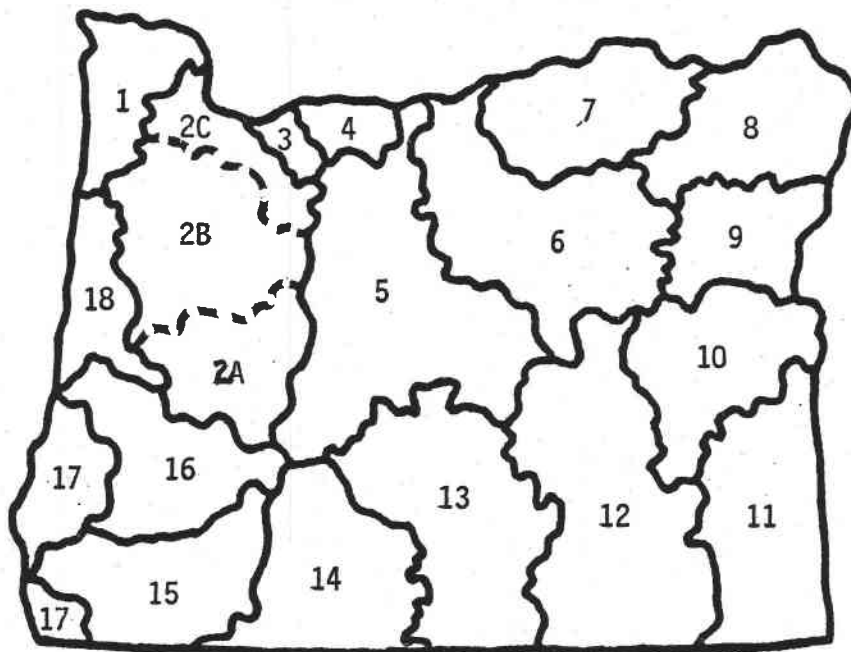


A RESOURCE SURVEY OF RIVER ENERGY  
AND LOW-HEAD HYDROELECTRIC POWER POTENTIAL  
IN OREGON

APPENDIX 2B: MIDDLE WILLAMETTE BASIN



WATER RESOURCES RESEARCH INSTITUTE  
Oregon State University  
Corvallis, Oregon 97331

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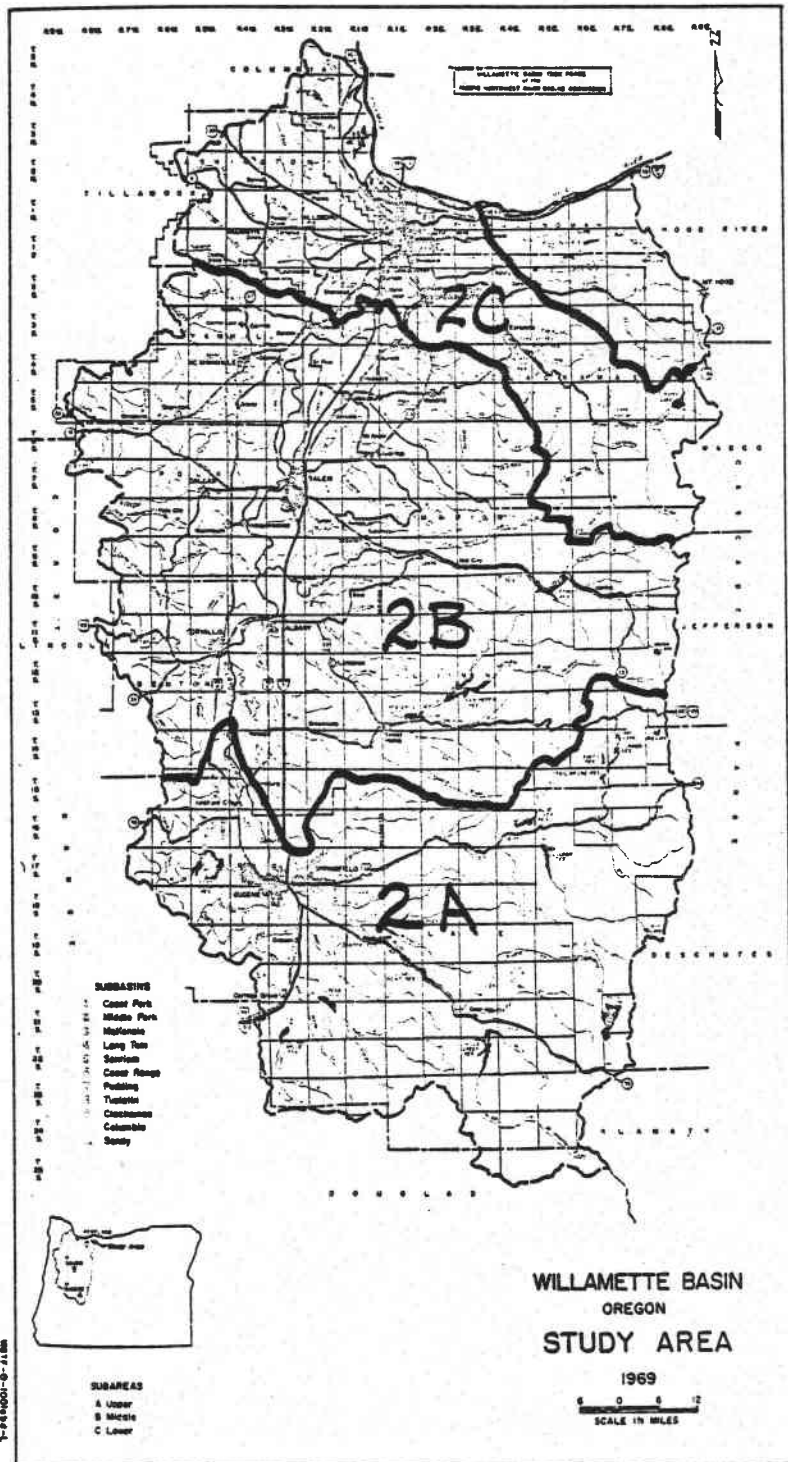
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# REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-060-000-000-R0005

## I. LOCATION

A. State	Oregon
B. County	Clackamas
C. Township, Range	T3S, R1E, Sec. 21
D. Latitude, Longitude	45°17'N, 122°41'W
E. Stream Name	Willamette River
F. Major Basin Name	Mid Willamette
G. River Mile	32.5 to 35.7

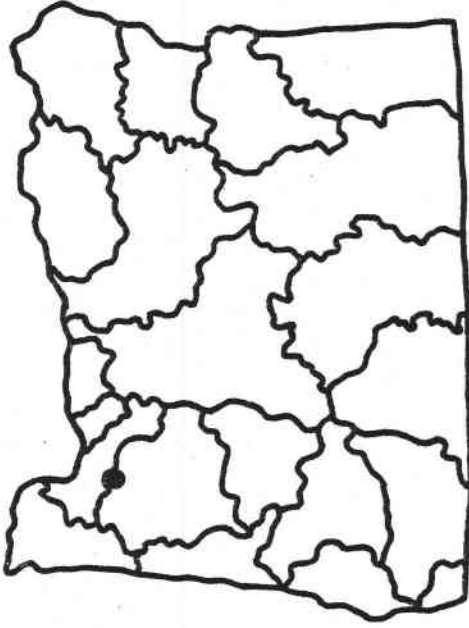
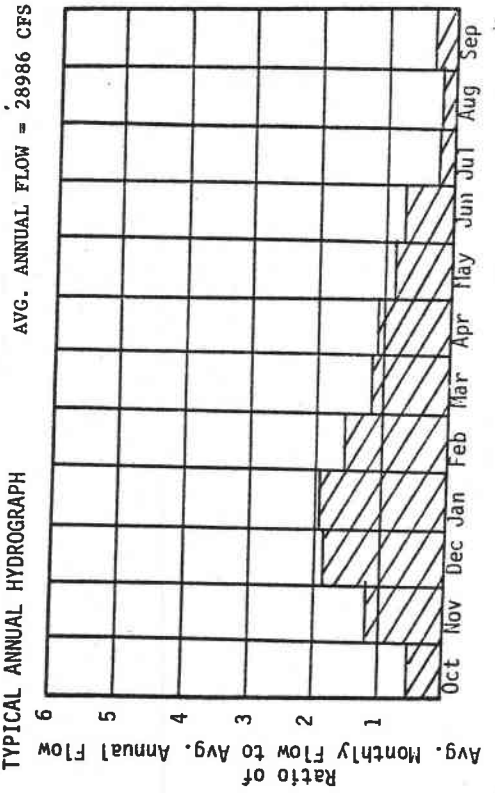
## II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	51	Ft. MSL
B. Downstream Elevation of Reach	50	Ft. MSL
C. Total Available Head in Reach	1	Ft.
D. Average Slope in Reach	0.3	Ft./Mi.
E. Drainage Area above Reach Mouth	7192	Sq. Mi.
F. Inflow Classification	Regulated	

## III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I I	I DISCHARGE I I	I THEORETICAL I PLANT SIZE I I	I ANNUAL ENERGY I AVAILABLE I I	I PLANT I FACTOR I I
I 95 I	I 5680.7 I	I .48 I	I 4.22 I	I 1.000 I
I 80 I	I 8458.2 I	I .72 I	I 6.02 I	I .959 I
I 50 I	I 19324.2 I	I 1.64 I	I 11.26 I	I .785 I
I 30 I	I 30521.0 I	I 2.59 I	I 14.59 I	I .644 I
I 10 I	I 67134.0 I	I 5.69 I	I 20.03 I	I .402 I

## IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES  
1:250,000 SCALE  
MAP NAME: VANCOUVER



# REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-060-036-000-R0001

## I. LOCATION

A. State	Oregon
B. County	Clackamas
C. Township, Range	T3S, R1E, Sec. 20
D. Latitude, Longitude	45° 16' N, 122° 43' W
E. Stream Name	Molalla River
F. Major Basin Name	Mid Willamette
G. River Mile	0.0 to 0.8

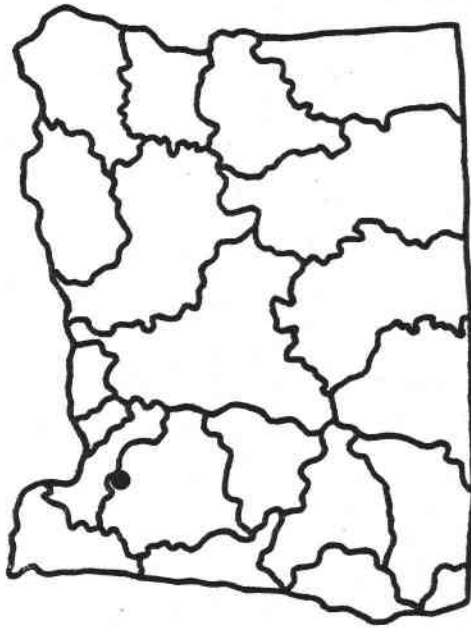
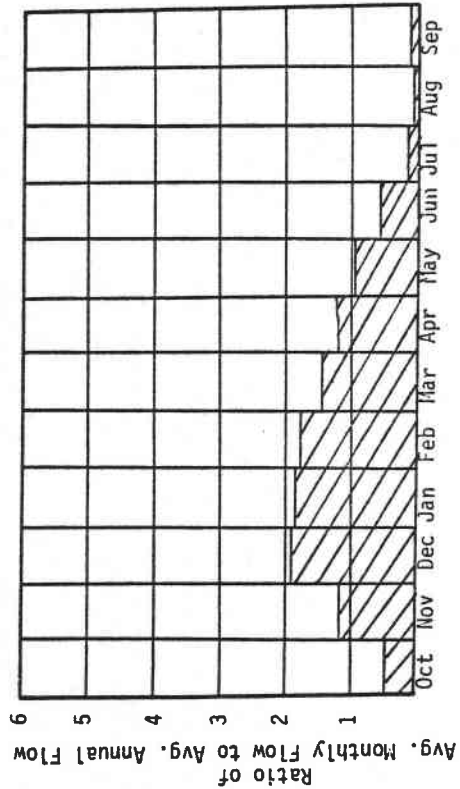
## II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	55	Ft. MSL
B. Downstream Elevation of Reach	51	Ft. MSL
C. Total Available Head in Reach	4	Ft.
D. Average Slope in Reach	5.0	Ft./Mi.
E. Drainage Area above Reach Mouth	932	Sq. Mi.
F. Inflow Classification	Natural	

## III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GW	I	I
I	95	I	251.8	I	.09	I	.75	I	1.000
I	80	I	501.7	I	.17	I	1.40	I	.938
I	50	I	1857.7	I	.63	I	4.01	I	.728
I	30	I	3253.5	I	1.10	I	5.67	I	.587
I	10	I	6572.6	I	2.23	I	7.64	I	.392

## IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES  
1:250,000 SCALE  
MAP NAME: VANCOUVER



# REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-060-036-005-R0001

## I. LOCATION

A. State	Oregon
B. County	Clackamas
C. Township, Range	T3S, R1E, Sec. 31
D. Latitude, Longitude	45°16'N, 122°44'W
E. Stream Name	Pudding River
F. Major Basin Name	Mid Willamette
G. River Mile	0.0 to 7.2

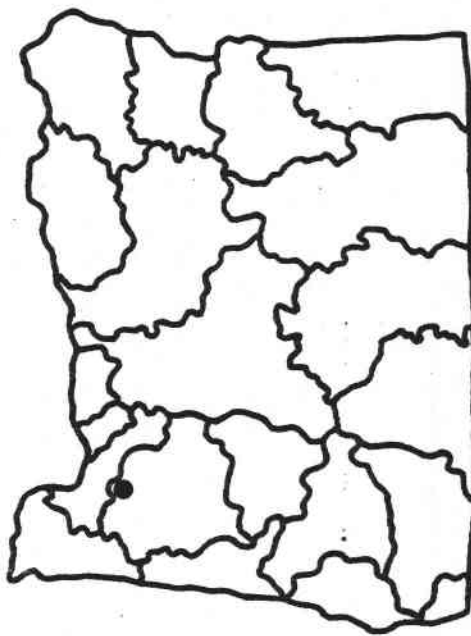
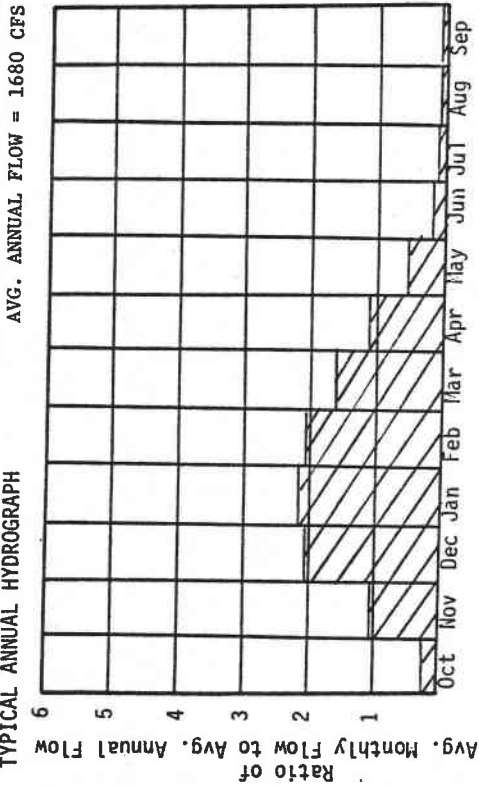
## II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	67	Ft. MSL
B. Downstream Elevation of Reach	55	Ft. MSL
C. Total Available Head in Reach	12	Ft.
D. Average Slope in Reach	1.7	Ft./Mi.
E. Drainage Area above Reach Mouth	575	Sq. Mi.
F. Inflow Classification	Natural	

## III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I I
I 95 I	I 135.0 I	I .14 I	I 1.20 I	I 1.000 I
I 80 I	I 272.4 I	I .28 I	I 2.27 I	I .937 I
I 50 I	I 1045.8 I	I 1.06 I	I 6.75 I	I .725 I
I 30 I	I 1858.6 I	I 1.89 I	I 9.65 I	I .583 I
I 10 I	I 3817.7 I	I 3.88 I	I 13.14 I	I .386 I

## IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES  
1:250,000 SCALE  
MAP NAME: VANCOUVER



# REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-060-036-005-R0002

## I. LOCATION

A. State	Oregon
B. County	Clackamas
C. Township, Range	T4S, R1W, Sec. 12
D. Latitude, Longitude	45° 11' N, 122° 45' W
E. Stream Name	Mill Creek
F. Major Basin Name	Mid Willamette
G. River Mile	0.0 to 2.2

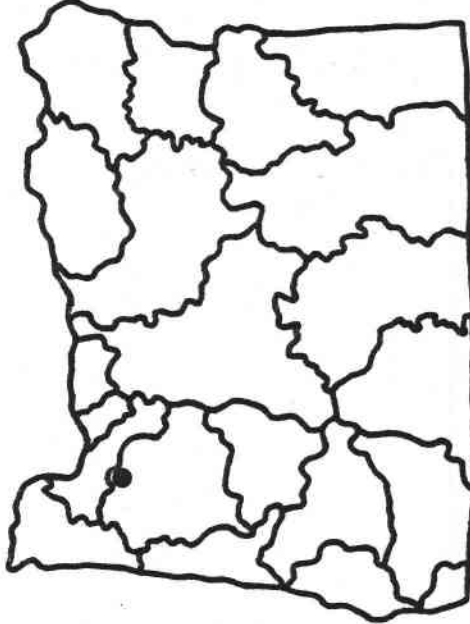
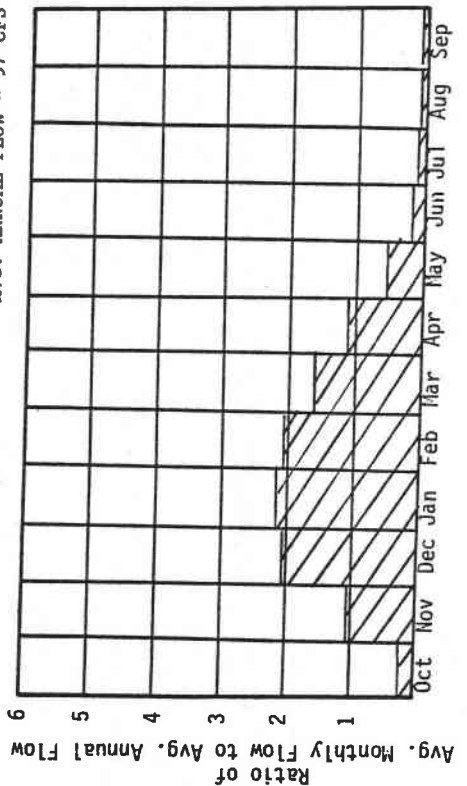
## II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	109	Ft. MSL
B. Downstream Elevation of Reach	67	Ft. MSL
C. Total Available Head in Reach	42	Ft.
D. Average Slope in Reach	19.1	Ft./Mi.
E. Drainage Area above Reach Mouth	38	Sq. Mi.
F. Inflow Classification	Natural	

## III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 5.5 I	I .02 I	I .17 I	I 1.000 I
I 80 I	I 11.8 I	I .04 I	I .34 I	I .933 I
I 50 I	I 54.5 I	I .19 I	I 1.21 I	I .711 I
I 30 I	I 104.5 I	I .37 I	I 1.83 I	I .562 I
I 10 I	I 233.8 I	I .83 I	I 2.64 I	I .362 I

## IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES  
1:250,000 SCALE  
MAP NAME: VANCOUVER



# REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-060-036-005-R0003

## I. LOCATION

A. State	Oregon
B. County	Clackamas
C. Township, Range	T4S. R1W. Sec. 14
D. Latitude, Longitude	45° 12' N. 122° 46' W
E. Stream Name	Mill Creek
F. Major Basin Name	Mid-Willamette
G. River Mile	2.2 to H.W.

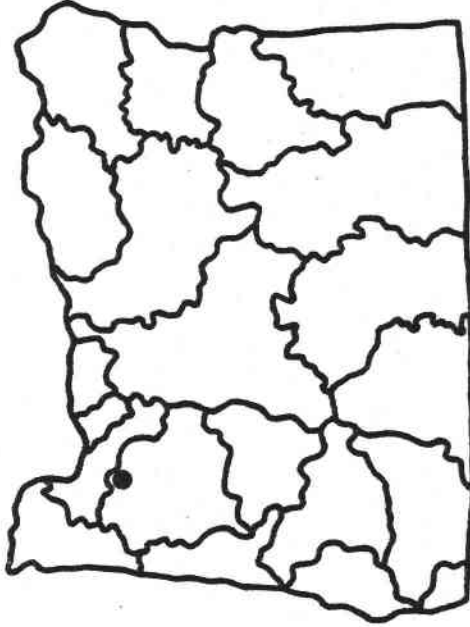
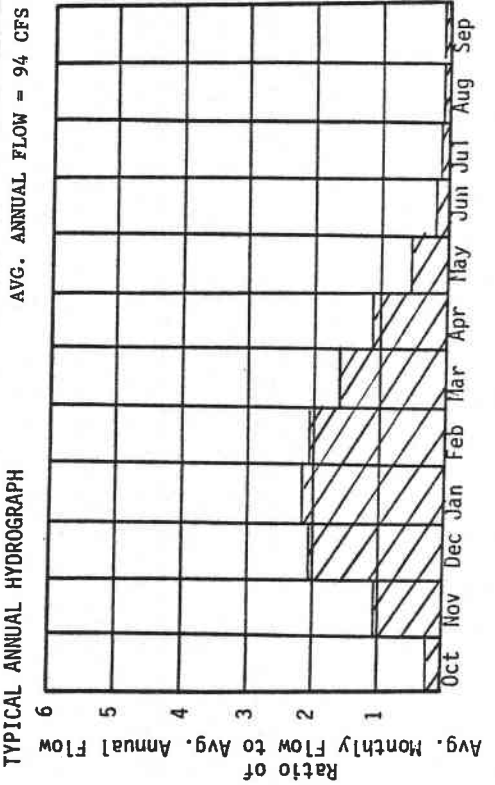
## II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach		Ft. MSL
B. Downstream Elevation of Reach		Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach		Ft./Mi.
E. Drainage Area above Reach Mouth	36	Sq. Mi.
F. Inflow Classification	Natural	

## III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GMH I	I PLANT I FACTOR I
I 95 I	I 5.3 I	I .03 I	I .26 I	I 1.000 I
I 80 I	I 11.4 I	I .06 I	I .52 I	I .933 I
I 50 I	I 52.8 I	I .30 I	I 1.84 I	I .711 I
I 30 I	I 101.3 I	I .57 I	I 2.79 I	I .562 I
I 10 I	I 226.8 I	I 1.27 I	I 4.02 I	I .362 I

## IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES  
1:250,000 SCALE  
MAP NAME: VANCOUVER

