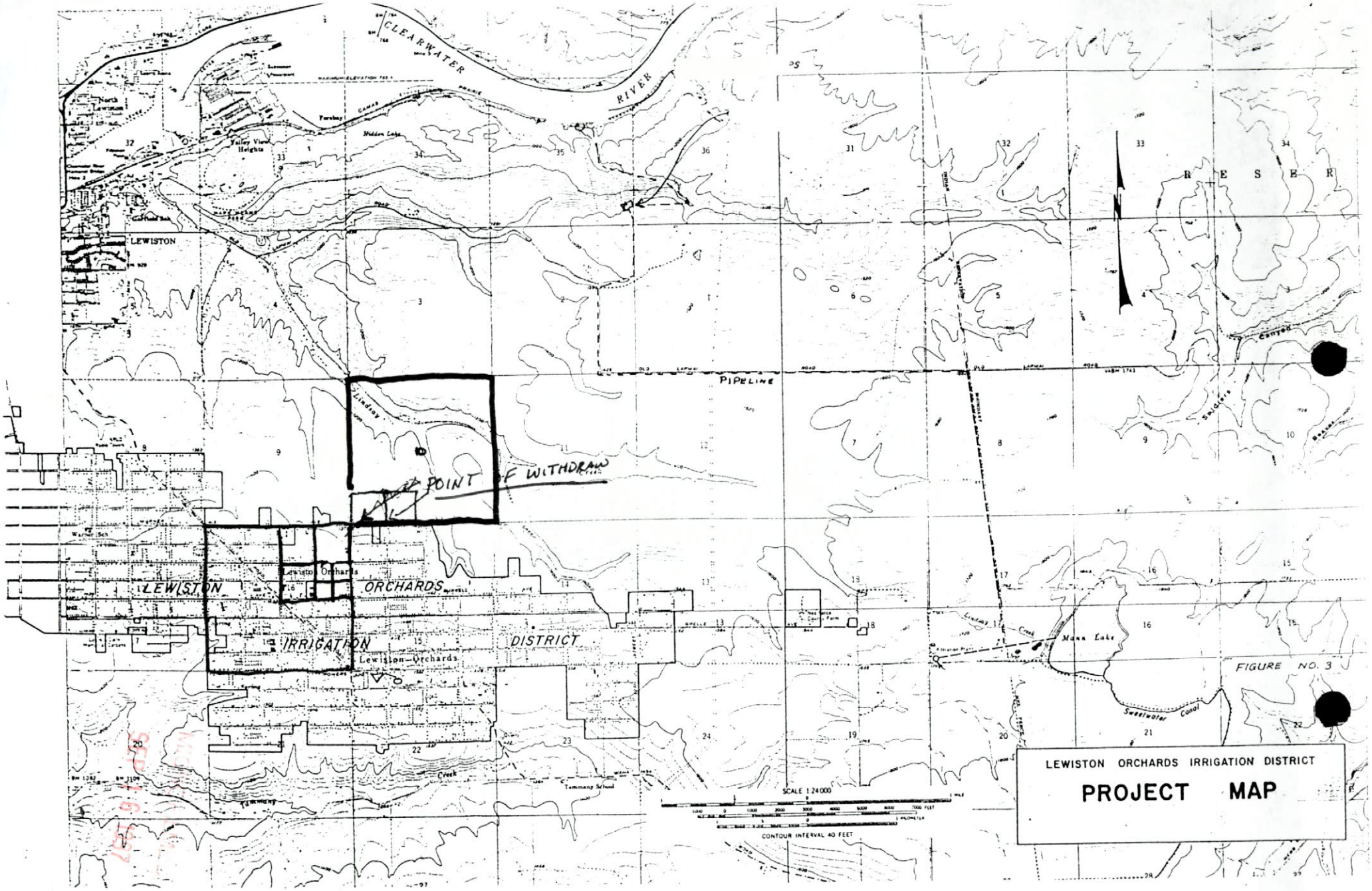
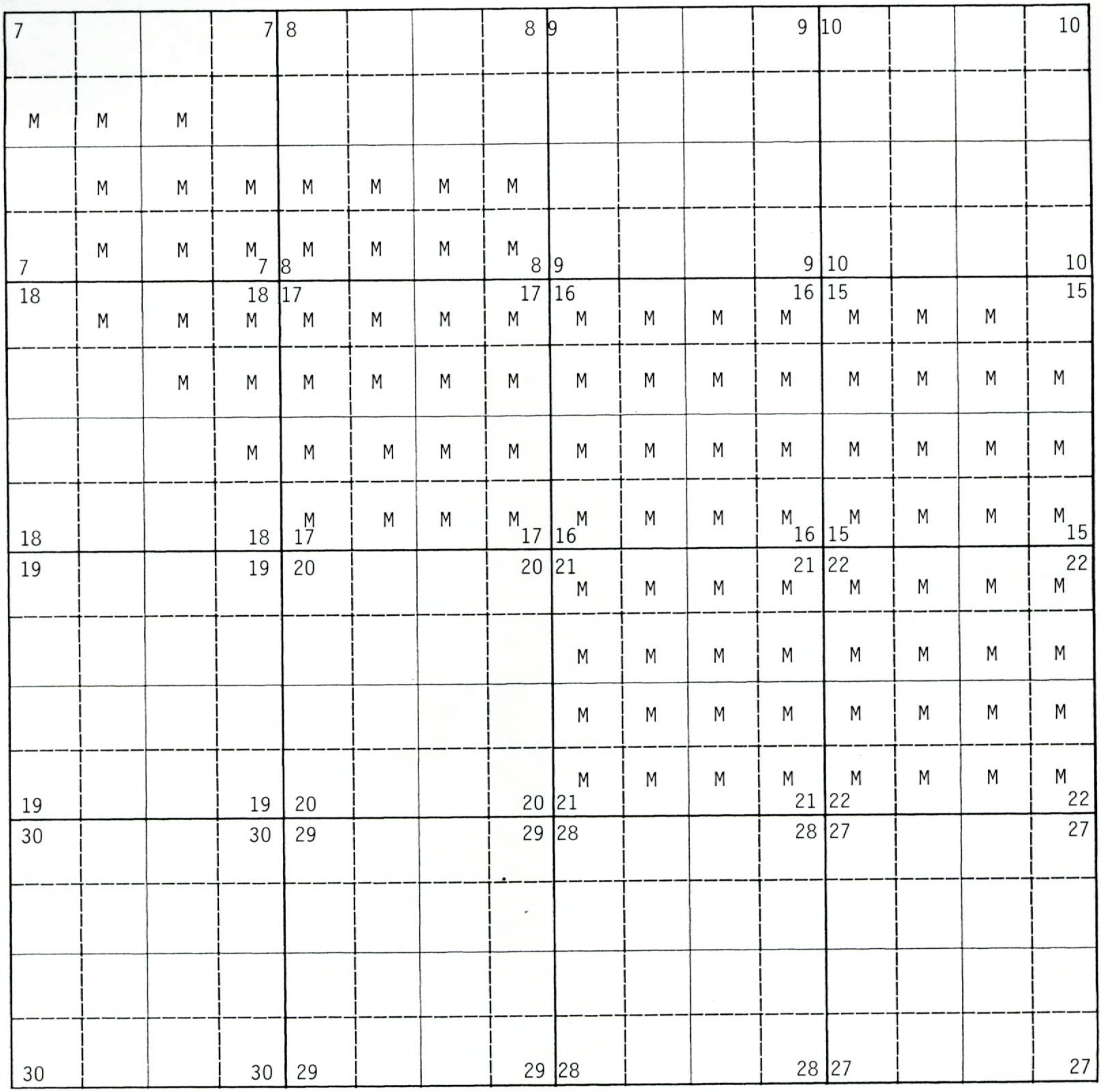


PLACE OF USE WITHIN THE SERVICE AREA OF LEWISTON ORCHARDS IRRIGATION DISTRICT.

13. Map of proposed project: show clearly the proposed point of diversion, place of use, section number, township and range number. T. 35 N., R. 5 W.



Scale: 2 inches equal 1 mile.

MICROFILMED
SEP 16 1997

BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth.

SIGNATURE ON NEXT PAGE

Randy Moore (Applicant)
Manager, Lewiston Orchards Irrigation District

13. Map of proposed project: show clearly the proposed point of diversion, place of use, section number, township and range number. T. 35 N., R. 5 W.

10			10	11			11	12			12	7			7
10			10	11			11	12			12	7			7
15 M	M	M	15	14			14	13			13	18			18
M	M	M	M	M	M										
M	M	M	M	M	M	M	M	M	M						
M	M	M	M	M	M	M	M	M							
15			15	14			14	13			13	18			18
22 M	M	M	22 M	23 M	M	M	23 M	24			24	19			19
M	M	M	M			M	M								
M	M	M	M			M	M								
22			22	23			23	24			24	19			19
27			27	26			26	25			25	30			30
27			27	26			26	25			25	30			30

Scale: 2 inches equal 1 mile.

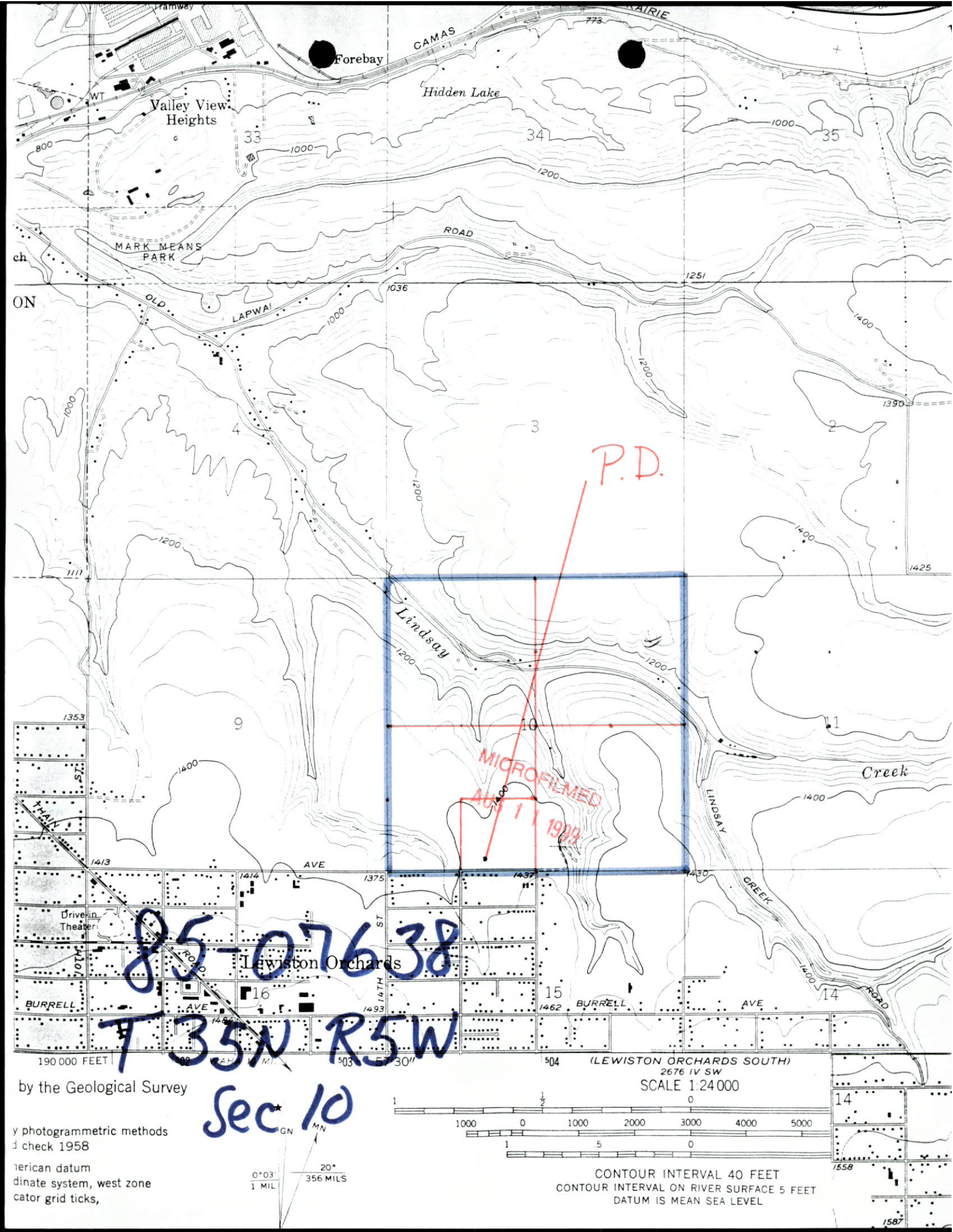
MICROFILMED SEP 16 1997

R. 5 W. | R. 4 W.

BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth.

Randy Moore (Applicant)

Manager, Lewiston Orchards Irrigation District



85-07638

Lewiston Orchards

T 35N - R5W

Sec 10

PERMIT # 85-07638

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
FIELD REPORT SUPPLEMENT

PHOTOGRAPHS



Point of Diversion



2.5 million gallon Storage tank (Hereth Res.)

MICROFILMED
AUG 11 1999

PERMIT # 85-07638

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
FIELD REPORT SUPPLEMENT

P H O T O G R A P H S



Hereth Res. Pump Station

MICROFILMED
AUG 1 1 1999

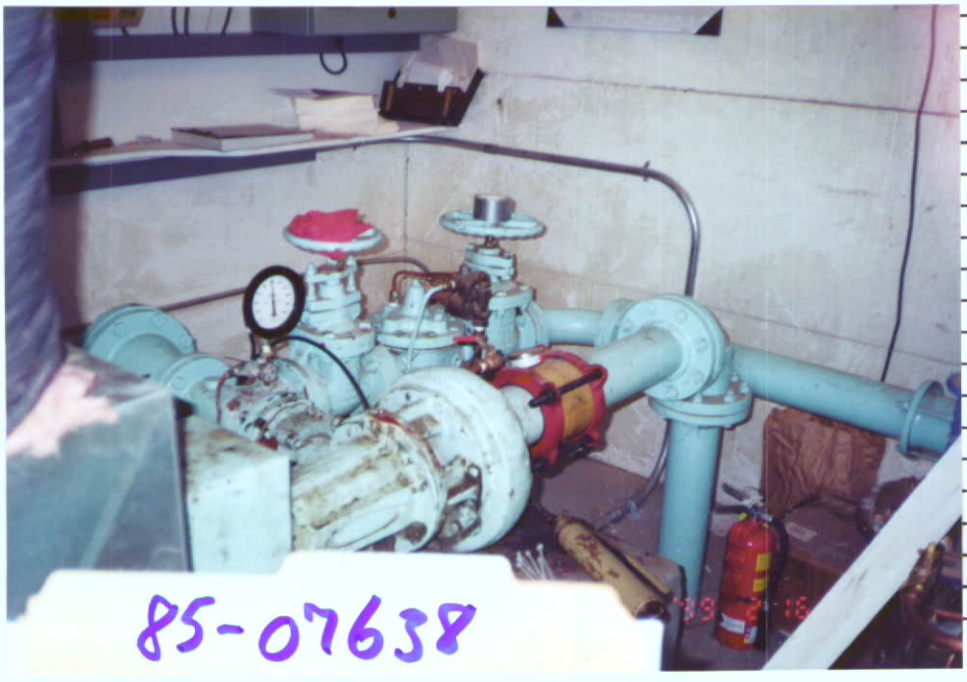
PERMIT # 85-07638

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
FIELD REPORT SUPPLEMENT

PHOTOGRAPHS



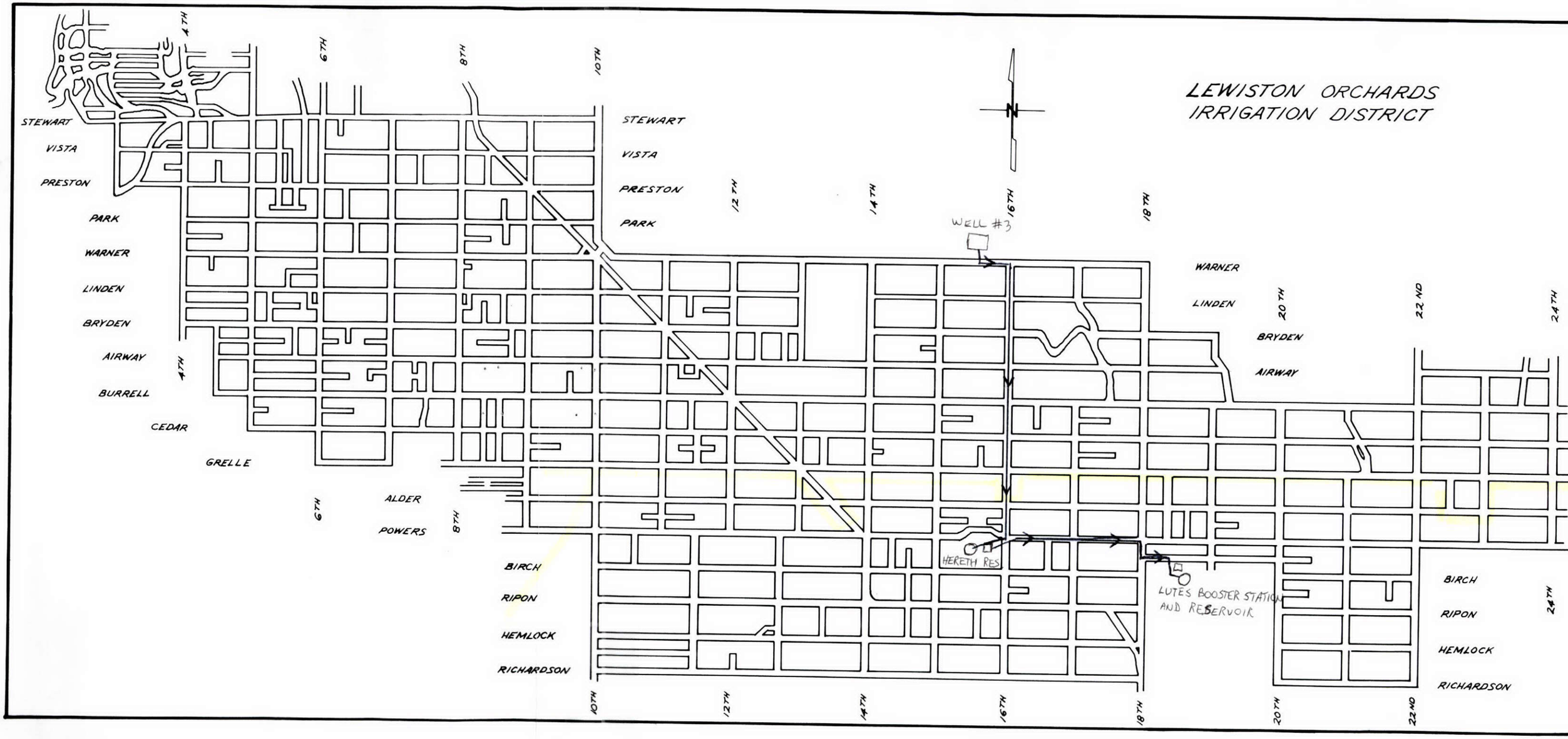
Lutes
Reservoir
(.5 million)
gallons



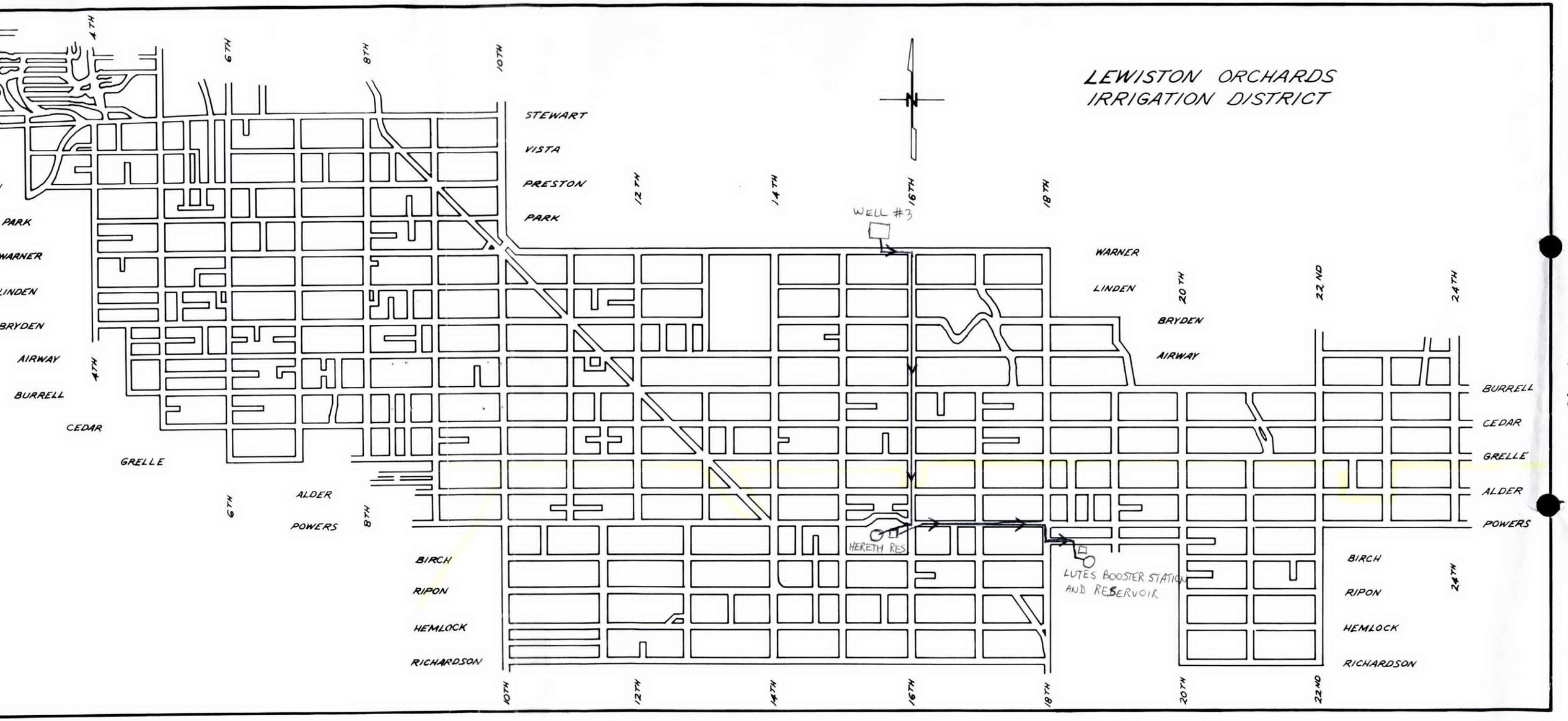
Lutes
Booster/distributio
station

MICRO
AUG

LEWISTON ORCHARDS IRRIGATION DISTRICT



LEWISTON ORCHARDS IRRIGATION DISTRICT



TRIBUNE PUBLISHING COMPANY, INC.
The Lewiston Morning Tribune
505 C St., P.O.Box 957
Lewiston, Idaho 83501
(208) 743-9411

Date 06/12/97 INVOICE NO. 145543

Account No. 964750

Description 145543NOTICEOFCORRECTI

Times 2 Lines 29

Tab. Lines _____

$ 39.88

LEGAL ADVERTISING INVOICE

SOLD TO: ID DEPT. OF WATER RESOURCES
1910 NORTHWEST BLVD. STE 210
COEUR D'AL ID 83814

ok

NOTICE: This is an invoice of Purchase made by you. Statement will be rendered the first of the month.
Please Retain This Invoice as Your Statement Will Refer to Invoice by No. Only.

AFFIDAVIT OF PUBLICATION

145543

NOTICE OF CORRECTION

NOTICE IS HEREBY GIVEN THAT APPLICATION FOR PERMIT NO. 85-07638 in the name of LEWISTON ORCHARDS IRRIGATION DISTRICT, #1520 Powers Avenue, Lewiston, ID 83501, was incorrectly advertised on 5/1 & 8/97.

The POINT OF DIVERSION was incorrectly advertised as being in the SWSW of Sec. 10, T35N, R05W, Nez Perce County, whereas correctly it should read **SESW of Sec. 10, T35N, R05W, Nez Perce County.**

(For additional information concerning the property location, call the Northern Regional Office at 769-1450.)

Any protests against the approval of the above-referenced correction must be filed with the applicant and with the Director, Dept. of Water Resources, 1910 Northwest Blvd. Suite 210, Coeur d'Alene, Id. 83814, together with a protest fee of $25.00 on or before June 23, 1997.

KARL J. DREHER, Dir.

Published in the Lewiston Tribune on 6/5 & 12/1997.

STATE OF IDAHO, ss.
County of Nez Perce

Karen Lewis, being duly sworn, deposes and says, I am the Legal Clerk of the Tribune Publishing Company, a corporation organized and existing under and by virtue of the laws of the State of Idaho, publishers of the LEWISTON MORNING TRIBUNE, a newspaper of general circulation published at Lewiston, Nez Perce County, Idaho; That the said Lewiston Morning Tribune is an established newspaper and has been published regularly and issued regularly at least once a day for more than 21 consecutive years next immediately preceding the first publication of this notice, and has been so published uninterrupted for said period; that the 145543NOTICEOFC attached hereto and which is made a part of this affadavit was published in the said Lewiston Morning Tribune, 2 time(s). Publication being on 06/05, or once a WEEK for 2 consecutive WEEK, the first publication thereof being on the 06/05/97, and the last publication thereof being on the 06/12/97, and said 145543NOTICEOFC was so published in the regular and entire issue of said newspaper and was not in a supplement thereof and was so published in every issue and number of the said paper, during the period and times of publication as set forth above.

Karen J. Lewis

SUBSCRIBED AND SWORN BEFORE ME THIS THE 13 day of June 1997

Ray Rosl

Notary Public in and for the State of Idaho, residing at Lewiston, therein
Commission Expires 7/1/97

RECEIVED
JUN 16 1997
NORTHERN REGION
IDWR

NOTARY PUBLIC
SEP 16 1997

TRIBUNE PUBLISHING COMPANY, INC.
The Lewiston Morning Tribune
505 C St., P.O.Box 957
Lewiston, Idaho 83501
(208) 743-9411

Date 05/08/97 INVOICE NO. 142291

Account No. 964750

Description 142291NOTICEOFAPPLICAT

Times 2 Lines 35

Tab. Lines

$ 48.13

LEGAL ADVERTISING INVOICE

SOLD TO: ID DEPT. OF WATER RESOURCES
1910 NORTHWEST BLVD. STE 210
COEUR D'AL ID 83814

NOTICE: This is an invoice of Purchase made by you. Statement will be rendered the first of the month.
Please Retain This Invoice as Your Statement Will Refer to Invoice by No. Only.

142291

NOTICE OF APPLICATION
FOR WATER RIGHT

The following application(s) have been filed to appropriate the public waters of the State of Idaho:

85-07638
LEWISTON ORCHARDS IRRIGATION DISTRICT
1520 POWERS AVENUE
LEWISTON, ID 83501
Source: GROUNDWATER
Diversion Pt: SWSW Sec 10 T 35N R 05W in NEZ PERCE County
Use: MUNICIPAL (3.340 CFS)
Total Diversion: (3.340 CFS)
Date Filed: 4/11/1997
PLACE OF USE IS WITHIN THE SERVICE AREA OF LEWISTON ORCHARDS IRRIGATION DISTRICT

For additional information concerning the property location, call the Northern Regional Office at (208) 769-1450.

The permit(s) will be subject to all prior water rights. Protests must be filed with the applicant and with the Director, Dept. of Water Resources, Northern Region, 1910 Northwest Blvd, Suite, 210, Coeur d'Alene, Idaho 83814, together with a protest fee of $25.00 on or before MAY 19, 1997.

KARL J. DREHER, Director
Published: 5/ 1/97 & 5/ 8/1997

RECEIVED
MAY 0 9 1997
NORTHERN REGION
IDWR

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO, ss.
County of Nez Perce

Karen Lewis, being duly sworn, deposes and says, I am the Legal Clerk of the Tribune Publishing Company, a corporation organized and existing under and by virtue of the laws of the State of Idaho, publishers of the LEWISTON MORNING TRIBUNE, a newspaper of general circulation published at Lewiston, Nez Perce County, Idaho; That the said Lewiston Morning Tribune is an established newspaper and has been published regularly and issued regularly at least once a day for more than 21 consecutive years next immediately preceding the first publication of this notice, and has been so published uninterrupted for said period; that the 142291NOTICEOFA attached hereto and which is made a part of this affadavit was published in the said Lewiston Morning Tribune, 2 time(s). Publication being on 05/01, or once a WEEK for 2 consecutive WEEK, the first publication thereof being on the 05/01/97, and the last publication thereof being on the 05/08/97, and said 142291NOTICEOFA was so published in the regular and entire issue of said newspaper and was not in a supplement thereof and was so published in every issue and number of the said paper, during the period and times of publication as set forth above.

Karen J Lewis

SUBSCRIBED AND SWORN BEFORE ME THIS THE 8

day of May 1997

Ray R (?)

Notary Public in and for the State of Idaho,
residing at Lewiston, therein
Commission Expires 7/97

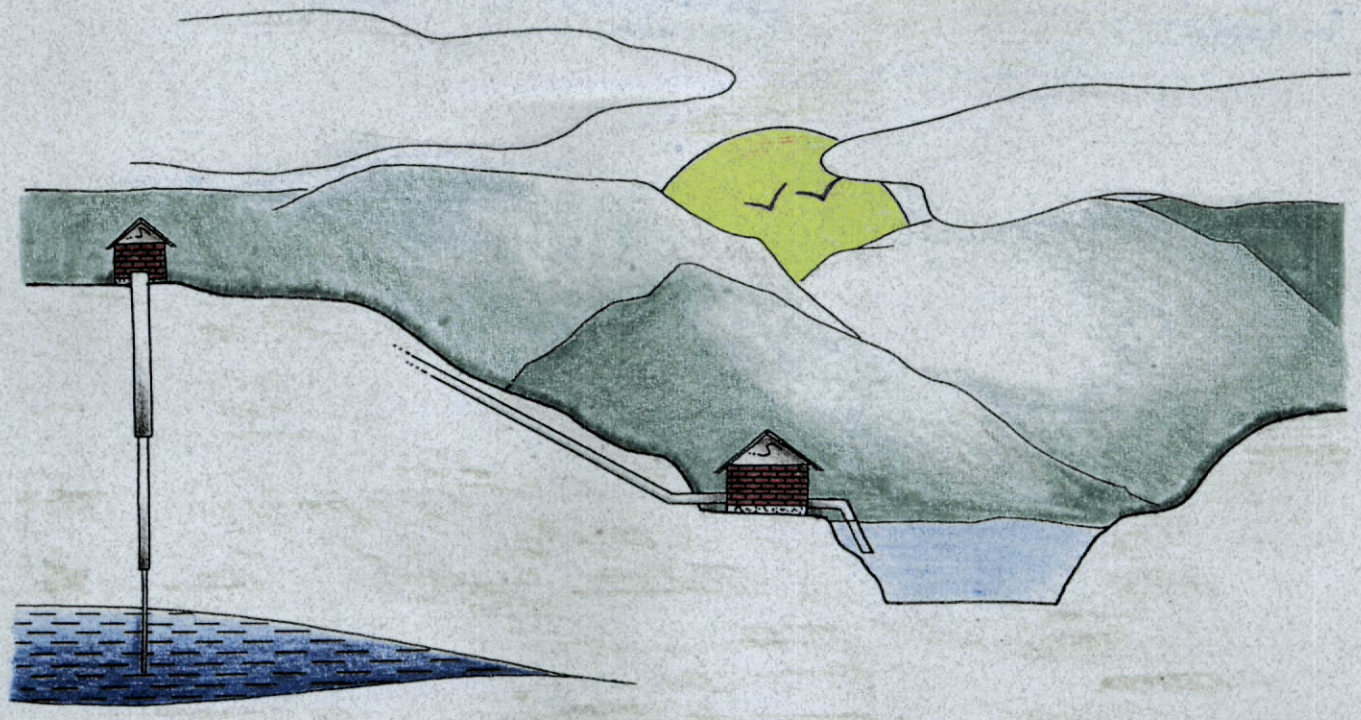
MICROFILMED
SEP 1 6 1997

S. SCHEVENIUS

CITY OF LEWISTON / LEWISTON ORCHARDS IRRIGATION DISTRICT

COORDINATED WATER STUDY

PHASE I



JULY 1995

Prepared By:

Wyatt Engineering
101 Thain Road
Lewiston, Idaho 83501
Office (208) 746-2661
Fax (208) 746-6825

MICROFILMED
SEP 16 1997
front cover & front pg. only.

COMPREHENSIVE PLANNING MAP

LEWISTON, IDAHO

CLARKSTON

POTENTIAL GROWTH BOUNDARY

CITY LIMIT

R 6 W
R 5 W

EXISTING WASTE WATER TREATMENT PLANT

BOOSTER BUMP STATION

TEMPORARY INTAKE

PERMENENT INTAKE (CITY)

CLEARWATER RIVER

WELL 1A

WELL 2

WELL 3

WELL 4

WELL 5

LOWER GRANITE RESERVOIR

WATER TREATMENT PLANT AND WELL 4

SNAKE RIVER AVENUE

MAIN STREET

4TH STREET

11TH AVENUE

16TH AVENUE

19TH AVENUE

21ST STREET

14TH STREET

OLD LAPWAI ROAD

PROPOSED RAW WATER INTAKE

PROPOSED RAW WATER PIPELINE

SCHAUB RANCH DEVELOPMENT

WATER STORAGE TANK

1316 AC.

255 AC.

PROPOSED TREATED WATER PIPELINE

1058 AC.

PROPOSED WATER TREATMENT PLANT

LOW RESERVOIR

HIGH RESERVOIR

LINDSEY CREEK ROAD

21ST. ST. BOOSTER PUMP STATION

SOUTH HIGH RESERVOIR AND BOOSTER PUMP STATION

SOUTH WEST BOOSTER PUMP STATION

SNAKE RIVER

GOLF COURSE ROAD

846 AC.

240 AC.

134 AC.

WARNER AVENUE

THAIN ROAD

BURRELL AVENUE

POWERS AVENUE

6TH ST

8TH ST

10th

16TH

BRYDEN WELL

SOUTH WEST RESERVOIR

BRYDEN CANYON

GOLF COURSE

POTENTIAL GROWTH BOUNDARY

260 AC.

92 AC.

347 AC.

BLOUNT RESERVOIR

CITY LIMIT

LOID WELL 1

LOID BOUNDARY

DUTES RESERVOIR

TAMMANY CREEK ROAD

412 AC.

923 AC.

676 AC.

88 AC.

2962 AC.

PROPOSED TREATED WATER AND IRRIGATION PIPELINE

LOID BOUNDARY

LOID WELL #2 & RESERVOIR

2091 AC.

NEZ PERCE INDIAN RESERVATION BOUNDARY

WATER STORAGE TANK

MAIN LINE

LEGEND

- CORPORATE CITY LIMITS
- LOID BOUNDARY
- POTENTIAL GROWTH BOUNDARY
- USE OF WATER FROM THE CLEARWATER RIVER
- LINDSAY CR. GROUNDWATER MANAGEMENT AREA

GRAPHIC SCALE

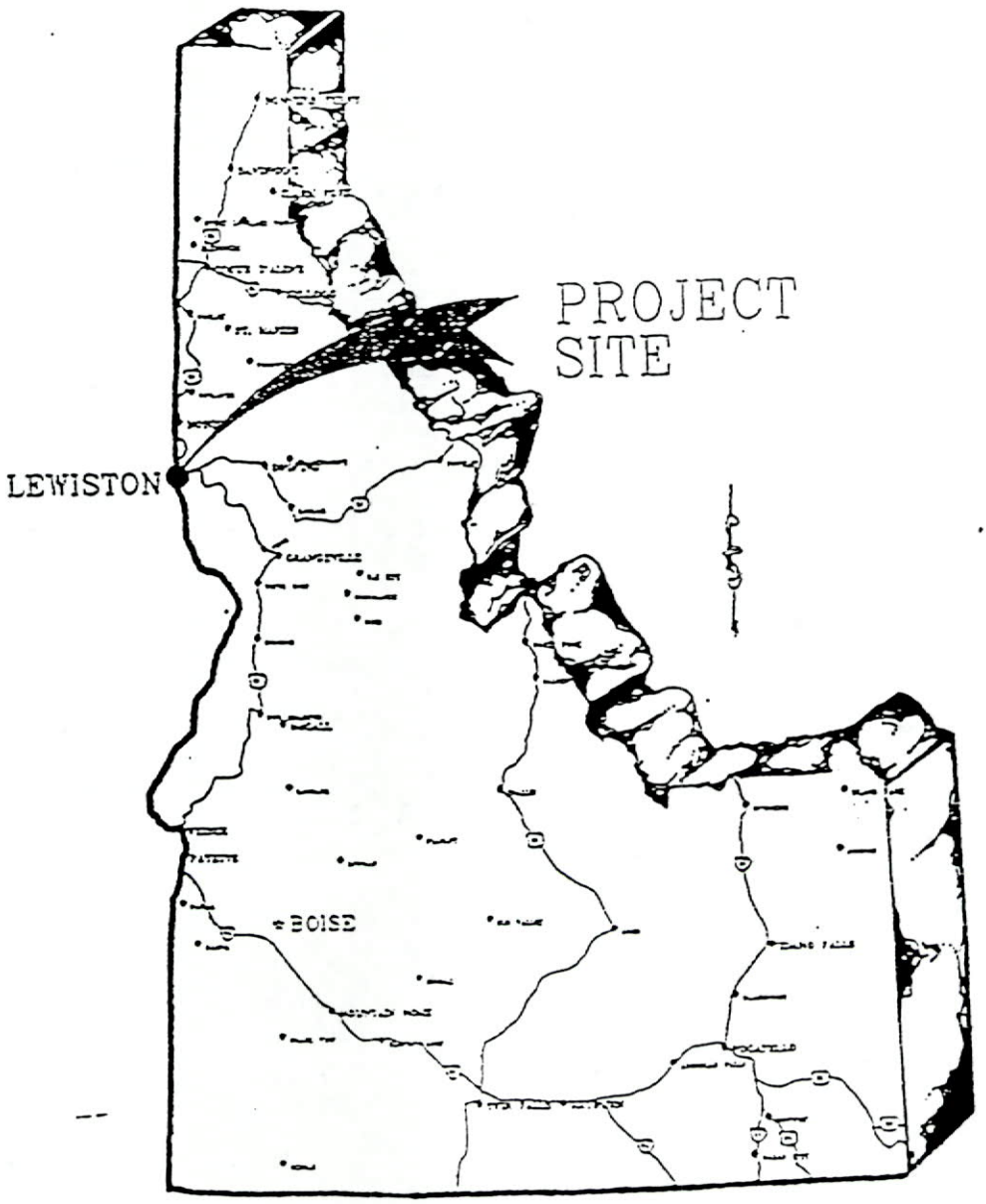
(IN FEET)
1 inch = 4000ft.

WYATT ENGINEERING
ENGINEERS & SURVEYORS
W. 1801 BROADWAY, #110
SPOKANE, WA. 99201
FAX (509) 328-0423
(509) 328-5139
101 THAIN RD.
LEWISTON, ID. 83501
FAX (208) 746-8825
(208) 746-2661

LEWISTON, IDAHO

DRAWN BY: MEE, SJN	CHECKED BY: SSS
DESIGNED BY: SSS	
SCALE: 1"=4000	
DATE: 4/17/95	
PROJECT NO.: 1010T	
SHEET 1 OF 1	

EXHIBIT 1
CITY OF LEWISTON / LEWISTON ORCHARDS IRRIGATION DISTRICT COORDINATED WATER STUDY



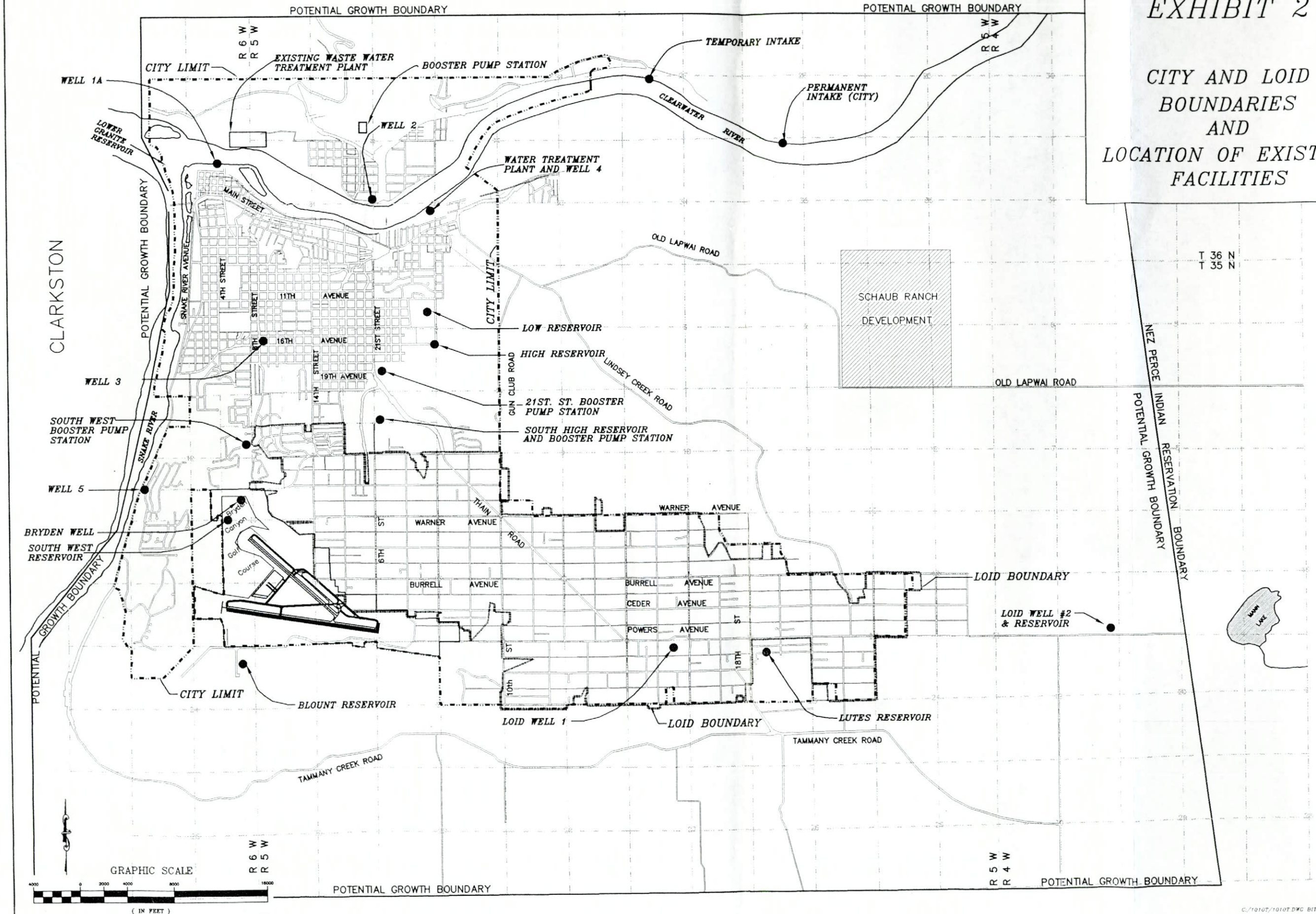
WYATT ENGINEERING
ENGINEERS & SURVEYORS

W. 1803 BROADWAY, #110
SPOKANE, WA 99201
FAX (509) 326-6423
(509) 326-5119

121 MAIN ST.
LEWISTON, ID 83501
FAX (208) 746-6820
(208) 746-2441

EXHIBIT 2

CITY AND LOID BOUNDARIES AND LOCATION OF EXISTING FACILITIES



C:/1010T/1010T.DWG BITBYBIT

WYATT ENGINEERING
ENGINEERS & SURVEYORS
101 THAIN RD.
LEWISTON, ID 83501
FAX (208) 746-0825
(208) 746-2661
W. 1801 BROADWAY, #110
SPOKANE, WA 99201
FAX (509) 328-0423
(509) 328-5139

LEWISTON, IDAHO

DRAWN BY: MEE, SJN	CHECKED BY: SSS
DESIGNED BY: SSS	
SCALE: 1"=4000'	
DATE: 4/17/95	
PROJECT NO.: 1010T	
SHEET 1 OF 1	

EXHIBIT 3

AREA OF FUTURE GROWTH MAP

CLARKSTON

POTENTIAL GROWTH BOUNDARY

CITY LIMIT

LOWER GRANITE RESERVOIR

SNAKE RIVER

CLEARWATER RIVER

MAIN STREET

SNAKE RIVER AVENUE

4TH STREET

6TH STREET

11TH AVENUE

16TH AVENUE

19TH AVENUE

21ST STREET

14TH STREET

OLD LAPWAI ROAD

SCHAUB RANCH DEVELOPMENT

255 AC.

1058 AC.

1316 AC.

LINDSEY CREEK ROAD

GUN CLUB ROAD

346 AC.

240 AC.

134 AC.

T 36 N
T 35 N

NEZ PERCE INDIAN RESERVATION BOUNDARY

POTENTIAL GROWTH BOUNDARY

R 6 W
R 5 W

R 5 W
R 4 W

Bryden Canyon Golf Course

WARNER AVENUE

MAIN ROAD

6TH ST

BURRELL AVENUE

POWERS AVENUE

10th ST

16TH ST

2962 AC.

LOID BOUNDARY

MANN LAKE

260 AC.

92 AC.

347 AC.

2091 AC.

TAMMANY CREEK ROAD

412 AC.

923 AC.

676 AC.

88 AC.

GRAPHIC SCALE

(IN FEET)
1 inch = 4000ft.

WYATT ENGINEERING
ENGINEERS & SURVEYORS

W. 1801 BROADWAY, #110
SPOKANE, WA 99201
(509) 328-9423
(509) 328-5139

101 THAIN RD.
LEWISTON, ID 83501
(208) 746-8823
FAX (208) 746-2681

LEWISTON, IDAHO

DRAWN BY: MEE, SJN	CHECKED BY: SSS
DESIGNED BY: SSS	
SCALE: 1" = 4000'	
DATE: 4/17/95	
PROJECT NO.: 1010T	
SHEET 1 OF 1	

EXHIBIT 4

POPULATION PROJECTIONS FOR CITY & LOID

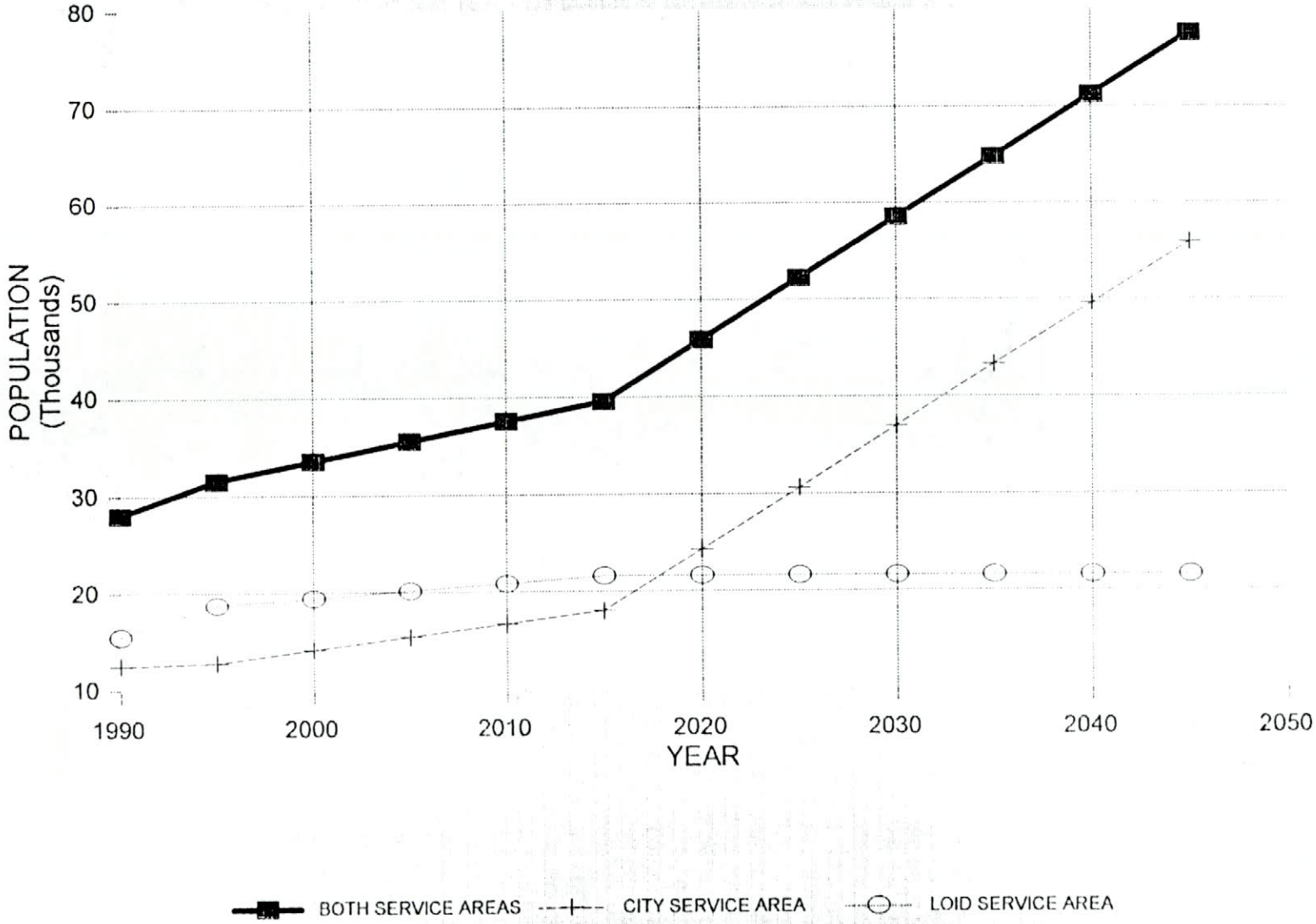


EXHIBIT 5

POPULATION PROJECTIONS USING VARIOUS GROWTH RATES

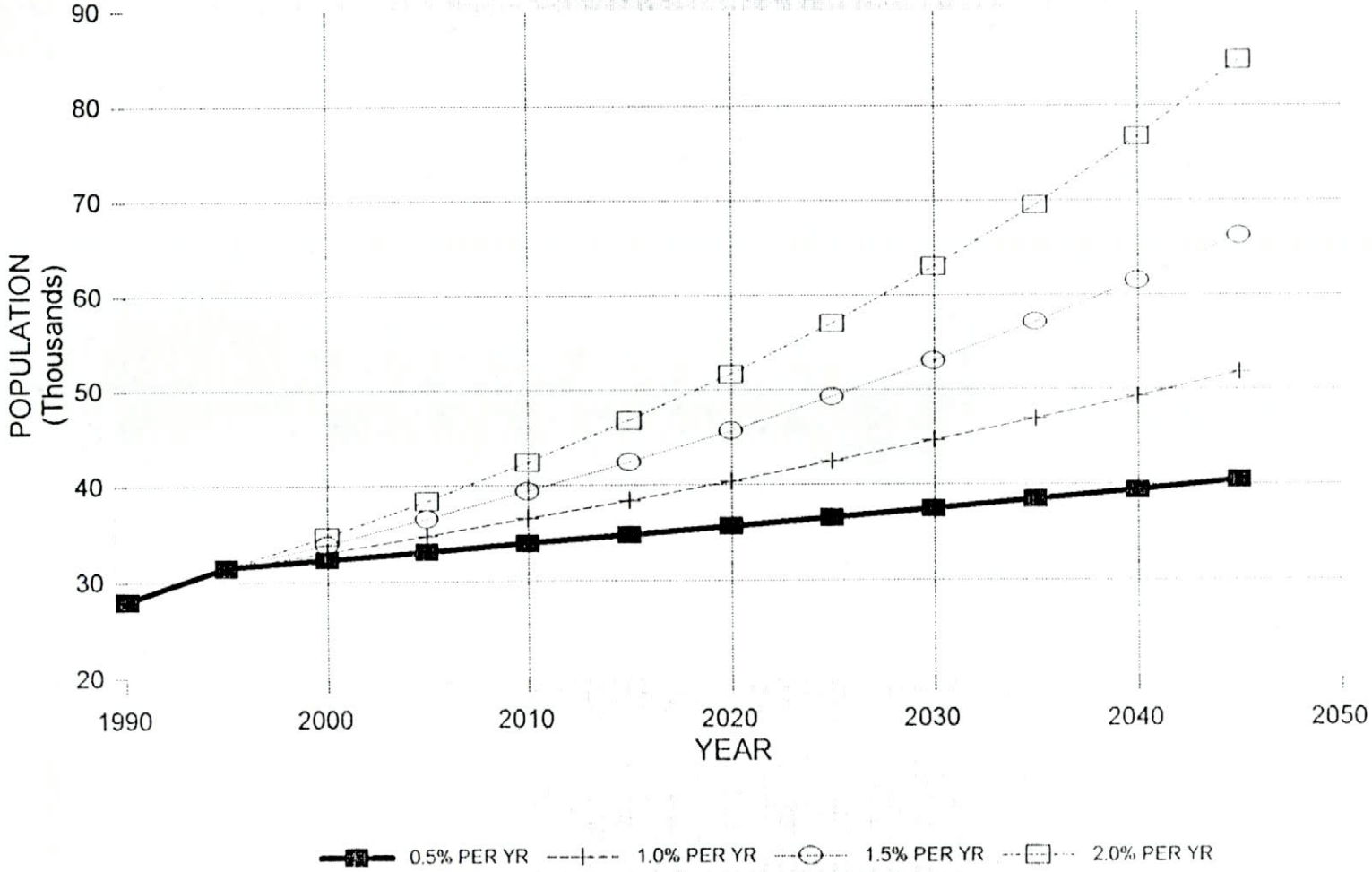


EXHIBIT 6

HISTORICAL WATER USE OF THE CITY OF LEWISTON

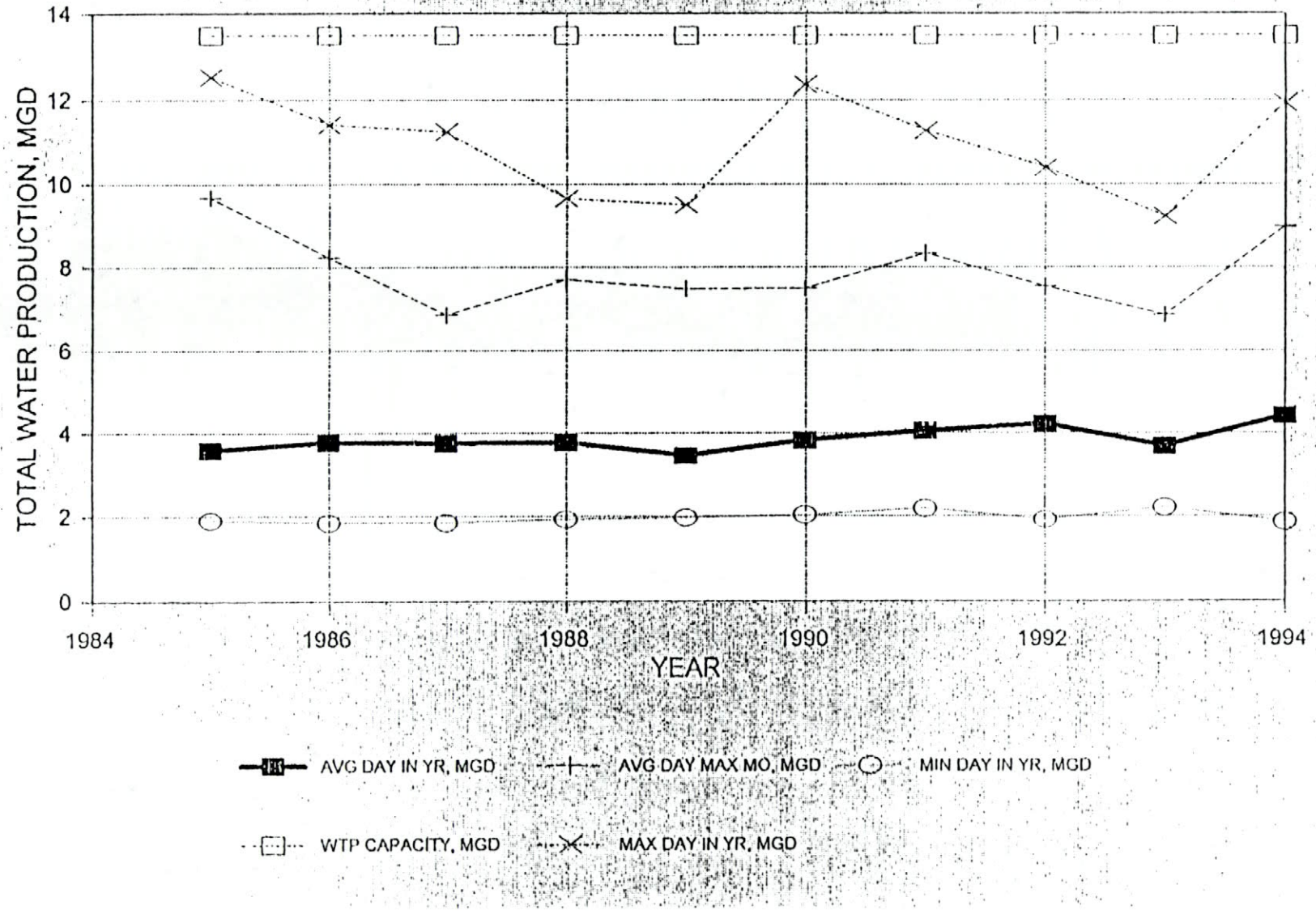
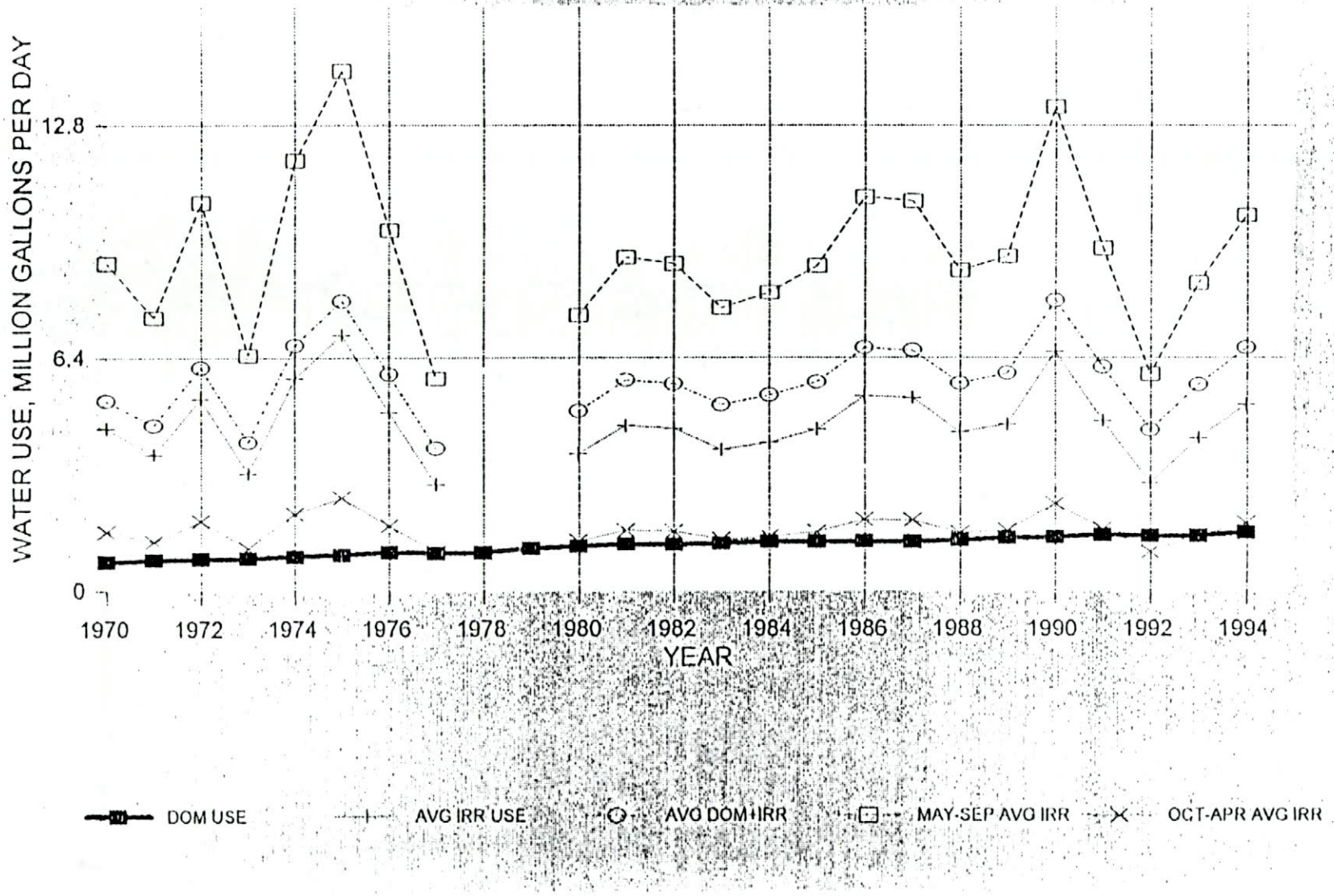


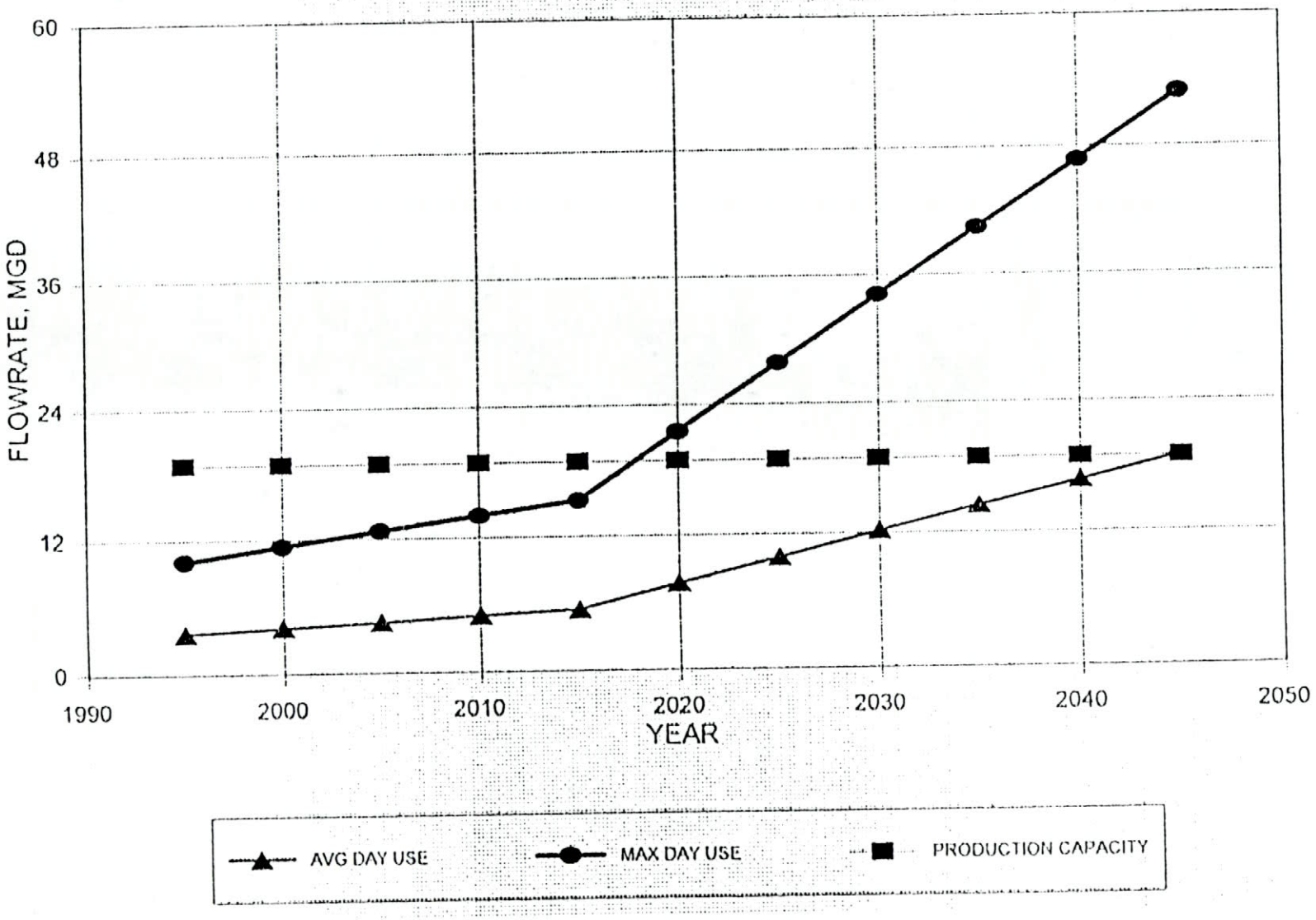
EXHIBIT 7

HISTORICAL WATER USE OF THE LOID

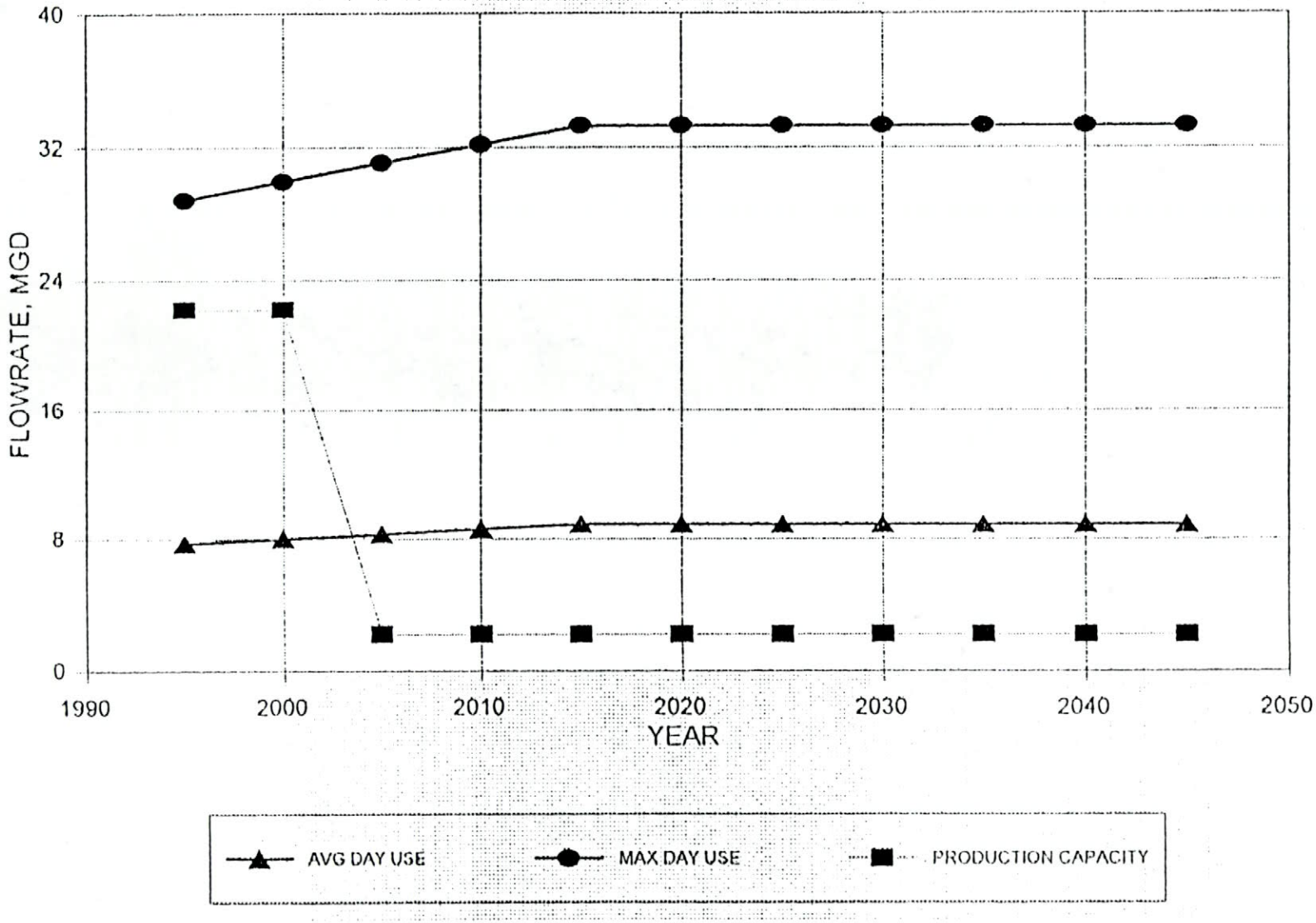


CITY OF LEWISTON

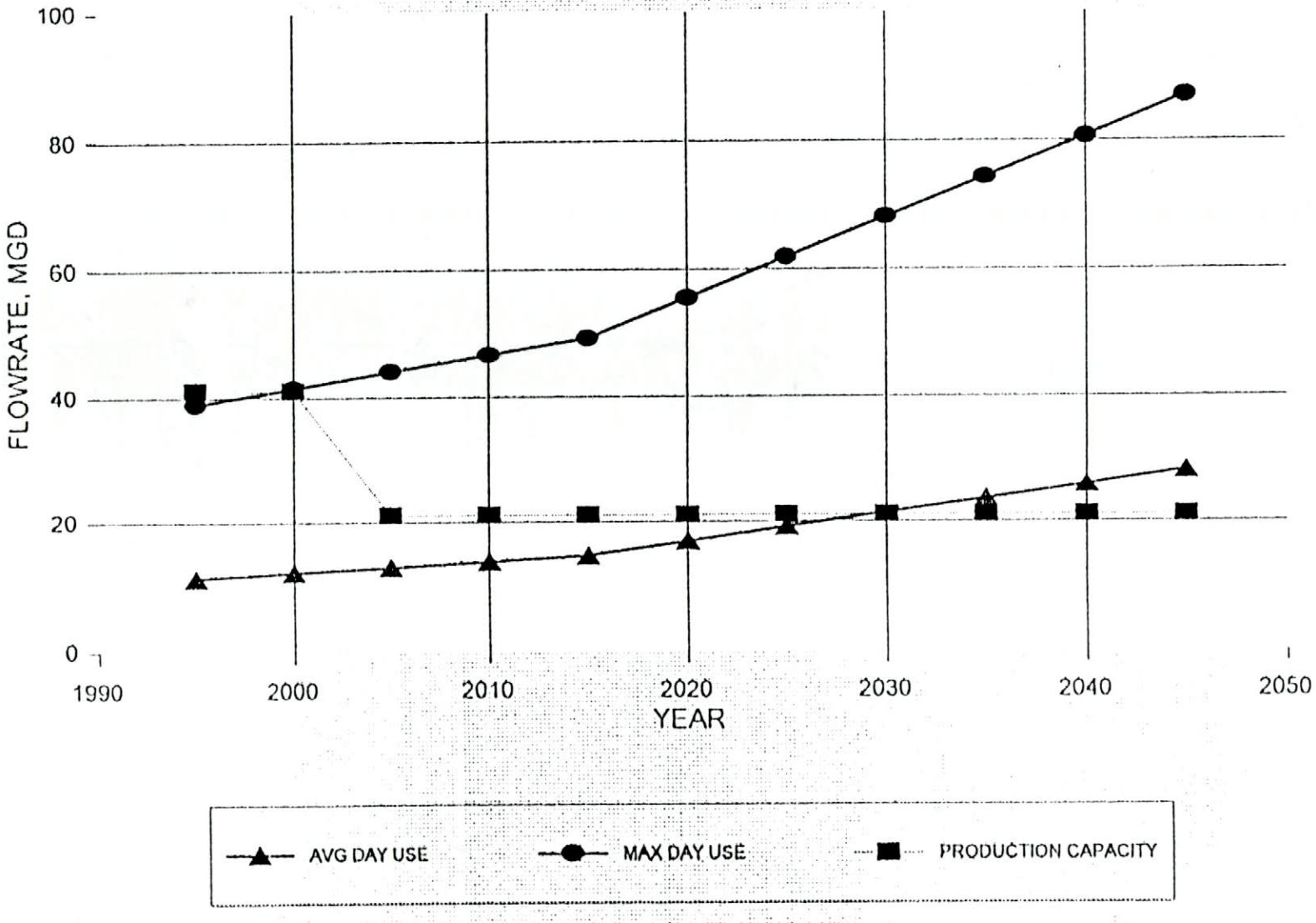
PROJECTED WATER USE - NO CONSERVATION



LEWISTON ORCHARDS IRRIGATION DISTRICT
PROJECTED WATER USE - NO CONSERVATION

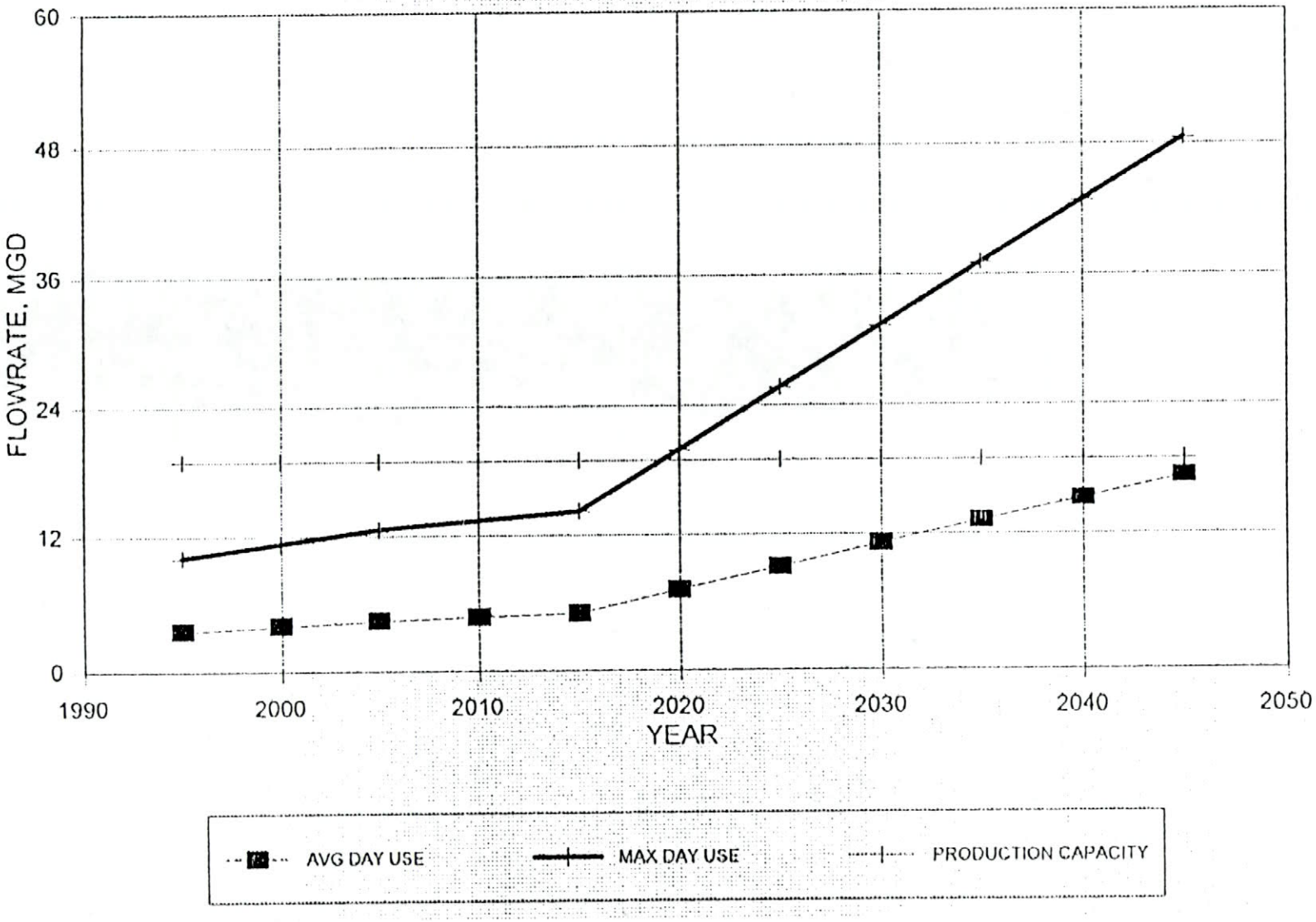


PROJECTED WATER USE OF CITY AND LOID
WITHOUT CONSERVATION

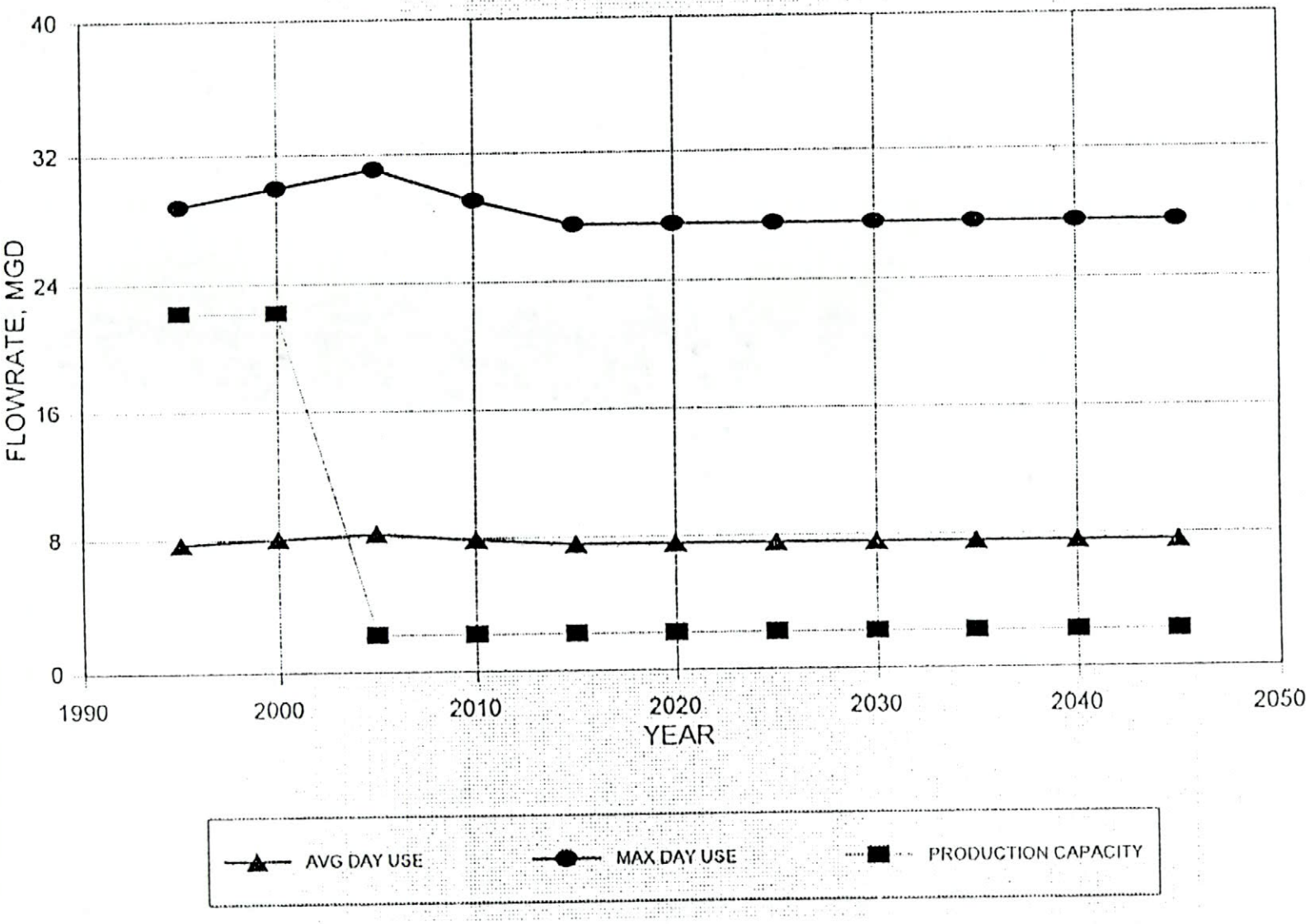


CITY OF LEWISTON

PROJ. WATER USE - WITH CONSERVATION



LEWISTON ORCHARDS IRRIGATION DISTRICT
PROJ. WATER USE - WITH CONSERVATION



PROJECTED WATER USE OF CITY AND LOID
WITH CONSERVATION

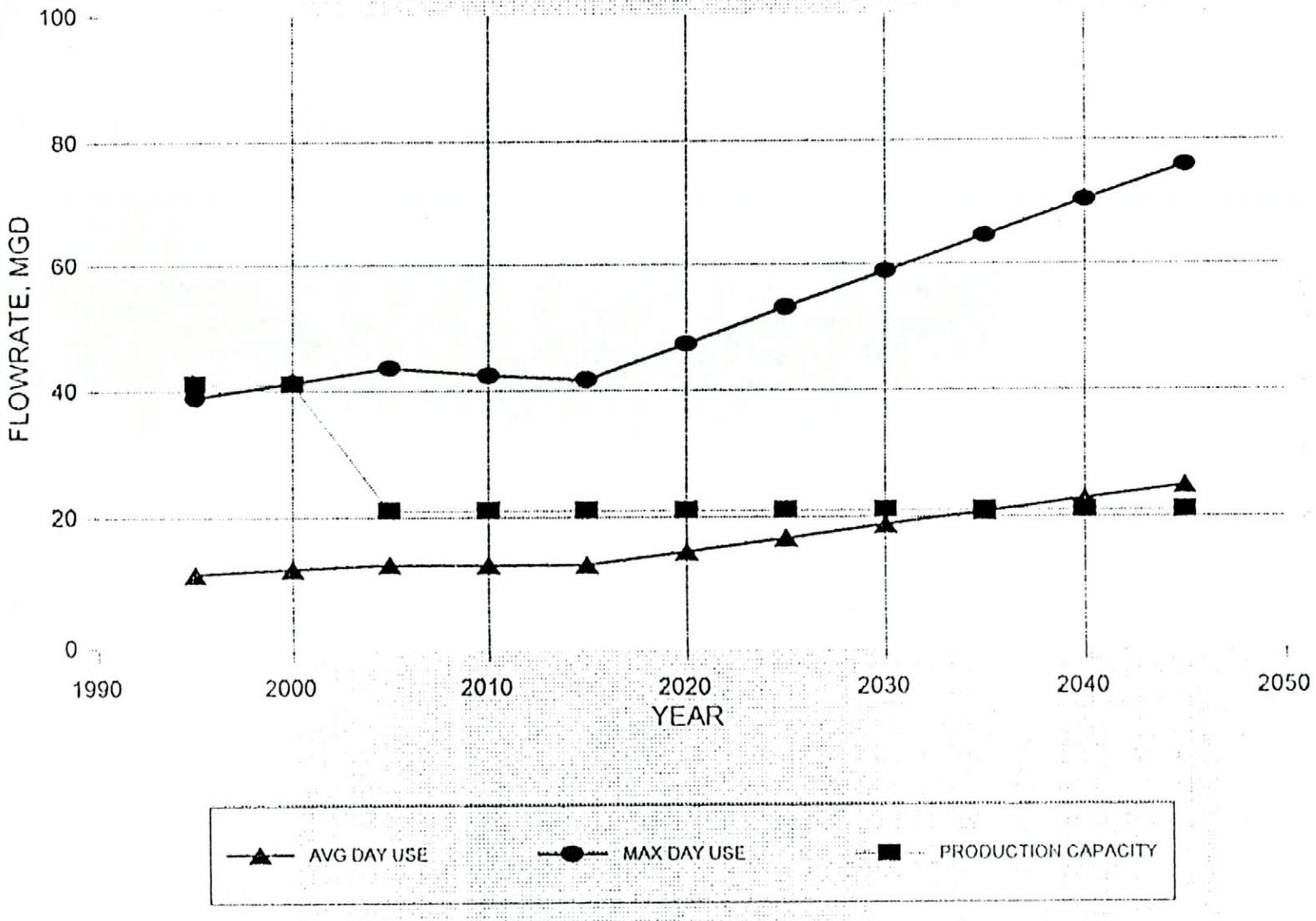


EXHIBIT 14
ALTERNATIVE 10-1

USE OF CITY WATER FOR LOID DOMESTIC AND OTHER USES

CLARKSTON

POTENTIAL GROWTH BOUNDARY

CITY LIMIT

R6W R5W

LOWER GRANITE RESERVOIR

SNAKE RIVER

SNAKE RIVER AVENUE

MAIN STREET

13TH AVENUE

16TH AVENUE

18TH AVENUE

21ST STREET

NEW PUMPS AND GENERATOR AT SOUTH HIGH RESERVOIR AND BOOSTER PUMP STATION

CLEARWATER RIVER

OLD LAPWAI ROAD

SCHAUB RANCH DEVELOPMENT

LINDSEY CREEK ROAD

GUN CLUB ROAD

R5W R4W

T 36 N
T 35 N

NEZ PERCE INDIAN RESERVATION BOUNDARY

EXISTING PIPING

EXISTING INTERTIE PIPING

PROPOSED PIPING TO REPLACE INADEQUATE SIZE PIPING

MAIN ROAD

WARNER AVENUE

BURRELL AVENUE

POWERS AVENUE

LOID BOUNDARY

Bryden Canyon Golf Course

TAMMANY CREEK ROAD

GRAPHIC SCALE

(IN FEET)
1 inch = 4000 ft.

WYATT ENGINEERING
ENGINEERS & SURVEYORS
101 MAIN RD.
LEWISTON, ID 83501
FAX (208) 746-8025
(208) 746-2661
W. 1601 BROADWAY, SUITE 110
BOISE, IDAHO 83702
FAX (208) 345-8118
(208) 345-3276

LEWISTON, IDAHO

Drawn By	JCC
Checked By	SJS
Scale	1" = 4000'
Date	4/17/95
Project No.	1010T
Sheet	1 OF 1

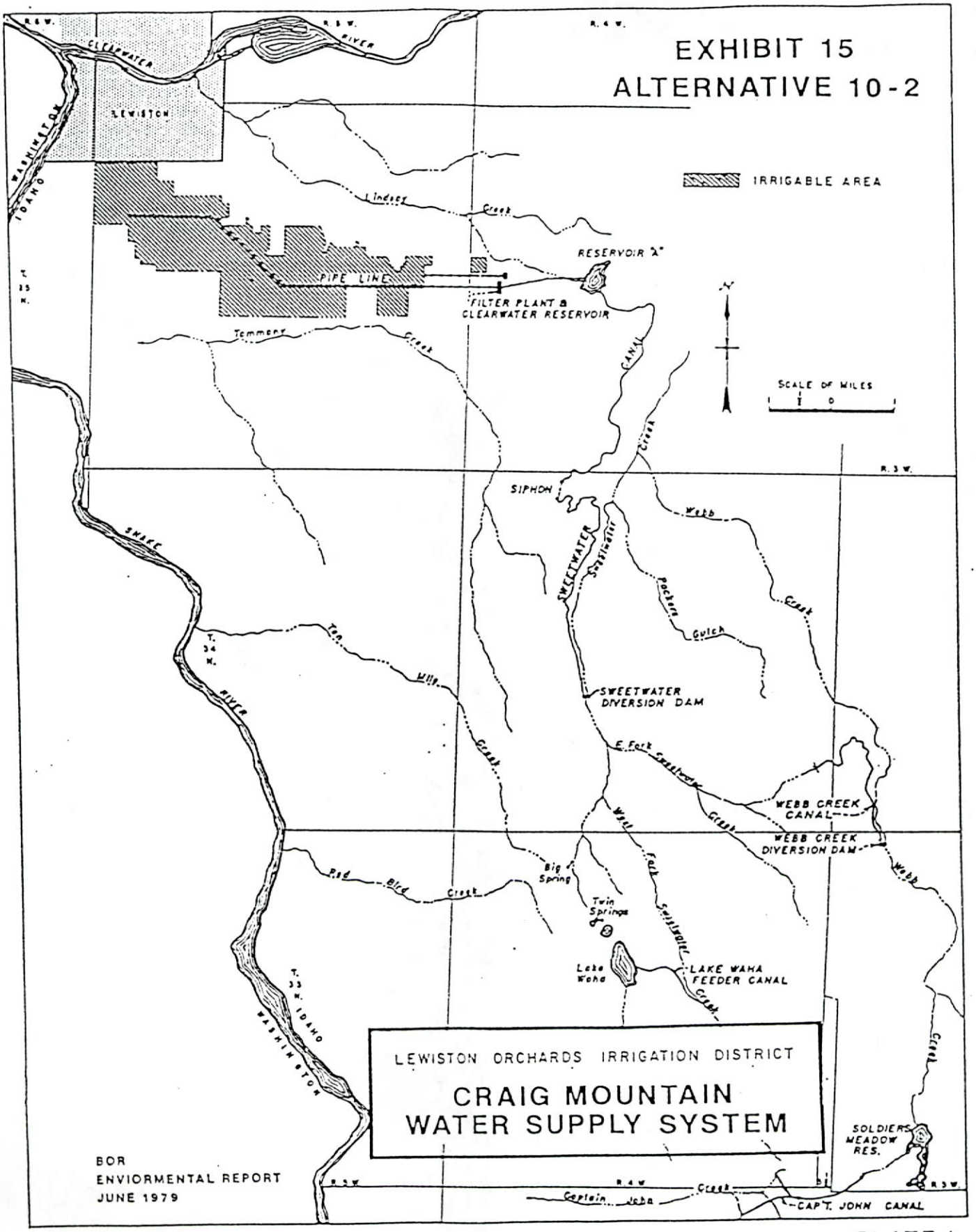

EXHIBIT 15
ALTERNATIVE 10-2
IRRIGABLE AREA
LEWISTON
CLEARWATER
SNAKE RIVER
WASHINGTON IDAHO
Lindsey Creek
RESERVOIR "A"
PIPE LINE
FILTER PLANT & CLEARWATER RESERVOIR
Tammany Creek
CANAL
SCALE OF MILES
SIPHON
Webb Creek
SWEETWATER
Spillway
Packers Gulch
SWEETWATER DIVERSION DAM
Tea Kettle Creek
E. Fork Sweetwater
WEBB CREEK CANAL
WEBB CREEK DIVERSION DAM
Red Bird Creek
Big Spring
Twin Springs
West Fork Spillway
Lake Waha
LAKE WAHA FEEDER CANAL
LEWISTON ORCHARDS IRRIGATION DISTRICT
CRAIG MOUNTAIN
WATER SUPPLY SYSTEM
SOLDIERS MEADOW RES.
Captain John Creek
CAPT. JOHN CANAL
BOR
ENVIORMENTAL REPORT
JUNE 1979

PLATE I

EXHIBIT 16
ALTERNATIVE 10-3

EXPANDED USE OF GROUND WATER WELLS

POTENTIAL GROWTH BOUNDARY

R 6 W
R 5 W

CITY LIMIT

CLEARWATER RIVER

POTENTIAL GROWTH BOUNDARY

R 5 W
R 4 W

T 36 N
T 35 N

SNAKE RIVER

POTENTIAL GROWTH BOUNDARY

MAIN STREET

4TH STREET

8TH STREET

11TH AVENUE

16TH AVENUE

19TH AVENUE

14TH STREET

21ST STREET

CITY LIMIT

GUN CLUB ROAD

OLD LAPWAI ROAD

LINDSEY CREEK ROAD

SCHAUB RANCH DEVELOPMENT

NEZ PERCE

INDIAN RESERVATION BOUNDARY

POTENTIAL GROWTH BOUNDARY

PROPOSED 1995
LOID WELL #3
GST/BPS 3

PROPOSED 1995
LOID WELL #4

PROPOSED 1995
LOID WELL #6

PROPOSED 1995
LOID WELL #5
GST/BPS 1

LOID BOUNDARY

GST/BPS 2

TIE-IN

MAIN LINE

WARNER AVENUE

MAIN ROAD

6TH ST

BURRELL AVENUE

CEDER AVENUE

POWERS AVENUE

10th ST

18TH ST

Bryden Canyon Golf Course

CITY LIMIT

LOID BOUNDARY

TAMMANY CREEK ROAD

TAMMANY CREEK ROAD

GRAPHIC SCALE

4000 8000 14000

(IN FEET)
1 inch = 4000ft.

R 6 W
R 5 W

POTENTIAL GROWTH BOUNDARY

R 5 W
R 4 W

POTENTIAL GROWTH BOUNDARY

WYATT ENGINEERING
ENGINEERS & SURVEYORS
101 THAIN RD.
LEWISTON, ID 83501
(208) 746-0555
FAX (208) 746-2861

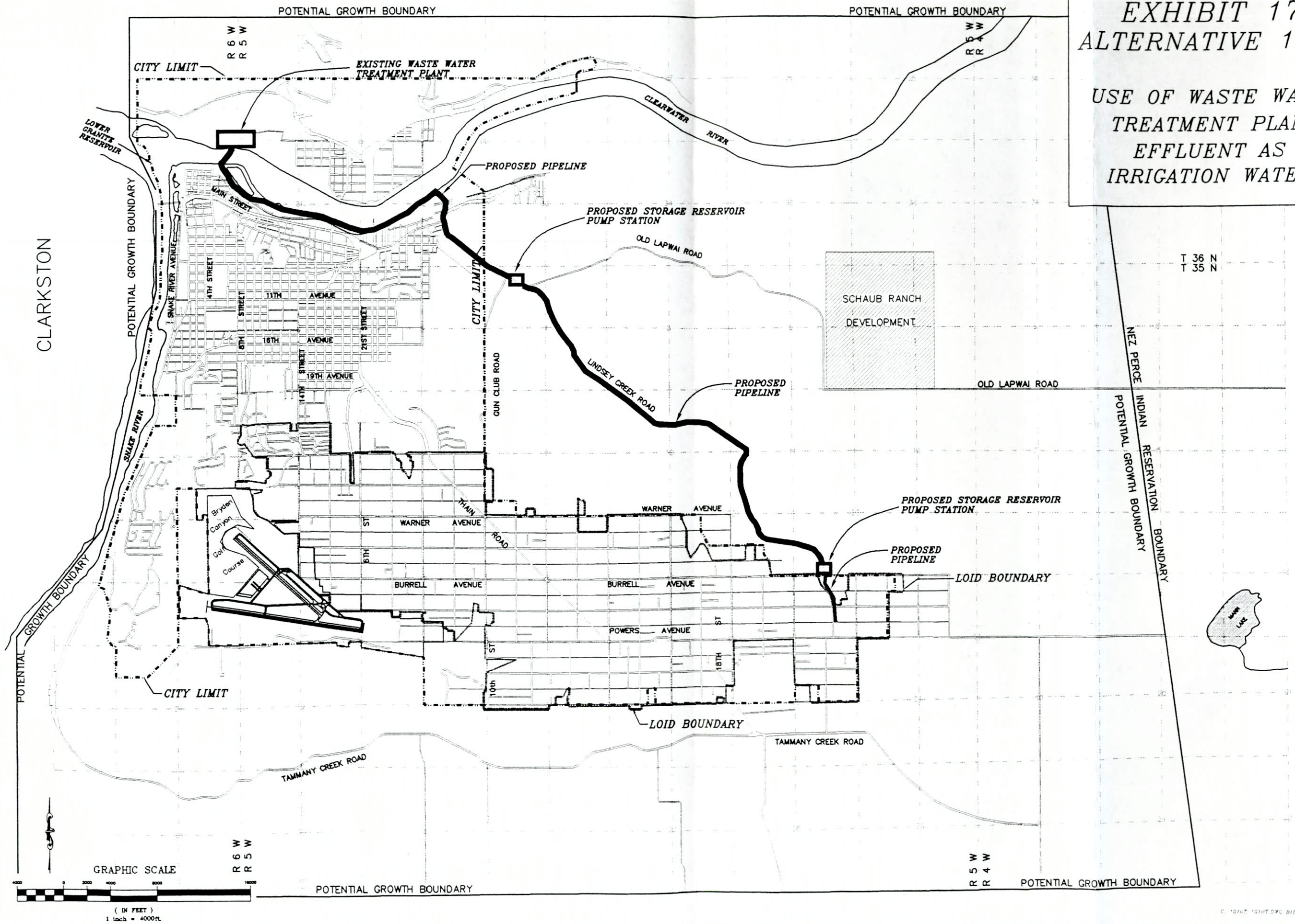
W. 1801 BROADWAY, #110
SPOKANE, WA 99201
FAX (509) 326-9423
(509) 326 5199

LEWISTON, IDAHO

DRAWN BY: MFF, SJN	CHECKED BY: SSS
DESIGNED BY: SSS	
SCALE: 1" = 4000'	
DATE: 4/17/95	
PROJECT NO.: 1010F	
SHEET 1 OF 1	

EXHIBIT 17
ALTERNATIVE 10-4

USE OF WASTE WATER TREATMENT PLANT EFFLUENT AS IRRIGATION WATER



WYATT ENGINEERING
ENGINEERS & SURVEYORS
W. 1801 BROADWAY, #110
SPOKANE, WA 99201
FAX (509) 328-0423
(509) 328-5139
101 THAIN RD.
LEWISTON, ID 83501
(208) 746-6825
FAX (208) 746-2861

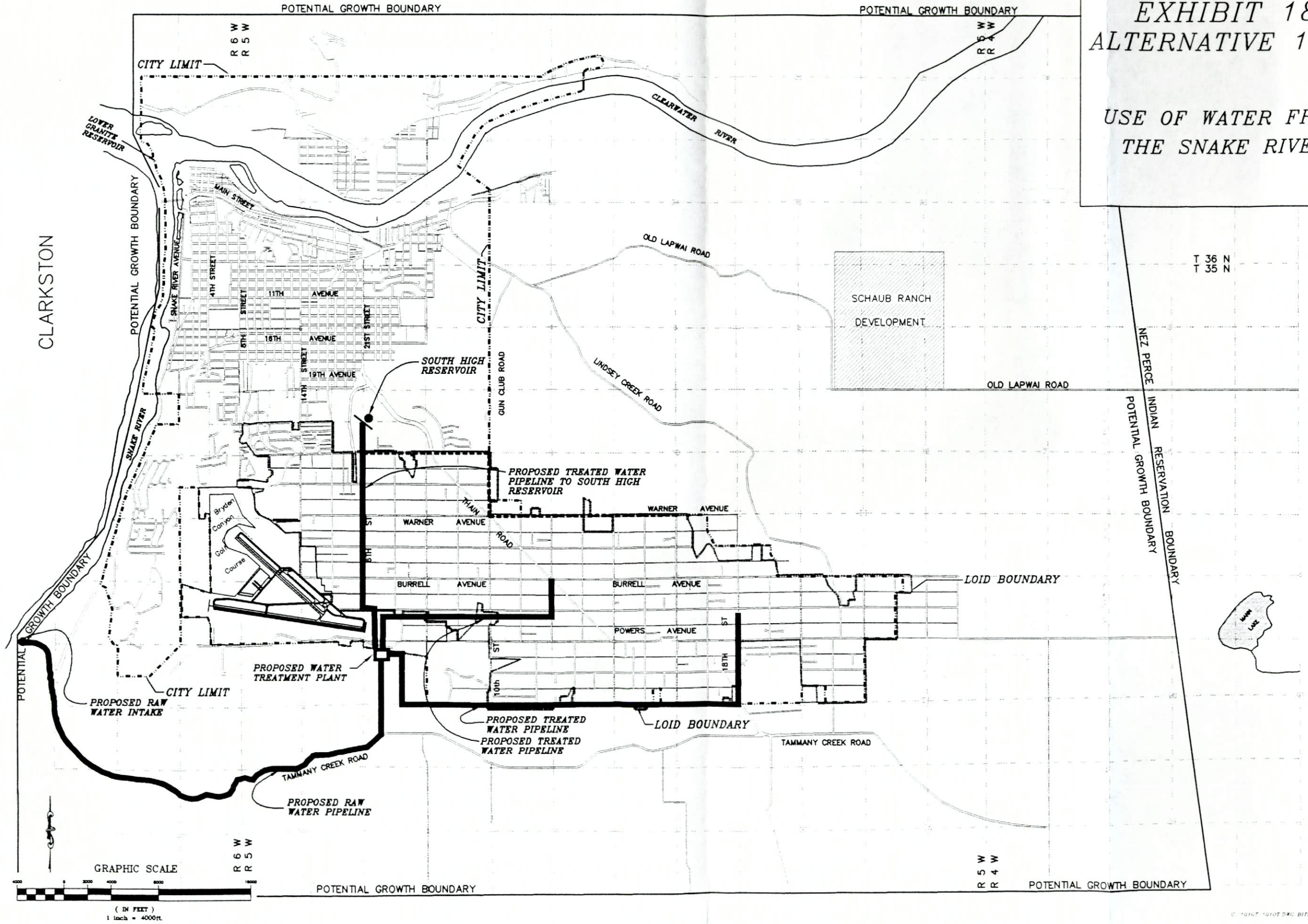
LEWISTON, IDAHO

DRAWN BY: MET, SJN	CHECKED BY: SSS
DESIGNED BY: SSS	
SCALE: 1" = 4000'	
DATE: 4/17/95	
PROJECT NO.: 10107	
SHEET 1 OF 1	

© 1994 WYATT ENGINEERING

EXHIBIT 18
ALTERNATIVE 10-5

USE OF WATER FROM THE SNAKE RIVER



CLARKSTON

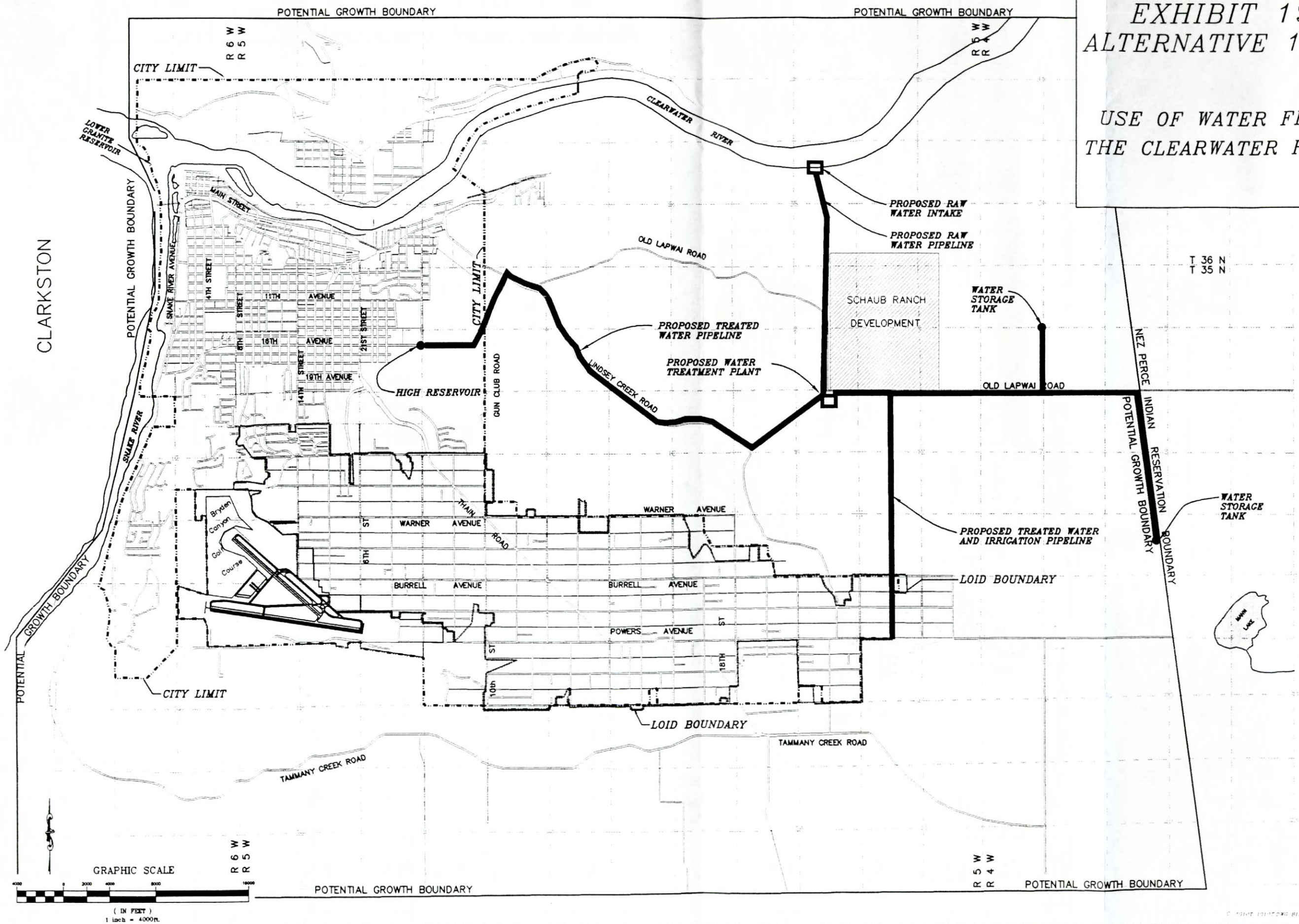
LEWISTON, IDAHO

WYATT ENGINEERING
ENGINEERS & SURVEYORS
W. 1801 BROADWAY, #110
SPOKANE, WA 99201
(509) 328-0423
FAX (509) 328-5139
101 THAIN RD.
LEWISTON, ID 83501
(208) 746-0825
FAX (208) 746-2661

DRAWN BY: MEF, SJN	CHECKED BY: SSS
DESIGNED BY:	SSS
SCALE:	1" =4000'
DATE:	4/17/95
PROJECT NO.:	1010T
SHEET	1 OF 1

EXHIBIT 19
ALTERNATIVE 10-6

USE OF WATER FROM THE CLEARWATER RIVER



WYATT ENGINEERING
ENGINEERS & SURVEYORS
W. 1801 BROADWAY, #110
SPOKANE, WA 99201
(509) 328-0423
FAX (509) 328-0423
(509) 328 5139
101 THAIN RD.
LEWISTON, ID 83501
(208) 746-2525
FAX (208) 746-2861

LEWISTON, IDAHO

DRAWN BY: MEE, SJN	CHECKED BY: SSS
DESIGNED BY: SSS	
SCALE: 1" =4000'	
DATE: 4/17/95	
PROJECT NO.: 1010T	
SHEET 1 OF 1	

EXHIBIT 20

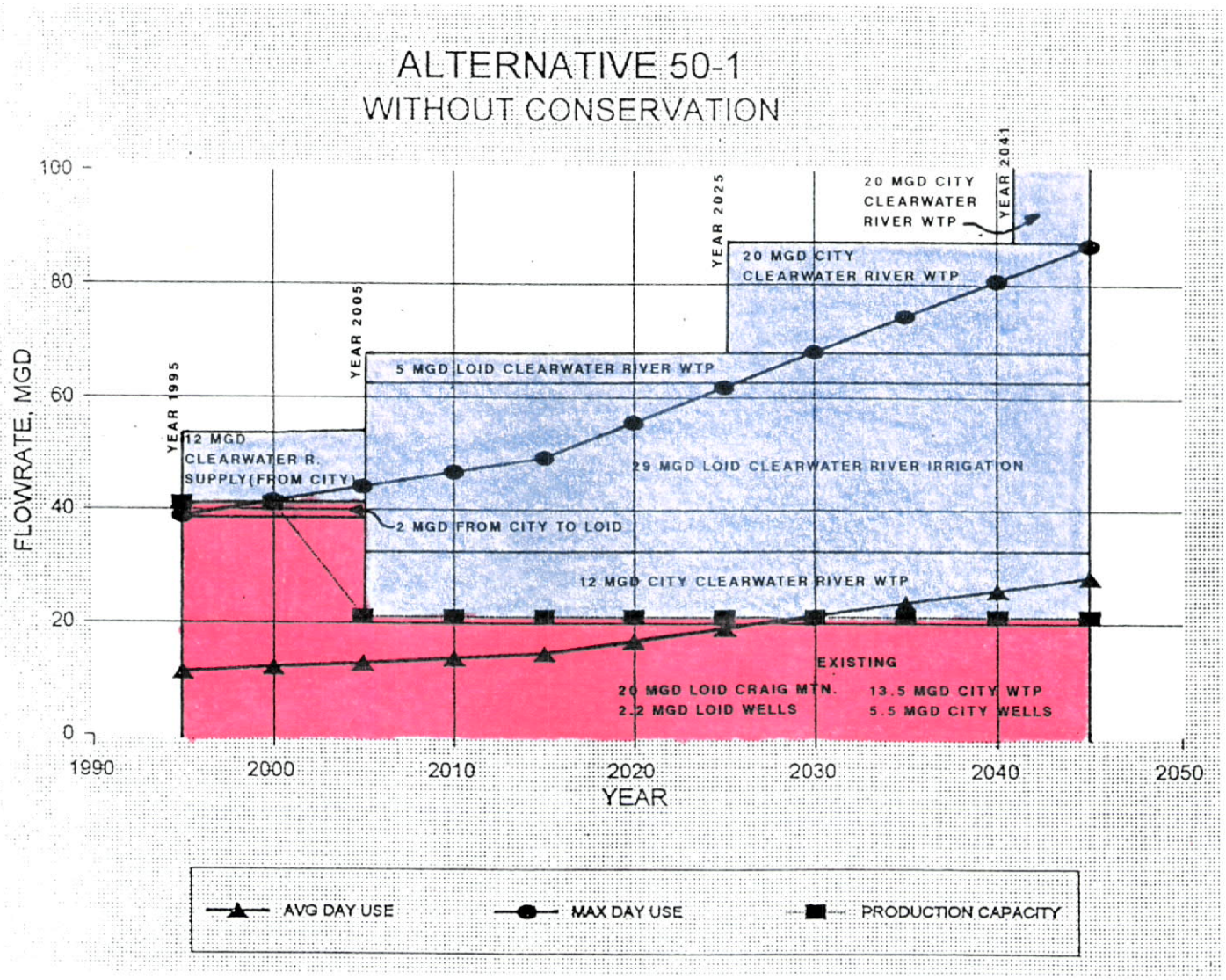

ALTERNATIVE 50-1
WITHOUT CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2025
YEAR 2041
12 MGD CLEARWATER R. SUPPLY(FROM CITY)
5 MGD LOID CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER RIVER WTP
29 MGD LOID CLEARWATER RIVER IRRIGATION
2 MGD FROM CITY TO LOID
12 MGD CITY CLEARWATER RIVER WTP
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD LOID WELLS
13.5 MGD CITY WTP
5.5 MGD CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 21

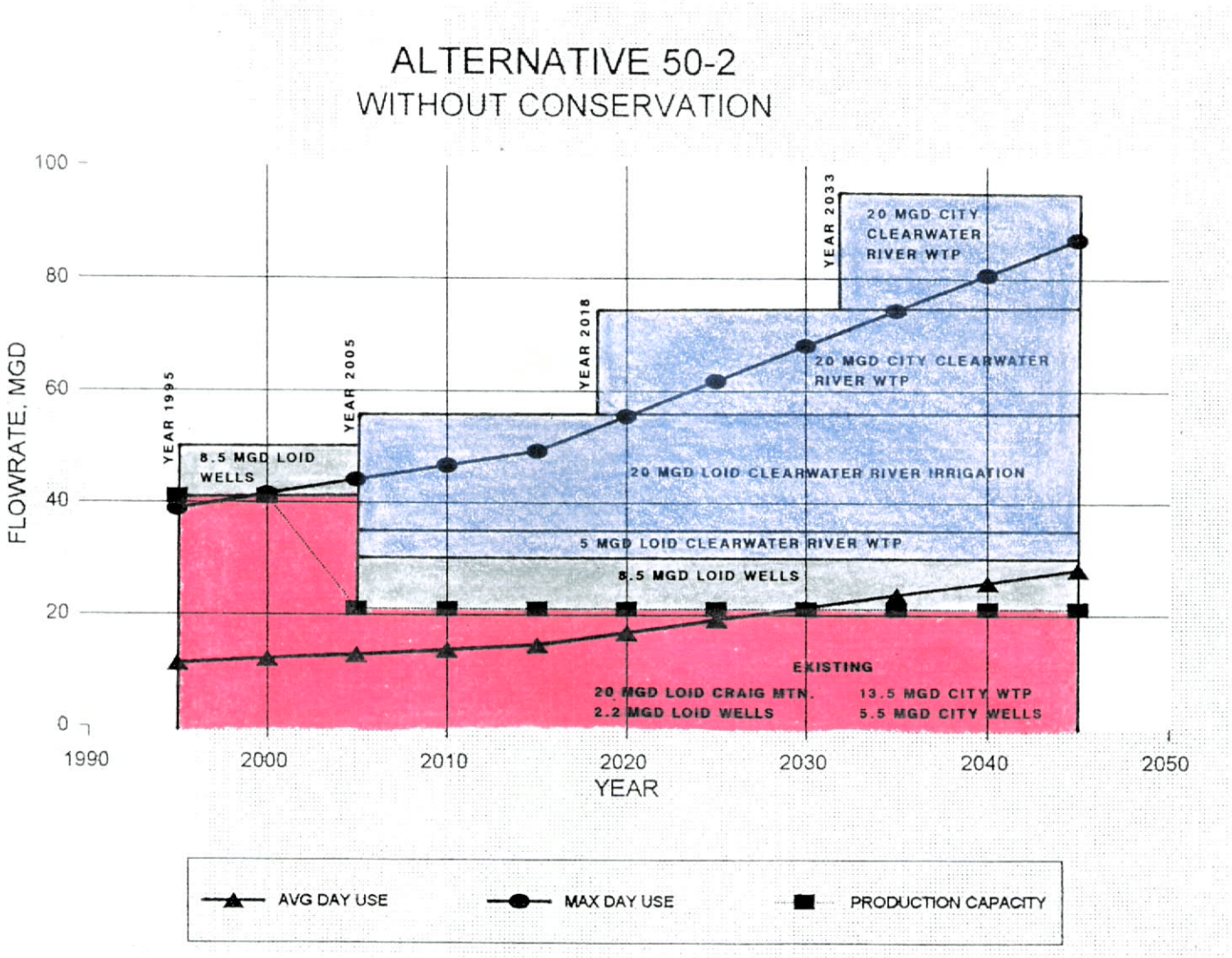

ALTERNATIVE 50-2
WITHOUT CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2018
YEAR 2033
8.5 MGD LOID WELLS
20 MGD CITY CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER RIVER WTP
20 MGD LOID CLEARWATER RIVER IRRIGATION
5 MGD LOID CLEARWATER RIVER WTP
8.5 MGD LOID WELLS
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD LOID WELLS
13.5 MGD CITY WTP
5.5 MGD CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 22

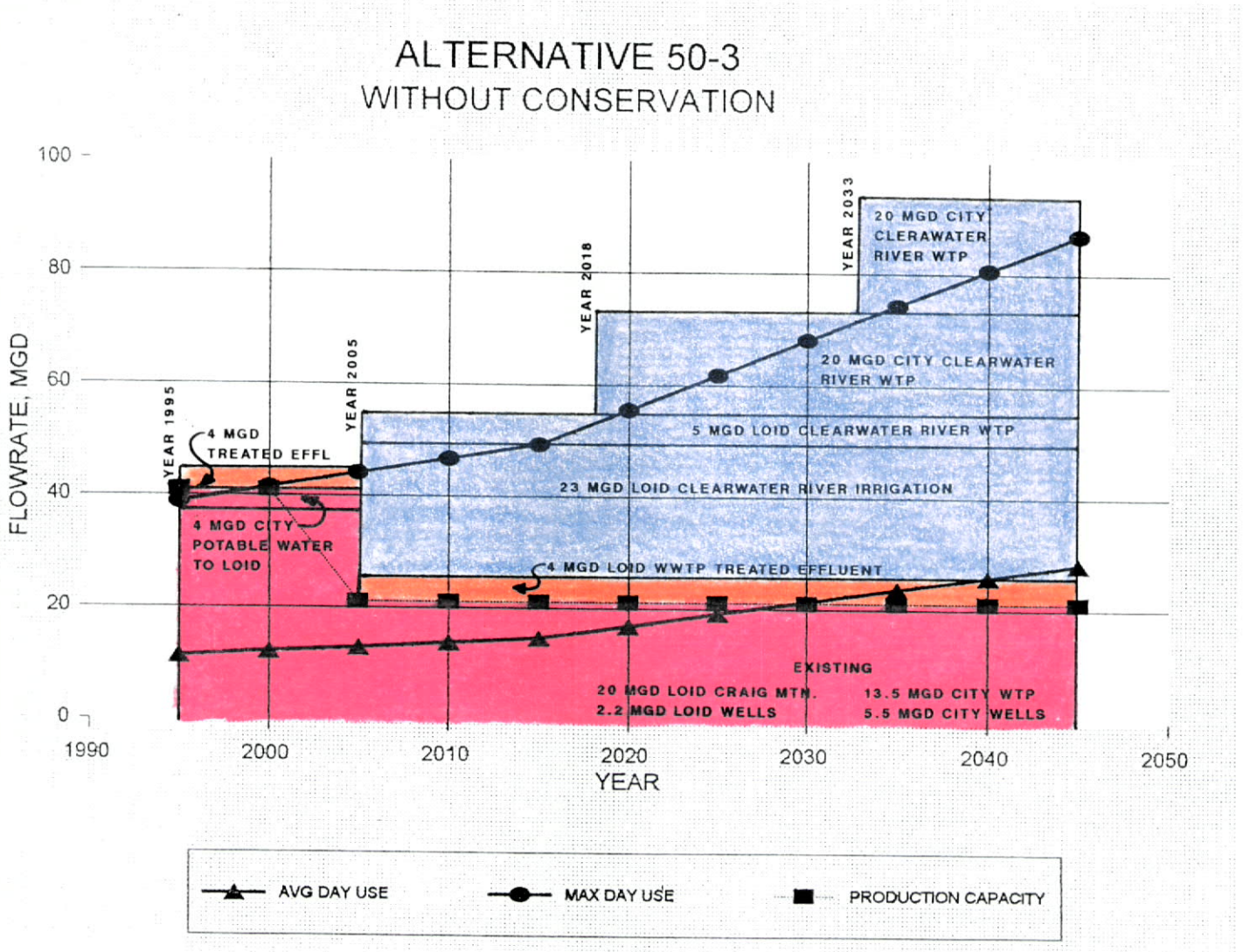

ALTERNATIVE 50-3
WITHOUT CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2018
YEAR 2033
4 MGD TREATED EFFL
4 MGD CITY POTABLE WATER TO LOID
20 MGD CITY CLERAWATER RIVER WTP
20 MGD CITY CLEARWATER RIVER WTP
5 MGD LOID CLEARWATER RIVER WTP
23 MGD LOID CLEARWATER RIVER IRRIGATION
4 MGD LOID WWTP TREATED EFFLUENT
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD LOID WELLS
13.5 MGD CITY WTP
5.5 MGD CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 23

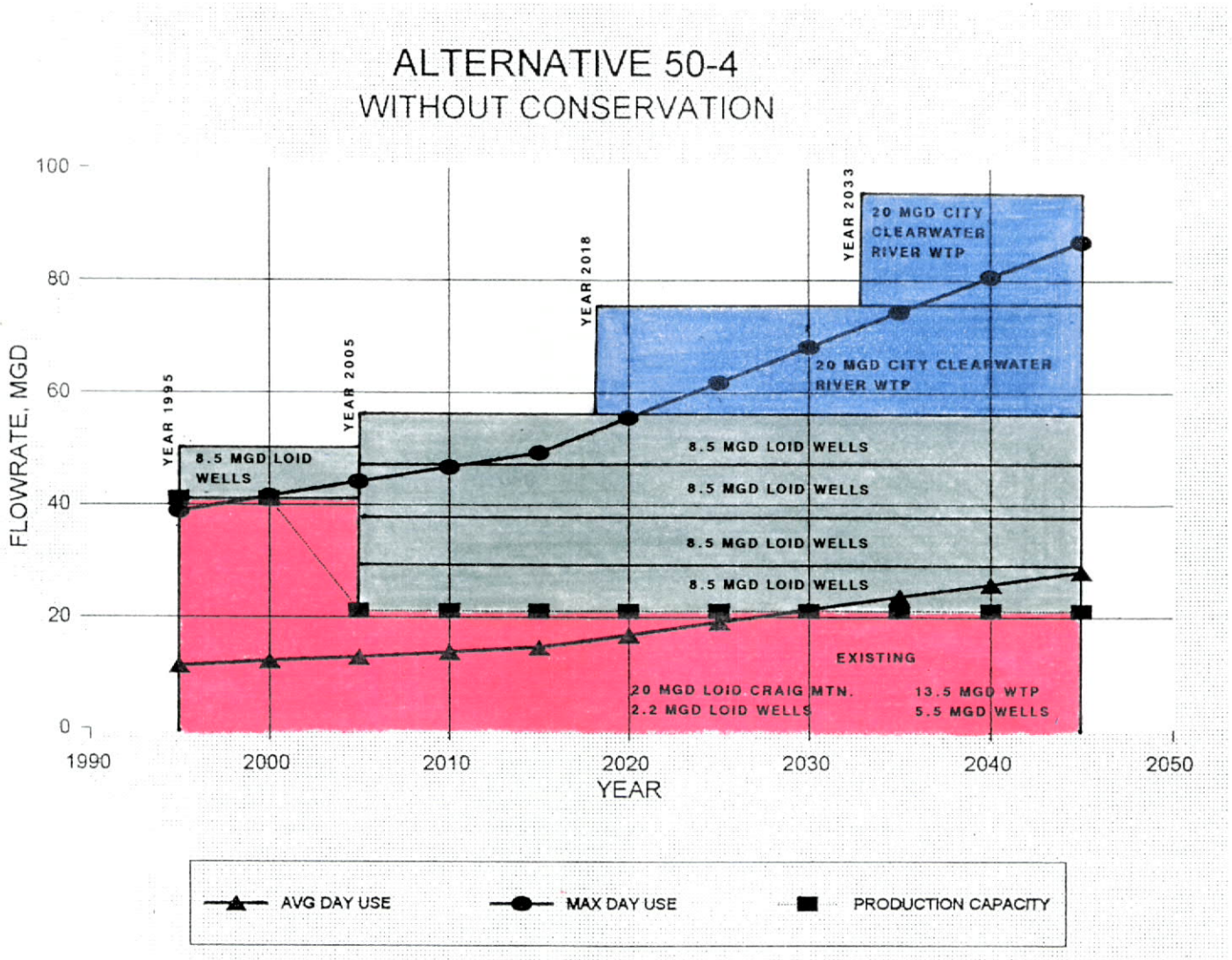

ALTERNATIVE 50-4
WITHOUT CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2018
YEAR 2033
8.5 MGD LOID WELLS
20 MGD CITY CLEARWATER RIVER WTP
8.5 MGD LOID WELLS
8.5 MGD LOID WELLS
8.5 MGD LOID WELLS
8.5 MGD LOID WELLS
20 MGD CITY CLEARWATER RIVER WTP
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD LOID WELLS
13.5 MGD WTP
5.5 MGD WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 24

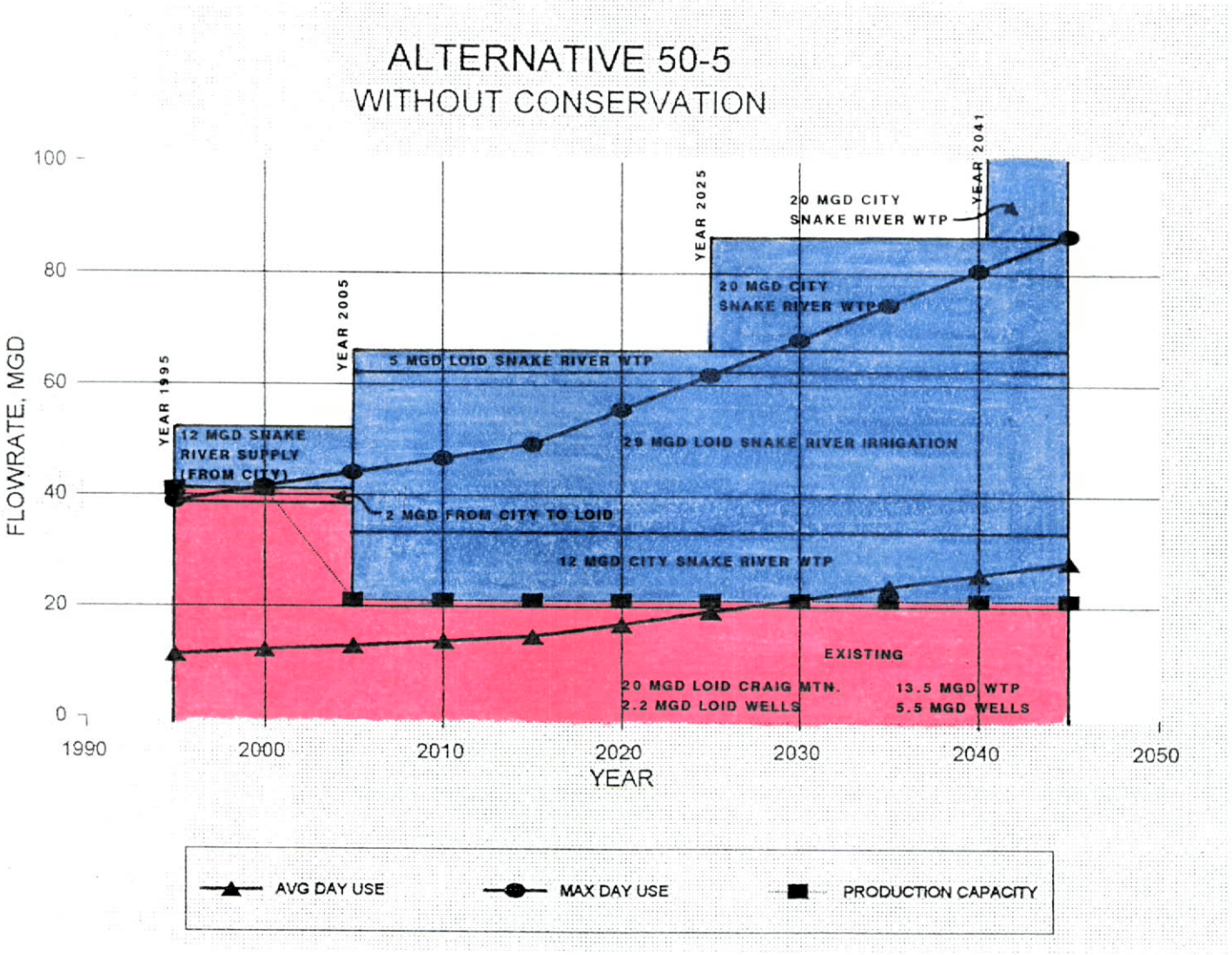

ALTERNATIVE 50-5
WITHOUT CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2025
YEAR 2041
12 MGD SNAKE RIVER SUPPLY (FROM CITY)
5 MGD LOID SNAKE RIVER WTP
20 MGD CITY SNAKE RIVER WTP
20 MGD CITY SNAKE RIVER WTP
29 MGD LOID SNAKE RIVER IRRIGATION
2 MGD FROM CITY TO LOID
12 MGD CITY SNAKE RIVER WTP
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD LOID WELLS
13.5 MGD WTP
5.5 MGD WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 25

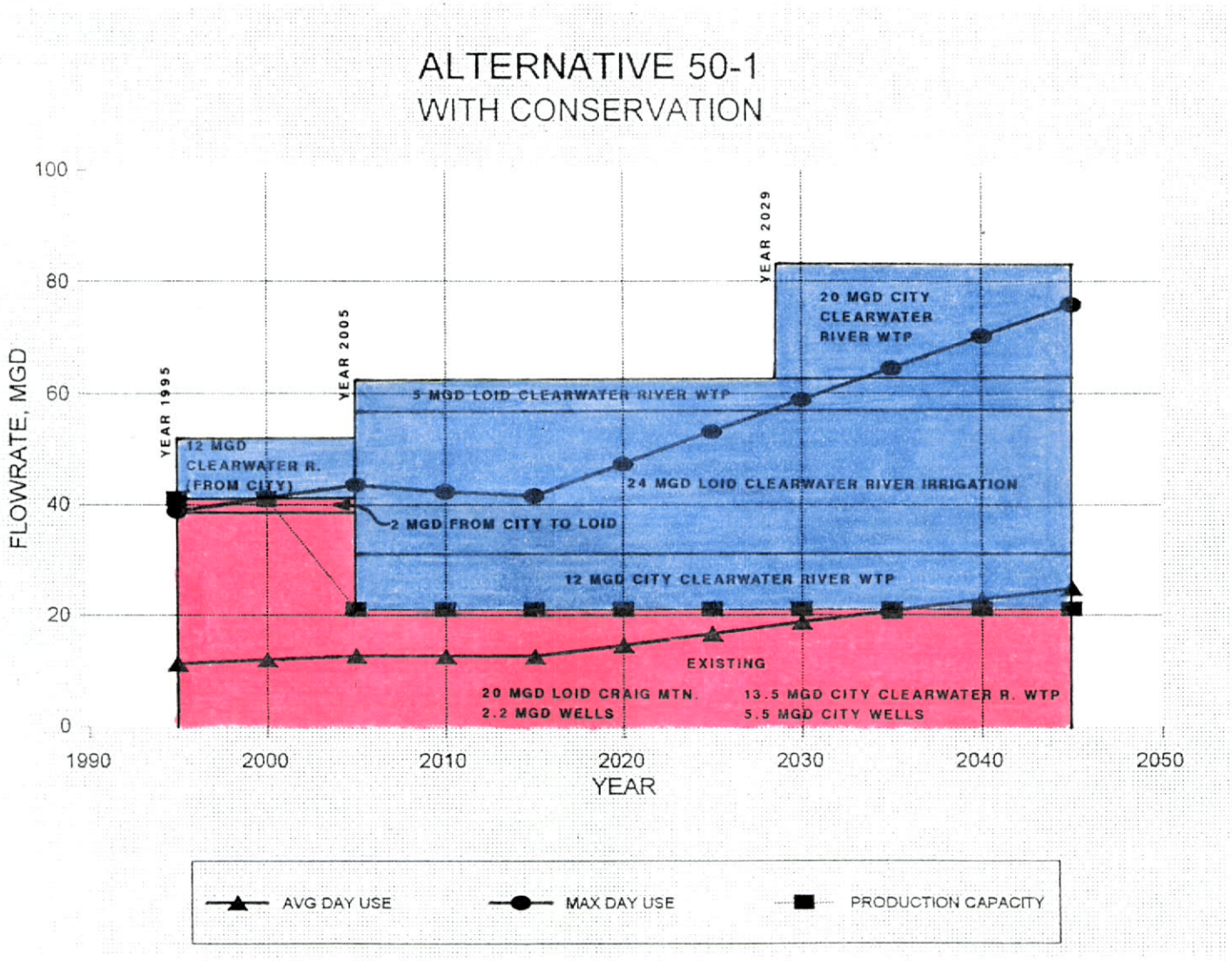

ALTERNATIVE 50-1
WITH CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2029
12 MGD CLEARWATER R. (FROM CITY)
5 MGD LOID CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER RIVER WTP
24 MGD LOID CLEARWATER RIVER IRRIGATION
2 MGD FROM CITY TO LOID
12 MGD CITY CLEARWATER RIVER WTP
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD WELLS
13.5 MGD CITY CLEARWATER R. WTP
5.5 MGD CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 26

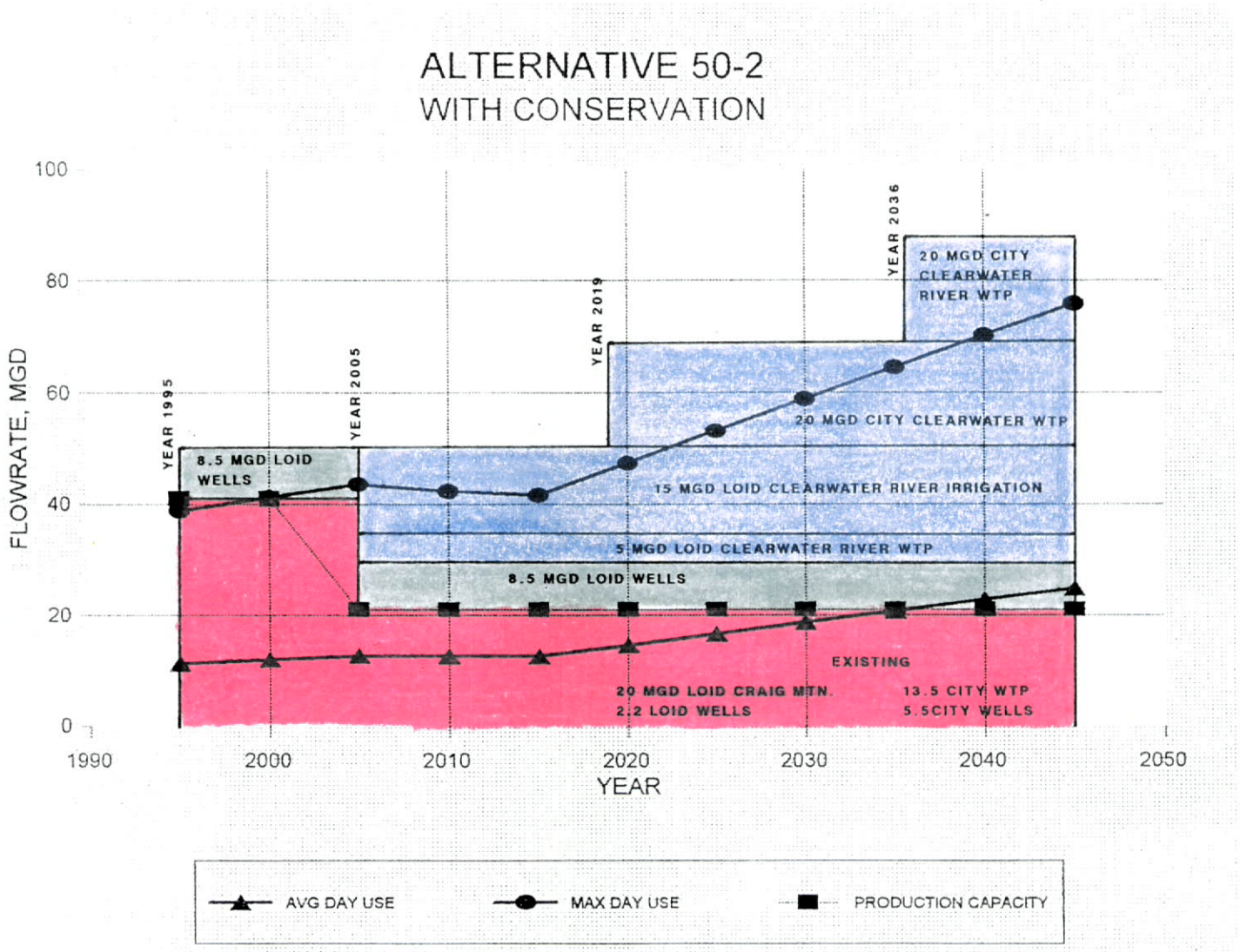

ALTERNATIVE 50-2
WITH CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2019
YEAR 2036
8.5 MGD LOID WELLS
20 MGD CITY CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER WTP
15 MGD LOID CLEARWATER RIVER IRRIGATION
5 MGD LOID CLEARWATER RIVER WTP
8.5 MGD LOID WELLS
EXISTING
20 MGD LOID CRAIG MTN.
2.2 LOID WELLS
13.5 CITY WTP
5.5CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 27

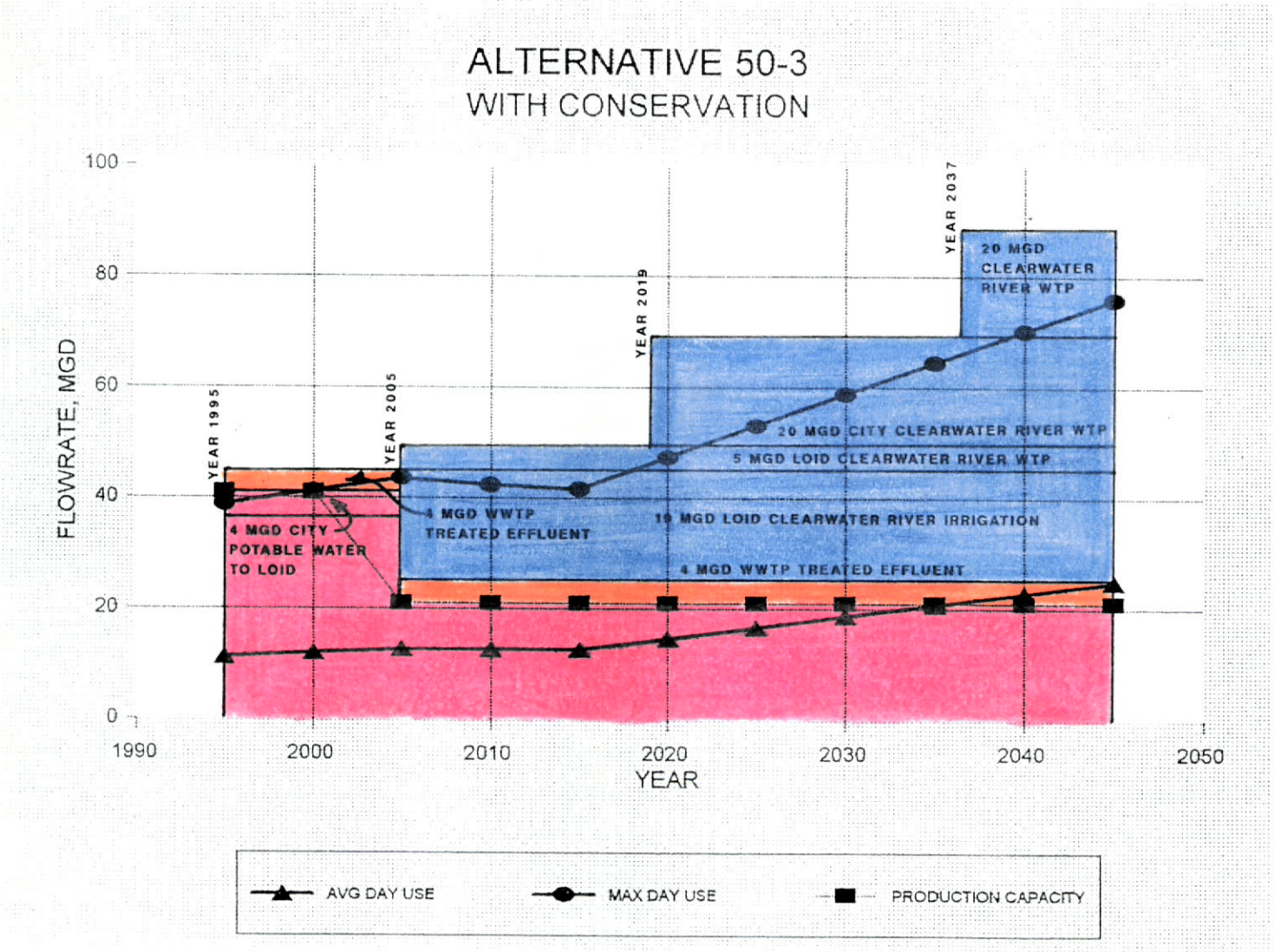

ALTERNATIVE 50-3
WITH CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2019
YEAR 2037
20 MGD CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER RIVER WTP
5 MGD LOID CLEARWATER RIVER WTP
4 MGD WWTP TREATED EFFLUENT
19 MGD LOID CLEARWATER RIVER IRRIGATION
4 MGD WWTP TREATED EFFLUENT
4 MGD CITY POTABLE WATER TO LOID
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 28

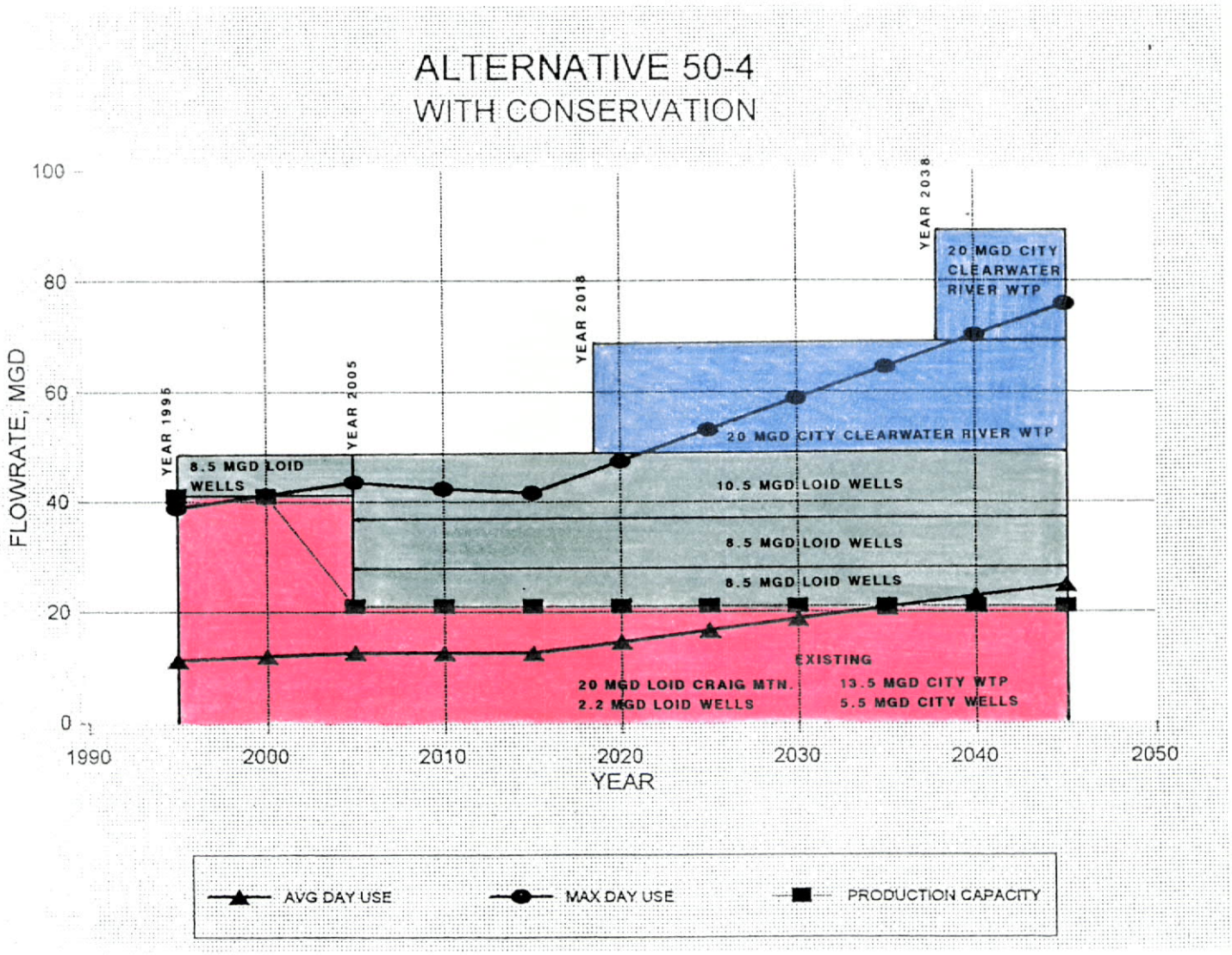
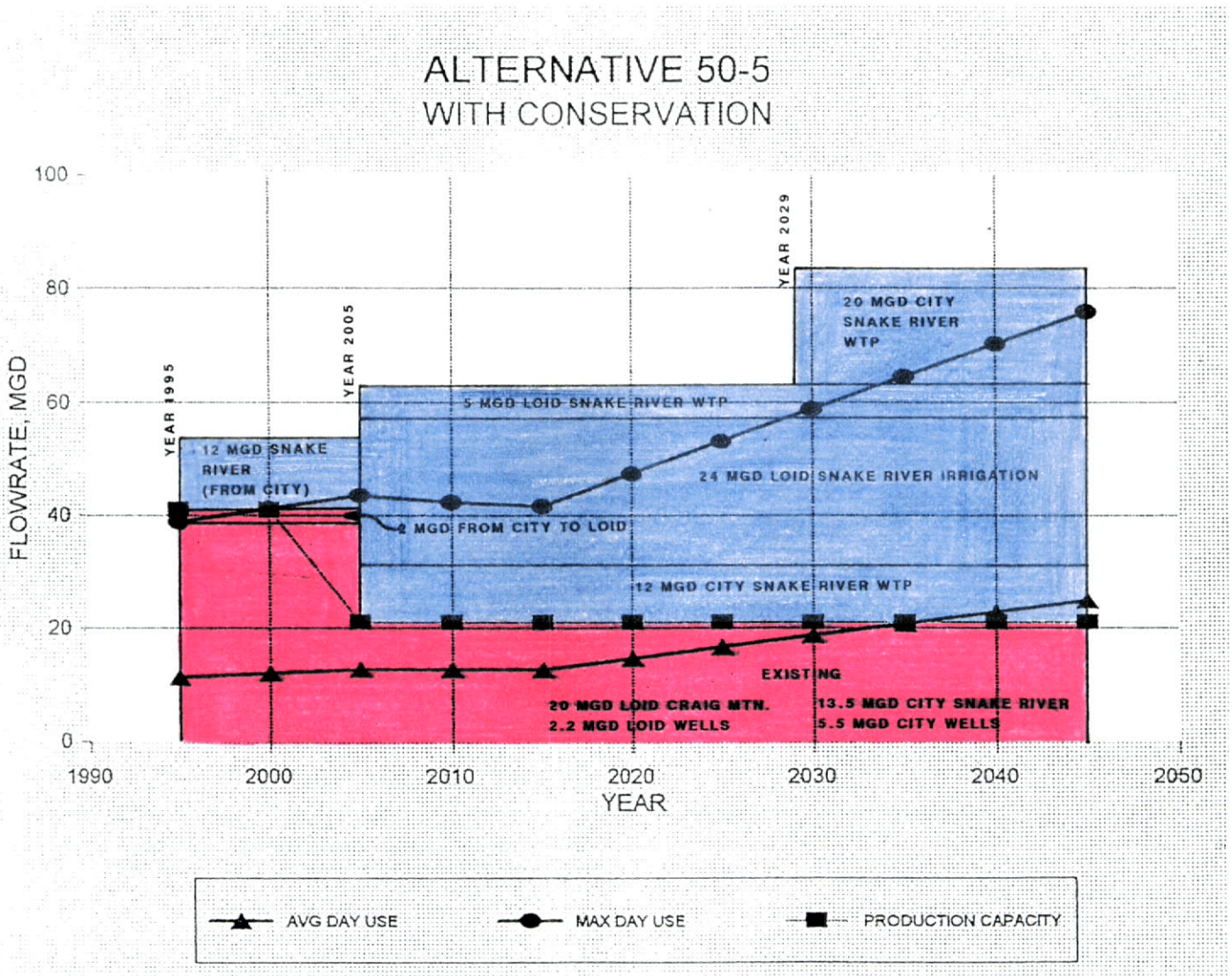

ALTERNATIVE 50-4
WITH CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2018
YEAR 2038
20 MGD CITY CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER RIVER WTP
8.5 MGD LOID WELLS
10.5 MGD LOID WELLS
8.5 MGD LOID WELLS
8.5 MGD LOID WELLS
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD LOID WELLS
13.5 MGD CITY WTP
5.5 MGD CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 29


ALTERNATIVE 50-5
WITH CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2029
12 MGD SNAKE RIVER (FROM CITY)
5 MGD LOID SNAKE RIVER WTP
20 MGD CITY SNAKE RIVER WTP
24 MGD LOID SNAKE RIVER IRRIGATION
2 MGD FROM CITY TO LOID
12 MGD CITY SNAKE RIVER WTP
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD LOID WELLS
13.5 MGD CITY SNAKE RIVER
5.5 MGD CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

State of Idaho
Department of Water Resources

Water Right License

WATER RIGHT NO. 85-07638

Priority: April 12, 1997 **Maximum Diversion Rate:** 2.76 CFS

This is to certify, that LEWISTON ORCHARDS IRRIGATION DISTRICT
1520 POWERS AVE
LEWISTON ID 83501 has complied with the terms and conditions of the permit, issued pursuant to Application for Permit dated April 11, 1997; and has submitted Proof of Beneficial Use on September 2, 1998. An examination indicates that the works have a diversion capacity of 2.760 cfs of water from a **GROUNDWATER** source, and a water right has been established as follows:

BENEFICIAL USE	PERIOD OF USE	RATE OF DIVERSION	ANNUAL VOLUME
MUNICIPAL	01/01 to 12/31	2.76 CFS	

LOCATION OF POINT(S) OF DIVERSION: SESW , Sec. 10, Township 35N, Range 05W
NEZ PERCE County

PLACE OF USE: See Remarks

CONDITIONS OF APPROVAL AND REMARKS

1. After specific notification by the department, the right holder shall install a suitable measuring device or shall enter into an agreement with the department to determine the amount of water diverted from power records and shall annually report the information to the department.
2. Place of use is located within the service area of Lewiston Orchard Irrigation District.
3. Point of diversion is also known as Well No. 3.

This license is issued pursuant to the provisions of Section 42-219, Idaho Code. The water right confirmed by this license is subject to all prior water rights and shall be administered in accordance with Idaho law and applicable rules of the Department of Water Resources. Signed and sealed this 16TH day of APRIL, 1999.

Acting for KARL J. DREHER, Director

MICROFILMED

AUG 1 1 1999

BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE

STATE OF IDAHO

IN THE MATTER OF PERMIT NO. 85-07638	)	**ORDER OF**
	)	
IN THE NAME OF LEWISTON ORCHARDS IRRIGATION DISTRICT	)	**REINSTATEMENT**
	)	

WHEREAS, the Department issued the above-captioned permit with the condition that proof of construction of works and application of water to beneficial use (proof of beneficial use) be submitted to the Department on or before September 1, 1998; and,

WHEREAS, the Department notified the permit holder on June 30, 1998, by certified mail that proof of beneficial use was due and instructed the permit holder of the steps to be taken to submit the proof of beneficial use or an extension of time request; and,

WHEREAS, the department sent the permit holder a lapse notice on September 8, 1998, since the department had not received an acceptable proof of beneficial use statement or extension of time; and,

WHEREAS, Section 42-218a, Idaho Code, provides that the Department may reinstate a permit upon a showing of reasonable cause by the permit holder within sixty days of the date of the notice of lapsing; and,

WHEREAS, the permit holder has provided a reasonable showing why the permit should be reinstated by submitting proof of beneficial use on September 2, 1998;

IT IS, THEREFORE, HEREBY ORDERED that Permit No. 85-07638 is **REINSTATED** with an advance in priority to **April 12, 1997.**

DATED this 23rd day of October, 1998.

L. Glen Saxton

L. GLEN SAXTON, Chief
Water Allocation Bureau

MICROFILMED

NOV 0 9 1998

Form No. 217
7/94

FOR OFFICE USE ONLY
Amt. of Fee $: 150.00
Receipt No. 043590
Receipt By: [illegible]
Date Receipted: 9/2/98

RECEIVED
SEP 0 2 1998
Department of Water Resources

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

PROOF OF BENEFICIAL USE

The Idaho Department of Water Resources considers this form a statement that the permit holder(s) has/have completed all development that will occur under this permit and that water has been applied according to the provisions of the permit for the beneficial use(s) described below. This form must be accompanied by a license examination fee, when necessary, or be accompanied by a completed field examination report prepared by a certified water right examiner who has been appointed by the department.

1. Permit No. 85-07638 Telephone No. 208-746-8235

2. Name(s) of Permit Holder(s): Lewiston Orchards Irrigation District

3. Mailing Address: 1520 Powers Ave., Lewiston, ID 83501

4. Source of Water: Ground If **GROUNDWATER** (well), Date Drilled: mo. 11 / yr. 97

a. Well Driller: Holman Drilling, Spokane, WA #108 Drilling Permit Number: 85 - 97N - 0024- 000

b. *OPTIONAL:*
Pump Horsepower: 500 Pressure (psi): 100 Dynamic pumping level (ft): 920' (495'MSL)

5. Use(s) (as authorized by the water right permit):

Domestic (No. of households): 1675 Stockwater (No. and type of stock): _____

Irrigation (No. of acres): _____ Other: _____

6. Total rate of diversion and/or volume for which proof is submitted: 2.67 cfs **OR** _____ acre feet

7. Measuring Device Requirement: **(refer to the approval conditions on your permit and respond accordingly)**
(This question is not optional. Please check either yes or no. Proofs returned not checked accordingly, will be considered incomplete)

Measuring Device:	Is a measuring device required?	Yes ____ or	No X
	Has the measuring device been installed?	Yes X or	No ____
Flow Measurement Port:	Is a flow measurement port required?	Yes ____ or	No X
	Has the measurement port been installed?	Yes ____ or	No X

8. Fee Enclosed: $ 150.00 (See Fee Schedule on back of the instructions for filing proof of beneficial use)

9. Person to contact to accompany the Department representative during field examination of the water system.

Name: Randy Moore, Manager Telephone Number: 208-746-8235

Address: 1520 Powers Ave., Lewiston, ID 83501

10. The information given on this form is my true statement of the extent to which the above numbered permit has been developed and I relinquish any undeveloped portion of the permit to the State of Idaho.

Signature of permit holder: _____ Date: 8/12/98
(include your title, if on behalf of company of organization)

MICROFILMED
NOV 0 9 1998

State of Idaho
Department of Water Resources

Permit To Appropriate Water

NO. 85-07638

Proposed Priority: April 11, 1997 **Maximum Diversion Rate:** 3.34 CFS

This is to certify, that **LEWISTON ORCHARDS IRRIGATION DISTRICT**
1520 POWERS AVE
LEWISTON ID 83501
has applied for a permit to appropriate water from: **GROUNDWATER**

and a permit is **APPROVED** for development of water as follows:

BENEFICIAL USE	PERIOD OF USE	RATE OF DIVERSION
MUNICIPAL	01/01 to 12/31	3.34 CFS

LOCATION OF POINT(S) OF DIVERSION: SESW , Sec. 10, Township 35N, Range 05W
NEZ PERCE County

PLACE OF USE: See Remarks

CONDITIONS OF APPROVAL AND REMARKS

1. Proof of construction of works and application of water to beneficial use shall be submitted on or before **September 1, 1998.**
2. Subject to all prior water rights.
3. After specific notification by the department, the right holder shall install a suitable measuring device or shall enter into an agreement with the department to determine the amount of water diverted from power records and shall annually report the information to the department.
4. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code.
5. The right holder shall comply with Idaho well construction standards when constructing a well pursuant to this right.
6. The issuance of this right does not grant any right-of-way or easement across the land of another.
7. Place of use is located within the service area of Lewiston Orchard Irrigation District.
8. Point of diversion is locally known as Well No. 3.

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code. Witness the signature of the Director, affixed at Boise, this

19th day of August, 1997.

for Karl J. Dreher, Director

MICROFILMED
SEP 16 1997

Form 202
6/85

Ident. No. 85-01638

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

RECEIVED
JUL 14 1997
Department of Water Resources

1. Name of applicant Lewiston Orchards Irrigation District Phone (208) 746-8235

   Post office address 1520 Powers Avenue, Lewiston, ID 83501

2. Source of water supply Ground Water which is a tributary of N/A

3. Location of point of diversion is NW ¼ of ~~SE~~ SEW ¼ of ~~SW~~ NE ¼, Govt. Lot ____

   Sec. ~~16~~ 10 Township T. 35 N. Range R. 5 W. B.M. Nez Perce County; additional points of diversion if any: ____

4. Water will be used for the following purposes:

   Amount 3.34 cfs (cfs or acre-feet per annum) for MUNICIPAL purposes from Jan. 1 to Dec. 31 (both dates inclusive)

   Amount ____ (cfs or acre-feet per annum) for ____ purposes from ____ to ____ (both dates inclusive)

   Amount ____ (cfs or acre-feet per annum) for ____ purposes from ____ to ____ (both dates inclusive)

   Amount ____ (cfs or acre-feet per annum) for ____ purposes from ____ to ____ (both dates inclusive)

5. Total quantity to be appropriated is (a) 3.34 cfs (cubic feet per second) and/or (b) ____ (acre feet per annum)

6. Proposed diverting works:

   a. Description of ditches, flumes, pumps, headgates, etc. ~~N/A~~ WELL + PUMP + 2.5 MILLION GAL. RES + DELIVERY SYSTEM.

   b. Height of storage dam N/A feet; active reservoir capacity N/A acre-feet; total reservoir capacity N/A acre-feet; period of year when water will be diverted to storage: ____ to ____ inclusive.

   c. Proposed well diameter is 12 inches; proposed depth of well is 1700 feet.

   d. Is ground water with a temperature of greater than 90°F being sought? No

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7. Time required for the completion of the works and application of the water to the proposed beneficial use is One (1) years (*minimum 1 year*). *per Scott Scheverius 5/16/97 memo.

NOTE - 4/24/97
SCOTT FROM WYATT ENGINEERING CALLED REGARDING THE LOCATION OF THE POINT OF DIVERSION FOR THIS FILING. IT WAS CHANGED AS REFLECTED ON ITEM 3.

8. Description of proposed uses (*if irrigation only, go to item 9*):

a. Hydropower; show total feet of head and proposed capacity in KW. N/A

b. Stockwatering; list number and kind of livestock. N/A

c. Municipal; show name of municipality. Lewiston Orchards Irrigation District

d. Domestic; show number of households. 6200 Connections

e. Other; describe fully. _____

9. Description of place of use:

a. If water is for irrigation, indicate acreage in each subdivision in the tabulation below.

b. If water is used for other purposes, place a symbol of the use (*example: D for Domestic*) in the corresponding place of use below. See instructions for standard symbols.

TWP	RANGE	SEC.	NE¼				NW¼				SW¼				SE¼				TOTALS
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
							SEE ATTACHED MAPS												
							1 THROUGH 2												

Total number of acres to be irrigated _____

10. Describe any other water rights used for the same purposes as described above. _____
Water rights on Nez Perce Reservation - see attached list

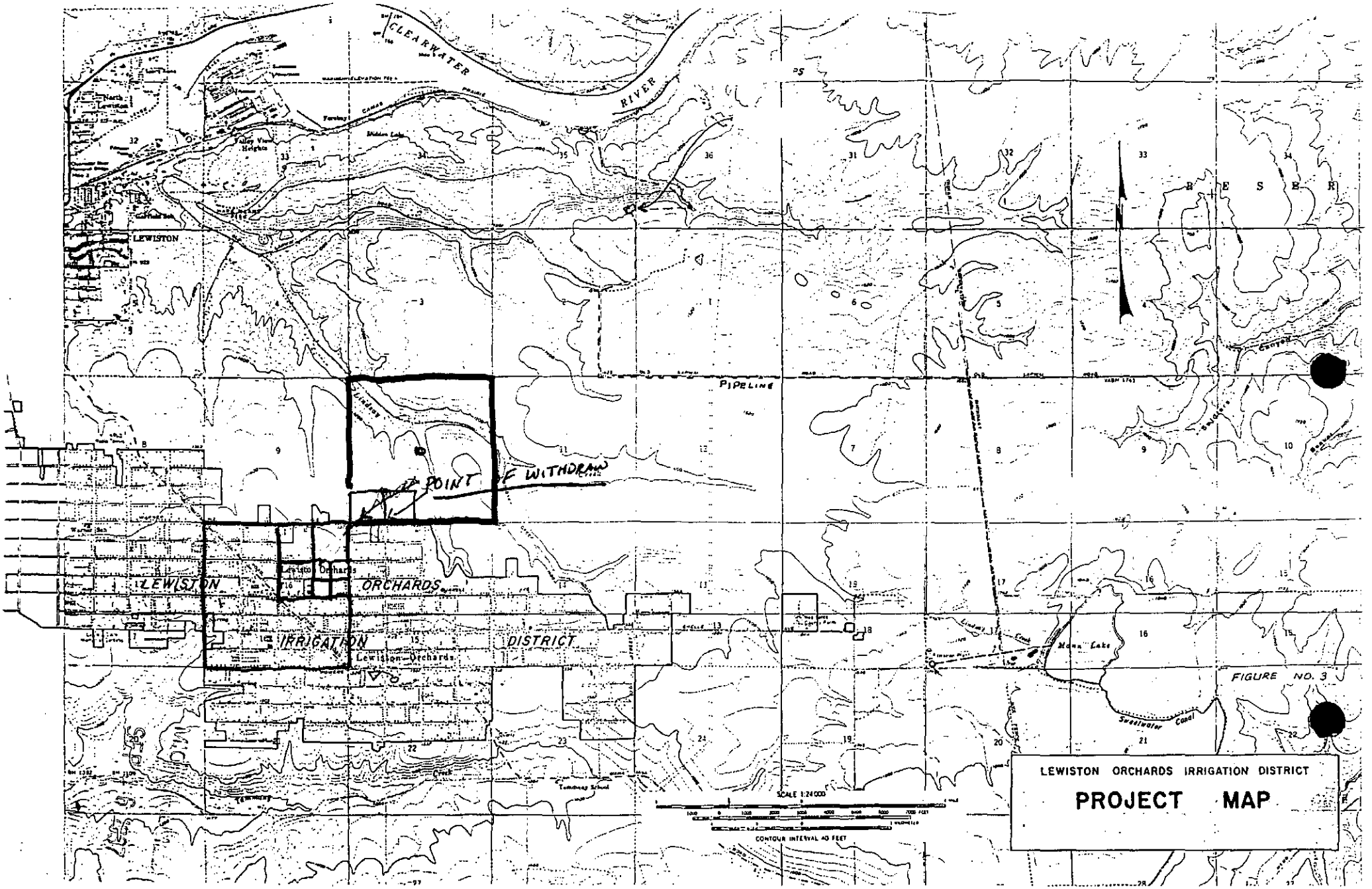
11. a. Who owns the property at the point of diversion? Private property

b. Who owns the land to be irrigated or place of use? Residents of the City of Lewiston & LOID

c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing. Upon approval LOID will purchase land for well and pump house.

12. Remarks: LOID has right of eminent domain for property acquisition.

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PLACE OF USE WITHIN THE SERVICE AREA OF LEWISTON ORCHARDS IRRIGATION DISTRICT.

13. Map of proposed project: show clearly the proposed point of diversion, place of use, section number, township and range number. T. 35 N., R. 5 W.

7			7	8			8	9			9	10			10
M	M	M													
	M	M	M	M	M	M	M								
7	M	M	M 7	M 8	M	M	M 8	9			9	10			10
18	M	M	18 M	17 M	M	M	17 M	16 M	M	M	16 M	15 M	M	M	15
		M	M	M	M	M	M	M	M	M	M	M	M	M	M
			M	M	M	M	M	M	M	M	M	M	M	M	M
18			18	M 17	M	M	M 17	M 16	M	M	M 16	M 15	M	M	M 15
19			19	20			20	21 M	M	M	21 M	22 M	M	M	22 M
								M	M	M	M	M	M	M	M
								M	M	M	M	M	M	M	M
19			19	20			20	M 21	M	M	M 21	M 22	M	M	M 22
30			30	29			29	28			28	27			27
30			30	29			29	28			28	27			27

Scale: 2 inches equal 1 mile.

MICROFILMED

BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth.

SEP 16 1997

SIGNATURE ON NEXT PAGE

Randy Moore (Applicant)

Manager, Lewiston Orchards Irrigation District

13. Map of proposed project: show clearly the proposed point of diversion, place of use, section number, township and range number. T. 35 N., R. 5 W.

10			10	11			11	12			12	7			7
10			10	11			11	12			12	7			7
15 M	M	M	15	14			14	13			13	18			18
M	M	M	M	M	M										
M	M	M	M	M	M	M	M	M	M						
M	M	M	M	M	M	M	M	M							
15			15	14			14	13			13	18			18
22 M	M	M	22 M	23 M	M	M	23 M	24			24	19			19
M	M	M	M			M	M								
M	M	M	M			M	M								
22			22	23			23	24			24	19			19
27			27	26			26	25			25	30			30
27			27	26			26	25			25	30			30

MICROFILMED SEP 1 8 1997

Scale: 2 inches equal 1 mile.

R. 4 W.

BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth.

Randy Moore (Applicant)

Manager, Lewiston Orchards Irrigation District

Received by dp Date 4/11/97 Time 1:15P Preliminary check by AB

Fee $ 160.00 Receipted by dp # N011079 Date 4/11/97

Publication prepared by dp/dp Date 4/23/97 5/28/97 Published in Lewiston Trib 6/5 +12/97 5/1 +8/97

Publication approved dp/dp Date 5/9/97 / 6/16/97

ACTION OF THE DIRECTOR, DEPARTMENT OF WATER RESOURCES

This is to certify that I have examined Application for Permit to appropriate the public waters of the State of Idaho No. _____, and said application is hereby _____.

1. Approval of said application is subject to the following limitations and conditions:

   a. SUBJECT TO ALL PRIOR WATER RIGHTS.

   b. Proof of construction of works and application of water to beneficial use shall be submitted on or before _____, 19 ____.

   c. The rate of diversion, if water is to be used for irrigation under this permit, when combined with all other water rights for the same land shall not exceed 0.02 cubic feet per second for each acre of land.

   d. The water right acquired under this permit if for hydropower purposes shall be junior and subordinate to all rights to the use of water, other than hydropower, within the State of Idaho that are initiated later in time than the priority of this permit and shall not give rise to any right or claim against any future rights to the use of water, other than hydropower, within the State of Idaho initiated later in time than the priority of this permit.

   e. Other:

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List of Officers
Lewiston Orchards Irrigation District
Board of Directors 1997

Chairman:	Jerry Northrup
Vice Chairman:	Timothy Thornley
Secretary:	Debbie Anttila
Treasurer:	Helen Smith
Attorney:	Earl McGeoghegan
Boardmember:	Robert E. Jones
Boardmember:	Milton Lind
Boardmember:	Vern Williams
Boardmember:	William Liedkie
Manager:	Randy Moore
Engineer:	Richard Wyatt

SEP 16 1997

WATER RIGHT SUMMARY

Chron. #	Water Right #	Description
1	A85-00016	Sweetwater Canal Division
2	85-4483	Mann's Lake (Reservoir "A")
3	85-2049	Lake Waha
? 4	85-11087	West Fork Sweetwater Creek Diversion
5	85-2146	Soldiers Meadows Reservoir
6	85-2063	Lake Waha
7	85-2065	Webb Creek Diversion
8	85-2147	Captain John Creek Diversion
9	85-7146	Domestic Water Well #1
10	85-7428	Domestic Water Well #2

SEP 16 1997

Instantaneous Demand Rates
in cubic feet per second (cfs)

1.	40.0 ac.	(x)	0.02 cfs/ac.	=	0.80 cfs
2.	6.0 ac.	(x)	0.02 cfs/ac.	=	0.12 cfs
3.	2.5 ac.	(x)	0.02 cfs/ac.	=	0.05 cfs
4.	1.0 ac.	(x)	0.02 cfs/ac.	=	0.02 cfs
5.	5.0 ac.	(x)	0.02 cfs/ac.	=	0.10 cfs
6.	10.0 ac.	(x)	0.02 cfs/ac.	=	0.20 cfs
7.	1.5 ac.	(x)	0.02 cfs/ac.	=	0.03 cfs
8.	2.5 ac.	(x)	0.02 cfs/ac.	=	0.05 cfs
9.	19.5 ac.	(x)	0.02 cfs/ac.	=	0.39 cfs
10.	5.0 ac.	(x)	0.02 cfs/ac.	=	0.10 cfs
	93.0 ac.				1.90 cfs

Note: Most of these areas have been platted for subdivision and future expansion of the Lewistion city limits.

All acreage has been rounded to the nearest 1/2 acre.

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Item 9 (attached)

Acreage breakdown of properties located outside Lewiston city limits and inside Lewiston Orchards Irrigation District utilizing L.O.I.D. domestic water and/or irrigation water.

1.	40.00 ac. @	, NE1/4, SE1/4, SEC. 13, T35N, R5W	
2.	05.87 ac. @	NE1/4, SE1/4, SE1/4, SEC. 13, T35N, R5W	
3.	02.48 ac. @	NE1/4, SE1/4, SW1/4, SEC. 18, T35N, R4W	
4.	01.15 ac. @	SE1/4, NE1/4, SE1/4, SEC. 13, T35N, R5W	
5.	05.00 ac. @	NW1/4, NW1/4, SW1/4, SEC. 13, T35N, R5W	
6.	09.44 ac. @	SE1/4, SW1/4, SE1/4, SEC. 09, T35N, R5W	
7.	01.54 ac. @	NE1/4, NE1/4, SW1/4, SEC. 22, T35N, R5W	
8.	02.50 ac. @	NW1/4, NW1/4, SE1/4, SEC. 22, T35N, R5W	
9.	19.44 ac. @	SW1/4, NW1/4, SW1/4, SEC. 09, T35N, R5W	AND
	@	NW1/4, SW1/4, SW1/4, SEC. 09, T35N, R5W	
10.	05.02 ac. @	SE1/4, SE1/4, SW1/4, SEC. 09, T35N, R5W	

92.44 ac. Total inside the L.O.I.D. boundary but outside the Lewiston City Limits boundary.

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SEP 16 1997

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, P.O. Box 83720, Boise, Idaho 83720-0098
Phone: (208) 327-7900 FAX: (208) 327-7866

April 19, 1999

DIRK KEMPTHORNE
GOVERNOR

KARL J. DREHER
DIRECTOR

LEWISTON ORCHARDS IRRIGATION DISTRICT
1520 POWERS AVE
LEWISTON ID 83501

RE: WATER RIGHT NO. 85-07638

Dear Water Right Holder(s):

The Department of Water Resources (the Department) has issued the enclosed license confirming that a water right has been established in accordance with the permit referenced above. The license is a **preliminary order** issued by the Department pursuant to section 67-5243, Idaho Code. It can and will become a final order without further action of the Department unless a party petitions for reconsideration or files an exception and/or brief as described in the enclosed information sheet.

If you have any questions, please call me at 208-327-7946.

Sincerely,

Shelley Walter Keen

Shelley W. Keen
Water Rights Supervisor

SK:klt

Enclosure

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AUG 1 1 1999

CERTIFICATE OF MAILING

I hereby certify that on the **19th** day of **April, 1999**, I mailed a true and correct copy, postage prepaid, of the foregoing **PRELIMINARY ORDER (Approved License)** to the person(s) listed below:

Water Right No. 85-07638

LEWISTON ORCHARDS IRRIGATION DISTRICT
1520 POWERS AVE
LEWISTON ID 83501

Kari Lynn Townsend
Secretary

MICROFILMED
AUG 11 1999

Responding to Preliminary Orders Issued by the Idaho Department of Water Resources

The Idaho Department of Water Resources (Department) issues water right permits, licenses, and transfers as preliminary orders pursuant to section 67-5243, Idaho Code. **A preliminary order can and will become a final order without further action of the department unless a party petitions for reconsideration or files an exception and/or brief as further described below:**

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the Department within fourteen (14) days of the service date of the order. The Department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See section 67-5243(3), Idaho Code.

EXCEPTIONS AND BRIEFS

Within twenty-one (21) days after (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from a preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding. Otherwise, a preliminary order will become a final order of the Department.

If any party appeals or takes exceptions to a preliminary order, opposing parties shall have twenty-one (21) days to respond to any party's appeal. Written briefs in support of or taking exceptions to the preliminary order shall be filed with the Department. The Department retains the right to review the preliminary order on its own motion.

ORAL ARGUMENT

If the Department grants a petition to review a preliminary order, the Department shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Department will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Department orders otherwise, all oral arguments will be heard in Boise, Idaho.

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CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Department in connection with a preliminary order shall be served on all other parties to the proceedings in accordance with Rules of Procedure 302 and 303.

FINAL ORDER

The Department will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Department may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

Unless a different date is stated in a final order, the order is effective fourteen (14) days after its issuance if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:

(a) the petition for reconsideration is disposed of; or
(b) the petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

i. A hearing was held,
ii. The final agency action was taken,
iii. The party seeking review of the order resides, or
iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.

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AUG 1 1 1999

LICENSE REVIEW CHECKLIST

PERMIT NO. 85-07638 DATE 4/13/99 REVIEWER: SHARLA

	Change/OK
NAME	OK
Address	OK
SOURCE	OK
POINT OF DIV	OK

Does change clarifiy orig. intended source? If no, Void permit

_ Change (P39 /P47) _ Add (P45/P42) Feds - P40

W32 (multiple in ¼¼)
W36 (overlap)
W59 (subd. desc)

Overlaps: Right(s): _____
File reviewed ___ Profile reports printed ___

PLACE OF USE OK _ Change (P41/P47) _ Add (P41/P42) Feds - P43

W60 (subd. desc)
W27 (ppu acre limit)

Overlaps: Right(s): _____
File reviewed ___ Profile reports printed ___

PD & PU amend (P37) Feds - P48

RATE OF DIV
Permitted Rate 3.34 cfs
Fee limit 3.00 cfs $150.00
Measured 2.76 cfs
Theoretical 2.68 cfs 920' lift 100 psi per Hu form
Recommended Total Div Rate 2.76 cfs

WATER USES OK Change (P46)

Muni	2.76 cfs	N/A af	Irrig -	overlap (R58-R61, R62-R65, R66-R69)
	___ cfs	___ af		supp. gw (WB7/065/079)
	___ cfs	___ af		overlap spec. combined rts (W35)
	___ cfs	___ af		<1acre (W31)
	___ cfs	___ af	Domestic	(W01/WB5/070/071/075)
TOTALS	___ cfs	___ af	Power	(W42 or W43/025/027/R22 or R23)
			Fish (042)	Fire (077) Wtr Quality (081/R07)

Flow rate N/A cfs X ____ days X 1.98 = _____ af

REMARKS PW ~~outside limits~~ service area of LOID.

ADD'L CONDITIONS ____ Watermaster Control WD# ____
____ GW Measurement/Measuring Device
____ Others Trust (052/R55 - remove 051) Non-trust (048/049)

Advance Priority ___ yes / no SRBA Claim N/A Adjust Memo ____/____
Amend letters ____/____

Form 219
6/92

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FEB 22 1999
Department of Water Resources

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No. 85-07638

1. Owner: Lewiston Orchards Irrigation District Phone No. (208) 746-8235

Current Address: 1520 Powers Ave. Lewiston, Idaho 83501

2. Accompanied by: Bud Heywood EXAM DATE: Feb 16, 1999

Address: Same Phone No. _____

Relationship to Permit Holder: operator

3. Source: Groundwater tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use: _____

2. Other water rights with the same point of diversion: _____

C. DIVERSION AND DELIVERY SYSTEM

1. **Point(s) of Diversion:**

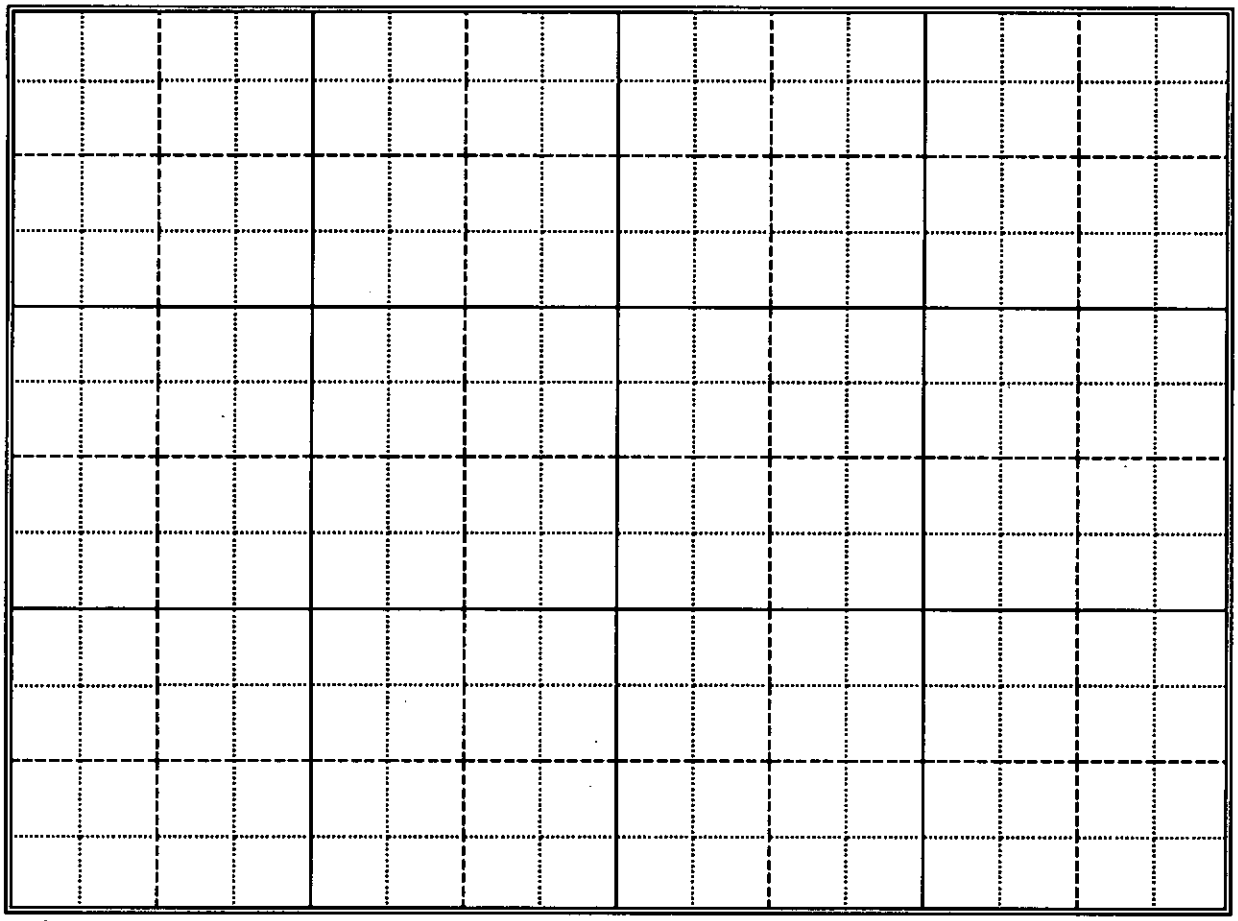
Ident No.	Gov't Lot	¼	¼	¼	Sec.	Twp.	Rge.	County	Method of Determination/Remarks
			SE	SW	10	35N	5W	Nez Perce	USGS 7.5' Quad.

2. **Place(s) of Use:** Nez Perce County Indicate Method of Determination _____

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

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3. **Delivery System Diagram**: Indicate all major components and distances between components. Indicate weir size/ditch size/pipe I.d. as applicable. See as built diagram



Scale: 1" = N/A

✓ Copy of USGS Quadrange Attached Showing location(s) of point(s) of diversion and place(s) of use (required).

___ Aerial Photo Attached (required for irrigation of 10+ acres)

✓ Photo of Diversion and System Attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well # 3		500			

**Code to correspond with No. on map and aerial photo*

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
In Line Meter		McCrometer		98-2927		

2. **Measurements:** 1240 gpm

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E. NARRATIVE/REMARKS/COMMENTS

Groundwater is being diverted at a maximum rate of 1240 gpm through a 6" line into a 2.5 million gallon reservoir. From there water is pumped through a 12" line into a .5 million gallon reservoir. Water is distributed to 6200 users. Mr. Haywood stated that developement continues to be an ongoing process.

My recommendation of 2.76 cfs is based on the maximum output of 1240 gpm that is available.

Have conditions of permit approval been met? ✓ yes ___ no

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AUG 1 1 1999

F. FLOW CALCULATIONS _____ Additional Computation Sheets Attached

Measured Method:

$$\frac{1240\ gpm}{448.8\ gpm} = \frac{x}{1\ cfs} = \frac{448.8x}{448.8} = \frac{1240}{448.8} = 2.76\ cfs$$

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{I.R.}$ = (Acres Irrigated) x (Irrigation Requirement) = _____

$V_{D.R.}$ = [Diversion Rate (cfs)] x (Days in Irrigation Season) x 1.9835 = _____

V = Smaller of $V_{I.R.}$ and $V_{D.R.}$ = _____

2. Volume Calculations for Other Uses:

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use From	Period of Use To	Rate of Diversion Q (cfs)	Annual Volume V (afa)
Municipal	01/01	12/31	2.76 cfs	
		Totals:	2.76 cfs	

2. Recommended Amendments

___ Change P.D. as reflected above ___ Add P.D. as reflected above ✓ None

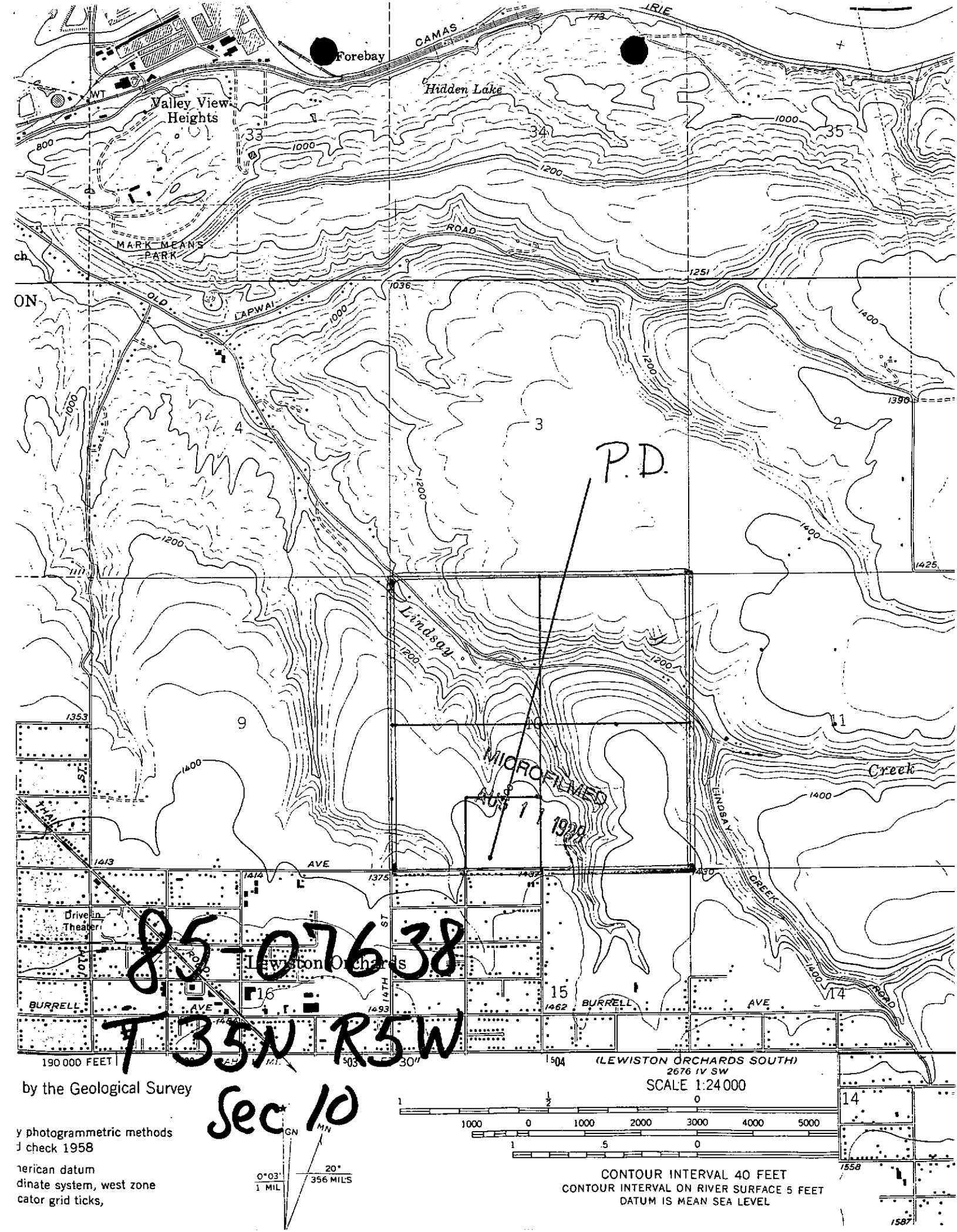
___ Change P.U. as reflected above ___ Add P.U. as reflected above ___ Other

I. AUTHENTICATION

Field Examiner's Name David A. Pagel Date Feb 17, 1999

Reviewer _____ Date _____

MICROFILMED SEAL
AUG 11 1999


Forebay
CAMAS
IRIE
Hidden Lake
Valley View Heights
MARK MEANS PARK
OLD LAPWAI ROAD
Lindsay Creek
LINDSAY CREEK ROAD
Drive-in Theater
Lewiston Orchards
BURRELL AVE
P.D.
MICROFILMED
AUG 1 1 1989
85-07638
T 35N - R5W
Sec 10
(LEWISTON ORCHARDS SOUTH)
2676 IV SW
SCALE 1:24 000
CONTOUR INTERVAL 40 FEET
CONTOUR INTERVAL ON RIVER SURFACE 5 FEET
DATUM IS MEAN SEA LEVEL
by the Geological Survey
y photogrammetric methods
d check 1958
nerican datum
dinate system, west zone
cator grid ticks,

PERMIT #85-07638

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
FIELD REPORT SUPPLEMENT



Point of Diversion



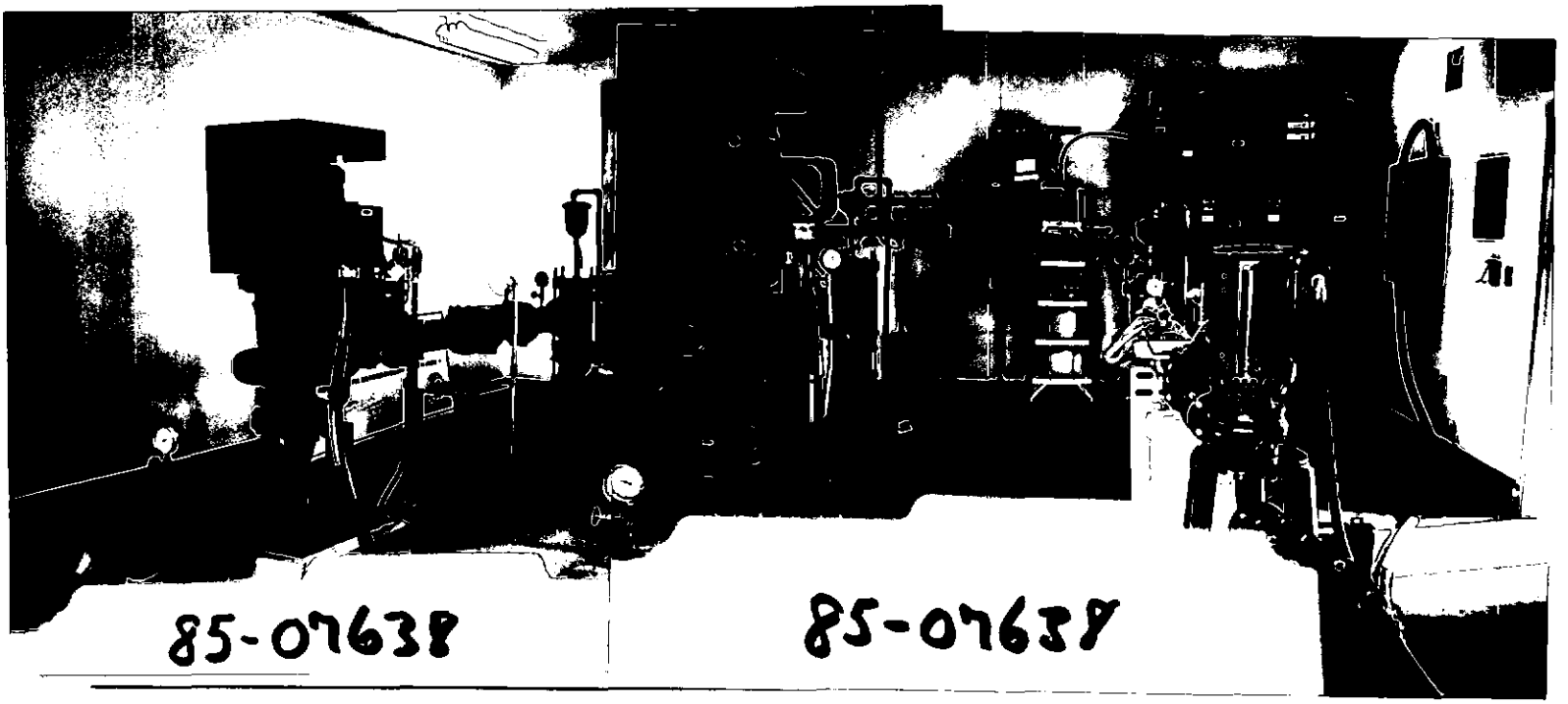
2.5 million gallon Storage tank (Hereth Res.)

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PERMIT # 85-07638

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
FIELD REPORT SUPPLEMENT

PHOTOGRAPHS



85-07638 85-07638

Hereth Res. Pump Station

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AUG 1 1 1999

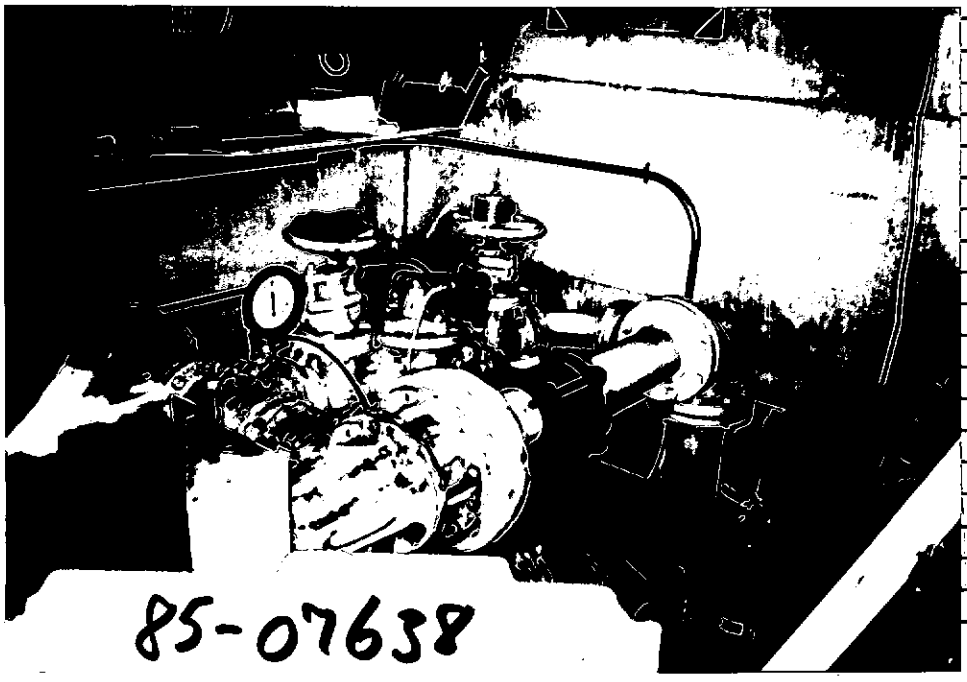
PERMIT # 85-07638

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
FIELD REPORT SUPPLEMENT

PHOTOGRAPHS



Lutes Reservoir (.5 million gallons)



85-07638

Lutes Booster/distribution station

RECEIVED
AUG 1 1989

LEWISTON ORCHARDS IRRIGATION DISTRICT

4TH
6TH
8TH
10TH
12TH
14TH
16TH
18TH
20TH
22ND
24TH

STEWART
VISTA
PRESTON
PARK

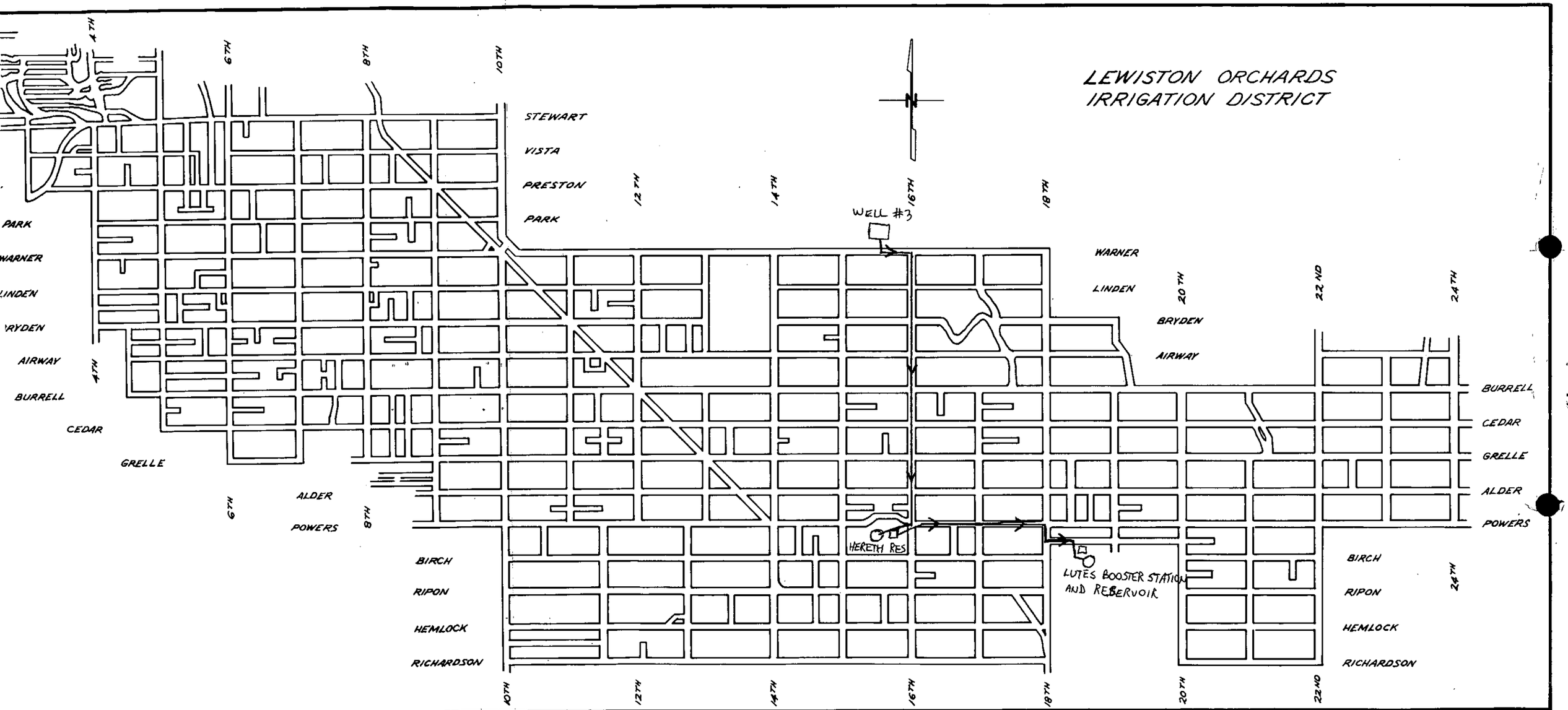
WELL #3

PARK
WARNER
LINDEN
BRYDEN
AIRWAY
BURRELL
CEDAR
GRELLE
ALDER
POWERS
BIRCH
RIPON
HEMLOCK
RICHARDSON

HERETH RES

LUTES BOOSTER STATION AND RESERVOIR

LEWISTON ORCHARDS IRRIGATION DISTRICT



ANALYSIS SHEET
FOR
PROOF OF BENEFICIAL USE

Permit No. 85-07638 Reviewed by Jy Date 10-22-98

GENERAL CONSIDERATIONS

yes Name same as permit?
yes Address same as permit?
No Proof timely received?
If not, complete calculation below.

TYPES OF USE

dom. (municipal)

Correct Uses? yes

SOURCE OF WATER

____ Surface water source

✓ Ground water source
yes Drilling permit required?
No Copy in the file? Drilling Permit No. 85-97-N-0024
200- Amount paid for permit yes Correct?
No Well log in the file?

LICENSE EXAMINATION FEE

yes Required?
150- Amount Submitted
yes Correct?

MEASURING DEVICE

yes Required?
yes Installed?
____ Waiver requested?

PRIORITY CALCULATION

Date proof received	9-2-98	
Date proof due	9-1-98	-
No. of days late	1	=
Priority Date	4-11-97	+
New Priority Date	4-12-97	

74-12-97

DEFICIENCIES OR ACTION ITEMS

Run state + advance priority to April 12, 1997.
Proof Acceptable

DATA ENTRY

New Address _____ Proof Made 9-2-98

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, P.O. Box 83720, Boise, Idaho 83720-0098
Phone: (208) 327-7900 FAX: (208) 327-7866

PHILIP E. BATT
GOVERNOR

KARL J. DREHER
DIRECTOR

October 23, 1998

Lewiston Orchards Irrigation Dist
1520 Powers Ave
Lewiston ID 83501

PROOF ACKNOWLEDGMENT LETTER

RE: Permit No. 85-07638

Dear Permit Holder:

The department acknowledges receipt of the proof of beneficial use form submitted for the above referenced permit.

Enclosed is an order reinstating the permit since proof was submitted after the proof due date. Note that the priority date has been advanced to April 12, 1997, as provided in Section 42-218a.2, Idaho Code.

Be advised that Section 42-248, Idaho Code, requires you or the owner of this water right to maintain current ownership and address records on file with the department. Forms to file a change of ownership of a water right and/or a change in the address of the water right owner are available from any department office.

The next step in the process of developing a water right is for the department to conduct a field examination to determine and confirm the use being made of the water. If you have questions concerning the field examination, you may contact the **NORTHERN** Regional Office of the department in Coeur d'Alene at (208)769-1450.

Sincerely,

Julie L. Yarbrough

JULIE L. YARBROUGH
Senior Secretary, Water Allocation Bureau

Enclosure

c: IDWR - Regional Office

MICROFILMED
NOV 0 9 1998

WYATT ENGINEERING
CONSULTING ENGINEERS

101 THAIN ROAD
LEWISTON, ID 83501
PHONE (208) 746-2661
FAX: (208) 746-6825

TRANSMITTAL FORM

TO: IDWR
1301 N. Orchard
Boise, ID 83706

ATTN: Julie Yarbrough

DATE: 9-1-98

PROJECT NAME: LOID Well #3

PROJECT NUMBER: 1010AA1

Enclosed please find the following items sent to you via Fed Ex.

COPIES	ORIGINALS	DATE	DESCRIPTION
	1		Proof of Beneficial Use Permit #85-07638
	1		Check #13211/US Bank $150.00

REMARKS: Please call if you have any questions.

If enclosures are not as noted, please notify us. Thank you.

Copies to: File No. 1010AA1

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NOV 0 9 1998

SIGNED: Lowell J. Cutshaw, P.E.

WARNING

CANCELLED OR LAPSED

This permit has been officially CANCELLED or LAPSED.

Ninety days following the date of official action this file will be DESTROYED.

September 8, 1998

LEWISTON ORCHARDS IRRIGATION DISTRICT
1520 POWERS AVE
LEWISTON ID 83501

LAPSE NOTICE

RE: PERMIT NO. 85-07638

Dear Permit Holder:

You are hereby notified that under the provisions of Section 42-218A, Idaho Code, the above referenced permit has lapsed and is of no further force nor effect. The department provided the proper forms to you in our proof due notice dated June 30, 1998. No further construction or additional development is authorized under this permit unless it is reinstated.

The permit can only be reinstated if you submit an acceptable proof of beneficial use or an acceptable request for extension of time to the department within sixty (60) days of the mailing of this lapse notice. An acceptable proof of beneficial use submittal must include the examination fee or a completed field examination report. A request for extension of time must be accompanied by a fifty dollar ($50.00) fee.

Enclosed again for your use are a proof of beneficial use form and a request for extension of time form. Please note that only one extension of time can be granted unless the project has not been completed because of lack of a necessary approval by a government agency or by litigation which may bring title to the water in question.

L. GLEN SAXTON
Chief, Water Allocation Bureau

Enclosures

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NOV 0 9 1998

CERTIFICATION OF MAILING
I hereby certify that on 9/8/98
~~a copy~~/an original of this document was deposited in the United States mail, postage prepaid addressed to the individual(s) named above.

June 30, 1998

LEWISTON ORCHARDS IRRIGATION DISTRICT
1520 POWERS AVE
LEWISTON ID 83501

PROOF DUE NOTICE

RE: PERMIT NO. 85-07638

Dear Permit Holder:

One of the conditions of approval of the above referenced water permit was that proof of the extent of your beneficial use must be submitted to this office on or before September 1, 1998. (See last page of your approved permit or your last approved extension request.) Enclosed is a form which when accompanied by the license examination fee or a complete field examination report prepared by a certified water right examiner may be used to submit the required proof.

If you have not fully completed your project, and you or a previous owner of this permit have not received a prior extension of time, you may request an extension of time if the delay is for reasonable cause as provided in Section 42-204, Idaho Code. If you have been prevented from proceeding by a governmental agency or by litigation which might bring title to the water in question, more than one extension of time can be granted. An extension of time request form is enclosed for your convenience.

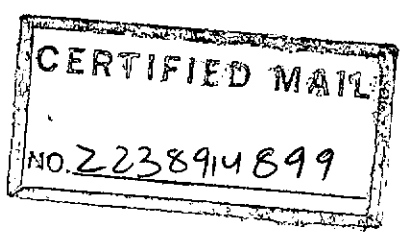
Either an acceptable proof of beneficial use submittal or an acceptable request for an extension of time must be received by this department on or before the above described proof due date. If neither is received, the department will send you a lapse notice. Within sixty (60) days of the mailing of the lapse notice, the permit will no longer be of any force nor effect.

SINCERELY,

JULIE L. YARBROUGH
Senior Secretary

Enclosures

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NOV 0 9 1998



State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, P.O. BOX 83720, Boise, Idaho 83720-0098
Phone: (208) 327-7900 FAX: (208) 327-7866

PHILIP E. BATT
GOVERNOR

KARL J. DREHER
DIRECTOR

August 20, 1997

LEWISTON ORCHARDS IRRIGATION DISTRICT
1520 POWERS AVE
LEWISTON ID 83501

PERMIT APPROVAL NOTICE

RE: PERMIT NO. 85-07638

Dear Permit Holder:

The Department of Water Resources (IDWR) has issued the enclosed permit authorizing you to establish a new water right. Please be sure to thoroughly review the conditions of approval and remarks listed on your permit.

The permit is a **preliminary order** issued by IDWR pursuant to section 67-5243, Idaho Code. **It can and will become a final order without further action by IDWR unless a party petitions for reconsideration or files an exception and/or brief as described in the enclosed information sheet.**

Enclosed is a form entitled "Instructions for Proof of Beneficial Use". Please read the instructions carefully since you must take further action to develop this permit into a licensed water right. Also enclosed is a form entitled "Proof of Beneficial Use". If your project is already completed, you should complete and submit this form immediately.

If a well has not already been constructed you are required to obtain a "drilling permit" from the department. The right to drill a well is not a part of this permit to appropriate water.

Also, please note that as of July 1, 1996, water right owners are required to report any change of water right ownership and any change of mailing address to the department. If you have acquired a water right or have changed your mailing address PRIOR TO July 1, 1996, you have until July 30, 1998, to notify the department. If you acquire a water right or change your mailing address AFTER July 1, 1996, you must notify the department within 120 days of the change.

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SEP 16 1997

Failure to report these changes could result in a $100 late filing fee. Contact any office of the department to obtain the proper reporting form.

Sincerely,

Shelley Walter Keen

Shelley W. Keen
Water Rights Supervisor

SK:klt

Enclosures

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SEP 16 1997

CERTIFICATE OF MAILING

I hereby certify that on the **20th** day of **August, 1997**, I mailed a true and correct copy, postage prepaid, of the foregoing **PRELIMINARY ORDER (Approved Permit)** to the person(s) listed below:

Water Right No. 85-07638

LEWISTON ORCHARDS IRRIGATION DISTRICT
1520 POWERS AVE
LEWISTON ID 83501

Kari Lynn Townsend
Secretary

SEP 16 1997

MEMORANDUM

DATE: August 18, 1997

TO: File No. 85-07638

FROM: Cindy Zimmerman

RE: Status of municipal use

Section 42-202(2) of the Idaho Code states that "an application proposing an appropriation of water by a municipal provider for reasonably anticipated future needs" must be accompanied by documentation related to the service area, planning horizon, etc. This application includes "City of Lewiston/Lewiston Orchards Irrigation District Coordinated Water Study" prepared by Wyatt Engineering in July 1995.

The file also includes a letter dated April 4, 1997 from Randy Moore, District Manager of Lewiston Orchards Irrigation District. The letter identifies that current demand exceeds the current system capacity. This application is intended to help meet current demand so that the irrigation district may not have to purchase water. Therefore, this permit should not be interpreted as authorizing an appropriation for reasonably anticipated future needs.

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SEP 16 1997

07/97

APPLICATION FOR PERMIT
STATE OFFICE REVIEW

by *Cindy Lou*

No.: 85-7638 Name: Lewiston Orchards Irr. Dist. Date: 8/1/97 Ad OK? — ✓ Gvmt Lts: —

AREA OF CONCERN: Source exempt No/Yes: S/C Mor / _____ ~~GWMA~~ Trust / Non-trust
PROTESTED: - 020 (Protest Agreement) or *W19 (Order)
SYSTEM COMPLETED:
- 1 year/no proof - ~~P16~~
- >1 year - 26A-P17

GROUNDWATER: (✓ FLO-CH)
- WMD (✓ MAP)
  - >0.24 cfs/5 acres - _____ or No MD (in-stream stock or power)
  - ≤ 0.24 cfs/5acres - No MD
- ~~WMD~~
  - >0.24 cfs - 01M (report when notified)
  - >5 a. - 01M; 065-079 (if GW use SW 1st-statewide) (cannot move SW off)
  - ≤ 0.24 cfs/5acres - No MD

DRILLING PERMIT:
- Existing well - NA (pre 7/1/87; ✓ WDQ3)
- Included w/permit - Permit No: _____ - _____ - _____ - _____ - _____, P99
- No drilling permit? - 046-~~46B~~-P23 (post 7/1/87)
- irr. in WD - P05 (new well location)

SURFACE WATER: (✓FLO-CH) (Surface water that *doesn't sink* is regulated):
- IN MIN. STR. FLOW (✓ MAP) - (modify remark *WB9)
- WD (✓ MAP & LISTING) - R04 (WD #_____)-01J-P08 (MD)
  - Pumped >0.20 cfs - 01H-P01 (LD & MD) or No MD (in-stream stock)
- WMD (✓ MAP)
  - > 0.24 cfs/5 acres - _____ or No MD (in-stream stock or power)
  - ≤ 0.24 cfs/5acres - No MD
- SPRINGS/SINK, INACTIVE WD & REST OF STATE
  - > 0.24 cfs/5 acres - 01M or No MD (in-stream stock or power)
  - ≤ 0.24 cfs/5acres - No MD

RIVER BASINS: (*Surface water):
- Snake R (01) - 11A-P04, NA
  - (02/03-irr) - 007-P07 (w/ remark *WB9 if above Weiser), NA
- Boise R (63) - 05A (if ~~WD~~), 11E (not 42-111 use), NA
- Payette R(65) - *W22 (regulated uses), 047-P04 (Payette Lake), NA

~~USE:~~
- Domestic surface - *WB5 (Big Wood R or Boise R ↑ Star Bridge); 27A (Payette River); NA
  - >1 in rest. area - 070-071- P53
- Fish Propagation - 07A-042 *(req)*-09E (WQ)-P10; 044 (N of 1000 Springs)
- Irr
  - ≤ 5 acres - 057 (0.03 cfs/acre)
  - > 5 acres - 03A (0.02 cfs/acre)
- Mining - 054 *(req)* & 09E-P10
- ~~Muni~~ (in restricted areas) - 022, 075, 004 (+memo?)
- Power - 17K-08A-025-01F(P19)-028-09E(P10); 027 (if no other cons. use); 17G (FERC) or 17M (~~FERC~~); 18B-P09; >25 cfs-P18
- Storage (✓3 compo.) - 080; 18A (in- & out-flow MD within district), 18B-P09 (>10' dam),

LOCATION:
- 42-248 area - ~~P84~~ (in 20/30/40/50/60/70/80 (~~87~~) basin)
- Boise Front LoGeo - ~~058~~ (<85° GW temp only)
- In-stream dev. - P52 (stream channel alteration)
- Irr Dist/Canal Co. - 023 (Twin Falls area)

SWAN FALLS FLAG *(See Code Chart)* - _____
- Trust - 051-052-053-P74 (Consumptive Uses), NA
- Non-Trust (1) - 048-049 (Consumptive Uses), NA

OWNERSHIP: - 004 (PD/PU) _____
OTHER CONDITIONS: - _____ _____ _____
STANDARD REMARKS: - ① WR3 ② POU
BENEFICIAL USE DUE: - 8/1/ 1998
COMMENTS: - _____

No. a
4/87-06/92n

DEPARTMENT OF WATER RESOURCE
APPROPRIATION APPLICATION ANALYSIS SHEET

RECEIVED
JUL 14 1997
DEPARTMENT OF WATER RESOURCES

WRI WRA BC

APPLICATION # 85-7638

********** INITIAL REVIEW **********

APPLICANT: LEWISTON ORCHARDS IRRIGATION DISTRICT

BY: [signature] DATE: 4/11/97

ITEM	REQUIRED INFORMATION
1.	(X) Name and Address
2.	(X) Source
3.	(X) Point of Diversion & County
4.	(X) Quantity
	(X) Nature of Proposed Use
	(X) Period of Use
5.	(X) Total Quantity
6.	(X) Description of diverting works
7.	(X) Time required for b/u
8.	(X) Proposed use
9.	(X) Place of use or acres irrigated
10.	(X) Other Water Rights
11.	(X) Ownership
13.	(X) Map
	(X) Signature
	(X) Fee (Amt, recpt, acknowlegment)

*** Send info sheet Y( ) N( )

PROCESSING

PRIORITY DATE: 4/11/97

Yes No
__ X (Include Moratorium Remark)
__ X Statewide Avertising: (Diversion rate greater than 10 cfs or 1,000 af).

LT/Thursday Lewiston Tribune - LT

ADVERTISE IN: NEZ PERCE County.

LETTERS SENT REQUESTING:

( ) Dam Information ( ) Fish Information
( ) Power Information ( ) Other: N/A

ADDITIONAL INFORMATION

Yes No
__ X Field check: by _____
__ __ Field report attached
__ __ Analysis Supp. attached(>5cfs/500af)
__ __ Water delivered by water master?
Water District # _____

INFORMATION RECEIVED:

( ) Dam Information ( ) Fish Information
( ) Power Information ( ) Other: N/A

********** GROUNDWATER SECTION **********

Checked by: _____ Date: __/__/____
Remarks: DRILLER - HOLMAN DRILLING

(Yes)(No)
__ X Groundwater management area
__ X Critical ground water area
X __ Well Drilling Permit required
__ __ Well Drilling Application and Fees received
__ __ Well Drilling Application approved?
Well Drilling Application Number ____-____-____

********** FINAL REGIONAL PROCESSING/REVIEW **********

(Yes)(No)
__ __ Notice of pending void order issued. Final order response date: __/__/____
__ __ Further information required from applicant
6/16 5/9 __ __ Affidavit of publication received
6/16 5/9 __ __ Application published correctly, If not, record action taken: Readvertise to correct POD
4/23 __ __ Publication dates and paper recorded on application | Sr. Agent initial [initials]
__ __ Protests received. Final protest date: ~~5/19/97~~ 6/23/97
__ __ Measuring device required
__ __ Measuring port required
__ __ Special conditions: _____
__ __ Special conditions of approval supplement and/or cover letter attached:

Approval Recommended by: [signature] Date: 6/30/97

STATE OF IDAHO
DIVISION OF
ENVIRONMENTAL QUALITY

1118 "F" Street, Lewiston, ID 83501-1986, (208) 799-4370

Philip E. Batt, Governor

RECEIVED
JUL 21 1997
Department of Water Resources

RECEIVED
JUN 19 1997
NORTHERN REGION
IDWR

June 18, 1997

Randy Moore
Lewiston Orchards Irrigation District
1520 Powers
Lewiston, Idaho 83501

85-7638

RE: Well Lot Approval

Dear Mr. Moore:

I have reviewed the proposed well lot for the new Lewiston Orchards Irrigation District's Well Number 3 on the southeast corner of the Madeline Walters property, which is located on the south side of Warner Avenue just east of 15th Street. The proposed lot appears to meet all our set back requirements for sources of contamination with regards to drinking water wells and therefore the well lot is approved for use with a drinking water well.

The state of Idaho approves proposed well sites and their accompanying well lots when the well is to be used as a water source for an existing or proposed public drinking water system. The state of Idaho also ensures that all construction and testing related to wells meets minimum standards set forth by the state of Idaho through review and approval of construction plans submitted to our office prior to work being performed.

The approval of proposed well sites and well lots is based on standards listed in Health and Welfare Regulations. These standards consist of the following:

1) Wells shall be located on well lots that are owned by the water system owner, or leased for the expected life of the well by the water system owner. The well lot shall extend 50 feet from the well in all directions. If the well lot is leased, it may be beneficial to include a statement in the lease document that assures the ability of the water system owner to comply with Idaho drinking water regulations. It may be sufficient to state that nothing in the easement agreement shall be construed as limiting or modifying in any way the ability, authority, or responsibility of the District to comply with IDAPA 16.01.08.550.03.a. This requirements of this regulation is detailed in Item 2.

2) The well lot shall exclude any sources of contamination, including petroleum

SEP 16 1997

products, tanks storing non-potable substances, toxic or hazardous substances, herbicides, pesticides, fertilizers, sewer lines, canals, ditches, streams, ponds, lakes, or livestock. In addition, petroleum products, herbicides, pesticides, and fertilizers shall not be applied to the well lot.

3) Privies, individual home septic tanks, individual home seepage pits, and individual home disposal fields shall not be located within a 100 foot radius of the well.

4) The proposed well site and well lot shall be approved prior to the actual drilling of the well if the well is to be used as by the public drinking water system.

The approval of the well lot by the Idaho Division of Environmental Quality does not constitute an approval for the drilling of the actual well, construction of the well and associated piping, or an approval for the water from that particular well to be supplied to the users of the public water system. This approval only indicates that the well site is acceptable to the state of Idaho. Well lot approval is not required to drill a pilot well, but it is highly encouraged to avoid future conflicts should the well be profitable enough to develop as a water source.

The IDEQ does not approve the actual drilling of any well. The Idaho Department of Water Resources approves well drilling through a permit system and should be contacted prior to actual drilling.

The IDEQ reviews and approves all construction associated with the transfer of the groundwater from the aquifer to the distribution system prior to any actual construction. For a project to be approved for construction, the plans and specifications must meet the following criteria.

1) The plans and specifications must be submitted to the IDEQ by a professional engineer licensed in the state of Idaho, and contain his professional stamp and signature.

2) All plans and specifications must comply with Department of Health and Welfare standards for public water system construction.

3) All plans and specifications must comply with appropriate American Water Works Association standards.

4) All plans and specifications must comply with appropriate Recommended Standards for Water Works, 1992 Edition standards.

5) All plans and specifications must comply with appropriate Idaho Department of Water Resources requirements.

6) As-constructed plans must be submitted to the IDEQ by a professional engineer

SEP 16 1997

licensed in the state of Idaho no later than 30 days after completion of the project. This usually requires that an engineer be on-site to inspect the construction of the project. The proposed inspection schedule should be reviewed by the IDEQ prior to actual construction.

Prior to the new water source being used, the system owner must show that the quality complies with state requirements regarding Inorganic Compound contamination, Volatile Organic Compound contamination, Synthetic Organic Compound contamination, bacteriological contamination, and radionucleii contamination. These requirements are listed as follows:

1) The system shall test for and not exceed the maximum contamination limits for antimony, barium, berylillum, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, sodium, sulfate, thallium, nitrite, and nitrate.

2) The system shall test for and not exceed regulated VOC's. A list of these chemicals is available from the approved laboratories in our area.

3) The system shall test for and not exceed regulated SOC's, A list of these chemicals is available from the approved laboratories in our area.

4) The system shall take and pass a bacteriological test prior to delivering any water to the system.

5) The system shall test for and pass an Alpha radiation test.

We are happy to work with you and your engineer on any or all of these requirements. If I can be of any further service to you, please don't hesitate to call me at 799-4370.

Sincerely,

Jerry W Shaffer

Jerry W. Shaffer, P.E.
Staff Engineer

cc: Lowell Cutshaw, P.E., Wyatt Engineering
Tom King, IDWR in Coeur d'Alene
Robert Haynes, IDWR in Coeur d'Alene

MICRO FILM

SEP 16 1997

TRIBUNE PUBLISHING COMPANY, INC.
The Lewiston Morning Tribune
505 C St., P.O.Box 957
Lewiston, Idaho 83501
(208) 743-9411

Date 06/12/97 INVOICE NO. 145543

Account No. 964750

Description 145543NOTICEOFCORRECTI

Times 2 Lines 29

Tab. Lines

$ 39.88

LEGAL ADVERTISING INVOICE

SOLD TO: ID DEPT. OF WATER RESOURCES
1910 NORTHWEST BLVD. STE 210
COEUR D'AL ID 83814

ok

NOTICE: This is an invoice of Purchase made by you. Statement will be rendered the first of the month.
Please Retain This Invoice as Your Statement Will Refer to Invoice by No. Only.

AFFIDAVIT OF PUBLICATION

145543

NOTICE OF CORRECTION

NOTICE IS HEREBY GIVEN THAT APPLICATION FOR PERMIT NO. 85-07638 in the name of LEWISTON ORCHARDS IRRIGATION DISTRICT, #1520 Powers Avenue, Lewiston, ID 83501, was incorrectly advertised on 5/1 & 8/97.

The POINT OF DIVERSION was incorrectly advertised as being in the SWSW of Sec. 10, T35N, R05W, Nez Perce County, whereas correctly it should read **SESW of Sec. 10, T35N, R05W, Nez Perce County.**

(For additional information concerning the property location, call the Northern Regional Office at 769-1450.)

Any protests against the approval of the above-referenced correction must be filed with the applicant and with the Director, Dept. of Water Resources, 1910 Northwest Blvd. Suite 210, Coeur d'Alene, Id. 83814, together with a protest fee of $25.00 on or before June 23, 1997.

KARL J. DREHER, Dir.

Published in the Lewiston Tribune on 6/5 & 12/1997.

STATE OF IDAHO, ss.
County of Nez Perce

Karen Lewis, being duly sworn, deposes and says, I am the Legal Clerk of the Tribune Publishing Company, a corporation organized and existing under and by virtue of the laws of the State of Idaho, publishers of the LEWISTON MORNING TRIBUNE, a newspaper of general circulation published at Lewiston, Nez Perce County, Idaho; That the said Lewiston Morning Tribune is an established newspaper and has been published regularly and issued regularly at least once a day for more than 21 consecutive years next immediately preceding the first publication of this notice, and has been so published uninterrupted for said period; that the 145543NOTICEOFC attached hereto and which is made a part of this affadavit was published in the said Lewiston Morning Tribune, 2 time(s). Publication being on 06/05, or once a WEEK for 2 consecutive WEEK, the first publication thereof being on the 06/05/97, and the last publication thereof being on the 06/12/97, and said 145543NOTICEOFC was so published in the regular and entire issue of said newspaper and was not in a supplement thereof and was so published in every issue and number of the said paper, during the period and times of publication as set forth above.

Karen J. Lewis

SUBSCRIBED AND SWORN BEFORE ME THIS THE 13 day of June 1997

Notary Public in and for the State of Idaho, residing at Lewiston, therein
Commission Expires 7/1/97

RECEIVED
JUN 16 1997
NORTHERN REGION
IDWR

SEP 16

May 28, 1997

Lewiston Tribune
505 C Street
Lewiston ID 83501

Re: Water Right No. 85-07638

Gentlemen:

Enclosed you will find a legal Notice of Correction which we wish to have published on the dates indicated (once a week for two consecutive weekly issues) in your newspaper. If you cannot publish the notice on the proposed dates, please contact us immediately.

Please send the Affidavit of Publication, and the bill, to this office before June 23, 1997.

Thank you.

Sincerely,

Dianne Ball
Senior Secretary

Enclosure

SEP 16 1997

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KARL J. DREHER, Dir.

Published in the Lewiston Tribune on 6/5 & 12/1997.

SEP 16 1997

WYATT ENGINEERING
101 Thain Road
LEWISTON, IDAHO 835[redacted]

(208) 746-2661
FAX (208) 746-6825

DATE 5-16-97

TO ALLEN BEARDSLEE

SUBJECT POINT OF DIVERSION
CHANGE LOID WATER RIGHT
NUMBER 85-07638

THANK YOU FOR MAKING THE CHAGE FOR THE POINT OF DIVERSION FOR THE LOID WELL #3. I WILL BE HOLDING MY BREATH UNTIL THE LAND SALE IS COMPETED.

Scott

SEP 16 1997

SIGNED SCOTT S. SCHEVENIUS

☐ PLEASE REPLY ☒ NO REPLY NECESSARY

WYATT ENGINEERING

10303

Check #: 10303

Date : 05/16/97
Amount : $50.00

Payee : IDAHO DEPT OF WATER RESOURCES
Address:

Comment: WATER RIGHT PUBLICATION
WATER RIGHT 85-07638

SEP 16 1997

RECEIVED

MAY 19 1997

NORTHERN REGION
IDWR

May 21, 1997

Scott S. Schevenius
Wyatt Engineering
101 Thain Road
Lewiston ID 83501

Re: 85-07638 - Lewiston Orchards Irrigation District

Dear Scott:

We received your check No. 10303 in the amount of $50.00 to cover the additional publication costs regarding the above referenced water right application.

Enclosed is Receipt No. N011206 for your file.

Sincerely,

Allen Beardslee
Senior Water Resource Agent

db

SEP 16 1997

NOTE TO FILE.

SD-4104 Idaho Department of Water Resources Date: 05/16/97
INQUIRY ONLY Well Log Location Data Screen Time: 14:25:45

Drilling Permit Number: 85-97-N-0024-000

3. Well Location:

Public Land Survey:

TWP	RNG	Sect	1/4	1/4	1/4	Lot	County Code	County Name	Acc Flag
35N	05W	10		~~SW~~ SE	SW		69	NEZ PERCE	V

Water Right Point of Diversion:

Well Site Location Description:
Address: 15TH STREET AND WARNER AVENUE
City: LEWISTON State: ID

Legal Description:
Lot:
Block
Subdivision Name

GPS Site ID: Latitude Longitude Accuracy
Geographic Location: : : N : : W

(GOLD2=Update) (Enter=Exit)
(GOLD8=Cancel)

NOTE:

SCOTT, FROM WYATT JAYKIM CALLED ON 5/16/97, SAID THAT WELL IS LOCATED WITHIN T. 35N., R. 5W., 10, SE¼ SW¼.

MICROFILMED
SEP 16 1997

TRIBUNE PUBLISHING COMPANY, INC.
The Lewiston Morning Tribune
505 C St., P.O.Box 957
Lewiston, Idaho 83501
(208) 743-9411

Date 05/08/97 INVOICE NO. 142291

Account No. 964750

Description 142291NOTICEOFAPPLICAT

Times 2 Lines 35

Tab. Lines

$ 48.13

LEGAL ADVERTISING INVOICE

SOLD TO: ID DEPT. OF WATER RESOURCES
1910 NORTHWEST BLVD. STE 210
COEUR D'AL ID 83814

NOTICE: This is an invoice of Purchase made by you. Statement will be rendered the first of the month.
Please Retain This Invoice as Your Statement Will Refer to Invoice by No. Only.

142291

NOTICE OF APPLICATION FOR WATER RIGHT

The following application(s) have been filed to appropriate the public waters of the State of Idaho:

85-07638
LEWISTON ORCHARDS IRRIGATION DISTRICT
1520 POWERS AVENUE
LEWISTON, ID 83501
Source: GROUNDWATER
Diversion Pt: SWSW Sec 10 T 35N R 05W in NEZ PERCE County
Use: MUNICIPAL (3.340 CFS)
Total Diversion: (3.340 CFS)
Date Filed: 4/11/1997
PLACE OF USE IS WITHIN THE SERVICE AREA OF LEWISTON ORCHARDS IRRIGATION DISTRICT

For additional information concerning the property location, call the Northern Regional Office at (208) 769-1450.

The permit(s) will be subject to all prior water rights. Protests must be filed with the applicant and with the Director, Dept. of Water Resources, Northern Region, 1910 Northwest Blvd, Suite, 210, Coeur d'Alene, Idaho 83814, together with a protest fee of $25.00 on or before MAY 19, 1997.

KARL J. DREHER, Director
Published: 5/ 1/97 & 5/ 8/1997

RECEIVED
MAY 0 9 1997
NORTHERN REGION
IDWR

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO, ss.
County of Nez Perce

Karen Lewis, being duly sworn, deposes and says, I am the Legal Clerk of the Tribune Publishing Company, a corporation organized and existing under and by virtue of the laws of the State of Idaho, publishers of the LEWISTON MORNING TRIBUNE, a newspaper of general circulation published at Lewiston, Nez Perce County, Idaho; That the said Lewiston Morning Tribune is an established newspaper and has been published regularly and issued regularly at least once a day for more than 21 consecutive years next immediately preceding the first publication of this notice, and has been so published uninterrupted for said period; that the 142291NOTICEOFA attached hereto and which is made a part of this affadavit was published in the said Lewiston Morning Tribune, 2 time(s). Publication being on 05/01, or once a WEEK for 2 consecutive WEEK, the first publication thereof being on the 05/01/97, and the last publication thereof being on the 05/08/97, and said 142291NOTICEOFA was so published in the regular and entire issue of said newspaper and was not in a supplement thereof and was so published in every issue and number of the said paper, during the period and times of publication as set forth above.

H Karen J Lewis

SUBSCRIBED AND SWORN BEFORE ME THIS THE 8

day of May 1997

H Ray R (?)

MICROFILMED
SEP 1 6 1997

Notary Public in and for the State of Idaho, residing at Lewiston, therein
Commission Expires 7/97

April 23, 1997

LEWISTON ORCHARDS IRRIGATION DISTRICT
1520 Powers Avenue
Lewiston ID 83501

Re: Water Appropriation Application No. 85-07638

Gentlemen:

The Idaho Department of Water Resources hereby acknowledges receipt of the above referenced Application for Permit to Appropriate the Public Waters of the State of Idaho. To assist us in providing you with prompt, accurate service, please refer to the above referenced number in all future matters concerning this water right application. Enclosed for your file is Receipt Number N011079.

Your appropriation application is currently being prepared for advertising in the local county newspaper. This advertisement will be published for two consecutive weeks followed by a waiting period of ten days to allow for the submittal of protests. Normal processing time is approximately 3 to 4 months, if the application is not protested.

If the application is not protested, it will be forwarded to Boise to be considered for approval by the Director. State office personnel will then conduct a complete review, and you will be notified by mail of the outcome. However, if the application is protested during this waiting period, you will be sent a copy of the protest and instructions to aid you in resolving the protest without a hearing. All protests must be resolved before approval of the application can be made, so if the protestant does not voluntarily withdraw the protest, this department will conduct a conference and/or hearing on the matter.

You will receive your approved Application for Permit and instructions on filing the Proof of Beneficial Use from our State office in Boise.

If your source is groundwater, a Well Drilling Permit is required <u>for all wells constructed after July 1, 1987</u>.

A "Domestic" well drilling permit should be obtained for a rate of diversion of up to 18 gallons per minute (0.04 CFS) and a daily volume of up to 2,500 gallons per day. The cost for this permit is $75.00. For any other use, including multiple homes, or municipal, etc., the Drilling Permit fee is $200. These Permits can be obtained by your driller, also. It is sometimes possible to upgrade an existing Domestic Drilling Permit by submitting a fee for the difference. This, however, depends on the individual well.

If you have any questions or if I can be of any assistance please feel free to contact me at this office.

Sincerely,

MICROFILMED
SEP 16 1997

ALLEN BEARDSLEE
Senior Water Resources Agent

AB:db

85-07638

LEWISTON ORCHARDS IRRIGATION DISTRICT
1520 POWERS AVENUE
LEWISTON, ID 83501

Source: GROUNDWATER

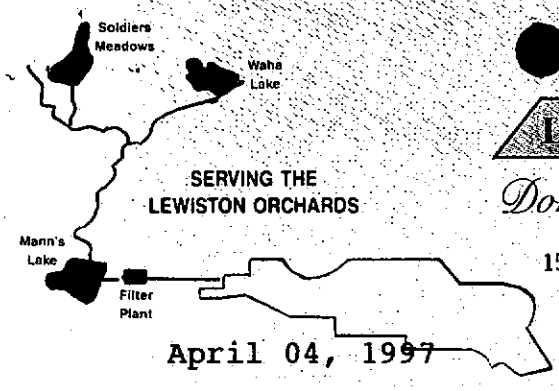
Diversion Pt: NWSENE Sec 16 T 35N R 05W in NEZ PERCE County.

Use:	MUNICIPAL	(	3.340 CFS)
	Total Diversion:	(	3.340 CFS)

Date Filed: 4/11/1997

PLACE OF USE IS WITHIN THE SERVICE AREA OF LEWISTON ORCHARDS IRRIGATION DISTRICT

SEP 16 1997



LEWISTON ORCHARDS IRRIGATION DISTRICT
Domestic and Irrigation Water
1520 Powers Avenue (208) 746-8235 Lewiston, Idaho 83501

April 04, 1997

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APR 11 1997
NORTHERN REGION
IDWR

Mr. Allen Beardslee
Sr. Water Resource Agent
Idaho Department of Water Resources
1910 Northwest Blvd., Suite No. 210
Coeur d' Alene, ID 83814

RE: Application for permit

Dear Mr. Beardslee:

We are submitting a water right application for ground water withdraw for municipal purposes. Currently the demand on the domestic system exceeds our supply capability. This causes us to purchase water from the city of Lewiston one to two times per week in order to refill our existing reservoirs which effectively eliminates our backup source.

It should also be noted that if one of the two existing wells is taken off line and only one well is operational and we are also receiving emergency water from the City of Lewiston, we still have a shortage in supply. This last scenario occurred in October of 1996 which led to the bond vote in February of 1997

The patrons of the Lewiston Orchards Irrigation District passed the bond issue for the purpose of drilling a new well and to build a 2.5 MG reservoir recognizing the need for additional supply and storage in the Lewiston Orchards.

I have also included a list of officers of the LOID Board of Directors for 1997. Please feel free to contact me at the above address, if you have any questions or comments. Thank you.

Sincerely,

Randy Moore
District Manager,
Lewiston Orchards Irrigation District

MICROFILMED
SEP 10 1997

RM-LOID/sss-WE

encl: List of Officers

LEWISTON ORCHARDS IRRIGATION DISTRICT, LEWISTON, IDAHO 83501

NO. 11629

DATE	INVOICE NO.	DESCRIPTION	AMOUNT	DISCOUNT	NET AMOUNT
04/09/97		MISC A/P	160.00	0.00	160.00

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DETACH AND RETAIN THIS STUB

WYATT ENGINEERING
101 Thain Road
LEWISTON, IDAHO 83501

(208) 746-2661
FAX (208) 746-6825

DATE 4-23-97

TO IDAHO DEPARTMENT OF WATER RESOURCES
ATTN: AL BEARDSLEE
1910 NORTHWEST BLVD. SUITE 210
COEUR d'ALENE, ID 83814

SUBJECT LEWISTON ORCHARDS IRRIGATION DISTRICT

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APR 25 1997
NORTH REGION
I.D.W.R.

> AL

HERE IS THE COPY OF THE WATER STUDY WE DID FOR THE CITY AND THE LOID. THIS IS A FAIRLY COMPREHENSIVE REPORT. ENJOY THE READING.

RECEIVED
SEP 16 1997

SIGNED Scott Wyatt

☐ PLEASE REPLY ☒ NO REPLY NECESSARY

S. SCHEVENIUS

CITY OF LEWISTON / LEWISTON ORCHARDS IRRIGATION DISTRICT

COORDINATED WATER STUDY

PHASE I



JULY 1995

Prepared By:

Wyatt Engineering
101 Thain Road
Lewiston, Idaho 83501
Office (208) 746-2661
Fax (208) 746-6825

SEP 16 '97
front cover & front pg. only.

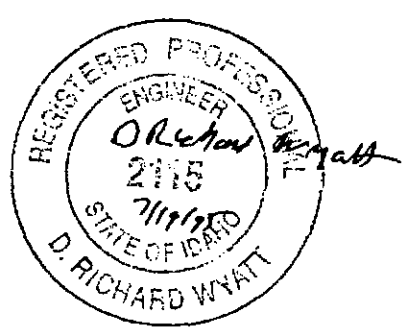
CITY OF LEWISTON
AND
LEWISTON ORCHARDS IRRIGATION DISTRICT

COORDINATED WATER STUDY
Phase I

July 1995

Prepared By:

Wyatt Engineering, Inc.
101 Thain Road
Lewiston, Idaho 83501
Office (208) 746-2661
FAX (208) 746-6825



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SEP 16 1997

COMPREHENSIVE PLANNING MAP

LEWISTON, IDAHO

POTENTIAL GROWTH BOUNDARY

POTENTIAL GROWTH BOUNDARY

CLARKSTON

POTENTIAL GROWTH BOUNDARY

CITY LIMIT

EXISTING WASTE WATER TREATMENT PLANT

BOOSTER BUMP STATION

TEMPORARY INTAKE

PERMENENT INTAKE (CITY)

CLEARWATER RIVER

WELL 1A

WELL 2

LOWER GRANITE RESERVOIR

WATER TREATMENT PLANT AND WELL 4

PROPOSED RAW WATER INTAKE

PROPOSED RAW WATER PIPELINE

OLD LAPWAI ROAD

CITY LIMIT

SNAKE RIVER AVENUE

4TH STREET

3RD STREET

15TH AVENUE

16TH AVENUE

21ST STREET

19TH AVENUE

14TH STREET

255 AC.

LOW RESERVOIR

HIGH RESERVOIR

PROPOSED TREATED WATER PIPELINE

1058 AC.

PROPOSED WATER TREATMENT PLANT

SCHAUB RANCH DEVELOPMENT

WATER STORAGE TANK

1316 AC.

NEZ PERCE INDIAN RESERVATION

POTENTIAL GROWTH BOUNDARY

OLD LAPWAI ROAD

WELL 3

SOUTH WEST BOOSTER PUMP STATION

SNAKE RIVER

CLUB ROAD

LINDSEY CREEK ROAD

21ST. ST. BOOSTER PUMP STATION

SOUTH HIGH RESERVOIR AND BOOSTER PUMP STATION

348 AC.

240 AC.

134 AC.

WELL 5

BRYDEN WELL

SOUTH WEST RESERVOIR

POTENTIAL GROWTH BOUNDARY

Bryden Canyon Golf Course

MAIN ROAD

WARNER AVENUE

6TH ST

8TH ST

BURRELL AVENUE

POWERS AVENUE

1ST

10TH

2962 AC.

PROPOSED TREATED WATER AND IRRIGATION PIPELINE

WATER STORAGE TANK

POTENTIAL GROWTH BOUNDARY

LOID BOUNDARY

LOID WELL #2 & RESERVOIR

SNAKE RIVER

2091 AC.

260 AC.

92 AC.

347 AC.

BLOUNT RESERVOIR

CITY LIMIT

LOID WELL 1

LOID BOUNDARY

DUTES RESERVOIR

TAMMANY CREEK ROAD

412 AC.

923 AC.

676 AC.

88 AC.

TAMMANY CREEK ROAD

POTENTIAL GROWTH BOUNDARY

R 6 W
R 5 W

R 5 W
R 4 W

GRAPHIC SCALE

4000 0 2000 4000 8000 16000

(IN FEET)
1 inch = 4000 ft.

LEGEND

- CORPORATE CITY LIMITS
- LOID BOUNDARY
- POTENTIAL GROWTH BOUNDARY
- USE OF WATER FROM THE CLEARWATER RIVER
- LINDSAY CR. GROUNDWATER MANAGEMENT AREA

WYATT ENGINEERING
ENGINEERS & SURVEYORS
101 THAIN RD.
LEWISTON, ID 83501
(208) 746-8625
FAX (208) 746-2681
W. 1801 BROADWAY, #110
SPOKANE, WA. 99201
FAX (509) 328-0423
(509) 328-5139

LEWISTON, IDAHO

DRAWN BY: MEE, SJN	CHECKED BY: SSS
DESIGNED BY: SSS	
SCALE: 1"=4000'	
DATE: 4/17/96	
PROJECT NO.: 10107	
SHEET 1 OF 1	

COORDINATED WATER STUDY

TABLE OF CONTENTS

Definition of Terms

Executive Summary

Page	Section	Title
001	1.00	General
001	1.01	Introduction
001	1.02	Background
006	1.03	Purpose
006	1.04	Listing of Existing Pertinent Materials
007	1.05	Acknowledgments
008	2.00	Land Use and Population
008	2.01	Historical Population
010	2.02	Existing Land Use
014	2.03	Impact Area
017	2.04	Population Projections
017	2.04.01	Factors Influencing Population Projections
020	2.04.02	Short Term Population Projections
021	2.04.03	Long Term Population Projections
027	3.00	Water Use
027	3.01	Historical Water Use Descriptions
027	3.02	Other Water Suppliers
028	3.03	Historical Water Use
034	3.04	Historical Domestic Water Use
036	3.05	Non-Domestic Water Uses
039	3.06	Projected Water Use Volumes
039	3.06.01	Effect of Conservation on Future Water Use
040	3.06.02	Future Water Use Projections Based On Population Projections No Conservation
042	3.06.03	Future Water Use Projections Based On Population Projections With Conservation

044 4.00 Water Rights and Existing Water Production Facilities

044 4.01 Water Rights Owned By City and LOID
047 4.02 Impact On Existing Water Rights of Ongoing Activities - Snake River Basin Water Rights Adjudication
048 4.03 Nez Perce Nation Water Rights Claims
049 4.04 Existing City Water Production Facilities
049a 4.05 Existing LOID Water Production Facilities

050 5.00 Potential Sources and Costs of Water Supplies

050 5.01 Pumping and Treatment Facilities Sizing
065 5.02 Water Quality Requirements for Various Uses

068 5.03 Maximization of Existing Sources of Water Supply

068	5.03.01	Alternative 10-1	Use of City Water for LOID Domestic and Other Uses
076	5.03.02	Alternative 10-2	Improvements to Craig Mountain Surface Water Supply
078	5.03.03	Alternative 10-3	Expanded Use of Groundwater Wells
082	5.03.04	Alternative 10-4	Use of Wastewater Treatment Plant Effluent as Irrigation Water
085	5.03.05	Alternative 10-5	Use of Water From Use the Snake River
088	5.03.06	Alternative 10-6	Use of Water From the Clearwater River

089 5.04 Summary of Ten Year Planning Period Alternatives

092 5.05 Fifty Year Planning Period Water Supply Alternatives

Alternative 50-1	Use of 2 MGD City Water for LOID and Use of Clearwater River for City and LOID
Alternative 50-2	Use of Additional Wells for LOID and Use of Clearwater River for City and LOID
Alternative 50-3	Use of 4 MGD City Water for LOID, Use of WWTP Effluent, and Use of Clearwater River for City and LOID
Alternative 50-4	Extensive Use of Groundwater Wells for LOID and Use of Clearwater River for City
Alternative 50-5	Use of 2 MGD City Water for LOID and Use of Snake River for City and LOID

092 5.06 Present Worth Evaluation of Fifty Year Planning Period Alternatives

115 5.07 Effect of Conservation on Fifty Year Planning Period Water Supply Alternatives

116 6.00 Fire Protection

116 6.01 Fire Protection Coverage Area
116 6.02 Fire Flow Requirements
116 6.03 Areas of Concern
117 6.04 Potential for System Interconnections to Enhance Firefighting Capabilities
118 6.05 Planning and Zoning Considerations

120 7.00 Conclusions and Recommendations

122 7.01 Summary of Identified Improvements

127 8.00 Impact of Proposed Improvements On Water Rates

127 8.01 Existing Water Rate of City of Lewiston
127 8.02 Existing Water Rate of Lewiston Orchards Irrigation District
128 8.03 Projected Impacts of Water Supply Alternatives on Water Rates

LISTING OF TABLES

Page No.	Table No.	Title
008	2-1	Historical Population of State of Idaho, Nez Perce County, and City of Lewiston
009	2-2	Historical Growth Rates for City of Lewiston
009	2-3	Historical Population of LOID
010	2-4	Historical Growth Rates for LOID
012	2-5	City of Lewiston Existing Zoning Categories and Areas
013	2-6	City of Lewiston and LOID Population Densities
015	2-7	Impact Area Descriptions
018	2-8	Known Development Activity
019	2-9	Potential Additional Residential Development in LOID Service Area
020	2-10	Short Term Population Projections
021	2-11	Short Term Population Projections Using Various Growth Rates
022	2-12	Potential Population Associated With Impact Area
023	2-13	Long Term Population Projections
024	2-14	Population Projections Using Various Rates of Growth
029	3-1	City of Lewiston Water Production Volumes
031	3-2	Lewiston Orchards Irrigation District Water Production Volumes
033	3-3	Historical Water Use in Census Years 1980 and 1990
035	3-4	Historical Domestic Water Use in the LOID Service Area
036	3-5	Historical Domestic Wastewater Generation in the LOID Service Area
037	3-6	Calculated Non-Domestic Water Uses in the City Service Area
038	3-7	Non-Domestic Water Uses in LOID Service Area
041	3-8	Projected Future Water Use Without Conservation
042	3-9	Projected Future Water Use With Conservation
044	4-1	Water Rights of the City of Lewiston
045	4-2	Water Rights of the Lewiston Orchards Irrigation District
046	4-3	Total and Usable Water Rights of the City and LOID
051	5-1	Maximum Day and Average Daily Water Use of the City and LOID
053	5-2	City of Lewiston Projected Water Use - No Conservation
055	5-3	Lewiston Orchards Irrigation District Projected Water Use - No Conservation
057	5-4	City and LOID Projected Water Use - No Conservation
059	5-5	City of Lewiston Projected Water Use - With Conservation
061	5-6	Lewiston Orchards Irrigation District Projected Water Use - With Conservation
063	5-7	City and LOID Projected Water Use - With Conservation
066	5-8	Contaminant Concentrations in the Snake and Clearwater Rivers
067	5-9	Contaminant Concentrations in Treated Effluent from the City Wastewater Treatment Plant
071	5-10	Alternative 10-1A - Use of 2.0 MGD City Water for LOID Domestic and Other Uses - Opinion of Probable Cost

073	5-11	Alternative 10-1B - Use of 4.0 MGD City Water for LOID Domestic and Other Uses - Opinion of Probable Cost
075	5-11A	Alternative 10-1C - Use of Water From the Clearwater River at a Maximum Flowrate of 12 MGD (18.6 CFS) Opinion of Probable Cost
077	5-12	Alternative 10-2 - Improvements to Craig Mountain Surface Water Supply Opinion of Probable Cost per Morrison-Knudsen Corporation
080	5-13	Alternative 10-3 - Expanded Use of Ground Water Wells Opinion of Probable Cost
083	5-14	Alternative 10-4 - Use of Wastewater Treatment Plant Effluent as Irrigation Water Opinion of Probable Cost
086	5-15	Alternative 10-5 - Use of Water From the Snake River Opinion of Probable Cost
089	5-16	Alternative 10-6 - Use of Water From the Clearwater River Opinion of Probable Cost
091	5-17	Summary of Ten Year Planning Period Alternatives
099	5-18	Present Worth Analysis of Alternative 50-1 Without Conservation
100	5-19	Present Worth Analysis of Alternative 50-2 Without Conservation
101	5-20	Present Worth Analysis of Alternative 50-3 Without Conservation
102	5-21	Present Worth Analysis of Alternative 50-4 Without Conservation
103	5-22	Present Worth Analysis of Alternative 50-5 Without Conservation
104	5-23	Summary of Fifty Year Planning Period Alternatives Without Conservation - For the City and LOID
110	5-24	Present Worth Analysis of Alternative 50-1 With Conservation
111	5-25	Present Worth Analysis of Alternative 50-2 With Conservation
112	5-26	Present Worth Analysis of Alternative 50-3 With Conservation
113	5-27	Present Worth Analysis of Alternative 50-4 With Conservation
114	5-28	Present Worth Analysis of Alternative 50-5 With Conservation
115	5-29	Summary of Fifty Year Planning Period Alternatives With Conservation - For the City and LOID
119	6-1	General Fire Flow Requirements by Zone

LISTING OF EXHIBITS

Page No.	Exhibit No.	Title
002	1	Area and Vicinity Map
004	2	Boundaries of the City and LOID
016	3	Area of Future Growth Map
025	4	Population Projections for City & LOID
026	5	Population Projections Using Various Growth Rates
030	6	Historical Water Use of the City of Lewiston
032	7	Historical Water Use of the LOID
054	8	City of Lewiston Projected Water Use - No Conservation
056	9	Lewiston Orchards Irrigation District Projected Water Use - No Conservation
058	10	Projected Water Use of City and LOID - Without Conservation
060	11	City of Lewiston Projected Water Use - With Conservation
062	12	Lewiston Orchards Irrigation District Projected Water Use - With Conservation
064	13	Projected Water Use of City and LOID - With Conservation
072	14	Alternative 10-1 Use of City Water for LOID Domestic and Other Uses
077A	15	Alternative 10-2 Craig Mountain Water Supply System
081	16	Alternative 10-3 Expanded Use of Groundwater Wells
084	17	Alternative 10-4 Use of Wastewater Treatment Plant Effluent as Irrigation Water
087	18	Alternative 10-5 Use of Water From the Snake River
090	19	Alternative 10 - 6 Use of Water From the Clearwater River
093	20	Alternative 50-1 Without Conservation
094	21	Alternative 50-2 Without Conservation
095	22	Alternative 50-3 Without Conservation
096	23	Alternative 50-4 Without Conservation
097	24	Alternative 50-5 Without Conservation
105	25	Alternative 50-1 With Conservation
106	26	Alternative 50-2 With Conservation
107	27	Alternative 50-3 With Conservation
108	28	Alternative 50-4 With Conservation
109	29	Alternative 50-5 With Conservation

DEFINITION OF TERMS

Ac-Ft or AF	Acre-feet - The measure of volume measuring one acre (43,560 square feet) and one foot in depth
Average Day Use	The amount of water used on an average day of a defined period, calculated as the total water use in a year divided by the number of days in the defined period, with units in million gallons per day or gallons per minute.
Capita	One person in a population area
City	City of Lewiston, Idaho
Distribution System	The network of pipes which carry water to individual service connection
Domestic Water	Water that is treated to remove bacteriological, chemical, and suspended contaminants to a level that is deemed safe for human consumption
Demand	The volume of water which must be delivered through the distribution system to meet the requirements of the users, with units in gallons per minute, million gallons per day, or acre-feet
Fire Flow	The volume of water needed to meet State and Local requirements for fire fighting purposes; this volume of water is usually added to any other water demands that are applied to the distribution system at any time, with units in gallons per minute
GPCPD	Gallons per capita per day; the average volume of water used by one person in one day
GPM	Gallons per minute; the measure of the rate of water flow
Groundwater	Water that is located beneath the earth's surface in water bearing rock or sand formations
Growth Rate	The increase in population over time, often calculated in terms of percentage growth above a base population
Irrigation Water	Water (usually, but not always surface water) that is not considered safe for human consumption, but safe and suitable for use for application to vegetation

LOID	Lewiston Orchards Irrigation District
Maximum Day Use	The volume of water used on the day of maximum water use of a year, with units of million gallons per day
Non-Potable Water	Water that is not potable, often used for irrigation or for other than human consumption purposes
Palatable Water	Water that has no odor or taste characteristics that are displeasing to the consumer; water that is palatable is not necessarily potable
Population	The number of persons in a defined area
Population Density	The number of persons in a defined area divided by the area, with units of persons per acre
Potable Water	Water that is safe for human consumption; potable water has been treated to remove unsafe contaminants but may not have been treated to remove unsatisfactory odor or taste
Present Worth	The value applied to an asset that is to be purchased at some time in the future using an inflation rate, depreciation period, and replacement cost. These future costs are then brought back to a present day value. This provides an accepted method for comparing different alternatives on an equivalent basis.
Re-Platting	The division of one parcel of land into two or more smaller parcels of land for the purpose of sale
Service Area	The land area which is provided with water service by a water utility
State	The State of Idaho, USA
Surface Water	Water that is located at the earth's surface, such as streams, rivers, and lakes
WTP	Water treatment plant
WWTP	Wastewater treatment plant

CITY OF LEWISTON
AND
LEWISTON ORCHARDS IRRIGATION DISTRICT
COORDINATED WATER STUDY

EXECUTIVE SUMMARY

Recent growth in the Lewiston area and the desire by the City of Lewiston (City) and the Lewiston Orchards Irrigation District (LOID) to explore possibilities for cooperative efforts in the provision of water supplies to area residents have led to this study to determine possible sources of additional water supplies.

The study as originally envisioned and later organized into phases, is divided into three parts, as follows:

Phase I	Determine existing and future water requirements, alternatives for additional water supplies and their respective approximate costs, and fire protection requirements
Phase II	Define water quality standards for potable and irrigation water uses, processes for treatment of water for the preferred alternative identified in Phase I, and costs associated with the treatment processes
Phase III	Update the geo-information system for the area, incorporate water conservation plans into the evaluation of future water requirements, prioritize and schedule improvements, identify and describe potential funding alternatives, and assist with development of distribution system policies

Population growth has been slow between 1970 and 1990. However, growth since 1990 growth has been much higher. Historical and projected future populations for the study area are presented as follows:

Year	Population	Comment
1940	10,548	Census Bureau
1950	12,985	Census Bureau
1960	22,371	Census Bureau
1970	26,068	Census Bureau
1980	27,986	Census Bureau
1990	28,015	Census Bureau
2000	33,727	Projection
2010	38,181	Projection
2020	46,731	Projection
2030	59,377	Projection
2040	72,023	Projection

Increasing population is due to the in-migration of people from outside the area, with

resulting increased demand for housing. This increased demand for housing has resulted in the construction of new sub-divisions and housing in the study area and re-platting activity for small tracts of open land in the LOID service area. Future population projections are based on completion of on-going developments within the defined potential growth boundary, additional known sub-divisions submitted to the City Community Planning Department for review, development activity outside the City limits, and continued re-platting activity in the LOID service area.

Water use has also increased in past years, increasing from an average daily use of 292 gallons per person per day in 1980 to 422 gallons per person per day in 1990.

The population is increasing and the per person water use is also increasing.

Two major water supply entities provide the bulk of water supplies in the Lewiston area: the City and the LOID. The City obtains its water from two sources: groundwater wells and the Clearwater River. The LOID obtains its water from two sources: groundwater wells for domestic water and a surface water supply originating on Craig Mountain on the Nez Perce Indian Nation Reservation for irrigation water.

The City water supply from the Clearwater River has been reliable and with high quality. The City has not experienced any major problems supplying treated drinking water to its service area, and on occasion has provided emergency domestic water supply to the LOID. In order to supplement its existing water supply, the City has elected to renovate existing groundwater wells and to construct one new groundwater well.

LOID has a long history of problems with the water supply from Craig Mountain which results in a required irrigation water rationing or the complete loss of the irrigation water supply late in the summertime during high use periods. This is caused by two primary factors: 1) recurrent local weather patterns (mild winters) which have caused lower than normal snowfall and rainfall, and 2) the small size of water storage reservoirs which store water for use during high demand periods. Water for domestic use from groundwater wells has been much more reliable, although there are occasional mechanical problems with well pumping equipment. However, the LOID has only two groundwater wells, both of which are required to provide the necessary domestic water supply, making the domestic water supply less reliable than desired due to the lack of redundancy of units.

An additional concern for the LOID is the potential loss of its major water supply. The Nez Perce Indian Nation has recently asserted claims for the water originating on Craig Mountain. If the Nez Perce Indian Nation claim is upheld, the resulting settlement would remove the Craig Mountain water supply from use by LOID.

Population growth and increasing per person water use in the LOID service area has resulted in the need for increased water supplies for users. This strains the existing water production facilities, resulting in water rationing or a complete loss of the irrigation water supply in late summer for LOID residents.

Projections of future water requirements have been made based on the following: 1) population projections for the areas currently served by the City and LOID, 2) population projections for areas of potential growth located in undeveloped areas adjacent to the service

areas of the City and LOID, and 3) documented per person water uses. The projections show the immediate need for additional water supplies for LOID and the long range need for additional water supplies for both the City and LOID. The effect of conservation measures to curtail the increasing per person water use were also included in projections of future water use. Water conservation can be attained by using several methods, including education, metering of irrigation water when water quality allows, use of drip and controlled irrigation systems, and changes in water rate schedules. However, immediate effects of conservation efforts may be difficult to measure. Projections of future average daily water use (the amount of water used during the entire year divided by 365 days per year) without conservation and with conservation are shown as follows:

Year	Water Use Projection **Without Conservation**	Water Use Projection **With Conservation**
	Million Gallons Per Day	Million Gallons Per Day
1995	12.28	12.28
2000	13.08	13.06
2005	13.88	13.84
2010	14.68	13.69
2015	15.48	13.64
2020	17.72	15.69
2025	19.97	17.73
2030	22.21	19.77
2035	24.45	21.81
2040	26.70	23.86
2045	28.94	25.90

planning horizon

In separate holdings, the City and LOID currently have water rights to water in sufficient quantities to provide water in the volumes shown above, even considering the potential loss of the LOID Craig Mountain water supply. In addition, the LOID has filed for, but not yet received approval for rights from the Clearwater River.

Water pumping, conveyance, and treatment facilities must be sized for the maximum daily water requirements which occur in a year. Maximum daily water requirements are based on historical ratios of maximum daily water use to average daily water use. Using these ratios, water pumping, conveyance, and treatment facilities capacities were determined to establish a timeline for needed facilities, and are shown as follows:

Year	Projected Future Water Facilities Capacity **Without Conservation**	Projected Future Water Facilities Capacity **With Conservation**
	Million Gallons Per Day	Million Gallons Per Day
1995	38.83	38.83
2000	41.44	41.19
2005	44.05	43.54
2010	46.66	42.37
2015	49.29	41.63
2020	55.55	47.35
2025	61.84	53.07
2030	68.12	58.78
2035	74.41	64.50
2040	80.69	70.22
2045	86.98	75.94

The successful implementation of conservation measures such as public education, installation of irrigation water meters when possible, use of drip irrigation and controlled irrigation, and changes in the water rate schedules could result in the postponement of constructing additional water pumping, conveyance, and treatment facilities, and result in lower costs for customers of the two water supply entities.

Alternatives were developed for two planning periods, a short planning period of ten years and a long planning period of fifty years. Fifty year planning alternatives were evaluated first without the effects of a water conservation effort and then with the effects of a water conservation.

Six alternatives for the supply of water to meet the projected requirements within the ten year planning period from 1995 to 2005 were evaluated. These six alternatives are as follows:

Alt. No.	Description	Opinion of Probable Cost 1995 Dollars
10-1	Use of 2.0 MGD City Water for LOID Domestic and Other Uses and Use of Water From the Clearwater River (providing an additional supply of 14 MGD)	$18,512,000
10-2	Improvements to Craig Mountain Surface Water Supply (providing an additional supply of 4.82 MGD)	$ 1,932,000
10-3	Expanded Use of Four Groundwater Wells Including a 2 Million Gallon Reservoir (providing an additional supply of 8.5 MGD)	$ 5,200,000
10-4	Use of WWTP Effluent as Irrigation Water (providing an additional supply of up to 4 MGD)	$11,046,000
10-5	Use of Water From the Snake River (providing an additional supply of 12 MGD)	$24,075,000
10-6	Use of Water From the Clearwater River (providing an additional supply of 12 MGD)	$17,066,000

Analyses to determine the alternatives with the lowest long term cost were accomplished. The analyses determine the present worth value of each alternative. The present worth value of an alternative is the amount of money required to be placed in an interest bearing account, which, if paid out over time, would provide the necessary funds to construct facilities and pay for identified annual expenses. Alternatives which can meet water requirements over time and have lower present worth values represent more attractive alternatives.

The present worth analyses recognize the costs for various items such as water sales and purchases, equipment replacement, water treatment, and electrical power use. For water sales and purchases, the transfer of funds from one entity to another have no impact on the analyses because the funds are transferred between entities which are both part of the impacted group.

The present worth analyses, by their nature, do not consider interest payments due to project financing. For implementation of a selected alternative, interest costs should also be considered.

Alternatives for a fifty year planning period without conservation with their respective present worth values (lower present worth values represent more attractive alternatives) are as follows:

Alt. No.	Description	Present Worth In Yr 1995 (See Note)
	WITHOUT CONSERVATION	
50-1	Use of 2 MGD City Water for LOID and Use of Clearwater River for City and LOID	$ 97,362,000
50-2	LOID 1995 Proposed Four Wells and Use of Clearwater River for City and LOID	$ 92,018,000
50-3	City Supply 4 MGD to LOID, Use of WWTP Treated Effluent, and Use of Clearwater River Supply for City and LOID	$ 97,332,000
50-4	Extensive Use of Groundwater Wells for LOID and Use of Clearwater River for City	$ 97,069,000
50-5	Use of 2 MGD City Water for LOID and Use of Snake River for City and LOID	$113,742,000

Note: 1. Use of City water for LOID would end after 10 years in those alternatives using City water provided to LOID.

Alternatives for a fifty year planning period with conservation with present worth values shown (lower present worth values represent more attractive alternatives) are as follows:

Alt. No.	Description	Present Worth In Yr 1995 (See Note)
	WITH CONSERVATION	
50-1	Use of 2 MGD City Water for LOID and Use of Clearwater River for City and LOID	$ 91,430,000
50-2	LOID 1995 Proposed Four Wells and Use of Clearwater River for City and LOID	$ 87,729,000
50-3	City Supply 4 MGD to LOID, Use of WWTP Treated Effluent, and Use of Clearwater River Supply for City and LOID	$ 92,993,000
50-4	Extensive Use of Groundwater Wells for LOID and Use of Clearwater River for City	$ 83,905,000
50-5	Use of 2 MGD City Water for LOID and Use of Snake River for City and LOID	$104,384,000

Note: 1. Use of City water for LOID would end after 10 years in those alternatives using City water provided to LOID.

Conclusions and recommendations as a result of the evaluation of alternatives are as follows:

Conclusions

1. The City water supply sources and production facilities appear to be sufficient for the next 15 to 20 years.

2. The LOID domestic water supply has been reliable except for occasional equipment problems. However, since there are only two groundwater wells, both of which are needed to provide the LOID domestic water supply, an additional domestic water supply is needed.

3. The LOID irrigation water supply from Craig Mountain has historically been deficient in producing the desired quantity of water. In addition, LOID faces the potential loss of the Craig Mountain irrigation water supply to claims on the supply by the Nez Perce Indian Nation.

4. Additional water supplies will be needed by both the City and the LOID in the future as a result of projected growth within the defined potential growth boundary.

5. A number of alternatives have been identified to provide the water supplies needed for future growth and to replace the potential loss of the LOID Craig Mountain water supply. The City and LOID currently own the rights to water in sufficient quantities to replace the Craig Mountain water supply and provide for future growth. The LOID has filed for, but not received approval for water rights from the Clearwater River.

6. Implementation of water conservation measures such as public education, installation of irrigation water meters when possible, use of drip irrigation and controlled irrigation, and changes in water rate schedules should be considered in order to reduce water requirements and provide cost savings due to reduction or postponement of facilities construction.

7. Use of wells can reduce the long term costs. However, extensive use of wells may not be possible due to interference of adjacent wells during high use periods which could lower individual well production rates.

8. Utilization of water from the Snake River is more expensive than use of water from other sources because the Snake River is the most removed from the largest areas of future potential growth.

9. Alternative 50-3 - Use of 4 MGD City Water to LOID, Use of 4 MGD of Wastewater Treatment Plant Treated Effluent, and Use of Clearwater River by the City and LOID, can be accomplished for a cost similar to Alternative 50-1 - 2 MGD City Water to LOID and Use of Clearwater River for City and LOID. Research would be needed to determine whether the public would find this alternative acceptable. No costs were included for any process improvements at the wastewater treatment plant, if required.

10. Significant savings can be realized from implementation of Alternative 50-4 - Extensive Use of Groundwater Wells for LOID and Use of Clearwater River for City, coupled with implementation of conservation measures to reduce the water requirements over time. However, caution is advised because 1) the conservation measures must be implemented and must be effective, and 2) use of a large number of wells may cause interference with adjacent wells resulting in reduced well production and higher than projected costs.

Recommendations

1. Measures to implement conservation of water should be instituted to reduce the water requirement over time, thus postponing the timing for new facilities and the ultimate cost of the facilities.

2. Water meters should be installed on the irrigation water services in the LOID to assist with implementing water conservation measures when a water supply of sufficient quality allows.

3. A water purchase contract should be established between the City of Lewiston and the Lewiston Orchards Irrigation District to provide additional domestic water supply and domestic water supply reliability and redundancy for the LOID.

4. Groundwater wells should be utilized to provide the initial, supplementary water supplies, to provide facilities with lowest cost over the fifty year planning period, and to provide the initial facilities at the lowest cost.

5. Although the extensive use of groundwater wells would be less expensive if implementation of conservation measures were successful, extensive use of groundwater should be delayed to evaluate the impact of a few additional wells on the aquifer. In addition, wells for the production of groundwater will likely be available as an option in the future when needed or desired.

6. Wastewater treatment plant effluent should be considered in the future as a supplemental source of irrigation water, if it can be treated to a quality which is acceptable to the public.

7. Use of the Clearwater River for future water supplies should be further evaluated and additional planning efforts made with the goal of providing facilities before the loss of the Craig Mountain water supply becomes a reality. The planning efforts will help to satisfy the requirements of the Idaho Department of Water Resources for proving the utilization of water rights previously granted by the State of Idaho. Phases II and III of this study, either as previously developed or modified as necessary, would provide this effort. Phases II and III of the study will further define conservation methods and policies, water quality standards and methods to achieve required water quality for various uses, definition of required facilities, facilities costs, funding alternatives, and future system policies.

8. In order to minimize the ultimate costs due to interest on borrowed funds, accounts for funding capital improvements should be initiated by a capital improvements charge on monthly customer bills.

The following is a summary of identified improvements for the next ten year period based on the conclusions and recommendations:

Item	Opinion of Probable Cost	Opinion of Annual Costs (+) or Receipts (-)
City of Lewiston		
So. High Reservoir Pump Station Improvements	$ 660,000	- $585,000 to - $1,035,000 (See Note, below)
Interest Over 10 Years at 7%	$ 280,000	
Total for City of Lewiston	$ 940,000	

16" Pipeline Improvements to LOID System to Receive Water From the City	$ 767,000	+ $585,000 to + $1,035,000 (See Note, below)
Interest Over 10 Years at 7%	$ 325,000	
Four 1,500 GPM Wells	$5,200,000	+ $85,000 (Electrical power cost)
Interest Over 10 Years at 7%	$2,204,000	
Total for Lewiston Orchards Irrigation District	$8,496,000	
Total for City and LOID	$9,436,000	

Note: If the City were to supply water to LOID at a rate of 2 million gallons per day, the LOID would pay from $585,000 to $1,035,000 (depending on the negotiated cost of water) to the City. The amount paid by LOID to the City would be an additional cost to LOID above their present budget. No change in the amount of domestic water would be provided. The existing two ground water wells would continue to be utilized to provide additional irrigation water with no addition in revenue to the LOID.

Additional improvements should be phased as follows:

Year	Improvement Description	Opinion of Probable Cost 1995 Dollars
	City of Lewiston	
1995	Pump Improvements to South High Booster Pump Station	$ 660,000
	Year 1995 Subtotal of City Facilities	**$ 660,000**
2018	20 MGD City Water Treatment Plant	$20,000,000
2018	18,000 LF 36" Dia Potable Transmission Pipeline to City High Reservoir	$ 5,505,000
	Year 2018 Subtotal of City Facilities	**$25,505,000**

2033	20 MGD City Water Treatment Plant Expansion	$20,000,000
2033	16,000 LF 36" Dia Potable Transmission Pipeline to New City Reservoir	$ 4,920,000
2033	4 MG City Potable Water Reservoir	$ 1,800,000
	Year 2033 Subtotal of City Facilities	**$26,720,000**
2038	Replace Equipment at WTP Installed in 2018	$ 6,000,000
	Year 2038 Subtotal of City Facilities	**$ 6,000,000**

Lewiston Orchards Irrigation District

1995	8.5 MGD LOID Groundwater Well Supply (4 - 1,500 GPM Wells and 2 MG Reservoir)	$ 5,200,000
1995	16" Pipeline Improvements to Potable Water System	$ 767,000
	Year 1995 Subtotal of LOID Facilities	**$ 5,967,000**
2005	5 MGD LOID Water Treatment Plant	$ 5,000,000
2005	15,500 LF 20" Dia Potable Transmission Pipeline to LOID	$ 1,581,000
2005	15,500 LF 36" Dia Irrigation Transmission Pipeline to LOID	$ 4,774,000
2005	10 Million Gallon Non-Potable Water Storage Reservoir	$ 4,500,000
2005	Installation of Water Meters on Irrigation Services	$ 150,000
	Year 2005 Subtotal of LOID Facilities	**$16,005,000**
2015	Replace Well Pumps Installed in 1995	$ 788,000
	Year 2015 Subtotal of LOID Facilities	**$ 788,000**
2025	Replace Water Treatment Plant Equipment Installed in 2005	$ 1,500,000
	Year 2025 Subtotal of LOID Facilities	**$ 1,500,000**
2035	Replace Well Pumps Installed in 2015	$ 788,000
	Year 2035 Subtotal of LOID Facilities	**$ 788,000**

City and LOID Cooperative Facilities

2005	80 MGD Clearwater River Intake	$ 1,970,000
2005	25 MGD Clearwater River Pump Station	$ 5,102,000
2005	Interim Reservoir and Booster Pump Station	$ 6,000,000
2005	10,000 LF 36" Dia Transmission Pipeline to WTP	$ 2,925,000
	Year 2005 Subtotal of Cooperative Facilities	**$15,997,000**
2018	20 MGD Clearwater River Pump Station Expansion	$ 2,508,000
2018	10,000 LF 36" Dia Transmission Pipeline to new City WTP	$ 2,925,000
	Year 2018 Subtotal of Cooperative Facilities	**$ 5,433,000**
2033	20 MGD Clearwater River Pump Station Expansion	$ 2,508,000
2033	10,000 LF 36" Dia Transmission Pipeline to WTPs	$ 2,925,000
	Year 2033 Subtotal of Cooperative Facilities	**$ 5,433,000**

Recapitulation of Projected Facilities Capital Spending, 1995 Dollars

Year 1995 Subtotal of City Facilities	**$ 660,000**
Year 1995 Subtotal of LOID Facilities	**$ 5,967,000**
Year 2005 Subtotal of LOID Facilities	**$ 16,005,000**
Year 2005 Subtotal of Cooperative Facilities	**$ 13,072,000**
Year 2015 Subtotal of LOID Facilities	**$ 788,000**
Year 2018 Subtotal of City Facilities	**$ 25,505,000**
Year 2018 Subtotal of Cooperative Facilities	**$ 5,433,000**
Year 2025 Subtotal of LOID Facilities	**$ 1,500,000**
Year 2033 Subtotal of City Facilities	**$ 26,720,000**
Year 2033 Subtotal of Cooperative Facilities	**$ 5,433,000**
Year 2035 Subtotal of LOID Facilities	**$ 788,000**
Year 2038 Subtotal of City Facilities	**$ 6,000,000**
Total, 1995 Dollars	**$110,646,000**

The impact of the above on water rates would be as follows:

City of Lewiston	**No Change** In Water Rates For Initial Projects
Lewiston Orchards Irrigation District	**Domestic Water Rate Increase of 80%** for Initial Projects and for Purchase of Water From City
	Irrigation Water Rate Increase of 160% for Initial Projects

CITY OF LEWISTON
AND
LEWISTON ORCHARDS IRRIGATION DISTRICT

COORDINATED WATER STUDY

1.00 GENERAL

1.01 Introduction

The supply of water, the increasing use of water, water quality complaints in the LOID, have increasingly led to public attention to the available supply and quality of water for consumption and irrigation use. As the local water supply entities have evaluated the possibilities for supplementing their water supplies through various sources, the benefits of cooperation and joint effort have been recognized in order to provide the necessary water supplies to the citizens of the area at the lowest cost. One of the results of this cooperative attitude is this coordinated water study.

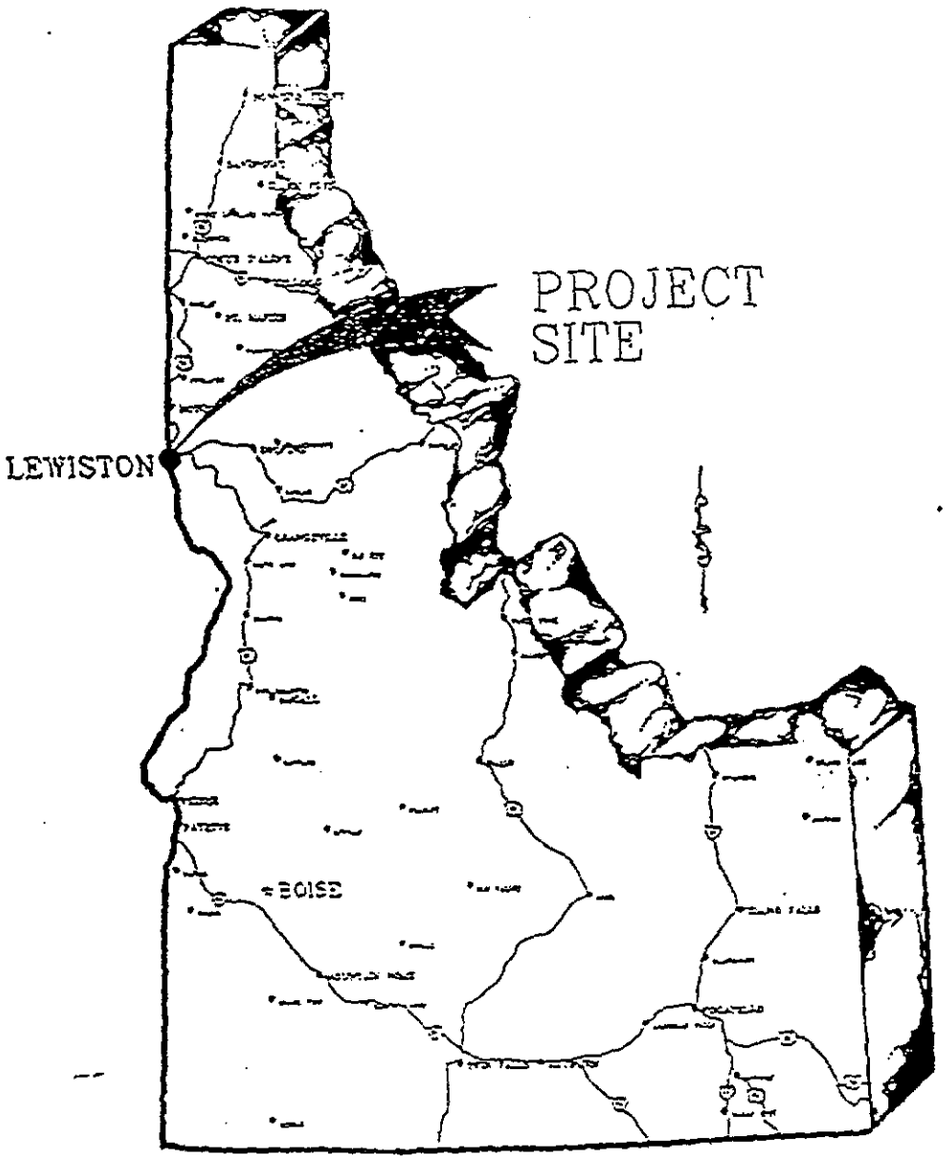
1.02 Background

The area southeast of the confluence of the Snake and Clearwater Rivers is occupied by the City of Lewiston, Idaho. The City currently has a population of approximately 30,000 persons. An area and vicinity map is provided in Exhibit 1.

Water supply is provided by two entities, with the exceptions listed in 3.00 within the City of Lewiston: the City municipal system and the system owned and operated by the Lewiston Orchards Irrigation District (LOID).

The City system has evolved into its present state since the founding of the City in 1861. The City system exists in order to provide potable water to the customers within its service area, which consists of the area bounded roughly by the Snake and Clearwater Rivers, east to Lindsey Creek Road, and south to Stewart Avenue. The service area also includes an area north of the Clearwater River, from the Idaho state boundary east to a point generally north of Potlatch Corporation, and an area along the Snake River, west of the Nez Perce County Airport. Potlatch Corporation is not within the City limits and is not served by the City system. LOID is within the City limits but is not served by the City system.

EXHIBIT 1
CITY OF LEWISTON / LEWISTON ORCHARDS IRRIGATION DISTRICT COORDINATED WATER STUDY



WYATT ENGINEERING
ENGINEERS & SURVEYORS

121 MAIN RD.
LEWISTON, ID 83501
FAX (208) 746-0623
(208) 746-2661

The City system obtains its water from the Clearwater River via an intake and pump station located on the north bank of the Clearwater River approximately 4.5 river miles upstream from the confluence with the Snake River. The water is pumped by four vertical turbine pumps from the pump station to a water treatment plant where the water is treated to remove turbidity, disinfected to kill or inactivate micro-organisms, and pumped into the City distribution system for delivery to the customers. In addition to the surface water source from the Clearwater River, the City system also owns five groundwater wells, three of which are currently used. Use of water from Well 1A has been replaced by use of water from the water treatment plant. Well 1A is currently used as a back-up source for water for fighting fires in the downtown area. Well 2 is currently being considered for renovation for use to provide irrigation water for City park property.

The LOID system has evolved into its present state since its formation in 1910 as an organized entity to supply irrigation water for the production of apples from orchards in the unincorporated area south of the limits of the City. LOID currently exists in order to provide potable water and irrigation water to the customers within its service area, which consists of the area bounded roughly by Stewart Avenue on the north, 4th Street on the west, Richardson Street on the south, and 24th Street on the east. The supply of water for domestic purposes has evolved and continues today, with separate supply and distribution pipeline systems for the supply of domestic and irrigation water to customers. The Nez Perce County airport is adjacent to but not within LOID, but is served by LOID through a water sale contract with the City.

Prior to 1980, the LOID system provided water for domestic use via a two (2) million gallon per day water treatment plant which treated a portion of the irrigation water supply. Today, the LOID system produces potable water from two ground water wells. Water from the ground water wells is pumped into a potable water distribution system for delivery to potable water customers. LOID also produces irrigation water through a system of reservoirs and canals which collect snow melt from the Craig Mountain area, located on the Nez Perce Indian Reservation. Irrigation water is collected in two (2) up-basin reservoirs, Soldiers Meadow Reservoir and Waha Reservoir, conveyed by gravity flow in canals and piping to a central collection location at Mann Lake, and conveyed by gravity flow in piping into the LOID irrigation water distribution system.

Exhibit 2 depicts the boundaries of the City and LOID and locations of the major water production facilities of the two entities.

EXHIBIT 2

CITY AND LOID BOUNDARIES AND LOCATION OF EXISTING FACILITIES

POTENTIAL GROWTH BOUNDARY

POTENTIAL GROWTH BOUNDARY

R 6 W
R 5 W

R 6 W
R 4 W

CITY LIMIT

EXISTING WASTE WATER TREATMENT PLANT

BOOSTER PUMP STATION

TEMPORARY INTAKE

PERMANENT INTAKE (CITY)

CLEARWATER RIVER

WELL 1A

WELL 2

LOWER GRANITE RESERVOIR

WATER TREATMENT PLANT AND WELL 4

MAIN STREET

CLARKSTON

POTENTIAL GROWTH BOUNDARY

SNAKE RIVER AVENUE

4TH STREET

C STREET

11TH AVENUE

16TH AVENUE

19TH AVENUE

14TH STREET

21ST STREET

CITY LIMIT

OLD LAPWAI ROAD

SCHAUB RANCH DEVELOPMENT

T 36 N
T 35 N

LOW RESERVOIR

HIGH RESERVOIR

LINDSEY CREEK ROAD

GUN CLUB ROAD

21ST. ST. BOOSTER PUMP STATION

SOUTH HIGH RESERVOIR AND BOOSTER PUMP STATION

OLD LAPWAI ROAD

NEZ PERCE INDIAN RESERVATION BOUNDARY

POTENTIAL GROWTH BOUNDARY

WELL 3

SOUTH WEST BOOSTER PUMP STATION

SNAKE RIVER

WELL 5

BRYDEN WELL

SOUTH WEST RESERVOIR

Bryden Canyon Golf Course

WARNER AVENUE

MAIN ROAD

BURRELL AVENUE

CEDER AVENUE

POWERS AVENUE

LOID BOUNDARY

LOID WELL #2 & RESERVOIR

POTENTIAL GROWTH BOUNDARY

CITY LIMIT

BLOUNT RESERVOIR

LOID WELL 1

LOID BOUNDARY

LUTES RESERVOIR

TAMMANY CREEK ROAD

TAMMANY CREEK ROAD

GRAPHIC SCALE

(IN FEET)
1 inch = 4000ft.

R 6 W
R 5 W

POTENTIAL GROWTH BOUNDARY

R 5 W
R 4 W

POTENTIAL GROWTH BOUNDARY

C:/1010T/1010T.DWG BITOYBIT

NO.	DATE	BY	REVISIONS
			ORIGINAL DRAWING

WATER ENGINEERING
ENGINEERS & SURVEYORS
101 TWAIN RD.
LEWISTON, ID 83501
FAX (208) 746-8825
(208) 746-2661

W. 1801 BROADWAY, #110
SPOKANE, WA 99201
FAX (509) 326-8423
(509) 328-5139

LEWISTON, IDAHO

DRAWN BY: MEE, SJN	CHECKED BY: SSS
DESIGNED BY: SSS	
SCALE: 1"=4000'	
DATE: 4/17/95	
PROJECT NO.: 1010T	
SHEET 1 OF 1	

Since 1990, the area has experienced substantial growth, with new development in the City service area, development of acreage within LOID service area causing an increased population density, and development outside of the City limits but within the City impact boundary. In addition, adjudication of water rights in the Snake River basin will define existing water use permits versus water needs of the various water users, and will resolve claims by the Nez Perce Indian Nation for rights to water originating from the area within the Nez Perce Indian Reservation.

The Snake River water rights adjudication process has placed a moratorium on the consideration of all new applications for water rights for water from the Snake River and its tributaries, including the Clearwater River. Water rights are normally granted by the State of Idaho after reviewing the availability of water from a source, reviewing the need of the applicant for the water being requested, providing a time period for receiving information pertaining to the application from others with water rights and other interested parties, finding of fact by the State, and issuance of a permit to the applicant. Applications for water use permits are now being received in order to establish priority with the possibility that no other action may be taken for applicants for private use. Public use applicants have recently received permits after the effective date of the moratorium, such as the City of Lewiston Permit No. A86-07342, for 18.6 cubic feet per second from the Clearwater River, with a priority date of April 28, 1993.

The claims of the Nez Perce Indian Nation for water rights to water originating from the area within the area of the Nez Perce Indian Reservation have the potential to eliminate the current irrigation water supply for the LOID. The consensus of opinion of LOID is that the claims of the Nez Perce Indian Nation will prevail, that the water rights permits currently held for the water originating from Craig Mountain will be allowed to be transferred to the Snake River or Clearwater River, and that new facilities for the conveyance of water into the LOID system will be required.

The effect of the claims of the Nez Perce Indian Nation on the water rights currently used by the LOID system has caused the LOID to begin searching and planning for additional water supply because of the uncertainty of supply from the traditionally used Craig Mountain supply and because on-going growth has caused the available supply to be deficient. The moratorium on applications for permits for water from the Snake River basin has added to the uncertainty for sources regarding water supplies for domestic or irrigation uses from either the Snake River or the Clearwater River.

The City of Lewiston water rights from the Clearwater River are also affected because adjudication of water rights in the Snake River basin will require the City to demonstrate its need for water for domestic and irrigation uses in the volumes documented in the permits it currently holds.

The Snake River adjudication process will culminate in the Fall of 1995 with a series of hearings to be held by the State of Idaho Attorney Generals Office, after which validity of permits to water from the Snake River will be upheld or revised.

1.03 Purpose

The purpose of the Coordinated Water Study is as follows:

Phase I

1. Determine existing water use and future water requirements for the area
2. Determine existing water rights and need for additional water supplies for the area
3. Determine available sources and approximate costs of alternatives for water supply
4. Determine fire protection requirements throughout the area and determine potential system interconnections to enhance fire fighting capabilities
5. Determine the impact of water supply alternatives and fire protection improvements on existing water rates

Phase II

1. Define water quality standards for potable and irrigation water uses
2. Define the processes for treatment of water from the preferred alternative identified in Phase I
3. Define the costs for water treatment process(es)

Phase III

1. Update the geo-information system for the area
2. Incorporate water conservation plans into the evaluation of future water requirements and assist with development of system piping extension policies
3. Prioritization and scheduling of proposed improvements
4. Identify and describe potential funding alternatives
5. Assist with development of distribution system policies and policies for future piping systems in currently undeveloped areas which may be served with water from the currently developed area

1.04 Listing of Pertinent Materials

The following materials have been obtained and used in the preparation of this report:

City of Lewiston

1. Comprehensive Plan and Zoning Map - Community Development Department, January 1991
2. Water System Master Plan - J. M. Montgomery Consulting Engineers, Inc., October 1991
3. Water Use Data, 1983-1992, Water Utilities Department
4. 1994-1995 Budget

Lewiston Orchards Irrigation District

1. Lewiston Basin Deep Aquifer Study - Wyatt-Jaykim Engineers, Inc., April 1994
2. Water Treatment Plant Study - Wyatt-Jaykim Engineers, Inc., April 1994
3. Alternative Irrigation Water Supply Evaluation - Morrison Knudsen Corporation, February 1992
4. Water Use Data, 1970-1994
5. 1994-1995 Budget

1.05 Acknowledgments

Our appreciation is hereby expressed to the following persons who provided information and assistance during the completion of this study:

City of Lewiston

1. Mr. Bud Van Stone, P.E., Public Works Administrator
2. Mr. Rich Puckett, Utilities Director
3. Mr. David Six, Water Systems Manager
4. Mr. Steve Watson, City Planner

Lewiston Orchards Irrigation District

1. Mr. Randy Moore, Manager
2. Ms. Shelly Ponozzo, Administrative Assistant

2.00 Land Use and Population

2.01 Historical Population

The following presents the recent historical population of Nez Perce County and the City of Lewiston:

TABLE 2-1
HISTORICAL POPULATION OF
STATE OF IDAHO, NEZ PERCE COUNTY AND CITY OF LEWISTON

Year	Total Population	Total Population	Total Population
	State of Idaho	Nez Perce County	City of Lewiston
1940	524873	18873	10548
1950	588637	22658	12985
1960	667191	27066	22371 (See Note 1)
1970	713008	30376	26068
1980	943935	33220	27986
1990	1006749	33374	28015
1995			31500

Notes: 1. 1960 population includes both City of Lewiston and 9,680 population from Lewiston Orchards.
2. The Lewiston Orchards area was annexed by the City of Lewiston in 1969.

As can be seen from Table 2-1, the population in Nez Perce County has grown by 10,716 persons since 1950, while the City of Lewiston grew by 15,030. A significant portion of the City of Lewiston population increase since 1950 is attributed to the annexation of the Lewiston Orchards area in 1969. In recent years, Nez Perce County population increases have been due primarily to growth in the City of Lewiston and LOID service areas.

Using the above data, growth rates were calculated for the City of Lewiston and are shown as follows:

TABLE 2-2
HISTORICAL GROWTH RATES
FOR CITY OF LEWISTON

Year	Total Population	Average Growth Rate Since Previous Listing, % Per Year
1940	10,548	----
1950	12,985	2.10
1960	22,371	5.59
1970	26,068	1.54
1980	27,986	0.71
1990	28,015	0.01
1995	31,500	2.37

Note: For the period from 1960 to 1990, average growth rate for the City of Lewiston, including both City and LOID service areas, has been 0.75% per year.

Based on review of previous U.S. Bureau of the Census data, the population for various census years may be divided between the City and LOID service areas as follows:

TABLE 2-3
HISTORICAL POPULATION OF THE CITY AND LOID SERVICE AREAS

Year	City Service Area Population (Note 1)	LOID Service Area Population (Note 2)	Total City and LOID Service Area Population
1960	12691	9680	22371
1970	12225	13843	26068
1980	14128	13858	27986
1990	12515	15500	28015

Notes:
1. Populations shown are for area provided with water service by the City of Lewiston.
2. Populations shown are for area provided with water service by LOID.
3. Historical data indicated a population decrease for the City of Lewiston for the periods from 1960 to 1970 and from 1980 to 1990. Water meter counts in the years of 1980 and 1990 show an increase in the numbers of water meters from 1980 to 1990.

Using the historical populations shown above, growth rates may be calculated as follows for the LOID service area:

TABLE 2-4
HISTORICAL GROWTH RATES FOR LOID

Year	Population	Average Growth Rate Since Previous Listing, % Per Year
1940	Not Determined	Unable To Calculate - Data Not Available
1950	Not Determined	Unable To Calculate - Data Not Available
1960	9680	Unable To Calculate - Data Not Available
1970	13843	3.64
1980	13858	0.01
1990	15500	1.13

Notes: 1. Population data shown is from Table 2-3.
2. From 1960 to 1990, average growth rate for LOID Service Area is 1.58% per year.

2.02 Existing Land Use

The existing land use within the Lewiston area exists as a result of historical uses and recent land use planning efforts which have resulted in zoning restrictions which limit the available land use choices of landowners and developers to conform with the needs of the community and the desires of residents regarding the composition of their community.

According to the Lewiston Comprehensive Plan, the current zoning within the City of Lewiston provides the land use categories and associated land areas as shown in Table 2-5. Based on the current estimated population of 31,500 persons and total land area within the City limits of 10,673 acres shown on Table 2-5, the current average density is as follows:

Total 1995 City of Lewiston Population = 31,500 persons
Total Land Area With 1995 City of Lewiston Boundary = 10,673 acres

Average Population Density = 31,500 persons/10,673 acres
= 2.95 persons/acre

According to Table 2-5, the area used for residential land use is 5,832 acres. The current average residential density for property zoned residential is as follows:

Total 1995 City of Lewiston Population = 31,500 persons
Total Land Area Zoned for Residential Use Per Comprehensive Plan = 5,832 acres

Average Residential Land Use Population Density = 31,500 persons/5,832 acres
= 5.40 persons per acre

Population densities for the two service areas in the census year of 1990 are shown on Table 2-6:

TABLE 2-5

CITY OF LEWISTON, IDAHO
EXISTING ZONING CATEGORIES AND AREAS

Zone	Description	Area, Acres	Percent of Total
R-1	Suburban Residential	1,494	14.0
R-2	Low Density Residential	1,420	13.3
R-2A	Low Density Residential - Manufactured Housing	1,820	17.1
R-3	Medium Density Residential	888	8.3
R-4	Higher Density Residential	200	1.9
Subtotal		5,832	54.6
C-1	Neighborhood Commercial	7	0.07
C-2	Tourist Commercial	3	0.03
C-3	Limited Commercial	150	1.4
C-4	General Commercial	594	5.6
C-5	General Commercial	24	0.2
C-6	Limited Arterial Commercial	204	1.9
Subtotal		982	9.2
M-1	Light Industrial	396	3.7
M-2	Heavy Industrial	307	2.9
Subtotal		703	6.6
PD	Planned Unit Development	263	2.5
F-2	Agricultural Transitional	1,883	17.6
P	Port	202	1.9
AP	Airport	808	7.6
TOTALS		10,673	100.0

TABLE 2-6
CITY OF LEWISTON AND LOID
POPULATION DENSITIES

Service Entity	1990 Population	Approximate Service Area, Acres	Average Population Density, Persons/Acre
City of Lewiston	12,515	6,828	1.83
LOID	15,500	3,845	4.03
Total	28,015	10,673	2.62

Notes:

1. 1990 populations shown are from Table 2-3.
2. Total approximate service area is from a table in the City of Lewiston Comprehensive Plan showing total zoning acreage.
3. LOID approximate service area of 3,845 acres is per LOID, and excludes the LOID administrative property.
4. The City approximate service area of 6,828 acres is the total area within the City limits of 10,673 acres minus the LOID service area of 3,845 acres.
5. The low population density for the City is due to the large amount of commercial property located in the downtown area.

Population density is higher in the LOID service area because of favorable terrain and because most of the commercial and industrial land use is located in the City service area. In addition, the population density continues to increase in the LOID service area.

Population density has been increasing in both the City and LOID service areas due to residential development activity. In the service area of the City, the new multi-lot sub-division developments have been constructed within the past few years, with City Community Development Department staff reporting additional developments in the preliminary planning stages. In the LOID service area, population density has been increasing due to re-platting activities of existing low density residential properties. These properties have existed in sizes of two acres and larger with single residences. Property owners have sought to sub-divide their properties into multiple lots for residential construction, thereby increasing the population contained within the same land area. City Community Development Department staff reports that there has been significant re-platting activity in the LOID service area, averaging approximately one re-plat application per week, or approximately fifty per year.

2.03 Potential Growth Area

The potential growth area represents the area which may potentially develop within the planning period and may be provided with the services normally provided by municipal government. In order to prevent uncontrolled and unregulated development on properties with potential to be annexed into the City, the City exercises some control over zoning and construction standards within an area outside the City boundaries but within the Potential Growth Area.

The Potential Growth Area has been arbitrarily divided into smaller tracts for the purpose of defining potential growth. Exhibit 3 portrays the areas of potential future growth with land areas associated with various sub-areas. Areas shown on Exhibit 3 represent areas with reasonable potential for development. Areas of excessive slope with low potential for development have been excluded. These areas of potential future growth are summarized as follows:

TABLE 2-7
IMPACT AREA DESCRIPTIONS

Area Description		Estimated Developable Area, Acres	Estimated Residential Area, Acres (Est Dev Area X 55% Residential)
Between City Limits and Lindsay Creek Road		984	541
Between Lindsay Creek Road and Lapwai Road, With South Limit at Powers Avenue		4,020	2,211
Between Lapwai Road and the Clearwater River, With West Limit at Lindsey Creek Road and East Limit at Nez Perce Reservation Boundary		2,882	1,585
Between City Limits and Defined Area Along Tammany Creek, With West Limit at the Snake River and East Limit at Extension of 7th Street		787	433
Between City Limits and Defined Area Along Tammany Creek, With West Limit at Extension of 7th Street and East Limit at Extension of 21st Street		1,335	734
Between City Limits and Defined Area Along Tammany Creek, With West Limit at Extension of 21st Street and East Limit at Nez Perce Reservation Boundary		2,767	1,522
Totals		12,775	7,026

Notes: 1. Existing City total zoned area is 10,673 acres, with 55% developed as residential use according to City of Lewiston Comprehensive Plan.

2. For more complete definition of area descriptions, see Exhibit 3.

EXHIBIT 3

AREA OF FUTURE GROWTH MAP

CLARKSTON

POTENTIAL GROWTH BOUNDARY

POTENTIAL GROWTH BOUNDARY

R 6 W
R 5 W

CITY LIMIT

LOWER GRANITE RESERVOIR

CLEARWATER RIVER

MAIN STREET

SNAKE RIVER AVENUE

11TH AVENUE

16TH AVENUE

19TH AVENUE

6TH STREET

14TH STREET

21ST STREET

POTENTIAL GROWTH BOUNDARY

SNAKE RIVER

CITY LIMIT

255 AC.

OLD LAPWAI ROAD

SCHAUB RANCH DEVELOPMENT

1058 AC.

1316 AC.

OLD LAPWAI ROAD

T 36 N
T 35 N

NEZ PERCE INDIAN RESERVATION BOUNDARY

POTENTIAL GROWTH BOUNDARY

LINDSEY CREEK ROAD

GEN. CLUB ROAD

346 AC.

240 AC.

194 AC.

2982 AC.

WARNER AVENUE

WARNER AVENUE

MAIN ROAD

8TH ST

10TH ST

Bryden Canyon Golf Course

BURRELL AVENUE

BURRELL AVENUE

LOID BOUNDARY

POWERS AVENUE

POTENTIAL GROWTH BOUNDARY

260 AC.

CITY LIMIT

92 AC.

347 AC.

2091 AC.

LOID BOUNDARY

TAMMANY CREEK ROAD

TAMMANY CREEK ROAD

412 AC.

923 AC.

88 AC.

676 AC.

R 6 W
R 5 W

5 W
4 W

POTENTIAL GROWTH BOUNDARY

POTENTIAL GROWTH BOUNDARY

GRAPHIC SCALE

4000 0 2000 4000 8000 16000

(IN FEET)
1 inch = 4000ft.

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LEWISTON, IDAHO

DRAWN BY: WEE, SJN	CHECKED BY: SSS
DESIGNED BY: SSS	
SCALE: 1" = 4000'	
DATE: 4/17/95	
PROJECT NO.: 1010T	
SHEET 1 OF 1	

2.04 Population Projections

2.04.01 Factors Influencing Population Projections

Projection of population over an extended future period with certainty is not possible. The best estimates of population growth are influenced by a large number of factors such as changes in governmental policy, economic conditions, technologic advancements, natural occurrences, and weather conditions.

Limited future period projections of population may be made with somewhat more reliability because information known today which affects the opportunity for increased or decreased population normally requires some time to come to fruition. Information of this type may be information regarding local economic conditions, such as labor statistics, income data, and housing demand; and information regarding current plans for development.

According to the Lewiston Chamber of Commerce, local economic conditions are good, with low unemployment and rising individual and family income. According to the Lewiston Board of Realtors, demand for housing is high, with low vacancy rates in rental units and short periods for resale of existing housing. Additionally, residential construction continues toward build-out in a number of existing newer residential sub-divisions.

Discussions with the Community Development Department regarding several new developments proposed within the City have been initiated by developers. Additional development with new residential units within the existing City boundaries would increase density. Development has been proposed as follows:

TABLE 2-8
KNOWN DEVELOPMENT ACTIVITY

Development	Residential Units	Estimated Potential Additional Population
Echo Hills Development	Approximately 50-60 as Low Density	55 X 3 = 165
Howard Development	Approximately 400 as Low Density	400 X 3 = 1200
McCann Development	Approximately 400 as Low Density Approximately 800 as High Density	400 X 3 = 1,200 800 X 2 = 1,600 Total = 2,800
Village Green Development	Approximately 200 as Low Density Approximately 150 as High Density	200 X 3 = 600 150 X 2 = 300 Total = 900
Modie Randall Development	Approximately 60-80 as High Density	75 X 2 = 150
Sunset Palisades	Approximately 400 as High Density	400 X 2 = 800
TOTALS	2,060 - 2,090	6,015

Note: Populations associated with known development activity have been estimated by Wyatt Engineers, Inc. based on 3 persons per residential unit for low density (single family detached housing with 3 persons per unit) and 2 persons per unit for high density (multi-family housing with 2 persons per unit)..

In addition to the above planned sub-divisions, the City of Lewiston Community Development Department has reported that development activity in the Orchards area has been steady as a result of a strong demand for housing and a streamlined re-platting process. The streamlined re-platting process allows property owners in the Orchards area to sub-divide property with the following requirements:

1. The sub-divided property must contain fewer than 10 lots, with lot sizes equal to or larger than that required for the zoning classification in the area
2. The use of the sub-divided property must be in conformance with the zoning classification for the area

3. No more than one lot in a grouping of four lots may be accessed by a long narrow strip of property provided for the purpose of access and utility service
4. Access to water, sewer, and other utilities must be readily accessible along the original property frontage
5. Topography and storm drainage must be addressed

According to the Community Development Department, an average of one re-plat per week in the Orchards area has been experienced over the past year using the streamlined re-platting process initiated by the City. This has been a principal contributor to the population increase of approximately 3,500 over the past four years within the City of Lewiston, and also has the effect of increasing population density.

Based on the re-plat activity experienced recently and the remaining numbers of properties which are available for re-plat, the following numbers of additional residential lots are potentially available in the Orchards area:

TABLE 2-9
POTENTIAL ADDITIONAL RESIDENTIAL DEVELOPMENT
IN THE LOID SERVICE AREA

Tract Description	Number of Tracts	Calculated Area of Tracts, Acres	Percentage of Area Available for Replatting	Calculated Area Available For Re-Plat	Number of Potential R-1 Zoning Lots	Potential Population Associated With Re-Platting
Larger Than 5.00 Acres	39	195	100	195	390	1,170
1.01 to 5.00 Acres	674	674	25	168	336	1,008
0.51 to 1.00 Acres	1,184	592	20	118	236	708
Less Than 0.51 Acres	4,024	2,012	0	0	0	0
Total	5,921	3,473		650	1,300	2,886

2.04.02. Short Term Population Projections

It is anticipated that the new known development, the potential of which is shown on Table 2-8 and the continued development in the LOID service area, the potential of which is shown on Table 2-9 would require some years for planning, engineering, and construction. For the purposes of this study, the following factors have been applied:

1. A period of 20 years has been allotted for planning, engineering, and construction of new developments, and for complete densification in LOID service area due to re-platting
2. Additional population of 6,020 has been projected due to known development activity shown in Table 2-8
3. Additional population of 2,886 has been projected due to re-platting activity in the LOID service area shown in Table 2-9

TABLE 2-10
SHORT TERM POPULATION PROJECTIONS

Year	Potential Population Increase - Planned Sub-divisions, Person/5 Year Increment	Potential Population Increase - LOID Area Re-Platting, Persons/5 Year Increment	Projected Population
1995			31500
2000	1505	722	33727
2005	1505	722	35954
2010	1505	722	38181
2015	1505	722	40408
Totals	5220	2888	

Notes: 1. Potential population increase due to planned sub-divisions is from Table 2-8.
2. Potential population increase due to re-platting in LOID area is from Table 2-9.

The population increases projected above, based on estimated 1995 population of 31,500 persons and existing or known development conditions and factors listed above, provide a growth rate of 1.25% per year, which is higher than any of the historical growth rates for Nez Perce County, the City of Lewiston, or the Lewiston Orchards Irrigation District since 1970.

As a comparison, the following short term projected populations were made using annual growth rates as shown:

TABLE 2-11
SHORT TERM POPULATION PROJECTIONS
USING VARIOUS GROWTH RATES

Year	Projected Population	Projected Population	Projected Population
	0.5% Per Yr Growth	1.0% Per Yr Growth	1.5% Per Yr Growth
1995	31500	31500	31500
2000	32295	33107	33934
2005	33111	34796	36557
2010	33947	36571	39382
2015	34804	38436	42426

2.04.03 Long Term Population Projections

Long term population projections are based on the development of the areas outside of the city boundaries of the City of Lewiston but within the Potential Growth Area Boundary Line. For the purposes of this study, the long term projections are based on the following:

1. Use of the same proportions of residential development as exists now within the City of Lewiston
2. Application of the current residential density of 5.4 persons per acre
3. Use of current residential property development of 55% of the estimated developable area, or 7,026 acres per Table 2-6
4. Use of estimated developable area of 12,775 acres in the area outside of the City limits but within the Potential Growth Area boundary from Table 2-7

Using the above listed criteria, the total population inside the Potential Growth Area would be as follows:

TABLE 2-12
POTENTIAL POPULATION
ASSOCIATED WITH POTENTIAL GROWTH AREA

Area Description	Total Residential Area, Acres	Residential Density, Persons/Acre	Total Population, Persons
Existing Residential	5832	5.4	31,500
Outside City Limits and Within Potential Growth Boundary	7,026	5.4	37,940
Total	11,102		69,440

Notes:
1. Total existing residential area is from Table 2-5
2. Total residential area outside City Limits and within potential growth area is from Table 2-7
3. Residential density is from Section 2.02
4. Total population is determined by multiplying total residential area times residential density

Using a period of 50 years to attain the total population in the City and LOID service areas and Potential Growth Area, and using the short term population projections, the long term population projection would be as follows:

TABLE 2-13
LONG TERM POPULATION PROJECTIONS

(Used as the Basis In the Remainder of the Report)

Year	Population Increase, Persons/Year	Projected Population	Growth Rate, % Per Year
1995		31500	
2000	2,227	33,727	1.38
2005	2,227	35,954	1.29
2010	2,227	38,181	1.21
2015	2,227	40,408	1.14
2020	6,323	46,731	2.95
2025	6,323	53,054	2.57
2030	6,323	59,377	2.28
2035	6,323	65,700	2.04
2040	6,323	72,023	1.85
2045	6,323	78,346	1.70

Notes: 1. Projected average growth rate from 1995 to 2045 is 1.70% per year
2. Growth rates are calculated from the following:
Growth Rate, %/Yr = {[Current Year Population/Previous Year Population)exp(1/(Current Year - Previous Year)]-1} X 100

Population projections based on average growth rates of 0.5% per year, 1.0% per year, 1.5%, and 2.0% per year are presented in Table 2-14 as a comparison:

TABLE 2-14
POPULATION PROJECTIONS
USING VARIOUS RATES OF GROWTH

Year	Projected Population	Projected Population	Projected Population	Projected Population
	0.5%/Year Growth	1.0%/Year Growth	1.5%/Year Growth	2.0%/Year Growth
1995	31,500	31,500	31,500	31,500
2000	32,295	33,107	33,934	34,779
2005	33,111	34,796	36,557	38,398
2010	33,947	36,571	39,382	42,395
2015	34,804	38,436	42,426	46,807
2020	35,683	40,397	45,705	51,058
2025	36,584	42,457	49,237	57,058
2030	37,508	44,623	53,042	62,997
2035	38,455	46,899	57,142	69,553
2040	39,426	49,292	61,558	76,792
2045	40,421	51,806	66,315	84,785

For the purposes of projections of future water use, the population projections contained in Table 2-13 will be used in the remainder of this report.

The population projections shown in Tables 2-13 and 2-14 are presented in graphical form in Exhibits 4 and 5.

EXHIBIT 4

POPULATION PROJECTIONS FOR CITY & LOID

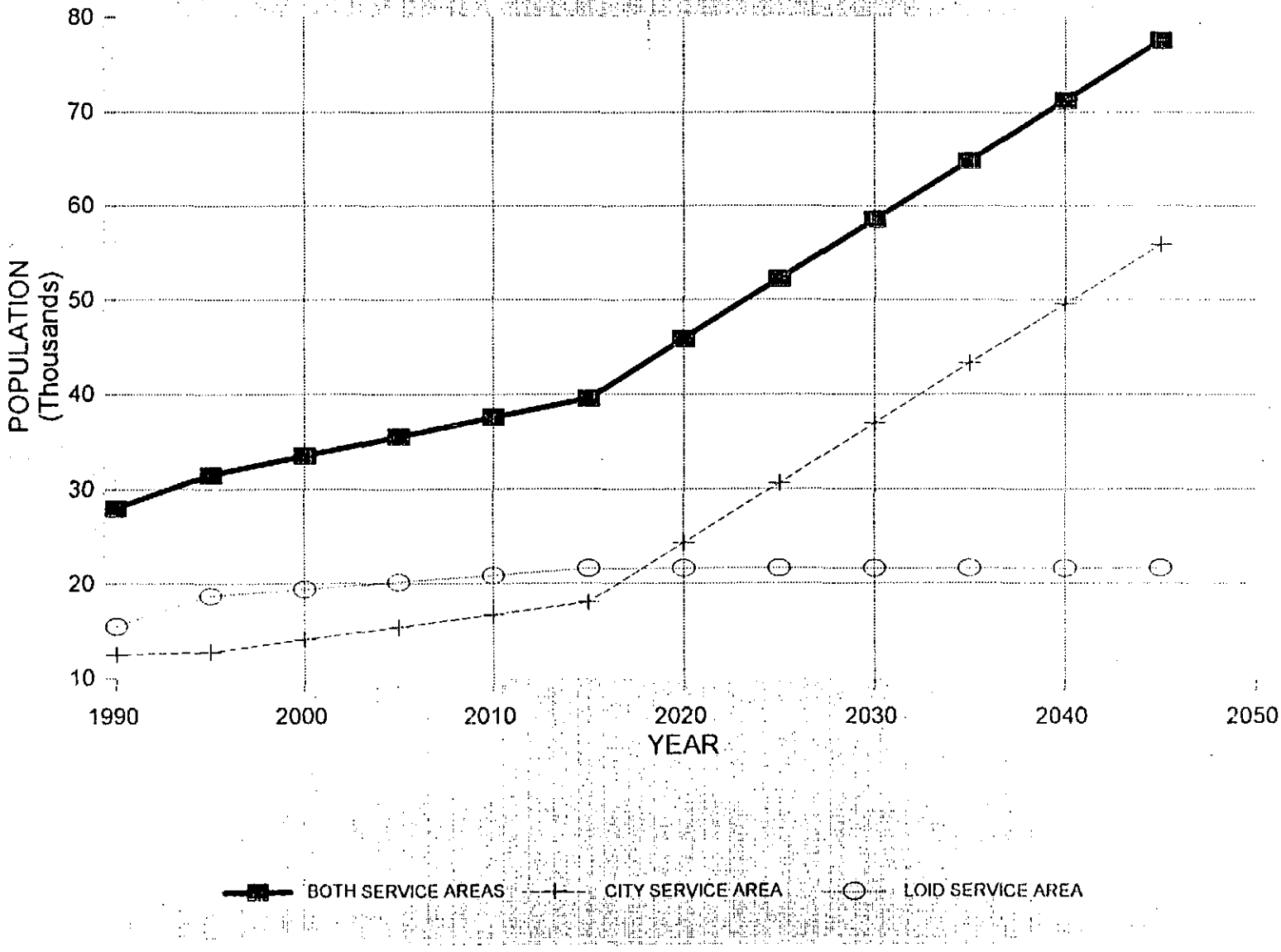
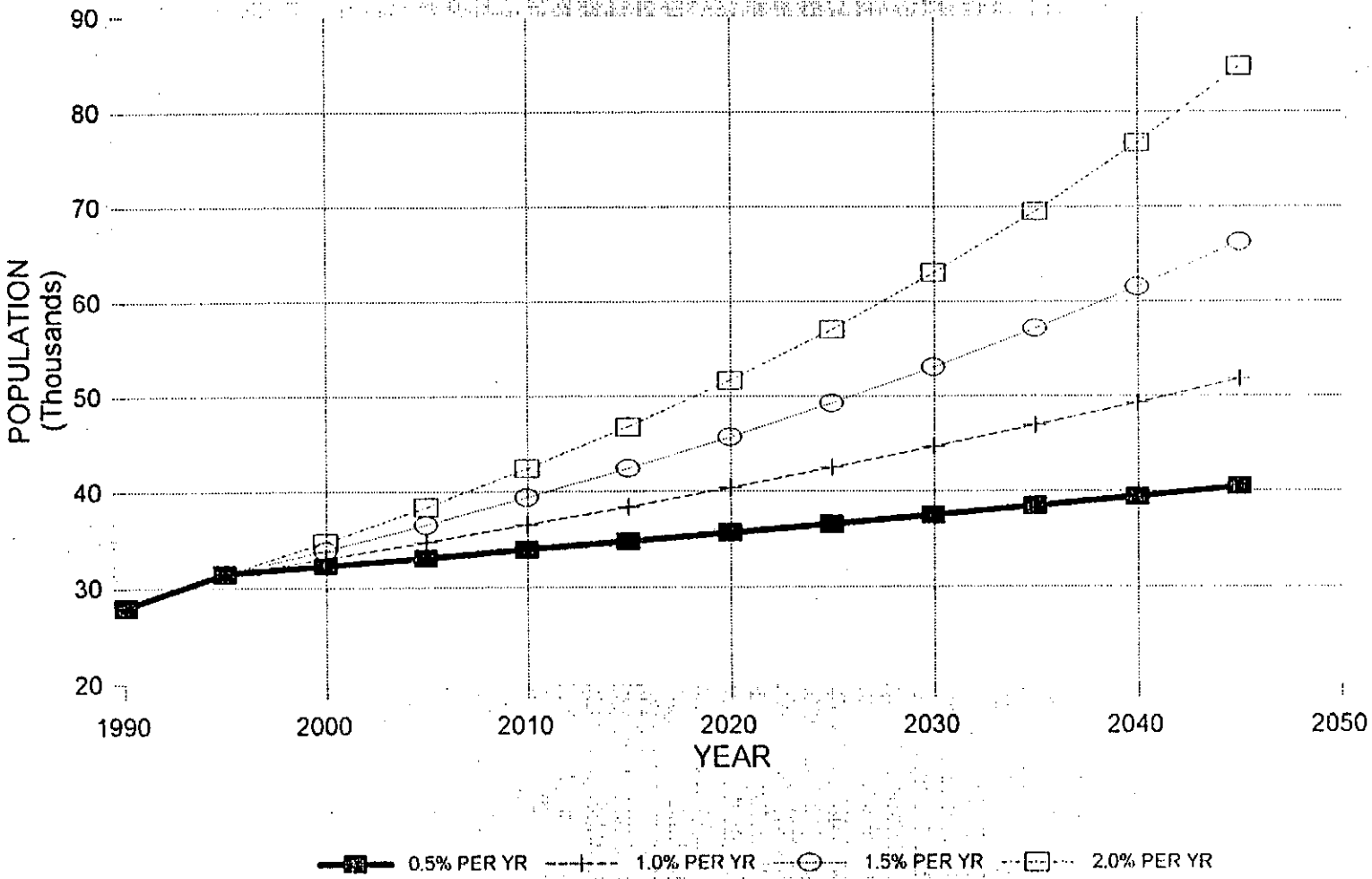


EXHIBIT 5

POPULATION PROJECTIONS USING VARIOUS GROWTH RATES



3.00 WATER USE

3.01 Historical Water Use Descriptions

Water has been historically used in the Lewiston-Clarkston Valley area for a number of uses, some of which are listed as follows:

1. Drinking water
2. Irrigation water
3. Industrial uses, such as cooling water, water used in a manufacturing process
4. Travel
5. Commerce - shipping, fish harvest
6. Recreation

To some extent, all of the above listed uses are still being utilized today. However, the largest uses now are drinking water, irrigation water, industrial uses, commerce, and recreation.

3.02 Other Water Suppliers

The City of Lewiston and the Lewiston Orchards Irrigation District provide the bulk of the water to users in the Lewiston area. Other entities which provide water for themselves or others include the following:

1. Red Rock Water District, located north of the Clearwater River near the City limits of the City of Lewiston, provides water from a spring and water purchased from the City of Lewiston to City and County residents and businesses in the area of State Highway 12. Water use has been provided by the District and recent use is included in the Appendix.

2. Potlatch Corporation, located in northeast Lewiston on the south bank of the Clearwater River, provides water for its own industrial use and for consumption and sanitary purposes from a well located on the plant site. Water use data is not available.

3. Blount Industries, located on Snake River Avenue in the City of Lewiston, provides water from a well for its own uses. Water use data is not available.

4. Twin City Foods, Inc., located in downtown Lewiston on the south bank of the Clearwater River provides water for its own use from a well located at the plant site. Water use data is not available.

5. Atlas Sand and Gravel, located along the Snake River in southwest Lewiston, provides water for its own use from the Snake River via an intake and pump and from a well. Water use data is not available.

6. Hatwai Irrigation District, located on the slope of the north bank of the Clearwater River provides water for fire protection purposes only, using a small piping network, four fire hydrants, and pump or pumps which pump directly from the Clearwater River. Since water is used for fire protection only, water use data is not available.

3.03 Historical Water Use

Water produced by the City of Lewiston is from two sources:

1. Surface water from the Clearwater River
2. Groundwater from wells.

Surface water is pumped from an intake and pump station located on the north bank of the Clearwater River to a surface water treatment plant, treated by the plant to remove turbidity and provide disinfection, and pumped into the City's distribution system which provides water to users for all uses, including domestic use and irrigation.

Three of the five wells owned by the City of Lewiston are also used to produce water. Wells 3, 4, and 5 are currently used. Well 1A is used in a stand-by mode to provide water for fire protection in the downtown area and Well 2 is currently being renovated to provide irrigation water for a City park.

Water produced by the Lewiston Orchards Irrigation District is also from two sources:

1. Surface water from snow melt from the Craig Mountain area
2. Groundwater from one of two wells, both of which are currently used

Snow melt from the Craig Mountain area is collected in the natural creeks on Craig Mountain, and in two reservoirs, Soldiers Meadow and Waha Lake. Water is transported via canals and piping to a central storage reservoir, Mann Lake. From Mann Lake, water for irrigation purposes is distributed in a distribution pipeline system to users.

The two groundwater wells produce drinking water quality water for domestic and commercial uses in a separate distribution system to users.

Water volumes produced by the City of Lewiston and the Lewiston Orchards Irrigation District for the past ten year period is shown in Tables 3-1 and 3-2:

TABLE 3-1
CITY OF LEWISTON
WATER PRODUCTION VOLUMES

Year	Groundwater Production, MGD (Note 4)	Surface Water Production, MGD	Total Water Production, MGD
1985	0.092	3.501	3.593
1986	0.127	3.648	3.775
1987	0.119	3.638	3.757
1988	0.066	3.721	3.787
1989	0.106	3.354	3.460
1990	0.119	3.710	3.829
1991	0.082	3.977	4.059
1992	0.140	4.081	4.221
1993	0.075	3.613	3.688
1994	0.087	4.341	4.428

Notes: 1. Water production data is from the City of Lewiston Water Utilities Department.
2. Values shown represent the average daily water use for the year shown from groundwater and surface water production sources and total water production.
3. Average daily water use = annual water use in millions of gallons / 365 days.
4. Well 5 was the only groundwater source used by the City from 1984 to 1994.

Exhibit 6 provides the historical water use of the City of Lewiston for the ten year period from 1985 through 1994.

EXHIBIT 6
HISTORICAL WATER USE
OF THE CITY OF LEWISTON

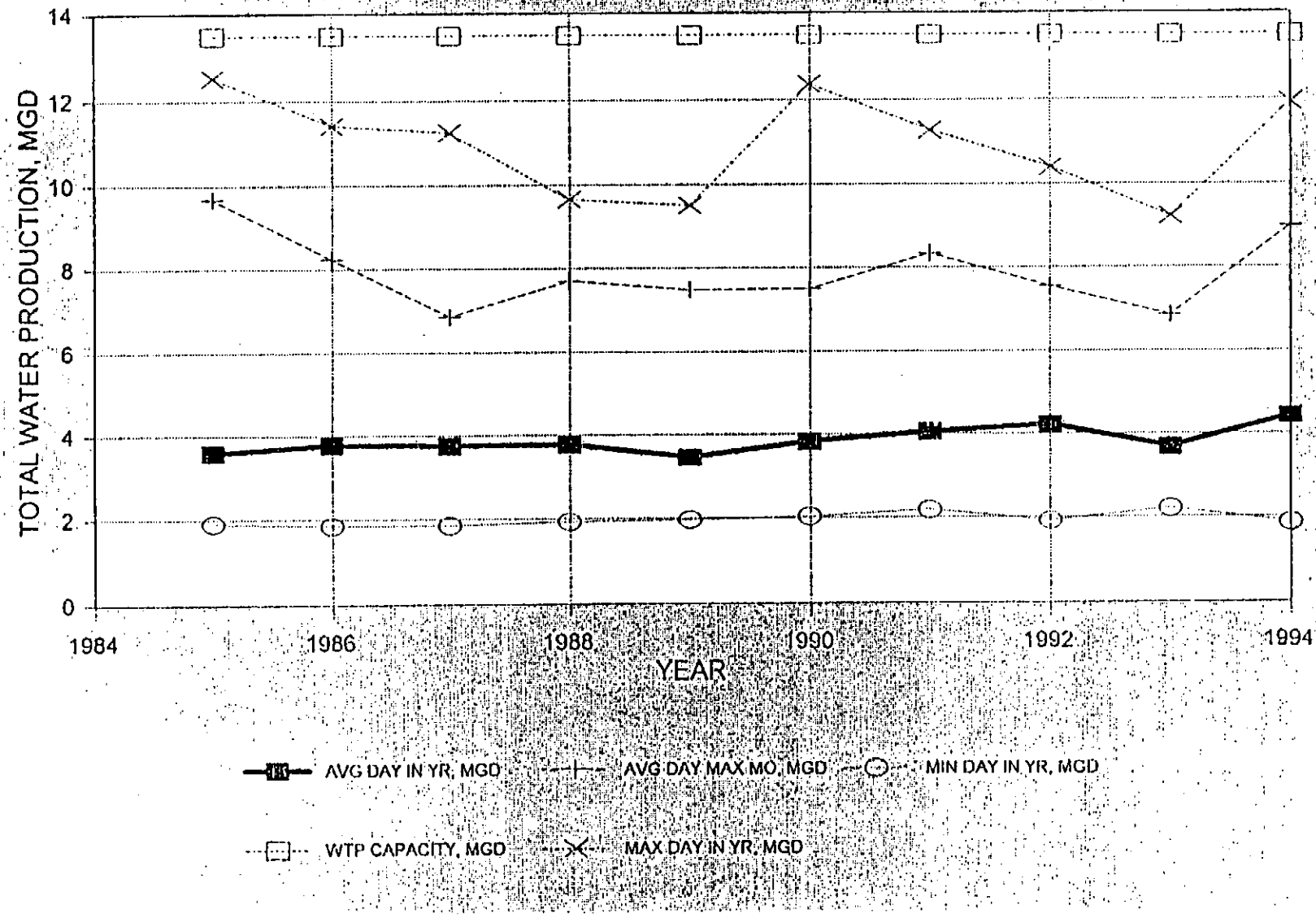


TABLE 3-2
LEWISTON ORCHARDS IRRIGATION DISTRICT
WATER PRODUCTION VOLUMES

Year	Groundwater Production, MGD	Surface Water Production, MGD	Total Water Production, MGD
1984	1.303	4.053	5.356
1985	1.310	4.414	5.724
1986	1.320	5.346	6.666
1987	1.308	5.289	6.596
1988	1.344	4.354	5.698
1989	1.425	4.546	5.971
1990	1.441	6.566	8.007
1991	1.487	4.653	6.139
1992	1.467	2.925	4.392
1993	1.468	4.180	5.648
1994	1.569	5.099	6.668

Notes:
1. Water production data is from the Lewiston Orchards Irrigation District
2. Values shown represent the average daily water use for the year shown from groundwater and surface water production sources and total water production
3. Average daily water use = annual water use in millions of gallons / 365 days
4. LOID groundwater use is for domestic and commercial uses only.
5. LOID surface water use is for irrigation use only since 1980, when use of the water treatment plant, which treated surface water for domestic and commercial use, was discontinued.

Historical water use of the Lewiston Orchards Irrigation District is shown in Exhibit 7.

Water use data was obtained for the census years 1980 and 1990 in order to determine average per person water use. This data is presented in Table 3-3:

EXHIBIT 7

HISTORICAL WATER USE OF THE LOID

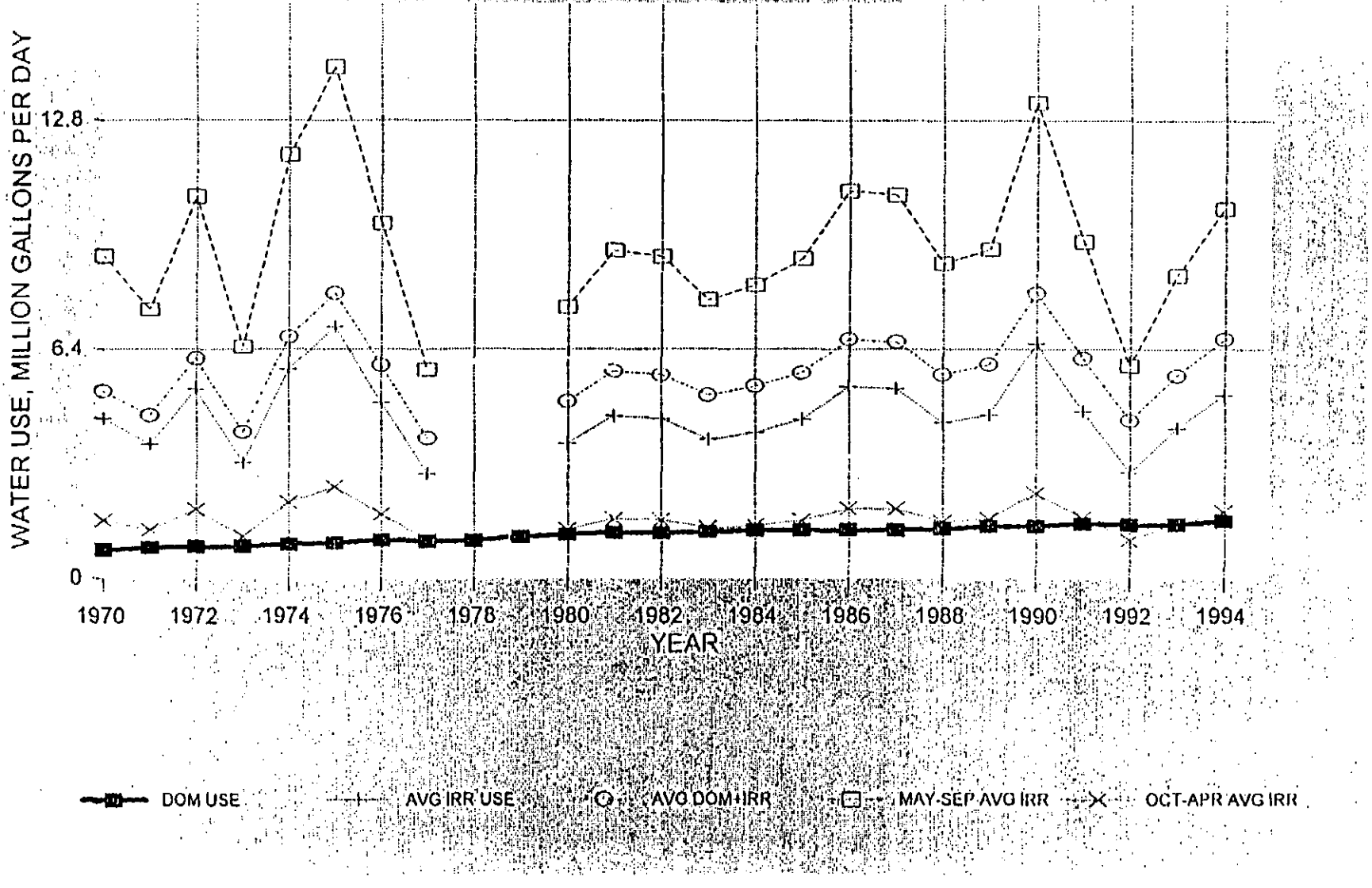


TABLE 3-3
HISTORICAL WATER USE
CENSUS YEARS 1980 AND 1990

Annual Basis

Year	Service Area Population		Average Water Use, MGD[1]		Average Water Use, GPCPD[1]	
	City	LOID	City[2]	LOID	City	LOID
1980	14,128	13,858	3.247	4.932	230	356
1990	12,515	15,500	3.829	8.007	305	517

October-April (Non-Irrigation Months) Basis

Year	Service Area Population		Average Water Use, MGD[1]		Average Water Use, GPCPD[1]	
	City	LOID	City[2]	LOID	City	LOID
1980	14,128	13,858	2.132	2.525	151	182
1990	12,515	15,500	2.524	3.791	202	245

May-September (Irrigation Months) Basis

Year	Service Area Population		Average Water Use, MGD[1]		Average Water Use, GPCPD[1]	
	City	LOID	City[2]	LOID	City	LOID
1980	14,128	13,858	4.769	8.784	338	634
1990	12,515	15,500	5.657	14.755	452	951

Notes:
1. Total of domestic and irrigation water use by each person, in gallons per capita (person) per day
2. Total of WTP and Well 5 Production (1980 Well 5 average = 0.141 MGD)
3. Annual Basis shows the average daily water use, in millions of gallons per day, for each day of the year. Average daily water use = total water use for the year shown / 365 days
4. October-April (Non-Irrigation Months) Basis shows the average daily water use, in millions of gallons per day, for each day of the months of October through April. Average daily water use = total water use for the period of October through April for the year shown / 212 days

5. May-September (Irrigation Months) Basis shows the average daily water use, in millions of gallons per day, for each day of the months of May through September. Average daily water use = total water use for the period of May through September for the year shown / 153 days

As can be seen from the data in Tables 3-1 through 3-3, water use in the LOID service area is higher than that in the City service area. The following factors have been identified as possible contributing factors to higher water use in the LOID versus the City:

1. Irrigation water use in the LOID service area is not metered and is not purchased on a usage basis
2. Irrigation water cost is low
3. Livestock water use is higher in the LOID service area
4. Irrigation water use in the City service area is accomplished with treated surface water through a metered water service
5. Irrigation water use in the City service area is purchased on a usage basis
6. There is a higher degree of agricultural land use in the LOID service area requiring greater volumes of water for irrigation purposes

3.04 Historical Domestic Water Use

Domestic water is produced in the two service areas as follows:

1. City Service Area: From treated surface water pumped through a single pipeline system
2. LOID Service Area: From ground water produced from wells and pumped through a domestic water system separate from the irrigation system

Because the LOID system produces and distributes domestic water separately, determining the average volume of water used per person is more easily accomplished. The following Table 3-4 shows domestic water use in the LOID service area in Census years 1970, 1980, and 1990:

TABLE 3-4
HISTORICAL DOMESTIC WATER USE
IN THE LOID SERVICE AREA

Year	Population	Average Water Use, MGD	Average Water Use, Gal/Person/Day
1970	13,843	0.767	55
1980	13,858	1.120	85
1990	15,500	1.441	93

Notes: 1. Populations are from Table 2-3
2. Average Water Use is from data provided by LOID

Typical water volumes for domestic uses can be verified by other methods. In this case, a review of wastewater flows generated and conveyed to the Lewiston Wastewater Treatment Plant was accomplished. The Lewiston Orchards Sewer District (LOSD) and the Central Orchards Sewer District (COSD) were formed to provide sanitary service to the residents of the Lewiston Orchards area. Both entities collect wastewater from wastewater generators and convey the wastewater for treatment and disposal. The City of Lewiston provides wastewater treatment service for LOSD and COSD and meters the wastewater conveyed for treatment in order to determine the fee for treatment and disposal. Using the records of the City Wastewater Treatment Plant, the domestic water use of the LOID was verified using wastewater records. The analysis of wastewater generation versus domestic water production for the LOID service area is provided in Table 3-5:

TABLE 3-5
HISTORICAL DOMESTIC WASTEWATER GENERATION
IN THE LOID SERVICE AREA

Year	Approximate Population	Average Wastewater Generation, MGD	Average Wastewater Generation, Gal/Person/Day	Average Water Use, Gal/Person/Day
1991-92	16,271	1.22	75	
1992-93	16,657	1.41	85	
1993-94	17,042	1.18	69	
Avg	16,657	1.27	76	93[1]

Notes: 1. Approximate populations are interpolations from historical data and estimates of 1995 population by City Community Development Department
2. Average wastewater generation, in million gallons per day, is from City Wastewater Treatment Plant
3. Average wastewater generation, in gallons per person per day, is calculated as follows: Average wastewater generation, MGD, X 1000000 / approximate population
4. Average water use, in gallons per person per day is from Table 3-4

The average wastewater contribution of 76 gallons per person per day compares favorably with the average water per person domestic water use of 93 gallons per person per day.

3.05 Non-Domestic Water Uses

By using the average domestic water use per person of 93 gallons per person per day applied to the City service area population, domestic and non-domestic uses were developed for the City service area as shown in Table 3-6:

TABLE 3-6
CALCULATED NON-DOMESTIC WATER USES
IN THE CITY SERVICE AREA

Annual Basis

Year	Population	Average Domestic Water Use, MGD	Average Domestic Water Use, GPCPD	Average Non-Domestic Water Use, MGD	Average Non-Domestic Water Use, GPCPD	Total Water Use, MGD	Total Water Use, GPCPD
1970	12,225	0.672	55				
1980	14,128	1.201	85	2.046	145	3.247	230
1990	12,515	1.164	93	2.665	213	3.829	306

Notes:
1. Populations are from Table 2-3
2. Average domestic water use, in gallons per capita (person) per day is from Table 3-5
3. Average domestic water use, in gallons per capita (person) per day, is from Table 3-4, for the LOID service area
4. Average domestic water use, in million gallons per day, is calculated as follows: Population X average domestic water use / 1000000
5. Average non-domestic water use, in million gallons per day, is calculated as follows:
   Total Water Use, MGD - Average Domestic Water Use, MGD
6. Average non-domestic water use, in gallons per capita (person) per day, is calculated as follows:
   Average Non-domestic Water Use, MGD, X 1000000 / Population
7. Annual Basis refers to annual average water use equal to total annual water use in gallons / 365

TABLE 3-7
NON-DOMESTIC WATER USES
IN LOID SERVICE AREA

Annual Basis

Year	Population	Average Domestic Water Use, MGD	Average Domestic Water Use, GPCPD	Average Non-Domestic (Irrig) Water Use, MGD	Average Non-Domestic (Irrig) Water Use, GPCPD	Total Water Use, MGD	Total Water Use, GPCPD
1970	13,843	0.767	55	4.450	321	5.217	377
1980	13,858	1.120	85	3.748	270	4.932	356
1990	15,500	1.441	93	6.566	424	8.007	517

Notes:
1. Populations are from Table 2-3
2. Average domestic water use, in gallons per capita (person) per day is from Table 3-5
3. Average domestic water use, in gallons per capita (person) per day, is from Table 3-4, for the LOID service area
4. Average domestic water use, in million gallons per day, is calculated as follows: Population X average domestic water use / 1000000
5. Average non-domestic water use, in million gallons per day, is calculated as follows:
   Total Water Use, MGD - Average Domestic Water Use, MGD
6. Average non-domestic water use, in gallons per capita (person) per day, is calculated as follows:
   Average Non-domestic Water Use, MGD, X 1000000 / Population
7. Annual Basis refers to annual average water use equal to total annual water use in gallons / 365

The differences between water use in the City versus LOID service areas appears again in the above tables, with non-domestic water use higher in the LOID than in the City. Possible contributing factors for this were presented previously.

Tables 3-6 and 3-7 also show that water use in increasing, not due only to increasing population, but also because the volume of water used by each person is also increasing.

3.06 Projected Water Use Volumes

Future water use projections are necessary in order to develop plans for future water conveyance and treatment facilities and to obtain rights to water in sufficient quantities to provide for population growth and industrial needs.

Future water use projections must take into consideration historical water use trends and known water use trends for the future. Included in these known future water use trends is effect of conservation.

3.06.01 Effect of Conservation on Future Water Use

Because much water today has already been obtained for use by municipalities, agriculture, industry, instream use, and other uses, and because, considering current water use rates, available water is already in decreasing supplies, water conservation is becoming more important and valuable.

Water conservation is accomplished by educating users and the public regarding the need to conserve and its desirable effects, and policy that effects reduced water use. Policies that can have the effect of reduced water use include the following:

1. Reduced pressure water service - reduced pressure has the effect of reducing water use because water flowrate is reduced with the reduced supply pressure. Improvements needed to provide reduced pressure water service consist of the addition of pressure reducing valves on individual water services
2. Reduced water use plumbing fixtures - some plumbing fixtures are already required to reduced water use type due to regulations effect nationwide. The devices which reduce water use are being added by individual water customers at their own expense as new devices are needed. However, this water use reduction process will take place slowly over time as existing devices are replaced and as new devices are placed in new installations.
3. Sale of irrigation water based on volumes used - metering irrigation water use and sale of irrigation water based on the volume of irrigation water used tends to decrease irrigation water use versus the sale of irrigation water based on a fixed cost when the fixed cost is low. When the fixed cost is high or the sale of irrigation water is based on volume of use, potential users of irrigation water must evaluate the use of the water versus the cost and the benefit that the use of the water will provide.
4. Drip irrigation - drip irrigation provides reduced water usage due to the reduction of water waste by evaporation. Drip irrigation systems irrigate plants by the direct application of water to the ground at individual plants or to ground in plant production areas. Drip irrigation systems are generally installed by individual irrigation system owners to replace existing irrigation systems.

Systems which require less irrigation water may be encouraged with different water rates or monetary incentives similar to those used by electric power utilities.

5. Controlled irrigation systems - the use of controlled irrigation systems, such as automatic lawn sprinklers, can provide limited use of irrigation water which more nearly meets the needs of the irrigated vegetation versus uncontrolled irrigation, resulting in reduced water use.
6. Level or increasing water rates versus water use - level or increasing water rates versus water use may constitute a change in current water rate structure. Many water rate structures provide for lower water costs per unit of use as use increases, so that high volume water users pay a lower water rate than low volume water users. Changing the water rate structure to provide for level or increasing water rates versus use creates a strong incentive by large volume water users for water savings, changes in water use to effect conservation, or installation of systems to re-use process water. Changing the water rate structure may or may not be possible depending on the policies of the water provider regarding existing customers and industrial and commercial development promotion relative to the provider's water supply and delivery system situation.

In addition to the above policies, there is the possibility that water conservation goals may be adopted by the federal government and enforced by the use of penalties.

Using the above considerations, future water use projections have been made using the following effects of future conservation:

1. The effect of future conservation would first begin in ten years
2. Domestic water use would not be affected by water conservation measures
3. Commercial and industrial water use would be affected by a reduction in water use beginning in 10 years and increasing gradually over the subsequent 10 year period to a 10% total reduction in water use below what would have been used
4. Irrigation water use would be affected by a reduction in water use beginning in 10 years and increasing gradually over the subsequent 10 year period to a 20% total reduction in water use below what would have been used

3.06.02 Future Water Use Projections Based on Population Projections No Conservation

Projected water use for the City and LOID service areas without implementation of any water conservation measures is presented in Table 3-8.

These projections have been made based on the previously developed population projections and historical water use per person.

TABLE 3-8
PROJECTED FUTURE WATER USE
WITHOUT CONSERVATION

Year	Projected Population	Projected Domestic Water Use, MGD	Projected Com/Ind Water Use, MGD	Projected Irrigation Water Use, MGD	Total Projected Water Use, MGD	Total Projected Water Rights Required, CFS
1995	31,500	3.825	2.205	6.250	12.280	19.00
2000	33,527	4.102	2.347	6.630	13.079	20.24
2005	35,554	4.379	2.489	7.009	13.878	21.47
2010	37,581	4.657	2.631	7.389	14.677	22.71
2015	39,608	4.934	2.773	7.769	15.476	23.95
2020	45,931	5..946	3.215	8.559	17.720	27.42
2025	52,254	6.957	3.658	9.350	19.965	30.89
2030	58,577	7.969	4.100	10.140	22.210	34.37
2035	64,900	8.891	4.543	10.930	24.454	37.84
2040	71,223	9.992	4.896	11.721	26.699	41.31
2045	77,546	11.004	5.428	12.511	28.944	44.79

Notes:
1. Projected populations are from Table 2-13
2. Water use projections shown above are based on per person water use and population growth.
3. Water use projections shown above are based on the following:
   a. Domestic water use: City - 160 GPCPD, including residential irrigation use
      LOID - 95 GPCPD
   b. Commercial/Industrial water use: City and LOID - 70 GPCPD
   c. Irrigation water use: City - 50 GPCPD for other than residential irrigation
      LOID - 300 GPCPD
   d. Future irrigation water use: City - 75 GPCPD for other than residential irrigation
      LOID - 300 GPCPD
4. Projected water uses are determined as follows:
   Projected Population X Per Person Water Use as provided in Note 3 above.
5. Total water use is determined by adding projected domestic, commercial/industrial, and irrigation water use.
6. Water rights requirements shown are based on average daily use over one year.

3.06.03 Future Water Use Projections Based on Population Projections With Conservation

Projected water use for the City and LOID service areas with implementation of water conservation measures is presented in Table 3-9. These projections have been made based on the previously developed population projections, historical water use per person, and water conservation which has been described previously.

TABLE 3-9
PROJECTED FUTURE WATER USE
WITH CONSERVATION

Year	Projected Population	Projected Domestic Water Use, MGD	Projected Com/Ind Water Use, MGD	Projected Irrigation Water Use, MGD	Total Projected Water Use, MGD	Total Projected Water Rights Required, CFS
1995	31500	3.825	2.205	6.25	12.28	19
2000	33,527	4.102	2.347	6.61	13.059	20.21
2005	35,554	4.379	2.489	6.97	13.838	21.41
2010	37,581	4.657	2.492	6.542	13.691	21.18
2015	39,608	4.934	2.495	6.215	13.644	21.11
2020	45,931	5..946	2.894	6.847	15.687	24.27
2025	52,254	6.957	3.292	7.48	17.729	27.43
2030	58,577	7.969	3.69	8.112	19.771	30.59
2035	64,900	8.891	4.089	8.744	21.814	33.75
2040	71,223	9.992	4.487	9.377	23.856	36.91
2045	77546	11.004	4.885	10.009	25.898	40.07

Notes:
1. Projected populations are from Table 2-13
2. Water use projections shown above are based on per person water use and population growth.
3. Water use projections shown above are based on the following:
   a. Domestic water use: City - 160 GPCPD, including residential irrigation use
      LOID - 95 GPCPD
   b. Commercial/ Industrial water use: City and LOID - 63 GPCPD
   c. Irrigation water use: City - 40 GPCPD for other than residential irrigation
      LOID - 240 GPCPD
   d. Future irrigation water use: City - 60 GPCPD for other than residential irrigation
      LOID - 240 GPCPD

4. Commercial and irrigation water use at rates shown in Note 2 would take effect after 10 years and be phased in over the subsequent 10 years. For the first 10 year period, commercial and irrigation water use would be at no conservation per capita uses as shown in previous table.
5. Projected water uses are determined as follows:
   Projected Population X Per Person Water Use as provided in Note 3 above.
6. Total water use is determined by adding projected domestic, commercial/industrial, and irrigation water use.
7. Water rights requirements shown are based on average daily use over one year.

4.00 WATER RIGHTS AND EXISTING WATER PRODUCTION FACILITIES

4.01 Water Rights Owned By City and LOID

In order to provide water for various uses to the customers of the City and LOID service areas, water rights have been obtained and maintained since 1890 for the City and since 1904 for the LOID. Tables 4-1 and 4-2 present the water rights owned by the two water providing entities.

The total water rights and the total usable water rights of the City and LOID are presented in Table 4-3.

TABLE 4-1
WATER RIGHTS OF THE
CITY OF LEWISTON

ID No.	Priority Date	Location	Amount, CFS	Amount, MGD	Status
A86-04034	06-01-1890	Clearwater River Intake	10.7	6.915	Primary Intake
A86-04032	06-01-1951	Pepsi Park (Well 2)	1.0	0.646	Inactive - Power Is Disconnected
A85-02099	08-06-1953	7th Street Between 16th Avenue & 15th Avenue (Well 3)	2.67	1.726	Operational - Used for Cemetery Irrigation
A85-04017	07-01-1960	Near Twin City Foods (Well 1A)	4.0	2.585	In Stand-by Mode (Sand Problems)
A85-04019	07-01-1960	Water Treatment Plant (Well 4)	2.3	1.486	Operational - Production Treated By WTP
A85-02131	09-25-1964	Supplements Well 4 (0.7 cfs), Well 3 (1.2 cfs), Well 1 (1.0 cfs), and Well 2 (1.0 cfs)	3.9	2.520	See status of Wells 1, 2, 3, & 4
A85-07015	01-15-1970	3100 Country Club Drive (Well 5)	0.85	0.549	Operational
A85-07158	06-23-1977	3100 Country Club Drive (Well 5)	1.38	0.892	Operational
A86-07090	09-13-1978	Clearwater River Intake	7.9	5.106	Primary Intake
A86-07342	04-28-1993	Clearwater River Intake	18.6	12.021	Permanent Intake (Secondary)
		Total	53.3	34.446	
		Total for Useful, Active Sources (Excludes Well 1A, Well 1 Supplement, Well 2, and Well 2 Supplement)	46.3	29.922	

TABLE 4-2
WATER RIGHTS
OF THE
LEWISTON ORCHARDS IRRIGATION DISTRICT

WATER RIGHT	PRIORITY DATE	DESCRIPTION	USE PERIOD	QUANTITY		WATER RIGHT	PRIORITY DATE	DESCRIPTION	USE PERIOD	QUANTITY
85-2003	07-14-1904	Sweetwater Canal Diversion		87.8 CFS		85-2146	05-24-1922	Soldiers Meadow Reservoir		
								Irrigation Storage	00-00 to 00-00	2000 AFA
85-4483	06-01-1907	Mann Lake	01-01 to 12-31					Irrigation from Storage	00-00 to 00-00	2000 AFA
		Irrigation Storage	04-15 to 10-01	8000 AFA				Total		2000 AFA
		Irrigation from Storage	01-01 to 12-31	8000 AFA						
		Stockwater Storage	01-01 to 12-31	1000 AFA		85-2063	08-24-1923	Lake Waha		
		Stockwater from Storage	01-01 to 12-31	1500 AFA				Irrigation	00-00 to 00-00	10 CFS
		Industrial Storage	01-01 to 12-31	1500 AFA				Domestic		
		Industrial from Storage	01-01 to 12-31	1500 AFA				Total		10 CFS
		Municipal Storage	01-01 to 12-31	1500 AFA						
		Municipal from Storage	01-01 to 12-31	1500 AFA		85-2065	01-30-1924	Webb Creek Diversion		
		Fire Protection Storage	01-01 to 12-31	1000 AFA				Irrigation	00-00 to 00-00	40 CFS
		Fire Protection from Storage	01-01 to 12-31	1000 AFA				Domestic		
		Total		10500 AFA				Total		40 CFS
85-2049	05-26-1915	Lake Waha				85-2147	12-04-1934	Captain John Creek Diversion		
		Irrigation	00-00 to 00-00	10 CFS				Irrigation Storage	01-01 to 12-31	2000 AFA
		Domestic	00-00 to 00-00					Irrigation from Storage	03-15 to 11-15	2000 AFA
		Total		10 CFS				Domestic Storage	01-01 to 12-31	2000 AFA
								Domestic from Storage	01-01 to 12-31	2000 AFA
85-11087	05-26-1915	West Fork Sweetwater Creek Diversion						Total		2000 AFA
		Irrigation Storage	01-01 to 12-31	20 CFS						
		Irrigation from Storage	03-15 to 11-15	10 CFS		85-7146	04-29-1977	Domestic Well 1	01-01 to 12-31	1.34 CFS
		Domestic Storage	01-01 to 12-31	20 CFS		85-7428	02-28-1985	Domestic Well 2	01-01 to 12-31	2.13 CFS
		Domestic from Storage	01-01 to 12-31	10 CFS						
		Total		20 CFS						

TABLE 4-3
TOTAL AND USABLE WATER RIGHTS
OF THE CITY AND LOID

Owner	Groundwater Right, cfs	Groundwater Right, MGD	Surface Water Right, cfs	Surface Water Rights, MGD	Total Water Rights, MGD
City	16.10	10.40	37.20	24.04	34.44
City Usable, Annual Avg	16.10	10.40	37.20	24.04	34.44
LOID	3.47	2.24	87.80	56.74	58.98
LOID Usable, Annual Avg	3.47	2.24	4.44	2.87	5.11
LOID Usable May-September	3.47	2.24	5.83	3.77	6.01
Total City and LOID	19.57	12.64	125.0	76.91	93.42
Total City and LOID Useable, Annual Avg	5.70	12.64	41.64	26.91	39.55
Total City and LOID Useable, May-September	5.70	12.64	43.03	27.81	40.45

Notes:
1. City of Lewiston ground and surface water rights from Table 4-1.
2. LOID ground and surface water rights are from Table 4-2.
3. LOID usable surface water right is based on annual irrigation use in 1977, the year of lowest use between 1970 and 1994.
4. LOID usable, May-September surface water right is based on May-September irrigation water use in 1992, the year of lowest use between 1970 and 1994.

The above Table 4-3 indicates that water rights held between the City of Lewiston and the Lewiston Orchards Irrigation District for a continuous supply of approximately 39.55 MGD, using the current sources of supply from the Clearwater River, the Craig Mountain surface water supply, and groundwater wells. A large portion of the supply is in jeopardy, however, based on claims on the LOID Craig Mountain water supply by the Nez Perce Indian Nation.

The LOID has filed for, but not yet received approval for rights from the Clearwate River.

4.02 Impact on Existing Water Rights of Ongoing Activities
Snake River Basin Water Rights Adjudication

The process conducted by the State of Idaho to review current and projected water needs relative to water rights owned by various entities in the Snake River Basin, including the Clearwater River sub-basin of the Snake River, is now ongoing. Hearings to be conducted to publicly receive input from interested parties are scheduled for the fall of 1995. Typical interested parties include the following:

1. Water rights owners, such as municipalities, irrigating agri-businesses, industries, etc.
2. Environmental protection groups
3. The States of Oregon and Washington on behalf of water users in the portion of the Snake River and Columbia River systems in those states
4. The United States federal government on behalf of instream water users
5. Indian nations on behalf of out of stream and instream water users
6. Associations representing various groups of interested parties, such as associations of municipalities, associations of businesses, associations of industries, etc
7. The State of Idaho, with various portions of the state government possibly represented on behalf of their regulated community

The adjudication process will seek to determine the actual current water needs and the water needs for the projected future. The projected future water needs will be reviewed relative to reasonableness and probability of occurrence and weighed against the demonstrated projected needs of others. In the event that projected needs exceed availability, reductions of water rights may be made among the owners of water rights.

Although municipalities often are granted some latitude in projecting future water needs, it is important that care be exercised in documenting historical water use and in projecting future water use so that water rights needed for future growth may be protected relative to the needs of other water users during the adjudication process.

After the public input process is completed through the public hearings conducted in various parts of the State, the State of Idaho will review the information provided to it by the various interested parties and make issue of Findings of Fact. The Findings of Fact will set forth the findings of the State of Idaho and will make determinations regarding the appropriate sub-division of the available water among the various existing water rights owners while protecting the common public interest and providing for environmental protection.

The end result of the adjudication process is not possible to predict with certainty.

4.03 Nez Perce Nation Water Rights Claims

As the Snake River Adjudication Process public hearings approach, the claims for water rights of the Nez Perce Nation have recently been made. These claims have been made in the following areas:

1. Water rights to water generated from lands within the Nez Perce Indian Reservation, located in Nez Perce County, Lewis County, Clearwater County, and Idaho County.
2. Water rights to water in the Clearwater and Snake Rivers for instream uses for aquatic life, particularly migrating salmon and other fish traditionally used by the Nez Perce people as a primary food source.

Since the claims for water rights have been made, parties to discussions with the Nez Perce Indian Nation have included the following:

1. The federal government of the United States
2. The State of Idaho
3. Lewiston Orchards Irrigation District

The federal government of the United States has the primary role in making any agreements on behalf of the United States and the Nez Perce Indian Nation through the authority granted to the federal government in the U.S. Constitution. However, the federal government does take into account the interests of the other parties who have vested interests in the outcome of any negotiations, such as LOID.

LOID is involved in the discussions with the Nez Perce Indian Nation because all LOID surface water is obtained from the Craig Mountain area which is almost completely located within the Nez Perce Indian Reservation.

The end result of a successful claim by the Nez Perce Indian Nation for the water rights from the land within the Nez Perce Indian Reservation would be to take control of the Craig Mountain surface water delivery system from the LOID, diverting the water from the use of the customers of the LOID to other uses. Currently, the claims of the Nez Perce Indian Nation include taking control of the following Craig Mountain surface water delivery facilities:

1. Lake Waha
2. Soldiers Meadow Reservoir
3. Webb Creek Canal System
4. Sweetwater Canal System
5. Mann Lake

The above facilities deliver all of the irrigation water used by the customers of the LOID. Loss of these facilities would leave the LOID with only the two existing groundwater wells for a water supply.

The timing of the conclusion of discussions and ultimately negotiations with the Nez Perce Indian Nation regarding the claims for water rights is not known. However, negotiations between the federal government of the United Station and other Indian Nations have taken as long as ten to fifteen years before coming to a conclusion. Such a time frame is not unreasonable to expect in this situation because of the number of difficult problems involved in the overall claims.

The conclusion of discussions and negotiations is not anticipated to be completed prior to the adjudication of water rights in the Snake River basin and Clearwater River sub-basin of the Snake River. It is anticipated that some assumption regarding the Nez Perce claims may be included in allocating water rights to existing owners of rights versus instream uses.

4.04 Existing City of Lewiston Production Facilities

The water production facilities of the City include five existing groundwater wells and a water treatment plant which treats surface water from the Clearwater River. An additional well at the Bryden Canyon Country Club is expected to be operational in the near future and has also included as a production facility. The groundwater wells and water treatment plant have capacities as follows:

Facility	Location	Capacity
Well No. 3	7th St Between 16th Ave and 15th Ave	2.50 MGD
Well No. 4	Water Treatment Plant	1.49 MGD
Well No. 5	3100 Country Club Drive	1.44 MGD
Bryden Canyon	Bryden Canyon Country Club	1.44 MGD Approx
Sub-Total		6.87 MGD
Water Treatment Plant	On South Bank of Clearwater River North Extension of 29th Street	12.00 MGD
Total Water Production Capacity		18.87 MGD

The capacities shown above have been used to determine the timing of the need for future additional facilities.

4.05 Existing LOID Water Production Facilities

The water production facilities of the LOID include two ground water wells and the gravity surface water supply system from Craig Mountain. These facilities have capacities shown as follows:

Facility	Location	Capacity
Well No. 1	Powers Avenue Between 15th and 16th St	1.22 MGD
Well No. 2	At LOID WTP on East Powers Avenue	1.00 MGD
Sub-Total		2.22 MGD
Craig Mountain	Southeast of LOID Service Area in Nez Perce County	20 MGD
Total Water Production Capacity		22.22 MGD

The capacities shown above have been used to determine the timing of the need for future additional water facilities.

It should be noted that both of the LOID groundwater wells are required to provide customer requirements for domestic water. Occasional mechanical problems with well pumping equipment have been experienced. During these occasions, the City has provided an emergency domestic water supply to the LOID through an inter-connection pipeline located along Stewart Avenue, 10th Street, and Warner Avenue. Water is supplied by the City through the City's South High Reservoir and Booster Pump Station. Although the City can supply some of the normal domestic water supply currently during emergency situations, facilities are not available for the City to provide the total domestic water supply to the LOID on an on-going basis. Currently, there is no contractual agreement between the City and the LOID for the City to furnish the LOID with domestic water.

5.00 Potential Sources and Costs of Water Supplies

Alternatives for potential sources of water supplies have been identified to provide an additional water supply for use by the City and LOID and are described in the following paragraphs. Potential sources of water supplies must, in conjunction with the existing sources of supply, provide sufficient volumes and rates of supply of water to meet the water needs of the service areas for a defined planning period.

In previous paragraphs, projections of water requirements have been made for a fifty year planning period. However, uncertainties associated with making long range projections and the cost of providing facilities which would provide the necessary water supplies for a long term planning period make the provision of such facilities unwise. However, using the previously developed long term projections as a basis, supplies which can provide water for shorter planning period should be evaluated.

Another component in the evaluation of a source of water supply is the quality of the water from the supply. Waters from different sources have different characteristics and may require treatment prior to distribution for an intended use.

Alternatives considered as potential sources of additional water supplies for an approximately ten (10) year planning period are described below. Some of these alternatives can provide water to supplement ability of the existing supplies in meeting the current water requirements, while others have the potential for meeting the current and future projected water requirements. The alternatives include the following:

Ten Year Planning Period Alternatives

Alternative 10-1	Maximize use of existing water sources
Alternative 10-2	Improvements to LOID Craig Mountain surface water supply
Alternative 10-3	Expanded use of ground water wells
Alternative 10-4	Utilization of wastewater treatment plant effluent as irrigation water
Alternative 10-5	Utilization of water from the Snake River
Alternative 10-6	Expanded use of water from the Clearwater River

5.01 Pumping and Treatment Facilities Sizing

Water use is not constant but varies over the course of time. Water use is less in winter than in summer. Table 5-1 shows average and maximum day water use for the period from 1985 through 1994.

TABLE 5-1
MAXIMUM DAY AND AVERAGE DAILY WATER USE OF THE CITY AND LOID

Year	City Max Day Use, MGD	City Avg Day Use, MGD	LOID Max Domestic Use, MGD	LOID Avg Domestic Use, MGD	LOID Max Irrigation Use, MGD	LOID Avg Irrigation Use, MGD
1985	12.54	3.593		1.310		4.414
1986	11.422	3.775		1.320		5.346
1987	11.25	3.757		1.308		5.289
1988	9.665	3.787		1.344		4.354
1989	9.51	3.460		1.425		4.546
1990	12.361	3.829		1.441		6.566
1991	11.281	4.059	2.983	1.487	17.81	4.653
1992	10.413	4.221	1.865	1.467	12.54	2.925
1993	9.231	3.688	1.784	1.468	18.62	4.180
1994	11.939	4.428	1.985	1.569	22.13	5.099

Facilities for the conveyance and treatment of water supplies are generally sized to supply water based on the anticipated requirement of the maximum day water use. Based on the above, ratios of maximum day to average daily use from 1991 through 1994 are:

Service Area	Ratio of Max/Avg Range of Values
City of Lewiston	2.47 - 2.78
Lewiston Orchards Irrigation District	
Domestic Water	1.22 - 2.01
Irrigation Water	3.83 - 4.45

Facilities which treat or pump water would be sized on the basis of maximum day water use. Maximum day uses are projected on the basis of projected average daily water use, multiplied times established ratios of maximum day to average daily water uses. Conservative ratios of maximum day to average daily water use of 2.80 for the City, 2.00 for LOID domestic water use, and 4.40 for LOID irrigation water use.

Using the above referenced ratios, projections of required capacities of production, treatment, pumping, and conveyance facilities are provided in the following Tables and Exhibits:

Table 5-2	City of Lewiston Projected Water Use - No Conservation
Exhibit 8	City of Lewiston Projected Water Use - No Conservation
Table 5-3	Lewiston Orchards Irrigation District Projected Water Use - No Conservation
Exhibit 9	Lewiston Orchards Irrigation District Projected Water Use - No Conservation
Table 5-4	City and LOID Projected Water Use - No Conservation
Exhibit 10	City and LOID Projected Water Use - No Conservation
Table 5-5	City of Lewiston Projected Water Use - With Conservation
Exhibit 11	City of Lewiston Projected Water Use - With Conservation
Table 5-6	Lewiston Orchards Irrigation District Projected Water Use - With Conservation
Exhibit 12	Lewiston Orchards Irrigation District Projected Water Use - With Conservation
Table 5-7	City and LOID Projected Water Use - With Conservation
Exhibit 13	City and LOID Projected Water Use - With Conservation

[redacted]

CITY OF LEWISTON AND LEWISTON ORCHARDS IRRIGATION DISTRICT

CITY FUTURE WATER USE PROJECTIONS

NO WATER CONSERVATION

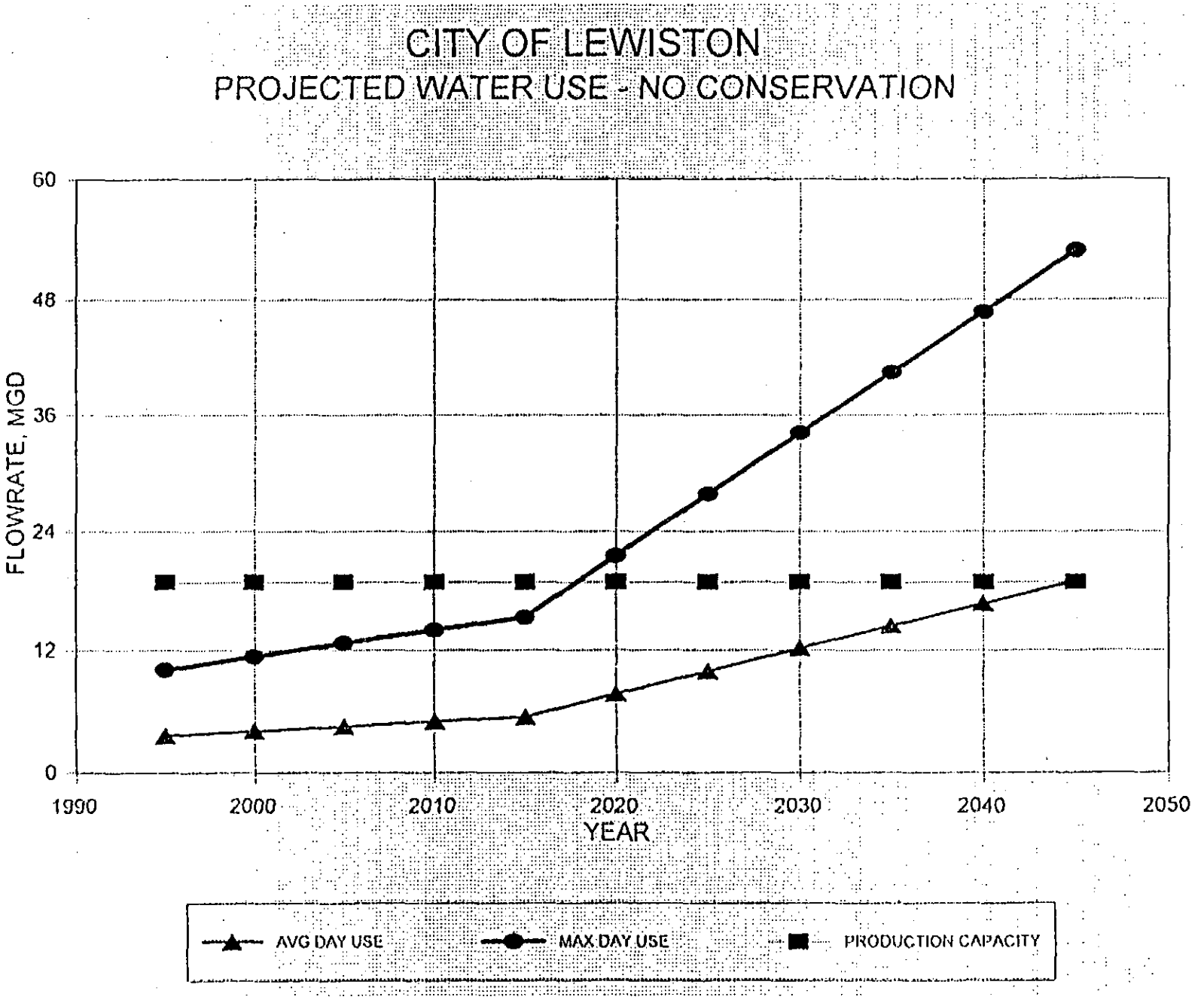
USE CATAGORY

	CITY	LOID
DOMESTIC WATER USE	160 GPCPD	0 GPCPD
COMMERCIAL/INDUSTRIAL USE	70 GPCPD	0 GPCPD
IRRIGATION USE	30 GPCPD	0 GPCPD
IRRI USE, NEW DEVELOP	75 GPCPD	0 GPCPD

INITIAL INDUSTRIAL USE RESERVE	0.000	MGD
INDUSTRIAL USE RESERVE GROWTH/YR	0.000	MGD

YEAR	CITY POP	LOID POP	TOTAL POP	CITY DOM WTR USE MGD	LOID DOM WTR USE MGD	TOTAL DOM WTR USE MGD	CITY COM/ IND WTR USE MGD	LOID COM/ IND WTR USE MGD	TOTAL COM/ IND WTR USE MGD	CITY IRR WTR USE MGD	LOID IRR WTR USE MGD	TOTAL IRR WTR USE MGD	TOTAL CITY WTR USE MGD	TOTAL LOID WTR USE MGD	8TH SPCFC WTR USE MGD	TOTAL WATER USE MGD	TOTAL WATER USE CFS	AVG WTR USE GPCPD
1995	12800	18700	31500	2.048	0.000	2.048	0.896	0.000	0.896	0.640	0.000	0.640	3.584	0.000	0.000	3.584	5.55	114
2000	14103	19412	33527	2.257	0.000	2.257	0.987	0.000	0.987	0.803	0.000	0.803	4.047	0.000	0.000	4.047	6.26	121
2005	15410	20144	35554	2.466	0.000	2.466	1.079	0.000	1.079	0.966	0.000	0.966	4.511	0.000	0.000	4.511	6.98	127
2010	16713	20866	37581	2.674	0.000	2.674	1.170	0.000	1.170	1.129	0.000	1.129	4.974	0.000	0.000	4.974	7.70	132
2015	18020	21589	39608	2.883	0.000	2.883	1.261	0.000	1.261	1.293	0.000	1.293	5.437	0.000	0.000	5.437	8.41	137
2020	24143	21588	45731	3.863	0.000	3.863	1.704	0.000	1.704	2.083	0.000	2.083	7.682	0.000	0.000	7.682	11.89	167
2025	30664	21588	52252	4.907	0.000	4.907	2.167	0.000	2.167	2.873	0.000	2.873	9.926	0.000	0.000	9.926	15.36	190
2030	36989	21588	58577	5.918	0.000	5.918	2.589	0.000	2.589	3.664	0.000	3.664	12.171	0.000	0.000	12.171	18.83	208
2035	43313	21588	64900	6.930	0.000	6.930	3.033	0.000	3.033	4.454	0.000	4.454	14.416	0.000	0.000	14.416	22.31	223
2040	49635	21588	71223	7.942	0.000	7.942	3.474	0.000	3.474	5.244	0.000	5.244	16.660	0.000	0.000	16.660	25.78	234
2045	55958	21588	77546	8.953	0.000	8.953	3.917	0.000	3.917	6.033	0.000	6.033	18.903	0.000	0.000	18.903	29.25	244

YEAR	TOTAL WATER USE	TOTAL WATER USE	CITY WTR RIGHTS	CITY WTR RIGHTS	LOID WTR RIGHTS	LOID WTR RIGHTS	TOTAL WTR RIGHTS	TOTAL WTR RIGHTS	CITY MAX DAY WTR USE	LOID MAX DAY WTR USE	TOTAL MAX DAY WTR USE	CITY SW TRTM + GR WTR PROD CAP	CITY NEW DR CANYON GR WTR WELL	LOID + DR SYSTEM CAP	LOID NEW GR WTR WELLS	TOTAL PROD A GR/DV SYSTEM CAP	NEEDED GR/DV SRFC WTR SYS CAP	NEEDED GR/DV SRFC WTR SYS CAP
	CFS	MGD	CFS	MGD	CFS	MGD	CFS	MGD	MGD	MGD	MGD	MGD	MGD	MGD		MGD	MGD	CFS
1995	5.55	3.584	33.3	34.446	93.81	54.177	127.13	88.623	10.033	0.000	10.033	17.443	1.440	0.000	0.000	18.883	0.000	0.00
2000	6.26	4.047	33.3	34.446	93.81	54.177	127.13	88.623	11.332	0.000	11.332	17.443	1.440	0.000	0.000	18.883	0.000	0.00
2005	6.98	4.511	33.3	34.446	2.47	1.596	35.77	36.043	12.630	0.000	12.630	17.443	1.440	0.000	0.000	18.883	0.000	0.00
2010	7.70	4.974	33.3	34.446	2.47	1.596	35.77	36.043	13.927	0.000	13.927	17.443	1.440	0.000	0.000	18.883	0.000	0.00
2015	8.41	5.437	33.3	34.446	2.47	1.596	35.77	36.043	15.224	0.000	15.224	17.443	1.440	0.000	0.000	18.883	0.000	0.00
2020	11.89	7.682	33.3	34.446	2.47	1.596	35.77	36.043	21.309	0.000	21.309	17.443	1.440	0.000	0.000	18.883	2.426	4.08
2025	15.36	9.926	33.3	34.446	2.47	1.596	35.77	36.043	27.794	0.000	27.794	17.443	1.440	0.000	0.000	18.883	8.911	13.79
2030	18.83	12.171	33.3	34.446	2.47	1.596	35.77	36.043	34.079	0.000	34.079	17.443	1.440	0.000	0.000	18.883	15.196	23.51
2035	22.31	14.416	33.3	34.446	2.47	1.596	35.77	36.043	40.364	0.000	40.364	17.443	1.440	0.000	0.000	18.883	21.481	33.24
2040	25.78	16.660	33.3	34.446	2.47	1.596	35.77	36.043	46.649	0.000	46.649	17.443	1.440	0.000	0.000	18.883	27.766	42.96
2045	29.25	18.903	33.3	34.446	2.47	1.596	35.77	36.043	52.934	0.000	52.934	17.443	1.440	0.000	0.000	18.883	34.051	52.69


CITY OF LEWISTON
PROJECTED WATER USE - NO CONSERVATION
FLOWRATE, MGD
60
48
36
24
12
0
1990
2000
2010
2020
2030
2040
2050
YEAR
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

COORDINATED WATER STUDY

CITY OF LEWISTON AND LEWISTON ORCHARDS IRRIGATION DISTRICT

LOID FUTURE WATER USE PROJECTIONS

NO WATER CONSERVATION

USE CATAGORY

	CITY	LOID
DOMESTIC WATER USE	0 GPCPD	93 GPCPD
COMMERCIAL/INDUSTRIAL USE	0 GPCPD	13 GPCPD
IRRIGATION USE	0 GPCPD	300 GPCPD
IRRI USE, NEW DEVELOP	0 GPCPD	300 GPCPD

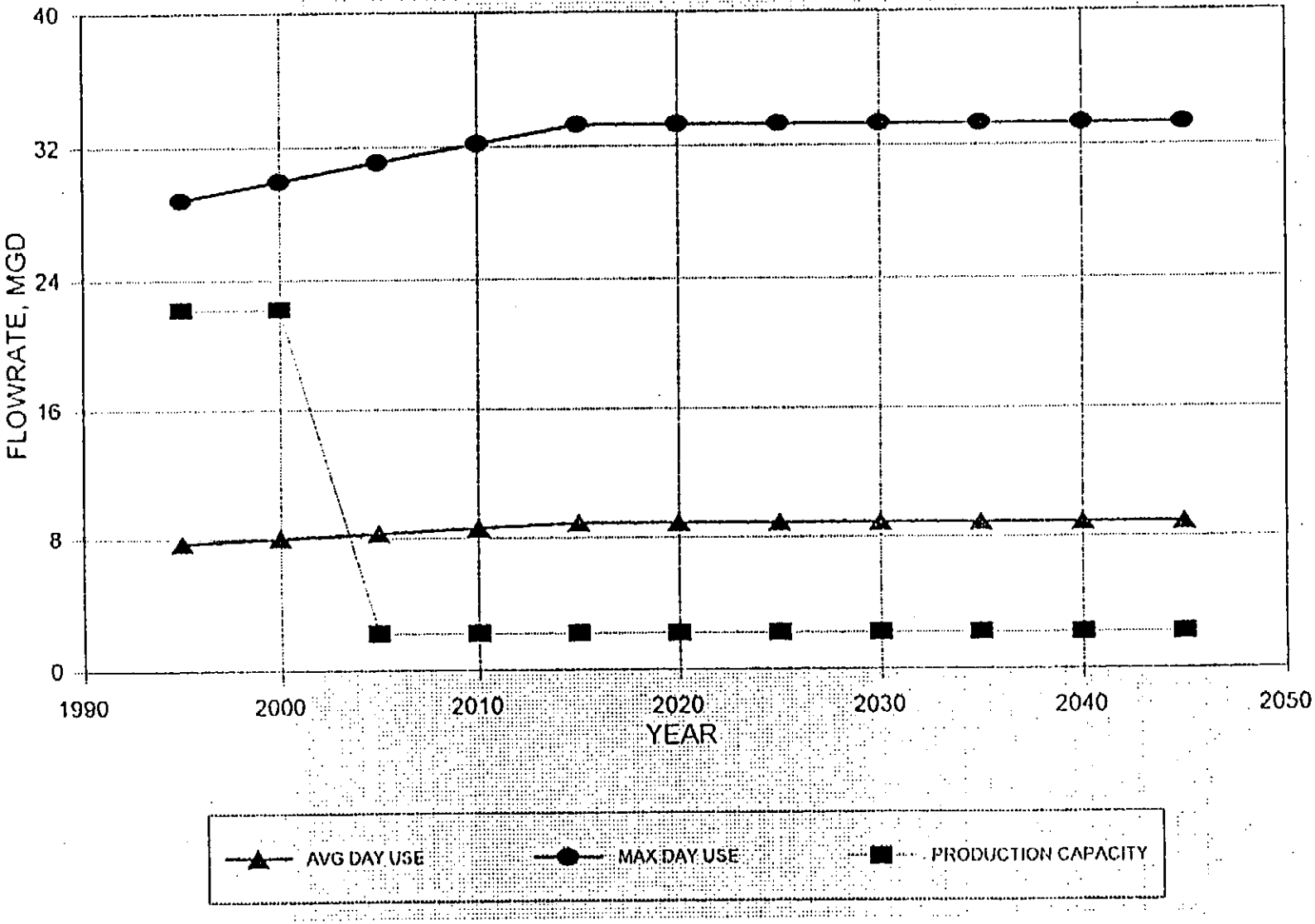
INITIAL INDUSTRIAL USE RESERVE 0.000 MGD

INDUSTRIAL USE RESERVE GROWTH/YR 0.000 MGD

YEAR	CITY POP	LOID POP	TOTAL POP	CITY DOM WTR USE	LOID DOM WTR USE	TOTAL DOM WTR USE	CITY COM/ IND WTR USE	LOID COM/ IND WTR USE	TOTAL COM/ IND WTR USE	CITY IRR WTR USE	LOID IRR WTR USE	TOTAL IRR WTR USE	TOTAL CITY WTR USE	TOTAL LOID WTR USE	SITE SPCFC WTR USE	TOTAL WATER USE	TOTAL WATER USE	AVG WTR USE
				MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	CFS	GPCPD
1995	12800	18700	31500	0.000	1.777	1.777	0.000	0.281	0.281	0.000	5.610	5.610	0.000	7.667	0.000	7.667	11.86	243
2000	14305	19423	33727	0.000	1.845	1.845	0.000	0.291	0.291	0.000	5.817	5.817	0.000	7.963	0.000	7.963	12.32	236
2005	19810	20144	35954	0.000	1.914	1.914	0.000	0.302	0.303	0.000	6.043	6.043	0.000	8.259	0.000	8.259	12.78	230
2010	17515	20866	38181	0.000	1.982	1.982	0.000	0.313	0.313	0.000	6.260	6.260	0.000	8.555	0.000	8.555	13.24	224
2015	18820	21588	40409	0.000	2.051	2.051	0.000	0.324	0.324	0.000	6.476	6.476	0.000	8.851	0.000	8.851	13.70	219
2020	25143	21588	46731	0.000	2.051	2.051	0.000	0.324	0.324	0.000	6.476	6.476	0.000	8.851	0.000	8.851	13.70	189
2025	31466	21588	53054	0.000	2.051	2.051	0.000	0.324	0.324	0.000	6.476	6.476	0.000	8.851	0.000	8.851	13.70	167
2030	37789	21588	59377	0.000	2.051	2.051	0.000	0.324	0.324	0.000	6.476	6.476	0.000	8.851	0.000	8.851	13.70	149
2035	44112	21588	65700	0.000	2.051	2.051	0.000	0.324	0.324	0.000	6.476	6.476	0.000	8.851	0.000	8.851	13.70	135
2040	50435	21588	72023	0.000	2.051	2.051	0.000	0.324	0.324	0.000	6.476	6.476	0.000	8.851	0.000	8.851	13.70	123
2045	56758	21588	78346	0.000	2.051	2.051	0.000	0.324	0.324	0.000	6.476	6.476	0.000	8.851	0.000	8.851	13.70	113

YEAR	TOTAL WATER USE	TOTAL WATER USE	CITY WTR RIGHTS	CITY WTR RIGHTS	LOID WTR RIGHTS	LOID WTR RIGHTS	TOTAL WTR RIGHTS	TOTAL WTR RIGHTS	CITY MAX DAY WTR USE	LOID MAX DAY WTR USE	TOTAL MAX DAY WTR USE	CITY SW TRTM + GR WTR PROD CAP	CITY NEW DR CANYON GR WTR WELL	LOID + IRR SYSTEM CAP	LOID GR WTR WELLS	TOTAL PROD & CONVEY SYSTEM CAP	NEEDED GRNDW SREC WTR SYS CAP	NEEDED GRNDW SREC WTR SYS CAP
	CFS	MGD	CFS	MGD	CFS	MGD	CFS	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	CFS
1995	11.86	7.667	53.3	34.446	85.83	54.177	137.13	88.623	0.000	28.798	28.798	0.000	0.000	22.200	0.000	22.200	6.598	10.21
2000	12.32	7.963	53.3	34.446	61.83	39.977	115.13	74.423	0.000	29.910	29.910	0.000	0.000	22.200	0.000	22.200	7.710	11.93
2005	12.78	8.259	53.3	34.446	2.47	1.596	55.77	36.043	0.000	31.022	31.022	0.000	0.000	2.200	0.000	2.200	28.822	44.60
2010	13.24	8.555	53.3	34.446	2.47	1.596	55.77	36.043	0.000	32.134	32.134	0.000	0.000	2.200	0.000	2.200	29.934	46.32
2015	13.70	8.851	53.3	34.446	2.47	1.596	55.77	36.043	0.000	33.246	33.246	0.000	0.000	2.200	0.000	2.200	31.046	48.04
2020	13.70	8.851	53.3	34.446	2.47	1.596	55.77	36.043	0.000	33.246	33.246	0.000	0.000	2.200	0.000	2.200	31.046	48.04
2025	13.70	8.851	53.3	34.446	2.47	1.596	55.77	36.043	0.000	33.246	33.246	0.000	0.000	2.200	0.000	2.200	31.046	48.04
2030	13.70	8.851	53.3	34.446	2.47	1.596	55.77	36.043	0.000	33.246	33.246	0.000	0.000	2.200	0.000	2.200	31.046	48.04
2035	13.70	8.851	53.3	34.446	2.47	1.596	55.77	36.043	0.000	33.246	33.246	0.000	0.000	2.200	0.000	2.200	31.046	48.04
2040	13.70	8.851	53.3	34.446	2.47	1.596	55.77	36.043	0.000	33.246	33.246	0.000	0.000	2.200	0.000	2.200	31.046	48.04
2045	13.70	8.851	53.3	34.446	2.47	1.596	55.77	36.043	0.000	33.246	33.246	0.000	0.000	2.200	0.000	2.200	31.046	48.04

LEWISTON ORCHARDS IRRIGATION DISTRICT
PROJECTED WATER USE - NO CONSERVATION



COORDINATED WATER STUDY
CITY OF LEWISTON AND LEWISTON ORCHARDS IRRIGATION DISTRICT

COMBINED CITY AND LOID FUTURE WATER USE PROJECTIONS
NO WATER CONSERVATION

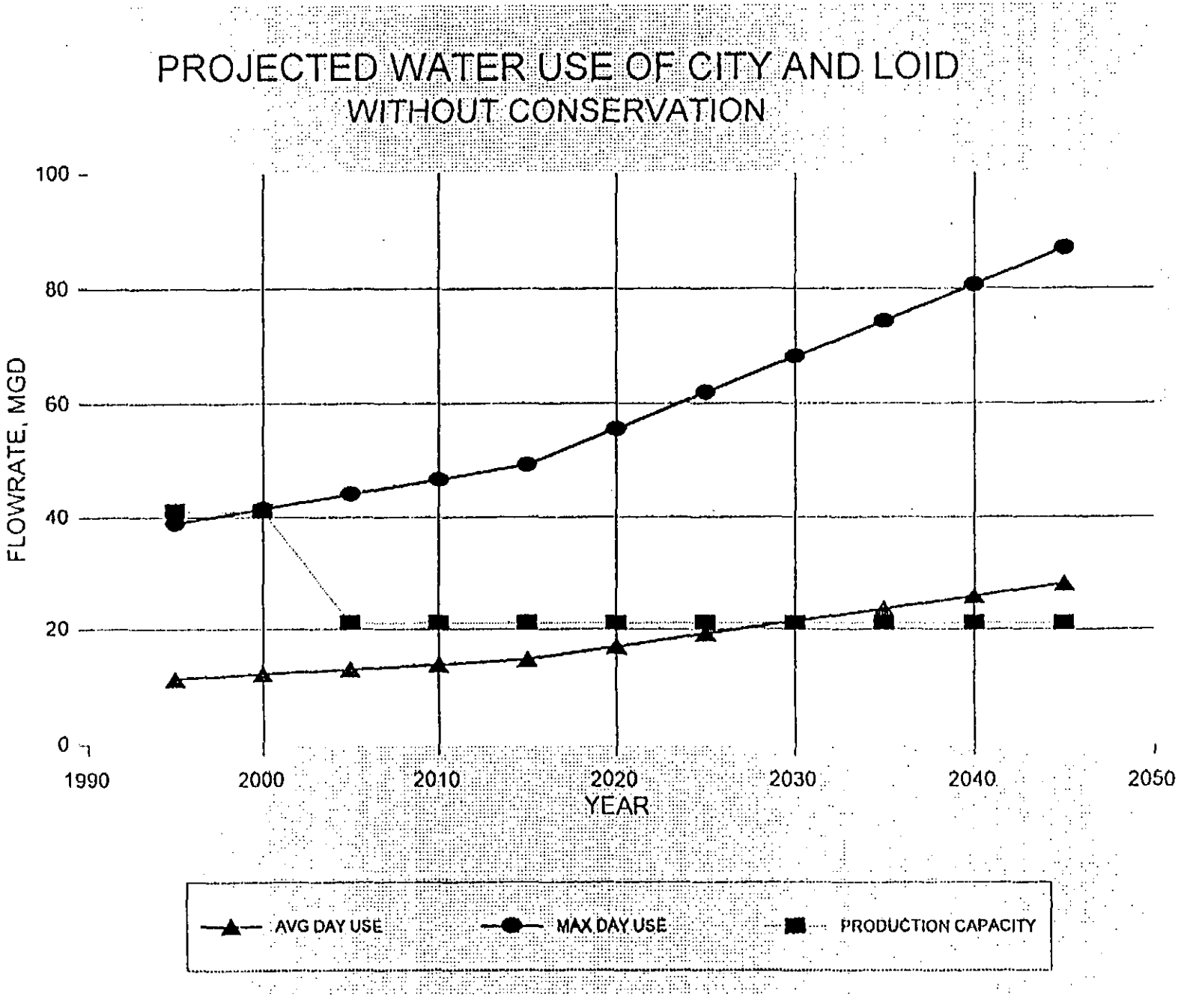
USE CATAGORY

	CITY	LOID
DOMESTIC WATER USE	180 GPCPD	95 GPCPD
COMMERCIAL/INDUSTRIAL USE	70 GPCPD	15 GPCPD
IRRIGATION USE	50 GPCPD	300 GPCPD
IRRIG USE, NEW DEVELOP	75 GPCPD	300 GPCPD

INITIAL INDUSTRIAL USE RESERVE 0.000 MGD
INDUSTRIAL USE RESERVE GROWTH/YR 0.000 MGD

YEAR	CITY POP	LOID POP	TOTAL POP	CITY DOM WTR USE	LOID DOM WTR USE	TOTAL DOM WTR USE	CITY COM/ IND WTR USE	LOID COM/ IND WTR USE	TOTAL COM/ IND WTR USE	CITY IRR WTR USE	LOID IRR WTR USE	TOTAL IRR WTR USE	TOTAL CITY WTR USE	TOTAL LOID WTR USE	SITE SPCFC WTR USE	TOTAL WATER USE	TOTAL WATER USE	AVG WTR USE
				MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	CFS	GPCPD
1995	12600	18700	31500	2.048	1.777	3.825	0.906	0.281	1.177	0.840	6.610	6.280	3.594	7.667	0.000	11.261	17.41	357
2000	14305	19422	33727	2.289	1.845	4.134	1.001	0.291	1.293	0.828	5.827	6.655	4.118	7.963	0.000	12.081	18.69	358
2005	15810	20144	35954	2.530	1.914	4.443	1.107	0.302	1.409	1.018	6.043	7.059	4.653	8.258	0.000	12.912	19.98	359
2010	17315	20866	38181	2.770	1.982	4.753	1.212	0.313	1.526	1.204	6.260	7.464	5.187	8.555	0.000	13.742	21.26	360
2015	18820	21588	40408	3.011	2.050	5.062	1.317	0.324	1.641	1.393	6.476	7.868	5.721	8.851	0.000	14.572	22.55	361
2020	25143	21588	46731	4.023	2.050	6.074	1.760	0.324	2.084	2.183	6.476	8.659	7.966	8.851	0.000	16.817	26.02	360
2025	31466	21588	53054	5.035	2.050	7.085	2.203	0.324	2.526	2.973	6.476	9.450	10.210	8.851	0.000	19.062	29.49	359
2030	37788	21588	59377	6.048	2.051	8.097	2.645	0.324	2.969	3.764	6.476	10.240	12.455	8.851	0.000	21.306	32.97	359
2035	44112	21588	65700	7.058	2.051	9.109	3.088	0.324	3.412	4.554	6.476	11.030	14.700	8.851	0.000	23.551	36.44	358
2040	50435	21588	72023	8.070	2.051	10.120	3.530	0.324	3.854	5.344	6.476	11.821	16.944	8.851	0.000	25.796	39.91	358
2045	56758	21588	78346	9.081	2.051	11.132	3.973	0.324	4.297	6.135	6.476	12.611	19.189	8.851	0.000	28.040	43.39	358

YEAR	TOTAL WATER USE	TOTAL WATER USE	CITY WTR RIGHTS	CITY WTR RIGHTS	LOID WTR RIGHTS	LOID WTR RIGHTS	TOTAL WTR RIGHTS	TOTAL WTR RIGHTS	CITY MAX DAY WTR USE	LOID MAX DAY WTR USE	TOTAL MAX DAY + GR WTR PROD	CITY SW TRTM + GR WTR CAP	CITY NEW BR CANYON GR WTR WELL	LOID + IRR SYSTEM CAP	LOID GR WTR WELLS	TOTAL NEW PROD & CONVEY SYSTEM CAP	NEEDED GRND/ SRFC WTR SYS CAP	NEEDED GRND/ SRFC WTR SYS CAP
	CFS	MGD	CFS	MGD	CFS	MGD	CFS	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	CFS
1995	17.41	11.251	53.3	34.446	83.83	54.177	137.13	88.623	10.036	28.798	38.833	17.443	1.440	22.200	0.000	41.083	0.000	0.00
2000	18.69	12.081	53.3	34.446	83.83	54.177	137.13	88.623	11.831	29.910	41.441	17.443	1.440	22.200	0.000	41.083	0.358	0.56
2005	19.98	12.912	53.3	34.446	2.47	1.596	55.77	36.043	13.627	31.022	44.648	17.443	1.440	2.200	0.000	21.083	22.066	35.54
2010	21.26	13.742	53.3	34.446	2.47	1.596	55.77	36.043	14.823	32.134	46.957	17.443	1.440	2.200	0.000	21.083	25.874	39.57
2015	22.55	14.572	53.3	34.446	2.47	1.596	55.77	36.043	16.019	33.246	49.265	17.443	1.440	2.200	0.000	21.083	28.182	43.61
2020	26.02	16.817	53.3	34.446	2.47	1.596	58.77	36.043	22.304	33.246	55.550	17.443	1.440	2.200	0.000	21.083	34.467	53.33
2025	29.49	19.062	53.3	34.446	2.47	1.596	55.77	36.043	28.589	33.246	61.835	17.443	1.440	2.200	0.000	21.083	40.752	63.06
2030	32.97	21.306	53.3	34.446	2.47	1.596	55.77	36.043	34.874	33.246	68.120	17.443	1.440	2.200	0.000	21.083	47.037	72.78
2035	36.44	23.551	53.3	34.446	2.47	1.596	55.77	36.043	41.159	33.246	74.405	17.443	1.440	2.200	0.000	21.083	53.322	82.51
2040	39.91	25.796	53.3	34.446	2.47	1.596	55.77	36.043	47.444	33.246	80.690	17.443	1.440	2.200	0.000	21.083	59.607	92.23
2045	43.39	28.040	53.3	34.446	2.47	1.596	55.77	36.043	53.729	33.246	86.975	17.443	1.440	2.200	0.000	21.083	65.892	101.96


PROJECTED WATER USE OF CITY AND LOID
WITHOUT CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

[redacted]

COORDINATED WATER STUDY

CITY OF LEWISTON AND LEWISTON ORCHARDS IRRIGATION DISTRICT

CITY FUTURE WATER USE PROJECTIONS

WATER CONSERVATION

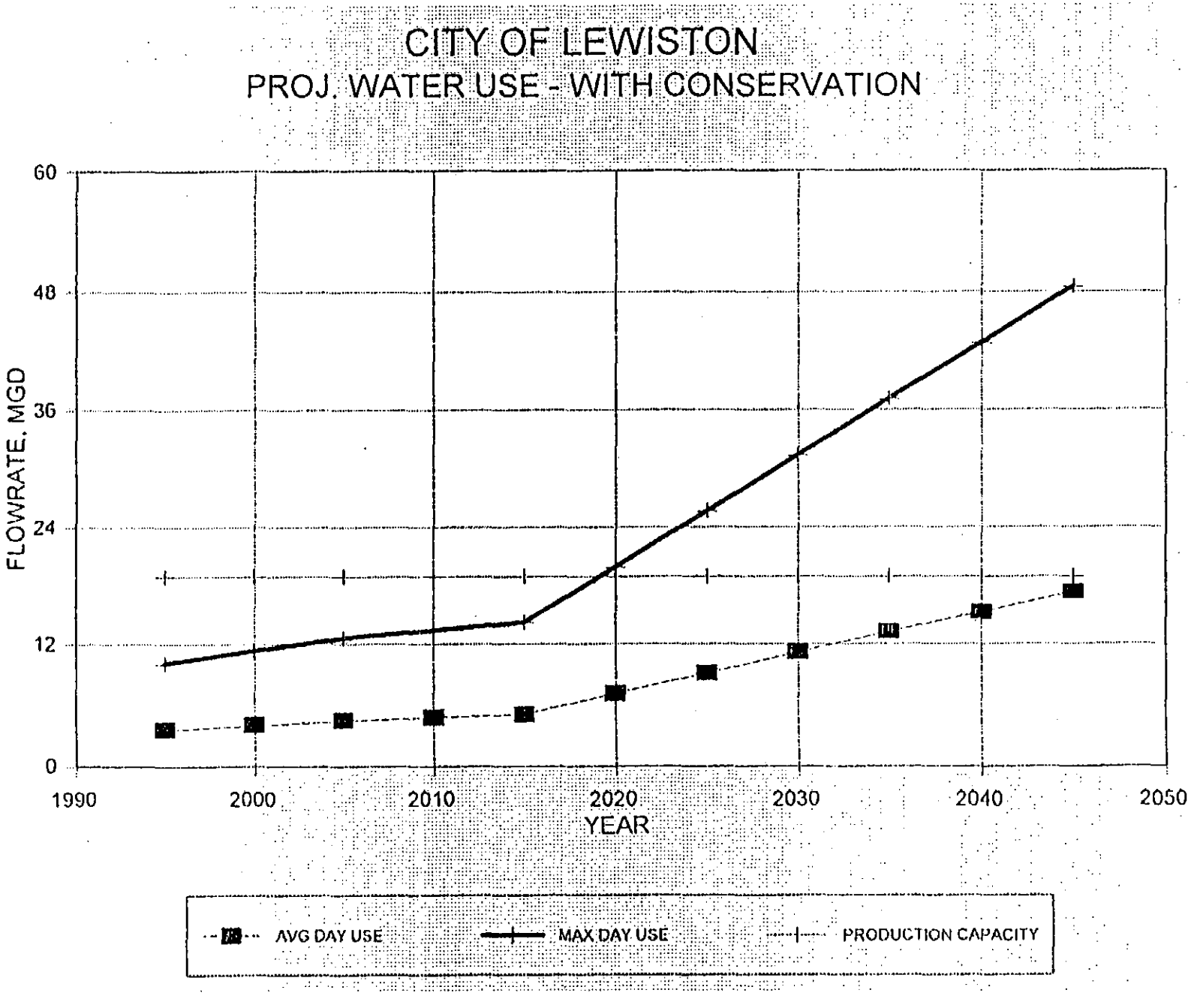
USE CATAGORY	AFTER 10 YEARS	
	CITY	LID
DOMESTIC WATER USE	160 GPCPD	0 GPCPD
COMMERCIAL/INDUSTRIAL USE	61 GPCPD	0 GPCPD
IRRIGATION USE	40 GPCPD	0 GPCPD
DOMESTIC, NEW DEVELOP	60 GPCPD	0 GPCPD

INITIAL INDUSTRIAL USE RESERVE 0.000 MGD

INDUSTRIAL USE RESERVE GROWTH/YR 0.000 MGD

YEAR	CITY POP	LID POP	TOTAL POP	CITY DOM WTR USE MGD	LID DOM WTR USE MGD	TOTAL DOM WTR USE MGD	CITY COM/ IND WTR USE MGD	LID COM/ IND WTR USE MGD	TOTAL COM/ IND WTR USE MGD	CITY IRR WTR USE MGD	LID IRR WTR USE MGD	TOTAL IRR WTR USE MGD	TOTAL CITY WTR USE MGD	TOTAL LID WTR USE MGD	SITE SPECIFC WTR USE MGD	TOTAL WATER USE MGD	TOTAL WATER USE CFS	AVG WTR USE GPCPD
1995	12899	18700	31300	2.048	0.000	2.048	0.896	0.000	0.896	0.640	0.000	0.640	3.584	0.000	0.000	3.584	5.55	114
2000	14203	19422	33625	2.253	0.000	2.253	0.987	0.000	0.987	0.784	0.000	0.784	4.028	0.000	0.000	4.028	6.23	120
2005	15410	20144	35554	2.446	0.000	2.446	1.079	0.000	1.079	0.937	0.000	0.937	4.471	0.000	0.000	4.471	6.92	126
2010	16715	20966	37681	2.674	0.000	2.674	1.188	0.000	1.188	0.938	0.000	0.938	4.781	0.000	0.000	4.781	7.37	127
2015	18020	21388	39408	2.883	0.000	2.883	1.133	0.000	1.133	1.016	0.000	1.016	5.032	0.000	0.000	5.032	7.81	128
2020	26103	27588	45933	3.893	0.000	3.893	1.334	0.000	1.334	1.666	0.000	1.666	7.093	0.000	0.000	7.093	10.98	154
2025	30666	31588	52254	4.907	0.000	4.907	1.933	0.000	1.933	2.299	0.000	2.299	9.137	0.000	0.000	9.137	14.14	175
2030	36999	31588	58577	5.918	0.000	5.918	2.330	0.000	2.330	2.931	0.000	2.931	11.179	0.000	0.000	11.179	17.30	191
2035	43312	21588	64900	6.930	0.000	6.930	2.729	0.000	2.729	3.565	0.000	3.565	13.222	0.000	0.000	13.222	20.46	204
2040	49625	21588	71223	7.942	0.000	7.942	3.127	0.000	3.127	4.196	0.000	4.196	15.264	0.000	0.000	15.264	23.61	214
2045	51938	21588	77546	8.933	0.000	8.933	3.333	0.000	3.333	4.838	0.000	4.838	17.106	0.000	0.000	17.106	26.78	221

YEAR	TOTAL WATER USE	TOTAL WATER USE	CITY WTR RIGHTS	CITY WTR RIGHTS	LID WTR RIGHTS	LID WTR RIGHTS	TOTAL WTR RIGHTS	TOTAL WTR RIGHTS	CITY MAX DAY WTR USE	LID MAX DAY WTR USE	TOTAL MAX DAY WTR USE	CITY SW IRIG +GR WTR PR(A) CAP	CITY NEW DR CANTON GR WTR SYSTEM WTR,L CAP	LID OR WTR +IRR WELLS	LID NEW GR WTR SYSTEM	TOTAL PROD A CONVEY CAP	NEEDED ORDIV SRFC WTR SYS CAP	NEEDED ORDIV SRFC WTR SYS CAP
	CFS	MGD	CFS	MGD	CFS	MGD	CFS	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	CFS
1995	5.55	3.584	33.3	34.446	83.83	54.177	137.13	88.623	10.053	0.000	10.053	17.443	1.440	0.000	0.000	18.883	0.000	0.00
2000	6.23	4.028	33.3	34.446	83.83	54.177	137.13	88.623	11.378	0.000	11.378	17.443	1.440	0.000	0.000	18.883	0.000	0.00
2005	6.92	4.471	33.3	34.446	2.47	1.596	35.77	36.043	12.520	0.000	12.520	17.443	1.440	0.000	0.000	18.883	0.000	0.00
2010	7.37	4.761	33.3	34.446	2.47	1.596	35.77	36.043	13.330	0.000	13.330	17.443	1.440	0.000	0.000	18.883	0.000	0.00
2015	7.81	5.032	33.3	34.446	2.47	1.596	35.77	36.043	14.147	0.000	14.147	17.443	1.440	0.000	0.000	18.883	0.000	0.00
2020	10.98	7.093	33.3	34.446	2.47	1.596	35.77	36.043	19.865	0.000	19.865	17.443	1.440	0.000	0.000	18.883	0.982	1.52
2025	14.14	9.137	33.3	34.446	2.47	1.596	35.77	36.043	25.584	0.000	25.584	17.443	1.440	0.000	0.000	18.883	6.701	10.37
2030	17.30	11.179	33.3	34.446	2.47	1.596	35.77	36.043	31.303	0.000	31.303	17.443	1.440	0.000	0.000	18.883	12.419	19.22
2035	20.46	13.222	33.3	34.446	2.47	1.596	35.77	36.043	37.021	0.000	37.021	17.443	1.440	0.000	0.000	18.883	18.138	28.07
2040	23.61	15.264	33.3	34.446	2.47	1.596	35.77	36.043	42.739	0.000	42.739	17.443	1.440	0.000	0.000	18.883	23.856	36.91
2045	26.78	17.306	33.3	34.446	2.47	1.596	35.77	36.043	48.458	0.000	48.458	17.443	1.440	0.000	0.000	18.883	29.575	45.76


CITY OF LEWISTON
PROJ. WATER USE - WITH CONSERVATION
FLOWRATE, MGD
60
48
36
24
12
0
1990
2000
2010
2020
2030
2040
2050
YEAR
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

COORDINATED WATER STUDY

CITY OF LIVERMORE AND LIVERMORE ORCHARDS IRRIGATION DISTRICT

LOD FUTURE WATER USE PROJECTIONS

WATER CONSERVATION

USE CATAGORY	AFTER 10 YEARS	
	CITY	LOD
DOMESTIC WATER USE	0 GPCPD	95 GPCPD
COMMERCIAL/INDUSTRIAL USE	0 GPCPD	13.3 GPCPD
IRRIGATION USE	0 GPCPD	240 GPCPD
IRRIG USE, NEW DEVELOP	0 GPCPD	240 GPCPD

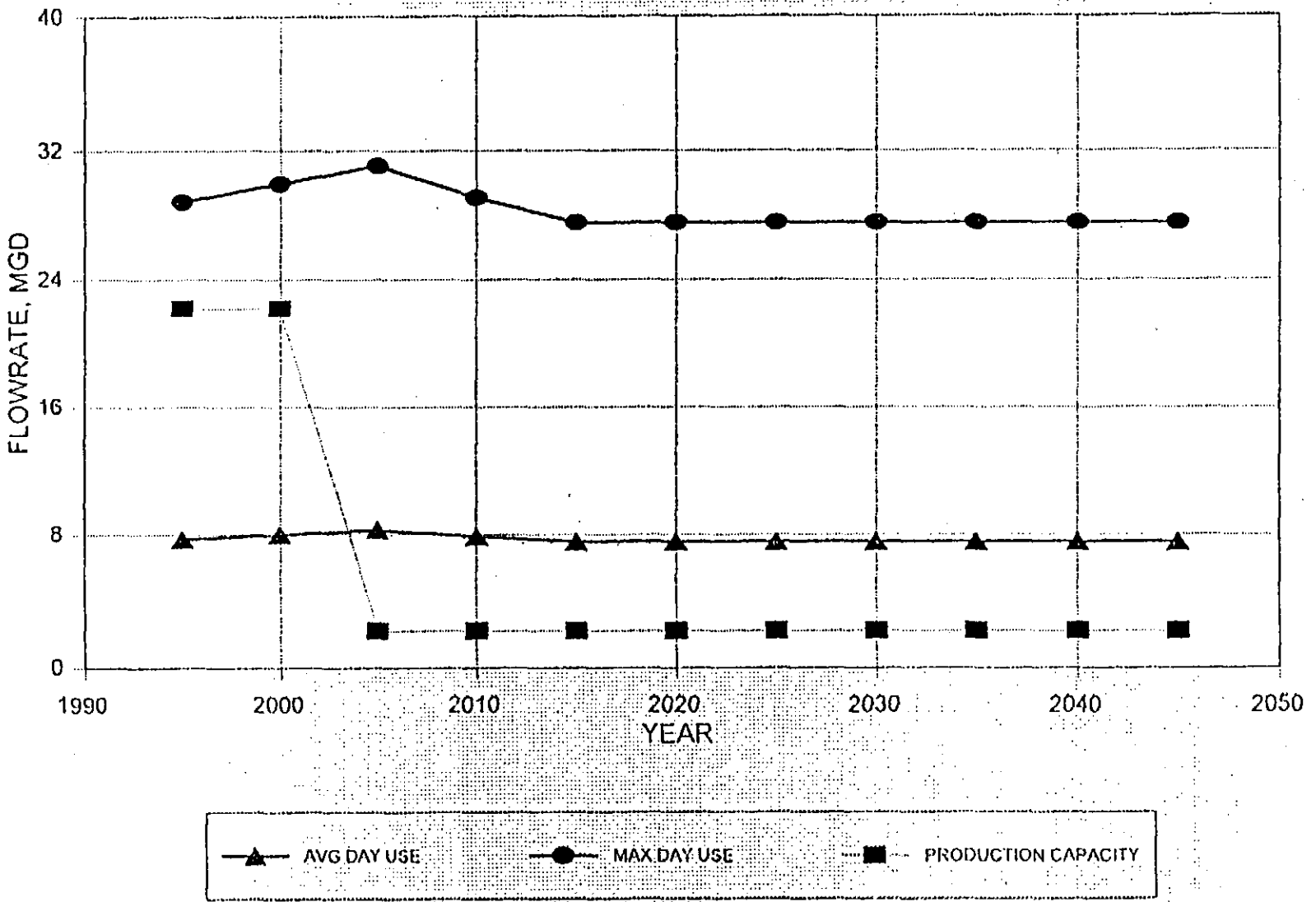
INITIAL INDUSTRIAL USE RESERVE 0.000 MGD

INDUSTRIAL USE RESERVE GROWTH/YR 0.000 MGD

YEAR	CITY POP	LOD POP	TOTAL POP	CITY DOM WTR USE	LOD DOM WTR USE	TOTAL DOM WTR USE	CITY COM/ IND WTR USE	LOD COM/ IND WTR USE	TOTAL COM/ IND WTR USE	CITY IRR WTR USE	LOD IRR WTR USE	TOTAL IRR WTR USE	TOTAL CITY WTR USE	TOTAL LOD WTR USE	SITE SPCFC WTR USE	TOTAL WATER USE	TOTAL WATER USE	AVG WTR USE
				MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	CFS	GPCPD
1995	12809	18709	31509	0.000	1.777	1.777	0.000	0.281	0.281	0.000	5.610	5.610	0.000	7.667	0.000	7.667	11.86	243
2000	14505	19433	33937	0.000	1.845	1.845	0.000	0.291	0.291	0.000	5.827	5.827	0.000	7.963	0.000	7.963	12.32	238
2005	15410	20844	35554	0.000	1.914	1.914	0.000	0.303	0.303	0.000	6.043	6.043	0.000	8.259	0.000	8.259	12.78	233
2010	16715	20864	37581	0.000	1.982	1.982	0.000	0.297	0.297	0.000	5.564	5.564	0.000	7.843	0.000	7.843	12.14	209
2015	18020	21569	39608	0.000	2.051	2.051	0.000	0.291	0.291	0.000	5.181	5.181	0.000	7.523	0.000	7.523	11.64	190
2020	24343	21588	45931	0.000	2.051	2.051	0.000	0.291	0.291	0.000	5.181	5.181	0.000	7.523	0.000	7.523	11.64	164
2025	30666	21588	52254	0.000	2.051	2.051	0.000	0.291	0.291	0.000	5.181	5.181	0.000	7.523	0.000	7.523	11.64	141
2030	36989	21588	58577	0.000	2.051	2.051	0.000	0.291	0.291	0.000	5.181	5.181	0.000	7.523	0.000	7.523	11.64	128
2035	43312	21588	64900	0.000	2.051	2.051	0.000	0.291	0.291	0.000	5.181	5.181	0.000	7.523	0.000	7.523	11.64	116
2040	49635	21588	71223	0.000	2.051	2.051	0.000	0.291	0.291	0.000	5.181	5.181	0.000	7.523	0.000	7.523	11.64	106
2045	55958	21588	77546	0.000	2.051	2.051	0.000	0.291	0.291	0.000	5.181	5.181	0.000	7.523	0.000	7.523	11.64	97

YEAR	TOTAL WATER USE	TOTAL WATER USE	CITY WTR RIGHTS	CITY WTR RIGHTS	LOD WTR RIGHTS	LOD WTR RIGHTS	TOTAL WTR RIGHTS	TOTAL WTR RIGHTS	CITY MAX DAY WTR USE	LOD MAX DAY WTR USE	TOTAL MAX DAY WTR USE	CITY SW TRTM + GR WTR PROD CAP	CITY NEW DR CANYON GR WTR WELL	LOD UR WTR + IRR SYSTEM CAP	LOD NEW GR WTR WELLS	TOTAL PROD & CONVEY SYSTEM CAP	NEEDED GRNDW SRFC WTR SYS CAP	REQUIRED GRNDW SRFC WTR SYS CAP
	CFS	MGD	CFS	MGD	CFS	MGD	CFS	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	CFS
1995	11.86	7.667	55.3	34.446	83.83	54.177	137.13	88.623	0.000	28.798	28.798	0.000	0.000	22.200	0.000	22.200	6.598	10.21
2000	12.32	7.963	55.3	34.446	83.83	54.177	137.13	88.623	0.000	29.910	29.910	0.000	0.000	22.200	0.000	22.200	7.710	11.93
2005	12.78	8.259	55.3	34.446	2.47	1.596	57.77	36.043	0.000	31.022	31.022	0.000	0.000	2.200	0.000	2.200	28.822	44.60
2010	12.14	7.843	55.3	34.446	2.47	1.596	57.77	36.043	0.000	29.040	29.040	0.000	0.000	2.200	0.000	2.200	26.840	41.53
2015	11.64	7.523	55.3	34.446	2.47	1.596	57.77	36.043	0.000	27.482	27.482	0.000	0.000	2.200	0.000	2.200	25.282	39.12
2020	11.64	7.523	55.3	34.446	2.47	1.596	57.77	36.043	0.000	27.482	27.482	0.000	0.000	2.200	0.000	2.200	25.282	39.12
2025	11.64	7.523	55.3	34.446	2.47	1.596	57.77	36.043	0.000	27.482	27.482	0.000	0.000	2.200	0.000	2.200	25.282	39.12
2030	11.64	7.523	55.3	34.446	2.47	1.596	57.77	36.043	0.000	27.482	27.482	0.000	0.000	2.200	0.000	2.200	25.282	39.12
2035	11.64	7.523	55.3	34.446	2.47	1.596	57.77	36.043	0.000	27.482	27.482	0.000	0.000	2.200	0.000	2.200	25.282	39.12
2040	11.64	7.523	55.3	34.446	2.47	1.596	57.77	36.043	0.000	27.482	27.482	0.000	0.000	2.200	0.000	2.200	25.282	39.12
2045	11.64	7.523	55.3	34.446	2.47	1.596	57.77	36.043	0.000	27.482	27.482	0.000	0.000	2.200	0.000	2.200	25.282	39.12

LEWISTON ORCHARDS IRRIGATION DISTRICT
PROJ. WATER USE - WITH CONSERVATION



COORDINATED WATER STUDY

CITY OF LEWISTON AND LEWISTON ORCHARDS IRRIGATION DISTRICT

COMBINED CITY AND LOID FUTURE WATER USE PROJECTIONS

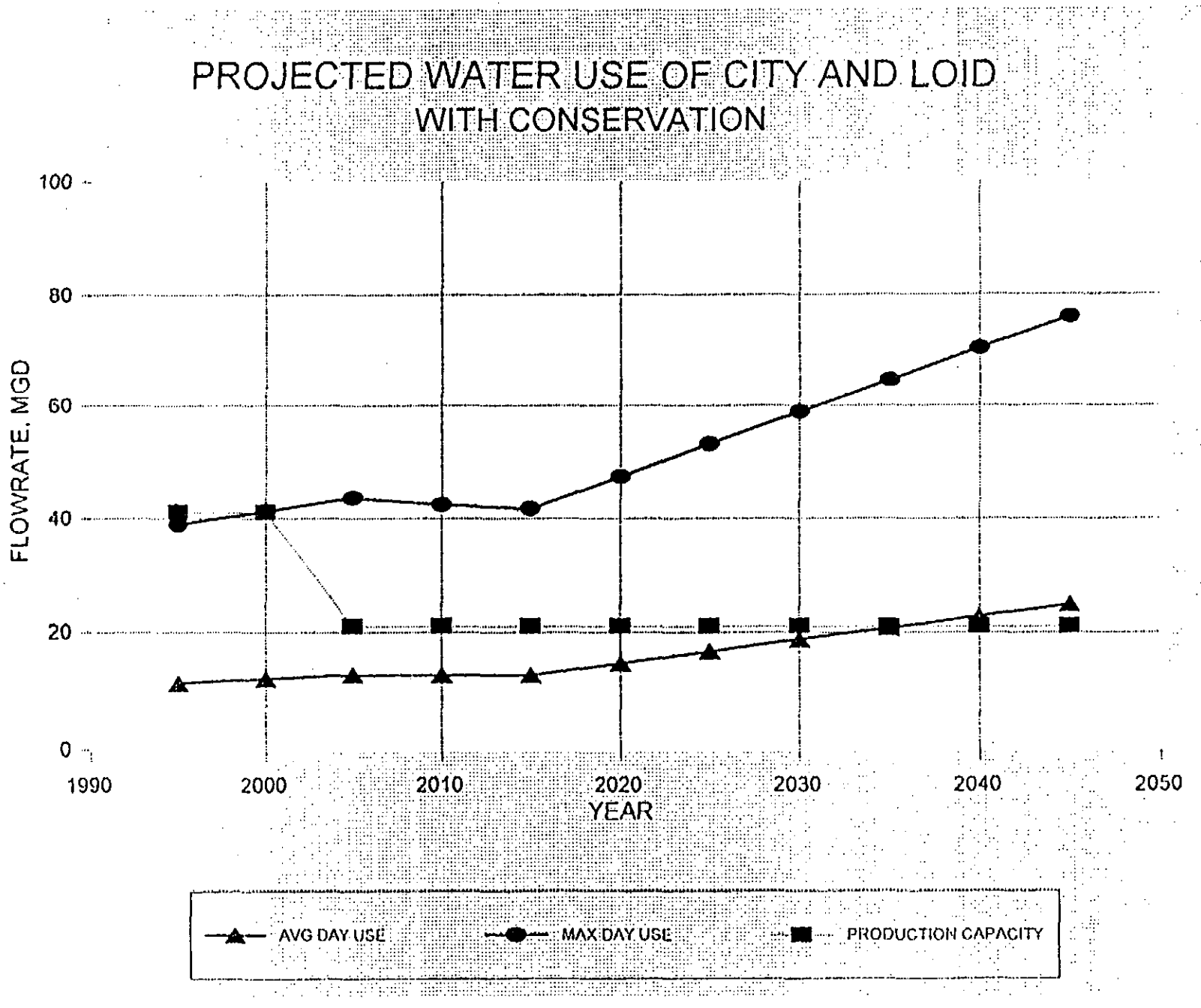
WATER CONSERVATION

USE CATAGORY	AFTER 10 YEARS	
	CITY	LOID
DOMESTIC WATER USE	160 GPCPD	85 GPCPD
COMMERCIAL/INDUSTRIAL USE	63 GPCPD	14 GPCPD
IRRIGATION USE	40 GPCPD	240 GPCPD
IRRIG USE, NEW DEVELOP	60 GPCPD	240 GPCPD

INITIAL INDUSTRIAL USE RESERVE	0.000 MGD
INDUSTRIAL USE RESERVE GROWTH/YR	0.000 MGD

YEAR	CITY POP	LOID POP	TOTAL POP	CITY DOM WTR USE MGD	LOID DOM WTR USE MGD	TOTAL DOM WTR USE MGD	CITY COM/ IND WTR USE MGD	LOID COM/ IND WTR USE MGD	TOTAL COM/ IND WTR USE MGD	CITY IRR WTR USE MGD	LOID IRR WTR USE MGD	TOTAL IRR WTR USE MGD	TOTAL CITY WTR USE MGD	TOTAL LOID WTR USE MGD	SITE SPCFC WTR USE MGD	TOTAL WATER USE MGD	TOTAL WATER USE CFS	AVG WTR USE GPCPD
1995	12900	18700	31600	2.048	1.777	3.825	0.896	0.281	1.177	0.840	5.810	6.250	3.584	7.887	0.000	11.251	17.41	357
2000	14105	19422	33527	2.257	1.846	4.102	0.987	0.291	1.278	0.784	5.827	6.610	4.028	7.963	0.000	11.991	18.55	358
2005	15410	20144	35554	2.468	1.914	4.378	1.079	0.302	1.381	0.927	6.043	6.970	4.471	8.259	0.000	12.730	19.70	358
2010	16715	20866	37581	2.674	1.982	4.657	1.188	0.297	1.485	0.978	5.564	6.542	4.781	7.843	0.000	12.604	19.50	335
2015	18020	21588	39608	2.883	2.051	4.934	1.135	0.291	1.427	1.034	5.181	6.216	5.052	7.523	0.000	12.575	19.46	318
2020	24343	21588	45931	3.895	2.051	5.946	1.634	0.291	1.925	1.086	5.181	6.047	7.095	7.523	0.000	14.618	22.62	318
2025	30666	21588	52254	4.907	2.051	6.957	1.932	0.291	2.223	2.209	5.181	7.490	9.137	7.523	0.000	16.661	25.78	319
2030	36989	21588	58577	5.918	2.051	7.969	2.330	0.291	2.622	2.931	5.181	8.112	11.179	7.523	0.000	18.703	28.94	319
2035	43312	21588	64900	6.930	2.051	8.981	2.729	0.291	3.020	3.563	5.181	8.744	13.222	7.523	0.000	20.745	32.10	320
2040	49635	21588	71223	7.942	2.051	9.992	3.127	0.291	3.418	4.196	5.181	9.377	15.264	7.523	0.000	22.788	35.26	320
2045	55958	21588	77546	8.953	2.051	11.004	3.625	0.291	3.817	4.828	5.181	10.008	17.306	7.523	0.000	24.830	38.42	320

YEAR	TOTAL WATER USE CFS	TOTAL WATER USE MGD	CITY WTR RIGHTS CFS	CITY WTR RIGHTS MGD	LOID WTR RIGHTS CFS	LOID WTR RIGHTS MGD	TOTAL WTR RIGHTS CFS	TOTAL WTR RIGHTS MGD	CITY MAX DAY WTR USE MGD	LOID MAX DAY WTR USE MGD	TOTAL MAX DAY WTR USE MGD	CITY SW TRTM + GR WTR PROD CAP MGD	CITY NEW BR CANYON GR WTR WELL MGD	LOID + IRR SYSTEM CAP MGD	LOID NEW GR WTR WELLS MGD	TOTAL PROD & CONVEY SYSTEM CAP MGD	NEEDED GRNDW SRFC WTR SYS CAP MGD	NEEDED GRNDW SRFC WTR SYS CAP CFS
1995	17.41	11.251	53.3	34.446	83.83	54.177	137.13	88.623	10.035	20.706	30.033	17.443	1.440	22.200	0.000	41.083	0.000	0.00
2000	18.55	11.991	53.3	34.446	83.83	54.177	137.13	88.623	11.278	20.010	41.187	17.443	1.440	22.200	0.000	41.083	0.104	0.16
2005	19.70	12.730	53.3	34.446	2.47	1.596	55.77	36.043	12.520	31.022	43.543	17.443	1.440	2.200	0.000	21.083	22.459	34.76
2010	19.50	12.604	53.3	34.446	2.47	1.596	55.77	36.043	13.330	29.040	42.370	17.443	1.440	2.200	0.000	21.083	21.287	32.94
2015	19.46	12.576	53.3	34.446	2.47	1.596	55.77	36.043	14.147	27.482	41.629	17.443	1.440	2.200	0.000	21.083	20.545	31.79
2020	22.62	14.618	53.3	34.446	2.47	1.596	55.77	36.043	19.068	27.482	47.347	17.443	1.440	2.200	0.000	21.083	26.264	40.64
2025	25.78	16.661	53.3	34.446	2.47	1.596	55.77	36.043	25.584	27.482	53.065	17.443	1.440	2.200	0.000	21.083	31.982	49.49
2030	28.94	18.703	53.3	34.446	2.47	1.596	55.77	36.043	31.302	27.482	58.784	17.443	1.440	2.200	0.000	21.083	37.701	58.34
2035	32.10	20.745	53.3	34.446	2.47	1.596	55.77	36.043	37.021	27.482	64.502	17.443	1.440	2.200	0.000	21.083	43.419	67.18
2040	35.26	22.788	53.3	34.446	2.47	1.596	55.77	36.043	42.739	27.482	70.221	17.443	1.440	2.200	0.000	21.083	49.138	76.03
2045	38.42	24.830	53.3	34.446	2.47	1.596	55.77	36.043	48.458	27.482	75.940	17.443	1.440	2.200	0.000	21.083	54.857	84.88


PROJECTED WATER USE OF CITY AND LOID
WITH CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

5.02 Water Quality Requirements for Various Uses

Potential alternatives for meeting additional water supply requirements for the service areas include surface water from rivers, ground water, and use of treated wastewater. Depending on the intended use of water, water quality may vary.

Use of water with poor quality can have several undesirable consequences. These include the following:

1. Failure to meet Federal and State quality requirements for drinking water due to contaminants, turbidity, or disinfection levels
2. Potential for water supply contamination, such as bacterial growth in drinking water supplies
3. Adverse impacts on plant viability due to contaminants or other substances in the water supply, such as high chloride concentrations inhibiting plant growth
4. Low customer acceptance or customer rejection of the water supply
5. Distribution system problems

An example of a distribution system problem which has occurred in the LOID distribution system as a result of unacceptable water quality are the problems associated with metering the irrigation water supply. When metering irrigation water services was attempted in the past, particulates in the irrigation water supply damaged and plugged water meters, leading to the removal of the meters.

Water quality for water produced as drinking water for domestic and other uses is currently very high from both surface water and ground water sources.

Water quality from surface water sources (i.e. Snake River, Clearwater River, Craig Mountain streams) is known to vary, ranging in quality depending on the time of year and rates of stream flow. Generally, higher flow rates correlate with lower quality while lower to average stream flow rates correlate with higher quality.

Water used for irrigation use must also have a suitable quality. Common contaminants which, in excessive concentrations, limit the use of water for irrigation purposes include: boron, metal chlorides, selenium, sulfates, dissolved solids, and suspended solids. Water from the Snake and Clearwater Rivers contain the following ranges of contaminants, according to test data measured in 1990 and 1991 and obtained from the U.S. Geological Survey, as shown in Table 5-8:

Table 5-8
Contaminant Concentrations
in the Snake and Clearwater Rivers

Contaminant	Units	Concentration Range in the Snake River at Anatone, WA	Concentration Range in the Clearwater River at Spalding, ID
Boron	mg/L	Not Measured	Not Measured
Dissolved Chloride	mg/L as Cl	11-17	<0.1-1.4
Selenium	ug/L as Se	<1	<1
Sulfates	mg/L as SO_4	24-42	<1-2.1
Dissolved Solids	mg/L	160-254	24-42
Suspended Solids	mg/L	Not Measured	Not Measured

Based on the above, water from the Snake and Clearwater Rivers is considered suitable for use as irrigation use.

To encourage water conservation, metering of water supplies used for non-domestic or irrigation purposes is desirable. Surface water supplies from either the Snake or Clearwater Rivers are generally excellent in quality except for springtime periods of snowmelt runoff when the velocity of the water in streams contains a large quantity of particulates. Particulates in water take two forms: heavier particulates such as sand and silt and finer particulates which can remain suspended in the water for years without treatment.

Very fine material suspended in water blocks the passage of light through the water and is defined as turbidity. Measurements of turbidity are made by measuring the amount of light deflection of a light beam directed through a water sample. Water used for domestic supplies is required to have a very low turbidity which is usually achieved in multiple treatment steps involving clarification and filtration.

Water used for irrigation supplies may be treated to lesser levels, deleting the filtration treatment step. Although limited treatment of water from the Snake and Clearwater Rivers may be required during limited periods to achieve a water quality from surface water sources for irrigation which can be metered, treatment of the surface water for irrigation purposes has not been incorporated into surface water alternatives.

If limited treatment is determined to be necessary based on further study, it is believed that the necessary treatment can be achieved using only clarification at a much lower cost than required for drinking water, possibly using the raw water storage reservoirs located at booster pump station sites or at the water treatment plant locations.

Metering of irrigation water services has been estimated to cost approximately $150,000. including meters and other materials required for installation, and installation.

Treated effluent from a wastewater treatment plant may also be considered for use as irrigation water. Treated effluent may be obtained from the existing City wastewater treatment plant or from a new plant. Using laboratory test results from the City's wastewater treatment plant as representative, water quality would be as shown in Table 5-9:

Table 5-9
Contaminant Concentrations in
Treated Effluent From the City Wastewater Treatment Plant

Contaminant	Units	Contaminant Average of Effluent from the City Wastewater Treatment Plant
Biochemical Oxygen Demand	mg/L	11.6
Total Suspended Solids	mg/L	11.4
Arsenic	mg/L	0.0012
Cadmium	mg/L	0.001
Copper	mg/L	0.01
Lead	mg/L	0.0053
Mercury	mg/L	0.0001
Nickel	mg/L	0.008
Silver	mg/L	0.002
Zinc	mg/L	0.047
Cyanide	mg/L	0.007

The above contaminant concentrations for treated effluent from a wastewater treatment plant indicate that the treated effluent would be suitable for use as irrigation water.

5.03 Maximization of Existing Sources of Supplies

Maximizing the use of existing sources of water supplies would involve utilizing all of the water sources in the area to the maximum degree possible. Alternatives which would maximize existing sources of supplies include the following:

1. Use of City water to provide for the domestic water and other possible uses in the LOID service area
2. Improvements to enhance the Craig Mountain surface water supply

5.03.01 Alternative 10-1 - Use of City Water for LOID Domestic and Other Uses, and Use of Water from the Clearwater River

Use of City water in LOID service area could provide 2 to 4 MGD of water for use as the LOID domestic water supply. The District's ground water wells could then be used to supplement the Craig Mountain irrigation water supply, thereby providing additional overall water supply to the LOID service area. In order to provide a greater supply than is presently available, and to provide a new water source in light of the possible loss of the Craig Mountain water supply, facilities to withdraw water from the Clearwater River and pump the water to the LOID system have also been included.

At this time, the City has permitted rights to the volumes of water required to provide water for both service areas. The City obtained an 18.6 cubic feet per second right to water from the Clearwater River in 1993 which could be used to provide additional water for both service areas. The treatment facilities are sufficient in size to meet the domestic water requirements for at least the next 10 years. Major improvements to the pumping and pipeline conveyance facilities would be required for the City to provide all LOID water needs at the time at the expected loss of the LOID Craig Mountain water supply. For this reason, use of City treated water in the LOID service area may be considered a partial solution in meeting the overall water needs of both service areas without major additional facilities. This alternative must be expanded in future years to provide for both domestic and irrigation water requirements in the City and LOID service areas over the fifty year planning period.

Facilities determined to be required to provide additional treated water to LOID for domestic water use from the City include the following:

1. Two (2) new pumps at the City's South High Booster Pump Station. These pumps would be larger than the single existing pump which is now used to provide water to LOID from the City during emergency situations.
2. Emergency power generator to provide emergency power during interruptions of power from the electric power service utility
3. 6,800 L.F. of 16" diameter parallel transmission pipeline in the LOID distribution system to supplement the conveyance capacity of a section of 8" diameter pipeline

In addition to the above facilities, the sale and purchase of the water is another consideration. The City and LOID are currently conducting discussions regarding the cost of water purchased from the City by LOID. Since the LOID would be a large user of water, requiring only some of the major facilities of the City to deliver the water to the LOID system, the City has considered a sale cost which would not include the costs of maintaining the extensive water distribution system of the City. With this consideration in mind, a water rate ranging from $0.60 to $0.70 per 100 cubic feet may be used.

Facilities determined to be required to deliver water from the Clearwater River at a maximum flowrate of 12 MGD (18.6 cubic feet per second) include the following:

1. Intake channel from the Clearwater River to a pump station.
2. Intake structure at the end of the intake channel to provide for screening of water prior to pumping.
3. River pump station to pump water from the Clearwater River.
4. 10,000 LF of 24-inch diameter transmission pipeline.
5. Interim reservoir to store water from the river pump station.
6. Booster pump station to pump the water stored in the interim reservoir to the delivery point.
7. 15,000 LF of 24-inch diameter transmission pipeline.

The components of this alternative have been labeled as follows:

Alternative 10-1A	2 MGD City Treated Water Supply to LOID
Alternative 10-1B	4 MGD City Treated Water Supply to LOID
Alternative 10-1C	12 MGD Clearwater River Water Supply (using the City's 18.6 cfs permit)

The opinion of probable costs for the alternative combinations under Alternative 10-1 are as follows:

Alternative	Initial Capital Cost	Additional Water Supply Provided	Initial Capital Cost Per Million Gallons Per Day
10-1A	$ 1,446,000	2 MGD	$ 723,000
10-1B	$ 1,521,000	4 MGD	$ 380,000
10-1C	$17,066,000	12 MGD	$1,422,000
10-1A+ 10-1C	$18,512,000	14 MGD	$1,322,000
10-1B+ 10-1C	$18,587,000	16 MGD	$1,162,000

This alternative would provide a portion of the total needed additional water supply. The opinion of probable cost for providing 2 MGD potable water supply from the City to LOID under this alternative is provided in Table 5-10. The location of required facilities are shown on Exhibit 14.

The cost for the purchase of water at various rates is shown below for 2 million gallons per day:

Purchase Price	Volume of Water Purchased Per Day, Gallons	Volume of Water Purchased Per Day, Cubic Feet	Annual Cost
$1.06/100 CF	2,000,000	267,400	$ 1,035,000
$1.00/100 CF	2,000,000	267,400	$ 967,000
$0.90/100 CF	2,000,000	267,400	$ 878,400
$0.80/100 CF	2,000,000	267,000	$ 780,800
$0.70/100 CF	2,000,000	267,400	$ 683,200
$0.60/100 CF	2,000,000	267,400	$ 585,600

Table 5-10
Alternative 10-1A
Use of 2.0 MGD City Water for LOID Domestic and Other Uses
Opinion of Probable Cost

Item Description	Opinion of Probable Cost
Pumps for City's South High Booster Pump Station	$315,000
Emergency Generator	$150,000
Pipeline Improvements 6800 LF of 16" DIP at $73/LF	$499,000
Subtotal	$964,000
Engineering, Administration, and Legal at 20%	$193,000
Subtotal	$1,157,000
Contingencies at 25%	$289,000
Total	$1,446,000

EXHIBIT 14
ALTERNATIVE 10-1

USE OF CITY WATER FOR LOID DOMESTIC AND OTHER USES

CLARKSTON

POTENTIAL GROWTH BOUNDARY

CITY LIMIT

R 6 W
R 5 W

LOWER GRANITE RESERVOIR

SNAKE RIVER

CLEARWATER RIVER

MAIN STREET

SNAKE RIVER AVENUE

6TH STREET

8TH STREET

10TH AVENUE

16TH AVENUE

18TH AVENUE

21ST STREET

NEW PUMPS AND GENERATOR AT SOUTH HIGH RESERVOIR AND BOOSTER PUMP STATION

GUN CLUB ROAD

OLD LAPWAI ROAD

LINDSEY CREEK ROAD

SCHAUB RANCH DEVELOPMENT

T 36 N
T 35 N

NEZ PERCE INDIAN RESERVATION BOUNDARY

EXISTING PIPING

EXISTING INTERTIE PIPING

PROPOSED PIPING TO REPLACE INADEQUATE SIZE PIPING

WARNER AVENUE

BURRELL AVENUE

POWERS AVENUE

LOID BOUNDARY

Bryden Canyon Golf Course

CITY LIMIT

TAMMANY CREEK ROAD

GRAPHIC SCALE

(IN FEET)
1 inch = 4000 ft.

R 4 W
R 5 W

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LEWISTON, IDAHO

DRAWN BY: MCL S.M	CHKD BY: SSS
DESIGNED BY: SSS	
SCALE: 1" = 4000'	
DATE: 4/17/95	
PROJECT NO: 1010T	
SHEET 1 OF 1	

In the event that up to 4 MGD of potable water from the City to LOID would be required, somewhat larger pumps are anticipated to be required. In the event that up to 4 MGD of potable water was supplied from the City to LOID, the opinion of probable cost would be as follows in Table 5-11:

Table 5-11
Alternative 10-1B
Use of 4.0 MGD City Water for LOID Domestic and Other Uses
Opinion of Probable Cost

Item Description	Opinion of Probable Cost
Pumps for City's South High Booster Pump Station	$365,000
Emergency Generator	$150,000
Pipeline Improvements 6800 LF of 16" DIP at $73/LF	$499,000
Subtotal	$1,014,000
Engineering, Administration, and Legal at 20%	$203,000
Subtotal	$1,217,000
Contingencies at 25%	$304,000
Total	$1,521,000

The cost for the purchase of water at various rates is shown below for 4 million gallons per day:

Purchase Price	Volume of Water Purchased Per Day, Gallons	Volume of Water Purchased Per Day, Cubic Feet	Annual Cost
$1.06/100 CF	4,000,000	534,800	$ 2,069,000
$1.00/100 CF	4,000,000	534,800	$ 1,952,000
$0.90/100 CF	4,000,000	534,800	$ 1,757,000
$0.80/100 CF	4,000,000	534,800	$ 1,562,000
$0.70/100 CF	4,000,000	534,800	$ 1,366,400
$0.60/100 CF	4,000,000	534,800	$ 1,171,200

Table 5-11A
Alternative 10-1C
Use of Water From the Clearwater River
at a Maximum Rate of 12 MGD (18.6 cfs)
Opinion of Probable Cost

Item Description	Opinion of Probable Cost
80 MGD Intake Channel on Clearwater River	$ 1,313,000
Intake Structure and 12 MGD Pump Station	$ 3,051,000
10,000 LF 24" Diameter Raw Water Transmission Pipeline	$ 983,000
Receiving Reservoir and Booster Pump Station	$ 3,670,000
15,500 LF 24" Raw Water Transmission Pipeline from WTP Site to Connection With LOID Irrigation Water System	$ 2,360,000
Subtotal	$ 11,377,000
Engineering, Administration, and Legal at 20%	$ 2,275,000
Subtotal	$ 13,652,000
Contingencies at 25%	$ 413,000
Total	$ 17,066,000

5.03.02 Alternative 10-2 - Improvements to Craig Mountain Surface Water Supply

Improvements to the LOID Craig Mountain surface water supply were studied by Morrison-Knudsen Corporation in February 1992. Six basic alternatives were studied to provide additional water supply from Craig Mountain as follows:

1. Rehabilitation of Sweetwater Canal to provide either a concrete canal liner, replace the canal with piping, or construct a siphon. This alternative was determined to provide an additional 3,456 acre-feet (3.09 MGD) annually at a capital cost of $1,817,248 and an annual cost of $168,930.
2. Construct a new reservoir to provide the same function as Mann Lake. This alternative was determined to provide an additional 864 acre-feet (0.77 MGD) annually if coupled with the rehabilitation of Sweetwater Canal, at a capital cost of $2,968,531 and an annual cost of $284,953.
3. Construct a new Outlet Tunnel Structure at Lake Waha. This alternative was determined to provide an additional 815 acre-feet (0.73 MGD) annually at a capital cost of $3,133,000 and an annual cost of $296,242.
4. Increase pumping from Lake Waha. This alternative would be in lieu of Alternative 3 above to provide an additional 815 acre-feet (0.73 MGD) annually at a capital cost of $115,000 and an annual cost of $27,361.
5. Construction of additional dam and spillway to increase the level of Soldiers Meadow Reservoir. This alternative was determined to provide an additional 106 acre-feet (0.09 MGD) annually at a capital cost of $200,642 and an annual cost of $18,651.
6. Construct a new storage reservoir dam and spillway at Zenner's Meadow. This alternative was determined to provide an additional 204 acre-feet (0.18 MGD) annually at a capital cost of $1,599,888 and an annual cost of $150,006.

The alternatives are summarized as follows in Table 5-12:

TABLE 5-12
ALTERNATIVE 10-2
IMPROVEMENTS TO CRAIG MOUNTAIN SURFACE WATER SUPPLY

No.	Alternative Description	Additional Supply Provided, Acre-Feet	Opinion of Probable Capital Cost	Opinion of Probable O&M Cost
1	Rehabilitation of Sweetwater Canal	3,456	$1,817,248	$168,930
2	New Reservoir Similar to Mann Lake	864	$2,968,531	$284,953
3	Construct New Outlet Tunnel Structure at Lake Waha	815	$3,133,000	$296,242
4	Increase Pumping From Lake Waha	815	$115,000	$27,371
5	Construction of Additional Dam and Spillway at Soldiers Meadow Reservoir	106	$200,642	$18,651
6	Construct New Storage Reservoir at Zenner's Meadow	204	$1,599,888	$150,006

Notes:
1. Additional water from all alternatives is not additive.
2. Additional water from Alternative 2 applies only if Alternative 1 is constructed.

Of the above alternatives, Alternative 1 - Sweetwater Canal Rehabilitation and Alternative 4 - Increase Lake Waha Pumping provide the most additional water supply for the least cost. These two alternatives would provide an additional annual supply of 4,271 acre-feet (4.82 MGD) at a capital cost of $1,932,248 and an annual cost of $187,581. The average initial cost is $400,881 per MGD.

A disadvantage with this alternative is that it is anticipated that the entire Craig Mountain surface water supply, including any improvements made to the supply, will be lost as a result of claims on the supply made by the Nez Perce Indian Nation. For this reason, it is necessary to evaluate this alternative with extreme caution. The Craig Mountain water supply system is shown on Exhibit 15.

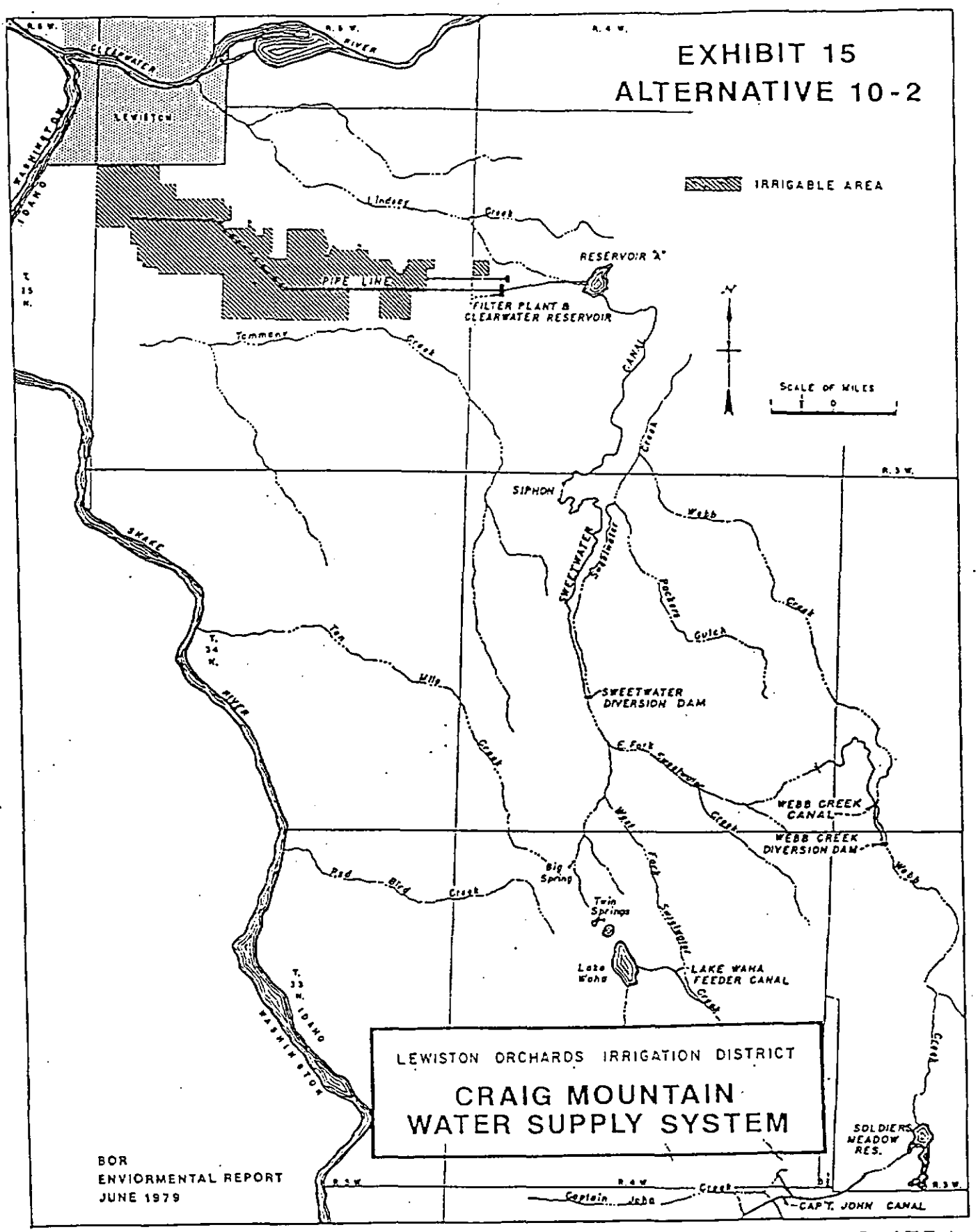

EXHIBIT 15
ALTERNATIVE 10-2
IRRIGABLE AREA
LEWISTON
CLEARWATER
RIVER
WASHINGTON
IDAHO
Indian Creek
RESERVOIR "A"
PIPE LINE
FILTER PLANT & CLEARWATER RESERVOIR
Tammany Creek
CANAL
SCALE OF MILES
SIPHON
Webb Creek
SWEETWATER
Packers Gulch
SWEETWATER DIVERSION DAM
SNAKE RIVER
Ten Mile Creek
E. Fork Sweetwater
WEBB CREEK CANAL
WEBB CREEK DIVERSION DAM
Red Bird Creek
Big Spring
Twin Springs
West Fork Sweetwater
Lake Waha
LAKE WAHA FEEDER CANAL
LEWISTON ORCHARDS IRRIGATION DISTRICT
CRAIG MOUNTAIN
WATER SUPPLY SYSTEM
SOLDIERS MEADOW RES.
Captain John Creek
CAPT. JOHN CANAL
BOR
ENVIORMENTAL REPORT
JUNE 1979

PLATE I

5.03.03 Alternative 10-3 - Expanded Use of Ground Water Wells

Expanded use of ground water wells is an alternative which is already being utilized to provide additional water supplies to both service areas. Expanded use of wells is being utilized for the following reasons:

1. Use of wells can provide a source of water near locations of heavy use. Examples of this are City Well No. 3 and the Bryden Canyon Well.
2. Use of wells, in some instances, has been accomplished by refurbishing existing wells at relatively low cost thereby providing an inexpensive additional water supply, such as for City Well 4.
3. Use of wells can provide, in some instances, relief for other supplies, which, considering the water quality and intended use of the water, may make the use of ground water better suited for a particular use. Examples of this are the recent use of City Well 3 for use as cemetery irrigation and the proposed City Bryden Canyon Well which will provide irrigation water for the Bryden Canyon golf course, replacing the use of treated surface water from the Clearwater River.

A recent study completed for LOID by Wyatt Engineering, Inc., the Lewiston Deep Aquifer Study, suggested that a well spacing of approximately one (1) mile was necessary to provide for maximum well production without interference from adjacent wells. Based on this well spacing requirement and locations of existing wells, a total of approximately 18 wells could be developed in the areas east and north of the two service areas. Development of up to 18 wells could provide a total additional water supply of 40.1 CFS, or 25.9 MGD, at 1,000 gallons per minute per well.

The Lewiston Orchards Irrigation District has proposed to construct four 1,500 gallon per minute wells to provide an additional source of water to supplement both the LOID domestic water irrigation water supply for the District. The four 1,500 gallon per minute wells proposed by the LOID for construction have been included in this alternative.

For the development of this alternative, groups of four to six wells, producing approximately 1,100 gallons per minute of water per well, would pump to a central ground storage tank located at one of the well sites. Water from the wells would be stored in the ground storage tank. To meet distribution system water use requirements, a pumping station located at each ground storage tank would provide flow and pressure to the distribution system.

Facilities necessary for the expanded use of ground water wells in this alternative include the following:

1. Ground water wells
2. Storage reservoirs to store water from the wells
3. Pump stations to pump stored water from the storage reservoirs into the distribution system
4. Piping from the pump stations to connections with existing piping

The opinion of probable cost for the LOID proposed four wells and a 2 million gallon reservoir is $5,200,000 for approximately 8.50 MGD, at an average initial capital cost of $611,800 per MGD. This alternative could provide the total needed additional water supply through the year 2005 considering the probable loss of the Craig Mountain Water Supply.

Additional wells could also be constructed, along with ground storage tanks, pumping stations, and pipelines to provide additional groundwater supplies to replace the probable loss of the Craig Mountain Water Supply. Eighteen (18) additional wells, spaced at approximately one mile from other wells and each well pumping at 1,000 gallons per minute, could provide approximately 26 million gallons per day of water, thereby replacing the Craig Mountain supply and provide for some future growth.

The Lewiston Deep Aquifer Study determined that the amount of water available from the aquifer was very large and that recharge to the aquifer was high. According to the Lewiston Deep Aquifer Study, approximately 44 billion gallons of aquifer discharge occurs to area streams, making additional water from the aquifer available for use. As many as eighteen wells spaced at one mile intervals and all pumping at 1,000 gallons per minute may cause excessive well drawdown, causing increased costs for pumping. Prior to construction of a large number of wells, the geologists and hydro-geologists should be further consulted. Additionally, consideration should be given to constructing wells in phases with up to four wells per phase and monitoring the well drawdown on existing wells caused by the new wells.

The opinion of probable cost for the LOID proposed four wells and other, additional wells and associated facilities is provided in Table 5-13:

Table 5-13
Alternative 10-3
Expanded Use of Ground Water Wells
Opinion of Probable Cost

Item Description	Opinion of Probable Cost, Including Engineering, Administration, Legal, at 20% of Construction and Contingencies at 25% of All Items
Four Wells, 2MG Reservoir, and Piping As Proposed By LOID, May 1995	$5,200,000
Six Wells, Ground Storage Tank, Pump Station, and Piping Near Burrell Ave at 24th St (Site 1)	$9,118,000
Six Wells, Ground Storage Tank, Pump Station, and Piping Near the LOID WTP (Site 2)	$8,536,000
Six Wells, Ground Storage Tank, Pump Station, and Piping Near Stewart Ave at 10th St (Site 3)	$8,335,000

Note: Only the four wells and piping as proposed by LOID, May 1995, or one of the other sites should be considered as a ten year planning period alternative. The LOID 1995 four wells and wells at the other sites are used as components for fifty year alternatives, presented later.

The locations of ground storage tanks, pump stations, and wells used in this alternative are shown on Exhibit 16.

EXHIBIT 16
ALTERNATIVE 10-3

EXPANDED USE OF GROUND WATER WELLS

POTENTIAL GROWTH BOUNDARY

POTENTIAL GROWTH BOUNDARY

R 6 W
R 5 W

R 5 W
R 4 W

CITY LIMIT

CLEARWATER RIVER

OWEN PLANTE RESERVOIR

MAIN STREET

SNAKE RIVER AVENUE

4TH STREET

6TH STREET

11TH AVENUE

16TH AVENUE

19TH AVENUE

21ST STREET

SNAKE RIVER

CITY LIMIT

POTENTIAL GROWTH BOUNDARY

3-4

OLD LAPWAI ROAD

3-5

3-3

3-2

3-1

GUN CLUB ROAD

LINDSEY CREEK ROAD

PROPOSED 1996
LOID WELL #3
GST/BPS 3

PROPOSED 1995
LOID WELL #4

PROPOSED 1995
LOID WELL #6

WARNER AVENUE

5TH

MAIN ROAD

3-6

BURRELL AVENUE

CEDER AVENUE

POWERS AVENUE

ST

18TH

16th

Bryden Canyon Golf Course

CITY LIMIT

LOID BOUNDARY

TAMMANY CREEK ROAD

TAMMANY CREEK ROAD

1-5

SCHAUB RANCH DEVELOPMENT

1-6

T 36 N
T 35 N

NEZ PERCE INDIAN RESERVATION BOUNDARY

1-3

OLD LAPWAI ROAD

1-2

1-1

2-4

POTENTIAL GROWTH BOUNDARY

1-4

2-3

PROPOSED 1996
LOID WELL #5
GST/BPS 1
LOID BOUNDARY

2-1

GST/BPS 2

TIE-IN

2-2

2-5

2-6

MINE LINE

GRAPHIC SCALE

4000 0 4000 8000

(IN FEET)
1 inch = 4000ft.

R 6 W
R 5 W

POTENTIAL GROWTH BOUNDARY

R 5 W
R 4 W

POTENTIAL GROWTH BOUNDARY

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LEWISTON, IDAHO

DRAWN BY: MES, SJH	CHECKED BY: SSS
DESIGNED BY: SSS	
SCALE: 1"=4000'	
DATE: 4/17/95	
PROJECT NO.: 1010T	
SHEET 1 OF 1	

5.03.04 Alternative 10-4 - Use of Wastewater Treatment Plant Effluent as Irrigation Water

The LOID water system provides separate distribution of domestic and irrigation water. For this alternative, only the LOID irrigation system would be provided with the additional water supply provided from wastewater treatment plant effluent. LOID irrigation system use is projected to increase from average daily use of 5.610 MGD in 1995 to 6.476 MGD in the year 2045, without conservation.

Use of wastewater treatment plant effluent as irrigation water could provide up to an additional 4 million gallons per day initially for irrigation use, and more over time as the sewered population increases. For the purposes of this alternative, a maximum irrigation supply of 4.0 MGD is considered.

For this alternative, two options were initially considered:

1. Use of treated effluent from a new wastewater treatment plant constructed in the Orchards area to treat wastewater collected from the Central Orchards Sewer District and the Lewiston Orchards Sewer District

2. Use of treated effluent from the existing City of Lewiston wastewater treatment plant

Based on preliminary opinions of probable cost, it appeared that use of treated effluent from the existing City of Lewiston wastewater treatment plant could be pumped from the plant to the LOID service area for distribution in the LOID irrigation distribution system at less cost. Therefore only that option is presented as Alternative 10-4.

Facilities necessary for the use of treated effluent from the wastewater treatment plant in this alternative include the following:

1. Pump station to pump treated effluent from the wastewater treatment plant to the LOID service area
2. 16" diameter pipeline from the City WWTP to a location near Lapwai Road and Lindsay Road
3. Treated effluent storage reservoir
4. Re-lift pump station
5. 16" diameter pipeline from the re-lift pump station to a treated effluent storage reservoir and pump station located near Burrell Avenue and 20th Street
6. 16" diameter pipeline from the booster pump station treated effluent storage reservoir to connection with the LOID irrigation system at Powers Avenue and 20th Street

The opinion of probable cost for this alternative is $8,666,000 including contingencies and engineering. This alternative could provide approximately 50% of the total needed additional annual irrigation water supply. A breakdown of cost for this alternative is provided in Table 5-14 for an average annual irrigation water supply of approximately 2.5 MGD, with a 4.0 MGD irrigation supply in peak irrigation months in the summer. The average initial capital cost is $3,466,000 per MGD.

Table 5-14
Alternative 10-4
Use of Wastewater Treatment Plant Effluent as Irrigation Water
Opinion of Probable Cost

Item Description	Opinion of Probable Cost
Treated Effluent Pump Station at the WWTP	$1,000,000
17,000 LF of 16" Diameter Non-Potable Water Pipeline from WWTP to Near Lapwai Road and Lindsay Creek Road	$1,026,000
1,100 LF of 16" Clearwater River Pipeline Crossing	$605,000
Treated Effluent Storage Lagoon and Booster Pump Station	$2,500,000
14,000 LF of 16" Diameter Non-Potable Water Pipeline from Re-Lift Pump Station to Terminal Treated Effluent Storage Lagoon Near Burrell and 20th Street	$718,000
Terminal Treated Effluent Storage Reservoir	$300,000
Treated Effluent Booster Pump Station at Terminal Storage Lagoon	$1,000,000
4,000 LF of 16" Diameter Non-Potable Water Pipeline from Pump Station to Connection With LOID Irrigation System at Powers Avenue at 20th Street	$240,000
Subtotal	$7,389,000
Engineering, Administration, and Legal at 20%	$1,448,000
Subtotal	$8,837,000
Contingencies at 25%	$2,209,000
Total	$11,046,000

The facilities required in this alternative are shown on Exhibit 17.

EXHIBIT 17
ALTERNATIVE 10-4

USE OF WASTE WATER TREATMENT PLANT EFFLUENT AS IRRIGATION WATER

CLARKSTON

POTENTIAL GROWTH BOUNDARY

R 6 W
R 5 W

CITY LIMIT

EXISTING WASTE WATER TREATMENT PLANT

LOWER GRANITE RESERVOIR

CLEARWATER RIVER

PROPOSED PIPELINE

PROPOSED STORAGE RESERVOIR PUMP STATION

OLD LAPWAI ROAD

SCHAUB RANCH DEVELOPMENT

T 36 N
T 35 N

NEZ PERCE INDIAN RESERVATION BOUNDARY

POTENTIAL GROWTH BOUNDARY

R 5 W
R 4 W

SNAKE RIVER

MAIN STREET

4TH STREET

11TH AVENUE

6TH STREET

16TH AVENUE

24TH STREET

19TH AVENUE

14TH STREET

CITY LIMIT

GUN CLUB ROAD

UNDSEY CREEK ROAD

PROPOSED PIPELINE

Brigham Canyon Golf Course

MAIN ROAD

WARNER AVENUE

8TH ST

BURRELL AVENUE

POWERS AVENUE

1ST ST

10TH ST

PROPOSED STORAGE RESERVOIR PUMP STATION

PROPOSED PIPELINE

LOID BOUNDARY

CITY LIMIT

LOID BOUNDARY

TAMMANY CREEK ROAD

TAMMANY CREEK ROAD

GRAPHIC SCALE

(IN FEET)
1 inch = 4000 ft.

R 6 W
R 5 W

POTENTIAL GROWTH BOUNDARY

R 5 W
R 4 W

POTENTIAL GROWTH BOUNDARY

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LEWISTON, IDAHO

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DESIGNED BY: SSS	
SCALE: 1" = 4000'	
DATE: 4/17/95	
PROJECT NO.: 1010T	
SHEET 1 OF 1	

5.03.05 Alternative 10-5 - Use of Water From the Snake River

Water from the Snake River represents a potential surface water source from which to provide the additional water supply needed in the service areas. Availability of water from the Snake River may not be determined until application for water rights is made to the Idaho Department of Water Resources, who reviews and approves water rights applications after determining availability. Preliminary information indicates that water would not be available from the Snake River due to over-use by upstream users. For the purposes of this alternative, it is assumed that water could be secured from the Snake River using the City's 18.6 CFS permit for water from the Clearwater River transferred to Lower Granite Reservoir.

Adequate water quality is important in order to meter the irrigation water supply. The irrigation water supply from the Craig Mountain system is not of sufficient quality for the reliable operation of irrigation water meters. The quality of water from the Snake River is believed to be sufficient for reliable operation of meters without treatment. However, if it was determined that limited treatment of the irrigation water supply would be required for the reliable operation of meters, additional costs for treatment would be required to be added. Such treatment may be for limited periods of time and, in any event, clarification only may be sufficient at reduced cost over water treatment facilities for drinking water quality. Complete water treatment facilities would be required to produce potable water. Costs for treatment facilities to treat water to drinking water standards have not been included in this alternative.

For Alternative 10-5, an intake and raw water pump station would be located on the Snake River near where Tammany Creek Road turns to the north to follow the river. An irrigation water storage reservoir and booster pump station would be located in the area immediately southeast of the Lewiston-Nez Perce Airport. The piping connection to the LOID irrigation distribution system would be made at Cedar Avenue and Thain Road.

Facilities necessary for use of Snake River water in Alternative 10-5 include the following:

1. Intake to receive water from the Snake River
2. Raw Water Pump Station to pump water from the intake to the irrigation water storage reservoir
3. Irrigation Water Storage Reservoir
4. Irrigation Water Booster Pump Station to pump irrigation water into the LOID irrigation distribution system
5. Transmission Pipelines

The opinion of probable cost for the initial phase of this alternative for 12 MGD is $24,075,000 at an average initial capital cost of $2,006,000 per MGD. This alternative could provide the total needed

additional water supply through the year 2005, considering the probable loss of the LOID Craig Mountain Water Supply. A breakdown of cost for this alternative is provided in Table 5-15:

Table 5-15
Alternative 10-5
Use of Water From the Snake River
Opinion of Probable Cost

Item Description	Opinion of Probable Cost
Intake Channel on Snake River	$1,313,000
Intake Structure and Pump Station	$3,226,000
37,700 LF of 36" Diameter Raw Water Transmission Pipeline from the Snake River Intake to Connection to LOID Irrigation System	$7,511,000
Interim Reservoir and Booster Pump Station	$4,000,000
Subtotal	$16,050,000
Engineering, Administration, and Legal at 20%	$3,210,000
Subtotal	$19,260,000
Contingencies at 25%	$4,815,000
Total	$24,075,000

The facilities necessary for this alternative are shown in Exhibit 18.

A disadvantage associated with this alternative is that the alternative is located away from projected future growth areas, requiring additional transmission pipelines across developed portions of the two service areas in order to provide water supply to the developing areas east of the City service area.

EXHIBIT 18
ALTERNATIVE 10-5

USE OF WATER FROM THE SNAKE RIVER

CLARKSTON

POTENTIAL GROWTH BOUNDARY

CITY LIMIT

R 6 W
R 5 W

LOWER GRANITE RESERVOIR

SNAKE RIVER

CLEARWATER RIVER

MAIN STREET

6TH STREET

14TH STREET

11TH AVENUE

16TH AVENUE

19TH AVENUE

21ST STREET

SOUTH HIGH RESERVOIR

GUN CLUB ROAD

OLD LAPWAI ROAD

LINDSEY CREEK ROAD

SCHAUB RANCH DEVELOPMENT

T 36 N
T 35 N

NEZ PERCE INDIAN RESERVATION BOUNDARY

R 5 W
R 4 W

PROPOSED TREATED WATER PIPELINE TO SOUTH HIGH RESERVOIR

MAIN ROAD

WARNER AVENUE

BURRELL AVENUE

POWERS AVENUE

8TH ST

10TH ST

18TH ST

LOID BOUNDARY

Bryden Canyon Golf Course

PROPOSED WATER TREATMENT PLANT

CITY LIMIT

PROPOSED RAW WATER INTAKE

PROPOSED TREATED WATER PIPELINE

PROPOSED TREATED WATER PIPELINE

TAMMANY CREEK ROAD

PROPOSED RAW WATER PIPELINE

GRAPHIC SCALE

(IN FEET)
1 inch = 4000ft.

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5.03.06 Alternative 10-6 - Use of Water From the Clearwater River

Use of water from the Clearwater River has many of the same features as discussed for use of water from the Snake River.

This alternative has one major advantage over the Snake River alternative in that the water supply and delivery facilities would be located in the middle of the projected future growth area.

For this alternative, water would be obtained from the Clearwater River and pumped through a pipeline to a storage reservoir located on the same site as facilities for water treatment. The City of Lewiston has a 18.6 CFS (12 MGD) permit for water from the Clearwater River which could be used under this alternative if approved by the Idaho Department of Water Resources.

Adequate water quality is important in order to meter the irrigation water supply. The irrigation water supply from the Craig Mountain system is not of sufficient quality for the reliable operation of irrigation water meters. The quality of water from the Clearwater River is believed to be sufficient for reliable operation of meters without treatment. However, if it was determined that limited treatment of the irrigation water supply would be required for the reliable operation of meters, additional costs for treatment would be required to be added. Such treatment may be for limited periods of time and, in any event, clarification only may be sufficient at reduced cost over water treatment facilities for drinking water quality. Complete water treatment facilities would be required to produce potable water. Costs for treatment facilities to treat water to drinking water standards have not been included in this alternative.

For Alternative 10-6, an intake and raw water pump station would be located on the Clearwater River near River Mile 6, where an electrical power transmission line crosses the river. An irrigation water storage reservoir and booster pump station would be located in the area near a ninety degree bend in Lapwai Road, approximately 1.6 miles north of the intersection of Burrell and 20th Street. The piping connection to the LOID irrigation distribution system at Powers Avenue and the cross country electric power transmission line east of 23rd Street through piping installed in the power line right-of-way.

Facilities necessary for use of Clearwater River in Alternative 10-6 include the following:

1. Intake to receive water from the Clearwater River
2. Raw Water Pump Station to pump water from the intake to the irrigation water storage reservoir
3. Irrigation Water Storage Reservoir
4. Irrigation Water Booster Pump Station to pump irrigation water into the LOID irrigation distribution system
5. Transmission Pipelines

The opinion of probable cost for this alternative is $17,066,000 for an initial 12 MGD supply at an average initial capital cost of $1,422,000 per MGD.

This alternative could provide the total needed additional water supply through the year 2005, considering the probable loss of the LOID Craig Mountain Water Supply. The opinion of probable cost for this alternative is provided in Table 5-16.

Table 5-16
Alternative 10-6
Use of Water From the Clearwater River
Opinion of Probable Cost

Item Description	Opinion of Probable Cost
80 MGD Intake Channel on Clearwater River	$ 1,313,000
Intake Structure and 12 MGD Pump Station	$ 3,051,000
10,000 LF 24" Diameter Raw Water Transmission Pipeline	$ 983,000
Receiving Reservoir and Booster Pump Station	$ 3,670,000
15,500 LF 24" Raw Water Transmission Pipeline from WTP Site to Connection With LOID Irrigation Water System	$ 2,360,000
Subtotal	$ 11,377,000
Engineering, Administration, and Legal at 20%	$ 2,275,000
Subtotal	$ 13,652,000
Contingencies at 25%	$ 413,000
Total	$ 17,066,000

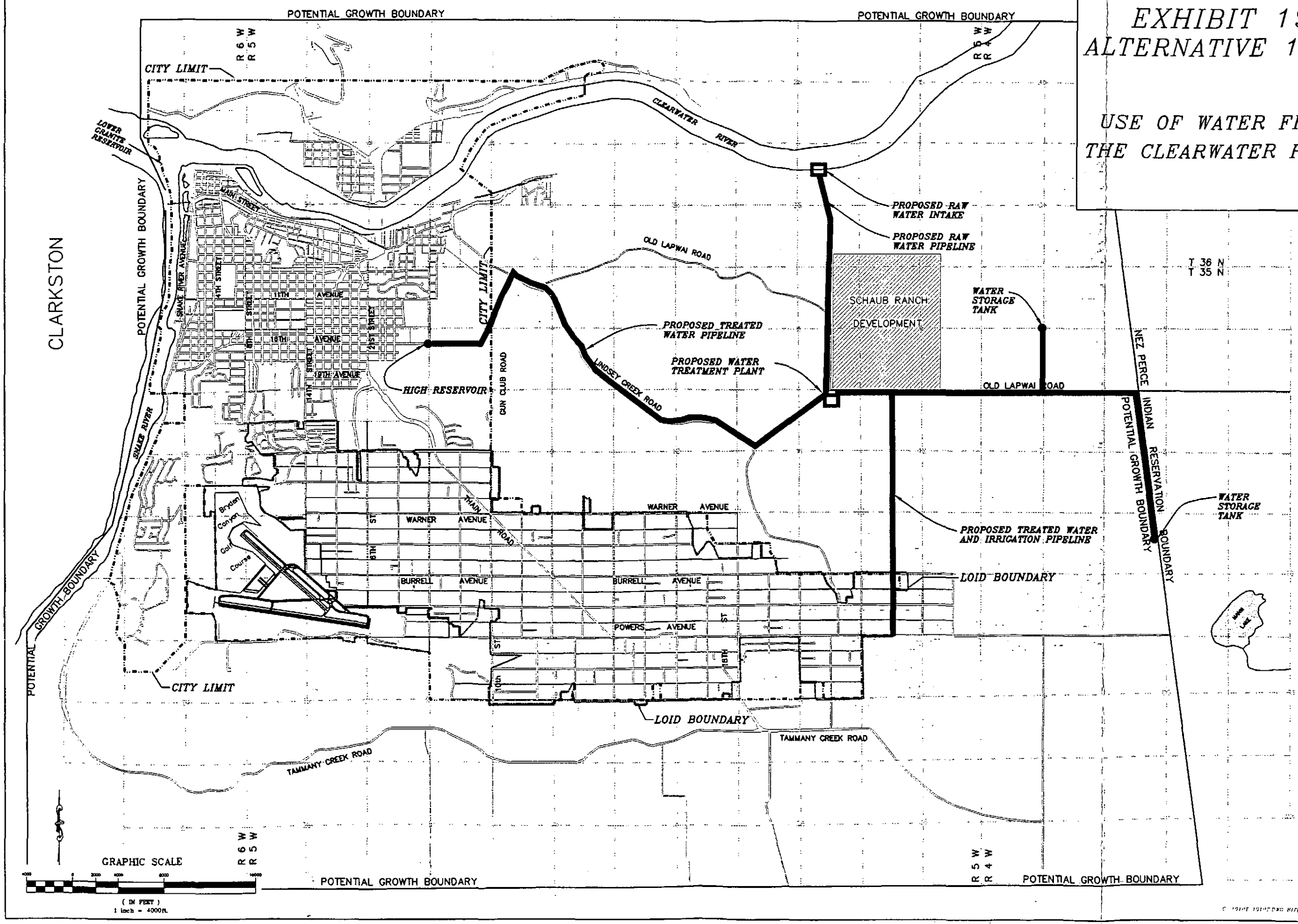
Facilities required for this alternative are shown on Exhibit 19.

5.04 Summary of Ten Year Planning Period Alternatives

Table 5-17 provides a summary of the ten year planning period alternatives:

EXHIBIT 19
ALTERNATIVE 10-6

USE OF WATER FROM THE CLEARWATER RIVER



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DATE: 4/17/95	
PROJECT NO.: 1010T	
SHEET 1 OF 1	

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TABLE 5-17
SUMMARY OF TEN YEAR PLANNING PERIOD ALTERNATIVES

Alt. No.	Description	Quantity of Water Provided	Opinion of Capital Cost of Facilities	Other Considerations
1A	LOID Purchase 2 MGD From City	2.0 MGD	$1,446,000	Water Cost from $585,000 to $683,200 Per Year
1B	LOID Purchase 4 MGD From City	4.0 MGD	$1,521,000	Water Cost from $585,000 to $683,200 Per Year
1C	Use of Water From the Clearwater River	12.0 MGD	$17,066,000	Electric Power Cost $225,000 Per Year
2	Improvements to Craig Mountain Supply	4.82 MGD	$1,932,000	Electric Power Cost $188,000 Per Year
3	Ground Water Wells	8.5 MGD	$5,200,000	Electric Power Cost $85,000 Per Year
4	Use of WWTP Treated Effluent	4.0 MGD	$11,046,000	Electric Power Cost $190,000 Per Year
5	Use of Water From the Snake River	12.0 MGD	$24,075,000	Electric Power Cost $255,000 Per Year
6	Use of Water From the Clearwater River	12.0 MGD	$17,066,000	Electric Power Cost $255,000 Per Year

Notes:
1. Alternatives 1A and 1B - electric power cost is included in purchase of water cost
2. Alternative 2 - electric power cost is from Morrison-Knudsen study
3. Alternatives 3 - 6 - electric power costs calculated as follows:
(Qty of wtr provided X 10exp6)/1440/3X1060/3960X0.7457/(0.85X0.9)X24X360X$0.04

5.05 Fifty Year Planning Period Water Supply Alternatives

In order to provide water for the entire fifty year planning period, combinations of ten year planning period alternatives would be required. Five alternatives were developed to evaluate combinations to meet the long term water requirements of the two service areas. These alternatives are as follows:

Alternative No.	Description
50-1	Use of 2 MGD City Water for LOID and Use of Clearwater River for City and LOID
50-2	LOID 1995 Proposed Four Wells and Use of Clearwater River Supply for City and LOID
50-3	City Supply 4 MGD to LOID, Use of WWTP Treated Effluent, and Use of Clearwater River Supply for City and LOID
50-4	Extensive Use of Groundwater Wells for LOID and Use of Clearwater River for City
50-5	Use of 2 MGD City Water for LOID and Use of Snake River for City and LOID

Exhibits 20 through 24 show the timing of supplies and facilities relative to the increasing requirement for water over the fifty year planning period, without implementation of any conservation measures. Each of the components which make up the fifty year alternatives described above have the limitations described previously.

5.06 Present Worth Evaluation of Fifty Year Planning Period Alternatives

In order to evaluate the fifty year planning period alternatives, a present worth value analysis was performed on each alternative, considering the effects of water use without conservation and with conservation, for a total of ten analyses.

The present worth analysis calculates the approximate total amount of money placed in an interest bearing account, which, if paid out over time, would provide the necessary funds to construct facilities and pay for identified annual expenses. Alternatives which can meet the water requirements over time and have lower total present worth values represent more attractive alternatives.

EXHIBIT 20

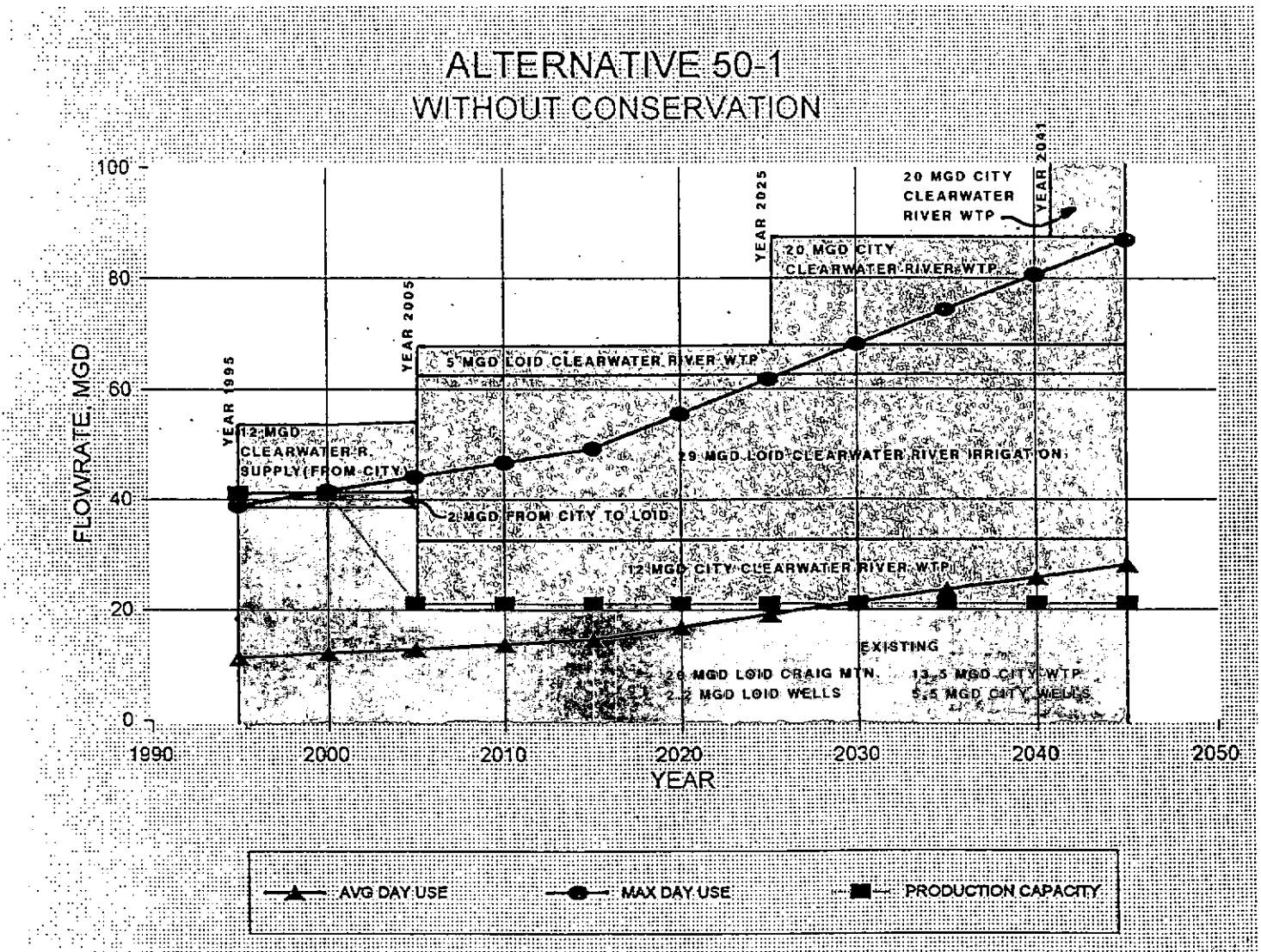

ALTERNATIVE 50-1
WITHOUT CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2025
YEAR 2041
20 MGD CITY CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER RIVER WTP
5 MGD LOID CLEARWATER RIVER WTP
12 MGD CLEARWATER R. SUPPLY (FROM CITY)
29 MGD LOID CLEARWATER RIVER IRRIGATION
2 MGD FROM CITY TO LOID
12 MGD CITY CLEARWATER RIVER WTP
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD LOID WELLS
13.5 MGD CITY WTP
5.5 MGD CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 21

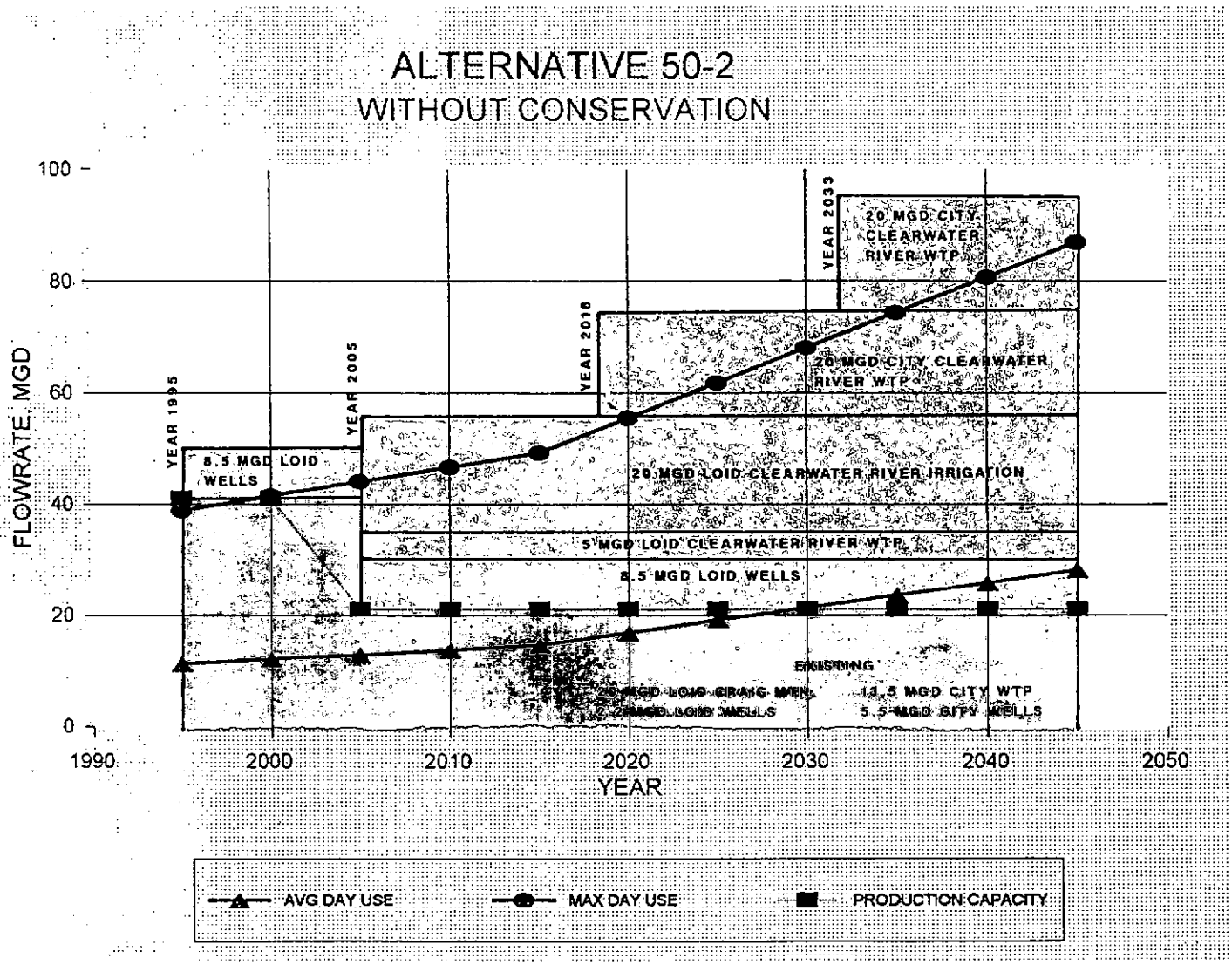

ALTERNATIVE 50-2
WITHOUT CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2018
YEAR 2033
8.5 MGD LOID WELLS
20 MGD CITY CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER RIVER WTP
20 MGD LOID CLEARWATER RIVER IRRIGATION
5 MGD LOID CLEARWATER RIVER WTP
8.5 MGD LOID WELLS
EXISTING
20 MGD LOID CRAIG MEN
13.5 MGD CITY WTP
5.5 MGD CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 22

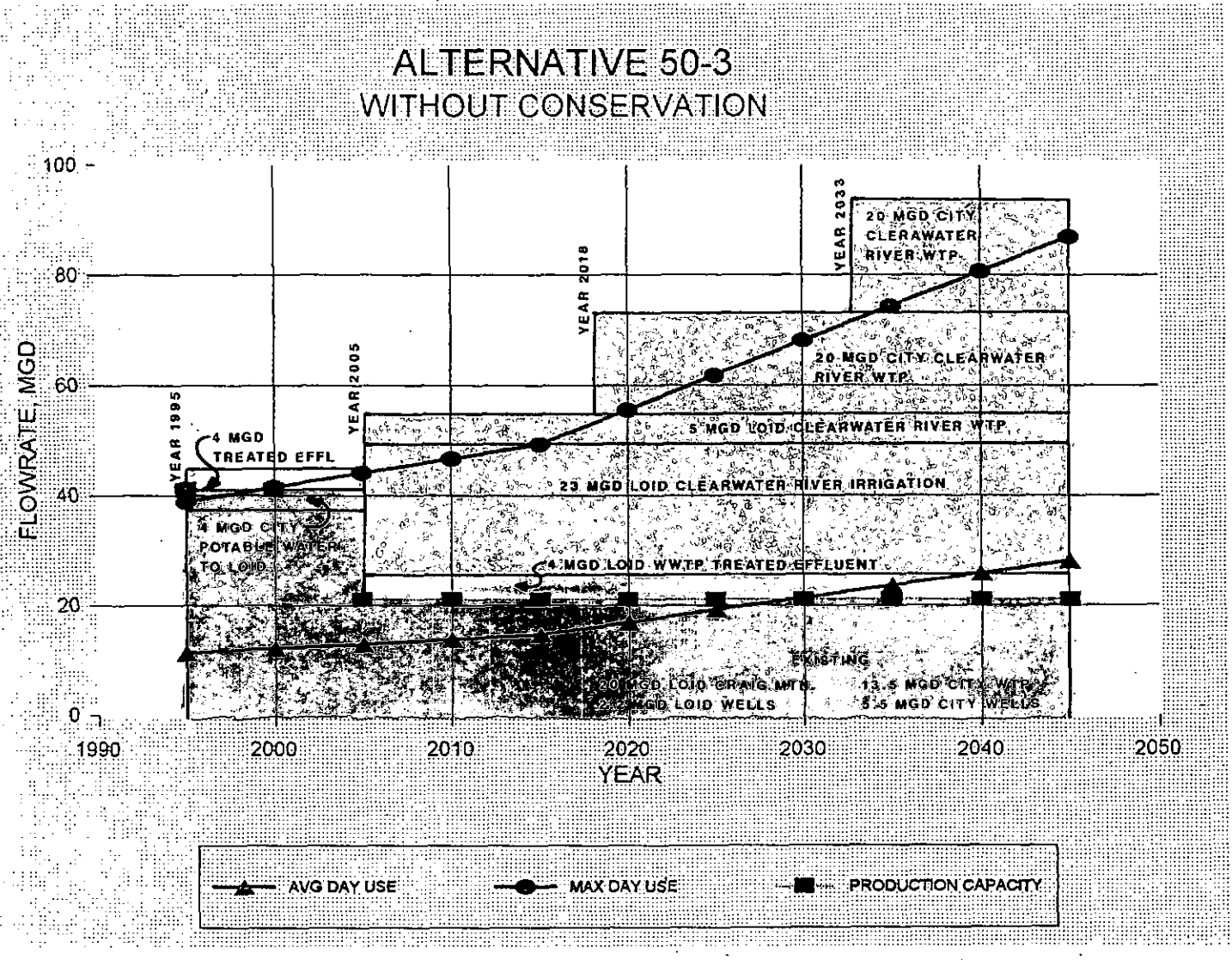

ALTERNATIVE 50-3
WITHOUT CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2018
YEAR 2033
4 MGD TREATED EFFL
4 MGD CITY POTABLE WATER TO LOID
20 MGD CITY CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER RIVER WTP
5 MGD LOID CLEARWATER RIVER WTP
23 MGD LOID CLEARWATER RIVER IRRIGATION
4 MGD LOID WW TP TREATED EFFLUENT
EXISTING
20 MGD LOID CRAIG MTR.
2 MGD LOID WELLS
13.5 MGD CITY WTP
5.5 MGD CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 23

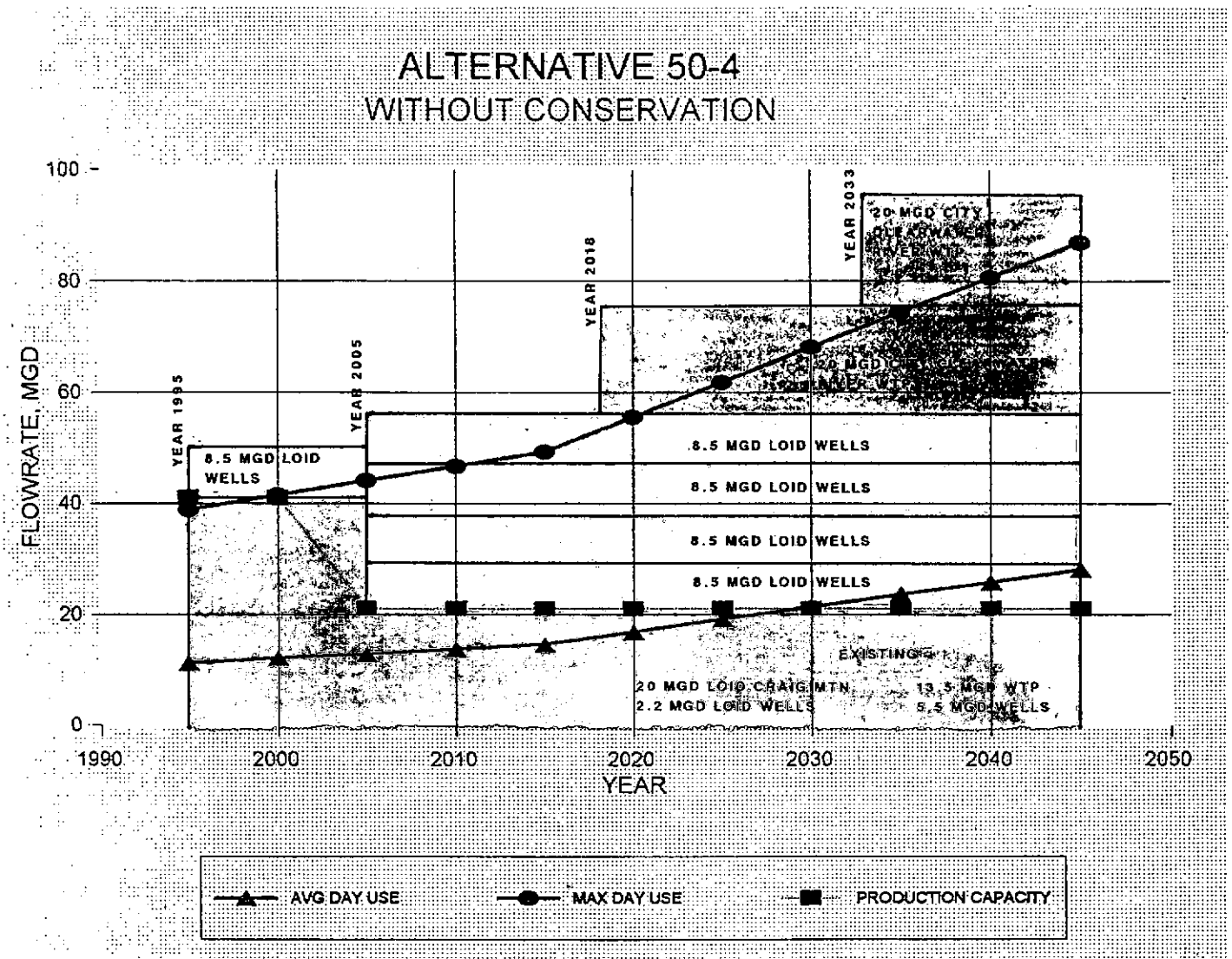
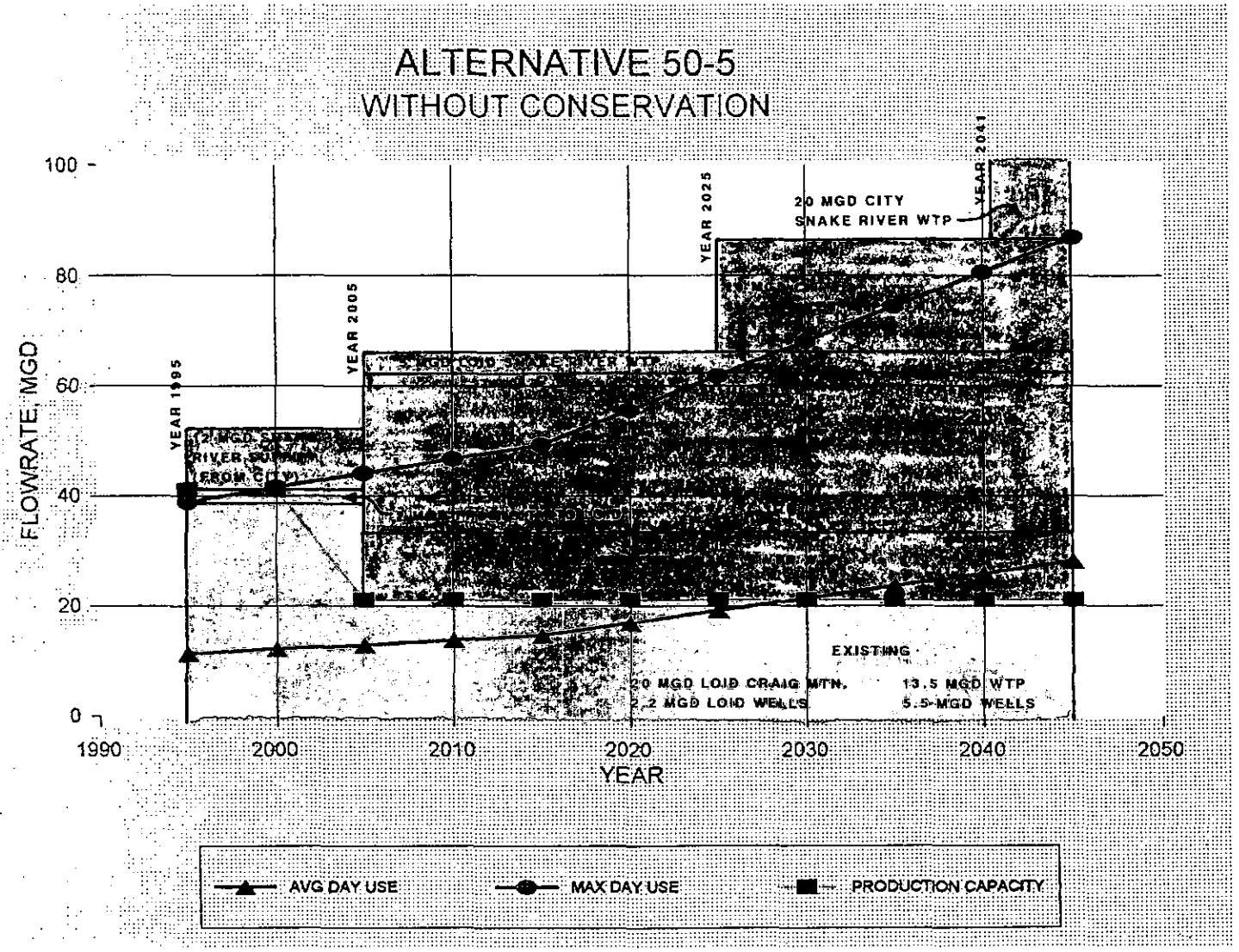

ALTERNATIVE 50-4
WITHOUT CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2018
YEAR 2033
8.5 MGD LOID WELLS
8.5 MGD LOID WELLS
8.5 MGD LOID WELLS
8.5 MGD LOID WELLS
8.5 MGD LOID WELLS
20 MGD CITY
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD LOID WELLS
13.5 MGD WTP
5.5 MGD WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 24


ALTERNATIVE 50-5
WITHOUT CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2025
YEAR 2041
20 MGD CITY
SNAKE RIVER WTP
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD LOID WELLS
13.5 MGD WTP
5.5-MGD WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

Factors considered in the present worth evaluation include the following:

1. Capital costs of alternative components based on the requirements of the components, such as pipeline diameter and length, pump station capacity, treatment facilities capacity, storage reservoirs volume and location, etc.

2. Timing of the need for additional water supplies and facilities

3. Increasing costs over time, or inflation rate, at 5% cost increase per year

4. Cost of financing, or interest rate, at 7% per year

5. Depreciation, or decline in value over time (straight line depreciation). Depreciation periods used for equipment was 20 years, depreciation use for all other items is 50 years.

6. Equipment replacements after 20 years of use

7. Electric power costs for pumping water from one location to another

8. Surface water treatment costs

Using the above described factors, fifty year planning period alternatives were evaluated. The results of the evaluation of the alternatives are shown on Tables 5-18 through 5-22. The tables show the following:

1. Facilities required to meet the water requirement, generally for a 20 year period
2. Capital costs of facilities in 1995 dollars
3. Breakdown of equipment cost from other costs for depreciation uses
4. Capital cost in the year of construction
5. Breakdown of equipment cost from other costs in the year of construction for depreciation uses
6. Remaining equipment value after depreciation in year 2045 based on capital cost in year of construction
7. Remaining other value after depreciation in year 2045 based on capital cost in year of construction
8. Total remaining value after depreciation in year 2045 based on capital cost in year of construction
9. Total present worth value of remaining year 2045 depreciation in year 1995
8. Total present worth value of the construction year capital cost in year 1995
7. Total present worth in year 1995

At the bottom right of each table is shown the total of the calculated present worth values.

ALTERNATIVE 50-1 - WITHOUT CONSERVATION
CITY SUPPLY OF 2 MGD OF POTABLE WATER TO LOID AND CLEARWATER RIVER WATER SUPPLY
PRESENT WORTH VALUE ANALYSIS

INTEREST RATE: 7 % 0.07
INFLATION RATE: 5 % 0.05

A NO.	B YEAR	C ITEM	D TOTAL COST IN YEAR 1995	E EQUIP COST IN YR 1995	F OTHER COST IN YR 1995	G TOTAL COST IN YEAR SHOWN IN COL B	H EQUIP COST IN YEAR SHOWN IN COL B	I OTHER COST IN YEAR SHOWN IN COL B	J EQUIP REMAIN DEPR VALUE IN YEAR 2045	K OTHER REMAIN DEPR VALUE IN YEAR 2045	L TOTAL REMAIN DEPR VALUE IN YEAR 2045	M TOTAL PR WRTH OF DEPR IN YEAR 1995	N TOTAL PR WRTH OF CAP COST IN YEAR 1995	O TOTAL PR WRTH IN YEAR 1995
1	1995	12 MGD CLEARWATER RIVER FACILITIES												
	1995	80 MGD INTAKE	1969500	0	1969500	1970000	0	1970000	0	0	0	0	1970000	1970000
	1995	12 MGD RIVER PUMP STATION	4576500	1443000	3133500	4577000	1443000	3134000	0	0	0	0	4577000	4577000
	1995	INTERIM RESERVOIR AND BOOSTER PUMP STATION	5505000	1237500	4267500	5505000	1238000	4268000	0	0	0	0	5505000	5505000
	1995	24" IRR TRANS PIPELINE TO LOID SYSTEM	3540000	0	3540000	3540000	0	3540000	0	0	0	0	3540000	3540000
2	1995	CITY SOUTH HIGH PUMP STA PUMPS TO												
	1995	SUPPLY 2 MGD POTABLE WATER TO LOID												
	1995	CITY PUMP IMPROVEMENTS	660000	660000	0	660000	660000	0	0	0	0	0	660000	660000
	1995	16" PIPELINE IMPROVEMENTS IN LOID	767000	0	767000	767000	0	767000	0	0	0	0	767000	767000
3	2005	34 MGD RIVER PUMP STA EXPANSION	2868000	2868000	0	4672000	4672000	0	0	0	0	0	2375000	2375000
	2005	36" TRANS PIPELINE TO NEW CITY WTP	2925000	0	2925000	4785000	0	4785000	0	953000	953000	-32000	2422000	2390000
	2005	5 MGD WTP FOR LOID	5000000	1500000	3500000	8144000	2443000	5701000	0	1140000	1140000	-38000	4140000	4101000
	2005	24" IRR TRANS PIPELINE FROM LOID WTP TO SYSTEM	2328750	0	2328750	3793000	0	3793000	0	759000	759000	-26000	1926000	1902000
	2005	20" POT TRANS PIPELINE FROM LOID WTP TO SYSTEM	1581000	0	1581000	2575000	0	2575000	0	515000	515000	-17000	1309000	1292000
	2005	12 MGD WTP FOR CITY	12000000	3600000	8400000	19547000	5864000	13683000	0	2737000	2737000	-93000	9937000	9844000
	2005	20" POT TRANS PIPELINE TO CITY HIGH RESERVOIR	1926000	0	1926000	3137000	0	3137000	0	627000	627000	-21000	1595000	1574000
	2005	10 MG NON-POTABLE WATER STORAGE RESERVOIR	4500000	0	4500000	7330000	0	7330000	0	1466000	1466000	-50000	3726000	3676000
4	2025	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	10839000	10839000	0	0	0	0	0	1424000	1424000
	2025	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	12642000	0	12642000	0	7585000	7585000	-257000	1661000	1404000
	2025	20 MGD CITY WTP EXPANSION	20000000	6000000	14000000	86439000	25932000	60507000	0	36304000	36304000	-1232000	11355000	10123000
	2025	36" TRANS PIPELINE FROM WTP TO RESERVOIR	4920000	0	4920000	21264000	0	21264000	0	12758000	12758000	-433000	2793000	2360000
	2025	4 MG POTABLE WATER STORAGE RESERVOIR	1800000	0	1800000	7779000	0	7779000	0	4667000	4667000	-166000	1022000	864000
5	2041	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	23681000	23681000	0	18929000	0	18929000	-643000	1053000	410000
	2041	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	27595000	0	27595000	0	25387000	25387000	-862000	1228000	366000
	2041	20 MGD CITY WTP EXPANSION	20000000	6000000	14000000	188885000	56666000	132080000	45285000	121514000	166799000	-5662000	8396000	2734000
	2041	24" TRANS PIPELINE FROM WTP TO RESERVOIR	1594000	0	1594000	15036000	0	15036000	0	13835000	13835000	-470000	669000	199000
	2041	4 MG POTABLE WATER STORAGE RESERVOIR	1800000	0	1800000	16982000	0	16982000	0	15623000	15623000	-530000	756000	226000
6		PRESENT WORTH OF ANNUAL WATER PURCHASE												
	1995	PURCHASE OF WATER FROM CITY BY LOID												-4972000
	1995	SALE OF WATER FROM CITY TO LOID												4972000
7		EQUIPMENT REPLACEMENTS												
	2025	LOID 5 MGD WTP EQUIPMENT INSTALLED IN 2005	1500000	1500000	0	6483000	6483000	0	0	0	0	0	852000	852000
	2025	CITY 12 MGD WTP EQUIPMENT INSTALLED IN 2005	3600000	3600000	0	15559000	15559000	0	0	0	0	0	2044000	2044000
8		ELECTRICAL POWER COSTS												
	1995	12 MGD CLRWTR RIVER PUMPING TO LOID (4 MGD AT 1060 FT)												8246000
	2005	17 MGD CLRWTR RIVER PUMPING TO LOID (8 MGD AT 1060 FT)												10415000
	2005	12 MGD CLRWTR RIVER PUMPING TO CITY WTP (4 MGD AT 680 FT)												3818000
	2005	5 MGD WTP PUMPING TO LOID SYSTEM (2 MGD AT 230 FT)												846000
	2005	12 MGD WTP PUMPING TO CITY HIGH RES (4 MGD AT -340 FT)												0
	2025	20 MGD CLRWTR RIVER PUMPING TO CITY WTP (8 MGD AT 680 FT)												2385000
	2025	20 MGD WTP PUMPING TO NEW CITY RES (8 MGD AT 160 FT)												631000
	2041	20 MGD CLRWTR RIVER PUMPING TO CITY WTP (8 MGD AT 680 FT)												485000
	2041	20 MGD WTP PUMPING TO NEW CITY RES (8 MGD AT 340 FT)												243000
9		PRESENT WORTH OF WATER TREATMENT COSTS												3314000
		TOTAL PRESENT WORTH VALUE												97362000

ALTERNATIVE 50-2 - WITHOUT CONSERVATION
ADDITIONAL WELLS FOR LOID AND CLEARWATER RIVER WATER SUPPLY
PRESENT WORTH VALUE ANALYSIS

INTEREST RATE: 7 % 0.07
INFLATION RATE: 5 % 0.05

A NO.	B YEAR	C ITEM	D TOTAL COST IN YEAR 1995	E EQUIP COST IN YR 1995	F OTHER COST IN YR 1995	G TOTAL COST IN YEAR SHOWN IN COL B	H EQUIP COST IN YEAR SHOWN IN COL B	I OTHER COST IN YEAR SHOWN IN COL B	J EQUIP REMAIN DEPR VALUE IN YEAR 2045	K OTHER REMAIN DEPR VALUE IN YEAR 2045	L TOTAL REMAIN DEPR VALUE IN YEAR 2045	M TOTAL PR WRTH OF DEPR IN YEAR 1995	N TOTAL PR WRTH OF CAP COST IN YEAR 1995	O TOTAL PR WRTH IN YEAR 1995
1	1995	8.5 MGD LOID GROUNDWATER WELL SUPPLY												
	1995	LOID 1995 PROPOSED 4 WELLS	5200000	862500	4337500	5200000	863000	4338000	0	0	0	0	5200000	5200000
2	2005	25 MGD CLEARWATER RIVER FACILITIES												
	2005	80 MGD INTAKE	1969500	0	1969500	3208000	0	3208000	0	642000	642000	-22000	1631000	1609000
	2005	25 MGD CLEARWATER RIVER PUMP STATION	6101500	2553450	2548050	8310000	4159000	4151000	0	830000	830000	-28000	4224000	4196000
	2005	INTERIM RESERVOIR AND BOOSTER PUMP STATION	6000000	1582500	4417500	9773000	2578000	7196000	0	1439000	1439000	-49000	4968000	4919000
	2005	36" TRANS PIPELINE TO NEW LOID WTP	2925000	0	2925000	4765000	0	4765000	0	953000	953000	-32000	2422000	2390000
3	2005	5 MGD WTP FOR LOID	5000000	1500000	3500000	8144000	2443000	5701000	0	1140000	1140000	-39000	4140000	4101000
	2005	20" POT TRANS PIPELINE FROM LOID WTP TO SYSTEM	1581000	0	1581000	2575000	0	2575000	0	515000	515000	-17000	1309000	1292000
	2005	36" IRR TRANS PIPELINE FROM LOID WTP TO SYSTEM	4773750	0	4773750	7776000	0	7776000	0	1555000	1555000	-53000	3953000	3900000
	2005	10 MG NON-POTABLE WATER STORAGE RESERVOIR	4500000	0	4500000	7330000	0	7330000	0	1466000	1466000	-50000	3726000	3676000
4	2018	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	7703000	7703000	0	0	0	0	0	1625000	1625000
	2018	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	8984000	0	8984000	0	4133000	4133000	-140000	1895000	1755000
	2018	20 MGD CITY WTP	20000000	6000000	14000000	61430000	18429000	43001000	0	19780000	19780000	-671000	12958000	12287000
	2018	36" TRANS PIPELINE FROM WTP TO CITY HIGH RESERVOIR	5505000	0	5505000	16909000	0	16909000	0	7778000	7778000	-264000	3567000	3303000
5	2033	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	16015000	16015000	0	6406000	0	6406000	-217000	1224000	1007000
	2033	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	18678000	0	18678000	0	14195000	14195000	-482000	1428000	946000
	2033	20 MGD CITY WTP EXPANSION	20000000	6000000	14000000	127710000	38313000	89397000	15325000	67942000	83267000	-2827000	9764000	6937000
	2033	36" TRANS PIPELINE FROM WTP TO NEW RESERVOIR	4920000	0	4920000	31417000	0	31417000	0	23877000	23877000	-811000	2402000	1591000
	2033	4 MG POTABLE WATER STORAGE RESERVOIR	1800000	0	1800000	11494000	0	11494000	0	8735000	8735000	-297000	879000	582000
6		EQUIPMENT REPLACEMENTS												
	2015	4 - 1,500 GPM WELL PUMPS INSTALLED IN 1995	787500	787500	0	2069000	2069000	0	0	0	0	0	540000	540000
	2025	LOID 5 MGD WTP EQUIP INSTALLED IN 2005	1500000	1500000	0	6483000	6483000	0	0	0	0	0	852000	852000
	2035	4 - 1,500 GPM WELL PUMPS INSTALLED IN 2015	787500	787500	0	5644000	5644000	0	2772000	0	2772000	-94000	370000	276000
	2038	CITY 20 MGD WTP EQUIP INSTALLED IN 2018	6000000	6000000	0	48898000	48898000	0	31784000	0	31784000	-1079000	2666000	1587000
7		ELECTRICAL POWER COSTS												
	1995	4 - 1,500 GPM WELL PUMPS (3 MGD AT 1060 FT)												6184000
	2005	5 MGD CLRWTR RIVER PUMPING TO LOID WTP (2 MGD AT 680 FT)												1909000
	2005	5 MGD LOID WTP PUMPING TO SYSTEM (2 MGD AT 230 FT)												646000
	2005	20 MGD CLRWTR RIVER PUMPING TO LOID (8 MGD AT 1060 FT)												8927000
	2018	20 MGD CLRWTR PUMPING TO CITY WTP (6 MGD AT 680 FT)												3414000
	2018	20 MGD CLRWTR PUMPING TO CITY HIGH RES (6 MGD AT -340 FT)												0
	2033	20 MGD CLRWTR PUMPING TO CITY WTP (6 MGD AT 680 FT)												1364000
	2033	20 MGD CLRWTR PUMPING TO NEW CITY RES (6 MGD AT 160 FT)												321000
8		PRESENT WORTH OF OF WATER TREATMENT COSTS												4682000
		TOTAL PRESENT WORTH VALUE												92018000

ALTERNATIVE 50-3 - WITHOUT CONSERVATION
CITY SUPPLY OF 4 MGD OF POTABLE WATER TO LOID, USE OF WWTP EFFLUENT, AND CLEARWATER RIVER WATER SUPPLY
PRESENT WORTH VALUE ANALYSIS

INTEREST RATE: 7 % 0.07
INFLATION RATE: 5 % 0.05

A NO.	B YEAR	C ITEM	D TOTAL COST IN YEAR 1995	E EQUIP COST IN YR 1995	F OTHER COST IN YR 1995	G TOTAL COST IN YEAR SHOWN IN COL B	H EQUIP COST IN YEAR SHOWN IN COL B	I OTHER COST IN YEAR SHOWN IN COL B	J EQUIP REMAIN DEPR VALUE IN YEAR 2045	K OTHER REMAIN DEPR VALUE IN YEAR 2045	L TOTAL REMAIN DEPR VALUE IN YEAR 2045	M TOTAL PR WRTH OF DEPR IN YEAR 1995	N TOTAL PR WRTH OF CAP COST IN YEAR 1995	O TOTAL PR WRTH IN YEAR 1995
1	1995	4 MGD WWTP EFFLUENT PUMP STATION AND PIPELINE												
	1995	4 MGD WWTP EFFLUENT PUMP STATION	1500000	750000	750000	1500000	750000	750000	0	0	0	0	1500000	1500000
	1995	16" PIPELINE FROM PS TO BOOSTER PS AND RIVER CROSSING	2446500	0	2446500	2447000	0	2447000	0	0	0	0	2447000	2447000
	1995	INTERIM RESERVOIR AND BOOSTER PUMP STATION	3750000	750000	3000000	3750000	750000	3000000	0	0	0	0	3750000	3750000
	1995	16" PIPELINE FROM BOOSTER PS TO SURGE RESERVOIR	1077000	0	1077000	1077000	0	1077000	0	0	0	0	1077000	1077000
	1995	1 MG SURGE RESERVOIR	450000	0	450000	450000	0	450000	0	0	0	0	450000	450000
	1995	PUMP STATION FOR PRESSURE INTO LOID SYSTEM	1500000	750000	750000	1500000	750000	750000	0	0	0	0	1500000	1500000
	1995	16" PIPELINE FROM SURGE RESERVOIR TO LOID SYSTEM	360000	0	360000	360000	0	360000	0	0	0	0	360000	360000
2	1995	CITY SOUTH HIGH PUMP STA PUMPS TO												
	1995	SUPPLY 4 MGD POTABLE WATER TO LOID												
	1995	CITY PUMP IMPROVEMENTS	825000	660000	165000	825000	660000	165000	0	0	0	0	825000	825000
	1995	16" PIPELINE IMPROVEMENTS IN LOID	748500	0	748500	749000	0	749000	0	0	0	0	749000	749000
3	2005	28 MGD CLEARWATER RIVER FACILITIES												
	2005	60 MGD INTAKE	1969500	0	1969500	3208000	0	3208000	0	642000	642000	-22000	1831000	1809000
	2005	28 MGD RIVER PUMP STATION	5851500	2305500	3546000	9531000	3755000	5776000	0	1155000	1155000	-39000	4845000	4806000
	2005	INTERIM RESERVOIR AND BOOSTER PUMP STATION	6000000	1582500	4417500	9773000	2576000	7196000	0	1439000	1439000	-49000	4968000	4919000
	2005	36" IRR TRANS PIPELINE TO LOID WTP AND SYSTEM	7260000	0	7260000	11826000	0	11826000	0	2365000	2365000	-80000	6012000	5932000
	2005	5 MGD WTP FOR LOID	5000000	1500000	3500000	8144000	2443000	5701000	0	1140000	1140000	-39000	4140000	4101000
	2005	20" POT TRANS PIPELINE FROM LOID WTP TO SYSTEM	1561000	0	1561000	2575000	0	2575000	0	515000	515000	-17000	1309000	1292000
	2005	10 MG NON-POTABLE WATER STORAGE RESERVOIR	4500000	0	4500000	7330000	0	7330000	0	1466000	1466000	-50000	3726000	3676000
4	2018	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	7703000	7703000	0	0	0	0	0	1825000	1825000
	2018	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	8984000	0	8984000	0	4133000	4133000	-140000	1895000	1755000
	2018	20 MGD CITY WTP	20000000	6000000	14000000	61430000	18429000	43001000	0	19780000	19780000	-671000	12958000	12287000
	2018	36" TRANS PIPELINE FROM WTP TO HIGH RESERVOIR	5505000	0	5505000	16909000	0	16909000	0	7778000	7778000	-264000	3567000	3303000
6	2033	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	16015000	16015000	0	6406000	0	6406000	-217000	1224000	1007000
	2033	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	18678000	0	18678000	0	14195000	14195000	-482000	1428000	946000
	2033	20 MGD CITY WTP EXPANSION	20000000	6000000	14000000	127710000	38313000	89397000	15325000	67942000	83267000	-2827000	9764000	6937000
	2033	36" TRANS PIPELINE FROM WTP TO NEW RESERVOIR	4920000	0	4920000	31417000	0	31417000	0	23877000	23877000	-811000	2402000	1591000
	2033	NEW 4 MG POTABLE WATER STORAGE RESERVOIR	1800000	0	1800000	11494000	0	11494000	0	8735000	8735000	-297000	879000	582000
7		PRESENT WORTH OF ANNUAL WATER PURCHASE												
	1995	PURCHASE OF WATER FROM CITY BY LOID												-9813000
	1995	SALE OF WATER FROM CITY TO LOID												9813000
8		EQUIPMENT REPLACEMENTS												
	2025	LOID 5 MGD WTP EQUIPMENT INSTALLED IN 2005	1500000	1500000	0	6483000	6483000	0	0	0	0	0	852000	852000
	2038	CITY 20 MGD WTP EQUIPMENT INSTALLED IN 2005	6000000	6000000	0	48898000	48898000	0	31784000	0	31784000	-1079000	2666000	1587000
9		ELECTRICAL POWER COSTS												
	1995	4 MGD WWTP EFFL PUMPING TO LOID (1.5 MGD AT 1060 FT)												3092000
	2005	28 MGD CLRWTR RIVER PUMPING TO LOID (9 MGD AT 1060 FT)												13391000
	2005	5 MGD LOID WTP PUMPING TO LOID SYSTEM (2 MGD AT 230 FT)												646000
	2018	20 MGD CLRWTR RIVER PUMPING TO CITY WTP (6 MGD AT 680 FT)												3414000
	2018	20 MGD WTP PUMPING TO CITY HIGH RES (6 MGD AT -340 FT)												0
	2033	20 MGD CLRWTR RIVER PUMPING TO CITY WTP (6 MGD AT 680 FT)												321000
	2033	20 MGD WTP PUMPING TO NEW CITY RES (6 MGD AT 160 FT)												321000
10		PRESENT WORTH OF WATER TREATMENT COSTS												4682000
		TOTAL PRESENT WORTH VALUE												97332000

ALTERNATIVE 50-4 - WITHOUT CONSERVATION
EXTENSIVE USE OF GROUNDWATER WELLS AND CLEARWATER RIVER WATER SUPPLY
PRESENT WORTH VALUE ANALYSIS

INTEREST RATE: 7 % 0.07
INFLATION RATE: 5 % 0.05

A NO.	B YEAR	C ITEM	D TOTAL COST IN YEAR 1995	E EQUIP COST IN YR 1995	F OTHER COST IN YR 1995	G TOTAL COST IN YEAR SHOWN IN COL B	H EQUIP COST IN YEAR SHOWN IN COL B	I OTHER COST IN YEAR SHOWN IN COL B	J EQUIP REMAIN DEPR VALUE IN YEAR 2045	K OTHER REMAIN DEPR VALUE IN YEAR 2045	L TOTAL REMAIN DEPR VALUE IN YEAR 2045	M TOTAL PR WRTH OF DEPR IN YEAR 1995	N TOTAL PR WRTH OF CAP COST IN YEAR 1995	O TOTAL PR WRTH IN YEAR 1995
1	1995	8.5 MGD LOID GROUNDWATER WELL SUPPLY												
	1995	LOID 1995 PROPOSED 4 WELLS	5200000	862500	4337500	5200000	863000	4338000	0	0	0	0	5200000	5200000
2	2005	25.5 MGD GROUNDWATER WELLS SUPPLY FACILITIES												
	2005	WELL CLUSTER NO. 1, INCL 6 WELLS, GST, HSPS, PIPING	9118500	1012500	8106000	14853000	1649000	13204000	0	2641000	2641000	-90000	7551000	7461000
	2005	WELL CLUSTER NO. 2, INCL 6 WELLS, GST, HSPS, PIPING	8535000	1012500	7522500	13903000	1649000	12253000	0	2451000	2451000	-83000	7068000	6985000
	2005	WELL CLUSTER NO. 3, INCL 6 WELLS, GST, HSPS, PIPING	8335500	1012500	7323000	13578000	1649000	11928000	0	2386000	2386000	-81000	6902000	6821000
3	2018	20 MGD CLEARWATER RIVER FACILITIES												
	2018	80 MGD INTAKE	1969500	0	1969500	6049000	0	6049000	0	2783000	2783000	-94000	1276000	1182000
	2018	20 MGD CLEARWATER RIVER PUMP STATION	5101500	2553450	2548050	15669000	7843000	7826000	0	3600000	3600000	-122000	3305000	3183000
	2018	INTERIM RESERVOIR AND BOOSTER PUMP STATION	6000000	1582500	4417500	18429000	4861000	13568000	0	6241000	6241000	-212000	3888000	3676000
	2018	36" TRANS PIPELINE TO NEW CITY WTP	2925000	0	2925000	8984000	0	8984000	0	4133000	4133000	-140000	1895000	1755000
	2018	20 MGD CITY WTP	20000000	6000000	14000000	61430000	18429000	43001000	0	19780000	19780000	-671000	12958000	12287000
	2018	36" TRANS PIPELINE FROM WTP TO CITY HIGH RESERVOIR	5505000	0	5505000	16909000	0	16909000	0	7778000	7778000	-264000	3567000	3303000
4	2033	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	16015000	16015000	0	6406000	0	6406000	-217000	1224000	1007000
	2033	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	18678000	0	18678000	0	14195000	14195000	-482000	1428000	946000
	2033	20 MGD CITY WTP EXPANSION	20000000	6000000	14000000	127710000	38313000	89397000	15325000	67942000	83267000	-2827000	9764000	6937000
	2033	36" TRANS PIPELINE FROM WTP TO NEW RESERVOIR	4920000	0	4920000	31417000	0	31417000	0	23877000	23877000	-811000	2402000	1591000
	2033	NEW 4 MG CITY POTABLE WATER STORAGE RESERVOIR	1800000	0	1800000	11494000	0	11494000	0	8735000	8735000	-297000	879000	582000
5		EQUIPMENT REPLACEMENTS												
	2015	WELL PUMPS FOR LOID 1995 WELLS INSTALLED IN 1995	862500	1012500	-150000	2288000	2686000	-398000	0	-159000	-159000	5000	591000	596000
	2025	WELL AND HSPS PUMPS FOR WELL CLUSTER NO. 1 INSTALLED IN 20	1012500	1012500	0	4376000	4376000	0	0	0	0	0	575000	575000
	2025	WELL AND HSPS PUMPS FOR WELL CLUSTER NO. 2 INSTALLED IN 20	1012500	1012500	0	4376000	4376000	0	0	0	0	0	575000	575000
	2025	WELL AND HSPS PUMPS FOR WELL CLUSTER NO. 3 INSTALLED IN 20	1012500	1012500	0	4376000	4376000	0	0	0	0	0	575000	575000
	2035	WELL PUMPS FOR LOID 1995 WELLS INSTALLED IN 2015	862500	862500	0	6072000	6072000	0	3036000	0	3036000	-103000	405000	302000
	2038	CITY 20 MGD WTP EQUIP INSTALLED IN 2018	6000000	6000000	0	48898000	48898000	0	31784000	0	31784000	-1079000	2666000	1587000
6		ELECTRICAL POWER COSTS												
	1995	4 - 1,500 GPM WELL PUMPS (3 MGD AT 1060 FT)												6184000
	2005	12 - 1,500 GPM WELL PUMPS AND HSPS PUMPS (8.5 MGD AT 1060 FT)												12647000
	2018	20 MGD CLRWTR RIVER PUMPING TO WTP (6 MGD AT 1060 FT)												5322000
	2018	20 MGD WTP PUMPING TO CITY HIGH RES (6 MGD AT -340 FT)												0
	2033	20 MGD CLRWTR PUMPING TO CITY WTP (6 MGD AT 1060 FT)												2125000
	2033	20 MGD WTP PUMPING TO NEW CITY RES (6 MGD AT 160 FT)												321000
7		PRESENT WORTH OF WATER TREATMENT COSTS												3344000
		TOTAL PRESENT WORTH VALUE												97069000

ALTERNATIVE 50-5 - WITHOUT CONSERVATION
CITY SUPPLY OF 2 MGD OF POTABLE WATER TO LOID AND SNAKE RIVER WATER SUPPLY
PRESENT WORTH VALUE ANALYSIS

INTEREST RATE: 7 % 0.07
INFLATION RATE: 5 % 0.05

A NO.	B YEAR	C ITEM	D TOTAL COST IN YEAR 1995	E EQUIP COST IN YR 1995	F OTHER COST IN YR 1995	G TOTAL COST IN YEAR SHOWN IN COL B	H EQUIP COST IN YEAR SHOWN IN COL B	I OTHER COST IN YEAR SHOWN IN COL B	J EQUIP REMAIN DEPR VALUE IN YEAR 2045	K OTHER REMAIN DEPR VALUE IN YEAR 2045	L TOTAL REMAIN DEPR VALUE IN YEAR 2045	M TOTAL PR WRTH OF DEPR IN YEAR 1995	N TOTAL PR WRTH OF CAP COST IN YEAR 1995	O TOTAL PR WRTH IN YEAR 1995
1	1995	12 MGD SNAKE RIVER FACILITIES												
	1995	80 MGD INTAKE	1969500	0	1969500	1970000	0	1970000	0	0	0	0	1970000	1970000
	1995	12 MGD RIVER PUMP STATION	4839000	1855500	2983500	4839000	1856000	2984000	0	0	0	0	4839000	4839000
	1995	INTERIM RESERVOIR AND BOOSTER PUMP STATION	6000000	1582500	4417500	6000000	1583000	4418000	0	0	0	0	6000000	6000000
	1995	36" IRR TRANS PIPELINE TO LOID	11267000	0	11267000	11267000	0	11267000	0	0	0	0	11267000	11267000
2	1995	CITY SOUTH HIGH PUMP STATION PUMPS TO												
	1995	SUPPLY 2 MGD POTABLE WATER TO LOID												
	1995	CITY PUMP IMPROVEMENTS	660000	660000	0	660000	660000	0	0	0	0	0	660000	660000
	1995	16" PIPELINE IMPROVEMENTS IN LOID	767000	0	767000	767000	0	767000	0	0	0	0	767000	767000
3	2005	22 MGD RIVER PUMP STATION EXPANSION	2508000	2508000	0	4085000	4085000	0	0	0	0	0	2077000	2077000
	2005	36" TRANS PIPELINE TO NEW CITY WTP	6727500	0	6727500	10958000	0	10958000	0	2192000	2192000	-74000	5570000	5496000
	2005	5 MGD WTP FOR LOID	5000000	1500000	3500000	8144000	2443000	5701000	0	1140000	1140000	-39000	4140000	4101000
	2005	20" POT TRANS PIPELINE TO LOID	1428000	0	1428000	2326000	0	2326000	0	465000	465000	-16000	1182000	1166000
	2005	12 MGD WTP FOR CITY	12000000	3600000	8400000	19547000	5864000	13683000	0	2737000	2737000	-93000	9937000	9844000
	2005	20" POT TRANS PIPELINE TO CITY SOUTH HIGH RESERVOIR	1200000	0	1200000	1955000	0	1955000	0	391000	391000	-13000	994000	981000
	2005	10 MG NON-POTABLE WATER STORAGE RESERVOIR	4500000	0	4500000	7330000	0	7330000	0	1466000	1466000	-50000	3726000	3676000
4	2025	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	10839000	10839000	0	0	0	0	0	1424000	1424000
	2025	36" TRANS PIPELINE TO CITY WTP	6727500	0	6727500	29076000	0	29076000	0	17446000	17446000	-592000	3820000	3228000
	2025	20 MGD CITY WTP EXPANSION	20000000	6000000	14000000	86439000	25932000	60507000	0	36304000	36304000	-1232000	11355000	10123000
	2025	36" TRANS PIPELINE FROM WTP TO NEW RESERVOIR	9360000	0	9360000	40463000	0	40463000	0	24272000	24272000	-824000	5314000	4490000
	2025	4 MG POTABLE WATER STORAGE RESERVOIR	1800000	0	1800000	7779000	0	7779000	0	4667000	4667000	-158000	1022000	864000
5	2041	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	23661000	23661000	0	18929000	0	18929000	-643000	1053000	410000
	2041	36" TRANS PIPELINE TO CITY WTP	6727500	0	6727500	63469000	0	63469000	0	58391000	58391000	-1982000	2824000	842000
	2041	20 MGD CITY WTP EXPANSION	20000000	6000000	14000000	188685000	56606000	132080000	45285000	121514000	166799000	-5662000	8396000	2734000
	2041	24" TRANS PIPELINE FROM WTP TO RES	2378000	0	2378000	22435000	0	22435000	0	20640000	20640000	-701000	998000	297000
	2041	4 MG POTABLE WATER STORAGE RESERVOIR	1800000	0	1800000	16982000	0	16982000	0	15623000	15623000	-530000	756000	226000
6		PRESENT WORTH OF ANNUAL WATER PURCHASE												
	1995	PURCHASE OF WATER FROM CITY BY LOID												-4972000
	1995	SALE OF WATER FROM CITY TO LOID												4972000
7		EQUIPMENT REPLACEMENTS												
	2025	LOID 5 MGD WTP EQUIPMENT INSTALLED IN 2005	1500000	1500000	0	6483000	6483000	0	0	0	0	0	852000	852000
	2025	CITY 12 MGD WTP EQUIPMENT INSTALLED IN 2005	3600000	3600000	0	15559000	15559000	0	0	0	0	0	2044000	2044000
8		ELECTRICAL POWER COSTS												
	1995	12 MGD SNAKE RIVER PUMPING TO LOID (4 MGD AT 1060 FT)												8246000
	2005	12 MGD WTP PUMPING TO CITY SO HI RES (4 MGD AT -120 FT)												0
	2005	17 MGD SNAKE RIVER PUMPING TO LOID (6 MGD AT 1060 FT)												10415000
	2005	12 MGD SNAKE RIVER PUMPING TO CITY WTP (4 MGD AT 680 FT)												3818000
	2005	5 MGD WTP PUMPING TO LOID SYSTEM (2 MGD AT 230 FT)												646000
	2025	20 MGD SNAKE RIVER PUMPING TO CITY WTP (6 MGD AT 680 FT)												2385000
	2025	20 MGD WTP PUMPING TO NEW CITY RES (6 MGD AT 320 FT)												1122000
	2041	20 MGD SNAKE RIVER PUMPING TO CITY WTP (6 MGD AT 680 FT)												485000
	2041	20 MGD WTP PUMPING TO NEW CITY RES (6 MGD AT 320 FT)												228000
9		PRESENT WORTH OF WATER TREATMENT COSTS												6019000
		TOTAL PRESENT WORTH VALUE												113742000

A summary of the present worth evaluation is presented in Table 5-23.

TABLE 5-23
SUMMARY OF FIFTY YEAR PLANNING PERIOD ALTERNATIVES
- WITHOUT CONSERVATION -
FOR THE CITY AND LOID

Alt. No.	Description	Initial Project Capital Cost	Total Present Worth Value In Year 1995
1	2 MGD City Water To LOID and Use of Clearwater River for City and LOID	$17,018,000	$97,362,000
2	LOID 1995 Proposed Four Wells and Use of Clearwater River for City and LOID	$5,200,000	$92,018,000
3	Use of 4 MGD City Water To LOID, Use of WWTP Treated Effluent, and Use of Clearwater River for City and LOID	$11,084,000	$97,332,000
4	Extensive Use of Groundwater Wells for LOID and Use of Clearwater River for City	$5,200,000	$97,069,000
5	2 MGD City Water To LOID and Use of Snake River for City and LOID	$25,503,000	$113,742,000

EXHIBIT 25

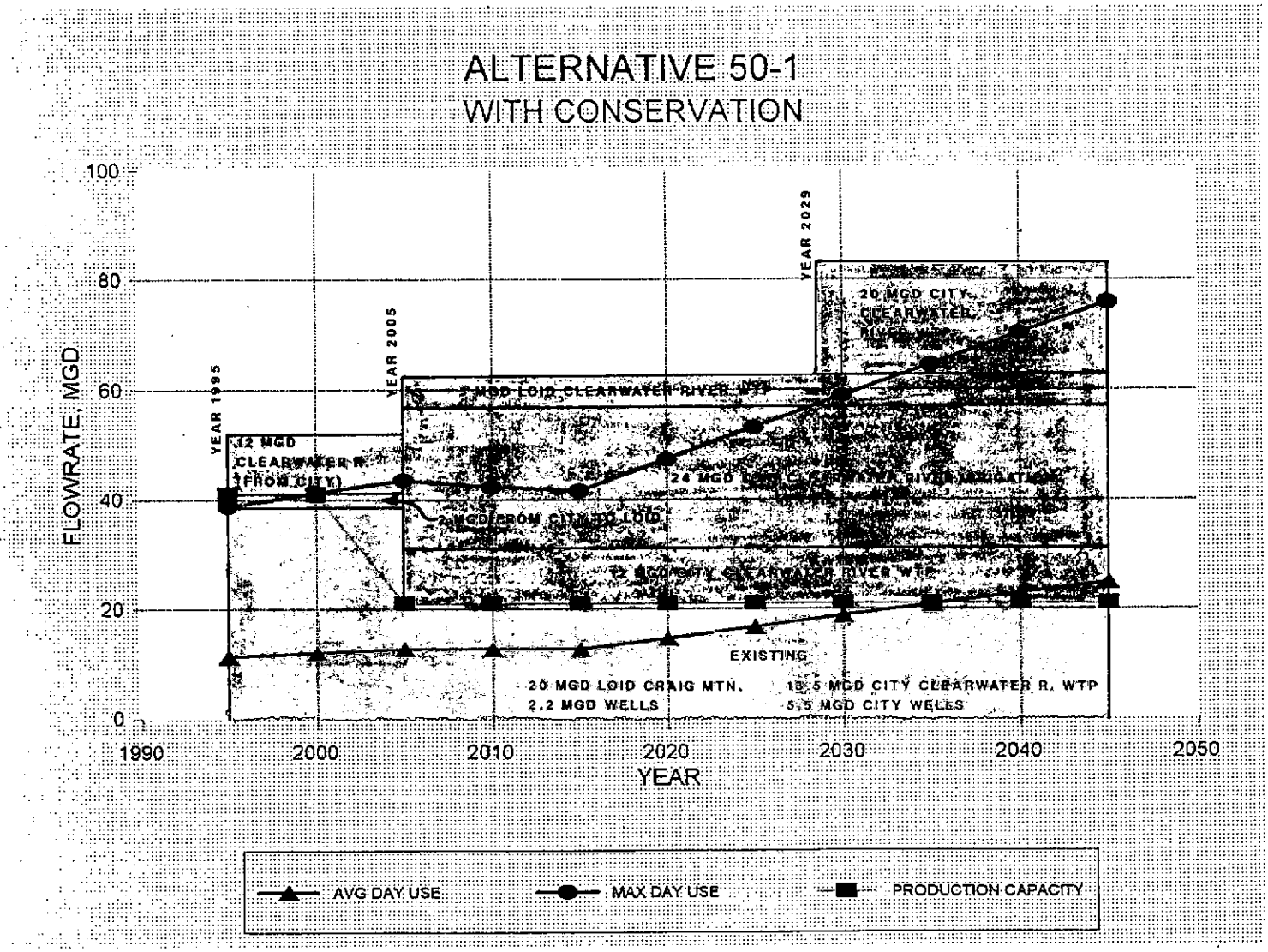

ALTERNATIVE 50-1
WITH CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2029
.12 MGD
CLEARWATER R.
(FROM CITY)
2 MGD LOID CLEARWATER RIVER WTP
20 MGD CITY
CLEARWATER
RIVER WTP
24 MGD LOID CLEARWATER RIVER IRRIGATION
2 MGD FROM CITY TO LOID
12 MGD CITY CLEARWATER RIVER WTP
EXISTING
20 MGD LOID CRAIG MTN.
2.2 MGD WELLS
13.5 MGD CITY CLEARWATER R. WTP
5.5 MGD CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 26

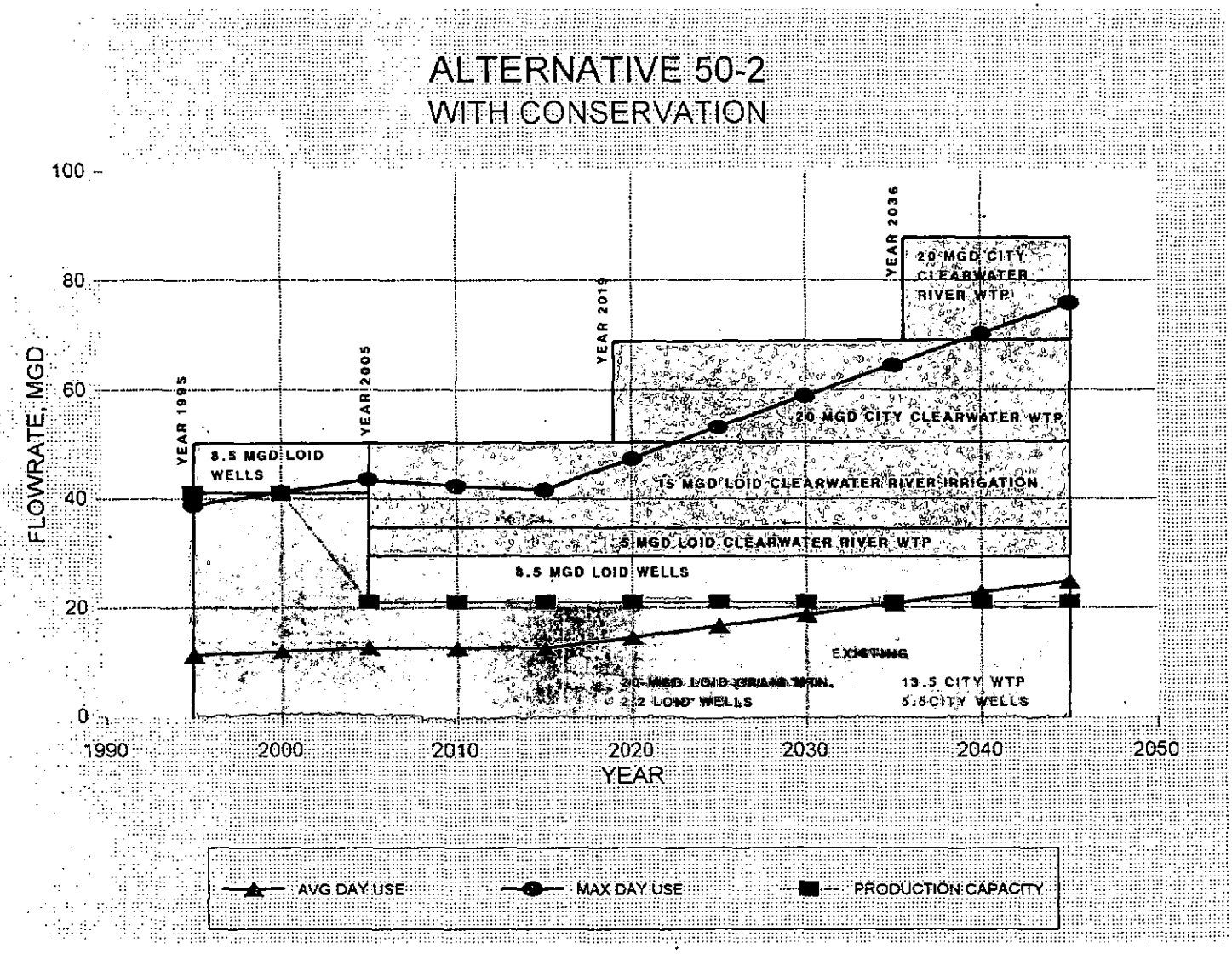

ALTERNATIVE 50-2
WITH CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2019
YEAR 2036
8.5 MGD LOID WELLS
20 MGD CITY CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER WTP
15 MGD LOID CLEARWATER RIVER IRRIGATION
5 MGD LOID CLEARWATER RIVER WTP
8.5 MGD LOID WELLS
EXISTING
20 MGD LOID GRAND MTN.
2 2 LOID WELLS
13.5 CITY WTP
5.5 CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 27

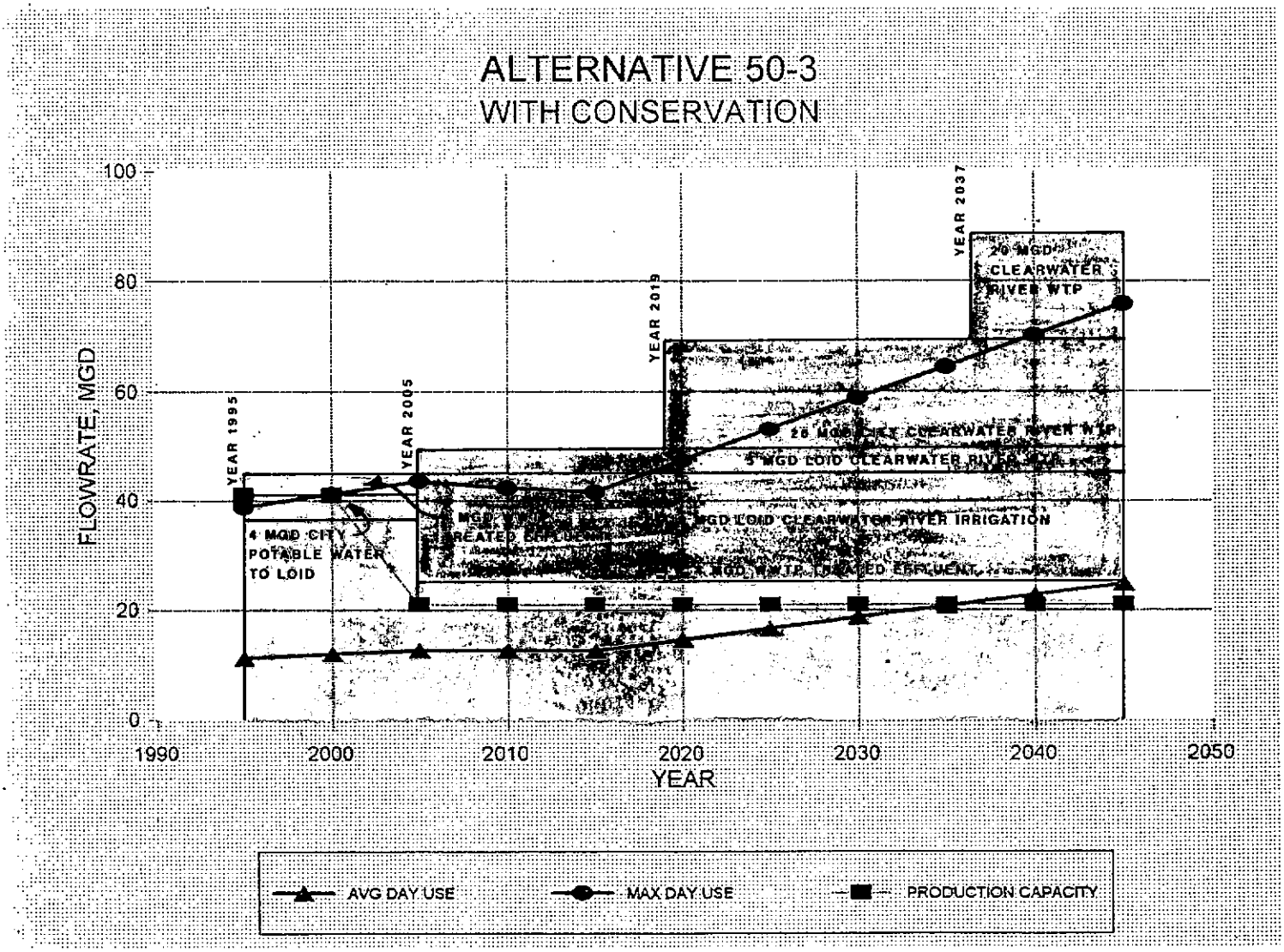

ALTERNATIVE 50-3
WITH CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2019
YEAR 2037
4 MGD CITY POTABLE WATER TO LOID
20 MGD CLEARWATER RIVER WTP
5 MGD LOID CLEARWATER RIVER IRRIGATION
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 28

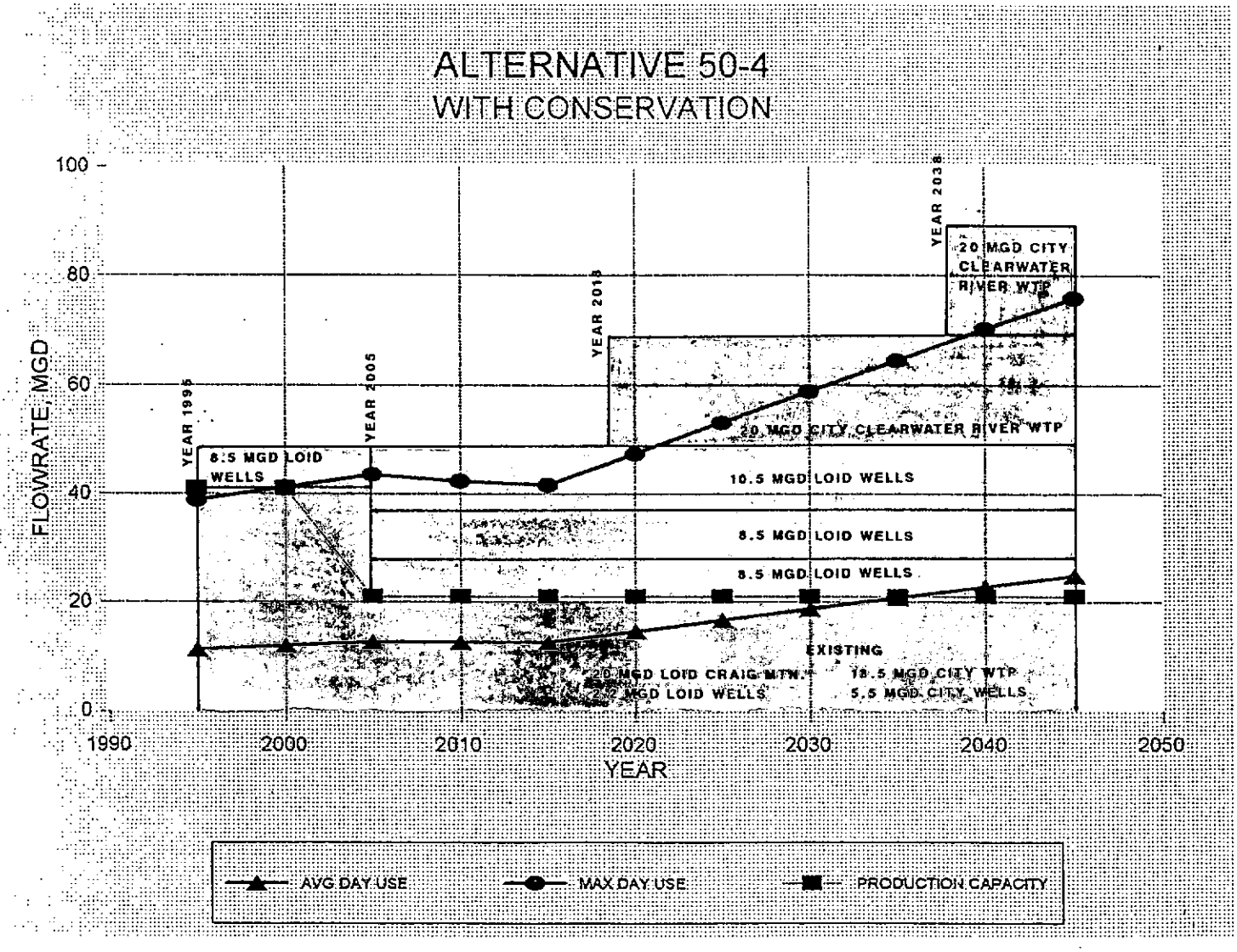
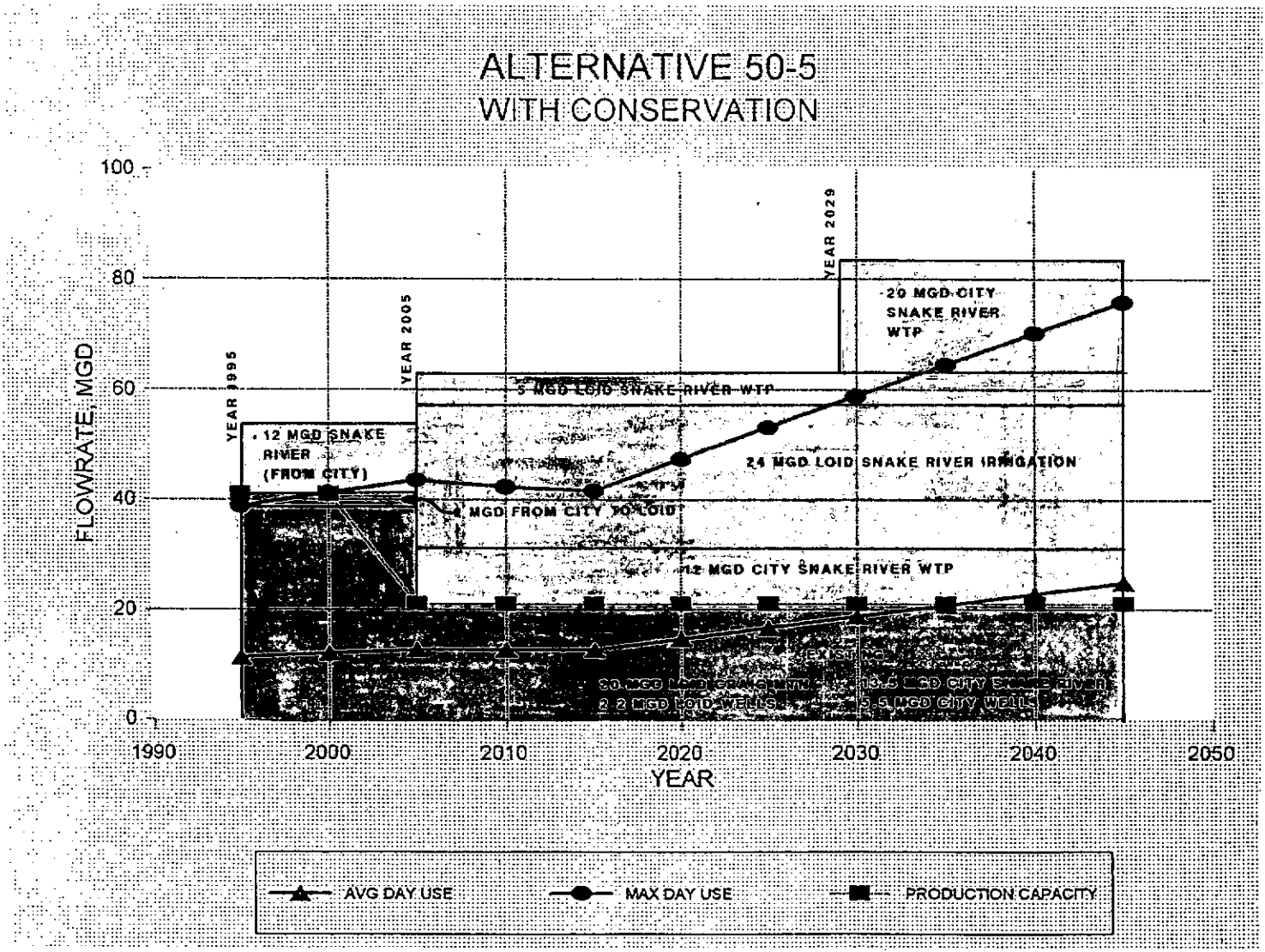

ALTERNATIVE 50-4
WITH CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
1990
2000
2010
2020
2030
2040
2050
YEAR
YEAR 1995
YEAR 2005
YEAR 2015
YEAR 2038
8.5 MGD LOID WELLS
20 MGD CITY CLEARWATER RIVER WTP
20 MGD CITY CLEARWATER RIVER WTP
10.5 MGD LOID WELLS
8.5 MGD LOID WELLS
8.5 MGD LOID WELLS
EXISTING
20 MGD LOID CRAIG MTN.
MGD LOID WELLS
18.5 MGD CITY WTP
5.5 MGD CITY WELLS
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

EXHIBIT 29


ALTERNATIVE 50-5
WITH CONSERVATION
FLOWRATE, MGD
100
80
60
40
20
0
YEAR 1995
YEAR 2005
YEAR 2029
12 MGD SNAKE RIVER (FROM CITY)
5 MGD LOID SNAKE RIVER WTP
20 MGD CITY SNAKE RIVER WTP
24 MGD LOID SNAKE RIVER IRRIGATION
4 MGD FROM CITY TO LOID
12 MGD CITY SNAKE RIVER WTP
2.2 MGD LOID WELLS
5.5 MGD CITY WELLS
1990
2000
2010
2020
2030
2040
2050
YEAR
AVG DAY USE
MAX DAY USE
PRODUCTION CAPACITY

ALTERNATIVE 50-1 - WITH CONSERVATION
CITY SUPPLY OF 2 MGD OF POTABLE WATER TO LOID AND CLEARWATER RIVER WATER SUPPLY
PRESENT WORTH VALUE ANALYSIS

INTEREST RATE: 7 % 0.07
INFLATION RATE: 5 % 0.05

A NO.	B YEAR	C ITEM	D TOTAL COST IN YEAR 1995	E EQUIP COST IN YR 1995	F OTHER COST IN YR 1995	G TOTAL COST IN YEAR SHOWN IN COL B	H EQUIP COST IN YEAR SHOWN IN COL B	I OTHER COST IN YEAR SHOWN IN COL B	J EQUIP REMAIN DEPR VALUE IN YEAR 2045	K OTHER REMAIN DEPR VALUE IN YEAR 2045	L TOTAL REMAIN DEPR VALUE IN YEAR 2045	M TOTAL PR WRTH OF DEPR IN YEAR 1995	N TOTAL PR WRTH OF CAP COST IN YEAR 1995	O TOTAL PR WRTH IN YEAR 1995
1	1995	12 MGD CLEARWATER RIVER FACILITIES												
	1995	80 MGD INTAKE	1969500	0	1969500	1970000	0	1970000	0	0	0	0	1970000	1970000
	1995	12 MGD RIVER PUMP STATION	4576500	1443000	3133500	4577000	1443000	3134000	0	0	0	0	4577000	4577000
	1995	INTERIM RESERVOIR AND BOOSTER PUMP STATION	5505000	1237500	4267500	5505000	1238000	4268000	0	0	0	0	5505000	5505000
	1995	24" IRR TRANS PIPELINE TO LOID SYSTEM	3540000	0	3540000	3540000	0	3540000	0	0	0	0	3540000	3540000
2	1995	CITY SOUTH HIGH PUMP STA PUMPS TO												
	1995	SUPPLY 2 MGD POTABLE WATER TO LOID												
	1995	CITY PUMP IMPROVEMENTS	660000	660000	0	660000	660000	0	0	0	0	0	660000	660000
	1995	16" PIPELINE IMPROVEMENTS IN LOID	767000	0	767000	767000	0	767000	0	0	0	0	767000	767000
3	2005	20 MGD RIVER PUMP STA EXPANSION	2724000	2724000	0	4437000	4437000	0	0	0	0	0	2256000	2256000
	2005	36" TRANS PIPELINE TO NEW CITY WTP	2925000	0	2925000	4765000	0	4765000	0	953000	953000	-32000	2422000	2390000
	2005	5 MGD WTP FOR LOID	5000000	1500000	3500000	8144000	2443000	6701000	0	1140000	1140000	-39000	4140000	4101000
	2005	20" POT TRANS PIPELINE FROM LOID WTP TO SYSTEM	1581000	0	1581000	2575000	0	2575000	0	515000	515000	-17000	1309000	1292000
	2005	24" IRR TRANS PIPELINE FROM LOID WTP TO SYSTEM	2328750	0	2328750	3793000	0	3793000	0	759000	759000	-26000	1928000	1902000
	2005	12 MGD WTP FOR CITY	12000000	3600000	8400000	19547000	5864000	13683000	0	2737000	2737000	-93000	9937000	9844000
	2005	20" POT TRANS PIPELINE TO CITY HIGH RESERVOIR	1926000	0	1926000	3137000	0	3137000	0	627000	627000	-21000	1595000	1574000
	2005	10 MG NON-POTABLE WATER STORAGE RESERVOIR	4500000	0	4500000	7330000	0	7330000	0	1466000	1466000	-50000	3726000	3676000
4	2029	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	13175000	13175000	0	2635000	0	2635000	-89000	1320000	1231000
	2029	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	16386000	0	16386000	0	10449000	10449000	-355000	1540000	1185000
	2029	20 MGD CITY WTP EXPANSION	20000000	6000000	14000000	105087000	31520000	73547000	6304000	50012000	56316000	-1912000	10530000	8618000
	2029	36" TRANS PIPELINE FROM WTP TO RESERVOIR	4920000	0	4920000	25846000	0	25846000	0	17575000	17575000	-597000	2590000	1993000
	2029	4 MG POTABLE WATER STORAGE RESERVOIR	1800000	0	1800000	9456000	0	9456000	0	6430000	6430000	-218000	948000	730000
5		PRESENT WORTH OF ANNUAL WATER PURCHASE												
	1995	PURCHASE OF WATER FROM CITY BY LOID												-4972000
	1995	SALE OF WATER FROM CITY TO LOID												4972000
6		EQUIPMENT REPLACEMENTS												
	2025	LOID 5 MGD WTP EQUIPMENT INSTALLED IN 2005	1500000	1500000	0	6483000	6483000	0	0	0	0	0	852000	852000
	2025	CITY 12 MGD WTP EQUIPMENT INSTALLED IN 2005	3600000	3600000	0	15559000	15559000	0	0	0	0	0	2044000	2044000
7		ELECTRICAL POWER COSTS												
	1995	12 MGD CLRWTR RIVER PUMPING TO LOID (4 MGD AT 1060 FT)												8246000
	2005	17 MGD CLRWTR RIVER PUMPING TO LOID (8 MGD AT 1060 FT)												10416000
	2005	12 MGD CLRWTR RIVER PUMPING TO CITY WTP (4 MGD AT 680 FT)												3818000
	2005	5 MGD WTP PUMPING TO LOID SYSTEM (2 MGD AT 230 FT)												648000
	2005	12 MGD WTP PUMPING TO CITY HIGH RES (4 MGD AT -340 FT)												0
	2029	20 MGD CLRWTR RIVER PUMPING TO CITY WTP (8 MGD AT 680 FT)												1855000
	2029	20 MGD WTP PUMPING TO NEW CITY RES (8 MGD AT 160 FT)												436000
8		PRESENT WORTH OF WATER TREATMENT COSTS												5307000
		TOTAL PRESENT WORTH VALUE												91430000

ALTERNATIVE 50-2 - WITH CONSERVATION
ADDITIONAL WELLS FOR LOID AND CLEARWATER RIVER WATER SUPPLY
PRESENT WORTH VALUE ANALYSIS

INTEREST RATE: 7 % 0.07
INFLATION RATE: 5 % 0.05

A NO.	B YEAR	C ITEM	D TOTAL COST IN YEAR 1995	E EQUIP COST IN YR 1995	F OTHER COST IN YR 1995	G TOTAL COST IN YEAR SHOWN IN COL B	H EQUIP COST IN YEAR SHOWN IN COL B	I OTHER COST IN YEAR SHOWN IN COL B	J EQUIP REMAIN DEPR VALUE IN YEAR 2045	K OTHER REMAIN DEPR VALUE IN YEAR 2045	L TOTAL REMAIN DEPR VALUE IN YEAR 2045	M TOTAL PR WRTH OF DEPR IN YEAR 1995	N TOTAL PR WRTH OF CAP COST IN YEAR 1995	O TOTAL PR WRTH IN YEAR 1995
1	1995	8.5 MGD LOID GROUNDWATER WELL SUPPLY												
	1995	LOID 1995 PROPOSED 4 WELLS	5200000	862500	4337500	5200000	863000	4338000	0	0	0	0	5200000	5200000
2	2005	20 MGD CLEARWATER RIVER FACILITIES												
	2005	80 MGD INTAKE	1969500	0	1969500	3208000	0	3208000	0	642000	642000	-22000	1631000	1609000
	2005	20 MGD CLEARWATER RIVER PUMP STATION	4591000	2412000	2179000	7478000	3929000	3549000	0	710000	710000	-24000	3801000	3777000
	2005	INTERIM RESERVOIR AND BOOSTER PUMP STATION	6000000	1582500	4417500	9773000	2578000	7196000	0	1439000	1439000	-49000	4968000	4919000
	2005	36" TRANS PIPELINE TO NEW LOID WTP	2925000	0	2925000	4765000	0	4765000	0	953000	953000	-32000	2422000	2390000
3	2005	5 MGD WTP FOR LOID	5000000	1500000	3500000	8144000	2443000	5701000	0	1140000	1140000	-39000	4140000	4101000
	2005	20" POT TRANS PIPELINE FROM LOID WTP TO SYSTEM	1581000	0	1581000	2575000	0	2575000	0	515000	515000	-17000	1309000	1292000
	2005	36" IRR TRANS PIPELINE FROM LOID WTP TO SYSTEM	4773750	0	4773750	7776000	0	7776000	0	1555000	1555000	-53000	3953000	3900000
	2005	36" IRR TRANS PIPELINE FROM LOID WTP TO SYSTEM	4500000	0	4500000	7330000	0	7330000	0	1466000	1466000	-50000	3726000	3676000
4	2019	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	8089000	8089000	0	0	0	0	0	1595000	1595000
	2019	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	9433000	0	9433000	0	4526000	4526000	-154000	1860000	1706000
	2019	20 MGD CITY WTP	20000000	6000000	14000000	64502000	19351000	45151000	0	21672000	21672000	-736000	12716000	11980000
	2019	36" TRANS PIPELINE FROM WTP TO CITY HIGH RESERVOIR	6505000	0	6505000	17764000	0	17764000	0	8522000	8522000	-289000	3500000	3211000
5	2036	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	18539000	18539000	0	10196000	0	10196000	-346000	1157000	811000
	2036	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	21622000	0	21622000	0	17730000	17730000	-602000	1349000	747000
	2036	20 MGD CITY WTP EXPANSION	20000000	6000000	14000000	147840000	44352000	103488000	24394000	84860000	109254000	-3709000	9227000	5518000
	2036	36" TRANS PIPELINE FROM WTP TO NEW RES	4920000	0	4920000	36369000	0	36369000	0	29823000	29823000	-1012000	2270000	1258000
	2036	NEW 4 MG POTABLE WATER STORAGE RES	1800000	0	1800000	13306000	0	13306000	0	10911000	10911000	-370000	830000	460000
6		EQUIPMENT REPLACEMENTS												
	2015	4 - 1,500 GPM WELL PUMPS INSTALLED IN 1995	787500	787500	0	2089000	2089000	0	0	0	0	0	540000	540000
	2025	LOID 5 MGD WTP EQUIP INSTALLED IN 2005	1500000	1500000	0	6483000	6483000	0	0	0	0	0	852000	852000
	2035	4 - 1,500 GPM WELL PUMPS INSTALLED IN 2015	787500	787500	0	5544000	5544000	0	2772000	0	2772000	-94000	370000	276000
	2039	CITY 20 MGD WTP EQUIP INSTALLED IN 2019	6000000	6000000	0	51343000	51343000	0	35940000	0	35940000	-1220000	2616000	1396000
7		ELECTRICAL POWER COSTS												
	1995	4 - 1,500 GPM WELL PUMPS (3 MGD AT 1060 FT)												6184000
	2005	5 MGD CLRWTR RIVER PUMPING TO LOID WTP (2 MGD AT 680 FT)												1909000
	2005	5 MGD LOID WTP PUMPING TO SYSTEM (2 MGD AT 230 FT)												646000
	2005	20 MGD CLRWTR PUMPING TO LOID (6 MGD AT 1060 FT)												8927000
	2019	20 MGD CLRWTR PUMPING TO CITY WTP (6 MGD AT 680 FT)												3259000
	2019	20 MGD WTP PUMPING TO CITY HIGH RES (6 MGD AT -340 FT)												0
	2036	20 MGD CLRWTR PUMPING TO CITY WTP (6 MGD AT 680 FT)												1019000
	2036	20 MGD WTP PUMPING TO NEW CITY RES (8 MGD AT 160 FT)												240000
8		PRESENT WORTH OF OF WATER TREATMENT COSTS												4331000
		TOTAL PRESENT WORTH VALUE												87729000

ALTERNATIVE 50-3 - WITH CONSERVATION
CITY SUPPLY OF 4 MGD OF POTABLE WATER TO LOID, USE OF WWTP EFFLUENT, AND CLEARWATER RIVER WATER SUPPLY
PRESENT WORTH VALUE ANALYSIS

INTEREST RATE: 7 % 0.07
INFLATION RATE: 5 % 0.05

A NO.	B YEAR	C ITEM	D TOTAL COST IN YEAR 1995	E EQUIP COST IN YR 1995	F OTHER COST IN YR 1995	G TOTAL COST IN YEAR SHOWN IN COL B	H EQUIP COST IN YEAR SHOWN IN COL B	I OTHER COST IN YEAR SHOWN IN COL B	J EQUIP REMAIN DEPR VALUE IN YEAR 2045	K OTHER REMAIN DEPR VALUE IN YEAR 2045	L TOTAL REMAIN DEPR VALUE IN YEAR 2045	M TOTAL PR WRTH OF DEPR IN YEAR 1995	N TOTAL PR WRTH OF CAP COST IN YEAR 1995	O TOTAL PR WRTH IN YEAR 1995
1	1995	4 MGD WWTP EFFLUENT PUMP STATION AND PIPELINE												
	1995	4 MGD WWTP EFFLUENT PUMP STATION	1500000	750000	750000	1500000	750000	750000	0	0	0	0	1500000	1500000
	1995	16" PIPELINE FROM PS TO BOOSTER PUMP STATION	2446500	0	2446500	2447000	0	2447000	0	0	0	0	2447000	2447000
	1995	INTERIM RESERVOIR AND BOOSTER PUMP STATION	3750000	750000	3000000	3750000	750000	3000000	0	0	0	0	3750000	3750000
	1995	16" PIPELINE FROM BOOSTER PS TO SURGE RESERVOIR	1077000	0	1077000	1077000	0	1077000	0	0	0	0	1077000	1077000
	1995	1 MG SURGE RESERVOIR	450000	0	450000	450000	0	450000	0	0	0	0	450000	450000
	1995	PUMP STATION FOR PRESSURE INTO LOID SYSTEM	1500000	750000	750000	1500000	750000	750000	0	0	0	0	1500000	1500000
	1995	16" PIPELINE FROM SURGE RESERVOIR TO LOID SYSTEM	360000	0	360000	360000	0	360000	0	0	0	0	360000	360000
2	1995	CITY SOUTH HIGH PUMP STA PUMPS TO												
	1995	SUPPLY 4 MGD POTABLE WATER TO LOID												
	1995	CITY PUMP IMPROVEMENTS	825000	660000	165000	825000	660000	165000	0	0	0	0	825000	825000
	1995	16" PIPELINE IMPROVEMENTS IN LOID	748500	0	748500	749000	0	749000	0	0	0	0	749000	749000
3	2005	24 MGD CLEARWATER RIVER FACILITIES												
	2005	60 MGD INTAKE	1969500	0	1969500	3208000	0	3208000	0	642000	642000	-22000	1631000	1609000
	2005	24 MGD RIVER PUMP STATION	6265000	2075000	3191000	8578000	3380000	5198000	0	1040000	1040000	-36000	4361000	4326000
	2005	INTERIM RESERVOIR AND BOOSTER PUMP STATION	6000000	1582500	4417500	9773000	2678000	7196000	0	1439000	1439000	-49000	4968000	4919000
	2005	36" IRR TRANS PIPELINE TO LOID WTP AND SYSTEM	7260000	0	7260000	11826000	0	11826000	0	2365000	2365000	-80000	6012000	5932000
	2005	5 MGD WTP FOR LOID	6000000	1500000	3500000	8144000	2443000	5701000	0	1140000	1140000	-39000	4140000	4101000
	2006	20" POT TRANS PIPELINE FROM LOID WTP TO SYSTEM	1561000	0	1561000	2575000	0	2575000	0	515000	515000	-17000	1309000	1292000
	2005	10 MG NON-POTABLE WATER STORAGE RESERVOIR	4500000	0	4500000	7330000	0	7330000	0	1466000	1466000	-50000	3726000	3676000
4	2019	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	8089000	8089000	0	0	0	0	0	1595000	1595000
	2019	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	9433000	0	9433000	0	4528000	4528000	-154000	1860000	1706000
	2019	20 MGD CITY WTP	20000000	6000000	14000000	64502000	19351000	45151000	0	21672000	21672000	-736000	12716000	11980000
	2019	36" TRANS PIPELINE FROM WTP TO HIGH RESERVOIR	5505000	0	5505000	17764000	0	17764000	0	8522000	8522000	-289000	3500000	3211000
6	2037	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	19466000	19466000	0	11660000	0	11660000	-397000	1135000	738000
	2037	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	22703000	0	22703000	0	19071000	19071000	-647000	1324000	677000
	2037	20 MGD CITY WTP EXPANSION	20000000	6000000	14000000	155232000	46570000	108662000	27942000	91276000	119218000	-4047000	9054000	5007000
	2037	36" TRANS PIPELINE FROM WTP TO NEW RESERVOIR	4920000	0	4920000	38187000	0	38187000	0	32077000	32077000	-1089000	2227000	1138000
	2037	NEW 4 MG POTABLE WATER STORAGE RESERVOIR	1800000	0	1800000	13971000	0	13971000	0	11736000	11736000	-398000	815000	417000
7		PRESENT WORTH OF ANNUAL WATER PURCHASE												
	1995	PURCHASE OF WATER FROM CITY BY LOID												-9813000
	1995	SALE OF WATER FROM CITY TO LOID												9813000
8		EQUIPMENT REPLACEMENTS												
	2025	LOID 5 MGD WTP EQUIPMENT INSTALLED IN 2005	1500000	1500000	0	8483000	8483000	0	0	0	0	0	852000	852000
	2039	CITY 20 MGD WTP EQUIPMENT INSTALLED IN 2019	6000000	6000000	0	61343000	61343000	0	35940000	0	35940000	-1220000	2618000	1398000
9		ELECTRICAL POWER COSTS												
	1995	4 MGD WWTP EFFL PUMPING TO LOID (1.5 MGD AT 1060 FT)												3092000
	2005	28 MGD CLRWTR RIVER PUMPING TO LOID (9 MGD AT 1060 FT)												13391000
	2005	5 MGD LOID WTP PUMPING TO LOID SYSTEM (2 MGD AT 230 FT)												846000
	2019	20 MGD CLRWTR RIVER PUMPING TO CITY WTP (6 MGD AT 880 FT)												3269000
	2019	20 MGD WTP PUMPING TO CITY HIGH RES (6 MGD AT -340 FT)												0
	2037	20 MGD CLRWTR RIVER PUMPING TO CITY WTP (6 MGD AT 880 FT)												908000
	2037	20 MGD WTP PUMPING TO NEW CITY RES (6 MGD AT 160 FT)												214000
10		PRESENT WORTH OF WATER TREATMENT COSTS												4253000
		TOTAL PRESENT WORTH VALUE												92993000

ALTERNATIVE 50-4 - WITH CONSERVATION
EXTENSIVE USE OF GROUNDWATER WELLS AND CLEARWATER RIVER WATER SUPPLY
PRESENT WORTH VALUE ANALYSIS

INTEREST RATE: 7 % 0.07
INFLATION RATE: 5 % 0.05

A NO.	B YEAR	C ITEM	D TOTAL COST IN YEAR 1995	E EQUIP COST IN YR 1995	F OTHER COST IN YR 1995	G TOTAL COST IN YEAR SHOWN IN COL B	H EQUIP COST IN YEAR SHOWN IN COL B	I OTHER COST IN YEAR SHOWN IN COL B	J EQUIP REMAIN DEPR VALUE IN YEAR 2045	K OTHER REMAIN DEPR VALUE IN YEAR 2045	L TOTAL REMAIN DEPR VALUE IN YEAR 2045	M TOTAL PR WRTH OF DEPR IN YEAR 1995	N TOTAL PR WRTH OF CAP COST IN YEAR 1995	O TOTAL PR WRTH IN YEAR 1995
1	1995	8.5 MGD LOID GROUNDWATER WELL SUPPLY												
	1995	LOID 1995 PROPOSED 4 WELLS	5200000	862500	4337500	5200000	863000	4338000	0	0	0	0	5200000	5200000
2	2005	19 MGD GROUNDWATER WELLS SUPPLY FACILITIES												
	2005	WELL CLUSTER NO. 1, INCL 5 WELLS, GST, HSPS, PIPING	7881000	937500	6943500	12837000	1527000	11310000	0	2262000	2262000	-77000	6526000	6449000
	2005	WELL CLUSTER NO. 2, INCL 4 WELLS, GST, HSPS, PIPING	6018000	862500	5155500	9803000	1405000	8398000	0	1680000	1680000	-57000	4983000	4926000
	2005	WELL CLUSTER NO. 3, INCL 4 WELLS, GST, HSPS, PIPING	5972100	862500	5109600	9728000	1405000	8323000	0	1665000	1665000	-57000	4945000	4888000
3	2018	20 MGD CLEARWATER RIVER FACILITIES												
	2018	80 MGD INTAKE	1969500	0	1969500	6049000	0	6049000	0	2783000	2783000	-94000	1276000	1182000
	2018	20 MGD CLEARWATER RIVER PUMP STATION	5101500	2553450	2548050	15669000	7843000	7826000	0	3600000	3600000	-122000	3305000	3183000
	2018	INTERIM RESERVOIR AND BOOSTER PUMP STATION	6000000	1582500	4417500	18429000	4861000	13568000	0	6241000	6241000	-212000	3888000	3676000
	2018	36" TRANS PIPELINE TO NEW CITY WTP	2925000	0	2925000	8984000	0	8984000	0	4133000	4133000	-140000	1895000	1755000
	2018	20 MGD CITY WTP	20000000	6000000	14000000	61430000	18429000	43001000	0	19780000	19780000	-671000	12958000	12287000
	2018	36" TRANS PIPELINE FROM WTP TO CITY HIGH RESERVOIR	5505000	0	5505000	16909000	0	16909000	0	7778000	7778000	-264000	3567000	3303000
4	2037	20 MGD RIVER PUMP STA EXPANSION	2508000	2508000	0	19466000	19466000	0	11680000	0	11680000	-397000	1135000	738000
	2037	36" TRANS PIPELINE TO CITY WTP	2925000	0	2925000	22703000	0	22703000	0	19071000	19071000	-647000	1324000	677000
	2037	20 MGD CITY WTP EXPANSION	20000000	6000000	14000000	155232000	46570000	108662000	27942000	91276000	119218000	-4047000	9054000	5007000
	2037	36" TRANS PIPELINE FROM WTP TO NEW RESERVOIR	4920000	0	4920000	38187000	0	38187000	0	32077000	32077000	-1089000	2227000	1138000
	2037	NEW 4 MG CITY POTABLE WATER STORAGE RESERVOIR	1800000	0	1800000	13971000	0	13971000	0	11736000	11736000	-398000	815000	417000
5		EQUIPMENT REPLACEMENTS												
	2015	WELL PUMPS FOR LOID 1995 WELLS INSTALLED IN 1995	862500	862500	0	2288000	2288000	0	0	0	0	0	591000	591000
	2025	WELL AND HSPS PUMPS FOR WELL CLUSTER NO. 1 INSTALLED IN 2005	937500	937500	0	4052000	4052000	0	0	0	0	0	532000	532000
	2025	WELL AND HSPS PUMPS FOR WELL CLUSTER NO. 2 INSTALLED IN 2005	862500	862500	0	3728000	3728000	0	0	0	0	0	490000	490000
	2025	WELL AND HSPS PUMPS FOR WELL CLUSTER NO. 3 INSTALLED IN 2005	862500	862500	0	3728000	3728000	0	0	0	0	0	490000	490000
	2035	WELL PUMPS FOR LOID 1995 WELLS INSTALLED IN 2015	862500	862500	0	6072000	6072000	0	3036000	0	3036000	-103000	405000	302000
	2038	CITY 20 MGD WTP EQUIP INSTALLED IN 2018	6000000	6000000	0	48898000	48898000	0	31784000	0	31784000	-1079000	2666000	1587000
6		ELECTRICAL POWER COSTS												
	1995	4 - 1,500 GPM WELL PUMPS (3 MGD AT 1060 FT)												6184000
	2005	9 - 1,500 GPM WELL PUMPS AND HSPS PUMPS (6 MGD AT 1060 FT)												8927000
	2018	20 MGD CLRWTR RIVER PUMPING TO WTP (6 MGD AT 1060 FT)												5322000
	2018	20 MGD WTP PUMPING TO CITY HIGH RES (6 MGD AT -340 FT)												0
	2037	20 MGD CLRWTR PUMPING TO CITY WTP (6 MGD AT 1060 FT)												1415000
	2037	20 MGD WTP PUMPING TO NEW CITY RES (6 MGD AT 160 FT)												214000
7		PRESENT WORTH OF WATER TREATMENT COSTS												3025000
		TOTAL PRESENT WORTH VALUE												83905000

ALTERNATIVE 50-5 - WITH CONSERVATION
CITY SUPPLY OF 2 MGD OF POTABLE WATER TO LOID AND SNAKE RIVER WATER SUPPLY
PRESENT WORTH VALUE ANALYSIS

INTEREST RATE: 7 % 0.07
INFLATION RATE: 5 % 0.05

A NO.	B YEAR	C ITEM	D TOTAL COST IN YEAR 1995	E EQUIP COST IN YR 1995	F OTHER COST IN YR 1995	G TOTAL COST IN YEAR SHOWN IN COL B	H EQUIP COST IN YEAR SHOWN IN COL B	I OTHER COST IN YEAR SHOWN IN COL B	J EQUIP REMAIN DEPR VALUE IN YEAR 2045	K OTHER REMAIN DEPR VALUE IN YEAR 2045	L TOTAL REMAIN DEPR VALUE IN YEAR 2045	M TOTAL PR WRTH OF DEPR IN YEAR 1995	N TOTAL PR WRTH OF CAP COST IN YEAR 1995	O TOTAL PR WRTH IN YEAR 1995
1	1995	12 MGD SNAKE RIVER FACILITIES												
	1995	80 MGD INTAKE	1969500	0	1969500	1970000	0	1970000	0	0	0	0	1970000	1970000
	1995	12 MGD RIVER PUMP STATION	4839000	1855500	2983500	4839000	1856000	2984000	0	0	0	0	4839000	4839000
	1995	INTERIM RESERVOIR AND BOOSTER PUMP STATION	6000000	1582500	4417500	6000000	1583000	4416000	0	0	0	0	6000000	6000000
	1995	36" IRR TRANS PIPELINE TO LOID	11267000	0	11267000	11267000	0	11267000	0	0	0	0	11267000	11267000
2	1995	CITY SOUTH HIGH PUMP STATION PUMPS TO												
	1995	SUPPLY 2 MGD POTABLE WATER TO LOID												
	1995	CITY PUMP IMPROVEMENTS	660000	660000	0	660000	660000	0	0	0	0	0	660000	660000
	1995	16" PIPELINE IMPROVEMENTS IN LOID	767000	0	767000	767000	0	767000	0	0	0	0	767000	767000
3	2005	22 MGD RIVER PUMP STATION EXPANSION	2506000	2506000	0	4065000	4065000	0	0	0	0	0	2077000	2077000
	2005	36" TRANS PIPELINE TO NEW CITY WTP	6727500	0	6727500	10958000	0	10958000	0	2192000	2192000	-74000	5570000	5496000
	2005	5 MGD WTP FOR LOID	5000000	1500000	3500000	8144000	2443000	5701000	0	1140000	1140000	-39000	4140000	4101000
	2005	20" POT TRANS PIPELINE TO LOID	1428000	0	1428000	2328000	0	2328000	0	465000	465000	-16000	1182000	1166000
	2005	12 MGD WTP FOR CITY	12000000	3600000	8400000	19547000	5864000	13683000	0	2737000	2737000	-93000	9937000	9844000
	2005	20" POT TRANS PIPELINE TO CITY SOUTH HIGH RESERVOIR	1200000	0	1200000	1955000	0	1955000	0	391000	391000	-13000	994000	981000
	2005	10 MG NON-POTABLE WATER STORAGE RESERVOIR	4500000	0	4500000	7330000	0	7330000	0	1466000	1466000	-50000	3726000	3676000
4	2029	20 MGD RIVER PUMP STA EXPANSION	2506000	2506000	0	13175000	13175000	0	2635000	0	2635000	-89000	1320000	1231000
	2029	36" TRANS PIPELINE TO CITY WTP	6727500	0	6727500	35342000	0	35342000	0	24033000	24033000	-816000	3542000	2726000
	2029	20 MGD CITY WTP EXPANSION	20000000	8000000	14000000	105067000	31520000	73547000	6304000	50012000	56316000	-1912000	10530000	8618000
	2029	36" TRANS PIPELINE FROM WTP TO RESERVOIR	9380000	0	9380000	49171000	0	49171000	0	33436000	33436000	-1135000	4928000	3793000
	2029	NEW 4 MG POTABLE WATER STORAGE RESERVOIR	1600000	0	1600000	9456000	0	9456000	0	6430000	6430000	-218000	948000	730000
5		PRESENT WORTH OF ANNUAL WATER PURCHASE												
	1995	PURCHASE OF WATER FROM CITY BY LOID												-4972000
	1995	SALE OF WATER FROM CITY TO LOID												4972000
6		EQUIPMENT REPLACEMENTS												
	2029	LOID 5 MGD WTP EQUIPMENT INSTALLED IN 2005	1500000	1500000	0	7880000	7880000	0	1576000	0	1576000	-54000	790000	736000
	2029	CITY 12 MGD WTP EQUIPMENT INSTALLED IN 2005	3600000	3600000	0	18912000	18912000	0	3782000	0	3782000	-128000	1695000	1767000
8		ELECTRICAL POWER COSTS												
	1995	12 MGD SNAKE RIVER PUMPING TO LOID (4 MGD AT 1060 FT)												8248000
	2005	12 MGD WTP PUMPING TO CITY SO HI RES (4 MGD AT -120 FT)												0
	2005	17 MGD SNAKE RIVER PUMPING TO LOID (6 MGD AT 1060 FT)												10415000
	2005	12 MGD SNAKE RIVER PUMPING TO CITY WTP (4 MGD AT 680 FT)												3818000
	2005	5 MGD WTP PUMPING TO LOID SYSTEM (2 MGD AT 230 FT)												646000
	2029	20 MGD SNAKE RIVER PUMPING TO CITY WTP (6 MGD AT 680 FT)												2385000
	2029	20 MGD WTP PUMPING TO NEW CITY RES (6 MGD AT 320 FT)												1122000
9		PRESENT WORTH OF WATER TREATMENT COSTS												5307000
		TOTAL PRESENT WORTH VALUE												104384000

5.07 Effect of Conservation on Fifty Year Planning Period Alternatives

The effective delay of the need for water supplies and facilities over time as a result water conservation was also considered. The timing of supplies and facilities to meet the water requirements considering conservation is shown in Exhibits 25 through 29.

The present worth analysis was performed on each of the five described alternatives as described previously. The present worth analyses for the alternatives considering the effects of conservation are shown in Tables 5-24 through 5-28. The results of the analyses are shown in Table 5-29.

TABLE 5-29
SUMMARY OF FIFTY YEAR PLANNING PERIOD ALTERNATIVES
- WITH CONSERVATION -
FOR THE CITY AND LOID

Alt. No.	Description	Total Present Worth Value In Year 1995	Percentage Savings With Conservation
1	2 MGD City Water To LOID and Use of Clearwater River for City and LOID	$91,430,000	6.49%
2	LOID 1995 Proposed Four Wells and Use of Clearwater River for City and LOID	$87,729,000	4.89%
3	Use of 4 MGD City Water To LOID, Use of WWTP Treated Effluent, and Use of Clearwater River for City and LOID	$92,993,000	4.67%
4	Extensive Use of Groundwater Wells for LOID and Use of Clearwater River for City	$83,905,000	15.69%
5	2 MGD City Water To LOID and Use of Snake River for City and LOID	$104,384,000	8.96%

Note: Per Cent Savings is calculated as follows: Per Cent Savings = [(Total Present Worth Value for Alternative Without Conservation / Total Present Worth Value for Alternative With Conservation) X 100] - 100

6.00 FIRE PROTECTION

6.01 Fire Protection Coverage Area

The current service area for the City of Lewiston is approximately 17 square miles with a population of 28,015 according to 1990 census data. The potential growth area for the City is an additional 20 square miles. The total projected area for the City is 37 square miles with a possible population of around 77,600.

6.02 Fire Flow Requirements

Most water systems for fire fighting purposes are interrelated with the domestic water distribution system. The City of Lewiston is unique in the sense that there are four separate water distribution systems that the Fire Department has access to for obtaining water for fire fighting purposes. These systems are: 1) The City of Lewiston, 2) The Hatwai Water District, 3) The LOID Irrigation System and, 4) The LOID Domestic System. The required fire flows vary from 500 gpm to 5000 gpm depending on the size and type of building that is being protected. Several areas in the community need to have the available fire flows upgraded so that they meet minimum safe levels or so that growth can occur. The major areas of concern are listed below:

6.03 Areas of Concern

- Hatwai Area
- South Port
- Lewiston-Nez Perce Airport
- Various Locations in the Orchards Area

Hatwai Area

The Hatwai area, located outside the city limits of Northeast Lewiston, currently has four fire hydrants that obtain water from the Clearwater River through a pump system. This system is not tied into any domestic water supply. The purpose of this system is to provide fire protection in the Red Rock Water District and Hatwai areas.

South Port

South Port is located within the city limits on the Southwest side of the City. South port is an industrial area that has a fair amount of room for growth. Growth in this area will be limited to the amount of fire protection that can be provided. Plans need to be developed that address exactly how fire protection will be provided to this area so that growth can occur.

Lewiston-Nez Perce Airport

The Airport is located in the same general vicinity as South Port. The Airport also faces the same problems as South Port in that it is currently limited in the amount of growth that can be allowed to occur. The LOID needs to upgrade some of its waterlines if it is to provide more fire protection water to the Airport. Another alternative would be for the City to install a water reservoir for the purpose of fighting fires. The size of the reservoir would depend on the amount of water that is available from LOID and or the Bryden Canyon Well when it has been fully developed. There are several alternatives that need to be researched to determine the best solution to meet the growth potential around the Airport and South Port.

Various Locations in the Orchards Area

The Lewiston Orchards has an ample supply of water for meeting fire protection requirements. The water supply for providing fire protection is stored at Mann Lake. Approximately 400 acre feet (130 million gallons) of water is kept in reserve for fire protection. Within the LOID most of the fire hydrants are tied into the irrigation system and a few are tied into the domestic water system. The problem that needs to be addressed in the Orchard's areas is in the distribution systems. Many of the existing irrigation and domestic water lines are undersized for meeting minimum fire flow demands. LOID is currently in the process of developing a master plan for the replacement of its old and undersized water lines for both the irrigation and domestic water systems that will address fire flow requirements as well as future demands.

6.04 Potential for System Interconnection to Enhance Firefighting Capabilities

The City of Lewiston currently has two different computer programs for monitoring their water distribution system. The first is Orical, this program is used at the Water Treatment Plant. This program is capable of performing some fire flow analysis at a limited level. The second is Cybernet, this program is very good for performing fire flow analysis. The City's Cybernet model is not complete and cannot be used to conduct a fire flow analysis at this time.

The Lewiston Orchards Irrigation District is presently having their distribution system modeled with the Cybernet program. At this time the LOID model is not complete and it cannot be used for fire flow analysis at this time either.

The City's Cybernet model can be linked to LOID's model when they are both complete. When the models have been linked together, a detail analysis can be performed on the entire community. The detailed analysis would be used to determine the best method of inter-tying the two systems for optimum fire flow augmentation. Once these models are complete they will be practical tools to use in the planning and design process for the entire community.

6.05 Planning and Zoning Considerations

The types of zones in a community has a direct impact on the required fire flows throughout the community. The required fire flow cannot be determined by zone as it is determined by such factors as the square foot area of a structure, type of structure, building materials used, planned use, etc... Zoning can be used to help determine what is needed in the way of water line sizes for meeting future growth in a given zone.

Planning of new development and the direction of growth (towards or away from the supply source) will directly affect the sizing of new water mains. Careful consideration must be made in the planning process to establish what zones will be allow in specific areas. This process will enhance the development of the most economic water distribution system for the community.

The following table is provided to give a general idea for fire flow demand by zone:

TABLE 6-1
GENERAL FIRE FLOW
REQUIREMENTS BY ZONE

Zone	Description	Flow Duration Hrs)	Flow (GPM)
R-1	Suburban Residential	2	500 - 1500
R-2	Low Density Residential	2	500 - 1500
R-2A	Low Density Residential - Manufactured Housing	2	500 - 1500
R-3	Medium Density Residential	2	500 - 2000
R-4	High Density Residential	2	1000 - 1200
C-1	Neighborhood Commercial	2	1500 - 3000
C-2	Tourist Commercial	2	1500 - 3000
C-3	Limited Commercial	2	1500 - 3000
C-4	General Commercial	3	3000 - 4000
C-5	General Commercial	3	3000 - 4000
C-6	Limited Arterial Commercial	3	3000 - 4000
M-1	Light Industrial	4	3000 - 6000
M-2	Heavy Industrial	4	5000 - 8000
PD	Planned Unit Development	2	1000 - 2000
F-2	Agricultural Transitional	2	500 - 1500
P	Port	4	3000 - 8000
AP	Airport	4	3000 - 8000

NOTE:

This table is only a general guide layout for needed fire flow in areas as determined by zone and should not be used for determining actual required fire flows. The Uniform Fire Code is the governing authority in determining required fire flows. See UFC Appendix III-A, A-III-A-1.

7.00 Conclusions and Recommendations

As a result of the evaluation of ten year and fifty year planning period water supply alternatives, the following conclusions may be made:

Conclusions

1. The City water supply sources and production facilities appear to be sufficient for the next 15 to 20 years.

2. The LOID domestic water supply has been reliable except for occasional equipment problems. However, since there are only two groundwater wells, both of which are needed to provide the LOID domestic water supply, an additional domestic water supply is needed.

3. The LOID irrigation water supply from Craig Mountain has historically been deficient in producing the desired quantity of water. In addition, LOID faces the potential loss of the Craig Mountain irrigation water supply to claims on the supply by the Nez Perce Indian Nation.

4. Additional water supplies will be needed by both the City and the LOID in the future as a result of projected growth within the defined potential growth boundary.

5. A number of alternatives have been identified to provide the water supplies needed for future growth and to replace the potential loss of the LOID Craig Mountain water supply. The City and LOID currently own the rights to water in sufficient quantities to replace the Craig Mountain water supply and provide for future growth. The LOID has filed for, but not received approval for water rights from the Clearwater River.

6. Implementation of water conservation measures such as public education, installation of irrigation water meters when possible, use of drip irrigation and controlled irrigation, and changes in water rate schedules should be considered in order to reduce water requirements and provide cost savings due to reduction or postponement of facilities construction.

7. Use of wells can reduce the long term costs. However, extensive use of wells may not be possible due to possible depression of dynamic water surfaces caused by operations of adjacent wells during high use periods.

8. Utilization of water from the Snake River is more expensive than use of water from other sources because the Snake River is the most removed from the largest areas of future potential growth.

9. Alternative 50-3 - Use of 4 MGD City Water To LOID, Use of 4 MGD of Wastewater Treatment Plant Treated Effluent, and Use of Clearwater River by the City and LOID, can be accomplished for a cost similar to Alternative 50-1 - 2 MGD City Water to No LOID and Use of Clearwater River for City and LOID. Research would be needed to determine whether the public would find this alternative acceptable. No costs were included for any process improvements at the wastewater treatment plant, if required.

10. Significant savings can be realized from implementation of Alternative 50-4 - Extensive Use of Groundwater Wells for LOID and Use of Clearwater River for City, coupled with implementation of conservation measures to reduce the water requirements over time. However, caution is advised because 1) the conservation measures must be implemented and must be effective, and 2) use of a large number of wells may cause interference with adjacent wells resulting in reduced well production and higher than projected costs.

Recommendations

1. Measures to implement conservation of water should be instituted to reduce the water requirement over time, thus delaying the timing for new facilities and the ultimate cost of the facilities.

2. Water meters should be installed on the irrigation water services in the LOID to assist with implementing water conservation measures when a water supply of sufficient quality allows.

3. A water purchase contract should be established between the City of Lewiston and the Lewiston Orchards Irrigation District to provide additional potable water supply for the LOID.

4. Groundwater wells should be utilized to provide limited supplementary water supplies, provide facilities with lowest cost over the fifty year planning period, and provide the initial facilities at the lowest cost.

5. Use of the Clearwater River for future water supplies should be further evaluated and additional planning efforts made with the goal of providing facilities when the loss of the Craig Mountain water supply becomes a reality. The planning efforts will help to satisfy the requirements of the Idaho Department of Water Resources for proving the utilization of water rights previously granted by the State of Idaho. Phase II of this study, either as previously developed or modified as necessary, would provide this effort.

6. Although the extensive use of groundwater wells would be less expensive if implementation of conservation measures were successful, extensive use of groundwater should be delayed to evaluate the impact of additional wells on the aquifer. In addition, the use of groundwater should be available in the future when needed or desired.

7. Wastewater treatment plant effluent should be considered in the future as a supplemental source of irrigation water, if it can be treated to a quality which is acceptable to the public.

8. In order to minimize the ultimate costs due to interest on borrowed funds, accounts for funding capital improvements should be initiated and a capital improvements charge on monthly customer bills should be initiated to provide initial funding for capital projects.

7.01 Summary of Identified Improvements

The following is a summary of identified improvements for the next ten year period based on the conclusions and recommendations:

Item	Opinion of Probable Cost	Opinion of Annual Costs (+) or Receipts (-)
City of Lewiston		
So. High Reservoir Pump Station Improvements	$ 660,000	- $585,000 to -$683,200
Interest Over 10 Years at 7%	$ 280,000	(See Note, below)
Total for City of Lewiston	$ 940,000	
Lewiston Orchards Irrigation District		
16" Pipeline Improvements to LOID System to Receive Water From the City	$ 767,000	+ $585,000 to
Interest Over 10 Years at 7%	$ 325,000	+ $683,200 (See Note, below)
Four 1,500 GPM Wells	$5,200,000	+ $85,000
Interest Over 10 Years at 7%	$2,204,000	(Electrical power cost)
Total for Lewiston Orchards Irrigation District	$8,496,000	
Total for City and LOID	$9,436,000	

Note: If the City were to supply water to LOID at a rate of 2 million gallons per day, the LOID would pay from $585,000 to $1,035,000 (depending on the negotiated cost of water) to the City. The amount paid by LOID to the City would be an additional cost to LOID above their present budget. No change in the amount of domestic water would be provided. The existing two ground water wells would continue to be utilized to provide additional irrigation water with no addition in revenue to the LOID.

Additional improvements should be phased as follows:

Year	Improvement Description	Opinion of Probable Cost 1995 Dollars
	City of Lewiston	
1995	Pump Improvements to South High Booster Pump Station	$ 660,000
	Year 1995 Subtotal of City Facilities	**$ 660,000**
2018	20 MGD City Water Treatment Plant	$20,000,000
2018	18,000 LF 36" Dia. Potable Transmission Pipeline to City High Reservoir	$ 5,505,000
	Year 2018 Subtotal of City Facilities	**$25,505,000**
2033	20 MGD City Water Treatment Plant Expansion	$20,000,000
2033	16,000 LF 36" Dia. Potable Transmission Pipeline to New City Reservoir	$ 4,920,000
2033	4 MG City Potable Water Reservoir	$ 1,800,000
	Year 2033 Subtotal of City Facilities	**$26,720,000**
2038	Replace Equipment at WTP Installed in 2018	$ 6,000,000
	Year 2038 Subtotal of City Facilities	**$ 6,000,000**

1995	8.5 MGD LOID Groundwater Well Supply	$ 5,200,000
1995	16" Pipeline Improvements to Potable Water System	$ 767,000
	Year 1995 Subtotal of LOID Facilities	**$ 5,967,000**
2005	5 MGD LOID Water Treatment Plant	$ 5,000,000
2005	15,500 LF 20" Dia. Irrigation Transmission Pipeline to LOID	$ 1,581,000
2005	15,500 LF 36" Dia. Irrigation Transmission Pipeline to LOID	$ 4,774,000
2005	10 Million Gallon Non-Potable Water Storage Reservoir	$ 4,500,000
2005	Installation of Water Meters on Irrigation Services	$ 150,000
	Year 2005 Subtotal of LOID Facilities	**$ 16,005,000**
2015	Replace Well Pumps Installed in 1995	$ 788,000
	Year 2015 Subtotal of LOID Facilities	**$ 788,000**
2025	Replace Water Treatment Plant Equipment Installed in 2005	$ 1,500,000
	Year 2025 Subtotal of LOID Facilities	**$ 1,500,000**
2035	Replace Well Pumps Installed in 1995	$ 788,000
	Year 2035 Subtotal of LOID Facilities	**$ 788,000**

City and LOID Cooperative Facilities

2005	80 MGD Clearwater River Intake	$ 1,970,000
2005	25 MGD Clearwater River Pump Station	$ 5,102,000
2005	Interim Reservoir and Booster Pump Station	$ 6,000,000
2005	10,000 LF 36" Dia. Transmission Pipeline to WTP	$ 2,925,000
	Year 2005 Subtotal of Cooperative Facilities	**$15,997,000**
2018	20 MGD Clearwater River Pump Station Expansion	$ 2,508,000
2018	10,000 LF 36" Dia. Transmission Pipeline to New City WTP	$ 2,925,000
	Year 2018 Subtotal of Cooperative Facilities	**$ 5,433,000**
2033	20 MGD Clearwater River Pump Station Expansion	$ 2,508,000
2033	10,000 LF 36" Dia. Transmission Pipeline to WTP	$ 2,925,000
	Year 2033 Subtotal of Cooperative Facilities	**$ 5,433,000**

Recapitulation of Projected Facilities Capital Spending, 1995 Dollars

Year 1995 Subtotal of City Facilities	$ 660,000
Year 1995 Subtotal of LOID Facilities	$ 5,967,000
Year 2005 Subtotal of LOID Facilities	$ 16,005,000
Year 2005 Subtotal of Cooperative Facilities	$ 13,072,000
Year 2015 Subtotal of LOID Facilities	$ 788,000
Year 2018 Subtotal of City Facilities	$ 25,505,000
Year 2018 Subtotal of Cooperative Facilities	$ 5,433,000
Year 2025 Subtotal of LOID Facilities	$ 1,500,000
Year 2033 Subtotal of City Facilities	$ 26,720,000
Year 2033 Subtotal of Cooperative Facilities	$ 5,433,000
Year 2035 Subtotal of LOID Facilities	$ 788,000
Year 2038 Subtotal of City Facilities	$ 6,000,000
Total, 1995 Dollars	$ 110,646,000

8.00 Impact of Proposed Improvements On Water Rates

8.01 Existing Water Rate of the City of Lewiston

The 1994 water production, water sales income, and budgeted expenses for the City of Lewiston were as follows:

1994 Water Sales	173,668,300 Cubic Feet
1994 Water Rate	$1.06 Per 100 Cubic Feet
1994 Revenue from Water Sales	$1,840,884
1994 Budgeted Expenses (Per 1994-95 Budget)	$1,740,000

8.02 Existing Water Rate of the Lewiston Orchards Irrigation District

The 1994 water production, water sales income, and budgeted expenses for the Lewiston Orchards Irrigation District were as follows:

1993-94 Domestic Water Sales	63,767,200 Cubic Feet
1993-94 Units (Services)	Average of 6,516
1993-94 Domestic Water Rate	$1.30 Per 100 Cubic Feet $2.00 Unit Charge Per Month
1993-94 Revenue from Domestic Water Sales	$985,400
1993-94 Irrigation Acreage	3827.5 Acres
127 1993-94 Irrigation Assessment	$87.84 Per Acre
1993-94 Revenue from Irrigation Assessment	$336,200
1993-94 Revenue from Unit Charges	$393,900
1993-94 Total Irrigation Revenue	$730,100
1993-94 Total Domestic and Irrigation Revenue	$1,715,500
1993-94 Budgeted Expenses (Per 1994-95 Budget)	$1,745,000

8.03 Projected Impacts of Water Supply Alternatives on Water Rights

The following projected impacts on the existing water rates are based on the required initial facilities for the recommended alternative water facilities for the fifty year planning period:

City of Lewiston

The initial project for the City of Lewiston would be pump improvements for the South High Booster Pump Station in the amount of $660,000. Revenue from water sales to LOID would range from $585,000 to $683,200 per year. Since revenue from water sales to LOID would easily offset the cost of improvements over a short time, there would be no impact on water rates.

Lewiston Orchards Irrigation District

The initial projects for the Lewiston Orchards Irrigation District would be the following projects:

1.	6,800 LF 16" Pipeline Improvements to the Potable Water System	$ 767,000
2.	Financing Cost (Interest) on 16" Pipeline Improvements	$ 325,000
3.	LOID 1995 Proposed Four Wells	$5,200,000
4.	Financing Cost (Interest) on LOID 1995 Proposed Wells	$2,204,000
	Total	$8,496,000

Annual cost of the domestic water system improvements of $767,000 and associated interest of $325,000, totaling $1,092,000 over 10 years at an interest rate of 7% would be $156,000. Applying the annual cost of $156,000 for ten years and the water purchase cost of approximately $630,000, totaling $786,000 to the existing water sales of 63,767,200 cubic feet would result in an increase of $1.23 per 100 cubic feet, or an increase of 80%.

Annual cost of the irrigation water system improvements of $5,200,000 and associated interest of $2,204,000, totaling $7,404,000 over 10 years at an interest rate of 7% would be $1,054,000. Applying the annual cost $1,054,000 for ten years and annual electric power cost for the wells of $85,000 to the existing irrigation rates would result in the following increases:

Total 1993-94 Irrigation Revenue	$ 730,100
Ten Year Annual Cost of LOID 1995 Proposed Wells	$ 1,054,000
Annual Electric Power Cost for Wells	$ 85,000
Total Annual Revenue Requirements	$ 1,869,100
Total Annual Revenue Requirements/Total 1993-94 Irrigation Revenue	2.56
Required Irrigation Rate Increase	160%