which is not suitable for potable water supply use (without extensive treatment or dilution). Therefore, the ponds, even if polluting in some regard contrary to the EPA's general findings, should not be directly polluting a potable water supply. However, this groundwater does flow into other water resources used as potable water supplies. Within this flow path the groundwater is treated and diluted by natural processes such that pollution of an actual potable water supply is believed to be unlikely. In this case, it may be feasible to allow the ponds to remain in current service (but not expanded service) until existing dischargers can realistically fund the pond replacement project or alternative mitigation measure.

4.1.3 Potential Groundwater Degradation due to Reclamation

With effluent salinity currently at about 3,500 μS/cm and background shallow groundwater salinity about 3,000 μS/cm, or more, it may seem that salinity groundwater degradation in the reclamation area is unlikely, particularly if the potable water supply is improved to reduce effluent salinity to about 2,000 μS/cm. Unfortunately, agronomic irrigation (including effluent reclamation) evapotranspiratively concentrates salt in the irrigation water, potentially by a factor of up to about 3 to 4 depending on crop, irrigation method, rainfall, and averaging period. Effluent typically has a greater salinity than other irrigation water supplies. Therefore, agronomic irrigation with effluent typically results in greater salinity degradation of underlying shallow groundwater than would occur with use of other irrigation water supplies. Salinity degradation resulting from effluent reclamation runs contrary to State Board Resolution No. 68-16, which was adopted in 1968. However, the California legislature superseded this resolution relative to salinity degradation from water reclamation projects by adopting California Water Code (CWC) Section 13523.5. This law facilitated the legislature's desire to encourage wastewater reclamation as stated in CWC Sections 13510, 13511, 13512, etc. The legislature appears to be saying in CWC Section 13523.5 that the need to reclaim wastewater is a higher priority than the salinity degradation that may result from wastewater reclamation at this time.

The City's effluent reclamation areas are on lands with naturally high groundwater levels, which also tend to be areas of naturally high salinity (because of the historical evaporation and evapotranspiration from these lands, such as is still occurring to the east in the alkali areas along the San Joaquin River). To control shallow groundwater levels and associated soil salinity so as to allow agriculture to occur, much of the land immediately east of the City has been "reclaimed" by 1) addition of subsurface shallow groundwater drainage pipes that drain to the San Joaquin River, and 2) flushing the historically accumulated salinity to the San Joaquin River via application of surface water and/or groundwater to the soil. No effort has been made to estimate the historical salinity of groundwater in the area (which is believed to be greater than 3,000 μS/cm), though this may become necessary as part of an anti-degradation analysis. Although effluent reclamation on soils needing subsurface drainage is not prohibited, it is not encouraged if alternative effluent reclamation lands are feasible.

Based on the above, the City plans to continue effluent reclamation, but needs to involve the Regional Board in the development of that reclamation plan. The March 14th, 2006 letter to the Regional Board outlined the City's plan, which involved the following elements:

1. CWC Section 13523 states, "(a) Each regional board...shall... prescribe water reclamation requirements for water which is used... as reclaimed water." The City reclaims its wastewater and requested of the Regional Board that the current permit be revised to include "water reclamation requirements" (WRRs) as required by CWC Section 13523.

2. CWC Section 13523.5 states, "A regional board may not deny issuance of water reclamation requirements to a project which violates only a salinity standard in the basin plan." The City requested that the Groundwater Limitations in the requested WRR's reflect CWC Section 13523.5.

3. To avoid abuses under the foregoing, the City requested that the WRR's require a flow-weighted, average annual salinity for water applied to the effluent reclamation areas of no more than 2,000 μS/cm. This approach is 1) as protective as current laws related to agricultural use of groundwater, 2) passes the "reasonable man" test, and 3) is economically feasible. The basis behind this request included:

   - Bulk groundwater under the City (as evidenced by the City's current municipal water supply) has a long-term average salinity of about 1,700 μS/cm.

   - Bulk groundwater should become somewhat more saline to the east of the City as the historical alkali flats of the San Joaquin River are approached, and as suggested by DWR groundwater salinity maps for the area. Based on these state maps and the associated City data, a credible estimate for bulk groundwater salinity at the current WWTP site is about 2,000 μS/cm.

   - This 2,000 μS/cm groundwater could be used by local farmers for irrigation purposes without regulation.

   - Because of the evaporative salt concentrating effect of pond evaporation and tailwater return, a reclaimed water salinity limit of 2,000 μS/cm represents an equivalent influent wastewater average annual salinity limit of about 1,600 μS/cm. This is a 1,100 μS/cm increase over the 500 μS/cm presumed surface water supply. This increase is comparable to the current salinity increase and, therefore, should be achievable after the change in the potable water source.

4. The City's approach of using the quality of the bulk natural water resource for the area as the basis for establishing compliance appears to be in agreement with CWC Section 13551 and the California Supreme Court's recent construction of the legislature's intent in the case of City of Burbank v. State Board.

4.1.4 Permit Issues Related to Capacity

The facility is extremely well operated and maintained compared to similar oxidation pond systems of this type. However, the existing facility does not provide the margin of safety

generally expected by the WDRs. Specifically, the WDRs include two requirements that the facility is currently unable to meet:

1. *"The dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/l"* – The requirement for 1.0 mg/l in all ponds is a common requirement in all treatment pond permits to ensure adequate treatment and minimal offsite odors. Currently, Aeration Basin No. 2, the Oxidation Pond, and storage pond consistently maintain dissolved oxygen levels well over the 1.0 mg/l requirement. Aeration Basin No. 1, however, appears to be organically overloaded and typically operates at a dissolved oxygen level of less than 0.5 mg/l. Because of the facility's remote location and prevailing winds the overloading has not been an odor issue for plant operations. This deficiency can be corrected with additional pond volume and mechanical aeration. Specific options to correct this issue are discussed in Chapter 5.
2. *"The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency"* – The system must be able to treat, store, and dispose of wastewater generated during 100-year precipitation wet seasons. Recent wet winters, including 2005-2006, have indicated that the system does not provide 100-year wet season protection. This deficiency will be addressed by constructing additional seasonal storage and disposal area to handle the additional flows. A new storage basin has been designed and is awaiting Regional Board approval prior to construction.

Deficiencies also exist in the current treatment pond system, which prevent realization of full permitted flow and loads. Improvements needed to reliably meet current and permitted flow and load conditions are identified in Chapter 5. The options described in Chapter 5 allow the facility to operate reliably to permitted capacity and comply with the current Waste Discharge Requirements (WDRs), while using the existing pond system and surrounding land to the extent feasible. Future conditions beyond the permitted capacity, as well as the disposal of the treated wastewater, are discussed Chapter 6.

4.1.5 ITEMS COMPLETED TO DATE

Regulatory permit compliance is an ongoing process. Some of the actions described above have been completed, others are in process, and others will occur as the planning process moves forward. Items which have been completed to date include:

- Salinity: Negotiations with the California Aqueduct water suppliers (Central California Irrigation District) have begun. The water treatment and distribution master plan has been completed.
- Potential Groundwater Degradation due to Ponds: One down-gradient monitoring well has been installed and monitoring begun.
- Storage and Disposal Capacity: The design of the supplemental storage basin has been completed and submitted to the Regional Board for approval via a Report of Waste Discharge.
- Planning: Wastewater Collection System Master Plan, Water Master Plan, and Wastewater Treatment and Disposal Master Plan have been completed.

4.2 FUTURE REGULATORY PERMIT COMPLIANCE ISSUES

Regulatory permit compliance issues identified in the sections above are ongoing issues that need to continually be addressed as the City continues to plan, design, and construct improvements and expansions of the wastewater treatment and disposal facilities. Additional specific issues related to future compliance are discussed in more detail below.

4.2.1 POTENTIAL GROUNDWATER DEGRADATION

As discussed above, the potential for groundwater degradation will continue to be monitored and comes from two sources: the unlined treatment ponds and the reclamation practices. Section 4.1 represents a reasonable assessment of the current state of the City's wastewater system with respect to State policies and concerns. The question of whether the City's unlined treatment ponds are following the EPA "model" of not causing degradation, except for salinity, is being studied by the City, and the results will impact some aspects of near-term City wastewater facilities planning. Also in need of study is whether unacceptable nitrogen degradation is occurring in the effluent reclamation areas. These questions cannot be answered at this time because needed studies have not been completed. The remainder of this report provides recommendations based on the knowledge that these questions will take several months to several years to adequately answer.

To address the effluent salinity issue the City has proposed to switch the City's potable water supply from groundwater to surface water. With the improved water supply, use of water softeners (which add salinity to the water) in town would no longer be appropriate and, therefore, may decrease via a public education program. In general, people who have opted to use water softeners are resistant to stopping that use even when water softening is no longer necessary. Thus, the success of this program is difficult to predict. Proposed Assembly Bill 2270 would allow cities to ban use of water softeners on existing and future connections to the City's sewer system. The fate of this bill is unknown at this time.

The City has also proposed to implement a salinity source control program. Elimination of any high salinity wastewater sources in town will also reduce effluent salinity. Water conservation is not a part of the solution to the City's problem because water conservation increases effluent salinity

When the water supply improvement project is completed, effluent salinity concentrations should be acceptable to the Regional Board. The remaining concern related to the ponds would be determining whether the unlined treatment ponds are causing degradation of area groundwater with nitrate, various elements (e.g., iron, manganese, arsenic, etc.), pesticides, detergents, or pathogens in violation of State Board Resolution No. 68-16 (the State's Anti-Degradation Policy). A definitive assessment of degradation will take several years. If significant degradation is occurring, then lining the ponds or decommissioning the ponds at some point in time almost certainly becomes necessary under Resolution No. 68-16. Existing City residents and businesses using the ponds would be given time to correct the deficiency. However, new

City growth would be expected to fund new facilities not having this problem, or any other known problem.

Considering the complexity of a definitive degradation assessment, and the willingness of the City to implement a major reduction in effluent salinity via changing the City's potable water supply, the City and Regional Board have reached an understanding on how to approach the issue of degradation relative to the existing treatment ponds and City growth up to the level allowed by the current wastewater permit (Order No. 98-163). That understanding is based on the Regional Board having serious concerns about unlined treatment ponds being in contact with groundwater regardless of the EPA report. Specifically, those concerns are based on there being no evidence that EPA's conclusions apply to the City's specific situation other than the observation that after decades of operation, the City's ponds have not caused any known water quality pollution problems. To provide at least some site-specific numerical data to address the possibility of there being an undetected, but acute, groundwater quality problem, the City and Regional Board have agreed to the location of an "indicator" shallow monitoring well to assess whether an acute groundwater pollution problem needing immediate attention may exist.

If the indicator well (and follow-up studies, if needed) confirms that the ponds are causing an acute groundwater quality problem (other than salinity), then the potable water supply improvement project to reduce effluent salinity will be postponed so that all available City finances (from existing development and new development) can be focused on correcting the acute pollution problem. Otherwise, the potable water supply improvement project will proceed to reduce effluent salinity; the City will continue to grow using the existing wastewater facility up to its permitted capacity (at least on an interim basis); and the City will either 1) begin the process of assessing whether significant degradation is, or is not occurring, which may allow the existing wastewater treatment plant to remain in service, or 2) agree to modify the existing wastewater treatment plant in such a manner that degradation is not a reasonable possibility (i.e., either line the treatment ponds, or replace them with a mechanical process, such as activated sludge). While the City has expressed the desire to avoid the possibility of degradation, the finances to take such a preemptory step do not exist at this time. However, this does not preclude the City from considering its future wastewater treatment options with this desire in mind.

4.2.2 EFFLUENT RECLAMATION

The Regional Board encourages reclamation (i.e., reuse) of wastewater, where practicable, and requires as part of a Report of Waste Discharge (RWD) an evaluation of reuse and land disposal options as alternative disposal methods. Use of effluent (also called recycled water) for reclamation purposes is governed by Title 22, Chapter 4, of the California Code of Regulations (Title 22). Title 22 defines four types of recycled water, determined by the treatment process and certain effluent requirements. The four categories of recycled water are:

- Undisinfected Secondary Recycled Water
- Disinfected Secondary-23 Recycled Water
- Disinfected Secondary-2.2 Recycled Water
- Disinfected Tertiary Recycled Water

A description of the type of treatment required and the type of irrigation allowed for each of these categories is described in more detail in Chapter 6. The first three categories of recycled water can be used for various types of "restricted reclamation" projects, such as the City's current effluent irrigation of alfalfa. The fourth category of recycled water is referred to as "unrestricted reclamation", which can be used to irrigate all urban landscaping and most food crops.

In accordance with State policies and objectives, the City reclaims "undisinfected secondary recycled water" generated by existing residents and businesses through irrigation of alfalfa and sudan grass. Effluent reclamation via irrigation results in effluent salts becoming more concentrated. This concentrating effect is caused by vegetation evapotranspirating a portion of the irrigation water to the atmosphere and leaving the water-associated salts behind in the soil. This salt concentrating effect occurs regardless of the source of the irrigation water: surface water, groundwater, or effluent. The difference between these sources are that:

- Effluent typically contains more salt than either surface water or groundwater, thus the same salt concentrating effect results in a higher concentration of salt in the soil when effluent is used; and,
- Salinity degradation resulting from effluent irrigation is regulated differently from salinity degradation resulting surface water or groundwater irrigation.

With the water supply improvement project, effluent salinity should be comparable to groundwater salinity. Thus, groundwater degradation from irrigation with either effluent or groundwater should be comparable, and therefore acceptable to the Regional Board. This will allow effluent reclamation to continue to be the City's primary effluent disposal method.

Nitrogen impacts on groundwater from agriculture are also a concern. With effluent reclamation, effluent nitrogen reduces or eliminates the need for fertilizer nitrogen application to grow the crop. The difference between effluent nitrogen and fertilizer nitrogen applied at the same rate to the same crop is how the resulting nitrogen degradation of underlying groundwater is regulated. The extend and acceptability of nitrogen degradation of groundwater underlying the current effluent reclamation areas needs to be determined. If unacceptable nitrogen degradation is occurring, this can be corrected by reducing the effluent nitrogen application rate to the crops. This reduction can be accomplished by either of the following approaches:

- Applying effluent to the crops at a lower hydraulic application rate which also reduces the nitrogen application rate. Supplemental low nitrogen water would be needed to make up for the lower effluent application rate to the crops. This approach reduces WWTP design, construction, and treatment plant operations costs, but increases land needs and reclamation area design, construction, and operations costs.
- Treating the wastewater in a nitrification/denitrification activated sludge process designed to reduce effluent nitrogen concentrations to below levels of concern to the Regional Board for disposal by effluent reclamation. This approach minimizes effluent reclamation land needs, but has the cost of designing, constructing, and operating a nitrification/denitrification activated sludge process.

Based on the realistic expectation that effluent reclamation will continue to be the City's primary effluent disposal method, the location and type of land used for effluent reclamation remains to be determined. As discussed in Chapter 6, consideration should given to expanding the effluent reclamation options in the future. Continued use of restricted reclamation will require additional agricultural land. Effluent disposal through unrestricted urban reclamation will require a higher level of treatment and the dual plumbing of new areas of the City.

For future reclamation land, the City will need to determine whether to require developers to provide the land needed for storage and disposal facilities, or require the developers to provide the City with money so that the City can buy the needed land. In general, there are two types of land in the greater-Newman area that could be used for expanded effluent storage and agricultural reclamation facilities. These lands include:

- Lands east of the City adjacent to the floodplain of the San Joaquin River in the general vicinity of the existing WWTP.
- Lands to the south, north, and west of the City.

A comparison these two land types is provided in Table 4-1.

Table 4-1
Comparison of Land Types for
City of Newman Wastewater Reclamation

	Land East of City	Land South, North, & West of City
Notes	Land expected to be impacted by shallow groundwater that is of relatively poor quality.	Land without shallow groundwater problems.
Advantages	Lower land costs.	Better soil.
	Lower conveyance costs (closer to WWTP).	Less land needed.
	Reduced possibility of effluent reclamation causing unacceptable degradation of shallow groundwater due to the naturally poor groundwater quality.	Easier effluent farming because there is less concern about balancing salt buildup against shallow groundwater levels.
		Effluent irrigation would occur at typical agronomic rates or greater, if increasing the leaching fraction to reduce effluent impacts on shallow groundwater quality is approved by the Regional Board.
Disadvantages	More land may be needed because the effluent application rates may need to be less than typical agronomic irrigation rates as a result of the shallow groundwater.	Higher land costs.
	Shallow groundwater may supply part of the crops' water needs. In such situations, "over irrigation" may cause the shallow groundwater to rise and hinder the crop and/or soil stability.	Higher conveyance costs from the WWTP to more remote sites.
	Lands are underlain with subsurface drains. Subsurface drains under effluent reclamation areas are undesirable.	Lower salinity in underlying groundwater puts a greater risk on effluent reclamation causing some degradation of groundwater quality.

Technical, financial, and regulatory trade-offs exist between these two types of land for effluent storage and reclamation. There is also the possibility of some effluent reclamation within the City, particularly in new community areas where parks, green belts, landscaping, open space, and/or agricultural preserves could be irrigated with effluent. Urban reclamation reduces effluent reclamation land needs at the WWTP, reduces irrigation demands on the potable water supply, and increases the amount of community development that can be served by a given amount of surface water. These benefits are discussed in more detail in Chapters 6 and 7.

Chapter 5

Existing Treatment Analysis and Improvement Options

The purpose of this chapter is to assess the existing treatment capacity of the City of Newman (City) Wastewater Treatment Plant (WWTP) and identify improvements needed to reliably meet current and permitted flow and load conditions. Future conditions beyond the permitted capacity as well as the disposal of the treated wastewater are discussed Chapter 6. A previous WWTP treatment capacity analysis (*WWTP Capacity Analysis Technical Memorandum,* ECO:LOGIC, 2006) indicated that deficiencies exist in the current treatment pond system based on a review of data available at that time. Based on that analysis, the City completed wastewater flow and strength studies to more accurately define the cause, nature, and extent of the deficiencies. This Master Plan expands on the previous Capacity Analysis by more thoroughly characterizing influent flows and loads and considering the effect of pretreatment alternatives on the existing treatment system. Deficiencies in the existing treatment ponds are discussed and improvement options are provided for the current influent conditions as well as the permitted capacity of the facility. The options described in this chapter will allow the facility to operate reliably to permitted capacity and comply with the current Waste Discharge Requirements (WDRs), while using the existing pond system and surrounding land to the extent feasible.

The remainder of this chapter is divided into the following sections:

- Assessment of Existing Treatment Facilities
- Improvement Options
- Summary

5.1 ASSESSMENT OF EXISTING TREATMENT FACILITIES

The existing WWTP treatment capacity was analyzed for two scenarios: 1) existing influent flow conditions (1.1 Mgal/d average sanitary flow (ASF)), and 2) permitted capacity (1.44 Mgal/d ASF). Based on the special testing described in Chapter 2, historical flows and loading data collected from F&A Dairy effluent, the City's municipal wastewater, and the combined waste stream at the WWTP, which includes F&A Dairy discharge, the following assumptions were made for this analysis:

1. The municipal wastewater BOD_5 concentration is 300 milligrams per liter (mg/l). This value reflects the uncertainty associated with the limited dataset available to estimate the municipal wastewater BOD_5 concentration (estimated at 255 mg/l) and the BOD_5 concentrating effect of water conservation by City residents.

2. F&A Dairy contributes an average of 0.18 Mgal/d to the total flow of the City, with an average BOD_5 concentration of 2,000 mg/l.

3. F&A Dairy industrial wastewater could be pretreated to match a municipal wastewater concentration of 300 mg/l.

A summary of the current and permitted future influent flow and loading conditions is provided in Table 5-1.

Table 5-1
City of Newman WWTP Current and Permitted Influent Flows and Load

	Average Sanitary Flow (Mgal/d) [a]	BOD_5 (mg/l) [a]	BOD_5 (lbs/d) [a]
Existing Conditions			
Municipal	0.92	300	2,300
F & A Dairy	0.18	2,000	3,000
Total at WWTP	**1.1**	**580**	**5,300**
Permitted Conditions			
Municipal	1.26	300	3,200
F & A Dairy	0.18	2,000	3,000
Total at WWTP	**1.44**	**514**	**6,200**

(a) Mgal/d = million gallons per day; mg/l = milligrams per liter; lbs/d = pounds per day
(b) Municipal BOD_5 is based on historical data and typical composition of untreated domestic wastewater of 110mg/l – 350mg/l (Metcalf & Eddy 4th Edition)

Wastewater pond systems are designed to oxidize organic material in the wastewater by aerobic and facultative microbiological metabolism using oxygen 1) transferred across the pond surface, 2) produced by algal photosynthesis, and/or 3) oxygenation supplemented by mechanical aeration equipment. In the case of Newman, all of these means of oxygenation are employed. The first two ponds (Aeration Basin (AB) No. 1 and AB No. 2) are equipped with mechanical aeration. The third pond in the City's treatment system is a facultative pond which is referred to as the Oxidation Pond. Ponds using mechanical aeration equipment (aerators) are called "aerated ponds" and are analyzed for wastewater treatment capacity using first order kinetics modeling. Ponds without mechanical aerators are called "facultative ponds" and are analyzed for wastewater treatment capacity using empirical design criteria. During times when high levels of photosynthesis are occurring (i.e. the afternoons of sunny days), the oxygen levels in the Oxidation Pond can be very high.

Aerated pond systems are designed to meet peak oxygen demands within each pond under design wastewater flow and load conditions. Oxygen demand in each pond is determined by the wastewater temperature, BOD_5 concentration, hydraulic residence time and hydraulic mixing in the pond. Hydraulic mixing in aerated pond is controlled by operation of the mechanical aeration equipment. A rough guide for hydraulic mixing is having 10 to 20 horsepower (hp) of mechanical aerator per million gallons of pond volume. The type and size of aerator used and

pond geometry all impact the amount of aeration and mixing needed in aerated ponds. Facultative ponds are designed based on limiting the average BOD_5 load to the ponds surface area to no more than 30 pounds per acre per day (lbs/ac/d) under Central Valley climatic conditions.

To assess the treatment capacity based on aerobic treatment and compliance with the current WDRs, a first order kinetic model was utilized, incorporating established design criteria for aerated pond systems. The model was run at influent loading conditions for existing and permitted flows. The Newman WWTP treatment capacity was determined so that the organic loading on the oxidation pond does not exceed 30 lbs BOD_5/ac/d.

Winter wastewater temperatures used in the model were based on recorded winter temperatures of the influent in each basin and pond (15, 10, and 9 degrees Celsius, respectively). Cold winter temperatures are an appropriate temperature parameter for aerobic pond sizing and capacity analysis because biological activity is reduced at lower temperatures. Thus, treatment does not occur as rapidly and more treatment time is required. Summer temperatures used in the model were based on a typical temperature of 23 degrees Celsius. Summer temperatures are the appropriate temperature for sizing aerators because high summer temperatures cause the highest biological activity and greatest resulting oxygen demands.

5.1.1 Aeration Basin No. 1

Aeration Basin No. 1 (AB No. 1) has 2.7 acres of water surface area with a design depth of 8.0 feet and total volume of 7.0 million gallons (MG). However, this pond has significant sludge accumulation which is estimated to reduce the effective wastewater volume to about 4 MG. The current theoretical detention time is therefore estimated to be 3.1 days.

AB No. 1 uses an ASI small bubble diffuser system powered by a total of 90-hp of blowers. Modeling analysis of AB No. 1 indicates that under existing influent organic load conditions, the basin is overloaded. The oxygen estimated to be provided by the ASI aerators is only 49% of what is required to aerobically treat the existing BOD_5 load. Historical dissolved oxygen levels are typically below 0.5 mg/L and AB No.1 is malodorous (septic), though so far it has not triggered odor complaints from adjacent landowners. Besides organic load issues, the installed aerators may not be operating efficiently because of failures of the piping connections in the basins, which are difficult to maintain.

This submerged diffuser aeration system is not as efficient as desired in providing the required oxygen to maintain aerobic condition. The sludge buildup in the basin may have blocked some of the diffusers, resulting in cumulative inefficiency of the equipment, and the piping connections are difficult to maintain and often fail.

5.1.2 Aeration Basin No. 2

Aeration Basin No. 2 (AB No. 2) is a 5 acre pond with a minimum depth of 5.5 feet and maximum depth of 9.0 feet during wet season. The minimum volume of this pond is approximately 9 MG and the maximum volume is 14.7 MG. The detention time at minimum

water levels is approximately 4 days. Oxygen in this pond is provided by a total of 120-hp of high speed splash type aerators and one 11.5 regenerative blower and membrane porous pipe grid system.

To assist in providing more oxygen to AB No. 2 and to reduce the incoming wastewater hydraulic residence time in the basin, high dissolved oxygen water from the oxidation pond is recirculated at approximately 1,000 gallons per minute (gpm) to the inlet of AB No. 2. With this operational strategy, the oxygen demand for aerobic treatment within this basin is met under the existing influent conditions. However, at permitted capacity AB No. 2 requires additional aerators.

5.1.3 Oxidation Pond

The Oxidation Pond is a 50 acre pond with a minimum depth of 5.5 feet and maximum depth of 9 feet. The greater depth is generally used during the wet season as an effluent storage feature. The minimum and maximum volumes of the Oxidation Pond are 90 and 147 MG, respectively. The effective volume for treatment is assumed to be 90 million gallons. There are currently no mechanical aerators in the Oxidation Pond and aeration is provided by oxygen transfer across the pond surface, aided by wind, and algal photosynthesis. Recirculation via a recirculation channel, which goes around the pond to AB No. 2, also provides additional oxygen.

Based on these oxygen transfer mechanics, under Central Valley climatic conditions, the maximum allowable BOD_5 loading capacity for this pond is 30 lbs/ac/d. Modeling analysis indicates that under the existing influent loading conditions the organic loading in the Oxidation Pond exceeds this amount during winter temperatures. Therefore, the Oxidation Pond is currently overloaded at times and may not ensure reliable treatment to meet the permit requirements.

5.2 IMPROVEMENT OPTIONS

As discussed above, based on the flows and loads presented in Table 5-1, the WWTP is currently above reliable capacity and the aeration system within the ponds may not meet the potential peak oxygen demands. This section summarizes options that will allow the aerated pond system to operate reliably and comply with the current WDRs, including the requirement to maintain 1.0 mg/l of dissolved oxygen in each treatment pond.

Aeration horsepower requirements for each pond have been determined assuming the use of paddlewheel style "brush" aerators for added mechanical aeration demands. These aerators have proven to be more reliable than other mechanical aerators and are preferred by City staff. These improvement options are based on AB No. 1 being cleaned (i.e. the accumulated sludge removed), and the existing ASI small bubble diffusers would be replaced with brush aerators. The existing splasher type aerators in AB No. 2 would remain in service.

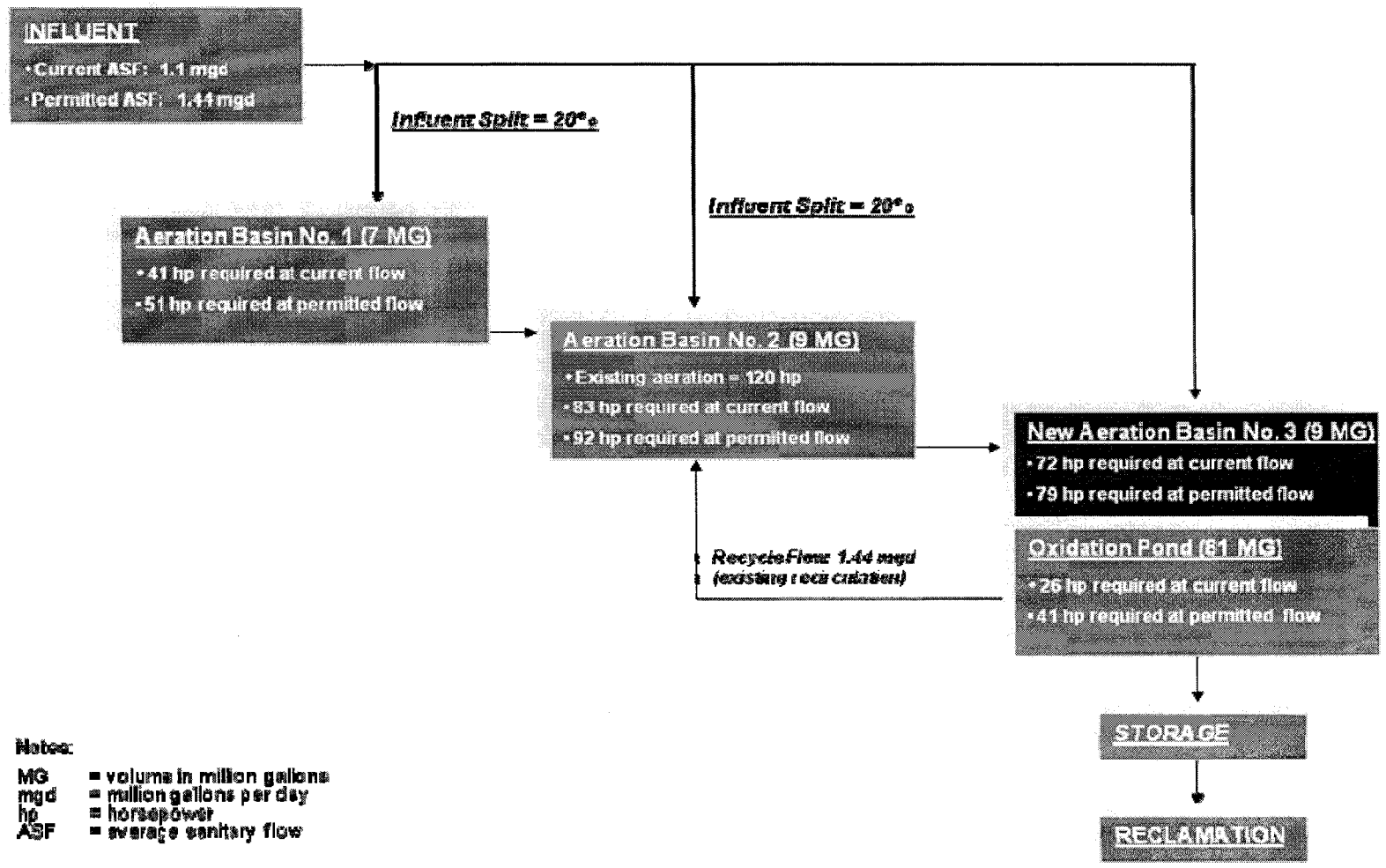
For planning purposes, a minimum of 20-hp per aerator has been assumed for each option when additional mechanical aeration is required. The capital cost of a single 20-hp brush aerator is estimated at $40,000 (early 2008 pricing).

5.2.1 Option 1: New Aeration Basin (AB No. 3) and Influent Flow Split

Option 1 includes creating a third aeration basin (AB No. 3) by baffling approximately five acres of the existing 50 acre Oxidation Pond and splitting the influent load across all aerated ponds. The influent flow would be distributed 20% to AB No. 1, 20% to AB No. 2, and 60% to the new AB No. 3. A schematic of this option is shown in Figure 5-1. Effluent from AB No.1 would continue to flow to AB No.2. Effluent from AB No.2 would flow to the newly partitioned AB No. 3. The oxidation pond would receive effluent from AB No.3.

This option would require cleaning and removal of the sludge buildup in the five acres of the Oxidation Pond for AB No. 3 and creating a flow diversion structure with flow splitting capabilities directly after the existing headworks. At existing influent conditions and using brush aerators, 72-hp of aeration would be needed for the new AB No. 3 and 26-hp of aeration would be needed for the reduced size Oxidation Pond to accommodate the loading at winter temperatures. (Given the planning nature of these estimates, when determining the number of brush aerators needed, it is assumed that a 20-hp brush aerator would be sufficient when the aeration requirement is up to 29-hp. A more thorough analysis would be conducted during design to confirm this assumption.) This horsepower requirement corresponds to the equivalent of four 20-hp brush aerators in AB No. 3 and one 20-hp aerator in the Oxidation Pond. In addition, replacing the aeration equipment in AB No. 1 would require two 20-hp aerators. At permitted flow conditions, one additional 20-hp aerator would be needed in both AB No. 1 and the Oxidation Pond.

Planning level cost estimates for Option 1 are provided in Table 5-2. The total capital cost is estimated at $3.8 million and $4.0 million for existing and permitted flow conditions, respectively.



Notes:

MG = volume in million gallons
mgd = million gallons per day
hp = horsepower
ASF = average sanitary flow

Figure 5-1
City of Newman WWTP
Option 1: New Aeration Basin (AB No.3) and Influent Flow Split

Table 5-2
City of Newman Planning Level Capital Cost Estimates for Option 1

	Current Conditions 1.1 Mgal/d [a]	Permitted Flow Conditions 1.44 Mgal/d [a]
Flow Split Box	$50,000	$50,000
Distribution Piping	$200,000	$200,000
Baffling of Oxidation Pond	$100,000	$100,000
Cleaning of New Aeration Basin No. 3	$460,000	$460,000
Aeration Equipment [b]		
Aeration Basin No. 1 (Replacement)	$80,000	$100,000
New Aeration Basin No. 3	$160,000	$180,000
Oxidation Pond	$60,000	$80,000
New Electrical Service		
Electrical Service Extension	$75,000	$75,000
Transformer	$150,000	$150,000
Conduits & Conductors	$40,000	$50,000
Switchgear	$200,000	$250,000
Allowance for Sitework & Dewatering	$300,000	$300,000
Rehabilitation / Cleaning of AB No. 1	$350,000	$350,000
Subtotal Treatment Ponds	**$2,225,000**	**$2,345,000**
Contingency (30%)	$668,000	$704,000
Subtotal Construction	**$2,893,000**	**$3,049,000**
Allowance for Engineering/ Admin/ CM/ Inspection (30%)	**$868,000**	**$915,000**
Total Project Cost [c]	**$3,800,000**	**$4,000,000**

[a] Mgal/d = million gallons per day.
[b] 20 horsepower (hp) brush aerators in incremental sizing at $40,000 per aerator installed.
[c] 2008 Dollars.

5.2.2 Option 2: Pretreatment of F&A Dairy Effluent and Recirculation Into AB No.1

Option 2 includes the pretreatment of F&A Dairy wastewater to municipal wastewater BOD_5 strength (approximately 300 mg/l) and recirculation of flow from the Oxidation Pond into AB No.1. As discussed previously, F&A Dairy's high strength wastewater represents over half the organic load entering the WWTP and has significant variability in strength compared to municipal wastewater. Pretreatment options for the industrial wastewater are discussed in Chapter 6.

In Option 2, the aerators in AB No.1 would be replaced with approximately 66-hp and 79-hp of brush aeration at existing and permitted flow, respectively. There would be no need for additional mechanical aeration in AB No. 2 or the Oxidation Pond for both existing and

CITY OF NEWMAN

Wastewater Treatment and Disposal Master Plan

October 2008

Prepared for
City of Newman

Prepared by
ECO:LOGIC Engineering

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Consulting Engineers

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Executive Summary

The City of Newman (City) Wastewater Treatment and Disposal Master Plan (Master Plan) is intended to provide guidance to the City on the existing wastewater treatment plant (WWTP) and options for necessary future expansion and improvements to accommodate City growth and regulatory requirements, respectively. This Master Plan is a continuation of work completed for the Capacity Analysis Study of the existing WWTP and negotiations with the Central Valley Regional Water Quality Control Board (Regional Board). One significant result of discussions with the Regional Board included agreement with the City's proposed course of action for reduction of salinity in the WWTP effluent. This compliance strategy includes the implementation of a new surface water supply (discussed in the companion City of Newman Water Master Plan) and other salinity source control measures. This Wastewater Treatment and Disposal Master Plan is a compilation of historical system performance data, projected wastewater flows from new City residences and businesses, applicable existing and expected State and Federal regulations, and cost projections for various treatment and disposal alternatives. Specific objectives of the Master Plan include:

- To evaluate the treatment and disposal capacity of the existing WWTP.
- To identify capital improvements needed to correct any identified existing deficiencies.
- To provide guidance on potential regulatory issues.
- To identify potential options for wastewater facilities needed to serve planned City growth.
- To relate this Master Plan to the City's companion Water Master Plan and Wastewater Collection System Master Plan.

ES.1 OVERVIEW

The City of Newman is located in the western portion of the Central Valley, at the southern border of Stanislaus County, near Merced County (Figure ES-1). The City of Newman WWTP receives wastewater from a residential population of approximately 10,000 and a commercial center concentrated within the City's historic downtown area. The City also treats wastewater generated from F&A Dairy (a raw milk processing facility), which discharges directly into the municipal sewer.

The existing WWTP is a series of ponds where necessary oxygen for treatment is provided by both mechanical aerators and surface reaeration from the atmosphere. Treated wastewater

(termed "effluent") is stored during the wet season and reclaimed as irrigation water on City-owned agricultural lands during the dry season. Emerging concerns related to the operation and expansion of the existing WWTP include:

- The City's General Plan addresses community growth up to a population of approximately 45,400. The forecast wastewater flow from this level of development is 4.8 million gallons per day (Mgal/d). Current wastewater flow is approximately 1.1 Mgal/d. The permitted equivalent capacity of the existing WWTP is 1.4 Mgal/d.

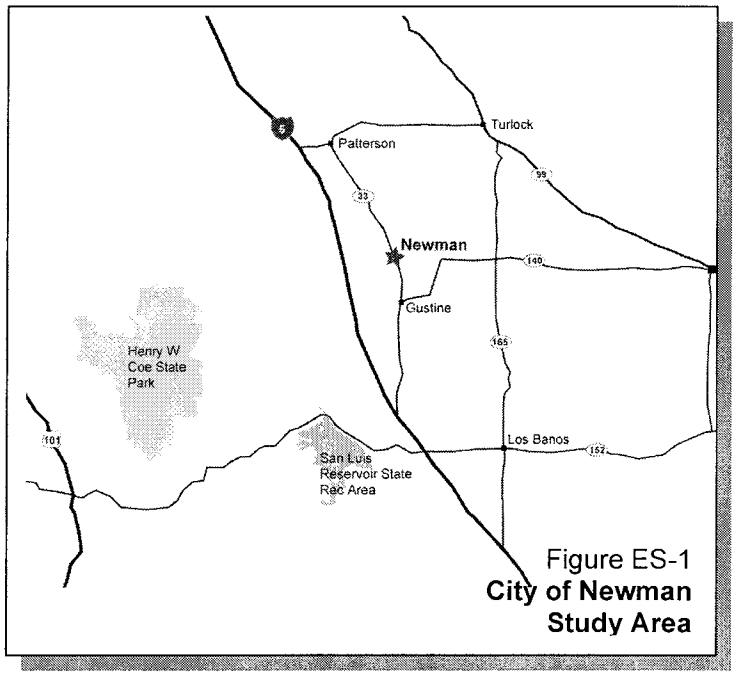


Figure ES-1
City of Newman Study Area

- The City's effluent has higher salinity than other irrigation water used in the vicinity. Therefore, the City's effluent reclamation practice has the potential to cause salinity degradation of underlying groundwater. The major source of salinity in the City's effluent is the City's potable water supply. This Master Plan coupled with the companion Water Master Plan provides a plan for a potable water supply improvement project to address this concern.

- The City's wastewater treatment ponds are unlined and in direct contact with shallow groundwater. Due to this contact, there is concern that salts, nitrates, pathogens, pesticides, and/or metals may be causing groundwater contamination. Although a wastewater treatment pond in direct contact with groundwater has the potential to contaminate that groundwater, it has generally been observed that contamination does not occur (Design Manual (for) Municipal Wastewater Stabilization Ponds (EPA-625/1-83-015)). The reason widespread contamination does not occur is that wastewater treatment ponds tend to "seal" themselves to reduce leakage of wastewater to groundwater and wastewater which does leak out is generally well treated by the sludge, soil, and associated microbes. The City currently is studying whether its treatment pond system acts in a similar manner. Also in need of study is whether unacceptable nitrogen degradation is occurring in the effluent reclamation areas. Even if other compounds appear not to contaminate groundwater, effluent salinity is still an issue for the WWTP.

- The City's potable water shift from groundwater to a high quality, more expensive surface water may put the City in a position to offset potable water with reclaimed effluent for some to all urban landscape irrigation water in new development areas. This is common practice in Southern California and is becoming more common in

areas of Northern California where potable water is becoming more expensive and/or difficult to reliably obtain.

- Once the potable water supply improvement project is complete, effluent salinity concentrations should be acceptable to the Regional Board. The remaining concern includes determining whether nitrogen degradation of groundwater is occurring under the reclamation area due to the pond effluent. Pond treatment (as compared to nitrification/ denitrification activated sludge) is generally not considered a reliable method for removing nitrogen from wastewater.
- The City's effluent reclamation areas are on lands with naturally high groundwater levels, which also tend to be areas of naturally high salinity. To control shallow groundwater levels and soil salinity so as to allow agriculture to occur, much of the land immediately east of the City has been "reclaimed" by 1) the addition of subsurface shallow groundwater drainage pipes that drain to the San Joaquin River, and 2) flushing the historically accumulated salinity via application of surface water and/or groundwater to the soil. Although effluent reclamation on soils needing subsurface drainage is not prohibited, it is not encouraged if alternative effluent reclamation lands are feasible.

In light of the above concerns and the fact that a definitive assessment of degradation will take several years, this Master Plan addresses the long-term potential wastewater treatment needs by bracketing the two extremes of options. This approach gives the City a plan which can easily be adjusted based on the results of groundwater monitoring and degradation analysis. The actual path the City pursues will be dictated by the results of the groundwater monitoring and the Regional Board's input as well as policy decisions of the City Council on what type of resource it views the City's wastewater. The two extremes of options are:

1. If the existing ponds are shown to not have an impact on local groundwater (either directly near the ponds or beneath the agricultural fields due to reclamation), the existing, unlined treatment ponds will continue to be used for existing customers. The WWTP will be expanded with similar treatment for new development.
2. If the existing unlined ponds show some degree of impact to local groundwater (either directly or through effluent reclamation), wastewater from new development will be treated in a more mechanical treatment process (such as activated sludge) and the existing users will be phased out of the existing ponds and into mechanical treatment over time.

The two options identified above are the extremes. It is possible that alternatives between these two options exist.

ES.2 EXISTING TREATMENT AND DISPOSAL ALTERNATIVES

The existing WWTP has a permitted capacity of 1.69 Mgal/d maximum dry weather monthly flow (MDWMF) based on the current Waste Discharge Requirements (WDRs, i.e., "the permit") issued by the Regional Board. This corresponds to an average sanitary flow of 1.44 Mgal/d and this permitted capacity will accommodate the existing residents and growth within the City limits. If the existing pond system is not causing acute pollution of the groundwater and the potable water supply improvement project is implemented to reduce effluent salinity, it appears

that the existing unlined treatment ponds should be able to be used in the near-term future. The City's ability to continue to use the existing unlined treatment ponds (up to the permitted capacity) on a long-term basis will be determined based on the results of the on-going groundwater monitoring program. If the ponds are causing unacceptable degradation of the groundwater, then the City would need to plan a different treatment method to serve existing City residents (as well as new residents) for the long-term future.

However, in order to continue using the existing ponds (in either the near-term or the long-term), treatment improvements are necessary. The existing pond system is currently being loaded with organics above its reliable capacity. The existing aeration system in the ponds would not provide the oxygen needed to treat the organic load under peak flow and load conditions. This Master Plan identifies three alternatives to assure that the system will operate reliably and comply with the current WDRs up to the permitted flow. The three alternatives include:

- Create a third aeration basin (AB No. 3) by baffling approximately five acres of the existing 50-acre Oxidation Pond and splitting the influent load across all aerated ponds (AB Nos. 1, 2, and 3). This alternative would require a flow diversion structure after the existing headworks and the addition of mechanical aeration in AB No. 3 and the Oxidation Pond. The total capital cost is estimated at $3.8 million for existing flow conditions, with an additional $200,000 needed at permitted flow conditions.

- Pretreat F&A Dairy wastewater to municipal wastewater organic strength and provide means to recirculate flow from the Oxidation Pond or the new storage basin into AB No. 1. F&A Dairy's high strength wastewater represents over half the organic load entering the WWTP and has significant variability in strength compared to municipal wastewater. The total capital cost for permitted flow conditions is estimated at $4.2 to $4.6 million. These costs include the pretreatment of F&A Dairy wastewater, estimated at approximately $2.0 million.

- Decommission existing AB No. 1 and replace it with two new, lined, mechanically aerated basins (AB No. 1A and No. 1B). This alternative also includes recirculation of flow from the Oxidation Pond or the new storage basin into the new AB No. 1A & 1B. The total capital cost for permitted flow conditions is estimated at $6.2 million.

The first alternative appears to offer the most flexibility, least capital cost (though higher operation and maintenance cost), and least investment in infrastructure. Least investment in infrastructure is an important consideration should significant groundwater degradation be found from on-going studies, which require the existing users to phase out of the existing WWTP and into mechanical treatment in the long-term.

With construction of the previously designed supplemental storage basin, the existing WWTP will be able to store effluent and 1-in-100 year precipitation events. However, since this basin will be built on existing reclamation area, an additional approximately 100 acres of effluent reclamation area will be needed. The cost of this additional land will depend on the specific area identified, but will likely be on the order of $2 million, including land, effluent conveyance to the

land, and on-site improvements. The City should begin the process of securing future disposal land as soon as practical.

ES.3 FUTURE TREATMENT AND DISPOSAL ALTERNATIVES

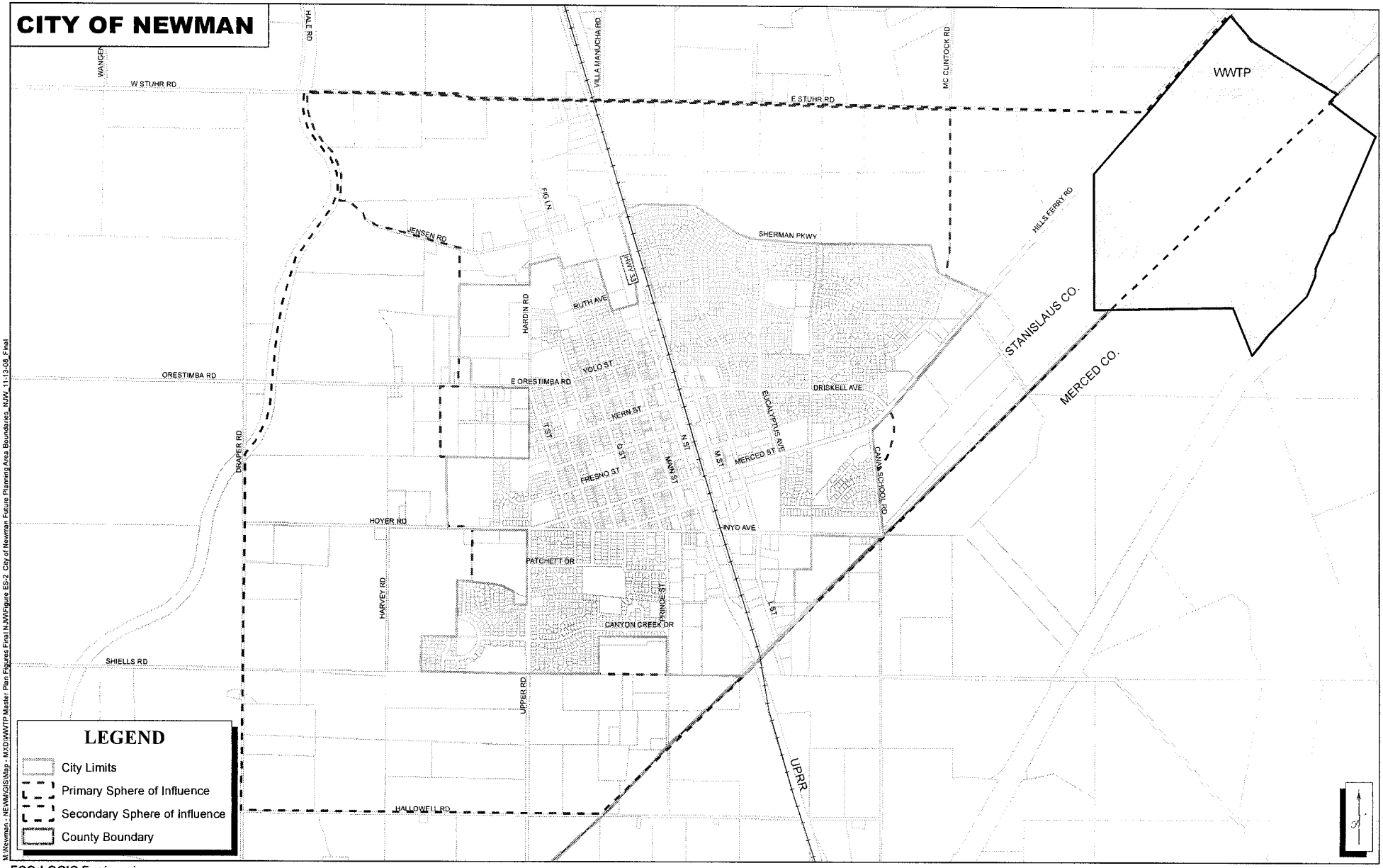
Once the potable water supply improvement project is completed, effluent salinity concentrations should be acceptable to the Regional Board. As mentioned above, the remaining concerns to be addressed include the potential for groundwater degradation due to the unlined ponds and nitrogen degradation due to the existing reclamation practices. In addition, the other major concern will be creating WWTP capacity to accommodate City growth beyond the existing City limits. Additional treatment, storage, and disposal will be needed to accommodate the Primary and Secondary Spheres of Influence (SOIs) identified in the City's General Plan (Figure ES-2). These WWTP components presumably will be funded by new development.

ES.3.1 FUTURE TREATMENT ALTERNATIVES

A fundamental aspect of any future WWTP expansion is that disposal governs treatment. The level of treatment required is dictated by where and how the effluent will be disposed. If more flexibility is needed or desired, or if degradation potential exists, then a higher level of treatment is required. The level of treatment required and other considerations for various effluent disposal methods are described in Table ES-1. As shown, for most disposal options besides current practices, tertiary treatment is required. A more detailed flowchart of the specific treatment processes needed for different disposal options is provided in Figure ES-3. Of particular importance is that all treatment methods, except for pond treatment, allow the process to be upgraded as necessary to include nitrogen removal, conventional or membrane filtration, and/or disinfection. The disadvantage of this flexibility is that there is an additional capital and operational cost associated with mechanical treatment. Technological advantages continue to improve nitrogen removal with pond treatment, but reliable removal is still uncertain with ponds.

Table ES-1
Level of Treatment Required and Considerations for Effluent Disposal Methods

Effluent Disposal Method	Level of Treatment	Additional Considerations
Urban Reclamation (e.g., Irrigation of parks, schools, greenbelts, parkways, commercial landscaping, front yards, and/or back yards)	Tertiary	❑ Significant costs for distribution ❑ Community input/perception ❑ Needs to be incorporated early into the General Planning process ❑ Reduces potable water demands and, therefore, potable water supply capital and annual costs
Unrestricted Agricultural Reclamation (e.g., food crops)	Tertiary	❑ City typically buys the land to assure the long-term viability of this method
Restricted Agricultural Reclamation (e.g, fodder crops; current practice)	Secondary (or equivalent secondary)	❑ Disinfection needed unless all stormwater is contained on-site



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City of Newman Wastewater Treatment and Disposal Master Plan

Figure ES-2
City of Newman Future Planning Area Boundaries

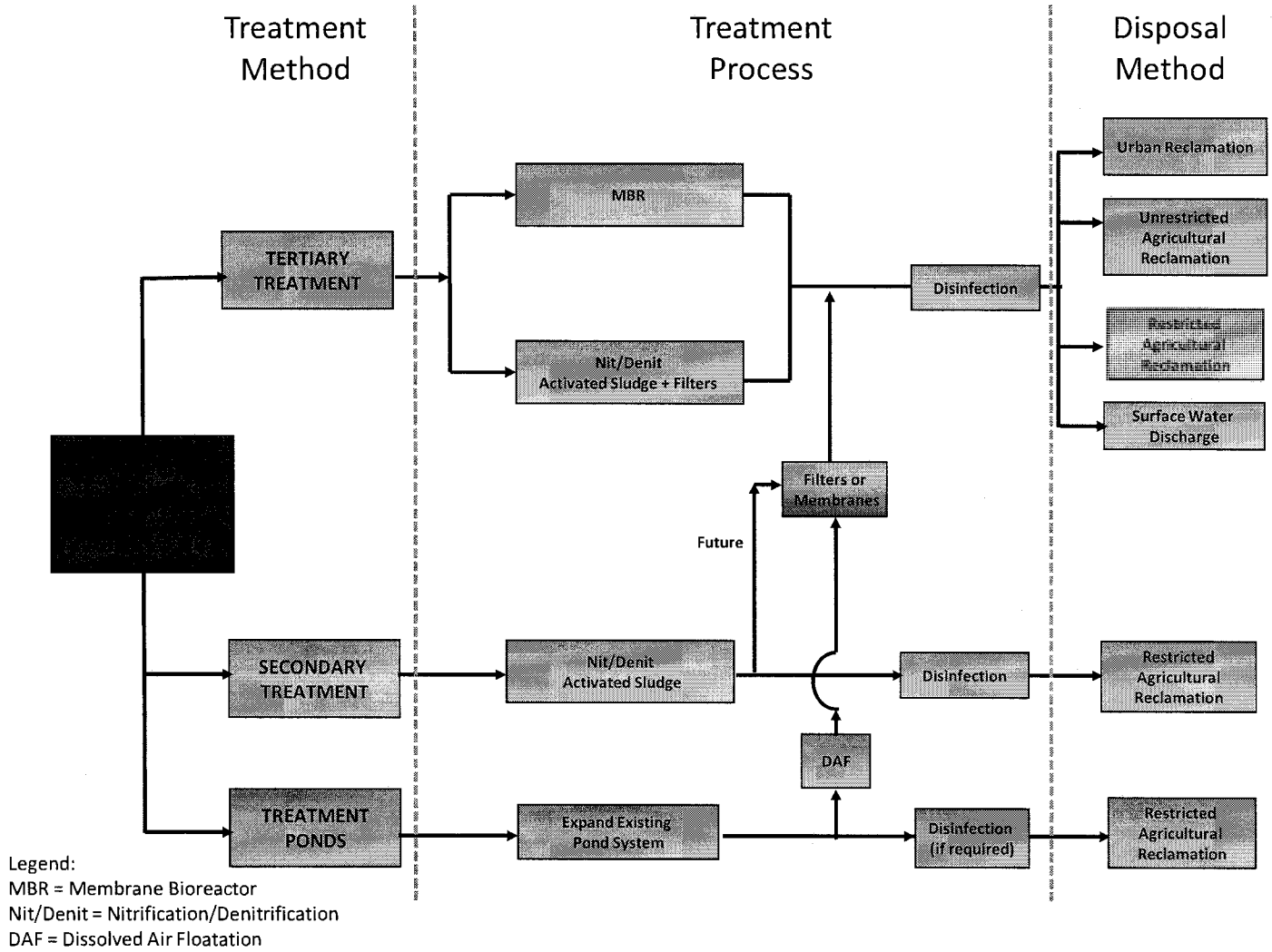

Figure ES-3
Level of Treatment Required for Various Disposal Option

Regardless of the outcome of any degradation analyses relative to the existing ponds, it is unlikely that additional unlined treatment ponds will be allowed for growth beyond the permitted capacity of the existing treatment ponds. Unlined treatment ponds are generally no longer considered Best Practical Treatment and Control (BPTC) technology because of their potential for groundwater degradation, even if (when wastewater salinity is not an issue) no significant degradation may actually be occurring in many situations, as reported by EPA. Therefore, the City should plan for an alternative treatment process to serve City growth beyond the permitted capacity of the existing WWTP. The three main treatment alternatives that exist for future users include:

- **Lined Treatment Ponds** – Lined treatment ponds (Figure ES-4) may be an acceptable long-term alternative for new development if the City can demonstrate that agricultural reclamation of the resulting effluent is not causing excessive nitrogen application rates to the crops, resulting in unacceptable nitrogen degradation of groundwater. However, even if groundwater degradation is not occurring, the City should evaluate the risks verses benefits of continuing to expand the pond system. Pond treatment does not offer reliable nitrogen removal at this time without going to the added expense of dissolved air flotation (DAF) and a separate nitrification/denitrification step (Figure ES-3). The potential need for these steps verses the cost (and cost effectiveness) of nitrification/denitrification activated sludge need to be considered by the City. These and other factors are discussed further below. If groundwater degradation due to nitrogen is occurring under the reclamation fields, then the City would need to plan to provide treatment via a nitrification / denitrification secondary or tertiary treatment process. Upgrading treatment for existing residents would need to be negotiated with the Regional Board. For new growth (and possibly existing residents), some effluent disinfection prior to irrigation of the fodder crops appears likely to be necessary when the current WDRs are renewed based on current Regional Board policy. However, that policy is in conflict with other Regional Board policies being implemented at this time. Therefore, the proper course of action for the City at this time is to plan for disinfection, but not implement it until mandated by the Regional Board.

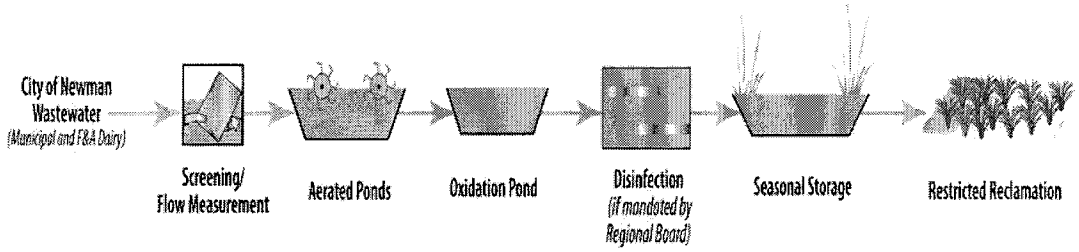

Figure ES-4
City of Newman Existing WWTP - Example of Lined Treatment Ponds

- **Secondary Treatment** – If it is determined that groundwater degradation is occurring in the reclamation fields due to nitrogen in the effluent, a nitrification / denitrification secondary treatment process (Figure ES-5) would be required at least for new growth. The Regional Board should give existing residents time to upgrade their treatment process, if needed. Secondary treatment, alone, does not significantly expand the

disposal options available to the City. Secondary treatment would facilitate upgrading the WWTP in the future to a higher level of treatment, if regulations and/or disposal methods dictate. Because the capital and annual costs of secondary treatment are not significantly different from lined, unaerated treatment ponds and requires a fraction of the land for treatment, the City should pursue secondary treatment if it does not want to embark on more extensive groundwater degradation studies or take the risk that groundwater degradation would cause a shift in treatment processes in the future. It is also possible that a nitrification / denitrification secondary treatment process could handle either all the City's wastewater or only a portion, if only a partial reduction in nitrogen is necessary to protect groundwater quality and still satisfy crop nitrogen needs.

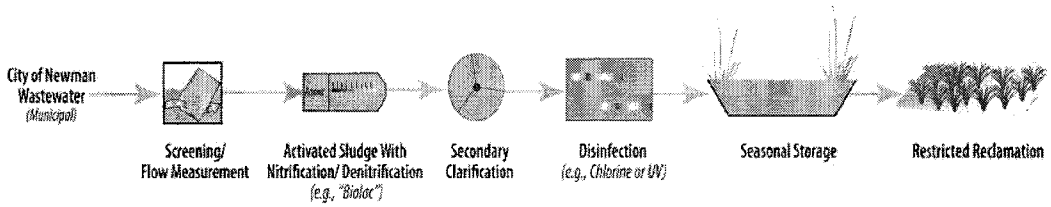

Figure ES-5
Example Secondary Treatment Process

- **Tertiary Treatment** – If the City prefers to 1) have the most flexibility in terms of effluent disposal options, and 2) reduce potable water supply costs, then tertiary treatment should be planned for new development – either for near-term new development or as a future treatment option. For wastewater effluent to be used for unrestricted reclamation, tertiary level treatment and effluent disinfection are required (as shown in Figure ES-3). Tertiary treatment (Figure ES-6) includes a biological treatment process followed by filtration or membrane filtration. Disinfection can be either through the use of chlorine or ultraviolet light (UV) disinfection. Wastewater treated to tertiary standards (as defined by Title 22 of the California Code of Regulations) can be reclaimed in an urban or agricultural setting. Tertiary treatment would give the City the ability to reclaim water in an urban setting, which would either reduce the capital and annual costs of the new surface water supply system (if it is sized to allow reclamation to meet some to all urban irrigation use demands), or reduce the input of poor quality groundwater into the potable water supply system when urban irrigation demands are greatest.

  Tertiary treatment could be accomplished through a secondary treatment process followed by filtration or through a combined process, such as a membrane bioreactor (MBR). Membrane bioreactors combine the biological treatment step of nitrification/denitrification activated sludge with membrane filtration to produce a high quality effluent. For either of these treatment options, treatment is further followed by UV disinfection. The same amount of acreage is needed for storage and disposal. However, the City would have the added flexibility of reclaiming the water on discrete parcels (such as urban landscaping, parks, greenbelts, commercial landscaping, etc), the ability to use the water on different types of crops, and may be able to enter into a long-term lease instead of a land purchase with an area farmer.

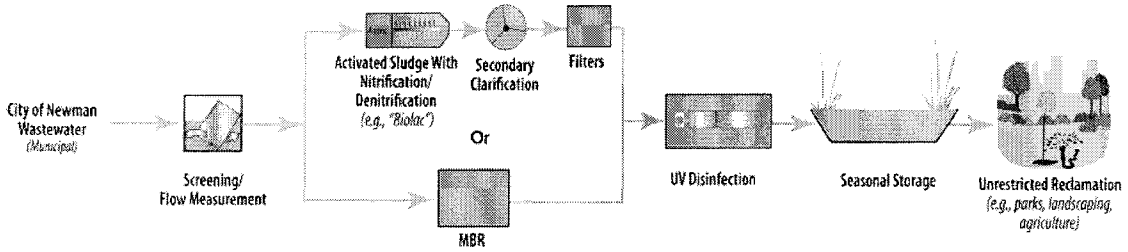

Figure ES-6
Example Tertiary Treatment Process

A summary of each level of treatment, advantages, disadvantages, and relative cost is summarized in Table ES-2.

ES-3.2 INDUSTRIAL PRETREATMENT

In addition to future treatment of residential wastewater, the future treatment of F&A Dairy wastewater also needs to be considered. The higher strength food process wastewater from F&A Dairy represents over half the total organic load currently entering the WWTP. Pond systems are generally well suited for food processing wastewater due to the fact that the systems can tolerate large swings in organic load on a daily, weekly, or monthly basis. Analysis of the existing WWTP capacity (described above) assumes that F&A Dairy flows and loads remain the same. Given this assumption and with the existing system improvements completed, the current WWTP should be able to accommodate the current flow and load from F&A Dairy. However, recent analysis of F&A Dairy load indicates that it may be more equitable to base monthly charges on COD (chemical oxygen demand) load, rather than the current method of BOD_5 (5-day biochemical oxygen demand) load.

When considering future treatment, it is assumed that F&A Dairy will not increase production and, therefore, the flow and load contribution will not change. However, if the flow and/or load of the dairy does go above current levels, pretreatment of the wastewater to municipal strength will be required, even if no improvements to the wastewater treatment process are required. Also, the size and associated capital cost as well as the operation and maintenance cost of activated sludge treatment processes are greatly affected by the influent organic loading. Therefore, if activated sludge secondary or tertiary treatment is used for future growth, it will be most cost effective only to treat municipal wastewater with this process. If F&A Dairy increases its loading to the City's WWTP or if results of the groundwater assessment indicate that the existing users (including F&A) are required to phase out of the existing ponds into secondary or tertiary treatment, it will be more cost effective to provide a separate pretreatment process at F&A Dairy to reduce the amount of organic load to municipal strength. This pretreatment process would likely be a high rate anaerobic process, which is much more suited to handle high organic strength wastewater.

Table ES-2
City of Newman Treatment Options for New Users Summary

	Lined Treatment Ponds	Secondary Treatment	Tertiary Treatment
Description	Ponds with synthetic lining to prevent leakage to groundwater; Addition of mechanical aeration, **OR** Large ponds for passive, atmospheric re-aeration	"Biolac" nitrification/denitrification activated sludge treatment process with chlorine disinfection	"Biolac" biological treatment process with conventional filters (disk filtration) and UV disinfection, **OR** Membrane bioreactor with UV disinfection
Disposal	Restricted agricultural reclamation (unless treatment is upgraded with at least DAF, filtration, and disinfection. A post DAF nitrogen removal process may be necessary)	Restricted agricultural reclamation (unless upgraded with filtration and enhanced disinfection)	❒ Urban reclamation ❒ Unrestricted agricultural reclamation ❒ Restricted agricultural reclamation ❒ Limited surface water discharge may be possible to reduce storage costs in wet winters
Advantages	❒ Familiar treatment and operation process ❒ Addition of aerators reduces size of treatment ponds ❒ Lowest O&M cost	❒ Upgradeable treatment system ❒ Consistent with current disposal practices ❒ BPTC with respect to nitrogen and salinity ❒ All treatment could occur on existing wastewater treatment plant site	❒ Highest level of treatment ❒ Modular treatment system (MBR) ❒ Opportunities for multiple disposal options ❒ BPTC with respect to nitrogen and salinity ❒ All treatment could occur on existing wastewater treatment plant site
Disadvantages	❒ Restricted disposal option ❒ Additional land needed for treatment ❒ Lining of unaerated ponds is very expensive due to large size of ponds ❒ May be inconsistent with long-term growth plans of City ❒ Upgradeable, but only at a significantly higher overall cost than other options	❒ Restricted disposal option ❒ More costly than aerated ponds ❒ Separation of industrial flows is likely cost effective	❒ Provides higher level of treatment than currently needed ❒ Highest capital cost ❒ Highest O&M cost ❒ Separation of industrial flows is likely cost effective
Capital Cost TREATMENT ONLY (2 Mgal/d; April 2008$)	$21.2 (aerated) to $49.1 million (unaerated)	$38.7 million	$45.0 (Biolac & Filters) to $55.1 million (MBR)
Additional O&M Cost (2010$)	$0 (unaerated) to $270,000 (aerated)	$500,000	$640,000 (Biolac & Filters) to $710,000 (MBR)

ES-3.3 STORAGE AND DISPOSAL

Future storage needs are independent of the treatment and reclamation disposal method used. Storage must be designed to accommodate the wastewater generated during the wet season as well as 1-in-100 year precipitation. For the Primary SOI, approximately 33 acres beyond the existing WWTP are needed. At full buildout of the Secondary SOI, approximately 150 total acres are needed (117 additional acres). Reclamation disposal land depends on the amount of urban reclamation used. If only restricted agricultural reclamation is employed, 208 acres of land is needed for the Primary SOI and an additional 570 acres is needed for the Secondary SOI. A schematic of the land area that will be required for storage and restricted reclamation at full buildout of the Secondary SOI is shown in Figure ES-7. The areas identified in Figure ES-7 are not intended to be the exact parcels, but instead to demonstrate the amount of land area needed.

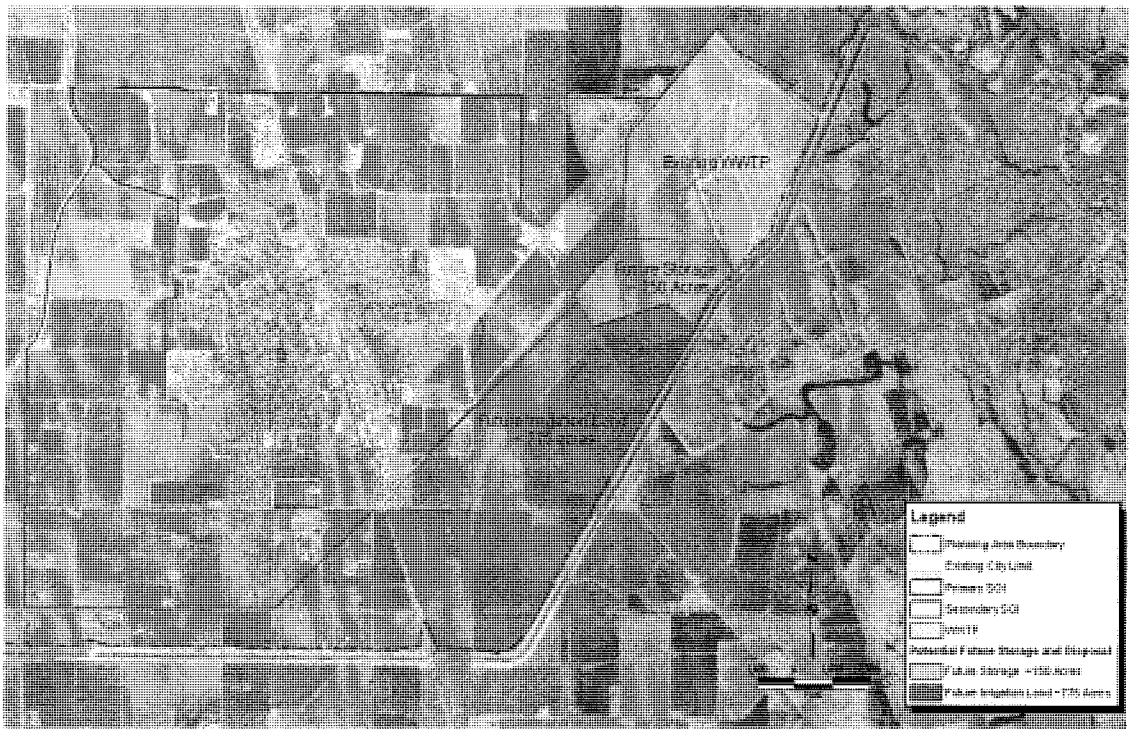

Figure ES-7
City of Newman Future Storage and Disposal Land Requirements – Full Buildout of Secondary SOI

ES-4 RECOMMENDED PLAN

In light of the above regulatory concerns, treatment and disposal options, and unknowns related to the potential for groundwater degradation, it is recommended that the City follow a plan that allows for the most flexibility in the future. The City of Newman has a unique, one-time opportunity to create a plan that is both consistent with regulations and also conserves resources. Growth within the existing City Limits can be accommodated in the existing WWTP with some

near-term, and possibly long-term, upgrades. Lands to the north (Primary SOI), west, and south (Secondary SOI) of the City that wish to annex to the City will need to fund construction infrastructure (including water and wastewater utilities) to serve these annexations. As discussed in the companion Wastewater Collection System Master Plan, these areas will need new trunk sewers to accommodate future wastewater flow to the WWTP. This "separate" collection system creates a distinction between new and existing users. There is a logical separation of new users to a new treatment process compared to the existing users who have already put a significant investment into their existing WWTP. F&A Dairy's wastewater is also limited to flowing to the existing pond system, which is better able to accommodate the high and variable strength wastewater than activated sludge or an MBR. This flexibility of separation of the new and existing users exists in very few Cities. In addition, if a higher level of treatment is selected for new growth, there is a nexus between that higher cost and the beneficiaries of the infrastructure being created. With a higher level of treatment being funded by the annexed areas, these areas can be required to be plumbed to use tertiary effluent on parks, school yards, commercial landscaping, etc., including consideration of residential front yard irrigation in all years, and back yard irrigation in drought years when the City's surface water allocation from the California Aqueduct may be reduced. It is prohibitively expensive to retrofit the existing City with urban reclamation "purple pipes" to allow the level of reclamation and water supply security possible for the annexed areas.

Based on the foregoing concepts, developed to provide existing and new City residents the most cost-effective and secure water supply and wastewater treatment and disposal system, the following major actions are recommendations as part of this Master Plan:

- **Plan for diversifying effluent disposal options in the future.** Continued expansion of the City's pond system to serve future growth is based on the ability of the City to acquire large parcels of land suitable for treatment and disposal ponds and restricted reclamation and, more importantly, the demonstration that the existing WWTP does not degrade groundwater either from the unlined ponds and/or from the reclamation practices. It is essentially impossible to predict if either of these concerns will surface in the future. Other communities that use secondary or tertiary treatment processes instead of pond treatment have the distinct advantage of being able to construct add-on processes to remove nitrogen, turbidity, pathogens, and even trace pollutants that allow the effluent to be disposed or reclaimed for other uses. For this reason, it is recommended that new development 1) treat its wastewater to a higher level, and 2) provide alternative means of effluent disposal.

- **Acquire more disposal land.** Concurrent with planning for diversified effluent disposal options, it is also prudent planning to secure suitable disposal land (ideally near the WWTP). This land can be used on either an interim basis and/or for long-term future disposal needs and will allow the WWTP to expand as needed to accommodate growth, regardless of the treatment and disposal methods pursued on a long-term basis.

- **Assume new development in the Primary and Secondary SOIs would be required to treat their wastewater tertiary standards.** As noted above, diversifying effluent disposal options requires a higher level of wastewater treatment. Current BPTC is a

lined wastewater treatment process that removes total effluent nitrogen to less than 10 milligrams per liter, unless the effluent discharger specifically demonstrates that the level of treatment is not needed to prevent degradation of underlying groundwater. The burden of proof rests with the City for new growth beyond the 1.44 Mgal/d (average sanitary flow basis) permitted capacity of the existing facility. Coupling BPTC with the need to diversify effluent disposal results in the recommendation that annexations to the City fund tertiary level treatment providing pathogen-free effluent that can be applied in an unrestricted manner to agricultural crops and urban landscaping. While there are several types of treatment processes that produce tertiary quality effluent, fiscal planning around a new membrane bioreactor (MBR) facility is recommended. MBRs have comparable costs to conventional tertiary systems and many of the new WWTPs built in California today are MBRs.

- **Plan future City parks, schoolyards, landscape medians, greenbelts, etc. for irrigation with tertiary effluent.** This recommendation implements diversifying effluent disposal and takes steps to either reduce the size and cost of the new potable water supply and/or maintain the quality of that water supply by reducing the need to operate existing potable water wells (with poor quality water) during maximum potable water demand days driven by landscape irrigation water needs. As discussed previously, this plan can only be implemented to any great extent in new development areas because of the high cost to retrofit existing developed areas with dual "purple pipe" systems needed for effluent reclamation. The City may wish also to consider effluent reclamation in residential front yards, and possibly in back yards during severe drought when the City's allocation of California Aqueduct Water may be reduced. With modern, reliable tertiary wastewater treatment facilities, front and back yard effluent irrigation is becoming increasingly common in prestigious communities. The "perception problem" is diminishing and since this practice would only be occurring in new areas, the people buying the home would be accepting the use as evidenced by the fact that they bought the home. This is a very different perspective than a forced retrofit where existing people have no choice.

- Under this plan, the layout of the new water, wastewater, and reclaimed water (i.e., effluent) pipes in the annexed areas would be consistent with California Department of Public Health "Title 22" requirements. This includes use of "purple pipe" to designate non-potable uses, addition of backflow preventers from the City's potable water lines, separate water lines to bathrooms/ drinking fountains, and selection of certain types of sprinkler heads to minimize overspray in public areas. Many communities have amended their city design standards to include the Title 22 provisions, even before reclaimed water is available. The new UC Merced campus is an example of such planning where the irrigation system is designed to switch over to reclaimed water when sufficient wastewater is generated by the students. Since it is very expensive to retrofit existing areas, it is recommended that city design standards be modified so that the City has options for how new urban landscaping could be watered in the future.

- **Develop a revenue program that equably funds wastewater treatment and disposal for both existing and new users.** Funding these initiatives will impact both the City's monthly wastewater rates (for capital projects related to achieving the permitted capacity of the existing WWTP and new operational costs benefiting existing users) and wastewater capital fees (for capital projects benefiting City growth,

including expansion of the WWTP beyond the current permitted capacity). A detailed revenue program is needed to determine funding of the items discussed above. Depending on the outcome of the groundwater monitoring, input from the Regional Board, and evaluation of the ability to off-set potable water demands, the City may desire to construct a new tertiary WWTP for new development and recycle that water on new urban and agricultural areas. Since funding major facility upgrades through monthly sewer rates is expensive and difficult to implement equitably across all users, it is recommended to base capital fees for development of the Primary and Secondary SOIs on the costs for constructing a new tertiary MBR treatment facility. A new MBR facility with a capacity of 1.0 Mgal/d and accommodations for future growth is estimated to cost $33 million (for treatment only) in 2008 dollars. Capital fees based on this amount would be adjusted each year to an inflation index tied to the construction industry. At this point, the plan recommends only collecting fees associated with the tertiary WWTP as a means to minimize risk to the City. If the various unknowns related to treatment and disposal practices can be resolved with some surety, then a portion of the collected money could be refunded to parties who funded the construction of the actual facilities.

Chapter 1

Introduction

The City of Newman (City) Wastewater Treatment and Disposal Master Plan (Master Plan) is intended to provide guidance to the City on the existing wastewater treatment plant (WWTP) and options for necessary future expansion and improvements to accommodate City growth and regulatory requirements, respectively. This Master Plan is a continuation of work completed for the Capacity Analysis Study of the existing WWTP and negotiations with the Central Valley Regional Water Quality Control Board (Regional Board). One significant result of discussions with the Regional Board included agreement with the City's proposed course of action for reduction of salinity in the WWTP effluent. This compliance strategy includes the implementation of a new surface water supply (discussed in the companion City of Newman Water Master Plan) and other salinity source control measures. This Wastewater Treatment and Disposal Master Plan is a compilation of historical system performance data, projected wastewater flows from new City residences and businesses, applicable existing and expected State and Federal regulations, and cost projections for various treatment and disposal alternatives. Specific objectives of the Master Plan include:

- To evaluate the treatment and disposal capacity of the existing WWTP.
- To identify capital improvements needed to correct any identified existing deficiencies.
- To provide guidance on potential regulatory issues.
- To identify potential options for wastewater facilities needed to serve planned City growth.
- To relate this Master Plan to the City's companion Water Master Plan and Wastewater Collection System Master Plan.

The existing WWTP is a series of ponds where necessary oxygen for treatment is provided by mechanical aerators and surface reaeration from the atmosphere. Treated effluent is stored seasonally during the wet season and reclaimed as irrigation water on City-owned agricultural land during the dry season. The WWTP is regulated under a Waste Discharge Requirements (WDRs) issued by the Regional Board. The system is very resilient to periodic high loads from the food processing industry within town, F&A Dairy. To the extent the facility can comply with new regulatory mandates, the City should continue to operate this system due to its simplicity and low capital, operation, and maintenance costs. Emerging concerns related to the operation and expansion of the existing WWTP include:

- The City's General Plan addresses community growth up to a population of approximately 45,400. The forecast wastewater flow from this level of development is 4.8 Mgal/d (millions of gallons per day). Current wastewater flow is approximately 1.1 Mgal/d. The permitted equivalent capacity of the existing WWTP is 1.44 Mgal/d.

- The City's effluent has higher salinity than other irrigation water used in the vicinity. Therefore, the City's effluent reclamation practice has the potential to cause salinity degradation of underlying groundwater. The major source of salinity in the City's effluent is the potable water supply. This Master Plan coupled with the companion Water Master Plan provides a plan for a potable water supply improvement project to address this concern.

- The City's wastewater treatment ponds are unlined and are in direct contact with shallow groundwater. Due to this contact, there is concern that salts, nitrates, pathogens, pesticides, and/or metals may be causing groundwater contamination. Although a wastewater treatment pond in direct contact with groundwater has the potential to contaminate that groundwater, it has generally been observed that contamination does not occur (Design Manual (for) Municipal Wastewater Stabilization Ponds (EPA-625/1-83-015)). The reason widespread contamination does not occur is that wastewater treatment ponds tend to "seal" themselves to reduce leakage of wastewater to groundwater and that wastewater which does leak out is generally well treated by the sludge, soil, and associated microbes. The City currently is studying whether the Newman pond system acts in a similar manner. Even if other compounds appear not to contaminate groundwater, effluent salinity is still an issue for the WWTP. Also in need of study is whether unacceptable nitrogen degradation is occurring in the effluent reclamation areas. Even if other compounds appear not to contaminate groundwater, effluent salinity is still an issue for the WWTP.

- The City's effluent reclamation areas are on lands with naturally high groundwater levels, which also tend to be areas of naturally high salinity. To control shallow groundwater levels and soil salinity so as to allow agriculture to occur, much of the land immediately east of the City has been "reclaimed" by 1) the addition of subsurface shallow groundwater drainage pipes that drain to the San Joaquin River, and 2) flushing the historically accumulated salinity via application of surface water and/or groundwater to the soil. Although effluent reclamation on soils needing subsurface drainage is not prohibited, it is not encouraged if alternative effluent reclamation lands are feasible.

- The City's potable water shift from groundwater to a high quality, more expensive surface water may put the City in a position to offset potable water with reclaimed effluent for some to all urban landscape irrigation water in new development areas. This is common practice in Southern California and is becoming more common in areas of Northern California where potable water is becoming more expensive and/or difficult to reliably obtain.

- Once the potable water supply improvement project is complete, effluent salinity concentrations should be acceptable to the Regional Board. The remaining concern includes determining whether nitrogen degradation of groundwater is occurring under the reclamation area due to the pond effluent. Pond treatment (as compared to

nitrification/ denitrification activated sludge) is generally not considered a reliable method for removing nitrogen from wastewater.

In light of the above concerns and the fact that a definitive assessment of degradation will take several years, this Master Plan addresses the long-term potential wastewater treatment needs by bracketing the two extremes of options. This approach gives the City a plan which can easily be adjusted based on the results of groundwater monitoring and degradation analysis. The actual path the City pursues will be dictated by the results of the groundwater monitoring and the Regional Board's input as well as policy decisions of the City Council on what type of resource it views the City's wastewater. The two extremes of options are:

1. If the existing ponds are shown to not have an impact on local groundwater (either directly near the ponds or beneath the agricultural fields due to reclamation), the existing, unlined treatment ponds will continue to be used for existing customers. The WWTP will be expanded with similar treatment for new development.
2. If the existing unlined ponds show some degree of impact to local groundwater (either directly or through effluent reclamation), wastewater from new development will be treated in a more mechanical treatment process (such as activated sludge) and the existing users will be phased out of the existing ponds and into mechanical treatment over time.

The two options identified above are the extremes. It is possible that alternatives between these two options exist.

Chapter 2

Existing and Future Flows and Loads

The purpose of this chapter is to summarize historical data and projected flows and loads for the City of Newman (City) Wastewater Treatment Plant (WWTP). This chapter establishes current (2007) equivalent design loading criteria. These flow and organic loading criteria are then used as a basis for projecting future wastewater loading conditions.

This chapter is organized into two major sections:

- Historical Wastewater Flows and Loads
- Projected Wastewater Flows and Loads

2.1 HISTORICAL WASTEWATER FLOWS AND LOADS

The City of Newman WWTP receives wastewater from a residential population of approximately 10,000 and a commercial center concentrated within its historic downtown. The City also treats wastewater generated from F&A Dairy, a raw milk processing plant, which discharges directly into the municipal sewer.

To determine historical flows and loads, daily influent flow and bi-weekly biochemical oxygen demand (BOD_5), were obtained from plant records from January 2003 to August 2007. F&A Dairy effluent flow and BOD_5 was obtained for January 2005 to December 2006. Historical WWTP influent BOD_5 indicated unaccounted for BOD_5. Therefore, some special testing was performed in August and September of 2007 to further clarify the appropriate design BOD_5 loads.

2.1.1 HISTORICAL FLOW CONDITIONS

In assessing the wastewater treatment capacity of pond systems, such as at the City's, several wastewater flow and loading characteristics are important to distinguish. Important flow conditions for this analysis are described in Table 2-1.

Average monthly influent flow, average sanitary flow (ASF), and maximum dry weather monthly flow (MDWMF) at the Newman WWTP for January 2003 through August 2007 are shown in Figure 2-1. Average monthly influent flow during this period ranged from 0.93 to 1.40 million gallons per day (Mgal/d).

The peak hour flow is the measured maximum flow at the WWTP plant. The current peak hour flow of 3.0 Mgal/d was measured in February 2005 during a rainfall storm event. Historical flow information is summarized in Table 2-2.

Table 2-1
City of Newman WWTP Flow Components [a]

Flow Component	Current Flow (Mgal/d) [b]	Description
Average Dry Weather Flow (ADWF)	1.17	ADWF represents the flow for system regulations by the Regional Water Quality Control Board (RWQCB), and for system capacity assessments by the City. Currently, the City's ADWF is regulated by the maximum month flow during dry season (often interpreted as the months of May through September). ADWF can be regulated as the 5-month average flow during this period.
Average Sanitary Flow (ASF)	1.10	ASF represents the base sanitary flow generated from residences, businesses, and industry. Often this flow corresponds to the ADWF that occurs in the summer months, unless surrounding agricultural irrigation causes significant infiltration and inflow (I&I) during summer months. In Newman, there is no significant summer I&I, therefore the ASF is roughly equivalent to the ADWF.
Maximum Dry Weather Monthly Flow (MDWMF)	1.44	MDWMF is used to determine flow compliance under the current Waste Discharge Requirements (WDR's) Permit issued by the RWQCB. Though unstated in the City's current WDRs (Order No, 98-163), RWQCB often interprets the dry weather period of the year to be from May through September. Based on this interpretation, MDWMF is expected to occur in May under heavy late spring rain conditions as a result of residual I&I from the preceding rainy season.
Peak Hour Flow (PHF)	3.00	Peak hour flow is the flow that the pond system headworks has to handle to convey the wastewater to the aeration basins/ponds. Some flow equalization will occur in the aeration basins/ponds, thereby reducing the critical peak flows and loads on the rest of the wastewater treatment system.

[a] Flow calculated based on WWTP influent data 2003 - 2007
[b] Mgal/d = million gallons per day

Based on the flow interpretations described in Table 2-1 and the City's I &I model (derived from the City's historical I&I and rainfall data), the ASF limit on the existing WWTP under the existing WDR is 1.44 Mgal/d. The current ASF is estimated to be 1.1 mgd. Thus, the existing WDRs allow 0.34 Mgal of community growth as long as any deficiencies in wastewater treatment capacity, effluent storage volume, and effluent reclamation area are corrected.

2.1.2 Historical Loading Conditions

The organic loading capacity of the Newman WWTP is measured as 5-day biochemical oxygen demand (BOD_5). BOD_5 is the accumulated oxygen required over a five day period by naturally occurring bacteria to consume the wastewater organics arriving at the WWTP each day. Influent BOD_5 for the City is measured from flow proportional samples taken weekly. BOD_5 flow composite data is also collected from the discharge of the City's largest industry, F&A Dairy. Influent BOD_5 loading, in pounds per day (lbs/d), for the last four years is provided in Figure 2-2. Average and four-sample (two month) rolling averages are also provided to determine the variation in organic loading throughout the year. The average influent BOD_5 load is about 8,300 lbs/d, with two month rolling averages from approximately 4,500 to 12,700 lbs/d.

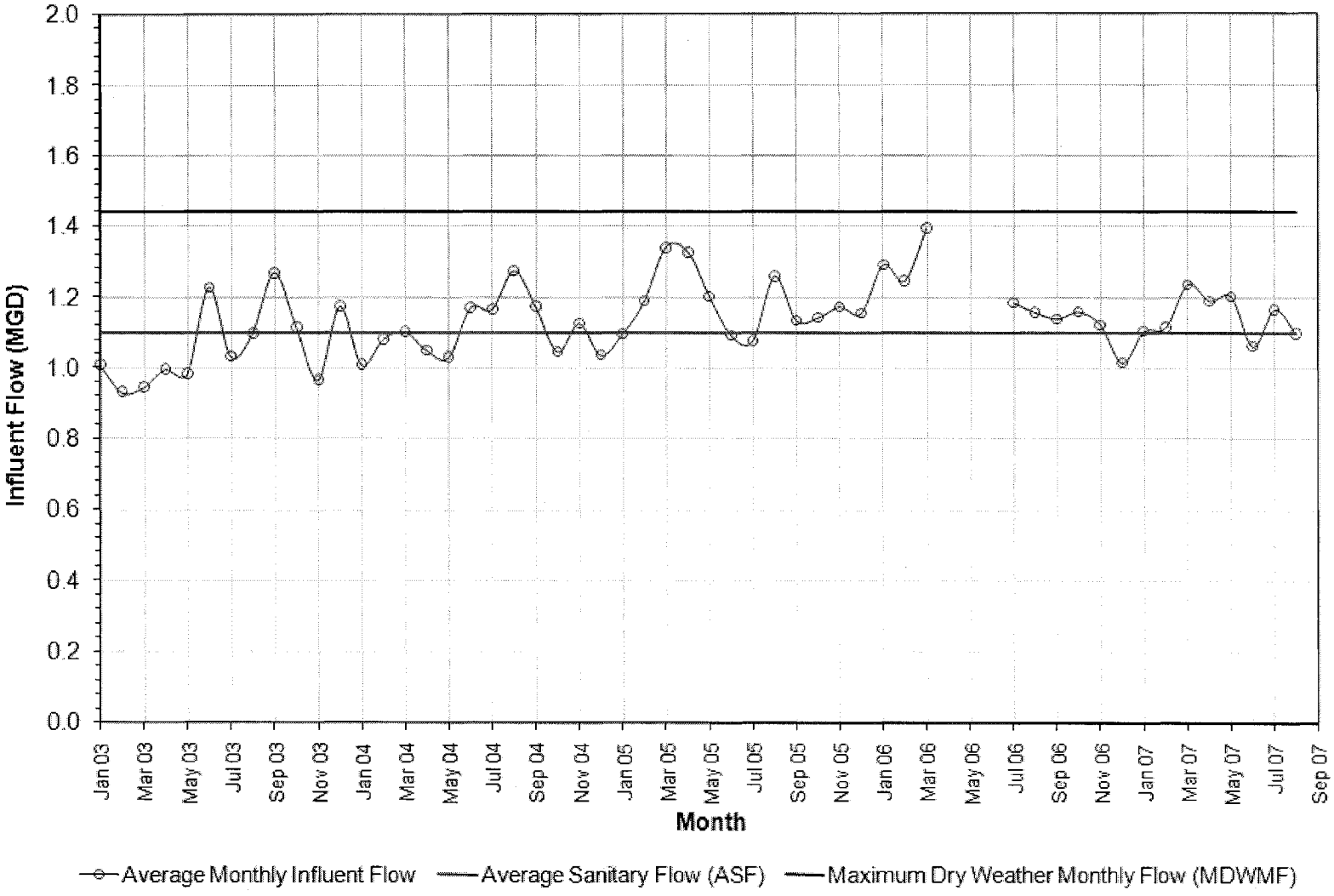

Figure 2-1
Average Monthly Influent Flow, ASF, and MDWMF at the City of Newman WWTP

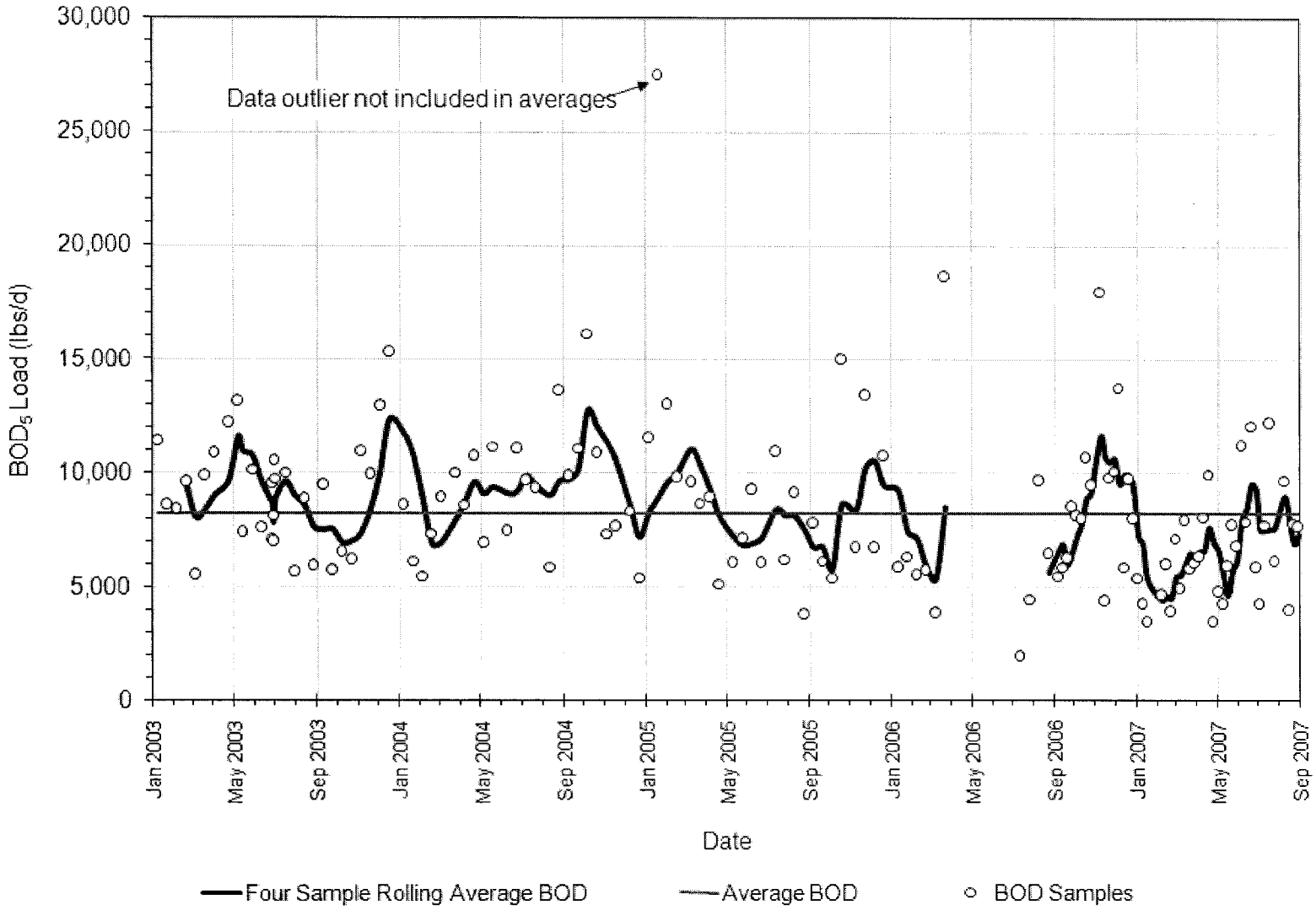

Figure 2-2
City of Newman Historical Influent BOD_5 Loading

A comparison of the existing plant design criteria and the current conditions for flows and loads is displayed in Table 2-2.

Table 2-2
City of Newman WWTP Design and Existing Flows and Loads

Constituent [a]	Existing Plant Design Criteria	Existing Conditions [b]
Flow (Mgal/d)		
Average Dry Weather Flow (ADWF)	1.14	1.17
Average Sanitary Flow (ASF)	--	1.10
Maximum Dry Weather Monthly Flow (MDWMF)	--	1.44
Peak Flow (PF)	1.71	1.40
Peak Hour Flow (PHF)	--	3.00
Constituent (lbs/d)		
Average BOD_5	9,430	8,300
Maximum BOD_5	--	18,000

[a] Mgal/d = million gallons per day; lbs/d = pounds per day.
[b] Constituents loading values determined from bi-weekly data from January 2003 to August 2007.

2.1.3 INDUSTRIAL WASTEWATER CONTRIBUTION

The City WWTP also treats wastewater generated by the industries in the City. Of particular importance is that the F&A Dairy (with an historical average BOD_5 load of about 5,200 lbs/d) represents over half of the influent organic loading to the WWTP. Based on historical data, the average monthly BOD_5 concentration of F&A Dairy discharge is about 1,800 milligrams per liter (mg/l). However, due to the variability in F&A Dairy discharge (ranging from 310 mg/l to 7,700 mg/l during 2005 to 2006) a conservative value of 2000 mg/l is used for analyses in this Master Plan. F&A Dairy is a significant contribution to the influent organic load at the WWTP and much of the variation in influent organic load (Figure 2-2) is likely attributable to this industry. Peak monthly loading from municipal wastewater typically varies about 20 to 30 percent above average. As a result of industrial contributions, the peak monthly loading for the four year period shown in Figure 2-2 varied up to 200 percent above the average and values of 50 to 60 percent above average were not uncommon.

2.1.4 ORGANIC LOADING SPECIAL TESTING

Prior analysis of WWTP influent and F&A Dairy effluent BOD_5 indicated that there was a significant discrepancy in the BOD_5 observed at the WWTP and the load that would be anticipated based on typical residential wastewater strength (Table 2-3). This variance is important since BOD load affects WWTP costs in both the capital cost of the treatment facilities and in the cost to maintain and operate those treatment facilities.

Agenda Item: **9.c.**

City of Newman
City Manager's Office
Memorandum

Date: October 23, 2008
To: City Council
From: Michael E. Holland

Subject: Vacant Property Ordinance

At the previous Council meeting, the Vacant Property Ordinance was introduced by the Council. For this meeting, staff is requesting the Council conduct a Public Hearing for said Ordinance. Due to this not being a regularly scheduled meeting, the Council is prohibited from approving the Ordinance. As a result, staff recommends the Council conducts the public hearing and introduce the Vacant Property Ordinance. Approval of the Ordinance will be scheduled for the December 9th meeting.

ORDINANCE NO. 2008-

MAINTENANCE, SECURITY AND REHABILITATION OF ABANDONED AND VACANT PROPERTY

8.08.010 FINDINGS - DECLARATION OF PURPOSE:

The Council finds that neglected, vacant, and abandoned properties are a major source of blight in residential and non-residential neighborhoods, especially when owners or responsible persons fail to maintain and manage those properties in a manner that ensures they do not become a liability to the surrounding community. Vacant buildings often attract transients, criminals, and drug users. Use of vacant, unsecured buildings by transients and criminals, who may employ primitive cooking or heating methods, creates a risk of fire for the building and adjacent properties and presents a dangerous attractive nuisance to children. Vacant properties are often used as dumping grounds for drug paraphernalia, furniture, tires, garbage, junk and debris, and are frequently overgrown with weeds and vegetation. In addition, the presence of vacant buildings that are simply boarded up for long periods of time to prevent entry by transients or vandals very often discourages economic development and encourages graffiti, disrupting neighborhood stability, retarding appreciation of property values, and promoting blight conditions. As a result, neighboring property owners and occupants are denied full use and enjoyment of their property.

The City currently expends vast resources monitoring and responding to the numerous health, welfare, safety, and economic problems caused by neglected, vacant properties. Because there is already a significant cost to the City for monitoring these properties, as well as a substantial toll on the citizens who are affected by the nuisance conditions created, the City Council finds there is an urgent need to implement a process by which these buildings are monitored and the costs borne by the owners of these properties, rather than the community.

8.08.020 DEFINITIONS:

For the purposes of this chapter, the following terms shall have the meanings indicated below:

ABANDONED: Any residential property in the city that is vacant or shows evidence of vacancy and:

(1) Is under a current notice of default and/or notice of trustee's sale, pending tax assessor's lien sale; and/or
(2) Was the subject of a foreclosure sale where the title was retained by the beneficiary or trustee of a deed of trust involved in the foreclosure who is the current owner of the property; and/or
(3) Was transferred to the current owner under a deed in lieu of foreclosure or sale.

DANGEROUS BUILDING: Any building or structure that is in violation of any condition referenced in chapter 14, article II, division 8, Uniform Code for the Abatement of Dangerous Buildings.

DEFAULT: The failure to fulfill a contractual obligation, monetary or conditional.

EVIDENCE OF VACANCY: Any condition that on its own or combined with other conditions present leads any person authorized to enforce this Code, in his or her reasonable discretion, or would lead any other reasonable person to believe that the property is vacant. Such conditions include, but are not limited to: overgrown and/or dead vegetation, accumulation of newspapers, circulars, flyers, and/or mail, past due utility notices and/or disconnected utilities, accumulation of trash, junk and/or debris, the absence of window coverings such as curtains, blinds and/or shutters, the absence of furnishings and/or personal items consistent with residential habitation,

statements by neighbors, passersby, delivery agents or government employees that the property is vacant.

OWNER: Any person, co-partnership, association, corporation, or fiduciary having a legal or equitable title or any interest in any real property.

PROPERTY: Any unimproved or improved real property or portion thereof, situated in the city and includes the buildings or structures located on the property regardless of condition.

RESIDENTIAL PROPERTY: Any improved real property or portion thereof, situated in the city, designed or permitted to be used for dwelling purposes, and shall include the buildings and structures located on such improved real property. This includes any real property being offered for sale, trade, transfer, or exchange as "residential" whether or not it is legally permitted and/or zoned for such use.

SECURING: Such measures as may be directed by the director of planning or his or her designee that assist in rendering the property inaccessible to unauthorized persons, including but not limited to the repairing of fences and walls, chaining or padlocking of gates, the repair or boarding of door, window and/or other openings. Boarding shall be completed to a minimum of the current HUD securing standards at the time the boarding is completed or required.
VACANT: Any building or structure that is unoccupied or occupied by unauthorized persons whether or not it is secured or boarded.

8.08.030. CLASSIFICATION OF NUISANCES:

The following acts and conditions, when performed or existing upon any lot or parcel within the city, are declared to be unlawful and are defined as and declared to be public nuisances per se that are injurious to the public health, safety, and welfare:

(a) Buildings or structures that are under construction or rehabilitation and are not completed during the term of a valid building permit or building permit extension issued by the director of planning or his or her designee.
(b) Unoccupied buildings or structures that have been left unlocked or otherwise open or unsecured from intrusion by persons, animals or the elements.
(c) Buildings or structures for human use or occupancy that have been left vacant for more than 180 days, unless one of the following applies:
    1. The building or structure is the subject of an active building permit for repair or rehabilitation and the owner is progressing diligently to complete the repair or rehabilitation.
    2. The building or structure complies with all codes adopted by the City of Newman, does not otherwise constitute a public nuisance, is ready for use or occupancy and is actively being offered for sale, lease or rent.
    3. The building or structure, including the premises on which it is located, does not otherwise constitute a public nuisance and is not likely to become apublic nuisance because it is being actively maintained and secured pursuant to Sections 14-523 and 14-524 of this Code.
(d) Every owner, occupant or person having charge or control of a building, structure, or property is liable for violations of this chapter regardless of any contract or agreement with any third party.

8.08.030 MAINTENANCE REQUIREMENTS:

Every owner, lessee, occupant, or person having charge or control of buildings, structures, or property within the city is required to maintain the building, structure or property subject to the following maintenance requirements:

(a) Any condition causing the property to constitute a dangerous building shall be immediately remedied.
(b) Properties must be kept free of weeds, dry brush, dead vegetation, trash, junk, debris, building materials, any accumulation of newspapers, circulars, flyers, notices, except those required by federal, state or local law, discarded personal items including, but not limited to furniture, clothing, large and small appliances, printed material or any other items that give the appearance that the property is abandoned.
(c) The property shall be maintained free of graffiti, tagging or similar markings by removal or painting over with an exterior grade paint that matches the color of the exterior of the structure.
(d) Visible front and side yards shall be mowed, landscaped and otherwise to the satisfaction of the director of planning or his or her designee. Landscape includes, but is not limited to, grass, ground covers, bushes, shrubs, hedges or similar plantings, decorative rock or bark or artificial turf or sod designed specifically for residential installation. Weeds, gravel, broken concrete, asphalt, decomposed granite, plastic sheeting, mulch, indoor-outdoor carpet or any similar materials are not acceptable landscaping. Maintenance of landscaping includes, but is not limited to, regular watering, irrigation, cutting, pruning and mowing of required landscape and removal of all trimmings.
(e) Pools and spas shall be kept in working order so the water remains clear and free of pollutants and debris, or shall be drained and kept dry.
(f) The owner of any vacant building, whether boarded by voluntary action of the owner or as a result of enforcement activity by the city, shall rehabilitate the boarded building for occupancy, in accord with all applicable codes and regulations, within 180 days after the building is boarded, except as provided in subsection 14-522(c)(3) of this Code.

Adherence to this section does not relieve the property owner of any obligations set forth in any covenants, conditions and restrictions and/or homeowners' association rules and regulations which may apply to the property.

8.08.040 SECURITY REQUIREMENTS:

Any property in the City of Newman classified as abandoned or vacant shall be subject to the following security requirements:

(a) All windows, doors (walk-through, sliding and garage), gates and any other opening of such size that it may allow a child to access the interior of the property and or structure(s) shall be secured so as to prevent access by any unauthorized person. In the case of broken windows, securing means the re-glazing or boarding of the window.
(b) Pools and spas shall be fenced or otherwise secured to prevent access or use by any unauthorized person.
(c) The property shall be posted with name and 24-hour contact phone number of a local property management company. The posting shall be no less than 4" x 6" and shall contain, along with the name and 24-hour contact number, the words "THIS PROPERTY MANAGED BY _____ " and "TO REPORT PROBLEMS OR CONCERNS CALL _____." The posting shall be placed on the interior of a window facing the street to the front of the property so it is visible from the street, or secured to the exterior of the building/structure facing the street to the front of the property so it is visible from the street or, if no such area exists, on a stake of sufficient size to support the posting in a location that is visible from the street to the front of the property but not readily accessible to vandals. Exterior posting must be constructed of and printed with weather-resistant materials.

8.08.050 INSPECTION:

The owner shall inspect the abandoned or vacant property on a monthly basis, or more frequently if required by the director of planning or his or her designee, to ensure that the property is in compliance with the requirements of this chapter and any other applicable laws.

8.08.060 ADDITIONAL REQUIREMENTS:

(a) The owner shall comply with all applicable laws and codes, including zoning, historic preservation, housing, and building codes.
(b) If the owner of a vacant property is a corporation, limited liability company or similar entity or is an "out-of-area" beneficiary, trustee, or owner, the owner shall contract with a property management company to ensure that the requirements of this Division, and any other applicable laws, are being met.
(c) The Chief of Police or his or her designee(s) shall have the authority to require the owner of any property subject to this chapter to implement additional maintenance and/or security measures including, but not limited to: securing any or all door, window or other openings, installing additional security lighting, increasing on-site inspection frequency, employment of an on-site security guard or other measures as may be reasonably required to arrest the decline of the property and prevent the maintenance of an attractive nuisance.

8.08.070 OTHER ENFORCEMENT:

Nothing in this chapter shall preclude the City from demolishing any building on the property or taking any other action authorized by this Division, or other provisions of this Code, or applicable law.

8.080.080 APPEALS:

Any person aggrieved by any of the requirements of this Division may appeal, in accordance with the provisions of 8.060.

8.08.90 VIOLATION/PENALTY:

A violation of this Division shall be treated as a strict liability offense regardless of intent. Any person, firm, or corporation that violates any provision of this Division shall be subject to prosecution and administrative enforcement as provided in the Newman Municipal Code.

8.080.100 SEVERABILITY:

If any section or portion of this ordinance shall be determined invalid or unconstitutional, that section or portion shall be deemed severable and all remaining sections or portions shall remain in full force and effect.

8.080.110 EFFECTIVE DATE

The City Council hereby finds that there is a current and immediate threat to the public health, safety, and welfare. The facts constituting this emergency are as follows: The number of vacant properties due to foreclosure and abandonment is imminently straining local resources in the City of Newman, causing blight in severe numbers, creating harborages for criminal activity, the effect of which is causing an overall devaluation of local properties. The City does not have the resources to devote to the severe

blight and management of these properties and, therefore, must initiate measures such as this to prevent the proliferation of criminal activity and blight by the vacant and abandoned properties.

Introduced at a regular meeting of the City Council of the City of Newman held on the 28th day of October, 2008 by Council Member Kelly, and at the special meeting of the City Council of the City of Newman held on the 18th day of November, 2008 by Council Member _____ and adopted at a regular meeting of said City Council held on the 9th day of December, 2008 by the following vote:

AYES:
NOES:
ABSTENTIONS:
ABSENT:

APPROVED:

_____
Mayor

ATTEST:

_____
Deputy City Clerk

Agenda Item: **10.a.**

City of Newman
Community Development Department
Memorandum

From: Stephanie Ocasio, Assistant Planner
To: Honorable Mayor and Members of the City Council
Date: November 13, 2008
Subject: Appeal of VA #2008-02

On September 18th the Planning Commission was presented an application from Joe Winters to allow a Variance permitting a fourteen (14) foot tall accessory building where the code allows a maximum height if twelve (12) feet. The proposed accessory building has already been erected and the applicant wishes to retain said building on the basis that he wishes to prevent further vandalism and damage to his personal property.

The Planning Commission was presented the information and the necessary findings to support both approval and denial. Upon review, the Planning Commission decided that the necessary findings could not be made to support approval of the Variance. As provided in the code, the applicant appealed the Planning Commission's decision to the City Council.

On October 28, 2008, Council was presented with the applicant's appeal requesting that the Planning Commission decision be overturned. Upon review and discussion of the staff report and site photographs, the item was continued to the November 18, 2008 meeting in an effort to provide a solution that benefited both the applicant and abided by applicable regulations.

As of this date, the applicant has been in contact with the installing contractor, Carolina Carports, and is still determining any/all possible alternatives for the subject accessory building.

Agenda Item: 10.b.

Honorable Mayor and Members
of the Newman City Council

City Council Meeting
of November 18, 2008

APPROVAL OF AN AMENDMENT TO THE STANISLAUS COUNTY CONSOLIDATED PLAN (FY 07-12) AND ANNUAL ACTION PLAN (FY 08-09) TO INCLUDE THE EXPENDITURE OF HUD ENTITLEMENT GRANT FUNDS UNDER THE NSP

RECOMMENDATION:

1. Approval of an Amendment to the Stanislaus County Consolidated Plan (FY 07-12) And Annual Action Plan (FY 08-09) To Include The Expenditure Of $9,744,482.00 In HUD Entitlement Grant Funds Under The Neighborhood Stabilization Program (NSP).

BACKGROUND:

Stanislaus County is part of a six-member CDBG/ESG consortium that includes the City of Newman.

The Federal Community Development Block Grant (CDBG) encompasses the following three specific goals:

1. Provide decent housing
2. Provide a suitable living environment
3. Expand economic opportunities

The Annual Action Plan has been developed to aid the consortium in achieving these goals. In addition, the Consortium's Consolidated Plan outlines the goals and policies for utilizing CDBG funds to service low income households and persons in the areas of housing, associated infrastructure and economic development.

As funded under the 2008 Housing and Economic Recovery Act (HERA), the Neighborhood Stabilization Program provides grants to every state to purchase foreclosed/abandoned homes and to rehabilitate/resell/redevelop areas in order to stabilize neighborhoods and stem the decline of home values in these communities.

Grants are allocated based on the following:

1. Number of Foreclosures
2. Number of homes financed by a subprime related loan
3. Number of homes in default or delinquency

With this formula, the Stanislaus County CDBG Consortium was allocated $9,744,482.00, of which the City of Newman is eligible to receive $1,002,000.00 of said allocation.

In an effort to provide a variety of housing for different income level households, the City of Newman has proposed to use 38% of the NSP funds within the CDBG Project Area and the remaining 62% in areas of town that have been hit the hardest by the foreclosure crises.

In order to utilize NSP funds, the Stanislaus County CDBG Consortium must abide by a set of certifications, they are the following:

1. Affirmatively Further Fair Housing
2. Comply with Anti-Lobbying Restrictions
3. Possess the legal authority to carry out the program (in accordance with HUD)
4. NSP Housing Activities are consistent with the consolidated plan
5. All acquisition and relocation requirements under 42 U.S.C. 4601 will be followed
6. Compliance with §3 of 12 U.S.C. 1701u
7. Citizen Participation compliance
8. Follow the current HUD approved Consolidated Plan
9. All funds will be utilized within 18 months of receipt
10. All NSP funds will be used with respect to individuals and families whose incomes do not exceed 120% AMI
11. Assessments will not be made on CDBG improvements
12. Prohibit the use of excessive force against individuals engaging in and/or physically barring entrance to or from civil-rights activities
13. Compliance with the Civil Rights Act of 1964 and Fair Housing Act
14. Compliance with lead-based paint procedures
15. Compliance with all applicable laws

In order to receive the above-mentioned allocation, the Stanislaus County CDBG Consortium must approve an amendment to its consolidated and annual action plans. The said amendment serves as the Consortia's application for NSP funds and is due to HUD by December 1, 2008.

ANALYSIS:
Approval of an amendment to the Stanislaus County Consolidated Plan (FY 07-12) and Annual Action Plan (FY 08-09) to include the expenditure of $9,744,482.00 in HUD entitlement grant funds under the Neighborhood Stabilization Program (NSP) will allow the Stanislaus County CDBG Consortium to apply for and subsequently receive NSP funds (upon authorization from HUD).

FISCAL IMPACT:
Positive, the City of Newman is eligible to receive $1,002,000.00.

CONCLUSION:
Staff recommends Council approval of the Amendment to the Stanislaus County Annual Action and Consolidated Plans.

Respectfully submitted,

Stephanie Ocasio
Assistant Planner

REVIEWED/CONCUR

Michael Holland
City Manager

Agenda Item: 10.c.

Honorable Mayor and Members
of the Newman City Council

City Council Meeting
of November 18, 2008

AMENDING TITLE 11.05 - WATER SERVICE REGULATIONS

RECOMMENDATION:
It is recommended that the Newman City Council:

- Introduce an Ordinance Amending Title 11.05 Water Service Regulations of the Newman City Code.

BACKGROUND:
The Current City Code states specific dollar amounts for the water deposit and other fees. Staff would like to revise the code to eliminate the specific amounts, and as an alternative set the deposit and other fees by resolution.

ANALYSIS:
Staff is researching the effects of increasing the amount of the water deposit because with the increase in water rates the current amount of the utility deposit does not completely cover one months billing. By increasing the amount of the deposit staff hopes to decrease the amount sent to collections.

FISCAL IMPACT:
There are minimal administrative costs associated with changing the city code.

CONCLUSION:
The revisions to the City Code would allow staff to change the water deposit and other fees, saving staff time and money.

Respectfully submitted:

Sonya Silva
Finance Director

Reviewed/Concur

Michael E. Holland
City Manager

ORDINANCE NO. 2008-

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF NEWMAN AMENDING TITLE 11.05 - WATER SERVICE REGULATIONS

The City Council of the City of Newman does ordain as follows:

Section 1.
That Title 11 of the Newman City Code is amended as follows:

11.05.190 Reconnection fee.
In the event that a consumer's service has been disconnected from the Water Department on account of any violation of this chapter, the Water Department is hereby authorized and directed to charge a reasonable fee ~~of $15.00~~, in addition to all other charges provided for herein for said reconnection.
In the event that a consumer's service has been disconnected from the Water Department on account of any violation of this chapter, the Water Department is hereby authorized and directed to charge a reasonable fee, ***as established by resolution****, in addition to all other charges provided for herein for said reconnection.*

11.05.100 Delinquent consumers.
If a consumer, who has initially established his credit, as in this chapter provided, or who has received service prior to the enactment of this chapter, later fails to pay his water bill to the Water Department, a cash deposit as provided in NCC 11.05.020 will be demanded, irrespective of whether or not the consumer owns the premises supplied by the service, in addition to payment of all delinquent bills and penalties. If he fails to pay said delinquent bills and make a cash deposit, his water service shall be discontinued after the expiration of 10 days' notice to discontinue service. If water service is discontinued, said service may again be established only in the event that the consumer or applicant for service pays all delinquent bills, makes said cash deposit and pays in addition thereto, ~~the sum of $15.00~~. Thereupon, and not otherwise, will service be resumed.
If water service is discontinued, said service may again be established only in the event that the consumer or applicant for service pays all delinquent bills, makes said cash deposit and pays in addition thereto, ***as established by resolution****. Thereupon, and not otherwise, will service be resumed.*

11.05.020 Application for service – Deposit.
A. Application. Before water will be supplied by the Water Department to any person, which requires a connection from the Department's water mains to water pipes on any real property, the owner or occupant of the property shall make a written application for such service and service connection upon a form provided by the Water Department. The information required in all instances, where application is made for water, shall include the name and address of the applicant, a description of the real property by lot number, block and tract and the official house number assigned to the premises, for which water is desired, together with a statement of the applicant's relation to the property, whether as owner, occupant, lessee or otherwise.
A. Application. Before water will be supplied by the Water Department to any person, which requires a connection from the Department's water mains to water pipes on any real property, the owner or occupant of the property shall make a written application for such service and service connection upon a form provided by the Water Department, ***and pay a non-refundable application fee as established by resolution.***

B. Deposit. The Water Department, as a condition to granting such application and supplying water to the premises, therein described, ~~when the applicant is not owner of the premises, is authorized, and shall~~

~~require a cash deposit in the sum of $50.00.~~ The deposit will be refunded when the services are discontinued, provided all charges to the applicant by the Water Department have been paid, otherwise said deposit shall be applied to the account of the applicant. The deposit will also be refunded, without interest, if the applicant has, as determined by the Finance Officer, a good payment record for the 18-month period immediately preceding.

B. Deposit. The Water Department, as a condition to granting such application and supplying water to the premises, therein described, is authorized, and shall require a cash deposit, ***as established by resolution****. The deposit will be refunded when the services are discontinued, provided all charges to the applicant by the Water Department have been paid, otherwise said deposit shall be applied to the account of the applicant. The deposit will also be refunded, without interest, if the applicant has, as determined by the Finance Officer, a good payment record for the 18-month period immediately preceding.*

Section 2.
All other sections and provisions of Title 11.05, shall remain in full force and effect.

Section 3.
That a duly noticed public hearing was held by the City Council.

Section 4.
This Ordinance shall take effect 30 days after the date of its adoption, and prior to the expiration of 15 days from the passage thereof shall be published and circulated in the City of Newman and thenceforth and thereafter the same shall be in full force and effect.

Introduced at a regular meeting of the City Council of the City of Newman held on the 18th day of November, 2008 by Council Member _____, and adopted at a regular meeting of said City Council held on the 9th day of December, 2008 by the following vote:

AYES:
NOES:
ABSENT:

APPROVED:

ATTEST:

_____
Mayor

_____
Deputy City Clerk

Agenda Item: 10.d

Honorable Mayor and Members
of the Newman City Council

City Council Meeting
of November 18, 2008

APPROVAL OF ANIMAL SERVICES AGREEMENT WITH CITY OF GUSTINE

RECOMMENDATION:
Staff recommends the City Council adopt Resolution No. 2008- , approving the attached Animal Services Agreement for animal boarding with the City of Gustine, authorize a budget adjustment for the purchase of an animal services pick-up, and authorize the City Manager to execute the agreement with the City of Gustine.

BACKGROUND:
The City of Newman currently contracts for animal control services with Stanislaus County. The Police Department coordinates this contract with the county. The City of Newman budgeted $30,000.00 for FY 08/09 for this contract. In early October of 2008 the City of Newman along with all of the other cities that contract for animal services with the County was notified that all existing contracted were being terminated as of January 1, 2009 and new contracts would have to be negotiated. The County further advised the projected costs for new contracts would exceed existing costs because of the building of a new animal shelter. In other words the County indicated the cities would have to share in the cost for construction of the new facility. Staff immediately began exploring other options that would maintain our existing level of service or exceed it at a reduced expense.

ANALYSIS:
Based upon statistics provided by Stanislaus County 373 animals entered the Stanislaus County Animal Shelter by various means from the City of Newman. (See Attachment A for details). Staff studied the statistics as well as other services that would be required to perform these duties internally versus outsourcing to Stanislaus County. Staff has determined that all field services for animal control can be accomplished by existing staff within the Police Department. Primarily this duty will rest with the Department's Community Service Officer and will be supplemented by on duty police officers as needed. To provide for this new service the Police Department will need to acquire a pick up truck to transport animals.

The second component to animal control services is boarding the animals for reunification with their owners or final disposal by other means. The City of Newman's temporary animal shelter is inadequate and cannot humanely board animals at this time. The City of Gustine has recently built a shelter that is capable of handling our animals in addition to theirs. They report their shelter is consistently at 50% capacity. Staff has negotiated an 18 month agreement where the City of Newman would be responsible for all animal services in the City of Newman and the City of Gustine would board Newman's animals the required legal period.

The animals would be reunited with their owners from the Gustine Shelter, adopted, released to rescue groups, or surrendered to Merced County. This arrangement is an improved level of service to our residents since they will no longer have to drive to Modesto to obtain their animals and the City of Newman regains full control of the level of service provided to our citizens.

Staff is discussing a partnership with our local veterinarians for spay/neuter/vaccination clinics within the city limits. This partnership would enhance our service delivery to our citizens and increase compliance with local ordinances. Several amendments to the Newman City Code will be required at future council meetings to return licensing and other ordinances to full city control.

FISCAL IMPACT:
As noted above $30,000.00 is currently budgeted for FY 08/09 for our animal control contract with Stanislaus County. This amount has been consistent for the last several years. Stanislaus County projects our new cost after January 1, 2009 to be $122,305 annually. This amount includes Stanislaus County retaining our revenues for all licensing and enforcement fines. This is a 300% increase in our cost. The Police Department budget cannot absorb this increase without loss of sworn personnel.

Assuming field duties with existing personnel does not have any fiscal impact as the CSO's salary/benefits are already fully budgeted for FY 08/09.

Assuming 300 animals a year require boarding for seven days each (worst case – highly unlikely), contracting for boarding services with the City of Gustine will cost $21,000.00 annually. This amount is approximate based on the manner animals are received. Staff used a worst case scenario approach to determine this annual expense. It is anticipated that at least half of those animals will require euthanasia. This cost is estimated at 8,000.00 annually. Additional expenses such as supplies, veterinary services, and related costs are anticipated at about $10,000.00 annually. Total anticipated annual animal control expense for the City of Newman is estimated at 39,000.00.

Based upon Stanislaus County statistics, Stanislaus County receives $21,600.00 annually in revenue for City of Newman animals. Staff does not expect to initially receive this amount of revenue as it will take some time for all county animal licenses to expire and be renewed with the city. Into the second year the City of Newman should realize the full potential of revenue from consistent enforcement of animal ordinances as well as local licensing. This license and fine revenue will offset our expected annual expenses leaving the City of Newman with an anticipated annual animal control cost of $17,400.00.

The purchase of a used pick-up for the use of animal control is estimated at $12,000 as a one time cost. No additional expense is anticipated in the vehicle maintenance or fuel accounts since the CSO will no longer use the sedan. The existing CSO sedan would remain with the PD as a pool vehicle and a 2002 sedan currently being used as a pool vehicle would be become surplus and available for sale to recover some of the cost to purchase a used pick-up. Staff recommends the City Council transfer $12,000.00 from 10-6200-21 Contract Services to 71-7105-21 Capital Repair and Improvements to be used for the purchase of a used pick-up. To date, the City of Newman has paid Stanislaus County $3164.00, for animal control services for the first quarter of FY 08/09 (due to staffing shortages Stanislaus County has not been able to provide the contracted amount of hours for the City of Newman). Staff expects our expenses for the second quarter to be similar leaving a surplus from the original budgeted $30,000.00 allowing for the purchase of the pick-up.

ATTACHMENTS:
Attachment A: Kennel Statistics Report 07/01/07 to 06/30/07
Attachment B: Stanislaus County Animal Services Projected Cost to Contracted Cities
Attachment C: Proposed Agreement with City of Gustine

CONCLUSION:
This staff report is submitted for City Council consideration and action. The proposed recommendations provide an improved service for our residents at a reduced expense toward the General Fund. The Police Department is confident the proposals are in the best interest of the City of Newman.

Respectfully submitted,

Adam McGill
Chief of Police

REVIEWED/CONCUR:

Michael Holland
City Manager

RESOLUTION NO. 2008-

A RESOLUTION AUTHORIZING THE CITY MANAGER TO EXECUTE A CONTRACT FOR ANIMAL SERVICES WITH THE CITY OF GUSTINE

WHEREAS, the City of Newman has put a high priority on providing the best quality services to its citizens, and

WHEREAS, in early October of 2008 the City of Newman the was notified by Stanislaus County that our existing contract with them for animal services was being terminated as of January 1, 2009 and a new contract would have to be negotiated, and

WHEREAS, Stanislaus County further advised the projected costs for new contracts would exceed existing costs because of the building of a new animal shelter, and

WHEREAS, the City of Newman has determined that all field services for animal control can be accomplished by existing staff within the Police Department, and

WHEREAS, the City of Gustine has recently built a shelter that is capable of handling both City's animals, and

WHEREAS, staff has negotiated an 18 month agreement where the City of Newman would be responsible for all animal services in the City of Newman and the City of Gustine would board Newman's animals the required legal period, and

WHEREAS, this arrangement is an improved level of service to our residents, and

WHEREAS, the City of Newman and the City of Gustine have previously contracted with each other for the animal services, and

WHEREAS, the City Council is desirous of entering into a contract with the City of Gustine, and

WHEREAS, the City Council of the City of Newman has determined it would be in the best interest to enter into a contract with the City of Gustine.

NOW, THEREFORE, BE IT RESOLVED that the Newman City Council hereby authorizes the City Manager to execute a contract with The City of Gustine for Animal Services.

The foregoing resolution was introduced at a regular meeting of the City Council of the City of Newman held on the 18th day of November, 2008 by Council member _____, who moved its adoption, which motion was duly seconded and it was upon roll call carried and the resolution adopted by the following roll call vote:

AYES:
NOES:
ABSENT:

APPROVED:

_____
Mayor of the City of Newman

ATTEST:

_____
Deputy City Clerk of the City of Newman

Kennel Statistics Report
Animals Taken Into Shelter from 07/01/07 to 06/30/08
Newman

	CAT	DOG	KITTEN	OTHER	PUPPY	TOTAL
Confiscate	0	4	0	0	0	4
Dead on Arrival	32	8	0	9	0	49
Owner Requested Euthanasia	5	8	0	0	0	13
Sent to Foster	11	9	0	0	0	20
Stray	142	93	9	16	11	271
Surrendered by Owner	3	11	0	0	2	16
TOTAL	193	133	9	25	13	373

Kennel Statistics Report
Animals That Left Shelter from 07/01/07 to 06/30/08
Newman

	CAT	DOG	KITTEN	OTHER	PUPPY	TOTAL
Adopted	5	26	3	2	7	43
Died	2	0	2	2	1	7
Disposal	38	10	0	9	0	57
Euthanized	131	63	2	1	0	197
Foster	8	0	1	0	0	9
Missing	9	0	1	0	0	10
Returned to Owner	1	22	0	0	2	25
Taken by Rescue Agency	0	17	0	0	0	17
Transferred to Another Shelter	0	1	0	12	0	13
TOTAL	194	139	9	26	10	378

Animals on hand on June 30, 2008 = **538**

Animal S vices
Projected Cost to Contracted Cities

DRAFT

Agency	Percentage of animals taken into the Shelter	2008-2009 Projected Operational Costs	2007-2008 Actual Revenue	Net	January 1, 2009 - June 30, 2009 (6 Months)
City of Modesto	41.0%	$ 884,985	$ 465,575	$ 419,410	$ 209,705
City of Ceres	11.0%	$ 440,597	$ 85,517	$ 355,080	$ 177,540
City of Riverbank	3.4%	$ 224,846	$ 47,145	$ 177,701	$ 88,851
City of Patterson	2.3%	$ 122,215	$ 33,275	$ 88,940	$ 44,470
City of Waterford	1.3%	$ 93,312	$ 27,095	$ 66,217	$ 33,109
City of Newman	1.3%	$ 127,082	$ 21,600	$ 105,482	$ 52,741
City of Hughson	1.2%	$ 49,638	$ 16,404	$ 33,234	$ 16,617
Stanislaus County	38.5%	$ 1,216,481	$ 260,898	$ 955,583	$ 477,792
City of Turlock			$ 15,819	$ (15,819)	
City of Oakdale			$ 6,909	$ (6,909)	
Total	**100.0%**	**$ 3,159,156**	**$ 980,237**	**$ 2,178,919**	**$ 1,100,825**

* Estimates do not include July 15, 2008 Board Approved new and increased fees.
* City of Modesto's Projected Operational Costs do not include Field Services

Agency	Percentage of animals taken into the Shelter	2009-2010 Projected Operational Costs	2007-2008 Actual Revenue	Net	New Facility Costs		Total
					Debt Service	Operating Costs	
City of Modesto	41.0%	$ 884,985	$ 465,575	$ 419,410	$ 398,328	$ 132,258	$ 949,996
City of Ceres	11.0%	$ 440,597	$ 85,517	$ 355,080	$ 106,868	$ 35,484	$ 497,432
City of Riverbank	3.4%	$ 224,846	$ 47,145	$ 177,701	$ 33,032	$ 10,968	$ 221,701
City of Patterson	2.3%	$ 122,215	$ 33,275	$ 88,940	$ 22,345	$ 7,419	$ 118,704
City of Waterford	1.3%	$ 93,312	$ 27,095	$ 66,217	$ 12,630	$ 4,193	$ 83,040
City of Newman	1.3%	$ 127,082	$ 21,600	$ 105,482	$ 12,630	$ 4,193	$ 122,305
City of Hughson	1.2%	$ 49,638	$ 16,404	$ 33,234	$ 11,658	$ 3,871	$ 48,763
Stanislaus County	38.5%	$ 1,216,481	$ 260,898	$ 955,583	$ 374,039	$ 124,193	$ 1,453,815
City of Turlock			$ 15,819	$ (15,819)			$ (15,819)
City of Oakdale			$ 6,909	$ (6,909)			$ (6,909)
Total	**100.0%**	**$ 3,159,156**	**$ 980,237**	**$ 2,178,919**	**$ 971,530**	**$ 322,579**	**$ 3,473,028**

* Debt Service assumes a $11 million project cost over 20 years.
* Percentages used to calculate animals taken into the Shelter are based on addresses using the County GIS system.

ANIMAL SERVICES AGREEMENT

This agreement is entered into this_____day of _____ 2008, between the City of **Gustine**, and the City of **Newman**.

ARTICLE 1

DESCRIPTION OF SERVICES

1.1 The City of Gustine will provide the following limited Animal Control Services to the City of Newman. The services selected by the City of Newman are described as follows, and are subject to the following terms and conditions. This agreement only relates to the impounding of cats and dogs, and does not include any other animals. Refer to ATTACHMENT A for specific cost for service.

1.2 ANIMAL IMPOUND

The City of Newman is responsible for transporting all animals to the Gustine City Kennel. Keys and gate controllers will be provided to the City of Newman.

1.3 PATROL SERVICES

The City of Gustine will not provide any patrol services within the incorporated limits of the City of Newman.

1.4 EMERGENCY CALL OUT

Absent exigent circumstances, Gustine Police Employees will not respond to the City of Newman to assist with Animal Control details. Any emergency call out will follow the current and future Mutual Aid Agreement between the City of Newman and the City of Gustine.

1.5 SHELTER SERVICES

The City of Gustine will provide kennel services for the City of Newman, specifically for cats and dogs. The City of Gustine will be responsible for the routine care of said animals, including feeding, shelter and cleaning of shelter facilities.

After a 7 day waiting period, any animal not returned to its owner or otherwise released shall be surrendered to Merced County Animal Control, for animal disposal, pursuant to the City of Gustine's contract with Merced County. The City of Gustine will facilitate such surrenders. The City of Newman agrees to pay for disposals at the agreed upon rate listed in Attachment A. Such fee includes an administrative fee.

1.6 VETERINARIAN/MEDICAL SERVICES

The City of Newman will be directly responsible for the actual costs of all Veterinarian/Medical Services, for their animals at the Gustine City Kennel. When practical, a Supervisor from the City of Newman will be notified prior to any Veterinarian/Medical Services being obtained for their animals, but the Gustine Animal Control Officer will obtain treatment, without prior approval, at his/her discretion, in exigent circumstances.

1.7 VICIOUS DOGS

The Newman Police Department shall have the responsibility for regulation and control of vicious and potentially dangerous dogs, pursuant to Food and Agriculture Code 31601 et seq.

1.8 LICENSING RESPONSIBILITY

The City of Gustine is not responsible for any animal licensing within the incorporated limits of the City of Newman, or ensuring mandated vaccinations are current prior to the release of any animal.

1.9 ANIMAL BITES

The City of Gustine is not responsible for investigating reports of animal bites, within the incorporated limits of the City of Newman.

1.10 IDENTITY OF OWNER

All animals received by the City of Gustine will be checked for a micro-chip and/or city license, in an attempt to identify their owner.

ARTICLE II

GENERAL PROVISIONS

2.1 ADDITIONAL FEE

The City of Newman agrees to pay the City of Gustine a one time, non-refundable fee of $750.00. This fee is to be used at the discretion of the Animal Control Officer, and will be used solely to increase the capacity of the Gustine City Kennel. This fee is not indicated on ATTACHMENT A.

2.2 PAYMENT OF FEES

The City of Newman agrees to pay the City of Gustine for the services selected and billed, within 30 days of receipt of statement of charges. The City of Gustine will not collect any money from Newman residents in regards to providing Animal Control Services for the City of Newman.

2.3 ANIMAL IMPOUND

The City of Gustine will not accept any animals directly from residents of the City of Newman.

2.4 RELEASE OF ANIMALS

An Employee from he City of Newman will be responsible for responding to the Gustine City Kennel to release animals. Keys and gate controllers will be provided to the City of Newman. Baring exigent circumstances, the City of Gustine will not release any animals impounded for the City of Newman.

2.5 DIRECT ASSISTANCE IN MAINTAINING KENNEL

The City of Newman will provide an employee, designated by the Chief of Police, to assist in routine feeding and cleaning of the kennel facilities. The schedule may be modified, but a total of 4 hours per week is requested. The Newman employee will work under the direction of the Gustine City Animal Control Officer.

2.6 MODIFICATION OF AGREEMENT/FEE SCHEDULE

This agreement may be modified and/or amended at anytime by mutual agreement of the parties, in writing. The attached fee schedule expires on June 30th, 2010, and must be renegotiated for each fiscal year. Any increase in fees shall not exceed 10% annually unless mutually agreed upon by both parties. The City of Newman agrees to honor any increase relating to the direct cost to Merced County for disposal.

2.7 ACCEPTANCE/TERMINATION OF AGREEMENT

This Agreement shall become effective immediately upon approval of the Gustine City Council and the Newman City Council, and shall automatically be renewed yearly thereafter. Either party may terminate the Agreement upon thirty days written notice.

IN WITNESS WHEREOF, This agreement was executed on the date first written above.

CITY OF GUSTINE	CITY OF NEWMAN
By_____	By_____
City Clerk	City Clerk
By_____	By_____
City Manager	City Manager
Approved as to form,	
By_____	By_____
City Attorney	City Attorney

Gustine Police Department
Devon Stavrowsky
Chief of Police
Phone: 209-854-3737 Fax: 209-854-1205
Email: dstavrowsky@gustinepolice.com

TO: CHIEF McGILL

FROM: ACTING CHIEF HAMERA

SUBJ: ESTIMATE OF STARTUP COSTS

DATE: OCTOBER 31, 2008

The following is an estimate of the startup costs to increase the capacity of our kennel:

Remote control	6@$34.00	$204.00
Keys	12@$2.00	$24.00
Feed/water bowels	10@$3.50	$35.00
Feed barrel	1@$25.00	$25.00
Litter boxes/cages	5@$5.00	$25.00
Cage platforms	4@$45.00	$180.00
Unanticipated expenses		$257.00
TOTAL STARTUP COSTS		$750.00

Gustine Police Department
Chief of Police
Phone: 209-854-3737 Fax: 209-854-1205
Email: dstavrowsky@gustinepolice.com

CASE NUMBER _____

ANIMAL SERVICES INVOICE

Date of impound _____

Impounded by _____

Date of release_____

Description of animal _____

Reason for impound _____

Name of owner (if known) _____

Total days of impound	_____	@$10.00 per day	_____
Total days of quarantine	_____	@$15.00 per day	_____
Release to Merced County	_____	@55.00 per animal	_____
		TOTAL BILL	_____

Released to _____

Released by _____

ATTACHMENT A

FEE SCHEDULE JULY 1 2008-JUNE 30, 2009

SERVICE RENDERED	COST
CAT AND DOG BOARD PER DAY	$10.00
QUARANTINE PER DAY	$15.00
FEE FOR DISPOSAL	$55.00

Agenda Item: 10.e.

Honorable Mayor and Members
of the Newman City Council

City Council Meeting
of October 28, 2008

REPORT ON PROPOSED ORDINANCE MODIFICATIONS TO CHAPTER 9.02 – ANIMAL CONTROL

RECOMMENDATION:

Introduction of ordinance modifications to Chapter 9.02.010 through 9.02.300 of the Newman Municipal Code relating to Animal Control.

BACKGROUND:

The current ordinances relating to Animal Control are written to designate Stanislaus County Animal Services as the City of Newman's Animal Services Department. Based on the proposed arranged with the City of Gustine and the City of Newman's contract with Stanislaus County being terminated modifications to the ordinances are necessary to allow the City of Newman Police Chief to be appointed as the Director of Animal Services and allow Newman police officials to enforce said ordinances.

ANALYSIS:

The modifications are necessary to grant authority to Newman police officials in enforcement of animal laws within the City and the authority to license animals within the City of Newman.

FISCAL IMPACT:

According to Stanislaus County statistics, Stanislaus County generates $21,600.00 in revenue annually based upon animal enforcement and licensing within the City of Newman. Adopting the proposed changes will redirect the licensing revenue to the City of Newman and allow the City of Newman to collect all fines relating to animal violations within the City of Newman. Staff anticipates the City will receive approximately the same amount of revenue annual as Stanislaus County previously received.

ATTACHMENTS:

Proposed ordinances.

CONCLUSION:

This staff report is submitted for City Council consideration and action. The proposed ordinance modifications are in the best interest of the City of Newman and its residents. Staff recommends the City Council approve the proposed animal control ordinances within the City of Newman, ordinance No. 2008- _____.

Respectfully submitted,

Adam McGill
Chief of Police

REVIEWED/CONCUR:

Michael Holland
City Manager

ORDINANCE NO. 2008-

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF NEWMAN AMENDING TITLE 9.02 – ANIMAL CONTROL

The City Council of the City of Newman does ordain as follows:

Section 1.
That Title 9 of the Newman City Code is amended as follows:

9.02.010 Definitions.

The words and terms used in this chapter shall have the meaning stated as set forth in this chapter, unless the meaning is clearly intended to be otherwise.

"Animal control center" means the facilities where impounded animals are held.

"Department of Animal Services" means that department of the City government which is specifically charged with the regulation of animals and the enforcement of laws dealing with animals within the incorporated territory of the City.

"Health Department" means the Health Department of the City.

"Health Officer" means the Health Officer of the City.

"Impoundment" means the taking and holding of an animal by the Animal Services Director.

"Kennel" means a place where ~~three~~ four or more dogs or cats over four months of age are kept for commercial or noncommercial purposes. The term "kennel" shall not apply to animal control shelters operated by governmental agencies, nonprofit societies for the care of stray animals or to veterinary hospitals.

"Licensing authority" means the City Clerk or such other ~~County~~ City department designated by resolution of the City Council.

"Owner" means a person who owns, possesses, harbors or controls an animal.

"Person" means one or more human beings and all fictional entities such as corporations, estates, associations, partnerships and trusts.

"Rabies vaccination" means the inoculation of an animal with a rabies vaccine approved by and in the manner prescribed by the California State Department of Public Health.

"Veterinarian" means a person licensed to practice veterinary medicine in the State. (Ord. 91-5, 4-9-1991)

9.02.020 Department of Animal Services – Creation – Director.

There is hereby created a Department of Animal Services within the Police Department. The Department shall be administered by an Animal Services Director who shall be the Chief of Police. ~~appointed by resolution of the City Council upon the recommendations of the City Manager.~~ (Ord. 91-5, 4-9-1991)

9.02.030 Pound established.

The City Council shall establish a suitable animal control center for impounding animals. (Ord. 91-5, 4-9-1991)

9.02.040 Regulations, establishment of.

The City Council may establish by resolution, regulations for the administration and implementation of this chapter which may include a schedule of fees for licenses and for services provided in accordance with this chapter. Such regulations, when adopted, shall become and thereafter be a part of this chapter. A copy of the regulations established by resolution of the City Council shall be filed with the City Clerk and posted at the animal control center. (Ord. 91-5, 4-9-1991)

9.02.050 Enforcement.

The Animal Services Director, who shall be the ~~Chief of Police Animal Services Director for the County of Stanislaus~~, and his or her ~~officers deputies~~ and the City Health Officer who shall be the Health Officer for the County of Stanislaus, and his or her deputies, are empowered, and it shall be their duty to enforce the provisions of this chapter. Any person whose duty it is to enforce the provisions of this chapter may at any reasonable time enter upon private property for such purpose. It is unlawful for any person to interfere with, oppose or resist any authorized person enforcing this chapter. (Ord. 91-5, 4-9-1991)

9.02.060 Authority to pursue animal.

Any person charged with the duty to enforce this chapter who is in pursuit of an animal, shall have the authority to go upon the property of the owner or other person, in order to impound such animal; provided, however, he shall not enter a dwelling without a search warrant and he shall exercise reasonable care to avoid causing damage to the property. (Ord. 91-5, 4-9-1991)

9.02.070 Authority to arrest and issue notices to appear.

Pursuant to the provisions of California Penal Code Section 836.5, the Animal Services Director and his or her employees, Health Officer and his or her employees, and a duly appointed State humane officer are authorized to arrest without a warrant and issue a written notice to appear whenever any such person has reasonable cause to believe that the person to be arrested has committed a misdemeanor in his or her presence which is in violation of this chapter or a violation of any other ordinance or statute which he or she has the duty to enforce. (Ord. 91-5, 4-9-1991)

9.02.080 Equipment to impound authorized.

Any person charged with the duty to enforce this chapter may use any equipment or device necessary to take up and impound an animal. (Ord. 91-5, 4-9-1991)

9.02.090 Firearms authorized.

The Animal Services Director and such employees as he or she may specifically designate in writing are authorized to carry weapons when acting in the course and scope of their employment pursuant to Section 12031 of the Penal Code of the State. (Ord. 91-5, 4-9-1991)

9.02.100 Prohibiting animals in residential areas.

A. Except as otherwise provided herein, it shall be unlawful for any person to own, possess, have in custody, control or maintain any animal upon any lot in any district zoned Estate Residential District or R-E District, Single-Family Residential District, or R-1 District, Duplex Residential District, or R-2 District, or Multiple Residential District or R-3 District in the City located within 300 feet of any residential building in said District owned by other than the owner or custodian of said animal or the tenant of said owner or custodian.

B. The ownership, possession, custody, control or maintenance of the following animals is permitted:

1. Household Pets. "Household pets" are defined as animals ordinarily permitted in the house and kept for company or pleasure and not for profit, such as dogs, cats and canaries, but not including a sufficient number of dogs to constitute a kennel as defined in this chapter, and not to exceed three cats six weeks of age or older. Household pets may also include any:

    a. Bird in a total number not to exceed five at any one time, continuously kept caged and within the confines of a dwelling house.

    b. Mouse, rabbit, guinea pig, hamster, squirrel or animal of like size or species in a total number not to exceed 10 at any one time, continuously kept caged and

within the confines of the dwelling house, or, only at a distance of 40 feet or more from the window or door of any residence or other building used for human habitation, and only on the rear one-third of the lot.

c. Animal continuously confined to a terrarium or aquarium and within the confines of a dwelling house.

d. Animal for which a permit has first been obtained from the City Manager pursuant to the provisions of this chapter.

C. Upon application, the City Manager may issue a permit for the ownership, possession, custody, control or maintenance of any animal on a residential lot otherwise prohibited by this chapter upon such terms and conditions as shall be deemed proper and in the best interests of the community. In issuing or denying permits, the City Manager shall be guided by the following criteria:

1. The purpose served by the ownership, possession, custody, control or maintenance of the animal in relationship to the needs of the community.
2. Provisions for sanitation and safety and for securing the animal.
3. The risk of odors and noise.
4. Prior compliance by the applicant.

D. The City Manager may require a report and investigation from the animal control officer or any other City officer or department before determining whether to issue or deny a permit, including, but not limited to the Health Officer, the City Police Department and the City Fire Department.

E. All permits issued by the City Manager shall be subject to revocation upon notice by mail to the holder of the permit, and after a noticed hearing; provided, however, the City Manager may, in his discretion, provide for a suspension of said permit pending the hearing on the revocation thereof. No permit issued shall create any vested rights in the holder thereof. All permits shall be issued on a yearly basis and shall expire, unless renewed at the request of the applicant, on December 31st of each calendar year.

F. The City Council may impose a reasonable fee for the issuance or renewal of a permit, said fee to be established by resolution of the City Council.

G. A violation of this section constitutes a public nuisance which may be abated in accordance with the laws and ordinances regulating the abatement of a public nuisance. (Ord. 82-7, 12-14-1982)

9.02.110 Animal Services Director.

A. Supervisory Authority. The animal control center and personnel of the Department of Animal Services shall be under the supervision of the Animal Services Director.

B. Duties. The Animal Services Director is primarily responsible for the enforcement and administration of this chapter. His duties shall include but not be limited to the following:

1. To administer the animal control center and keep such records as may be required by the City.
2. To take up and impound animals when authorized by this chapter.
3. To remove and dispose of the carcass of any animal found on any public highway, street, alley or any other public place in the unincorporated area of the County.
4. To quarantine animals and to cooperate with the County Health Officer.
5. To administer licensing programs as delegated by the licensing authority. (Ord. 91-5, 4-9-1991)

9.02.120 Animal restraint.

A. No owner of any animal, wild or domestic, except the domestic cat, shall permit or suffer the animal to:

1. Be off a leash or to be restrained by a leash which is more than eight feet in length, except that an animal need not be on a leash while it is on the premises of its owner nor while on other private property with consent of the owner.
2. Enter upon private property without consent of the owner of the private property.

3. Habitually make loud noises.

4. Act in such other manner so as to constitute a public nuisance.

B. Nothing in this section shall prohibit the use of animals on school property for teaching, use of the blind or other school purposes when permitted by school officials, or require a person to keep any animal in his possession on a leash if at the time the animal is restrained in a vehicle or cage. (Ord. 91-5, 4-9-1991)

9.02.130 Animals in City parks.

A person may bring an animal into a City park subject to the following conditions:

A. The ~~Superintendent~~ Chief of Police ~~of Public Works~~ may refuse admittance or require removal of any animal.

B. Stake leash shall be no more than 15 feet.

C. Walking leash shall be no more than eight feet.

D. The preceding leash requirement shall not apply in areas designated by the Chief of Police or Director of Public ~~Works Superintendent of Public Works~~ for dog training or if the Chief of Police or Director of Public Works ~~Superintendent of Public Works~~ specifically authorizes the owner to engage in dog training. (Ord. 91-5, 4-9-1991)

9.02.141 Dogs – License required – Tags – Rabies vaccination.

A. License Required. Every person who owns, possesses, harbors or controls any dog shall obtain a license before the dog reaches the age of five months. Within 30 days after any unlicensed dog over the age of four months is acquired or brought into the City, its owner shall obtain a license.

B. Tags. The licensing authority shall issue, upon proper application and payment of license fees, a serially numbered license tag stamped with the name of the City and the year of issuance. The owner shall provide a dog with a suitable collar or other device to which the license tag shall be attached. The Animal Services Director shall keep a copy of the application or other records sufficient to establish the identity of the person that owns or harbors the dog.

C. Rabies Vaccination Certificate Required. Each application for a dog license shall be on a form furnished by the licensing authority. An application for a license shall not be accepted unless a valid certificate of rabies vaccination by a licensed veterinarian covering the license period accompanies the application. (Ord. 91-5, 4-9-1991)

9.02.142 Dogs – Exemption, guide dog.

Seeing eye dogs must be licensed but a properly vaccinated seeing eye dog owned by a blind or partially blind person or a dog under one year old being trained especially for the purpose of guiding the blind shall be licensed without charges. (Ord. 91-5, 4-9-1991)

9.02.143 Dogs – Exemption, licensed under another jurisdiction.

A dog brought into the City which has been licensed in another county or city within the State shall not be subject to licensing provisions of this section for so long as the license would be current and valid at its place of issuance or for one year, whichever is the lesser period. (Ord. 91-5, 4-9-1991)

9.02.144 Dogs – Exemption, medical treatment.

Dogs brought into the City for the exclusive purpose of receiving medical care and in the custody of a licensed veterinarian need not be licensed. (Ord. 91-5, 4-9-1991)

9.02.145 Dogs – Exemption, government ownership.

Dogs owned by a county, City or other public agency shall be licensed without charge. (Ord. 91-5, 4-9-1991)

9.02.151 Kennels – License required.

No person shall, without first obtaining a license, keep, conduct or operate any dog kennel, cat kennel, pet shop, zoo, animal rental establishment, riding academy, livery stable, boarding stable, pony ride, livestock auction or market, rodeo, pet show, animal exhibition or any other use of animals for a commercial or noncommercial purpose. No license shall be required for any animal show or a use of animals which is sponsored and controlled by an organization which, under the discretion of the Animal Services Director, has proper rules and procedures to prevent the abuse of animals. (Ord. 91-5, 4-9-1991)

9.02.152 Kennels – License, in lieu of individual licenses.

In lieu of securing the license required by NCC 9.02.141 for each of the dogs in a kennel, a person owning or operating a kennel may obtain a kennel license covering all of the dogs in the kennel. Provisions of NCC 9.02.290 regarding vaccination for rabies shall be adhered to. Dogs owned or controlled by the kennel operator which are allowed outside the confines of the kennel shall be individually licensed as required by NCC 9.02.141. (Ord. 91-5, 4-9-1991)

9.02.153 Kennels – License application form.

Each application for a kennel license or other animal establishment license shall be upon a form furnished by the licensing authority. (Ord. 91-5, 4-9-1991)

9.02.154 Kennels – License, posting.

All licenses under this chapter shall be kept posted in a conspicuous place on the premises. (Ord. 91-5, 4-9-1991)

9.02.155 Kennels – License operating requirements.

Upon filing an application for an original, or a renewal kennel or animal establishment license, the licensing authority shall issue such license, only after certification by the Animal Services Director that:

A. The keeping of animals, or the conduct or operation of business for which the license is requested and at the place set forth in the application will not violate any law or any regulation adopted pursuant to NCC 9.02.040.

B. The conduct or operation of the activity will not endanger the health, peace or safety of the community.

C. The premises where animals are to be kept are clean and sanitary and that animals will not be subjected to suffering, cruelty or abuse.

D. The applicant has not had a similar license revoked within one year prior to the application. (Ord. 91-5, 4-9-1991)

9.02.156 Kennels – License, suspension or revocation.

The licensing authority may revoke or suspend any license issued under this chapter upon recommendation of the animal control officer or Health Officer if it is found that the licensee, his agent or employee has been convicted of any offense involving a violation of California Penal Code Sections 596, 597 and 599 or is in violation of this chapter or of any regulation adopted pursuant to NCC 9.02.040. (Ord. 91-5, 4-9-1991)

9.02.160 Dangerous animals.

A. Investigation. Whenever an animal suspected of being vicious is reported, the Animal Services Director or Health Officer shall investigate the circumstances. He or she may order that the animal be kept within a substantial enclosure, securely leashed or otherwise controlled. If the owner cannot provide restraint, the animal shall be temporarily impounded at the expense of the owner. At any time after seven days impoundment for such purpose, the Animal Services Director may, in his or her discretion, apply the provisions of NCC 9.02.190 through 9.02.270.

B. Impoundment Authorized. If upon receiving written notification the owner fails to restrain or control a vicious animal as ordered, the owner is in violation of this chapter and the

Animal Services Director is empowered to seize and impound or destroy the animal. (Ord. 91-5, 4-9-1991)

9.02.170 Dead or abandoned animals.

A. Abandonment Unlawful. It is unlawful for any person to abandon any animal whether dead or alive.

B. Dead Animal Disposal. The owner of a dead animal shall, within a reasonable time, provide for the burial, incineration in a manner approved by the animal control officer or other disposition of the carcass in a safe and sanitary manner. The owner may request the animal control officer to dispose of the animal at a fee fixed by resolution by the City Council. The animal control officer shall be responsible for disposal of all dead animals whose ownership cannot be established. (Ord. 91-5, 4-9-1991)

9.02.180 Licensing.

A. No person shall possess any animal not commonly kept or raised in the City as a domesticated animal and which is or may be, in the opinion of the Animal Services Director, dangerous to the health and safety of any person, without first obtaining a license for the possession of the animal.

B. If the possession of the animal does not violate any Federal or State law or zoning ordinance, a dangerous animal license may be issued.

C. Each application for a dangerous animal license shall be upon a form furnished by the licensing authority.

D. All licenses issued under this chapter shall be kept posted in a conspicuous place on the premises where the animal resides.

E. Upon filing an application for an original, or a renewal of a dangerous animal license, the licensing authority shall issue such license, only after certification by the Animal Services Director that:

1. The keeping of a dangerous animal for which the license is requested, and at the place set forth in the application will not violate any law or regulation;
2. The keeping of the dangerous animal will not endanger the health, peace or safety of the community;
3. The premises where the dangerous animal or animals are to be kept are clean and sanitary and that the animals will not be subjected to suffering, cruelty or abuse; and
4. The applicant has not had a similar license revoked within one year prior to the application.

F. Any license issued for a dangerous animal may be subject to such additional conditions as may be required by the Animal Services Director.

G. A license shall not be issued, or if issued, shall be revoked, where, in the opinion of the Animal Services Director the possession of the dangerous animal will endanger the health and safety of one or more persons.

H. In the event that a license is denied or revoked, the owner shall, within the time designated and under the conditions required by the Animal Services Director, dispose of the unlicensed animal. (Ord. 91-5, 4-9-1991)

9.02.190 Impoundment.

A. Authorized. Any animal which the animal control officer has reasonable cause to believe is engaged in activities, or existing in a condition prohibited by this chapter shall be impounded.

B. Notice Required – Form – Service.

1. Except as otherwise provided in this chapter, no animal impounded shall be disposed of until and after notice is given by the animal control officer to the owner of the impounded animal, if he is known.
2. The notice to the owner shall be in writing and shall contain a description of the

animal impoundment and the license tag number if available.

3. Notice to the owner may be served by delivering a copy to the owner of the animal personally, or by sending a copy by mail to the address provided on the application for license, or if the animal is unlicensed then to the owner's place of residence or last known address.

4. Service of notice by mail is deemed complete on the day after such mailing. (Ord. 91-5, 4-9-1991)

9.02.200 Notice, unlicensed tattooed animal.

If an impounded animal bears an identification tattoo but has no license tag and the owner is unknown, the notice provided in this chapter shall be given to the Stanislaus County Humane Society. (Ord. 91-5, 4-9-1991)

9.02.210 Duration of impoundment.

A. Licensed Dog. All impounded dogs found wearing a current license tag or bearing an identification tattoo shall, unless sooner redeemed, be kept in the animal control center for a period of not less than seven days after notification.

B. Unlicensed Dog. All impounded dogs found not wearing a current license tag shall, unless sooner redeemed, be kept in the animal control center for a period of not less than four days.

C. Livestock. Any impounded animal which is a kind referred to in Section 17003 of the Agriculture Code (bovine animal, horse, mule or burro) shall be kept in the animal control center for at least five days, unless it is redeemed within that period. If the animal is a bovine animal and is not redeemed, it shall be turned over the State Bureau of Livestock Identification for disposition by that office.

D. Other Animals. Any other impounded animal shall, unless sooner redeemed, be kept in the animal control center for at least four days. (Ord. 91-5, 4-9-1991)

9.02.220 Voluntary surrender.

Any animal which is voluntarily surrendered to or deposited with the animal control center or the animal control officer by the owner shall immediately thereafter become the property of the City for the purposes of NCC 9.02.250 and 9.02.260. (Ord. 91-5, 4-9-1991)

9.02.230 Disposition of injured animal.

A veterinarian who received an injured animal under the provisions of Section 597(f) of the Penal Code shall promptly notify the animal control officer of this disposition of such animal, and if the animal is given care and treatment, the waiting period before destruction of the animal shall be the same as the duration of impoundment provided by this chapter. (Ord. 91-5, 4-9-1991)

9.02.240 Owner redemption.

The owner or person entitled to custody or control of any impounded animal may, at any time before the sale or disposition of the animal, redeem such animal upon complying with the conditions and paying the fees established by resolution of the City Council. (Ord. 91-5, 4-9-1991)

9.02.250 Disposal authorized.

Except as otherwise provided in this chapter, an impounded animal which is not redeemed within the specified holding period shall be considered to be abandoned by its owner and shall become the property of the City ~~County~~. Such animal may be sold, destroyed or otherwise disposed of as authorized by resolution of the City Council. (Ord. 91-5, 4-9-1991)

9.02.260 Sale of animal.

If an animal is sold, the purchaser shall acquire ownership and all rights to the animal as

evidence by the bill of sale signed by the animal control officer. (Ord. 91-5, 4-9-1991)

9.02.270 Diseased or injured animal.

Notwithstanding any provisions of this chapter, an impounded animal, which is determined by the Health Officer or a veterinarian to constitute a health or safety hazard, shall be destroyed or otherwise disposed of without delay by the animal control officer or the veterinarian. An impounded animal which is determined by a veterinarian to be suffering extreme pain due to disease or injury and there is no reasonable probability that the animal will recover from its disease or injury, may be destroyed without delay by the animal control officer or the veterinarian. (Ord. 91-5, 4-9-1991)

9.02.280 Rabies control.

A. Quarantine.

1. The animal control officer shall assure that all animals falling into the following categories are isolated or quarantined at the place and under the conditions prescribed by the Health Officer and pertinent State laws and regulation:

a. Known rabid animals;

b. Suspected rabid animals;

c. Animals that have bitten or otherwise exposed a human to rabies;

d. Animals of a species subject to rabies, which have been bitten by a known rabid or suspected rabid animal or have come in close contact with a rabid or suspected rabid animal.

2. It is unlawful for the owner or keeper of an animal to violate any of the conditions of isolation or quarantine prescribed by the Health Officer.

B. Carcass Delivery. Upon the death of any rabid animal, clinically suspected rabid animal, or animal which has bitten or otherwise exposed a human to rabies, the animal control officer shall obtain and turn over to the Health Officer the carcass of such animal or an adequate specimen thereof.

C. Epidemic, Declaration. The Health Officer may determine and declare that a rabies epidemic or other unusually dangerous health situation exists among dogs or other animals in the City, or in any part thereof. Upon making such a declaration, the Health Officer shall prepare and promulgate, with the approval of the City Council, such rules and regulations as may be necessary for the control of persons and animals within the area where the dangerous conditions exist.

D. Epidemic Rules Enforced. It shall be the duty of the animal control officer to comply with all directives of the Health Officer in the enforcement of the rules and regulations. The rules and regulations, when adopted, shall become and thereafter be a part of this chapter. (Ord. 91-5, 4-9-1991)

9.02.290 Vaccination.

A. Required. Every dog shall have a medically current vaccination with an antirabies vaccine approved by the Health Department of the State. The vaccination shall be administered by a veterinarian or as provided through City or County recognized clinics, and a certificate of vaccination shall be issued to the owner. The certificate of rabies vaccination which accompanies the license application shall be valid if in compliance with the following immunization schedule:

1. Primary Immunization. Primary immunization shall be defined as the initial inoculation of an approved canine rabies vaccine administered to young dogs between the ages of four to 12 months.

2. Revaccination Intervals. The interval for revaccination of dogs administered primary immunization between the ages of four to 12 months will be 12 months. The interval for primary or revaccination of dogs administered rabies vaccine over the age of 12 months shall be at least once every three years.

B. Exemption. Notwithstanding the provisions of subsection (A) of this section, no dog

need be vaccinated for rabies where a licensed veterinarian has certified that the vaccination would endanger the dog's health and the Health Officer endorses on the certificate his approval. The certificate must bear the date of issuance and must be renewed each year.

C. Public Clinic. The Health Officer, in cooperation with the Animal Services Department and the animal control officer, shall establish public dog vaccination clinics at least once each calendar year. The charge for vaccination at such clinics shall not exceed the actual cost involved. (Ord. 91-5, 4-9-1991)

9.02.300 Animal bite.

A. Victim Report. Any person or parent or guardian of such person, or an owner of an animal, bitten or scratched by an animal of a species subject to rabies shall immediately report such incident to the Health Officer or the animal control officer.

B. Animal Bite Medical Report. Every veterinarian and every person providing professional medical treatment for animal bite by an animal of a species subject to rabies shall immediately notify the Health Department whenever rabies is suspected. (Ord. 91-5, 4-9-1991)

9.02.310 Unlawful use of animals – Games prohibited.

It is unlawful for any person, firm or corporation to offer to the public that game known as "loopaduck," or other game employing live animals, whether for consideration or otherwise, regardless of whether merchandise, money or other premiums are given as a reward. (Ord. 91-5, 4-9-1991)

9.02.320 Administration.

A. Department of Animal Services Records. The Animal Services Director shall keep records concerning the operation of the animal control center as prescribed by regulations established pursuant to NCC 9.02.040.

B. Information on Animal Care. The Animal Services Director is authorized to distribute to the people of the City brochures and information pertaining to care and control of animals.

C. Appeal of Administrative Decisions. Any person aggrieved by any decision or action resulting from the application of this chapter may appeal to the City Council. Such appeal must be in writing and must be received by the City Clerk not more than 15 days after such decision or action.

D. License Renewal or Suspension. Whenever provision is made in this chapter for a license or permit, such license or permit shall be renewed annually thereafter or at the next succeeding regular renewal date and annually thereafter as provided by the licensing authority. The Animal Services Director or the Health Officer may revoke or suspend a license whenever such action is necessary to protect the public health and safety or to accomplish the purpose of this chapter. (Ord. 91-5, 4-9-1991)

9.02.330 Violation – Penalty.

A. Infractions. Any person violating any provision of NCC 9.02.020 through 9.02.270 is guilty of an infraction and upon conviction thereof is punishable by a fine of not more than $250.00.

B. Misdemeanors. Any person violating any provision of NCC 9.02.280 through 9.02.310 is guilty of a misdemeanor and upon conviction thereof is punishable by a fine of not more than $500.00 or by imprisonment of not more than six months or by both such fine and imprisonment.

C. Each Day a Separate Offense. Every person violating any provision of this chapter shall be deemed guilty of a separate offense for each day, or portion thereof, during which such violation continues. (Ord. 91-5, 4-9-1991)

D. The City may choose to proceed with violations of provisions NCC 9.02.020 through 9.02.310 as an administrative offense and impose fines established by City Council resolution.

9.02.340 Vicious dog abatement hearing procedure.

A. Purpose and Intent. The provisions of this section provide an administrative procedure by which dogs within the City found to be vicious and a public nuisance may be abated following a hearing at which oral and documentary evidence is considered. This section is intended to supplement rather than supplant any other remedy available either under State law or this City Code.

1. Vicious Dog Defined. Any dog, except one assisting a peace officer engaged in law enforcement duties, which demonstrates any of the following behavior, is presumed vicious:

a. An attack which requires a defensive action by any person to prevent bodily injury or property damage when such person is conducting himself or herself peacefully and lawfully.

b. An attack which results in property damage or in an injury to a person when such a person is conducting himself or herself peacefully and lawfully.

c. An attack on another animal, livestock, or poultry which occurs on property other than that of the owner of the attacking dog.

d. Any behavior which constitutes a threat of bodily harm to a person when such person is conducting himself or herself peacefully and lawfully.

For purposes of this section, a person is conducting himself or herself peacefully and lawfully upon the private property of an owner or possessor of the dog when he or she is on such property in the performance of any duty imposed on such person by State or local law or by the laws or postal regulations of the United States, or when he or she is on such property upon invitation, either expressed or implied.

2. Investigation. Any incident reported to the Newman Police Department concerning a vicious dog shall be investigated by the Police Chief, or his/her designee. The investigation shall consist of reports of officers made at the time of the incident, or follow-up reports. If, based on the investigation, the Police Chief concludes that there is probable cause to believe that the dog is vicious, he/she shall so certify in writing within 10 working days following completion of the investigation to the person owning or controlling the dog. Thereafter, a hearing shall be held pursuant to subsections (A)(4), (5), and (6) of this section.

3. Confinement of Dog. If the Police Chief certifies that there is probable cause to believe that a dog is vicious and a risk to public safety, he/she may direct any animal control officer, police officer or other authorized employee of the City to enter the yard of any private residence or business in order to seize any such dog, whether running at large or not, and confine said dog at an appropriate animal shelter pending the decision of the City Manager following the hearing provided for in subsections (A)(4), (5), and (6) of this section. The cost of said confinement shall be paid by the person owning or controlling such dog. The dog shall not be released until such costs have been paid in full.

4. Hearing Schedule. A hearing date shall be set not later than 10 working days from the date of certification. The City Manager shall mail or otherwise deliver to the owner or person controlling the dog and other interested persons, including, but not necessarily limited to, all properties within 300 feet of the address of the owner or person controlling the dog, at least five working days prior to the date set for hearing, a notice in substantially the following form:

NOTICE OF HEARING REGARDING

VICIOUS DOG

TO:_____ (name)

_____(address).

NOTICE IS HEREBY GIVEN that pursuant to the provisions of NCC 9.02.340 of the Newman City Code, the Police Chief has certified that there is probable cause to believe a dog (breed), owned or controlled by you, is vicious.

FURTHER NOTICE IS HEREBY GIVEN that on _____ the _____ day of _____, 20___, at the hour of _____ o'clock, in the offices of the City Manager, City Hall, 1162 Main St., Newman, California, the report of the Police Chief will be considered by the City Manager or an appointed hearing officer with such other oral and documentary evidence bearing upon the question of whether your dog is vicious. You may appear and may present evidence at the hearing. You may also be represented by an attorney. If you fail to appear without giving notice to the City Manager, the matter may proceed in your absence and such absence may be further considered a waiver of your right to present evidence and object to any decision made.

In the event your dog is found to be vicious, it will be ordered to be controlled, confined, destroyed, restricted, or otherwise abated as a public nuisance and any impoundment cost incurred shall be assessed against you.

A copy of this notice has been sent to property owners within three hundred (300) feet of your address.

Dated: _____

_____

City Manager

5. Hearing Procedure. At the hearing, which may be continued from time to time, both oral and documentary evidence may be taken from any interested person and considered in determining whether the dog is vicious. Any owner who fails to appear after notice as provided herein was given, without obtaining a continuance from the City Manager or an appointed hearing officer, may be deemed to have waived any right to introduce evidence or object to an order made by the City Manager. If the hearing is conducted by a hearing officer other than the City Manager, the hearing officer shall submit a report to the City Manager summarizing the evidence and making a recommendation as to disposition, within three working days.
6. Hearing Findings – Public Nuisance. If, based upon the hearing, and the report of the hearing officer, if any, the City Manager upholds the findings of the Police Chief that the dog is vicious, the City Manager shall so specify in writing together with the reasons therefore. Any dog found to be vicious is hereby deemed a public nuisance and shall be, pursuant to the order of the City Manager, humanely destroyed, be removed from the City, or the nuisance otherwise abated by appropriate order of the City Manager including, but not limited to, confinement, fencing, muzzling or leashing. The decision of the City Manager shall be made within 10 working days after the conclusion of the hearing and shall be final. A copy of the decision shall be sent by certified mail or personally served upon the person owning or controlling the dog.
7. Cost of Impoundment. If the City Manager finds the dog is vicious, the costs of impoundment incurred by the City, including any abatement period, shall be paid by the owner or the person controlling the dog and shall become a lien against the real property upon which

the dog was kept and maintained until said lien is paid. If the order includes the release of a dog found to be vicious to the owner or person controlling it, the dog shall not be released until such costs have been paid in full. If such costs have not been paid within 30 calendar days after the date of mailing or delivery of the order, the City Manager may dispose of the dog in any manner provided by law, or return the dog and pursue alternative collection procedures. The total amount of the impoundment charges may be entered on the next fiscal year tax roll as a lien against the property upon which the dog was maintained and shall be subject to the same penalties as are provided for other delinquent taxes, liens or assessments of the City, or an action may be brought in the name of the City to recover the costs of impoundment.

8. Criminal Sanctions. The first violation of any order issued pursuant to subsection (A)(6) of this section shall constitute an infraction. The second and any further violations within 24 months of the order shall be misdemeanors. (Ord. 96-6, 7-23-1996)

Section 2.
All other sections and provisions of Title 9, shall remain in full force and effect.

Section 3.
That a duly noticed public hearing was held by the City Council.

Section 4.
This Ordinance shall take effect 30 days after the date of its adoption, and prior to the expiration of 15 days from the passage thereof shall be published and circulated in the City of Newman and thenceforth and thereafter the same shall be in full force and effect.

Introduced at a regular meeting of the City Council of the City of Newman held on the 18th day of November, 2008 by Council Member _____, and adopted at a regular meeting of said City Council held on the 9th day of December, 2008 by the following vote:

AYES:
NOES:
ABSENT:

APPROVED:

ATTEST:

_____
Mayor

_____
Deputy City Clerk

Agenda Item: **10.f.**

Honorable Mayor and Members
of the Newman City Council

City Council Meeting
of November 18, 2008

REPORT ON PROPOSED ORDINANCE RELATING TO SOLID WASTE – UNAUTHORIZED ENTRY INTO WASTE CONTAINERS

RECOMMENDATION:

Introduction of an ordinance adding Title 8, Chapter 8.01.180 of the Newman Municipal Code relating to Solid Waste - Unauthorized Entry into Waste Containers.

BACKGROUND:

Staff has received complaints from the community regarding individuals digging in dumpsters and residential waste containers. The new ordinance will address people going through salvageable waste from designated collection containers. A designated collection container includes residential garbage and commercial garbage containers.

The new ordinance states that it is unlawful for any person, except the owner or someone with the owner's consent or authorized City, County, State, or Federal personnel, or employees of the solid waste company that owns the waste container, in the performance of their duties, to rummage, explore, tamper with, move, remove, tip, deface, destroy, scavenge or otherwise search a waste container or the contents.

Although this new ordinance should discourage people from salvaging waste through collection containers, staff stresses the importance of shredding personal information to prevent identity theft.

ANALYSIS:

The Newman Police Department believes the proposed ordinance will reduce people going through salvageable waste and possibly obtaining information for identity theft. Another problem staff has encountered is the salvagers leave trash outside of the containers after rummaging, leaving health and safety issues. A common complaint associated with individuals digging in waste containers is excessive noise from the digging and/or dogs continuously barking. Some individuals who did in waste containers may be prone to commit theft or other crimes while in and around businesses and homes.

Adopting this ordinance will allow the police department to contact individuals digging in garbage and investigate the situation. Enforcement action may or may not be taken at the discretion of the officer investigating. The proposed ordinance does allow property owners to grant permission to individuals if they so desire. The City of Modesto has recently enacted a similar ordinance with success.

FISCAL IMPACT:

There are no fiscal impacts anticipated by adopting this ordinance.

ATTACHMENTS:

Proposed ordinance.

Agenda Item: 10.f.

CONCLUSION:

This staff report is submitted for City Council consideration and action. Staff recommends adoption of the proposed ordinance prohibiting the unauthorized entry into waste containers within the City of Newman, ordinance No. 2008- _____.

Respectfully submitted,

Adam McGill
Chief of Police

REVIEWED/CONCUR:

Michael Holland
City Manager

ORDINANCE NO. 2008-

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF NEWMAN AMENDING CHAPTER 8; HEALTH AND SANITATION, AND ADDING CHAPTER 8.01.180, AN ORDINANCE RELATING TO THE UNAUTHORIZED ENTRY INTO SOLID WASTE CONTAINERS, OF THE CODE OF THE CITY OF NEWMAN, CALIFORNIA.

The City Council of the City of Newman does hereby ordain as follows:

Chapter 8, HEALTH AND SANITATION, Unauthorized Entry Into Solid Waste Containers, Chapter 8.01.180, of the Newman City Code shall be added to read as follows:

WHEREAS, staff has received complaints from the community regarding individuals digging in dumpsters and residential waste containers that disturb the peace, expose residents to identify theft, and/or fail to return the trash to the container, leaving a mess; and

WHEREAS, the new ordinance states it is unlawful for any person, except the owner or someone with the owner's consent or authorized city, county, state, or federal personnel, or employees of the solid waste company that owns the waste container, in the performance of their duties, to rummage, explore, tamper with, move, remove, tip, deface, scavenge or otherwise search a waste container or the contents; and

WHEREAS, the ordinance will reduce people rummaging through salvageable waste and possibly obtaining information used to commit identity theft; and

WHEREAS, this ordinance allows the police department to contact individuals digging in waste containers and investigate their intent; and

WHEREAS, a public hearing was held regarding this matter by the City Council on December 9, 2008, and

WHEREAS, based on the facts, testimony, and circumstances stated herein, it is appropriate and necessary to prohibit the unauthorized entry into waste containers in the City of Newman in order to provide for the public safety, health and welfare of its citizens; and

WHEREAS, after the public hearing held on 9th day of December, 2008, the City Council determined as follows:

1. That the public necessity, convenience and general welfare support the proposed amendment.

2. That the proposed amendment is consistent with the Newman General Plan.

BE IT ORDAINED by the City Council of the City of Newman as follows:

CHAPTER 8.01.180: FINDINGS: The City Council of the City of Newman finds and determines as follows:

A. Staff has received complaints from the community about individuals entering waste containers.

B. The ordinance will reduce people rummaging through salvageable waste and possibly obtaining information used to commit identity theft. The ordiance will

reduce noise complaints and grant the police department the authority to contact individuals entering waste containers and make arrests if appropriate.

C. The City Council finds, based on substantial evidence entered into the record including the staff report and the testimony received at the public hearing for this item that this ordinance is necessary to prohibit the unauthorized entry into waste containers in the City of Newman in order to provide for the public safety, health and welfare of its citizens.

D. The City Council finds that this is a matter of citywide importance and is not directed toward any particular parcel of property.

CHAPTER 8.01.180: UNAUTHORIZED ENTRY INTO WASTE CONTAINERS

8.01.180 DEFINITIONS.

The following words and phrases, whenever used in this article, shall be construed as defined in this section:

(a) "Waste container(s)" means any and all containers including but not limited to automated collection container, detachable container, drop box container, recycling container and standard container.

8.01.190 UNAUTHORIZED ENTRY INTO WASTE CONTAINERS.

(a) The City Council recognizes that there is an increasing problem both nationally and locally involving persons who forage waste containers. The City Council finds that there is risk to the public health and safety when:

(1) waste is strewn about;
(2) waste containers are left open to animals;
(3) waste containers and lids are left in roadways or walkways.

(b) The City Council further finds that entry into waste containers by unauthorized individuals may subject owners to public nuisance liabilities for which they have no remedy unless provided by an addition to the Newman Municipal Code.

(c) The Council hereby finds that an ordinance is needed for the preservation of the public peace, health, safety and general welfare of the residents of the City of Newman based upon the finding of facts declared by the City Council herein above stated.

8.01.200 UNLAWFUL SEARCH AND ENTRY: PENALTY.

(a) It shall be unlawful for any person, except the owner or someone with the owner's consent or authorized City, County, State, or Federal personnel, or employees of the solid waste company that owns the waste container, in the performance of their duties, to rummage, explore, tamper with, move, remove, tip, deface, destroy, scavenge or otherwise search a waste container or the contents thereof.

(b) Any and each violation of Section 5-5.203(a) shall constitute a separate and distinct offense punishable as a misdemeanor and, upon conviction thereof, shall be punishable according to the provisions of this chapter.

8.01.210 PUBLIC NUISANCE.

Rummaging, exploring, scavenging, or otherwise searching a waste container is a violation of the provisions of this Chapter and is hereby declared a public nuisance.

8.01.220 VIOLATION AND PENALTY.

(a) Any person in violation of this Chapter shall be guilty of a misdemeanor

and shall be punishable by a fine of not more than Five Hundred ($500.00) Dollars or imprisonment in the Stanislaus County jail for not more than six (6) months, or both.
(b) Any person that continues in violation of this Chapter shall be guilty of a separate and distinct offense for each and every violation.

TITLE 8, CHAPTER 8.01.180: UNAUTHORIZED ENTRY INTO WASTE CONTAINERS

This Ordinance shall become effective thirty (30) days from and after its final passage and adoption, provided it is published in a newspaper of general circulation at least fifteen (15) days prior to its effective date.

This foregoing ordinance was introduced at a special meeting of the City Council of the City of Newman held on the 18th day of November, 2008. Said ordinance was given a second reading at a regular meeting of said Council on the 9th day of December, 2008, and Councilmember _____ seconded by Councilmember _____, moved the adoption of said ordinance, and upon roll call was carried by the following:

AYES:
NOES:
ABSTENTIONS:
ABSENT:

APPROVED:

_____
Mayor

ATTEST:

_____
Deputy City Clerk

Agenda Item: 10.g.

Honorable Mayor and Members
of the Newman City Council

City Council Meeting
of November 18, 2008

ADOPT RESOLUTION NO. 2008-XX, APPROVING THE KERN STREET AND DRISKELL AVENUE SIDEWALK INFILL PROJECT AND AUTHORIZING JOHN FANTAZIA AS MAYOR, AND MICHAEL E. HOLLAND, AS CITY CLERK TO RECORD A NOTICE OF COMPLETION

RECOMMENDATION:
It is recommended that the Newman City Council approve Resolution No. 2008-XX.

BACKGROUND:
The public works department applied for funds from the Congestion Mitigation and Air Quality Improvement Program programming cycle fiscal year 07/08 in an effort to continue with our Sidewalk Infill Project. The project was intended to enhance and encourage pedestrian movement to the downtown area thereby providing access to pedestrians and individuals with disabilities.

ANALYSIS:
On May 22, 2007, the council approved the Kern Street and Driskell Avenue Sidewalk Infill Project that was recently completed. The project included the installation of sections of sidewalk on the south side of Kern Street, from M Street to Balsam Drive, and the south side of Driskell Avenue from Balsam Drive to Eucalyptus Avenue It also included the installation of handicap ramps, and replacement of valley gutters.

FISCAL IMPACT:

$81,562.50

CONCLUSION:
It is recommended that the city council approve the Kern Street and Driskell Avenue Sidewalk Infill Project resolution.

Garner Reynolds
Director of Public Works

REVIEWED/CONCUR:

Michael E. Holland
City Manager

RESOLUTION NO. 2008-.

A RESOLUTION APPROVING THE KERN STREET AND DRISKELL AVENUE SIDEWALK INFILL PROJECT AND AUTHORIZING JOHN FANTAZIA AS MAYOR, AND MICHAEL E. HOLLAND, AS CITY CLERK TO RECORD A NOTICE OF COMPLETION

WHEREAS, on the 28th day of July, 2008, agreements were entered into between the CITY OF NEWMAN, and BDS CONSTRUCTION INC., for the making of certain improvements in the City of Newman, County of Stanislaus, State of California, known as the KERN STREET AND DRISKELL AVENUE SIDEWALK INFILL PROJECT; and

WHEREAS, the improvement security referred to in said agreement was duly executed and filed by BDS CONSTRUCTION INC;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Newman as follows:

1. That the improvements referred to in said agreement and the maps and other matters referred to therein be, and the same hereby are, approved and accepted.

2. That John Fantazia, as Mayor and Michael E. Holland as City Clerk, are hereby authorized and directed to execute and record a Notice Of Completion of said improvements.

The foregoing resolution was introduced at a regular meeting of the City Council of the City of Newman held on the 18th day of November, 2008 by Council Member _____, who moved its adoption, which motion was duly seconded and it was upon roll call carried and the resolution adopted by the following roll call vote:

AYES:

NOES:

ABSENT:

APPROVED:

_____
John G. Fantazia, Mayor

ATTEST:

_____
Michael E. Holland, City Clerk

I hereby certify that the foregoing resolution is a full, correct and true copy of a resolution passed by the City Council of the City of Newman, a municipal corporation of the County of Stanislaus, State of California, at a regular meeting held on November 18, 2008 and I further certify that said resolution is in full force and effect and has never been rescinded or modified.

DATED:

_____

City Clerk

NOTICE OF COMPLETION

NOTICE IS HEREBY GIVEN that the City of Newman, a Municipal Corporation of the County of Stanislaus, State of California, entered into an Agreement dated March 1, 2007 with Teichert Construction, Inc., 835 Kilroy Road, Turlock, CA 95380 for the installation and construction of sidewalk and handicap ramp improvement for the Yolo Street Sidewalk Infill Project in the City of Newman.

Construction of the above improvements was actually completed by the contractor, Teichert Construction, Inc. on August 30, 2007 and accepted by the City Council of the City of Newman at their regular meeting held on the 25th day of September, 2007.

DATED:

CITY OF NEWMAN

By_____
John G. Fantazia, Mayor

STATE OF CALIFORNIA)
)
COUNTY OF STANISLAUS)

I, JOHN G. FANTAZIA being the first duly sworn, deposes and says:
That he is the Mayor of the City of Newman, a Municipal Corporation, that contracted for the performance of the project mentioned in the foregoing Notice; that he has read the same and knows the contents thereof, and that the facts stated therein are true.

_____
John G. Fantazia, Mayor

Subscribed and sworn to before me
this _____ day of_____2007.

_____
Notary Public

Agenda Item: 10.h.

Honorable Mayor and Members
of the Newman City Council

City Council Meeting
of November 18, 2008

AWARD BID FOR THE CITY OF NEWMAN SANITARY SEWER LINE REPLACEMENT PROJECT TO LAWRENCE BACKHOE SERVICE

RECOMMENDATION:
It is recommended that the City Council award the Sanitary Sewer Line Replacement Project to Lawrence Backhoe for $124,899.90.

BACKGROUND:
In June 2004, the City of Newman executed a cooperative agreement with Stanislaus County to participate in its Community Development Block Grant (CDBG) Entitlement Program. This agreement entitles the City of Newman to receive an annual allotment of HOME funds on an annual basis without having to prepare competitive grant applications.

The public works department advertised for bids for the Sanitary Sewer Line Replacement project. The work includes but is not limited to furnishing and installing sanitary sewer pipeline, sanitary sewer manholes, curb, gutter, sidewalk, driveways, valley gutters, and paving existing city streets and alleys.

ANALYSIS:
A total of 10 bids were submitted for this project. Please see attachment A for the bid results.

Gary Davis, P.E. of GDR Engineering has reviewed the bid documents and has found all bid forms and bonds to be in proper order.

The City has $250,000.00 in CDBG monies available to move forward with the replacement of antiquated sewer lines.

FISCAL IMPACT:
Bid amount $124,899.90 08/09 Budgeted amount $250,000

CONCLUSION:
Staff recommends that the Council award the bid to Lawrence Backhoe Service.

Garner R. Reynolds
Director of Public Works

REVIEWED/CONCUR:

Michael E. Holland
City Manager

BID RESULTS
CITY OF NEWMAN - SANITARY SEWER REPLACEMENT
11/3/2008

Agenda Item: 10.h.

				LAWRENCE BACKHOE		CLYDE WHEELER PIPELINES		DSS CONSTRUCTION		TEICHERT CONSTRUCTION		CALIFORNIA TRENCHES		MID-CAL PIPELINES		RO-MAR CONSTRUCTION		ALLEN A. WAGGONER		PRESTON PIPELINES		ROLFE CONSTRUCTION	
ITEM NO.	DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL
1	CONSTRUCTION AREA TRAFFIC CONTROL SIGNS	LS	1	$3,500.00	$3,500.00	$10,000.00	$10,000.00	$5,500.00	$5,500.00	$6,600.00	$6,600.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$5,000.00	$5,000.00	$4,877.00	$4,877.00	$19,000.00	$19,000.00	$1,800.00	$1,800.00
2	R & D EXISTING SS FACILITIES	LS	1	$3,500.00	$3,500.00	$4,500.00	$4,500.00	$21,000.00	$21,000.00	$4,500.00	$4,500.00	$500.00	$500.00	$9,000.00	$9,000.00	$10,000.00	$10,000.00	$21,625.00	$21,625.00	$37,000.00	$37,000.00	$25,000.00	$25,000.00
3	6" PVC (SDR26)	LF	1,186	$33.00	$39,138.00	$43.00	$50,998.00	$42.00	$49,812.00	$65.00	$77,090.00	$69.00	$81,834.00	$64.00	$75,904.00	$50.00	$59,300.00	$52.00	$61,672.00	$45.00	$53,370.00	$36.00	$42,696.00
4	6" PVC (SDR26)	LF	480	$32.50	$15,600.00	$38.00	$18,240.00	$37.00	$17,760.00	$65.00	$31,200.00	$66.00	$31,680.00	$63.00	$30,240.00	$50.00	$24,000.00	$62.00	$29,760.00	$44.00	$21,120.00	$40.00	$19,200.00
5	CONNECT TO EXISTING SSMH	EA	7	$350.00	$2,450.00	$300.00	$2,100.00	$900.00	$6,300.00	$183.00	$1,281.00	$800.00	$5,600.00	$300.00	$2,100.00	$700.00	$4,900.00	$500.00	$3,500.00	$1,500.00	$10,500.00	$2,600.00	$18,200.00
6	SSMH	EA	2	$3,500.00	$7,000.00	$2,000.00	$4,000.00	$2,400.00	$4,800.00	$1,800.00	$3,600.00	$3,000.00	$6,000.00	$2,800.00	$5,600.00	$4,000.00	$8,000.00	$2,089.00	$4,178.00	$3,400.00	$6,800.00	$8,000.00	$16,000.00
7	RECONNECT 4" SS SERVICE TO SRD26	EA	30	$150.00	$4,500.00	$250.00	$7,500.00	$275.00	$8,250.00	$190.00	$5,700.00	$150.00	$4,500.00	$400.00	$12,000.00	$700.00	$21,000.00	$245.00	$7,350.00	$360.00	$10,800.00	$850.00	$25,500.00
8	RECONNECT 4" SS SERVICE TO SRD35	EA	11	$150.00	$1,650.00	$250.00	$2,750.00	$245.00	$2,695.00	$190.00	$2,090.00	$120.00	$1,320.00	$380.00	$4,160.00	$700.00	$7,700.00	$242.00	$2,662.00	$350.00	$3,850.00	$900.00	$9,900.00
9	MISCELLANEOUS PAVING REPAIR	SF	1,106	$22.15	$24,497.90	$22.00	$24,332.00	$14.00	$15,484.00	$15.00	$16,590.00	$12.00	$13,272.00	$5.00	$5,530.00	$13.00	$14,378.00	$21.00	$23,226.00	$15.00	$16,590.00	$13.00	$14,378.00
10	AGGREGATE BASE TRENCH PATCH	LF	1,365	$3.60	$5,187.00	$5.00	$6,825.00	$5.00	$6,825.00	$5.00	$6,825.00	$9.00	$12,285.00	$6.00	$8,190.00	$8.00	$10,920.00	$7.00	$9,555.00	$6.00	$8,190.00	$13.00	$17,745.00
11	REMOVE AND REPLACE VALLEY GUTTER	SF	109	$40.00	$4,360.00	$40.00	$4,360.00	$51.00	$5,559.00	$15.00	$1,635.00	$25.00	$2,725.00	$35.00	$3,815.00	$40.00	$4,360.00	$37.00	$4,033.00	$32.00	$3,488.00	$50.00	$5,450.00
12	REMOVE AND REPLACE ALLEY APPROACH	SF	126	$62.50	$7,875.00	$25.00	$3,150.00	$46.00	$5,796.00	$20.00	$2,520.00	$25.00	$3,150.00	$35.00	$4,410.00	$35.00	$4,410.00	$25.00	$3,150.00	$35.00	$4,410.00	$70.00	$8,820.00
13	REMOVE AND REPLACE SIDEWALK	SF	91	$40.00	$3,640.00	$12.50	$1,137.50	$38.00	$3,458.00	$18.00	$1,638.00	$15.00	$1,365.00	$10.00	$910.00	$40.00	$3,640.00	$25.00	$2,275.00	$30.00	$2,730.00	$110.00	$10,010.00
14	REMOVE AND REPLACE CURB AND GUTTER	LF	28	$71.50	$2,002.00	$75.00	$2,100.00	$101.00	$2,828.00	$23.00	$644.00	$20.00	$560.00	$60.00	$1,680.00	$80.00	$2,240.00	$118.00	$3,304.00	$75.00	$2,100.00	$200.00	$5,600.00
			GRAND TOTAL	$124,899.90		$141,992.50		$156,067.00		$161,913.00		$166,791.00		$165,559.00		$179,848.00		$181,167.00		$199,948.00		$220,299.00	

Agenda Item: 10.i.
City Council Meeting
of November 18, 2008

Honorable Mayor and Members
of the Newman City Council

RESOLUTION APPROVING WORK FOR THE AQUATIC CENTER PROJECT AND AUTHORIZING THE CITY MANAGER TO EXECUTE A CONTRACT FOR SERVICES

RECOMMENDATION:

Adopt resolution #2008-xx, approving the final contract for the Aquatic Center project and authorize the City manager to execute a contract for services.

BACKGROUND:

In March 2006, the City of Newman initiated the demolition process for the Newman Plunge based upon a report from a structural engineer. In November 2006, an interview committee heard presentations from five teams competing for the design contract. From those interviews, NTD Architecture was selected.

In April 2007, the City Council approved a scope of work that extended through the schematic design. The next stage is to complete construction documents and prepare the bid package.

ANALYSIS:

Over the past weeks, staff has been working with NTD to settle on a final contract and cost. The proposed contract covers four phases of the project; Construction documents, agency review, bidding and negotiations, and construction administration. The total sum of the four phases is $403,396. This amount represents a fixed fee based upon 9% cost of the project. This fee was negotiated down from 9.6%, saving the City $37,000. Upon conferring with the Director of Public Works, we found the contract amount to be fair. Staff is continuing to review the contract and scope language to ensure that City expectations are clearly spelled out within the document.

FISCAL IMPACT:

$403,396. This amount will be represented over the next three budget cycles.

CONCLUSION:

NTD Architecture is a large firm who has demonstrated experience designing award-winning aquatic facilities within a community's budget. The current proposal will lock in a price for their participation through construction of the project. Staff recommends the Council adopt the attached resolution and scope of work

Respectfully submitted,

Michael Holland
City Manager

RESOLUTION NO. 2008-

A RESOLUTION AUTHORIZING THE CITY MANAGER TO EXECUTE A CONTRACT FOR AQUATIC CENTER CONSTRUCTION DOCUMENTS AND ADMINISTRATION WITH NTD ARCHITECTURE

WHEREAS, the City of Newman has put a high priority on the design and development of a new aquatics and community center, and

WHEREAS, NTD Architecture provided the architectural design for award winning aquatic centers, including the Cities of Galt and Brentwood, and

WHEREAS, NTD Architecture has designed family activity and recreation pools that have "zero entry," slides, and other water features to accommodate people of all ages and abilities, and

WHEREAS, the City of Newman has already contracted with NTD Architecture for the Schematic Design and Master Plan, and

WHEREAS, the proposed contract covers four phases of the project; Construction Documents, Agency Review, Bidding And Negotiations, and Construction Administration, and

WHEREAS, the City Council is desirous of entering into a contract with NTD Architecture, and

WHEREAS, the City council of the City of Newman has determined it would be in the best interest to enter into a contract with NTD Architecture, and

NOW, THEREFORE, BE IT RESOLVED that the Newman City Council hereby authorizes the City Manager to execute a contract with NTD Architecture for Aquatic Center Construction Documents And Administration.

The foregoing resolution was introduced at a regular meeting of the City Council of the City of Newman held on the 18th day of November, 2008 by Council Member _____, who moved its adoption, which motion was duly seconded and it was upon roll call carried and the resolution adopted by the following roll call vote:

AYES:
NOES:
ABSENT:

APPROVED:

_____
Mayor of the City of Newman

ATTEST:

_____
Deputy City Clerk of the City of Newman

Date..: Nov 14, 2008
Time..: 10:25 am
Run by: EMILY M. FARIA

CITY OF NEWMAN
CASH DISBURSEMENTS REPORT

List.: NEW1
Group: PYCPDP

Ck #	Check Date	CK Amount	Vendor Name	Description
034978	11/10/08	5000.00	STANISLAUS LAFCO	MSR APPLICATION/GENERAL PLAN
034979	11/14/08	16351.00	ANTHEM BLUE CROSS	HEALTH INSURANCE PREMIUM/DEC 2008
034980	11/14/08	115.00	APCO INTERNATIONAL MEMBERSHIP	MEMBERSHIP DUES/APCO/DON HUTCHINS
034981	11/14/08	86.63	ARROWHEAD MOUNTAIN SPRING	BOTTLED WATER/OCT 2008
034982	11/14/08	284.62	AT&T MOBILITY	WIRELESS ACCESS/10/03/08-11/02/08/PD
034983	11/14/08	626.17	BASIC CHEMICAL SOL./INC.	230 GALS SODIUM HYPOCHLORITE/WELLS
034984	11/14/08	295.00	BORGE'S GLASS & MIRROR	REPAIR BROKEN WINDOW/TEEN CENTER
034985	11/14/08	985.79	BUSINESS CARD	LODGING/PESTICIDE CERT/REGISTRATION/TV/CABLE
034986	11/14/08	119.37	C B MERCHANT SERVICES,INC	REIMBURSE BAD DEBT
034987	11/14/08	509.89	CENTRAL SANITARY SUPPLY	PAPER TOWEL/CANLINERS/TP/CLEANER
034988	11/14/08	162.87	CIT TECHNOLOGY FIN SERV, INC	MS GSA OFFICE PRO PLUS/PD LEASE/NOV 2008
034989	11/14/08	500.00	CODE PUBLISHING COMPANY	MUNICIPAL CODE WEB HOSTING/11/08 TO 11/09
034990	11/14/08	1267.50	CONCINNITY, INC	MONTHLY IT CONTRACT SERVICES/DEC 2008
034991	11/14/08	2603.69	E&M ELECTRIC, INC.	CORD/REPAIRS TO PLANTERS/REPAIRS TO CONDUIT/MAIL
034992	11/14/08	874.65	ECONOMIC TIRE SHOP	4 NEW TIRES/2007 TRUCK/WWTP
034992	11/14/08	10.71	ECONOMIC TIRE SHOP	TIRE MOUNT/PD
034993	11/14/08	50.00	FGL ENVIRONMENTAL, INC	AG ANALYSIS/3RD CUTTING/WWTP
034994	11/14/08	350.00	GDR ENGINEERING, INC.	PROFESSIONAL SERVICES/OCT 08/SEWER LINE REPLACEMEN
034995	11/14/08	149.79	GRANDFLOW	50 W-2'S AND 50 1099'S
034996	11/14/08	184.96	TERRI HEIBERGER (NT)	REIMBURSE/DINNER SUPPLIES GARZA RETIREMENT/HEIBER
034997	11/14/08	585.77	HEWLETT-PACKARD FINANCIAL SERV	SOFTWARE RENTAL/PD/11/18/08-12/17/08
034998	11/14/08	326.16	HILTON ORANGE COUNTY	LODGING/RICHARDSON/SLI TRAINING
034999	11/14/08	645.22	HINDERLITER, dELLAMAS & ASSOCT	SALES TAX AUDIT SERVICES/APRIL-JUNE 2008
035000	11/14/08	82.84	DON HUTCHINS (NT)	MEALS/DISPATCH MTG/OAKDALE PD/REIMBURSE HUTCHINS

Ck #	Check Date	CK Amount	Vendor Name	Description
035002	11/14/08	325.36	IKON OFFICE SOLUTIONS	COPIER LEASE/10/25/08-11/24/08/PD
035003	11/14/08	1448.02	INFOSEND, INC	LATE NOTICE & UTILITY BILL MAILING/OCT 2008
035004	11/14/08	1092.00	JOE'S LANDSCAPING &	YARD CLEAN-UP/FENCE REPAIRS/2011 YOSEMITE PARK
035004	11/14/08	8945.00	JOE'S LANDSCAPING &	LANDSCAPE SERVICES/LLD/OCT 2008
035005	11/14/08	100.67	MALLARD EXPRESS AUTO	CLEANED AIR CLEANER/MAS-AIR FLOW SENSOR/96 FORD
035005	11/14/08	483.32	MALLARD EXPRESS AUTO	REPLACE MAS-AIR SENSOR/OXGEN SENSOR/96 FORD PICKUP
035006	11/14/08	886.59	MARTIN CARVER, AICP	NEWMAN PLAZA NEPA/OCT 2008
035006	11/14/08	7967.50	MARTIN CARVER, AICP	NEWMAN HOUSING ELEMENT/OCT 2008
035007	11/14/08	270.00	SANTIAGO MENDOZA	SOCCER REF/TAKE DOWN & SET UP/S. MENDOZA
035008	11/14/08	120.00	NENA	MMBSP DUES/NATIONAL EMERGENCY NUMBER ASSOC/HUTCHIN
035009	11/14/08	770.01	NEWMAN S & S AUTO SUPPLY	SAFETY GLASSES/GASKET/BATTERY/OIL FILTER/BED RAIL
035010	11/14/08	68.00	NEWMAN DAIRY SUPPLY	SERVICE/CHECK REFRIGERATOR/MEMORIAL BLDG
035011	11/14/08	714.52	NEWMAN ACE HARDWARE/JACT, INC	MISCELLANEOUS HARDWARE SUPPLIES/OCT 2008
035012	11/14/08	1297.35	NEXTEL COMMUNICATIONS	CELL PHONE USE/OCT 2008
035013	11/14/08	309.44	PACIFIC WATER RESOURCES	MECHANICAL SEALS/QUAD RINGS/VOLUTE GASKET/SHERMAN
035014	11/14/08	660.00	CITY OF PATTERSON	VIDEO REIMBURSEMENT/NOV 2008
035015	11/14/08	243.60	PHILATELIC FULFILLMENT SE	PRE-STAMPED ENVELOPES
035016	11/14/08	8797.32	PRECISION INSPECTION, INC	Bldg Reg Inspec BLDG REGU/OCT 2008
035017	11/14/08	169.03	RICHARD & CHAMBERS	CASH RECEIPTS/BINDERS/CC RECEIPTS/HIGHLIGHTERS
035018	11/14/08	200.00	RANDY RICHARDSON (NT)	PER DIEM/RICHARDSON/SLI TRNG
035019	11/14/08	298.67	SIERRA DISPLAY, INC.	1000 CLEAR BURNING LAMPS/DOWNTOWN CHRISTMAS LIGHTS
035020	11/14/08	35.00	STATE OF CALIFORNIA	OCT 2008/11550 H&S ANALYSES
035021	11/14/08	618.73	STAPLES CREDIT PLAN	FOLDERS/SONY 8GB/HP COLOR INK/PAPER/TRI-COLOR INK
035022	11/14/08	1082.12	STANISLAUS CNTY SHERIFF'S	REIMBURSE AT&T/MCI PHONE BILL T1 LINE 07/08-10/08
035023	.4/08	180.00	BARBARA J. TOSTA	OUNG AT HEART INSTRUCTOR/OCT 2008

Ck #	Check Date	CK Amount	Vendor Name	Description
035024	11/14/08	336.43	UNIFIRST CORPORATION	UNIFORM CLEANING/MAT RENTAL/TOWELS/OCT 2008
035025	11/14/08	2348.25	MATTOS NEWSPAPERS, INC.	UTILITY RECORDS/LEGAL ADS/STAMP/BUS CARDS/DISPLAY
035026	11/14/08	32.00	WEST SIDE PUBLIC SCALE	OCTOBER 08 WEIGHT TAGS/3RD CUTTING TERRACES
035027	11/14/08	76.24	Y-NOT NEWMAN FLORAL	DISH GARDEN/APPLEGATE
035028	11/14/08	427.01	YANCEY LUMBER COMPANY	PAINT/PROPANE/LUMBER/SAND/CONCRETE/MISCELLANEOUS

Sub-Total:		74219.81		

Grn-Total:		74219.81		
Count:	55			