Fieldbrook Glendale
Community Services District
water · sewer · fire

Notice is hereby given that a
REGULAR MEETING
Of the Board of Directors will be held at:
4584 Fieldbrook Road, Fieldbrook CA 95519

Tuesday, February 28, 2022

Fieldbrook Fire Hall & Teleconference
7:30 PM Regular Meeting
AGENDA

A. Roll Call

The Presiding officer will call the meeting to order, and the clerk will call the roll of members to determine the presence of a quorum.

This meeting may be accessed by using the following call-in number: 1- 669-900-9128. When prompted enter the meeting i.d. 849 0788 5446. Please submit public comments in writing 24 hours ahead of the meeting, if possible.

B. Agenda Modification

The Board may adopt/revise the order of the agenda as presented.

C. Public Comments

Regularly scheduled meetings provide an opportunity for members of the public to directly address the FGCSD Board Members on any action item that has been described in the agenda for the meeting, before or during consideration of that item, or on matters not identified on the agenda within the Board's jurisdiction. No action will be taken on non-agenda items.

D. Reports

1.1 Wastewater Report

1.2 Fire Chief Report

1.2.1 Call/Incident report

1.3 District Engineer Report

1.3.1 Muni-meeting report.

1.3.2 Status Report – Wastewater Pigging Project

1.3.3 Anker Tank Replacement project report.

1.4 Safety Report –

1.5 General Manager Report

1.6 Director Reports

E. Consent Agenda

The Board will approve the following items by a single vote unless any member of the Board or the public requests an item be removed and considered separately.

Meeting Materials may be accessed at:
https://fieldbrookglendalecsd.specialdistrict.org/board-meetings

Approval of Minutes

2.1 Regular Board Meeting, January 24, 2023.

Correspondence

3.1

Financial Reports

4.1 Interfund Transfers, $85,471.

4.2 Check/EFT Payments, (#7117-7140), $70,957.48.

4.3 Payroll, $9,868.62.

4.4 General Journal Entries, 578-580, $32,261.08.

4.5 Reimbursements $417.16, Mileage $641.25.

F. Business Items Action/Information

5.1 Engstrom water connection request. Action.

5.2 Draft report Glendale Hydraulic Water Study. Discussion.

5.3 Receive and file Conflict of Interest Form 700. No Action.

5.4

G. Public Hearings – None.

H. Closed Session

Conference with Legal Counsel – Existing Litigation (§ 54956.9): Closed
Time certain 7:00 PM, Edwards v. FGCSD, Case No.: CV2200214

I. Future Agenda Items

8.1

Adjournment/Announcements

9.1 Next regular meeting, March 28, 2023.

Notice regarding the Americans with Disabilities Act: The District adheres to the Americans with Disabilities Act. Persons requiring special accommodations or more information about accessibility should contact the District Office. Notice regarding Rights of Appeal: Persons who are dissatisfied with the decisions of the FGCSD Board of Directors have the right to have the decision reviewed by a State Court.

ATTENDANCE ROSTER

SDRMA

Safety Meeting

Date of Meeting: 11/2/23 Leader Name: Appleton

Instructions:

a. Fill in the date of the meeting and the name of the safety meeting leader.

b. Have all safety meeting participants sign this roster.
(Copy this form if more pages are needed.)

c. File this roster and the associated documents as outlined in the Leader Discussion Guide.

	Name (print)	Name (signature)
1.	Chris Appleton	
2.	Joshua Hillers	
3.	Gia Cerrozzi	
4.	Joe Mello	
5.	Greg Aslanian	
6.	DAN Orum	
7.	DAVID HAM	
8.	JOHN BRACKLOW	
9.	Travis Springer	
10.	Rich Grisson	
11.	Kristian Bajic	
12.		
13		
14.		
15.		
16.		
17.		
18.		
19		
20.		

Attachments: 1. Leader Discussion Guide 2. Safety Meeting Booklet

Fieldbrook Glendale Community Services District
water · sewer · fire

Notice is hereby given that a
REGULAR MEETING
Of the Board of Directors will be held at:
4584 Fieldbrook Road, Fieldbrook CA 95519

Tuesday, January 24, 2022

Fieldbrook Fire Hall & Teleconference
7:30 PM Regular Meeting
MINUTES

A. Roll Call

President Roy Sheppard called closed session to order at 7:00PM. Board members present were Vice-President Starr Kilian, Director Richard Grissom, and Director Jason Garlick, and Director Janet Miller. Legal counsel, Russ Gans was also present (teleconference). President Roy Sheppard called the regular board meeting to order at 7:31. All directors remained present. Also present were Fire Chief Chris Appleton, Sewer Technician Grant Weaver, District Engineer Steve Pearl, GHD, and General Manager Richard Hanger.

B. Agenda Modification –

C. Public Comments - *None.*

D. Reports

1.1 Wastewater Report

Sewer Technician Grant Weaver provided the staff report. The system is functioning as designed. Weir monitors have been installed at both pump stations. Butterfly and air relief valves are being installed to prepare for the pigging maintenance in February.

1.2 Fire Chief Report

1.2.1 Call/Incident report

Fire Chief Chris Appleton provided the staff report. Richard Grissom has been selected as the Assistant Fire Chief. The annual awards dinner is scheduled for February 11th. There were 8 auto aide calls, 3 EMS, 2 False alarms, 5 Hazard, and 1 mutual aid calls since the last board meeting.

1.3 District Engineer Report

1.3.1 Muni-meeting report.

District Engineer Steven Pearl reported the muni-meeting topics included the Tesla battery installation, there were no earthquake reported damages, turbidity issues were present during high water flows, and wholesale contract provisions were discussed.

1.3.2 Status Report – Wastewater Pigging Project

Moving forward and planned for February.

1.3.3 Anker Tank Replacement project report.

No report.

1.4 Safety Report – *None.*

1.5 General Manager Report – *None.*

1.6 Director Reports – *None.*

E. Consent Agenda

The Board will approve the following items by a single vote unless any member of the Board or the public requests an item be removed and considered separately.

Approval of Minutes

2.1 Regular Board Meeting, November 16, 2022.

Correspondence

3.1

Financial Reports

4.1 Interfund Transfers, $85,471.

4.2 Check/EFT Payments, (#7088-7116), $85,394.21.

4.3 Payroll, $4,110.06.

4.4 General Journal Entries, 576-577, $16,703.08.

4.5 Reimbursements $706.88, Mileage $572.48.

Director Richard Grissom moved to approve the consent agenda as presented. Director Jason Garlick seconded the motion. The motion carried with Sheppard, Kilian, Grissom, Garlick, and Miller voting aye.

F. Business Items Action/Information

5.1 Draft report Glendale Hydraulic Water Study. Discussion.

Tabled to February by order of the chair.

5.2 Financial reports and budget update. Action.

General Manager Richard Hanger provided the staff report.

Director Richard Grissom moved to receive the financial reports and approve the budget updates as presented. Director Janet Miller seconded the motion. The motion carried with Sheppard, Kilian, Grissom, Garlick, and Miller voting aye.

5.3 Receive and File audit report for fiscal year 2022. Action.

General Manager Richard Hanger reported that there were no changes from the draft report received in December.

Director Richard Grissom moved to receive the final audit report as presented. Director Jason Garlick seconded the motion. The motion carried with Sheppard, Kilian, Grissom, Garlick, and Miller voting aye.

5.4 CA I Bank, annual report. Action.

General Manager Richard Hanger provided the staff report. All provisions of the agreement with CA I Bank are being met.

Director Janet Miller moved to approve CA I Bank annual report as presented. Director Jason Garlick seconded the motion. The motion carried with Sheppard, Kilian, Grissom, Garlick, and Miller voting aye.

5.5 CPI Water Rate Adjustments. Action.

General Manager Richard Hanger provided the staff report, recommending a water rate increase of 6.45%. Wastewater rates will remain unchanged. Connection fees will have a rate increase of 6.45%. The rate increase is consistent with the annual CPI index ending December 2022.

Director Richard Grissom moved to approve the rate increases as presented. Director Janet Miller seconded the motion. The motion carried with Sheppard, Kilian, Grissom, Garlick, and Miller voting aye.

5.6 CPI Wage Adjustments. Action.

General Manager Richard Hanger provided the staff report, recommending a wage increase of 6.45%. The wage increase is consistent with the annual CPI index ending December 2022.

Director Jason Garlick moved to approve the wage increases as presented. Director Janet Miller seconded the motion. The motion carried with Sheppard, Kilian, Grissom, Garlick, and Miller voting aye.

G. Public Hearings – None.

H. Closed Session

Conference with Legal Counsel – Existing Litigation (§ 54956.9): Closed
Time certain 7:00 PM, Edwards v. FGCSD, Case No.: CV2200214

President Roy Sheppard reported out from closed session. No action was taken.

I. Future Agenda Items

8.1 Conflict of Interest (Form 700). February.

J. Adjournment/Announcements

9.1 Next regular meeting, February 28, 2023.

The meeting adjourned at 8:16 PM.

Respectfully submitted,

Richard Hanger	*Starr Kilian*
Secretary to the Board	*Vice-President*

Attachments
CCCU fund transfer
Initialed disbursement register

Fieldbrook Glendale
Community Services District
water · sewer · fire

REGULAR MEETING OF THE
BOARD OF DIRECTORS

February 28, 2023

Attention:
Stephanie Poletski spoletski@coastccu.org

Please confirm transfer verbally to Richard Hanger at 499-1963 or
Via email to gm@fgcsd.org

Coast Central Credit Union
2650 Harrison Avenue
Eureka, CA 95501-3259

Please transfer the following

Member Number 99580

From: S70 Business Liquid Asset Account	$108,668.50
To: S61 Water Checking	$108,668.50

Signed _____

_____

Thank you,

Richard Hanger
Treasurer

Fieldbrook Glendale Community Services District
water · sewer · fire

REGULAR MEETING OF THE BOARD OF DIRECTORS

February 28, 2023

Coast Central Credit Union
2650 Harrison Avenue
Eureka, CA 95501-3259

Please transfer the following

From: Business Liquid Asset Account $108,668.50
To: Water Checking $108,668.50

2/28/2023	
Check Register	$ 106,889.85
#7117-7140	$ 70,957.48
Deposit	$ 35,932.37
Deposit	$ -
Transfer Totals	$ (108,668.50)
Anker Tank Project	$ -
Fire	$ 10,550.31
Sewer	$ 58,277.24
Water	$ 39,840.95
Decrease Water Transfer	
Gross Pay	$ 9,868.62
<Net Pay>	$ (7,865.72)
Empr. Taxes	$ 962.20
Adjustments	
EDD	$ (86.32)
EDD	$ (191.55)
Intuit Annual	$ (1,064.00)
Optimum	$ 155.42
	$ -
Reconciliation	$ (106,889.85)
Balance	$ -

Fieldbrook Glendale Community Services District
Interfund Activity Report
As of February 28, 2023

Type	Date	Num	Name	Account	Class	Amount	Balance
Anker Tank Replacement							0.00
Total Anker Tank Replacement							0.00
Interfund Expenses/Fire							2,429.57
Bill	01/30/2023	99247...	Interfun...	5310 · Telephone (Telephone)	Fire Depart...	116.14	2,545.71
Bill	01/31/2023	Jan 2...	Interfun...	5345 · Internet Service (Internet Service)	Fire Depart...	156.42	2,702.13
Bill	01/31/2023	61498	Interfun...	5220 · Audit Services (Audit Services)	Fire Depart...	6,966.66	9,668.79
Bill	01/31/2023	51685	Interfun...	5210 · Legal Services (Legal Services)	Fire Depart...	42.67	9,711.46
Bill	01/31/2023	Jan 2...	Interfun...	5335 · Water (Water)	Fire Depart...	54.06	9,765.52
Bill	02/10/2023	Feb 2...	Interfun...	5345 · Internet Service (Internet Service)	Fire Depart...	156.50	9,922.02
Bill	02/20/2023	P1-81...	Interfun...	5390.02 · Office Software (Software licenses a...	Fire Depart...	2.00	9,924.02
Bill	02/23/2023	Feb 2...	Interfun...	5075 · Chief Expenses - Fire (Chief Expenses ...	Fire Depart...	50.00	9,974.02
Bill	02/23/2023	20220...	Interfun...	5390.02 · Office Software (Software licenses a...	Fire Depart...	407.00	10,381.02
Bill	02/23/2023	Feb M...	Interfun...	5366 · Mileage & Travel (Mileage & Travel)	Fire Depart...	8.48	10,389.50
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Fire Depart...	146.52	10,536.02
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Fire Depart...	0.15	10,536.17
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Fire Depart...	9.09	10,545.26
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Fire Depart...	2.12	10,547.38
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Fire Depart...	2.93	10,550.31
Total Interfund Expenses/Fire						8,120.74	10,550.31
Interfund Expenses/Sewer							9,410.21
Bill	01/26/2023	10159...	Interfun...	1648 · Major Repairs (Major Repairs)	Enterprise:S...	2,010.99	11,421.20
Bill	01/30/2023	99247...	Interfun...	5310 · Telephone (Telephone)	Enterprise:S...	23.21	11,444.41
Check	01/31/2023	E-Pay	Interfun...	5625.01 · Bank Fees (Bank Fees)	Enterprise:S...	16.52	11,460.93
Bill	01/31/2023	71577	Interfun...	5625.02 · Merchant Fees (Merchant Fees)	Enterprise:S...	85.54	11,546.47
Bill	01/31/2023	61498	Interfun...	5220 · Audit Services (Audit Services)	Enterprise:S...	6,966.67	18,513.14
Bill	01/31/2023	51685	Interfun...	5210 · Legal Services (Legal Services)	Enterprise:S...	42.66	18,555.80
Bill	01/31/2023	Jan 2...	Interfun...	5110.1 · HBMWD Admin & Billing (HBMWD A...	Enterprise:S...	526.05	19,081.85
Bill	01/31/2023	Jan 2...	Interfun...	5110.1 · HBMWD Admin & Billing (HBMWD A...	Enterprise:S...	416.79	19,498.64
Bill	01/31/2023	Jan 2...	Interfun...	5110.1 · HBMWD Admin & Billing (HBMWD A...	Enterprise:S...	2,508.28	22,006.92
Bill	01/31/2023	Jan 2...	Interfun...	5110.1 · HBMWD Admin & Billing (HBMWD A...	Enterprise:S...	118.07	22,124.99
Bill	01/31/2023	0912-...	Interfun...	5320 · Electric (Electric)	Enterprise:S...	980.90	23,105.89
Bill	01/31/2023	00086...	Interfun...	5020 · Purchased Sewer Services (Purchased...	Enterprise:S...	28,647.67	51,753.56
Bill	01/31/2023	00086...	Interfun...	5020 · Purchased Sewer Services (Purchased...	Enterprise:S...	66.54	51,820.10
Bill	02/02/2023	380-0...	Interfun...	5121 · Engineering Expenses	Enterprise:S...	537.50	52,357.60
Bill	02/02/2023	380-0...	Interfun...	5121 · Engineering Expenses	Enterprise:S...	13.80	52,371.40
Bill	02/20/2023	P1-81...	Interfun...	5390.02 · Office Software (Software licenses a...	Enterprise:S...	6.00	52,377.40
Bill	02/23/2023	20231...	Interfun...	5400.01 · Line Repairs Maintenance (Line Re...	Enterprise:S...	300.00	52,677.40
Bill	02/23/2023	Feb M...	Interfun...	5366 · Mileage & Travel (Mileage & Travel)	Enterprise:S...	499.77	53,177.17
Bill	02/23/2023	Feb M...	Interfun...	5366 · Mileage & Travel (Mileage & Travel)	Enterprise:S...	66.50	53,243.67
Paycheck	02/23/2023	7139	Interfun...	6560 · Payroll Expenses	Enterprise:S...	3,560.76	56,804.43
Paycheck	02/23/2023	7139	Interfun...	6560 · Payroll Expenses	Enterprise:S...	3.56	56,807.99
Paycheck	02/23/2023	7139	Interfun...	6560 · Payroll Expenses	Enterprise:S...	220.77	57,028.76
Paycheck	02/23/2023	7139	Interfun...	6560 · Payroll Expenses	Enterprise:S...	51.63	57,080.39
Paycheck	02/23/2023	7139	Interfun...	6560 · Payroll Expenses	Enterprise:S...	71.21	57,151.60
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Enterprise:S...	1,025.64	58,177.24
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Enterprise:S...	1.03	58,178.27
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Enterprise:S...	63.59	58,241.86
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Enterprise:S...	14.87	58,256.73
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Enterprise:S...	20.51	58,277.24
Total Interfund Expenses/Sewer						48,867.03	58,277.24
Interfund Expenses/Water							278.91
Bill	01/25/2023	7997-...	Interfun...	5320 · Electric (Electric)	Enterprise:...	902.37	1,181.28
Check	01/31/2023	E-Pay	Interfun...	5625.01 · Bank Fees (Bank Fees)	Enterprise:...	23.48	1,204.76
Bill	01/31/2023	71577	Interfun...	5625.02 · Merchant Fees (Merchant Fees)	Enterprise:...	121.54	1,326.30
Bill	01/31/2023	61498	Interfun...	5220 · Audit Services (Audit Services)	Enterprise:...	6,966.67	8,292.97
Bill	01/31/2023	51685	Interfun...	5210 · Legal Services (Legal Services)	Enterprise:...	42.67	8,335.64
Bill	01/31/2023	51685	Interfun...	5210 · Legal Services (Legal Services)	Enterprise:...	225.00	8,560.64
Bill	01/31/2023	51682	Interfun...	5210 · Legal Services (Legal Services)	Enterprise:...	66.50	8,627.14
Bill	01/31/2023	Jan 2...	Interfun...	5010 · Purchased Water (Purchased Water)	Enterprise:...	990.92	9,618.06
Bill	01/31/2023	Jan 2...	Interfun...	5010 · Purchased Water (Purchased Water)	Enterprise:...	12,768.29	22,386.35
Bill	01/31/2023	Jan 2...	Interfun...	5010 · Purchased Water (Purchased Water)	Enterprise:...	484.01	22,870.36
Bill	01/31/2023	Jan 2...	Interfun...	5010 · Purchased Water (Purchased Water)	Enterprise:...	731.93	23,602.29
Bill	01/31/2023	Jan 2...	Interfun...	5010 · Purchased Water (Purchased Water)	Enterprise:...	-50.07	23,552.22
Bill	01/31/2023	Jan 2...	Interfun...	5110.1 · HBMWD Admin & Billing (HBMWD A...	Enterprise:...	604.17	24,156.39
Bill	01/31/2023	Jan 2...	Interfun...	5110.1 · HBMWD Admin & Billing (HBMWD A...	Enterprise:...	478.69	24,635.08
Bill	01/31/2023	Jan 2...	Interfun...	5110.1 · HBMWD Admin & Billing (HBMWD A...	Enterprise:...	2,880.78	27,515.86
Bill	01/31/2023	Jan 2...	Interfun...	5110.1 · HBMWD Admin & Billing (HBMWD A...	Enterprise:...	135.61	27,651.47
Bill	01/31/2023	Jan 2...	Interfun...	5110.2 · HBMWD - Maintenance & Operation (...	Enterprise:...	8,030.94	35,682.41
Bill	01/31/2023	Jan 2...	Interfun...	5110.2 · HBMWD - Maintenance & Operation (...	Enterprise:...	1,244.93	36,927.34
Bill	01/31/2023	Jan 2...	Interfun...	5110.2 · HBMWD - Maintenance & Operation (...	Enterprise:...	410.00	37,337.34
Bill	01/31/2023	Jan 2...	Interfun...	5110.2 · HBMWD - Maintenance & Operation (...	Enterprise:...	266.29	37,603.63
Bill	01/31/2023	Jan 2...	Interfun...	5110.2 · HBMWD - Maintenance & Operation (...	Enterprise:...	106.77	37,710.40
Bill	01/31/2023	Jan 2...	Interfun...	5110.2 · HBMWD - Maintenance & Operation (...	Enterprise:...	275.04	37,985.44
Bill	01/31/2023	Jan 2...	Interfun...	5110.2 · HBMWD - Maintenance & Operation (...	Enterprise:...	45.00	38,030.44

Fieldbrook Glendale Community Services District
Interfund Activity Report
As of February 28, 2023

Type	Date	Num	Name	Account	Class	Amount	Balance
Bill	01/31/2023	Jan 2...	Interfun...	5110.2 · HBMWD - Maintenance & Operation (...	Enterprise:...	0.00	38,030.44
Bill	01/31/2023	Jan 2...	Interfun...	5110.2 · HBMWD - Maintenance & Operation (...	Enterprise:...	107.87	38,138.31
Bill	02/02/2023	380-0...	Interfun...	5121 · Engineering Expenses	Enterprise:...	239.00	38,377.31
Bill	02/02/2023	380-0...	Interfun...	5121 · Engineering Expenses	Enterprise:...	19.50	38,396.81
Bill	02/20/2023	P1-81...	Interfun...	5390.02 · Office Software (Software licenses a...	Enterprise:...	2.00	38,398.81
Bill	02/23/2023	Feb 2...	Interfun...	5070 · Directors' Fees - Water (Directors' Fee...	Enterprise:...	50.00	38,448.81
Bill	02/23/2023	Feb 2...	Interfun...	5070 · Directors' Fees - Water (Directors' Fee...	Enterprise:...	50.00	38,498.81
Bill	02/23/2023	Feb 2...	Interfun...	5070 · Directors' Fees - Water (Directors' Fee...	Enterprise:...	50.00	38,548.81
Bill	02/23/2023	Feb 2...	Interfun...	5070 · Directors' Fees - Water (Directors' Fee...	Enterprise:...	50.00	38,598.81
Bill	02/23/2023	Feb 2...	Interfun...	5070 · Directors' Fees - Water (Directors' Fee...	Enterprise:...	50.00	38,648.81
Bill	02/23/2023	Feb M...	Interfun...	5366 · Mileage & Travel (Mileage & Travel)	Enterprise:...	66.50	38,715.31
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Enterprise:...	1,025.64	39,740.95
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Enterprise:...	1.02	39,741.97
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Enterprise:...	63.59	39,805.56
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Enterprise:...	14.88	39,820.44
Paycheck	02/23/2023	7140	Interfun...	6560 · Payroll Expenses	Enterprise:...	20.51	39,840.95
Total Interfund Expenses/Water						39,562.04	39,840.95
TOTAL						**96,549.81**	**108,668.50**

Fieldbrook Glendale Community Services District
Check Register for this Month
January 25 through February 28, 2023

Type	Date	Num	Name	Amount
1000 · Coast Central Credit Union				
1012 · General Fund Checking				
1015 · Water Dept Checking				
Liability Check	01/27/2023	E-pay	EDD	-86.32
Liability Check	01/27/2023	E-pay	United States Treasury	0.00
Liability Check	01/27/2023	E-pay	EDD	-191.55
Transfer	01/31/2023			35,932.37
Check	01/31/2023	E-Pay	Coast Central Credit ...	-40.00
Bill Pmt -Check	02/03/2023	E-Pay	Verizon	-139.35
Bill Pmt -Check	02/06/2023	ACH	XPress Bill Pay	-207.08
Bill Pmt -Check	02/13/2023	ACH	PG&E	-902.37
Bill Pmt -Check	02/13/2023	ACH	PG&E	-66.01
Bill Pmt -Check	02/13/2023	ACH	PG&E	-52.38
Bill Pmt -Check	02/13/2023	ACH	PG&E	-197.41
Bill Pmt -Check	02/13/2023	ACH	PG&E	-30.72
Bill Pmt -Check	02/13/2023	ACH	PG&E	-980.90
Bill Pmt -Check	02/13/2023	ACH	Optimum	-156.50
Bill Pmt -Check	02/13/2023	ACH	Fieldbrook Glendale C...	-54.06
Bill Pmt -Check	02/13/2023	7117	Advanced Security Sy...	-69.18
Bill Pmt -Check	02/13/2023	7118	Dan Oram	-1,742.00
Bill Pmt -Check	02/13/2023	7119	Eureka Humboldt Fire...	-420.98
Bill Pmt -Check	02/13/2023	7120	Grant Weaver.	-417.16
Bill Pmt -Check	02/13/2023	7121	Miller Farms Nursery	-37.74
Bill Pmt -Check	02/13/2023	7122	Mitchell Law Firm, LLP	-419.50
Bill Pmt -Check	02/13/2023	7123	Thrifty Supply Company	-10,856.39
Bill Pmt -Check	02/22/2023	E-Pay	Intuit Quick Books	-10.00
Bill Pmt -Check	02/23/2023	7124	City of Arcata	-28,714.21
Bill Pmt -Check	02/23/2023	7125	Fire Station Software, ...	-407.00
Bill Pmt -Check	02/23/2023	7126	GHD, Inc	-809.80
Bill Pmt -Check	02/23/2023	7127	Humboldt Bay M&O	-18,155.28
Bill Pmt -Check	02/23/2023	7128	Humboldt Bay Munici...	-14,925.08
Bill Pmt -Check	02/23/2023	7129	Hunter, Hunter, & Hunt	-20,900.00
Bill Pmt -Check	02/23/2023	7130	Underground Service ...	-300.00
Bill Pmt -Check	02/23/2023	7131	Chris Appleton	-50.00
Bill Pmt -Check	02/23/2023	7132	Janet Miller	-50.00
Bill Pmt -Check	02/23/2023	7133	Jason Garlick	-50.00
Bill Pmt -Check	02/23/2023	7134	Rich Grissom	-50.00
Bill Pmt -Check	02/23/2023	7135	Roy Sheppard	-50.00
Bill Pmt -Check	02/23/2023	7136	Starr Kilian	-50.00
Bill Pmt -Check	02/23/2023	7137	Grant Weaver.	-499.77
Bill Pmt -Check	02/23/2023	7138	Richard A. Hanger	-141.48
Paycheck	02/23/2023	7139	Grant Weaver	-3,122.31
Paycheck	02/23/2023	7140	Richard A Hanger	-1,537.32
Total 1015 · Water Dept Checking				-70,957.48
Total 1012 · General Fund Checking				-70,957.48
Total 1000 · Coast Central Credit Union				-70,957.48
TOTAL				**-70,957.48**

Fieldbrook Glendale Community Services District
Payroll Summary
December 20, 2022 through February 28, 2023

	Grant Weaver			Richard A Hanger			TOTAL		
	Hours	Rate	Dec 20, '22 - Feb 28, 23	Hours	Rate	Dec 20, '22 - Feb 28, 23	Hours	Rate	Dec 20, '22 - Feb 28, 23
Employee Wages, Taxes and Adjustments									
Gross Pay									
Hourly Rate	166	32.97	5,473.02	120	36.63	4,395.60	286.00		9,868.62
Hourly Sick		32.97	0.00		36.63	0.00			0.00
Total Gross Pay	166		5,473.02	120		4,395.60	286.00		9,868.62
Adjusted Gross Pay	166		5,473.02	120		4,395.60	286.00		9,868.62
Taxes Withheld									
Federal Withholding			-214.00			-636.00			-850.00
Medicare Employee			-79.36			-63.74			-143.10
Social Security Employee			-339.33			-272.53			-611.86
CA - Withholding			0.00			-309.12			-309.12
CA - Disability Employee			-49.26			-39.56			-88.82
Medicare Employee Addl Tax			0.00			0.00			0.00
Total Taxes Withheld			-681.95			-1,320.95			-2,002.90
Net Pay	**166**		**4,791.07**	**120**		**3,074.65**	**286.00**		**7,865.72**
Employer Taxes and Contributions									
Medicare Company			79.36			63.74			143.10
Social Security Company			339.33			272.53			611.86
CA - Unemployment Company			109.46			87.91			197.37
CA - Employment Training Tax			5.47			4.40			9.87
Total Employer Taxes and Contributions			**533.62**			**428.58**			**962.20**

Fieldbrook Glendale Community Services District
Journal
January 25 through February 28, 2023

Trans #	Type	Date	Num	Name	Memo	Account	Debit	Credit
19971	General Journal	01/31/2023	578	Kernen C...	Kernen Principal payment #11	1206.04 · A/R Current - Ker...		1,000.41
				Kernen C...	Kernen Interest	4900.02 · Sewer Interest In...		144.67
				Kernen C...	Kernen Principal payment #11	1028 · Sewer Asset - Cash	1,145.08	
							1,145.08	1,145.08
20038	General Journal	01/31/2023	579		Monthly Depreciation	5350 · Depreciation Expens...	15,558.00	
					Monthly Depreciation	1710 · Water Accumulated ...		3,671.00
					Monthly Depreciation	1720 · Sewer Accumulated ...		7,559.00
					Monthly Depreciation	1730 · Fire Accumulated De...		4,328.00
							15,558.00	15,558.00
20039	General Journal	02/28/2023	580		Monthly Depreciation	5350 · Depreciation Expens...	15,558.00	
					Monthly Depreciation	1710 · Water Accumulated ...		3,671.00
					Monthly Depreciation	1720 · Sewer Accumulated ...		7,559.00
					Monthly Depreciation	1730 · Fire Accumulated De...		4,328.00
							15,558.00	15,558.00
TOTAL							**32,261.08**	**32,261.08**

12:14
◀ Outlook

Order details

90mm Guide Wheels Protective Cover for 23mm Pipe Sewer Ins...

$20.20

Returns accepted through Mar 29, 2023.

Leave feedback | More actions...

Tracking details

Number ES100220357528100010100 1B0N

Track package

Shipping address

Grant L Weaver
1082 W. Bates
Mckinleyville, California 95519-3408
United States

Payment info

VISA Ending in 7421
Grant L Weaver

$21.77
Jan 17 at 9:00 PM

Home | My eBay | Search | Notifications (5) | Selling

THANK YOU FOR SHOPPING AT
HENSEL'S ACE HARDWARE
ACE STORE #14010
884 9TH ST.
ARCATA CA 95521
(707) 822-2965

60DAY REGULAR ITEM RETURN POLICY& 14DAY
SPECIAL ORDER POLICY W/RECEIPT

01/17/23 12:26PM RKS 554 SALE

43299 1 EA 25.99 EA
PIPE S&D PVC SLD 4X10BEL 25.99
9791583 1 EA 3.99 EA
CORRECTION TAPE WITE-OUT 3.99
91400 1 EA 7.59 EA
MARKER MEAN STREAK W-HITE 7.59
2094035 1 EA 9.99 EA
BIT DRILL MULTIPURPS1/4" 9.99
9246232 1 EA 2.99 EA
PROFILE PEN BLK 2PK 2.99
5203450 1 EA 11.99 EA
HOOK TOOL FLIPUP BLACK 11.99
19365 1 EA 15.99 EA
RAGS PAPER 12X10" 200PC 15.99
5 4 EA 2.19 EA
HARDWARE 8.76

SUB-TOTAL:$ 87.29 TAX: $ 7.42
TOTAL: $ 94.71

CHARGE AMT: 94.71

==>> JRNL#E93469 INV#240950/1 <<==

USABlueBook Order Confirmation

*** PLEASE PRINT ORDER CONFIRMATION OUT AND RETAIN IT FOR FUTURE REFERENCE ***

Order Number 851170
Customer ID 1071148
Order Date 1/18/2023 3:30:25 PM

Bill To:
Grant Weaver
Fieldbrook Glendale Csd
PO BOX 2715
Mekinelyville, CA 95519
UNITED STATES
707-845-3443
gweave82@hotmail.com

Ship To:
Fieldbrook Glendale Csd
Fieldbrook Glendale Csd
1082 W BATES RD
Mekinelyville, Ca 95519
United States

Order Date:	1/18/2023 3:30:25 PM	**Locale/Currency:**	en-US / USD
Payment Method:	CREDITCARD	**Name On Card:**	Grant Weaver
Card Type:	MASTERCARD	**Card Number:**	****9871

SKU:	Product	Quantity	Price	Ext. Price
42926	Duct, 8" x 10' Hose w/ cuffs Vinyl Polyester	1	$198.95	$198.95

Order Notes:
None

SubTotal:		$198.95
Estimated Shipping:	FedEx Ground Service	$21.58
Estimated Tax:		$17.09
Total:		$237.62

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HENSEL'S ACE HARDWARE
ACE STORE #14010
884 9TH ST.
ARCATA CA 95521
(707) 822-2965

60DAY REGULAR ITEM RETURN POLICY& 14DAY
SPECIAL ORDER POLICY W/RECEIPT

01/20/23 1:57PM KH 556 SALE

4126009	1	EA	6.59 EA	
NIPPLE GALV 2"X2.5"				6.59
4125886	1	EA	5.99 EA	
NIPPLE GALV 2"XCLOSE				5.99

SUB-TOTAL:$ 12.58 TAX: $ 1.07
TOTAL: $ 13.65
CHARGE AMT: 13.65

==>> JRNL#E95651 INV#241270/1 <<==
CUST NO: 374
ACE REWARDS ID # 19801570337

Customer Copy

AIR Relief VALVE
FITTINGS

Name : X_____
GRANT WEAVER
Acct: GRANT WEAVER
PO#: FGCSD
****
Tell us about your experience
today and Enter to win a $50
gift card!
****
To participate
* Visit: TalkTo.AceHardware.com

* This survey invitation is
valid for 72 hours

* Store # 14010
* Survey approximately 5 mins

No purchase necessary.
Must be 18 or older to
enter sweepstakes. Void
where prohibited. See rules
at: TalkTo.AceHardware.com

THANK YOU FOR SHOPPING AT
HENSEL'S ACE HARDWARE
ACE STORE #14010
884 9TH ST.
ARCATA CA 95521
(707) 822-2965

60DAY REGULAR ITEM RETURN POLICY& 14DAY
SPECIAL ORDER POLICY W/RECEIPT

01/20/23 9:56AM PM 556 SALE

47778	3	EA	6.59 EA	
ELBOW GLV 1" 90 DEG ST				19.77
4067385	3	EA	8.59 EA	
HEX BUSHING GLV 2X1"				25.77

SUB-TOTAL:$ 45.54 TAX: $ 3.87
TOTAL: $ 49.41
CHARGE AMT: 49.41

==>> JRNL#E95395 INV#241216/1 <<==
CUST NO: 374
ACE REWARDS ID # 19801570337

Customer Copy

ARV Fittings

Name : X_____
GRANT WEAVER
Acct: GRANT WEAVER
PO#: FGCSD
****
Tell us about your experience
today and Enter to win a $50
gift card!
****
To participate
* Visit: TalkTo.AceHardware.com

* This survey invitation is
valid for 72 hours

* Store # 14010
* Survey approximately 5 mins

No purchase necessary.
Must be 18 or older to
enter sweepstakes. Void
where prohibited. See rules
at: TalkTo.AceHardware.com

Request for Mileage Reimbursement Form

Name: Richard Hanger

Rate per Mile	0.655
Total Mileage	216
Total Reimbursement	$ 141.48

Date	Description/Notes	Mileage
1/24/2023	Board Meeting	42
1/31/2023	Royal Gold Reading, Mail	45
2/10/2023	Mail	42
2/17/2023	Mail	42
2/24/2023	Mail, Royal Gold Reading	45

	Fee Calculation based on 2022 Budgeted expenses	
	Total Amount	$ 141.48
47%	Water	$ 66.50
47%	Sewer	$ 66.50
6%	Fire	$ 8.49

Requeser signature _____ Date _____

Approval Board Meeting Date _____

Request for Mileage Reimbursement Form

Name: Grant Weaver

Rate per Mile	0.655
Total Mileage	763
Total Reimbursement	$ 499.77

Date	Description/Notes	Mileage
2/21/2022	Mileage for 01/19 to 02/21	763

Requeser signature _____ Date _____

Approval Board Meeting Date _____

Fieldbrook Glendale Community Services District
water · sewer · fire

Agenda Background

Meeting Date: 2/28/23

Agenda Title: Water Connection, Engstrom, 245 Buckman Trail

Agenda Item: 5.1 **Presented by:** Richard Hanger

Type of Item: Action **Type of Action Required:** Roll Call Vote

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Background:
The Engstrom's are requesting a water connection at 245 Buckman Trail. The infrastructure was places for four connections in the summer of 2021 as part of the Harvey connection. The board approve the four connections at that time.

At issue here, is a financing request. Water Ordinance 91-1, Sections 4.05 and 4.06 requires installation and connection charges be collected in advance of service. The Engstroms have requested a payment plan of twelve months. The board may, at its sole discretion, waive provisions of the water ordinance provided they are able to establish findings that are supportive of the request.

Supporting documents have been provided that support the following findings:

1.) A special needs child resides in the home.

2.) Potable water is not available from a reliable source.

3.) The full cost of the entire project is estimated at $40,000 and represents a financial hardship.

Should the board be able to make these findings it may then waive the provisions of Water Ordinance 91-1 without setting a precedent.

The water connection fee is $12, 512.
A twelve month payment plan would bear no interest at $1,042.68 per month

Alternatively, the board may approve a 24 or 36 month plan with an annual interest rate of 6.25%
A 24-month plan would establish a monthly payment of $555.95 and collect $830.80 in interest.
A 36-month plan would establish a monthly payment of $382.06 and collect $1,242.10 in interest.

All installation fees, including the cost of the meter would be due with the application for service.

Recommendation:
Move to approve the Engstrom financing request based on the findings in the staff report.
Establish the length of the payment plan and applicable interest rate.
Direct staff to draft an agreement inclusive of remedies in case of default.

Dear Members of the Board,

Thank you for taking the time to hear from us. My wife, children and I are in need of a little community support in order to secure access to very essential water. Our well water has not been healthy, or even accessible for several years now, and taking water delivery is too expensive to be sustainable. The obvious solution has always been to connect to city water.

We are already $5000 into the project, with our meter installed, and a line laid from the meter partway to the house. We still need more trenching and line laid, with an estimated cost of $20,000. Add to that the $12,000 hook-up fee, and a couple thousand more to make the actual connection of the new line to our home, and we will have a bill upwards of $40,000.

At this point, I have fairly exhausted my financial resources, and am limited to using my earnings, as they come in. What we are requesting is for you to permit us to have the connection costs amortized over a year, allowing us to spread the cost over 12 monthly payments, essentially granting my family access to life sustaining water a year sooner than we could by saving the money first.

I recognize that this is not the norm, and that I am asking for a favor. I do so with humility, and respect. I have attached a few documents in support of our case. One is an email from the WIC office, as a demonstration of our financial situation. Second is an email from our son's ABA therapist, demonstrating our position as parents of a special-needs child. And third is a Dr.'s note stating the importance of residential water service for safety and health.

Again, thank you very much for your time, and consideration.

Sincerely,

Mark and Elizabeth Engstrom
245 Buckman Trail Ln, Fieldbrook
(707) 630-2280

Fieldbrook Glendale Community Services District
water · sewer · fire

Agenda Background

Meeting Date: 2/28/23

Agenda Title: Glendale Hydraulic Water Study - Report

Agenda Item: 5.2 **Presented by:** Richard Hanger

Type of Item: Discussion **Type of Action Required:** No Action

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Background:
The district directed a study be completed in the Glendale area to address the hydraulic water supply. GHD has completed the study and outlined three alternatives.

Recommendation:
Review the study and provide direction to staff.

Technical Memorandum

February 20, 2023

To	Fieldbrook Glendale Community Services District	**Contact No.**	707-267-2212
From	Steven Pearl	**Email**	Steven.pearl@ghd.com
CC	Ryan Doyle, Rebecca Crow PE	**Project No.**	12565692
Subject	Hydraulic Systems Alternatives Analysis Technical Memo		
Attachments	Attachment A – Hydraulic Model Node Locations Attachment B – Hydraulic Model Results Summary Attachment C – Hydraulic Diagram		

1. Introduction

GHD has evaluated 3 alternatives to address pressure concerns within the Fieldbrook Glendale Community Services District (FGCSD or District) water distribution system. The evaluation is based on the five alternatives presented in the FGCSD Water Infrastructure Evaluation Update Technical Memorandum submitted to the District on April 1, 2021 (2021 Report). The 2021 Report re-states that the District has experienced persistent pressure issues for several years. Hydraulic modeling and hydrant testing have been conducted in recent years in an effort to better understand the causes of pressure loss in the system. The purpose of this memorandum is to present refined hydraulic modeling results of Alternatives 1, 2, and 4 presented in the 2021 Report and discuss the alternatives with respect to the updated hydraulic model results. For clarity, the 3 alternatives are re-numbered sequentially for this technical memo:

1. Water Storage along Fieldbrook Road Upstream of Lyman Road booster pump station (BPS)
2. Fire Pump Station
3. Backflow from Pressure Zone 2 (PZ2) to Pressure Zone 1 (PZ1)

2. Background

Humboldt Bay Municipal Water District (HBMWD) provides potable water to the District. A transmission line supplies water from HBMWD's 1,000,000-gallon Korblex Reservoir at its Turbidity Reduction Facility to the FGCSD, the City of Blue Lake and several communities within the region. The transmission line originates as a 16-inch pipeline from the Korblex Reservoir. The line splits in both a westward and eastward direction. The westward line serves the McKinleyville CSD while the eastward line serves the District and the City of Blue Lake.

The eastward water line reduces from a 16-inch to a 14-inch pipe at the West End Road and Warren Creek Road intersection before crossing the Mad River near Glendale Drive. The line spurs in two directions approximately 490-feet east of Glendale Drive and Fieldbrook Road intersection at the location of the FGCSD meter. The eastern continues as a 14-inch pipe up to the intersection of Glendale Drive and Glendale Road to Larsen Heights. The line continues east as a 12-inch pipe on Glendale Drive to serve the Glendale community

and feeds the Blue Lake BPS, which is controlled by water levels in the Blue Lake water storage tanks. The northern spur is a 6-inch to 10-inch pipeline that follows Fieldbrook Road to serve the Fieldbrook community. FGCSD's Lyman Road BPS is located on this spur to provide the pressure needed to fill the District's 400,000-gallon tank located in Fieldbrook and is controlled by the water level in the District's storage tank.

Figure 1 in Attachment A shows the current water distribution system, the District's service boundary, and pressure nodes evaluated in the updated hydraulic model.

2.1 Pressure Zones

The system downstream (north) of the Lyman Road BPS is Pressure Zone 2 (PZ2). The system upstream (south) of Lyman BPS, upstream (northwest) of the Blue Lake BPS, and downstream (east) of the HBMWD transmission line at the District boundary is Pressure Zone 1 (PZ1). This memorandum is primarily focused on the pressure issues identified in PZ1. Due to the proximity with the District's storage tank, no major pressure issues have been reported in PZ2. Based on water meter data provided by the District, a total of 248 service connections exist in PZ1 and a total of 333 service connections exist in PZ2 as of November 2019.

2.2 Updated Hydraulic Model 2021

The Updated Hydraulic Water Model (2021 Model) done in WaterCAD is based on the initial hydraulic water model prepared in 2016 (2016 Model). Adjustments to demands, existing pipe material and lengths, and the Lyman BPS were included to be consistent with an improved hydraulic model developed in 2019 (2019 Model).

The demands provided in the 2021 Model were based on the highest demands used in the previous models and adding demand to nodes that were not assigned in the 2016 Model. Additional demands were added based on the cannabis permit applications in PZ1 and correspondence from Royal Gold's Environmental Compliance Officer requesting a maximum demand of 175 gpm during peak hour between 8am and 5pm. A summary of increased demands of corresponding nodes used in the 2021 Model are presented in Table 2.1. The Lyman Road BPS characteristics were also updated to be consistent with the 2019 Model.

The model results are limited to the recommendations presented in this memo and should not be used in subsequent designs. Subsequent designs shall use an updated model with inputs that are more representative of the water system's line pressures and updated demands.

Table 2.1 Summary of nodes and proposed demands for updated hydraulic model

Label	Description	Proposed Demand (gpm)	Proposed Future Demand (gpm)
N-4	Walton Ln and Parker Ln	200	-
N-5	Fieldbrook Rd Upstream of Lyman Road BPS	115	-
N-8	Fieldbrook Rd at Anker Lane	350	0.34
N-10	Swanson Lane Tee	398	11.4
N-11	Blue Lake BPS	457	-
N-18	Tee to Warren Creek Road Extension	18	-
N-21	MCSD PS Suction	2776	
N-22	Royal Gold Connection	175	

3. System Performance

A baseline model scenario was performed to simulate the actual conditions of the Fieldbrook Glendale water network including current demands and projected future demands from agriculture and industrial customers in Glendale and Fieldbrook. The model is simulated for the fire flow scenario on all nodes with the applicable future water demand provided. Under this baseline scenario, the majority of nodes within PZ1 of the District boundary were below the minimum criteria of 35 psi during average daily demand (ADD) conditions. The fire flow criteria is to maintain 20 psi and 1,500 gpm for two hours at a fire hydrant. Similarly, the majority of nodes within PZ1 are not capable of meeting the 1,500 gpm requirement. Flow velocities in all pipe segments are less than 6 feet per second (ft/s) under fire flow conditions. The node model results are presented in Table 0.2 presented in Attachment B.

3.1 Alternative 1 – Water Storage Upstream of Lyman BPS

Alternative 1 includes the installation of a new a 200,000 gallon water tank in the Glendale area upstream (south) of the Lyman Road BPS that would serve customers in PZ1. An approximate tank elevation of 325 ft is proposed based on the locations sited in previous studies. The model for this alternative was simulated for the fire flow scenario on all nodes with the applicable future water demand provided and the additional storage tank. Model results for this alternative indicate the pressure at most of the nodes were above the minimum criteria of 35 psi during ADD conditions. High pressures above 88 psi and up to 99 psi are noted at the nodes near the proposed tank location. Using the same fire flow criteria of maintaining 20 psi at a fire hydrant at a flow of 1,500 gpm for two hours, most of the proposed nodes meet this requirement. Nodes N-19 and N-24 are not capable of meeting the fire flow requirement with the available fire flow being 432 gpm and 1058 gpm, respectively. Flow velocities in all pipe segments are less than 6 feet per second (ft/s) during fire flow conditions.

An advantage of this alternative is the fire flow of 1,500 gpm at 20 psi is nearly satisfied at all nodes with the exceptions of N-19 and N-24. Of those nodes, N-19 is out of district and N-24 is proposed and does not represent existing conditions. It also offers the most long term water resilience for the District. One potential disadvantage to this alternative is the elevation at which the tank is installed. A location will need to be sited that can allow for the current HBMWD to operate as is. A tank located at an elevation higher than the existing Korblex tank will still require a booster station to fill the new tank based on the elevations shown in the hydraulic diagram in Attachment C. A new storage tank with a booster pump station to fill the new tank satisfies fire flows and pressure at all nodes in the District. The complete node model results are presented in Table 1.2 and 1.5 of Attachment B.

Another disadvantage to this alternative is primarily the associated construction costs and land acquisition and access. This alternative will require an access road and a clear corridor to install an estimated 2,000 ft of 10” pipe to a tank situated on a hill so it provides sufficient head to the system. This criteria limits the available options for land acquisition. This alternative therefore does not achieve addressing pressure issues in the near term.

3.1.1 Alternative 1 – Cost and Energy Efficiency Analysis

An opinion of probable cost has been developed for construction of a new water tank with the possibility of needing a booster pump station. The estimate is based on a recent estimate completed for the Anker Tank Replacement Project and assumes similar construction techniques. Operation and maintenance costs for the booster pump station is estimated by calculating the power required for a demand of 400-gpm and a head of 28-ft, and assumes a daily run time of 4 hours and energy cost of $0.16/kWh. A run time of 4 hours/day is assumed since the booster pump will only be used to fill the tank intermittently. The model indicates pressure

issues in PZ1 will be resolved with the tank, but will require a booster station to fill the tank. Table 3.1 below presents an estimated cost for Alternative 1.

Table 3.1 - Cost Estimate for New Water Storage with and without a Booster Pump Station.

Item No.	Description	Quantity	Units	Unit Cost	Cost
1	Engineering Design (±10% of Construction)	1	LS	$ 114,000	$ 114,000
2	Mobilization/Demobilization (5% of Construction)	1	LS	$ 70,000	$ 70,000
3	Temporary Traffic Control	1	LS	$ 15,000	$ 15,000
4	Construction Staking & Misc Testing	1	LS	$ 20,000	$ 20,000
5	Erosion Control and Site Restoration	1	LS	$ 30,000	$ 30,000
6	Demolition	1	LS	$ 30,000	$ 30,000
7	Earthwork	1	LS	$ 214,606	$ 214,606
8	Yard Piping and Appurtenances	1	LS	$ 179,594	$ 179,594
9	Architectural	1	LS	$ 32,000	$ 32,000
10	Structural	1	LS	$ 206,250	$ 206,250
11	Electrical	1	LS	$ 31,435	$ 31,435
	TOTAL				**$ 942,886**
	Additive Item				
12	Booster Pump Station	1	LS	$ 347,343	$ 347,343
	TOTAL				**$1,290,228**

3.2 Alternative 2 – Booster Pump Station

Two locations for a new booster pump station have been considered. The first location considered is near the Korblex tank. The second location considered is near Essex between Node-18 at the Lindley Road Tee and Node-3 at Fieldbrook Road.

Korblex Location

The booster pump station proposed near the existing Korblex tank was modelled with a pump flow of 4,500 gpm and head of 310 ft. The model is simulated for the fire flow scenario on all nodes with the applicable future water demand provided. The model indicates the pressure at most of the nodes were above the minimum criteria of 35 psi and some above 80 psi. Using the same fire flow criteria, most of the proposed nodes can meet this requirement. Node-5 and Node-24 are not capable of meeting the fire flow requirement of 1,500 gpm with the available fire flow being 987 gpm and 1,054 gpm respectively. Flow velocities in most of pipe segments are less than 6 feet per second (ft/s) during fire flow conditions. The complete node model results are presented in Table 2.2 of Attachment B.

An advantage with this alternative at Korblex is that the required fire flow and pressure are satisfied at all nodes except for N-5 which is the downstream most node in Pressure Zone 1, just upstream of the Lyman BPS. Disadvantages of this alternative primarily include construction and maintenance costs. Initial pump station costs, electrical provisions, high energy costs, and ongoing maintenance are all potential disadvantages. Another potential disadvantage is that static pressures at nodes can reach 100 psi and above. This location for a booster pump station would not require land acquisition and can be construction on HBMWD property.

Park 4 Location

The fire booster pump station proposed at Park 4, between Node 2 and Node 18. This location is the furthest east property that HBMWD owns on the South side of Mad River, at the tee to Lyndley Road and the tee to Fieldbrook Road, which was modelled with a pump flow of 2,600 gpm and head of 250 ft. The model is

simulated for the fire flow scenario on all nodes with the applicable future water demand provided. The pressure at most of the nodes were above the minimum criteria of 35 psi and some above 80 psi, which is the typical line pressure at Park 4. Using the same fire flow criteria, most of the proposed nodes can meet this requirement. Node-5, Node-19 and Node-24 are not capable of meeting the requirement of 1,500 gpm with the available fire flow being 948 gpm, 460 gpm and 1,019 gpm respectively. Flow velocities in most of pipe segments are less than 6 feet per second (ft/s). The complete node model results are presented in Table 2.5 of Attachment B.

Advantages to this alternative at the Park 4 location is that required fire flows and pressures are almost satisfied at all nodes except N-24 at the proposed Royal Gold connection. Construction and maintenance costs for this location is slightly less expensive, but has the same limitations as the Korblex location.

3.2.1 Alternative 2 – Cost and Energy Efficiency Analysis

An opinion of probable cost has been developed for construction of a new booster pump station. The estimate is based on a recent estimate for a booster pump station with similar flow and head requirements. Operation and maintenance costs for the booster pump station is estimated by calculating the power required for a demand of 400-gpm and a head of 28-ft, and assumes a daily run time of 8 hours and energy cost of $0.16/kWh. A run time of 8 hours is assumed since the booster pump will be used to satisfy pressure and flow requirements throughout PZ1. Table 3.2 below presents an estimated cost for Alternative 2. It is assumed the price will be similar for either location and does not include land acquisition since the preferred site is on HBMWD property.

Table 3.2 - Cost Estimate for Booster Pump Station

Item No.	Description	Quantity	Units	Unit Cost	Cost
1	Engineering Design (±10% of Construction)	1	LS	$ 35,000	$ 35,000
2	Mobilization/Demobilization (5% of Construction)	1	LS	$ 15,000	$ 15,000
3	Temporary Traffic Control	1	LS	$ 15,000	$ 15,000
4	Construction Staking & Misc Testing	1	LS	$ 16,000	$ 16,000
5	Erosion Control and Site Restoration	1	LS	$ 12,000	$ 12,000
6	Demolition	1	LS	$ 14,500	$ 14,500
7	Earthwork	1	LS	$ 27,929	$ 27,929
8	Yard Piping and Appurtenances	1	LS	$ 89,485	$ 89,485
9	Architectural	1	LS	$ 32,000	$ 32,000
10	Structural	1	LS	$ 70,000	$ 70,000
11	Electrical	1	LS	$ 18,469	$ 18,469
12	Estimated Annual O&M Costs	1	LS	$ 1,960	$ 1,960
	TOTAL				**$ 347,343**

3.3 Alternative 3 – Backflow from PZ2 to PZ1 with Pressure Reducing Valve

As designed, the Lyman Road BPS has a pressure-reducing valve that can allow back flow from PZ2 to PZ1 when pressure drops in PZ1 below an adjustable threshold. The Lyman Road BPS may not be operating during backflow. The Model is simulated for the fire flow scenario on all nodes with the applicable future water demand provided. The pressure at most of the nodes were above the minimum criteria of 35 psi and below 80 psi. Using the same fire flow criteria, most of the proposed nodes can meet this requirement. Nodes N-5, N-6, N-7, N-12, N-13, N-19 and N-24 are not capable of meeting the requirement of 1,500 gpm with the available fire flow being below 1,000 gpm for N-19 and N-24 and between 1,000 gpm and 1,500 gpm for the remaining nodes.

Flow velocities in most of pipe segments are less than 6 feet per second (ft/s). The complete node model results are presented in Table 3.2 of Attachment B.

The main advantage to this alternative is there is no additional cost to operating the existing PRV, but a disadvantage is the several unknowns with the PRV configuration. Though several nodes do not meet the fire flow requirements, pressure requirements are still met. Nodes N-5, N-6, N-7, N-12, N-13 are close to meeting the fire flow requirements. Of these nodes, only one had an updated demand in the new model, node N-5. This demand represents pending cannabis permit applications and does not represent the actual demand at this location in the system. The other two nodes, N-19 and N-24, also do not meet fire flow requirements, but node N-24 is a proposed industrial connection to the system and does not represent what the system actually sees. Node N-19 is out of district and adjustments to the existing PRV can be made to achieve fire flow requirements for the failed node locations. The adjustment must be done manually which is a disadvantage, especially in an emergency situation. The main disadvantage to this alternative is that another PRV and check valve located on Line 5 near Larsen Heights prevents backflow to all of Glendale as indicated in Figure 2, Attachment C. This PRV will need to be replaced with a PRV that allows backflow and a subsequent model will need to be produced to determine pressure set points for the new PRV.

3.3.1 Alternative 3 - Cost and Energy Efficiency Analysis

An opinion of probable cost has been developed for reconfiguring the PRV station located near Larson Heights. The estimate is based on recent estimates for similar appurtenances on a recent pump station project. The estimate assumes that most of the fittings and concrete vault can still be used. It also assumes manual operation similar to the PRV station located at the Lyman PS. Table 3.3 below presents an estimated cost for Alternative 3.

Table 3.3 - Cost Estimate for Re-configuring the Larsen Heights PRV Station

Item No.	Description	Quantity	Units	Unit Cost	Cost
1	Engineering Design (±10% of Construction)	1	LS	$ 10,000	$ 10,000
2	Mobilization/Demobilization (5% of Construction)	1	LS	$ 3,000	$ 3,000
3	Temporary Traffic Control	1	LS	$ 9,000	$ 9,000
4	Construction Staking & Misc Testing	1	LS	$ -	$ -
5	Erosion Control and Site Restoration	1	LS	$ 8,000	$ 8,000
6	Demolition	1	LS	$ 8,200	$ 8,200
7	Earthwork	1	LS	$ 10,628	$ 10,628
8	Yard Piping and Appurtenances	1	LS	$ 18,400	$ 18,400
9	Architectural	1	LS	$ -	$ -
10	Structural	1	LS	$ -	$ -
11	Electrical	1	LS	$ 50,000	$ 50,000
12	O&M Costs	1	LS	$ -	$ -
	TOTAL				**$ 117,228**

4. Recommendations and Next Steps

The most long-term solution to address pressure concerns in PZ1 would be to construct a new storage tank at one of the locations that have been sited in past assessments. A new tank would provide needed water resiliency to the district. Several parcels in the Glendale area have already been evaluated for acquisition, elevation, and constructability. Preliminary studies on the elevation of feasible locations for the new tank indicate a booster pump station will still be required to fill the new tank. The most ideal location for a booster

pump station is Park 4 since it is nearest to the FGCSD boundary, has power nearby, and is relatively flat and accessible. This location will also benefit HBMWD customers outside of the FGCSD boundary.

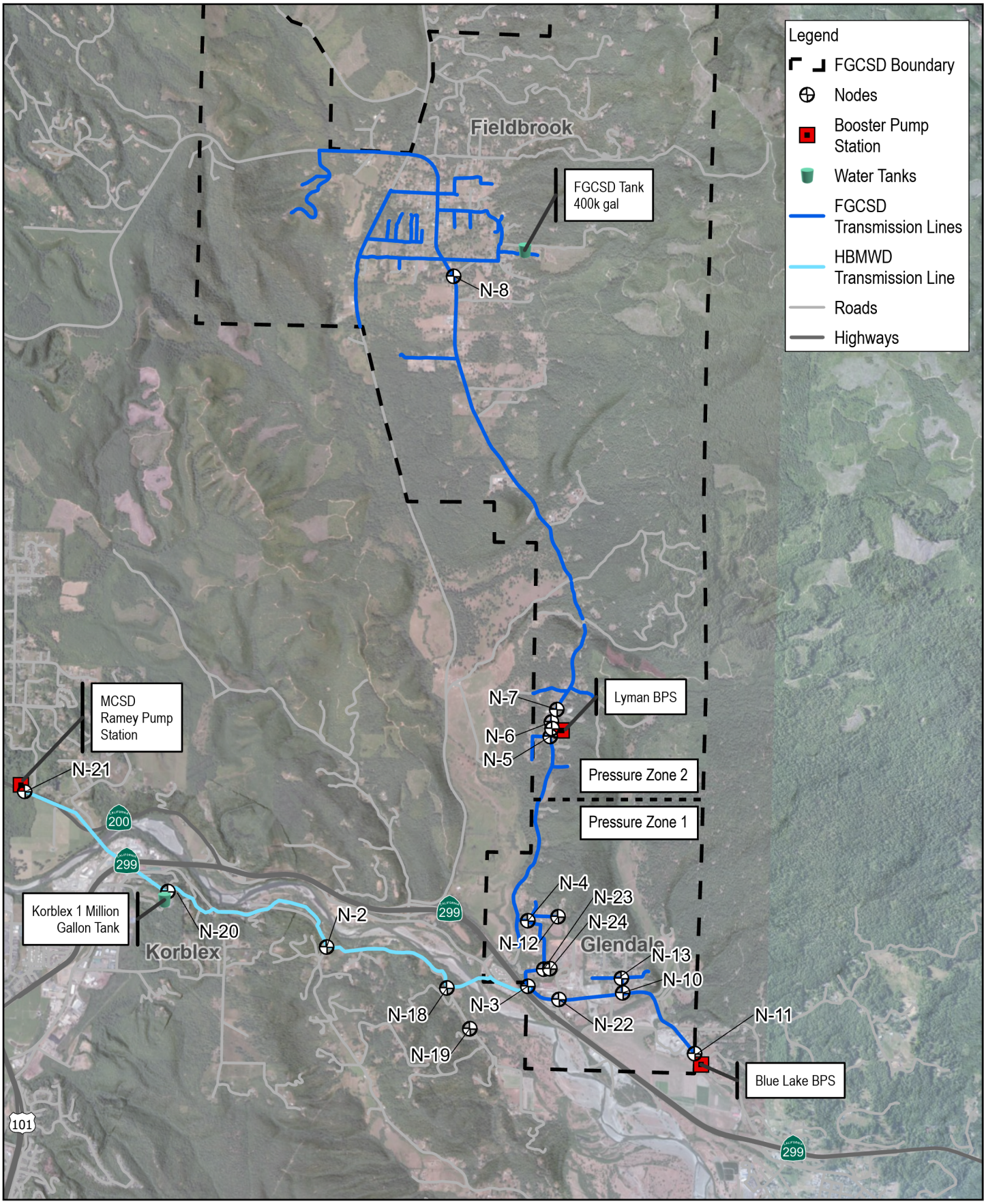
A short-term solution to address pressure concerns in PZ1 was considered, which would consist of installing new pressure reducing valves that allow backflow at the Lyman Pump Station and the PRV station at Larsen heights which currently does not allow backflow into the Glendale area. A Cla-Val model 90-05 Pressure Reducing Valve with Return Flow or equivalent is capable of allowing backflow to PZ1, but not without substantial reconfiguration of the PRV stations. Additional studies would need to be done to better understand limitations of the infrastructure and line pressures of the system to not introduce problems or pipe failures from the changes in pressure. Compatibility of automated sensors on the valve with existing or new panels would also need to be verified, as well as pump set points at Lyman Pump Station may possibly need to be adjusted to accommodate demands and tank levels for PZ2 to ensure backflow does not occur when the existing tank is being filled. It is recommended these PRV stations be evaluated with subsequent design strategies for a new tank and booster station at Park 4, along with an updated model that is more representative of the system's line pressures and demands.

Regards,

Steven Pearl

Assistant FGCSD District Engineer

Attachment A



Paper Size ANSI A

0 1,000 2,000 3,000 4,000

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

Fieldbrook Glendale Community Services District
Hydraulic Systems Alternatives Analysis

Project No. **12565692**
Revision No. **-**
Date **Feb 2023**

Water System

FIGURE 1

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Data source: World Imagery (Clarity): This work is licensed under the Esri Master License Agreement. View Summary | View Terms of Use. Export: This layer is not intended to be used to export tiles for offline. Data Collection and Editing: This layer may be used in Collector to collect and edit data. Collection and editing, with the results used internally or shared with others, as described for these use cases.
World Hillshade: Esri, NASA, NGA, USGS. Created by: jlopez4

Attachment B

Table 0.1 - Model Junction Results - Actual Scenario

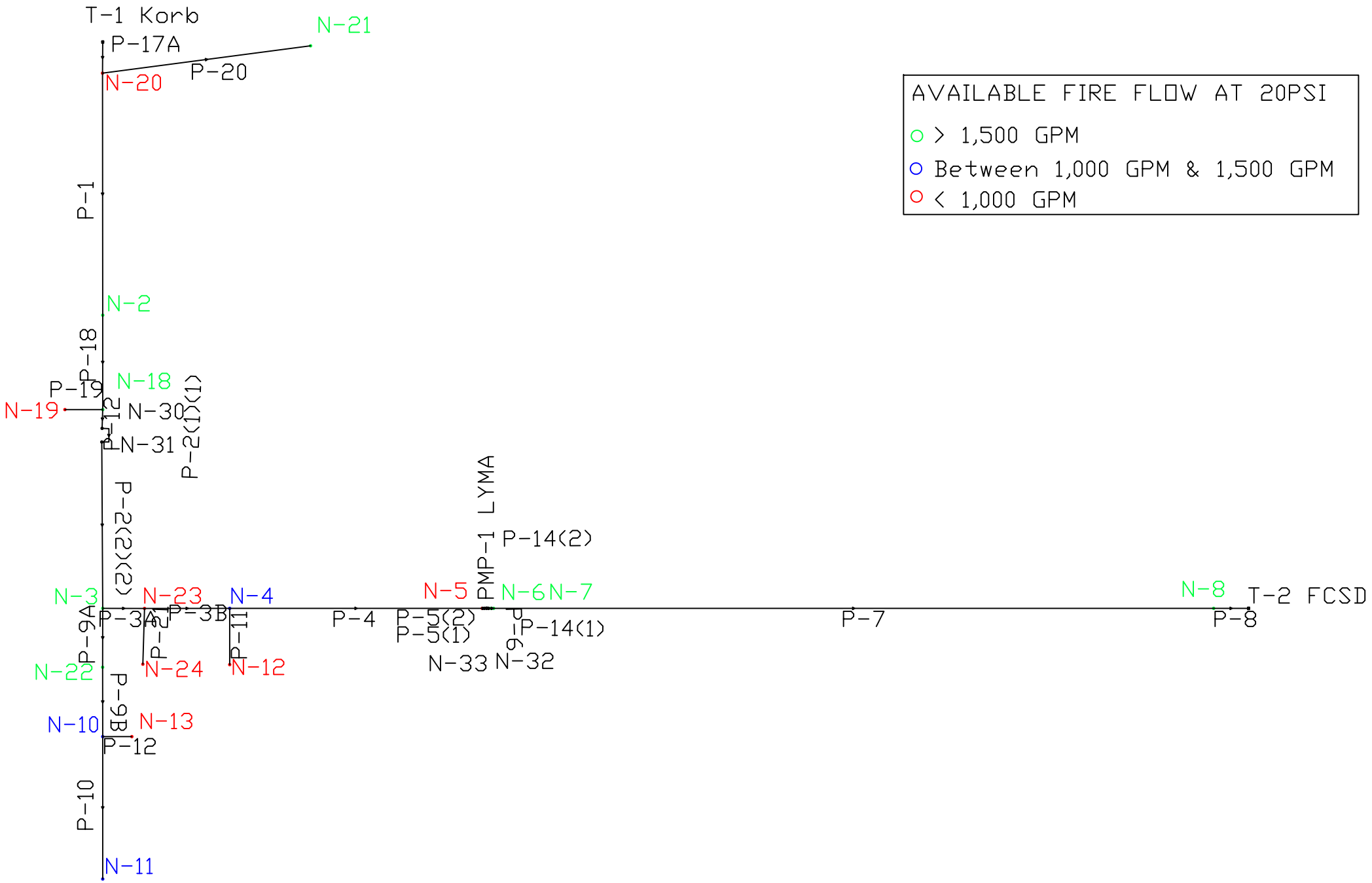
ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
42	N-2	70	0	233.24	71
44	N-3	85	0	218.07	58
31	N-4	81	200	208.73	55
33	N-5	125	115	175.51	22
36	N-6	110	0	398.82	125
37	N-7	110	0	398.6	125
38	N-8	170	350	347.92	77
46	N-10	95	409	211.86	51
74	N-11	86	457	210.09	54
32	N-12	145	0	208.73	28
47	N-13	120	0	211.86	40
43	N-18	60	18	232.35	75
45	N-19	160	0	232.35	31
41	N-20	210	0	243.75	15
73	N-21	50	2776	232.59	79
80	N-22	90	175	215.21	54
109	N-23	139	0	214.67	33
112	N-24	118	0	214.67	42
199	N-30	61.69	0	231.38	73
202	N-31	63.21	0	230.52	72
207	N-32	118.14	0	175.34	25
210	N-33	110	0	400.54	126

Table 0.2 - Model Fire Flow Report - Actual Scenario

Label	Pressure Zone	Fire Flow Constraint Satisfied	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Total Flow (Needed) (gpm)	Total Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
N-2	PZ1	TRUE	1500	3500	1500	3500	20	43
N-3	PZ1	TRUE	1500	2341	1500	2341	20	20
N-4	PZ1	FALSE	1500	1298	1700	1498	20	20
N-5	PZ1	FALSE	1500	34	1615	149	20	20
N-6	PZ2	TRUE	1500	1624	1500	1624	20	20
N-7	PZ2	TRUE	1500	1625	1500	1625	20	20
N-8	PZ2	TRUE	1500	3419	1850	3769	20	20
N-10	PZ1	FALSE	1500	1354	1909	1764	20	20
N-11	PZ1	FALSE	1500	1196	1957	1653	20	20
N-12	PZ1	FALSE	1500	324	1500	324	20	20
N-13	PZ1	FALSE	1500	891	1500	891	20	20
N-18	PZ1	TRUE	1500	3500	1518	3518	20	44
N-19	PZ1	FALSE	1500	521	1500	521	20	20
N-20	PZ1	FALSE	1500	0	1500	0	20	15
N-21	PZ1	TRUE	1500	3500	4276	6276	20	62
N-22	PZ1	TRUE	1500	1817	1675	1992	20	20
N-23	PZ1	FALSE	1500	737	1500	737	20	20
N-24	PZ1	FALSE	1500	390	1500	390	20	20
N-30		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-31		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-32		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-33		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)

Table 0.3 - Model Pipe Results - Actual Scenario

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)	Has User Defined Length?	Length (User Defined) (ft)
65	P-1	6394	N-20	N-2	16	Asbestos Cement	140	1798	2.87	1.612	TRUE	6514
200	P-2(1)(1)	496	N-18	N-30	14	Asbestos Cement	140	1780	3.71	3.033	TRUE	319
201	P-2(1)(2)	174	N-30	MP-3 PRC	14	Asbestos Cement	140	(N/A)	(N/A)	(N/A)	TRUE	112
203	P-2(2)(1)	185	MP-3 PRC	N-31	14	Asbestos Cement	140	(N/A)	(N/A)	(N/A)	TRUE	173
204	P-2(2)(2)	4396	N-31	N-3	14	Asbestos Cement	140	1780	3.71	3.033	TRUE	4104
110	P-3A	1104	N-3	N-23	10	Asbestos Cement	140	738	3.02	3.061	TRUE	1110
111	P-3B	2251	N-23	N-4	10	Asbestos Cement	140	738	3.02	3.061	TRUE	1940
64	P-4	6670	N-4	N-5	8	Asbestos Cement	140	538	3.44	5.055	TRUE	6573
208	P-5(1)	51	N-5	N-32	6	Asbestos Cement	140	423	4.8	13.152	TRUE	12
209	P-5(2)	61	N-32	MP-1 LYM	6	Asbestos Cement	140	423	4.8	13.153	TRUE	15
50	P-6	70	N-6	N-7	8	Asbestos Cement	140	423	2.7	3.239	TRUE	70
66	P-7	19020	N-7	N-8	8	Asbestos Cement	140	423	2.7	3.239	TRUE	15645
55	P-8	924	N-8	T-2 FCSD	10	Asbestos Cement	140	73	0.3	0.042	TRUE	2880
81	P-9A	1555	N-3	N-22	12	Asbestos Cement	140	1041	2.95	2.382	TRUE	1200
82	P-9B	1833	N-22	N-10	12	Asbestos Cement	140	866	2.46	1.694	TRUE	1980
61	P-10	3762	N-10	N-11	12	Asbestos Cement	140	457	1.3	0.518	TRUE	3420
57	P-11	1485	N-4	N-12	10	Asbestos Cement	140	0	0	0	TRUE	1350
54	P-12	770	N-10	N-13	10	Asbestos Cement	140	0	0	0	TRUE	770
205	P-12	719	N-30	N-31	14	Asbestos Cement	140	1780	3.71	3.033	TRUE	285
211	P-14(1)	44	MP-1 LYM	N-33	6	Asbestos Cement	140	423	4.8	13.152	TRUE	75
212	P-14(2)	76	N-33	N-6	6	Asbestos Cement	140	423	4.8	13.152	TRUE	130
147	P-17A	821	T-1 Korb	N-20	16	Asbestos Cement	140	4574	7.3	9.089	TRUE	40
58	P-18	2495	N-2	N-18	14	Asbestos Cement	140	1798	3.75	3.09	TRUE	290
56	P-19	1000	N-18	N-19	6	Asbestos Cement	140	0	0	0	TRUE	1000
63	P-20	5543	N-20	N-21	18	Asbestos Cement	140	2776	3.5	2.031	TRUE	5490
113	P-21	1473	N-23	N-24	4	Asbestos Cement	140	0	0	0	TRUE	440



ACTUAL SCENARIO / FUTURE DEMAND

Table 1.1 - Model Junction Results - New Tank Scenario

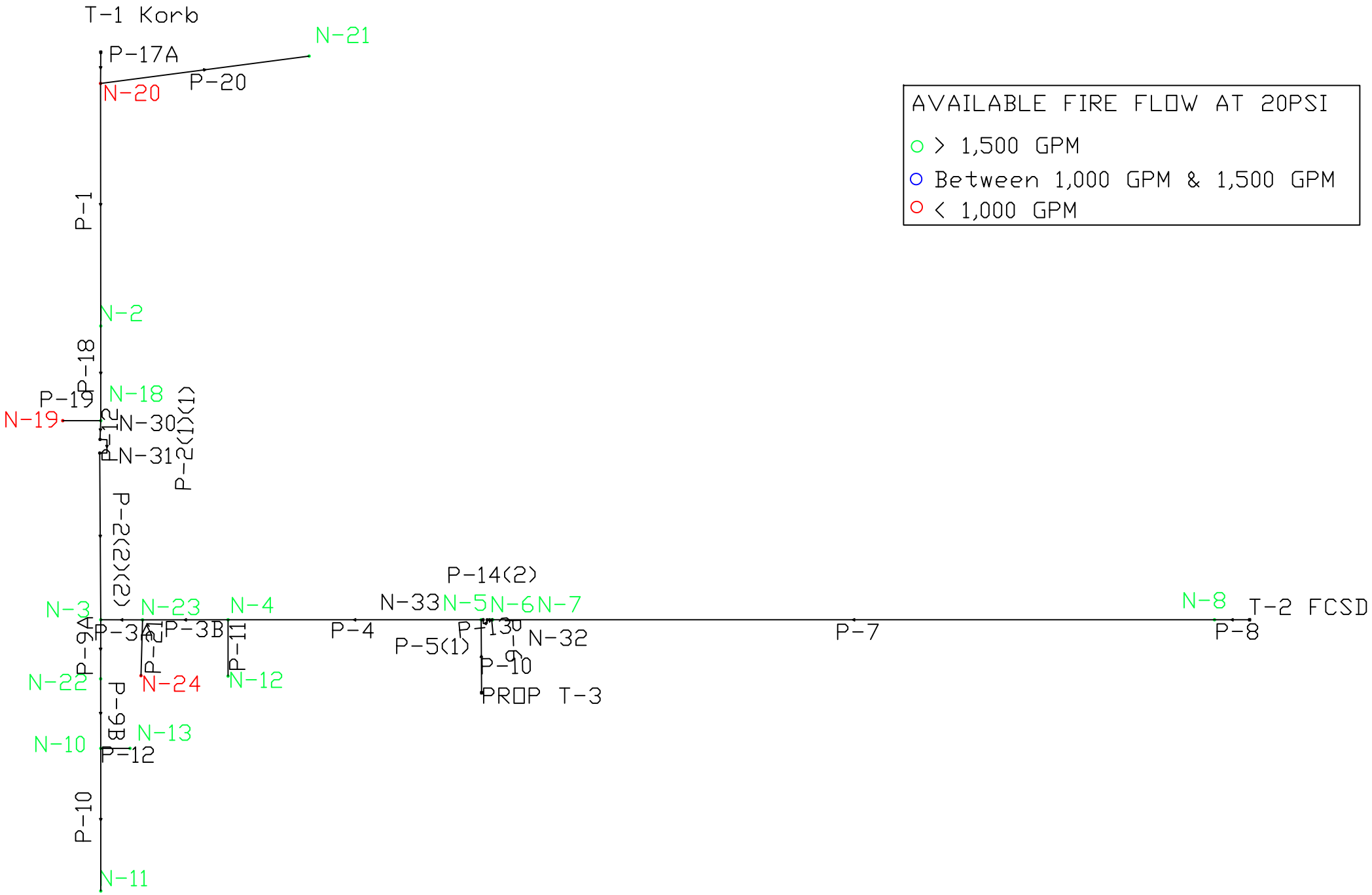
ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
42	N-2	70	0	243.42	75
44	N-3	85	0	242.72	68
31	N-4	81	200	251.33	74
33	N-5	125	115	338.6	92
36	N-6	110	0	338.9	99
37	N-7	110	0	338.93	99
38	N-8	170	350	343.95	75
46	N-10	95	409	236.51	61
74	N-11	86	457	234.74	64
32	N-12	145	0	251.33	46
47	N-13	120	0	236.51	50
43	N-18	60	18	243.37	79
45	N-19	160	0	243.37	36
41	N-20	210	0	243.93	15
73	N-21	50	2776	232.78	79
80	N-22	90	175	239.87	65
109	N-23	139	0	245.86	46
112	N-24	118	0	245.86	55
199	N-30	61.69	0	243.33	79
202	N-31	63.21	0	243.29	78
207	N-32	118.14	0	338.62	95
210	N-33	110	0	338.73	99

Table 1.2 - Model Fire Flow Report - New Tank Scenario

Label	Pressure Zone	Fire Flow Constraint Satisfied	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Total Flow (Needed) (gpm)	Total Flow (Available) (gpm)	Residual Pressure (Lower Limit) (psi)	Residual Pressure (Calculated) (psi)
N-2	PZ1	TRUE	1500	3500	1500	3500	20	58
N-3	PZ1	TRUE	1500	3500	1500	3500	20	30
N-4	PZ1	TRUE	1500	3116	1700	3316	20	20
N-5	PZ1	TRUE	1500	3500	1615	3615	20	68
N-6	PZ2	TRUE	1500	3500	1500	3500	20	35
N-7	PZ2	TRUE	1500	3500	1500	3500	20	32
N-8	PZ2	TRUE	1500	3461	1850	3811	20	20
N-10	PZ1	TRUE	1500	2220	1909	2629	20	20
N-11	PZ1	TRUE	1500	1804	1957	2261	20	20
N-12	PZ1	TRUE	1500	1638	1500	1638	20	20
N-13	PZ1	TRUE	1500	1625	1500	1625	20	20
N-18	PZ1	TRUE	1500	3500	1518	3518	20	61
N-19	PZ1	FALSE	1500	701	1500	701	20	20
N-20	PZ1	FALSE	1500	0	1500	0	20	15
N-21	PZ1	TRUE	1500	3500	4276	6276	20	62
N-22	PZ1	TRUE	1500	3054	1675	3229	20	20
N-23	PZ1	TRUE	1500	2401	1500	2401	20	20
N-24	PZ1	FALSE	1500	573	1500	573	20	20
N-30		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-31		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-32		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-33		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)

Table 1.3 - Model Pipe Results - New Tank Scenario

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)	Has User Defined Length?	Length (User Defined) (ft)
65	P-1	6394	N-20	N-2	16	Asbestos Cement	140	353	0.56	0.079	TRUE	6514
200	P-2(1)(1)	496	N-18	N-30	14	Asbestos Cement	140	335	0.7	0.138	TRUE	319
204	P-2(2)(2)	4396	N-31	N-3	14	Asbestos Cement	140	335	0.7	0.138	TRUE	4104
110	P-3A	1104	N-3	N-23	10	Asbestos Cement	140	-707	2.89	2.822	TRUE	1110
111	P-3B	2251	N-23	N-4	10	Asbestos Cement	140	-707	2.89	2.822	TRUE	1940
64	P-4	6670	N-4	N-5	8	Asbestos Cement	140	-907	5.79	13.277	TRUE	6573
208	P-5(1)	51	N-5	N-32	6	Asbestos Cement	140	-122	1.38	1.305	TRUE	12
50	P-6	70	N-6	N-7	8	Asbestos Cement	140	-122	0.78	0.321	TRUE	70
66	P-7	19020	N-7	N-8	8	Asbestos Cement	140	-122	0.78	0.321	TRUE	15645
55	P-8	924	N-8	T-2 FCSD	10	Asbestos Cement	140	-472	1.93	1.336	TRUE	2880
81	P-9A	1555	N-3	N-22	12	Asbestos Cement	140	1041	2.95	2.382	TRUE	1200
82	P-9B	1833	N-22	N-10	12	Asbestos Cement	140	866	2.46	1.694	TRUE	1980
61	P-10	3762	N-10	N-11	12	Asbestos Cement	140	457	1.3	0.518	TRUE	3420
176	P-10	1922	N-5	PROP T-3	10	PVC	150	-900	3.68	3.888	TRUE	1080
57	P-11	1485	N-4	N-12	10	Asbestos Cement	140	0	0	0	TRUE	1350
54	P-12	770	N-10	N-13	10	Asbestos Cement	140	0	0	0	TRUE	770
205	P-12	719	N-30	N-31	14	Asbestos Cement	140	335	0.7	0.137	TRUE	285
213	P-13	294	N-32	N-33	6	Asbestos Cement	140	-122	1.38	1.304	TRUE	90
212	P-14(2)	76	N-33	N-6	6	Asbestos Cement	140	-122	1.38	1.304	TRUE	130
147	P-17A	821	T-1 Korb	N-20	16	Asbestos Cement	140	3129	4.99	4.5	TRUE	40
58	P-18	2495	N-2	N-18	14	Asbestos Cement	140	353	0.74	0.151	TRUE	290
56	P-19	1000	N-18	N-19	6	Asbestos Cement	140	0	0	0	TRUE	1000
63	P-20	5543	N-20	N-21	18	Asbestos Cement	140	2776	3.5	2.031	TRUE	5490
113	P-21	1473	N-23	N-24	4	Asbestos Cement	140	0	0	0	TRUE	440



ALTERNATIVE 1 - NEW TANK SCENARIO / FUTURE DEMAND

Table 1.4 - Model Junction Results - Tank & Booster Pump Scenario

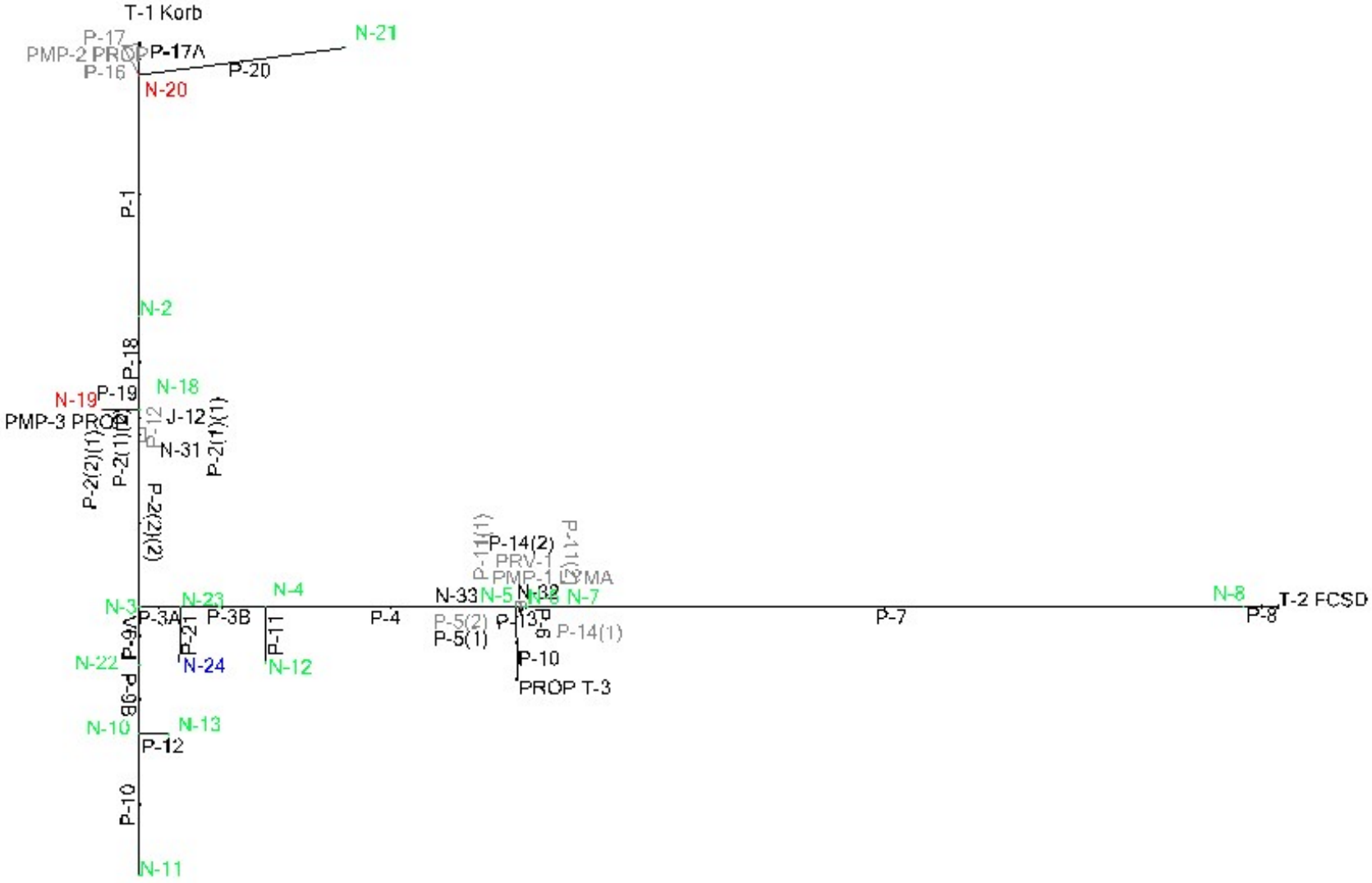
ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
42	N-2	70	0	227.67	68
44	N-3	85	0	476.03	169
31	N-4	81	200	453.17	161
33	N-5	125	115	349.05	97
36	N-6	110	0	348.9	103
37	N-7	110	0	348.89	103
38	N-8	170	350	346.45	76
46	N-10	95	409	469.82	162
74	N-11	86	457	468.04	165
32	N-12	145	0	453.17	133
47	N-13	120	0	469.82	151
43	N-18	60	18	226.31	72
45	N-19	160	0	226.31	29
41	N-20	210	0	243.68	15
73	N-21	50	2776	232.52	79
80	N-22	90	175	473.17	166
109	N-23	139	0	467.71	142
112	N-24	118	0	467.71	151
199	N-30	61.69	0	224.83	71
202	N-31	63.21	0	495.07	187
207	N-32	118.14	0	349.04	100
210	N-33	110	0	348.99	103

Table 1.5 - Model Fire Flow Report - Tank & Booster Pump Scenario

Label	Fire Flow Constraint Satisfied	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Total Flow (Needed) (gpm)	Total Flow (Available) (gpm)	Residual Pressure (Lower Limit) (psi)	Residual Pressure (Calculated) (psi)
N-2	TRUE	1500	3500	1500	3500	20	39
N-3	TRUE	1500	3500	1500	3500	20	79
N-4	TRUE	1500	3500	1700	3700	20	58
N-5	TRUE	1500	3500	1615	3615	20	77
N-6	TRUE	1500	3500	1500	3500	20	44
N-7	TRUE	1500	3500	1500	3500	20	41
N-8	TRUE	1500	3499	1850	3850	20	20
N-10	TRUE	1500	3500	1909	3909	20	27
N-11	TRUE	1500	3067	1957	3524	20	20
N-12	TRUE	1500	3138	1500	3138	20	20
N-13	TRUE	1500	3148	1500	3148	20	20
N-18	TRUE	1500	3500	1518	3518	20	40
N-19	FALSE	1500	432	1500	432	20	20
N-20	FALSE	1500	0	1500	0	20	15
N-21	TRUE	1500	3500	4276	6276	20	62
N-22	TRUE	1500	3500	1675	3675	20	58
N-23	TRUE	1500	3500	1500	3500	20	46
N-24	FALSE	1500	1058	1500	1058	20	20

Table 1.6 - Model Pipe Results - Tank & Booster Pump Scenario

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)	Has User Defined Length?	Length (User Defined) (ft)
65	P-1	6394	N-20	N-2	16	Asbestos Cement	140	2257	3.6	2.456	TRUE	6514
200	P-2(1)(1)	496	N-18	N-30	14	Asbestos Cement	140	2239	4.67	4.638	TRUE	319
201	P-2(1)(2)	174	N-30	MP-3 PRC	14	Asbestos Cement	140	2239	4.67	4.638	TRUE	112
203	P-2(2)(1)	185	MP-3 PRC	N-31	14	Asbestos Cement	140	2239	4.67	4.638	TRUE	173
204	P-2(2)(2)	4396	N-31	N-3	14	Asbestos Cement	140	2239	4.67	4.638	TRUE	4104
110	P-3A	1104	N-3	N-23	10	Asbestos Cement	140	1197	4.89	7.495	TRUE	1110
111	P-3B	2251	N-23	N-4	10	Asbestos Cement	140	1197	4.89	7.495	TRUE	1940
64	P-4	6670	N-4	N-5	8	Asbestos Cement	140	997	6.36	15.841	TRUE	6573
208	P-5(1)	51	N-5	N-32	6	Asbestos Cement	140	82	0.93	0.633	TRUE	12
50	P-6	70	N-6	N-7	8	Asbestos Cement	140	82	0.53	0.156	TRUE	70
66	P-7	19020	N-7	N-8	8	Asbestos Cement	140	82	0.53	0.156	TRUE	15645
55	P-8	924	N-8	T-2 FCSD	10	Asbestos Cement	140	-268	1.09	0.469	TRUE	2880
81	P-9A	1555	N-3	N-22	12	Asbestos Cement	140	1041	2.95	2.382	TRUE	1200
82	P-9B	1833	N-22	N-10	12	Asbestos Cement	140	866	2.46	1.694	TRUE	1980
61	P-10	3762	N-10	N-11	12	Asbestos Cement	140	457	1.3	0.518	TRUE	3420
176	P-10	1922	N-5	PROP T-3	10	PVC	150	800	3.27	3.125	TRUE	2000
57	P-11	1485	N-4	N-12	10	Asbestos Cement	140	0	0	0	TRUE	1350
54	P-12	770	N-10	N-13	10	Asbestos Cement	140	0	0	0	TRUE	770
213	P-13	294	N-32	N-33	6	Asbestos Cement	140	82	0.93	0.634	TRUE	90
212	P-14(2)	76	N-33	N-6	6	Asbestos Cement	140	82	0.93	0.634	TRUE	130
147	P-17A	821	T-1 Korb	N-20	16	Asbestos Cement	140	5033	8.03	10.85	TRUE	40
58	P-18	2495	N-2	N-18	14	Asbestos Cement	140	2257	4.7	4.708	TRUE	290
56	P-19	1000	N-18	N-19	6	Asbestos Cement	140	0	0	0	TRUE	1000
63	P-20	5543	N-20	N-21	18	Asbestos Cement	140	2776	3.5	2.031	TRUE	5490
113	P-21	1473	N-23	N-24	4	Asbestos Cement	140	0	0	0	TRUE	440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P-17
PMP-2 PROP
P-17A
P-16
P-20
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P-18
N-19
P-19
N-18
PMP-3 PROP
J-12
N-31
P-2(1)(1)
P-2(2)(1)
P-2(2)(2)
P-14(2)
PRV-1
PMP-1
MA
N-3
N-23
N-4
N-33
N-5
N-7
N-8
T-2 FCSD
P-3A
P-3B
P-4
P-5(2)
P-5(1)
P-7
P-8
P-14(1)
P-10
PROP T-3
N-22
N-24
N-12
N-10
N-13
P-12
N-11

Table 2.1 - Model Junction Results - New Pump Station(1) Scenario

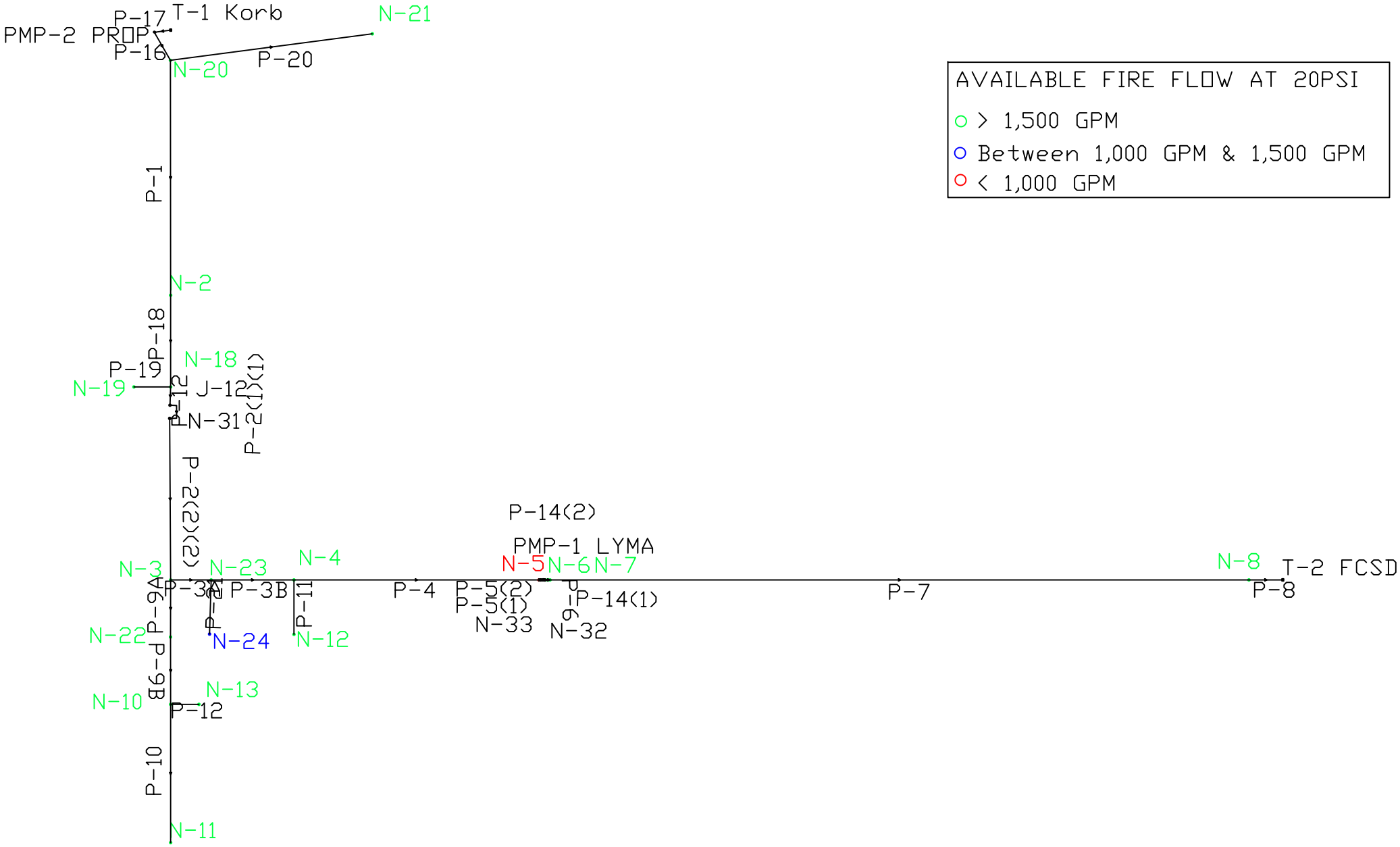
ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
42	N-2	70	0	520.34	195
44	N-3	85	0	499.66	179
31	N-4	81	200	481.34	173
33	N-5	125	115	401.77	120
36	N-6	110	0	496.54	167
37	N-7	110	0	495.89	167
38	N-8	170	350	350.6	78
46	N-10	95	409	493.45	172
74	N-11	86	457	491.68	176
32	N-12	145	0	481.34	146
47	N-13	120	0	493.45	162
43	N-18	60	18	519.13	199
45	N-19	160	0	519.13	155
41	N-20	210	0	534.62	140
73	N-21	50	2776	523.47	205
80	N-22	90	175	496.8	176
109	N-23	139	0	492.99	153
112	N-24	118	0	492.99	162
199	N-30	61.69	0	517.81	197
202	N-31	63.21	0	516.63	196
207	N-32	118.14	0	401.3	123
210	N-33	110	0	501.45	169

Table 2.2 - Model Fire Flow Report - New Pump Station(1) Scenario

Label	Pressure Zone	Fire Flow Constraint Satisfied	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Total Flow (Needed) (gpm)	Total Flow (Available) (gpm)	Residual Pressure (Lower Limit) (psi)	Residual Pressure (Calculated) (psi)
N-2	PZ1	TRUE	1500	3500	1500	3500	20	75
N-3	PZ1	TRUE	1500	3500	1500	3500	20	28
N-4	PZ1	TRUE	1500	2662	1700	2862	20	20
N-5	PZ1	FALSE	1500	987	1615	1102	20	20
N-6	PZ2	TRUE	1500	1908	1500	1908	20	20
N-7	PZ2	TRUE	1500	1909	1500	1909	20	20
N-8	PZ2	TRUE	1500	3500	1850	3850	20	26
N-10	PZ1	TRUE	1500	2851	1909	3261	20	20
N-11	PZ1	TRUE	1500	2530	1957	2987	20	20
N-12	PZ1	TRUE	1500	2033	1500	2033	20	20
N-13	PZ1	TRUE	1500	2532	1500	2532	20	20
N-18	PZ1	TRUE	1500	3500	1518	3518	20	77
N-19	PZ1	TRUE	1500	1773	1500	1773	20	20
N-20	PZ1	TRUE	1500	3500	1500	3500	20	46
N-21	PZ1	TRUE	1500	3500	4276	6276	20	93
N-22	PZ1	TRUE	1500	3274	1675	3449	20	20
N-23	PZ1	TRUE	1500	2758	1500	2758	20	20
N-24	PZ1	FALSE	1500	1054	1500	1054	20	20
N-30		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-31		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-32		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-33		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)

Table 2.3 - Model Pipe Results - New Pump Station(1) Scenario

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)	Has User Defined Length?	Length (User Defined) (ft)
65	P-1	6394	N-20	N-2	16	Asbestos Cement	140	2122	3.39	2.192	TRUE	6514
200	P-2(1)(1)	496	N-18	N-30	14	Asbestos Cement	140	2104	4.38	4.134	TRUE	319
204	P-2(2)(2)	4396	N-31	N-3	14	Asbestos Cement	140	2104	4.38	4.134	TRUE	4104
110	P-3A	1104	N-3	N-23	10	Asbestos Cement	140	1062	4.34	6.007	TRUE	1110
111	P-3B	2251	N-23	N-4	10	Asbestos Cement	140	1062	4.34	6.007	TRUE	1940
64	P-4	6670	N-4	N-5	8	Asbestos Cement	140	862	5.5	12.105	TRUE	6573
208	P-5(1)	51	N-5	N-32	6	Asbestos Cement	140	747	8.48	37.707	TRUE	12
209	P-5(2)	61	N-32	PMP-1 LYMA	6	Asbestos Cement	140	747	8.48	37.709	TRUE	15
50	P-6	70	N-6	N-7	8	Asbestos Cement	140	747	4.77	9.287	TRUE	70
66	P-7	19020	N-7	N-8	8	Asbestos Cement	140	747	4.77	9.287	TRUE	15645
55	P-8	924	N-8	T-2 FCSD	10	Asbestos Cement	140	397	1.62	0.971	TRUE	2880
81	P-9A	1555	N-3	N-22	12	Asbestos Cement	140	1041	2.95	2.382	TRUE	1200
82	P-9B	1833	N-22	N-10	12	Asbestos Cement	140	866	2.46	1.694	TRUE	1980
61	P-10	3762	N-10	N-11	12	Asbestos Cement	140	457	1.3	0.518	TRUE	3420
57	P-11	1485	N-4	N-12	10	Asbestos Cement	140	0	0	0	TRUE	1350
54	P-12	770	N-10	N-13	10	Asbestos Cement	140	0	0	0	TRUE	770
205	P-12	719	N-30	N-31	14	Asbestos Cement	140	2104	4.38	4.134	TRUE	285
211	P-14(1)	44	MP-1 LYM	N-33	6	Asbestos Cement	140	747	8.48	37.709	TRUE	75
212	P-14(2)	76	N-33	N-6	6	Asbestos Cement	140	747	8.48	37.708	TRUE	130
140	P-16	880	MP-2 PRC	N-20	16	Asbestos Cement	140	4898	7.82	10.316	TRUE	21
139	P-17	449	T-1 Korb	PMP-2 PROF	16	Asbestos Cement	140	4898	7.82	10.318	TRUE	19
58	P-18	2495	N-2	N-18	14	Asbestos Cement	140	2122	4.42	4.2	TRUE	290
56	P-19	1000	N-18	N-19	6	Asbestos Cement	140	0	0	0	TRUE	1000
63	P-20	5543	N-20	N-21	18	Asbestos Cement	140	2776	3.5	2.031	TRUE	5490
113	P-21	1473	N-23	N-24	4	Asbestos Cement	140	0	0	0	TRUE	440



ALTERNATIVE 2 - NEW PUMP STATION (1) / FUTURE DEMAND

Table 2.4 - Model Junction Results - New Pump Station(2) Scenario

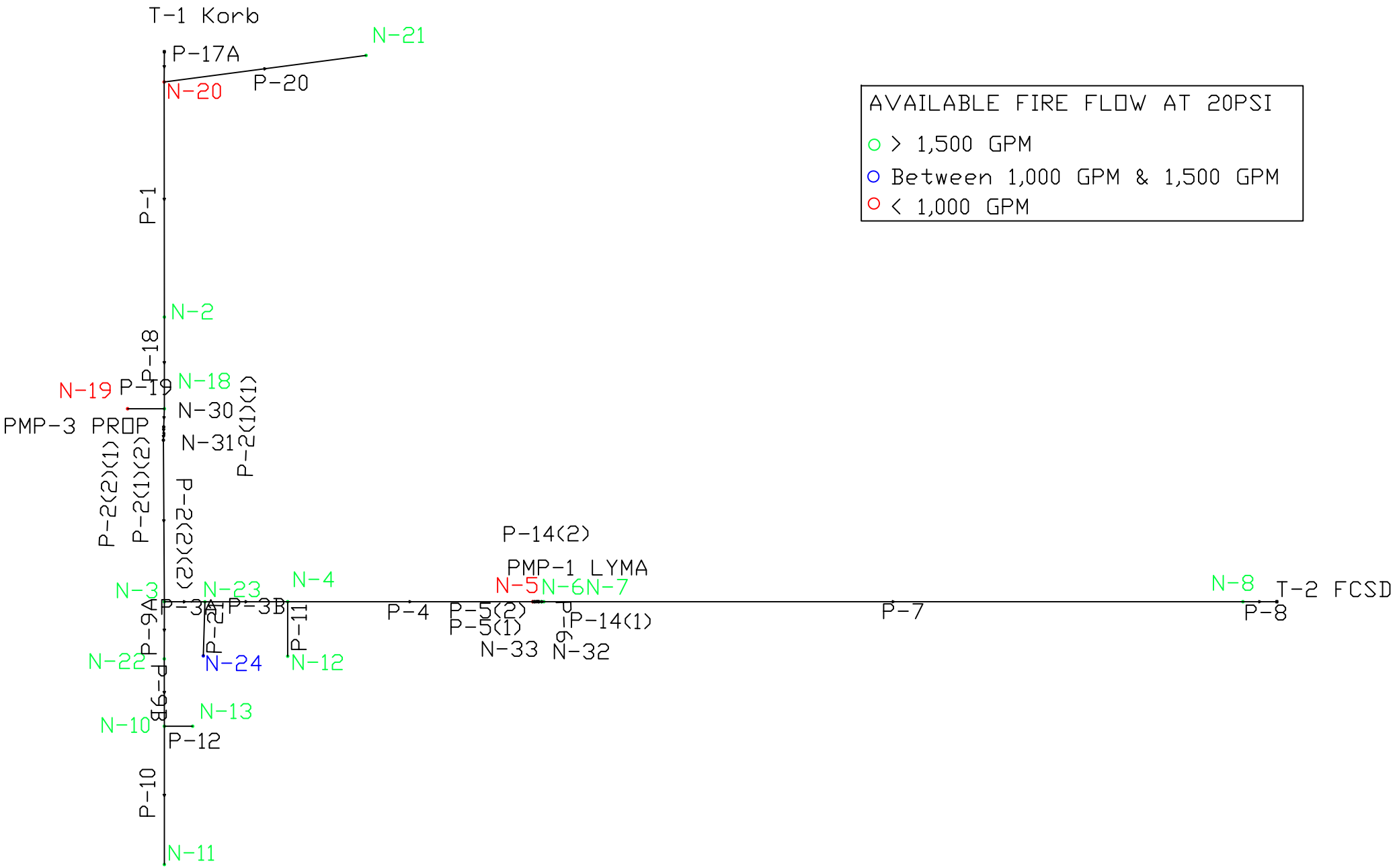
ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
42	N-2	70	0	229.55	69
44	N-3	85	0	488.36	175
31	N-4	81	200	470.37	168
33	N-5	125	115	392.56	116
36	N-6	110	0	492.68	166
37	N-7	110	0	492.05	165
38	N-8	170	350	350.46	78
46	N-10	95	409	482.15	168
74	N-11	86	457	480.38	171
32	N-12	145	0	470.37	141
47	N-13	120	0	482.15	157
43	N-18	60	18	228.34	73
45	N-19	160	0	228.34	30
41	N-20	210	0	243.7	15
73	N-21	50	2776	232.55	79
80	N-22	90	175	485.51	171
109	N-23	139	0	481.82	148
112	N-24	118	0	481.82	157
199	N-30	61.69	0	227.04	72
202	N-31	63.21	0	505.18	191
207	N-32	118.14	0	392.11	119
210	N-33	110	0	497.47	168

Table 2.5 - Model Fire Flow Report - New Pump Station(2) Scenario

Label	Pressure Zone	Fire Flow Constraint Satisfied	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Total Flow (Needed) (gpm)	Total Flow (Available) (gpm)	Residual Pressure (Lower Limit) (psi)	Residual Pressure (Calculated) (psi)
N-2	PZ1	TRUE	1500	3500	1500	3500	20	38
N-3	PZ1	TRUE	1500	3192	1500	3192	20	20
N-4	PZ1	TRUE	1500	2450	1700	2650	20	20
N-5	PZ1	FALSE	1500	948	1615	1063	20	20
N-6	PZ2	TRUE	1500	1897	1500	1897	20	20
N-7	PZ2	TRUE	1500	1897	1500	1897	20	20
N-8	PZ2	TRUE	1500	3500	1850	3850	20	25
N-10	PZ1	TRUE	1500	2561	1909	2971	20	20
N-11	PZ1	TRUE	1500	2314	1957	2771	20	20
N-12	PZ1	TRUE	1500	1882	1500	1882	20	20
N-13	PZ1	TRUE	1500	2294	1500	2294	20	20
N-18	PZ1	TRUE	1500	3500	1518	3518	20	40
N-19	PZ1	FALSE	1500	460	1500	460	20	20
N-20	PZ1	FALSE	1500	0	1500	0	20	15
N-21	PZ1	TRUE	1500	3500	4276	6276	20	62
N-22	PZ1	TRUE	1500	2891	1675	3066	20	20
N-23	PZ1	TRUE	1500	2462	1500	2462	20	20
N-24	PZ1	FALSE	1500	1019	1500	1019	20	20
N-30		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-31		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-32		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-33		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)

Table 2.6 - Model Pipe Results - New Pump Station(2) Scenario

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)	Has User Defined Length?	Length (User Defined) (ft)
65	P-1	6394	N-20	N-2	16	Asbestos Cement	140	2111	3.37	2.172	TRUE	6514
200	P-2(1)(1)	496	N-18	N-30	14	Asbestos Cement	140	2093	4.36	4.097	TRUE	319
201	P-2(1)(2)	174	N-30	MP-3 PRO	14	Asbestos Cement	140	2093	4.36	4.097	TRUE	112
203	P-2(2)(1)	185	MP-3 PRO	N-31	14	Asbestos Cement	140	2093	4.36	4.097	TRUE	173
204	P-2(2)(2)	4396	N-31	N-3	14	Asbestos Cement	140	2093	4.36	4.097	TRUE	4104
110	P-3A	1104	N-3	N-23	10	Asbestos Cement	140	1052	4.3	5.899	TRUE	1110
111	P-3B	2251	N-23	N-4	10	Asbestos Cement	140	1052	4.3	5.899	TRUE	1940
64	P-4	6670	N-4	N-5	8	Asbestos Cement	140	852	5.44	11.838	TRUE	6573
208	P-5(1)	51	N-5	N-32	6	Asbestos Cement	140	737	8.36	36.748	TRUE	12
209	P-5(2)	61	N-32	MP-1 LYM	6	Asbestos Cement	140	737	8.36	36.747	TRUE	15
50	P-6	70	N-6	N-7	8	Asbestos Cement	140	737	4.7	9.05	TRUE	70
66	P-7	19020	N-7	N-8	8	Asbestos Cement	140	737	4.7	9.05	TRUE	15645
55	P-8	924	N-8	T-2 FCSD	10	Asbestos Cement	140	387	1.58	0.924	TRUE	2880
81	P-9A	1555	N-3	N-22	12	Asbestos Cement	140	1041	2.95	2.382	TRUE	1200
82	P-9B	1833	N-22	N-10	12	Asbestos Cement	140	866	2.46	1.694	TRUE	1980
61	P-10	3762	N-10	N-11	12	Asbestos Cement	140	457	1.3	0.518	TRUE	3420
57	P-11	1485	N-4	N-12	10	Asbestos Cement	140	0	0	0	TRUE	1350
54	P-12	770	N-10	N-13	10	Asbestos Cement	140	0	0	0	TRUE	770
211	P-14(1)	44	MP-1 LYM	N-33	6	Asbestos Cement	140	737	8.36	36.747	TRUE	75
212	P-14(2)	76	N-33	N-6	6	Asbestos Cement	140	737	8.36	36.747	TRUE	130
147	P-17A	821	T-1 Korb	N-20	16	Asbestos Cement	140	4887	7.8	10.278	TRUE	40
58	P-18	2495	N-2	N-18	14	Asbestos Cement	140	2111	4.4	4.162	TRUE	290
56	P-19	1000	N-18	N-19	6	Asbestos Cement	140	0	0	0	TRUE	1000
63	P-20	5543	N-20	N-21	18	Asbestos Cement	140	2776	3.5	2.031	TRUE	5490
113	P-21	1473	N-23	N-24	4	Asbestos Cement	140	0	0	0	TRUE	440



ALTERNATIVE 2.1 - NEW PUMP STATION (2) / FUTURE DEMAND

Table 3.1 - Model Junction Results - PRV Scenario

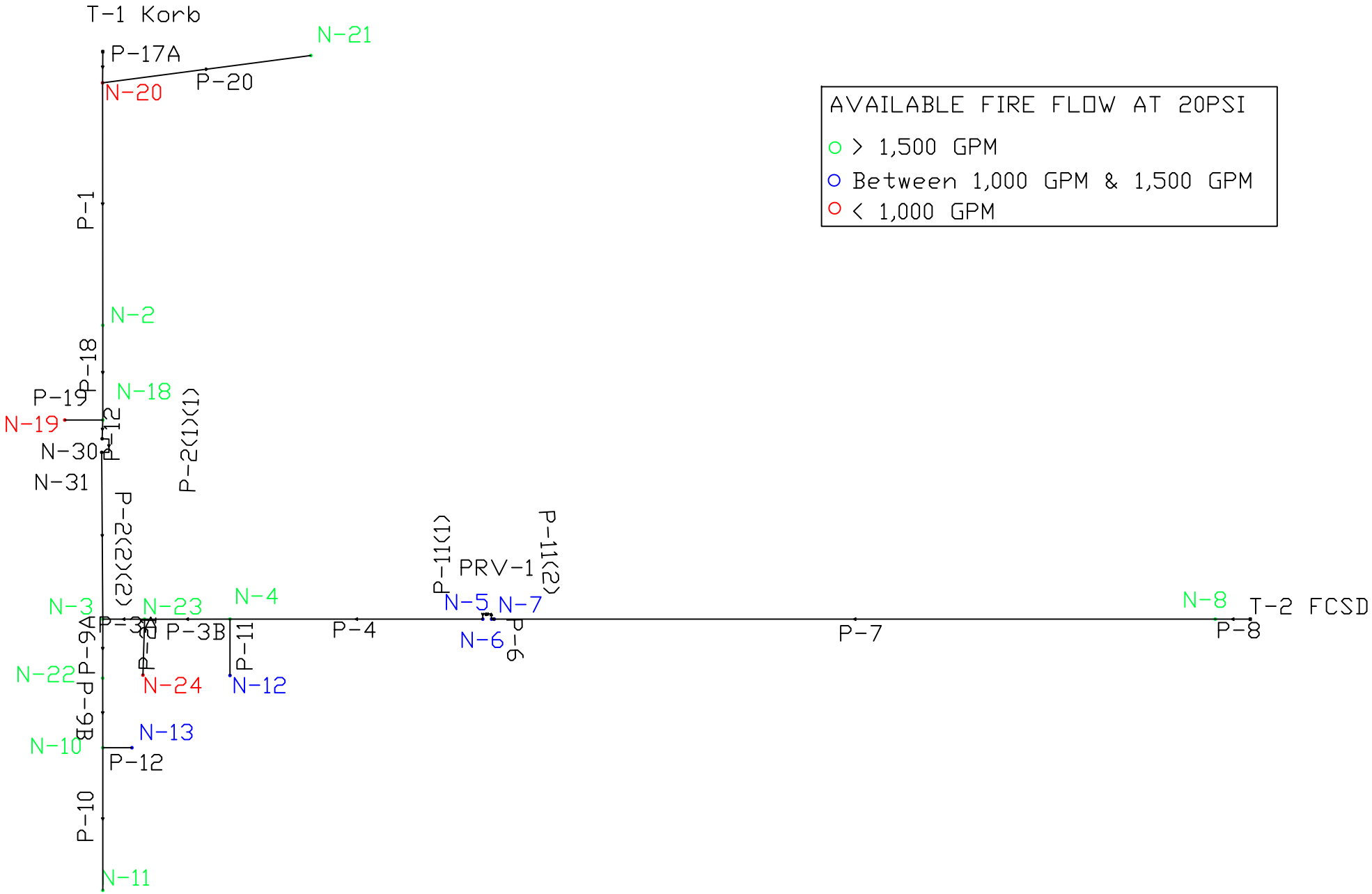
ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
42	N-2	70	0	241.21	74
44	N-3	85	0	237.43	66
31	N-4	81	200	238.28	68
33	N-5	125	115	257.66	57
36	N-6	110	0	262.09	66
37	N-7	110	0	262.42	66
38	N-8	170	350	335.91	72
46	N-10	95	409	231.22	59
74	N-11	86	457	229.45	62
32	N-12	145	0	238.28	40
47	N-13	120	0	231.22	48
43	N-18	60	18	240.98	78
45	N-19	160	0	240.98	35
41	N-20	210	0	243.87	15
73	N-21	50	2776	232.72	79
80	N-22	90	175	234.57	63
109	N-23	139	0	237.74	43
112	N-24	118	0	237.74	52
199	N-30	61.69	0	240.74	77
202	N-31	63.21	0	240.53	77

Table 3.2 - Model Fire Flow Report - PRV Scenario

Label	Pressure Zone	Fire Flow Constraint Satisfied	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Total Flow (Needed) (gpm)	Total Flow (Available) (gpm)	Residual Pressure (Lower Limit) (psi)	Residual Pressure (Calculated) (psi)
N-2	PZ1	TRUE	1500	3500	1500	3500	20	53
N-3	PZ1	TRUE	1500	3337	1500	3337	20	20
N-4	PZ1	TRUE	1500	2312	1700	2512	20	20
N-5	PZ1	FALSE	1500	1204	1615	1319	20	20
N-6	PZ2	FALSE	1500	1323	1500	1323	20	20
N-7	PZ2	FALSE	1500	1323	1500	1323	20	20
N-8	PZ2	TRUE	1500	2905	1850	3256	20	20
N-10	PZ1	TRUE	1500	1917	1909	2327	20	20
N-11	PZ1	TRUE	1500	1604	1957	2061	20	20
N-12	PZ1	FALSE	1500	1174	1500	1174	20	20
N-13	PZ1	FALSE	1500	1386	1500	1386	20	20
N-18	PZ1	TRUE	1500	3500	1518	3518	20	55
N-19	PZ1	FALSE	1500	654	1500	654	20	20
N-20	PZ1	FALSE	1500	0	1500	0	20	15
N-21	PZ1	TRUE	1500	3500	4276	6276	20	62
N-22	PZ1	TRUE	1500	2580	1675	2755	20	20
N-23	PZ1	TRUE	1500	1747	1500	1747	20	20
N-24	PZ1	FALSE	1500	531	1500	531	20	20
N-30		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-31		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-32		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)
N-33		(N/A)	1500	(N/A)	(N/A)	(N/A)	20	(N/A)

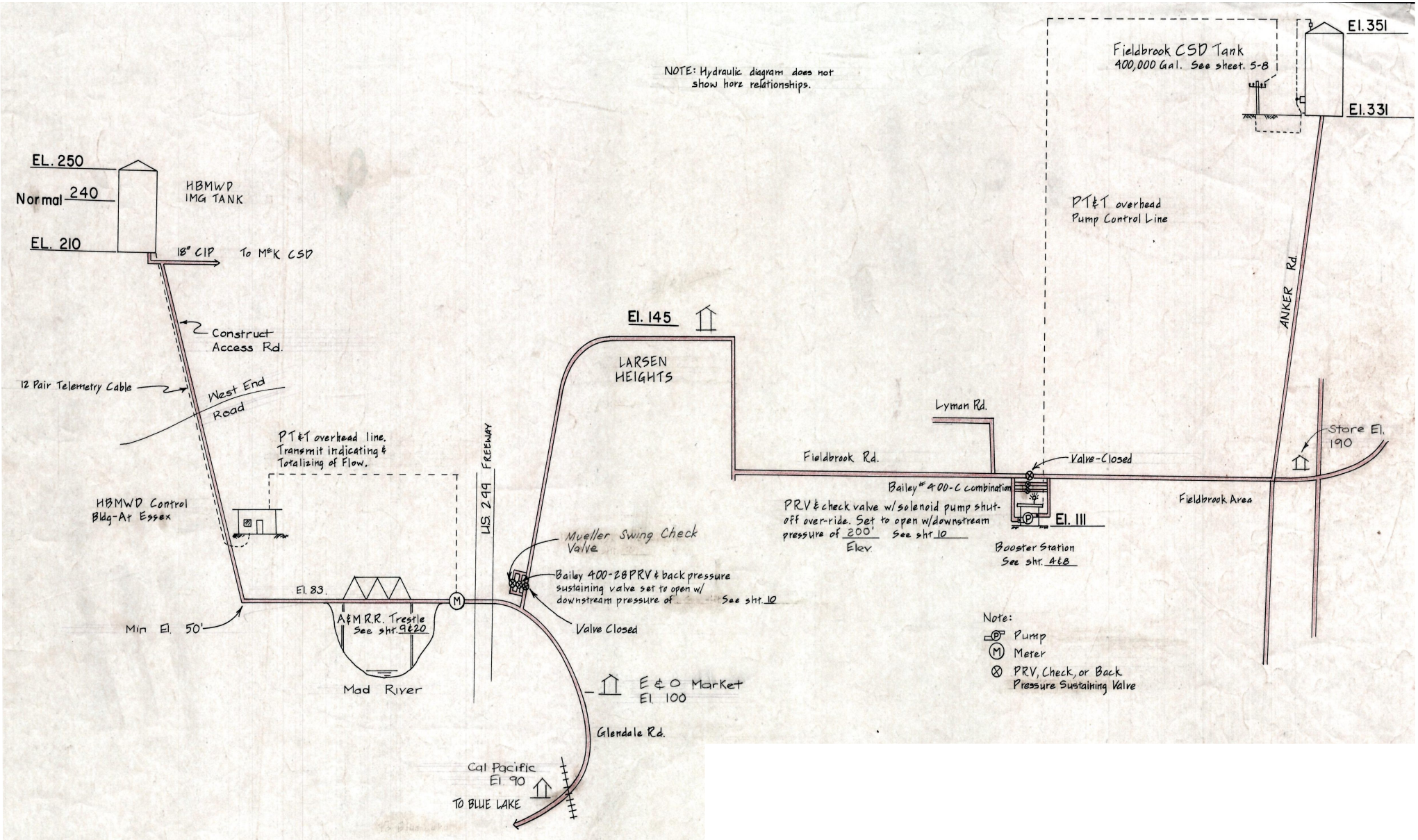
Table 3.3 - Model Pipe Results - PRV Scenario

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/1000ft)	Has User Defined Length?	Length (User Defined) (ft)
65	P-1	6394	N-20	N-2	16	Asbestos Cement	140	857	1.37	0.409	TRUE	6514
200	P-2(1)(1)	496	N-18	N-30	14	Asbestos Cement	140	839	1.75	0.754	TRUE	319
204	P-2(2)(2)	4396	N-31	N-3	14	Asbestos Cement	140	839	1.75	0.754	TRUE	4104
110	P-3A	1104	N-3	N-23	10	Asbestos Cement	140	-202	0.83	0.278	TRUE	1110
111	P-3B	2251	N-23	N-4	10	Asbestos Cement	140	-202	0.83	0.278	TRUE	1940
64	P-4	6670	N-4	N-5	8	Asbestos Cement	140	-402	2.57	2.949	TRUE	6573
50	P-6	70	N-6	N-7	8	Asbestos Cement	140	-517	3.3	4.698	TRUE	70
66	P-7	19020	N-7	N-8	8	Asbestos Cement	140	-517	3.3	4.697	TRUE	15645
55	P-8	924	N-8	T-2 FCSD	10	Asbestos Cement	140	-868	3.54	4.128	TRUE	2880
81	P-9A	1555	N-3	N-22	12	Asbestos Cement	140	1041	2.95	2.382	TRUE	1200
82	P-9B	1833	N-22	N-10	12	Asbestos Cement	140	866	2.46	1.694	TRUE	1980
61	P-10	3762	N-10	N-11	12	Asbestos Cement	140	457	1.3	0.518	TRUE	3420
57	P-11	1485	N-4	N-12	10	Asbestos Cement	140	0	0	0	TRUE	1350
191	P-11(1)	246	N-5	PRV-1	6	Asbestos Cement	140	-517	5.87	19.074	TRUE	115
192	P-11(2)	250	PRV-1	N-6	6	Asbestos Cement	140	-517	5.87	19.074	TRUE	117
54	P-12	770	N-10	N-13	10	Asbestos Cement	140	0	0	0	TRUE	770
205	P-12	719	N-30	N-31	14	Asbestos Cement	140	839	1.75	0.754	TRUE	285
147	P-17A	821	T-1 Korb	N-20	16	Asbestos Cement	140	3633	5.8	5.934	TRUE	40
58	P-18	2495	N-2	N-18	14	Asbestos Cement	140	857	1.79	0.784	TRUE	290
56	P-19	1000	N-18	N-19	6	Asbestos Cement	140	0	0	0	TRUE	1000
63	P-20	5543	N-20	N-21	18	Asbestos Cement	140	2776	3.5	2.031	TRUE	5490
113	P-21	1473	N-23	N-24	4	Asbestos Cement	140	0	0	0	TRUE	440



ALTERNATIVE 3 - PRV SCENARIO / FUTURE DEMAND

Attachment C



Fieldbrook Glendale Community Services District
Hydraulic Systems Alternatives Analysis

GHD

Hydraulic Diagram
1973 Water System Plans

Project No. 12565692
Revision No. -
Date February 2023

FIGURE 2
NOT TO SCALE