

**United States Department of the Interior
National Park Service**

Skagit River & Newhalem Creek
Hydroelectric Projects

**National Register of Historic Places
Continuation Sheet**

Section number _____ Page _____

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 96000416

Date Listed: 4/26/96

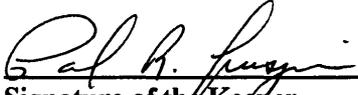
Skagit River & Newhalem Creek
Hydroelectric Projects
Property Name

Whatcom
County

WA
State

Hydroelectric Power Plant MPS
Multiple Name

This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.


Signature of the Keeper

4/26/96
Date of Action

Amended Items in Nomination:

Photographs:

The SHPO has verified that the 1989 photographs accurately document the current condition and integrity of the nominated resources. Historic Photos #1-26 are provided as photocopy duplications.

Resource Count:

The resource count is revised to read:

Contributing	Noncontributing	
21	6	buildings
2	-	sites
5	6	structures
1	-	objects

29	12	total

Number of contributing resources previously listed in the National Register 16.

A revised inventory list is appended to clarify the resource count and contributing status of properties in the district, particularly at the powerplant/dam sites. (See attached)

This information was confirmed with Lauren McCroskey of the WA SHPO.

DISTRIBUTION:

- National Register property file
- Nominating Authority (without nomination attachment)

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The following is a list of the contributing and noncontributing resources within the district, beginning at its westernmost--downstream--end, organized according to geographic location.(1)

(*) - Contributing Resources Previously listed in the National Register

A. TOWN OF NEWHALEM

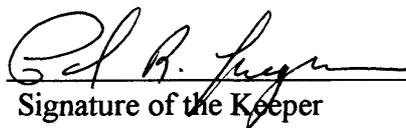
Boundaries: See Section 10.

Total Number of Contributing Resources: 20

Total Number of Non-contributing Resources: 5

LIST OF CONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Type of Resource</u>	<u>Date</u>
1	Silk Stocking Row House #8	Building	1921
2	Silk Stocking Row House #7	Building	1922
3	Silk Stocking Row House #6	Building	1922
4	Silk Stocking Row House #5	Building	1922
5	Silk Stocking Row House #4	Building	1922
6	Silk Stocking Row House #3	Building	1921
7	Silk Stocking Row House #2	Building	1922
8	Silk Stocking Row House #1	Building	1922
9	School Teacher's House (House #222)	Building	1938
10A	Garage #1-22	Building	1939 c.
10B	Garage #1-22	Building	1939 c.
11	The Hotel (Bunkhouse #23)	Building	1920
12	Commissary	Building	1920
13	Bunkhouse #13 (Pansy House)	Building	1934 c.
14	New Cook's Bunkhouse (Bunkhouse #10)	Building	1934 c.
15	Mess Hall (Gorge Inn)	Building	1920
16	Old Cook's Bunkhouse (Library)	Building	1921
17	Tourist Dormitory #70 (Bunkhouse #70)	Building	1935
18	U.S.G.S. Stream Gauging Station and Cable Car	Structure	1909/1923
19	Old Number Six	Object	1928


Signature of the Keeper 4/26/96
Date

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LIST OF NONCONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Type of Resource</u>	<u>Date</u>
20	Fire Hall	Building	1956 c.
21	Tourist Restroom (Visitor's Center)	Building	1934 c.
22	Currier Hall	Building	1957
23	Gazebo	Structure	1982 c.
24	Trail of the Cedars Suspension Bridge	Structure	1975 c.

B. GORGE POWERHOUSE AND DAM COMPLEX (2)

Boundaries: See Section 10.

Total Number of Contributing Resources: 3 (7 previously listed)

Total Number of Non-contributing Resources: 2 (1 previously listed)

LIST OF CONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Type of Resource</u>	<u>Date</u>
27a	Gorge Powerhouse	Building (*)	1924
27b	Power Tunnel	Structure (*)	1921
27c	Surge Tank	Structure (*)	1921 c.
27d-g	Penstocks (4)	Structure (4) (*)	1919-1929
28	Gorge Railroad Bridge	Structure	1935 c.
29	Gravity Oil Tank House	Building	1928 c.
30	Ladder Creek Falls Gardens	Site	1928

LIST OF NONCONTRIBUTING RESOURCES:

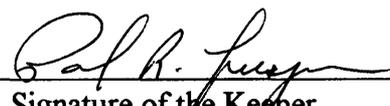
<u>Number</u>	<u>Historic Name</u>	<u>Type of Resource</u>	<u>Date</u>
31	Gorge Pedestrian Suspension Bridge	Structure	1983 c.
32	Gorge High Dam	Structure (*)	1961
33	Gorge Diversion Dam	Structure	1950

C. DIABLO POWERHOUSE AND DAM COMPLEX

Boundaries: See Section 10.

Total Number of Contributing Resources: 1 (9 previously listed)

Total Number of Non-contributing Resources: 3


 Signature of the Keeper 4/24/96
 Date

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LIST OF CONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Type of Resource</u>	<u>Date</u>
35a	Diablo Powerhouse	Building (*)	1936
35b	Power Tunnel	Structure (*)	1931
35c	Intake Tower	Structure (*)	1931
35d	Surge Tank	Structure (*)	1931
35e	Penstock	Structure (*)	1931
35f	Penstock	Structure (*)	1931
35g	Tailrace	Structure (*)	1936
36	Incline Waiting Station	Building	1934
37	Incline Lift and Powerhouse	Structure (*)	1928
42	Diablo Dam	Structure (*)	1930

LIST OF NONCONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Type of Resource</u>	<u>Date</u>
38	Diablo Commissary	Building	1952
39	Diablo Communications Building	Building	1935 c.
41	Incline Manlift	Structure	1953

D. SINGLE DISCONTIGUOUS CONTRIBUTING RESOURCES

Boundaries: See Section 10.

Total Number of Contributing Resources: 5

Total Number of Non-contributing Resources: 2

LIST OF CONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Location</u>	<u>Type of Resource</u>	<u>Date</u>
25	Ross Crypt	Newhalem	Site	1939 c.
26a	Newhalem Creek Powerhouse (Power Tunnel)	Newhalem Creek	Structure	1920
26b	Newhalem Creek Powerhouse (Steel Penstock)	Newhalem Creek	Structure	1921
34	House #2 (Building H-6)	Diablo (Hollywood)	Building	1938
40	Diablo Water Tower	Diablo	Structure	1934

Paul R. Meyer
 x Signature of the Keeper 4/26/96
Date

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LIST OF NONCONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Location</u>	<u>Type of Resource</u>	<u>Date</u>
26c	Newhalem Creek Powerhouse (Powerhouse)	Newhalem Creek	Building	1969
26b	Newhalem Creek Powerhouse (Dam)	Newhalem Creek	Structure	1969



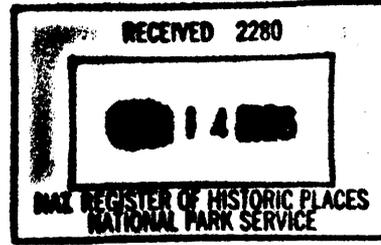
 Signature of the Keeper

 Date

4/26/96

United States Department of the Interior
National Park Service

National Register of Historic Places
Registration Form



This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property Skagit River and Newhalem Creek Hydroelectric Projects
historic name _____
other names/site number _____

2. Location
street & number Highway 20 Corridor not for publication
city, town 14 Miles between Newhalem and Ross Dam vicinity
state Washington code WA county Whatcom code 073 zip code 98283

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
<input type="checkbox"/> private	<input type="checkbox"/> building(s)	Contributing	Noncontributing
<input checked="" type="checkbox"/> public-local	<input checked="" type="checkbox"/> district	<u>22</u>	<u>5</u> buildings
<input type="checkbox"/> public-State	<input type="checkbox"/> site	<u>3</u>	<u>0</u> sites
<input type="checkbox"/> public-Federal	<input type="checkbox"/> structure	<u>5</u>	<u>6</u> structures
	<input type="checkbox"/> object	<u>1</u>	<u>0</u> objects
		<u>31</u>	<u>11</u> Total

Name of related multiple property listing: Hydroelectric Power Plants in Washington State
Number of contributing resources previously listed in the National Register 4

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register criteria. See continuation sheet.

Signature of certifying official _____ Date _____
State or Federal agency and bureau _____

In my opinion, the property meets does not meet the National Register criteria. See continuation sheet.

James Derry SHPO _____ 2.27.96
Signature of commenting or other official _____ Date _____
Office of Archaeology and Historic Preservation
State or Federal agency and bureau _____

5. National Park Service Certification

I, hereby, certify that this property is:

entered in the National Register.
 See continuation sheet.

determined eligible for the National Register. See continuation sheet.

determined not eligible for the National Register.

removed from the National Register.

other, (explain): _____

Paul R. Lueg _____ 4/26/96
Signature of the Keeper _____ Date of Action _____

6. Function or Use

Historic Functions (enter categories from instructions)

Government: Electric Generating Plant

Recreation and Culture: Municipal Resort

Domestic Institutional Housing

Landscape

Current Functions (enter categories from instructions)

Government: Electric Generating Plant

Recreation and Culture: Municipal Resort

Domestic Institutional Housing

Landscape

7. Description

Architectural Classification

(enter categories from instructions)

Other: Industrial Vernacular

Bungalow/Craftsman

Neo-Classicism

Materials (enter categories from instructions)

foundation Concrete

walls Concrete

Wood

roof Ribbed Metal

other

Describe present and historic physical appearance.

7. Physical Description

The Skagit River Hydroelectric Project is an interconnected system of three hydroelectric plants--Gorge, Diablo and Ross--and two company towns--Newhalem and Diablo--located on the upper Skagit River, which runs through the Cascade Range in Northern Washington state. Associated with the project is the Newhalem Creek Hydroelectric Project, located on a tributary of the Skagit River. The plants and towns are owned by the City of Seattle and operated by the municipal utility, Seattle City Light. Developed over a fifty year span, beginning in 1918, the Projects have a wide range of historic and nonhistoric resources, including structures, objects, sites and buildings, with an even broader range of functions. They are inextricably linked, both historically and physically, to the development of hydroelectric power for the City of Seattle. Collectively, the resources possess sufficient integrity to both represent the evolution of hydroelectric power development in the west, and to display the creation and growth of a rare type of planned community--the municipally-owned company town. In addition, some features of the project--Diablo Dam and Powerhouse--have high aesthetic value in their own right, and one resource--Ladder Creek Falls Gardens--is a unique designed landscape on a regional, if not national level.

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7. Physical Description, Continued

The boundaries of the historic district extend in a linear, but disconnected, fashion along the Skagit River, from the town of Newhalem to the Diablo Powerhouse and Dam. The extensive nature of the district, which totals three miles in length--excluding reservoirs--is due to the sequence of towns and industrial resources located along the river, beginning at the relatively flat bar area on which the town of Newhalem is located. It continues upriver to encompass the Gorge Powerhouse and Gorge High Dam; Diablo Powerhouse, a portion of the town of Diablo, the Diablo Incline Railroad, and Diablo Dam. Ross Dam and Ross Powerhouse are not included within the district, since the structure and building post-date the historic period, however their role in the historic development of the project is addressed in the text. The lakes formed by the dams are not included within the district, since their configurations were not significantly influenced by man. While headworks and powerhouses are generally considered as one resource, in this nomination they are evaluated separately, due to the changes at the headworks of some of the plants.

There are four additional discontinuous resources included in the district: the Ross Crypt, located within the town of Newhalem, but beyond historic district boundaries (Resource #25); the Newhalem Creek Powerhouse Site, south of the town of Newhalem on Newhalem Creek (Resource #26); a 1938 building in the Hollywood area of Diablo (Resource #34), a 1934 water tower in the town of Diablo (Resource #40). In addition, there are two discontinuous resources which have potential significance, but about which, at present, there is insufficient information available; the Dohne Cabin site, an archaeological site, and the Stetattle Creek Bridge, near the town of Diablo. Neither of these resources have been assigned numbers, but are discussed in the text.

Generally, those resources within the district which have been evaluated as noncontributing either post-date the historic period or have been subjected to significant alterations, affecting their integrity. For example, the suspension bridge between Newhalem and the Trail of the Cedars (Resource #24) has been entirely rebuilt twice since its initial construction in 1920-21.

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The following is a list of the contributing and noncontributing resources within the district, beginning at its westernmost--downstream--end, organized according to geographic location.¹

A. Town of Newhalem

Boundaries: See Section 10.

Total Number of Contributing Resources: 19

Total Number of Non-Contributing Resources: 5

LIST OF CONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Type of Resource</u>	<u>Date</u>
1	Silk Stocking Row House #8	Building	1921
2	Silk Stocking Row House #7	Building	1922
3	Silk Stocking Row House #6	Building	1922
4	Silk Stocking Row House #5	Building	1922
5	Silk Stocking Row House #4	Building	1921
6	Silk Stocking Row House #3	Building	1922
7	Silk Stocking Row House #2	Building	1922
8	Silk Stocking Row House #1	Building	1923
9	Schoolteacher's House (House #222)	Building	1938
10	Garages #1-22	Buildings	c. 1939
11	The Hotel (Bunkhouse #23)	Building	1920
12	Commissary	Building	1920
13	Bunkhouse #13 (Pansy House)	Building	c.1934
14	New Cook's Bunkhouse (Bunkhouse #10)	Building	c.1934
15	Mess Hall (Gorge Inn)	Building	1920
16	Old Cook's Bunkhouse (Library)	Building	1921
17	Tourist Dormitory #70 (Bunkhouse #70)	Building	1935
18	U.S.G.S. Stream Gauging Station and Cable Car	Structure	1909/1923
19	Old Number Six	Object	1928

LIST OF NONCONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Type of Resource</u>	<u>Date</u>
20	Fire Hall	Building	c.1956
21	Tourist Restroom (Visitor's Center)	Building	c.1934
22	Currier Hall	Building	1957
23	Gazebo	Structure	c. 1982
24	Trail of the Cedars Suspension Bridge	Structure	c.1975

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B. Gorge Powerhouse and Dam Complex²

Boundaries: See Section 10

Contributing Resources: 4
NonContributing Resources: 3

LIST OF CONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Type of Resource</u>	<u>Date</u>
27	Gorge Powerhouse	Building	1924
28	Gorge Railroad Bridge	Structure	c.1935
29	Gravity Oil Tank House	Building	c.1928
30	Ladder Creek Falls Gardens	Site	1928

LIST OF NONCONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Type of Resource</u>	<u>Date</u>
31	Gorge Pedestrian Suspension Bridge	Structure	c. 1983
32	Gorge High Dam	Structure	1961
33	Gorge Diversion Dam	Structure	1950

C. Diablo Powerhouse and Dam Complex

Boundaries: See Section 10

Contributing Resources: 4
NonContributing Resources: 3

LIST OF CONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic-Present Day Name</u>	<u>Type of Resource</u>	<u>Date</u>
35	Diablo Powerhouse	Building	1936
36	Incline Waiting Station	Building	1934
37	Incline Lift and Powerhouse	Structure	1928
42	Diablo Dam	Structure	1930

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LIST OF NONCONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Type of Resource</u>	<u>Date</u>
38	Diablo Commissary	Building	1952
39	Diablo Communications Building	Building	c.1935
41	Incline Manlift	Structure	1953

D. Single Discontiguous Contributing Resources

Total Contributing Resources: 4

LIST OF CONTRIBUTING RESOURCES:

<u>Number</u>	<u>Historic Name</u>	<u>Location</u>	<u>Type of Resource</u>	<u>Date</u>
25	Ross Crypt	Newhalem	Site	c.1939
26	Newhalem Creek Powerhouse Site	Newhalem Creek	Site	1921
34	House #2 (Building H-6)	Diablo (Hollywood)	Building	1938
40	Diablo Water Tower	Diablo	Structure	1934

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Natural Features

The Cascade Range runs north-south, bisecting the state of Washington. It is characterized by high, snow-laden peaks, cirques and vast snowfields which yield to dense evergreen forests on the western slopes, and arid open pine forests on the east. The area between Snoqualmie Pass and the Canadian border, where the Skagit Hydroelectric Project is located, is commonly referred to as the North Cascades. The Skagit Metamorphic Suite--the schists, gneisses and migmatites exposed along Highway 20 which runs through the Project--was created during the orogeny which formed the major structural units of the Cascades, approximately 90 million years ago. Advancing and retreating, slow-moving glaciers during the Pleistocene Epoch created U-shaped valleys, sheer cliffs and arêtes in the mountains, leaving behind lakes, ponds, and tarns.

The district is located within the boundaries of the Ross Lake National Recreation Area unit of the North Cascades National Park Service Complex, which consists of over a half-million acres of forest lands, alpine environments and river systems. Until the North Cascades park and two national recreation areas were created in 1968, the Skagit Hydroelectric Project was located within the Mount Baker National Forest. It is near the center of over two million acres of recreational land spanning three Washington counties--Chelan, Skagit and Whatcom, most of which are under the jurisdiction of the United States Forest Service. The Project itself reaches across two counties--Whatcom and Skagit.

The principal mountain peaks visible from the district are Mt. Logan (9,080 feet); Jack Mountain (9,070 feet); Colonial Peak (8,000 feet); Pyramid Peak (7,600 feet); Davis Peak (7,150 feet), Ruby Mountain (7,408 feet); Ross Mountain (6,052 feet), and Sourdough Mountain (5,977 feet). Ladder Creek Falls, which originates in Snowfield Peak (8,350 feet), is a significant natural feature which drops over 3,000 feet during its six mile run, and is incorporated into a designed landscape within the Project.

Five major rivers drain the North Cascades National Park Service Complex; of these, the Skagit River, the second largest river in the state, is the most prominent. It rises in Beaver Lake in Canada and flows in a southerly direction through densely-forested lowlands for more than fifty miles, before turning west towards the Pacific Ocean, where it ends its 140 mile course. The Skagit River basin topography ranges from the high mountains of the North Cascades, with elevations of 8,000 and 9,000 feet, to tidal marshes and sloughs in the river delta prior to its entrance into Puget Sound. Between the Canadian border and the town of Newhalem, the river drops over 1,000 feet in about 40 miles. As it shifts to a westerly course, just above the north end of the district, it is compressed into deep, narrow, rock-walled canyons and gorges.

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A series of creeks and rivers drain into the Skagit as it travels to the Sound. The Skagit Hydroelectric Project has altered the nature of the river from the Canadian border to Newhalem; its series of three dams--Ross, Diablo and High Gorge--have created three lakes, the largest of which is Ross Lake, twenty-four miles long, extending one-half mile into Canada. Diablo Lake reaches five miles, from Diablo Dam to Ross Dam, and Gorge Lake, a part of the Skagit impounded by Gorge High Dam, extends four and one-half miles to Diablo Dam. Among the Skagit tributaries are Ruby Creek, which enters the Skagit just above Ross Dam; Thunder Creek, which debouches into Diablo Lake; Stetattle Creek, joining just west of the town of Diablo; Gorge Creek and Gorge Falls, which enter Gorge Lake; Ladder Creek; Newhalem Creek, the location of the Project's first dam and powerhouse; and Godell Creek, the site of the Project's first employee camp. Below the town of Newhalem, the Cascade, Sauk and Baker Rivers flow into the Skagit.

The terrain throughout the Skagit Gorge is rugged, with sheer granite cliffs and rock outcroppings framing the once rushing waters of the river below. The area supports a rich variety of flora and fauna. Native trees include a variety of maples, Western birch, Douglas fir, hemlock, pine, cedar, alder, madrona, yew and mountain ash. Wildlife include blacktail deer, black and brown bear, beaver, marten, otters, osprey, eagles and ptarmigans.

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Historic Physical Development of the Skagit Hydroelectric Project

The Upper Skagit Prior to City Light

Prior to the 1880s, miners seeking gold were the principal Euro-American occupants of the Upper Skagit. The principal route through the future site of the hydroelectric project was a narrow trail with crude bridges spanning creeks. Miners lived in log cabins near their claim sites. In 1895 the Washington Board of State Road Commissioners was created to survey routes through the North Cascades in an attempt to establish a road linking the eastern and western parts of the state. In July of that year, an engineer and three commissioners set out from Marblemount, the easternmost community along the Skagit at that time, southwest of the present town of Newhalem. They described what development existed at that time:

The trail to Slate Creek from Marble Mount runs for seventeen miles through the forest and along the Skagit River, over a fairly-level country, but after the first four miles some rock is found. In the tenth mile the "Devil's Dream" (a trail made in front of a rock wall by rude bridges above the Skagit River to avoid rock work) is reached. The trail then runs along level bottom land mostly until the end of the seventeenth mile is reached. The eighteenth mile begins with a rock point, where the Skagit Canyon and rapids are first encountered. The trail here passes along a very high rock bluff, and the work is heavy for the first mile, but some lighter in the nineteenth mile, which brings us to the site of the old goat trail bridge, which washed away in the floods of 1894. At this point the celebrated "Goat Trail" begun and extended to Cedar Bar, a distance of 2 1/2 miles; and, up to within a few days of our arrival, the only mode of travel over it was on foot, using a ladder to scale the most difficult points. The volunteer work done in the spring of 1895 by blasting half tunnels through perpendicular cliffs and constructing rude bridges across chasms made it passable for small horses, but still the grades, in places are excessive, and the bridges and trail dangerous and difficult for even the lightest pony traffic...It is a picturesque place and rugged enough for the most ardent mountain climber.³

In 1897 twenty-one million acres of public domain lands in the northwest were withdrawn by Executive Order to create the federal forest reserves in Washington, of which the North Cascades National Park Service Complex is now a part. Nearly 3.6 million acres on both sides of the North Cascades became known as the Washington Forest Reserve, the largest of the reserves created by the Presidential Proclamation. In 1905 the administration of the reserves was transferred from the General Land Office and the Department of the Interior to the Bureau of Forestry in the Department of Agriculture, and that year the United States Forest Service (U.S.F.S.) was created to administer these lands. In 1907 the Washington Forest Reserve became the Washington National Forest; a year later the vast acreage it encompassed was subdivided into smaller forests, of which

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the Washington National Forest was one, administered by a regional office established in Portland, Oregon. In 1924, the name of the forest in which the Skagit Hydroelectric Project is located was changed to the Mount Baker National Forest. The City of Seattle was to deal frequently with representatives of the U.S. Forest Service over the years, and the Forest Service was to have an influence on many decisions affecting the development of the city's project, including the design of some extant buildings within it.

A second federal agency had a presence within the future Skagit Hydroelectric Project : the United States Geological Survey (U.S.G.S.) was, by the early years of the twentieth century, building and maintaining stream-gauging stations along the rivers and snow survey courses in the high country. Stream gauging stations were sited along the Skagit River at Reflector Bar and Stetattle Creek, although neither lasted past 1916. However, one site, established in 1909, at the south end of the future town of Newhalem, was not abandoned, and in the late teens or early 1920s, Seattle City Light took over the operation of the station, designed to measure water depths. In 1923 a concrete structure was built near the river on the site established by the U.S.G.S.(Resource #18). It had a Stevens Continuous Recorder and a wood staff gauge, still extant, to measure the height of the river along the bank. In addition, a cable car built by the U.S.G.S. in 1909 was maintained by the City after it took possession of the site in 1918, and, although the original timber A frame to support the cable on the north bank was replaced after the second World War, the deadmen and the original cable are intact .

By the late 1890s, ten known homesteaders had settled along the banks of the Skagit River north and east of Marblemount. The settler furthest east was August Dohne, who in 1897 purchased several log buildings on the north side of the Skagit River, west of Newhalem Creek. Situated on the trail leading upriver, and at almost the last site before the Skagit canyon walls narrowed, the site had been the location of a store for miners, established by N.E. Goodell in the late 1870s. Goodell's Landing, as it was called, had passed through several hands, turning into a roadhouse where miners could obtain lodging, food and supplies, when Dohne purchased it.⁴ After a fire destroyed the structures in 1901, Dohne rebuilt, erecting two houses and a barn. When Dohne died in 1918, his probated land was sold by the court to a Sedro Woolley investment company, which in turn sold it--under condemnation-- to the City of Seattle, by then exploring the Skagit for dam sites.

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Gorge Camp and Goodell Creek City

By the spring of 1918, the City of Seattle had survey and drilling crews exploring possible dam sites for hydroelectric development on the Skagit. By March of 1919, the Diamond Drilling Company, operated by three brothers--Dick, Dan and Pat Lynch--was under contract with the city to bore cores for bedrock analysis at various sites along the river. Their crew of forty was housed in tents above Gorge Creek. The first structure built in connection with the Skagit Hydroelectric Project was a two-story rectangular log building which served as the company office, dining room, kitchen and warehouse, located near Gorge Creek. Workers for the company referred to the building and tents as Gorge Camp.⁵ The camp was abandoned when the drilling crew finished their work in the early 1920s; the log building lasted until the late 1930s, gradually falling into ruin.

In November of 1919 the city engineer's office negotiated a permit with the U.S.F.S. district forester for permission to erect a sawmill and cut timber necessary for construction on the Skagit Project. The request also included permission to use the buildings left on Dohne's claim at Goodell Creek, south of the present state highway through Newhalem. These included several cabins and a large barn, which the city planned to use to house a twelve-man sawmill crew. One of two large cabins was used as a dining room and cookhouse; the other for sleeping quarters. The city's agent stationed in Marblemount, W.F. Paddock, was instructed to evaluate the furnishing needs, ranging from stoves to utensils and bedding.⁶

In February of 1920, the construction crew completed a timber frame sawmill, with a 25,000 board foot capacity, and mill pond near the foot of Goodell Creek. The creek's course shifted several hundred feet to the east during flooding in the 1940s; the sawmill and later sawmill camp associated buildings were erected on the west side of the present creek's former course, north of the present state highway. By May of 1920 plans had been drawn by Seattle City Engineering Department for two large wood gable-roofed buildings to serve as a mess house and additional bunkhouse. The latter additions served to house additional construction crews engaged in erecting the "temporary" power plant on Newhalem Creek and first building crews for the construction camp rising further east, nearer the site of the proposed Gorge Powerhouse. Some of the buildings at Goodell Creek "City" lasted into the 1950s, although the sawmill had vanished by the late 1930s. Today, there are no buildings dating from this period of development still standing near Goodell Creek, and no above-ground remains of Dohne's structures are believed to be extant, although a few aged lilacs are present near the site.

Newhalem Creek Powerhouse Site (Resource #26)

In the summer of 1918 the city engineer's department sent a hydrographer and an assistant to the Skagit to determine the location of a temporary generating station which would supply power for construction of the future dam and the camp that would have to be built to house workers.⁷ Newhalem Creek, which fed into the Skagit from the south, between Goodell Creek and the future site of the Gorge Powerhouse, was selected. In 1920 a 2,770 foot power tunnel, about 5 by 7 feet, was bored through gneiss to bring the waters of Newhalem Creek to the vicinity of what would be a small powerhouse, from a low log crib dam, some 3,000 feet upstream. A 500-foot long steel penstock was installed to connect the power tunnel to the small powerhouse; it split in two just outside the building to supply water to two Pelton wheels. The powerhouse was a wood frame, gable-

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roofed rectangular structure, enclosing a two-story volume, with board and batten siding. Wood sash windows with six-over-six lights were located at the first story and below the roof eaves. A pair of oversized swinging doors were located near the southerly end of the building. In 1921 the two Pelton impulse turbines and a 2000 kva horizontal shaft Westinghouse generator were installed. The plant began operation in August of 1921. In the early 1950s, the plant was semi-automated, allowing it to operate unmanned, except for start-up and shut-down.

Although initially intended as a temporary plant for construction purposes, the Newhalem powerhouse and dam remained in operation, supplying City Camp--later Newhalem--with 2,000 kva until July of 1966, when the powerhouse burned down. During the fire, which fed rapidly on the dry cedar siding and old timber of the powerhouse, a flange gasket in one line of the bifurcated penstock behind the powerhouse blew out, creating a 60- to 70-foot high sheet of water behind the powerhouse; it was this curtain of water which prevented the spread of the fire and loss of trees and timber on the hill behind the powerhouse.⁸

The power plant was rebuilt, utilizing the original power tunnel and penstock. During the fire, the the machinery continued to run, which kept the shaft of the generator from warping from the heat. Thus, the only major repair required on the Westinghouse unit was rewinding. The Pelton wheels also survived the fire, and underwent minor welding repairs. The turbines and generator are still operating in the plant, although they have been controlled remotely from Gorge Powerhouse's control room since the early 1970s.⁹

After the fire, a new 9-foot high concrete diversion dam was built, 4 1/2-feet thick and 47-feet wide, near the site of the original crib dam. A new wood frame powerhouse was built, with vertical board siding and a gable roof. The power tunnel was cleaned out, and some routine maintenance performed on the original penstock. The plant, officially titled the Newhalem Creek Hydroelectric Project, went back on line in February of 1970. In 1984 the Newhalem diversion dam and apron, damaged from bedload abrasion, received major structural repairs, and the gatehouse, destroyed by a floating tree during an unusually high freshet, was replaced at the same time. The plant is licensed and operated independently of the Skagit Project, but is staffed by City Light personnel from the Gorge Powerhouse.

Gorge Hydroelectric Power Plant

The Gorge Powerhouse, completed in 1924, is located at the east end of the town of Newhalem, on the opposite side of the Skagit River. The Gorge High Dam, built between 1955 and 1961, is several miles upstream, below Gorge Creek, in the lower part of the narrow, fourteen mile gorge through which the Skagit flows.

When the site for the first dam on the Skagit was identified by the Lynch crew, the Lighting Department proceeded with construction of the power plant. In October of 1921, R.C. Storrie Company of San Francisco was awarded the contract to build the Gorge power tunnel. City crews began to work on the powerhouse, which was completed on time, but the work on the power tunnel fell behind schedule. Storrie Company used jackhammers connected to eight inch pipes which carried compressed air from air compressors installed in a building in Newhalem. The

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compressors were electrically-powered by the Newhalem Power Plant, which was also supplying electricity for construction of the powerhouse, Newhalem buildings and living quarters. The electrical demands were too much for the small plant, and squabbles over priority rights to power rose, as the City Camp and construction projects experienced shortages. By August of 1924, almost three years after work started, the power tunnel was completed. By that time, two 30,000 kva Westinghouse generators powered by S. Morgan Smith turbines, rated at 38,800 horsepower each, had been installed in the powerhouse--a third unit was installed in 1929, giving the plant a capability of 60,000 kva, although it didn't achieve that rating until Diablo Dam was built-- and city crews had begun construction of the first Gorge Dam.

The "temporary" rock-filled timber crib dam was built in 1923 to raise the river thirty feet, and divert the flow into an 11,000 foot long, concrete-lined power tunnel, with a head of 270 feet. With the project already over budget and deadlines, the city opted to build this wood weir, rather than a masonry dam. By October of 1920, the Skagit Project's Chief Engineer, C.F. Uhden, and the city engineer, A.H. Dimock, had determined that the originally planned high dam at Gorge, which they felt would increase the head over 25 percent, would not be built at that time, due to time and money constraints, nor would a low masonry dam, which had been inserted into the plan later. Instead, Dimock reported, they decided to build a "...temporary timber crib dam which will serve for the present to divert the water to the pressure tunnel and will later serve as a diversion weir during the construction of the high dam."¹⁰ City crews also erected a transmission line to a substation north of Seattle. On September 14, 1924, the first electric power from the Skagit Hydroelectric Project was sent to Seattle.

In 1929 the city raised the existing crib dam two feet in height to help alleviate problems with gravel sweeping into the intake, and low water levels which affected the plant's efficiency. At this time the third units was installed in the powerhouse. In 1950 a concrete diversion dam was built to replace the wooden crib dam, which had lasted far longer than its anticipated life of four or five years, and a fourth generator was added, increasing the plant's capability to 108,000 kw.

In the summer of 1948 work began on a 100-foot extension to the Gorge Powerhouse, which would house the new generator and provide additional operation space. The reinforced concrete addition is architecturally sympathetic to the original Neo-classic concrete and steel building. By October of 1949 the plant was back in operation. Also in 1948-49, an additional power tunnel was built to carry water to the new generating unit, and a new transmission line was built from Gorge to Seattle. In 1959, during Gorge High Dam construction, work began on modernizing the four generators, bring the plant's capability to 173,000 kw; further work on the fourth generating unit in 1961 brought the Gorge Power Plant's capability to 178,000 kw.

The present dam is the third to be located in roughly the same area; the 1950 masonry dam is still extant, but covered by the impounded waters behind the new dam. Gorge High Dam's construction--with a gross head of 385 feet, increasing the capacity of the plant by 70,000 kilowatts--was envisioned in 1920, but its development to full capacity could only be accomplished after Ross Dam--also anticipated by that date-- was completed. In 1920, C.F. Uhden anticipated the final Gorge Dam would be 240 feet high, with two 11,000 foot long power tunnels. The dam is in fact 300 feet high from bedrock, and utilizes the one, original 11,000 foot long tunnel.¹¹

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For additional information on the plant, refer to the National Register of Historic Places Multiple Property Documentation Form, *Hydroelectric Power Plants in Washington State, 1890-1938*, prepared by Lisa Soderberg and revised by Leonard Garfield, and approved by the National Register on December 15, 1988. Please note that errors or inconsistencies in that nomination have been corrected in this present nomination.

Newhalem (City Camp)

The town of Newhalem is located on a relatively flat bar encompassing approximately 31 acres. It has a roughly linear shape, bounded by gorge cliffs on the north, and the Skagit River on the south and east. The formal west boundary has shifted several times since its establishment, as temporary buildings have been built and razed. Its present west gateway begins approximately three-quarters of a mile from the town center. The Gorge Powerhouse is located across the Skagit River to the east, visually terminating the east-west axis of the town.

On October 1, 1919 C.F. Uhden was appointed chief engineer in charge of the Skagit project. By January 26 of 1920 he had begun to assemble a staff of draftsmen to prepare plans and specifications for the system.¹² By early summer his staff, apparently operating under the supervision of the city engineer, A.H. Dimock, had prepared plans for principal construction camp buildings which were to be built in the forested flat land between Goodell City and the site of the future Gorge powerhouse. The staff also began to design and draw Gorge power plant features, including the Gorge penstocks. While this work was going on in Seattle, the sawmill crews on the Skagit were clearing timber from the site for construction of the buildings. When the sawmill began operation in the spring, the logs were milled for use in the buildings.

Construction on a railroad from Rockport, twenty-three miles southwest of the Gorge power plant site, began in early spring of 1920. The city purchased the rails from the Great Northern Railway Company. At this time, Dimock noted that the new line was only to be used for construction of the power plant, anticipating that the railroad would be sold by the city after construction "...to anyone desiring to operate it as a common carrier."¹³ However, the city continued to operate the road until its removal in 1954.

The city engineering department, under Uhden, prepared a general layout of the construction camp, which would accommodate city workers erecting the powerhouse and dam, and provide general services to other construction crews in the camp, including the contractor hired to drill the power tunnel connecting the powerhouse and dam. The general design scheme appears to have been determined, initially, by functional considerations. The topography of the site, sandwiched between the Skagit River to the southeast and sheer granite cliffs to the northwest, required a linear organization of buildings, which were placed along a grid of "streets" perpendicular to an east-west spine, defined by the railroad. The railroad, soon to be the principal means of access to the camp from Rockport for workers, equipment and supplies, was built along the base of the cliffs. Its location at the northerly edge of the flatland was the most direct route, heading east from Goodell Creek along the cliffs, branching across the Skagit upriver from its westerly bend, with one line continuing to the Gorge dam site and one across a railroad bridge to the Gorge powerhouse.

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Upper Camp

There were two major interrelated groups of buildings in City Camp. The easterly end of the camp, which occupied roughly two-thirds of the flatland, was referred to as the Upper Camp. It was bisected by Main Street, which began at the railroad tracks and ran perpendicular to them towards the river, terminating at a suspension bridge, built in 1920 (Resource #24) which crossed the Skagit.

The principal town buildings were located along both sides of Main Street. Designed between June and August of 1920, by November they were built and in use. They included a twenty-four man bunkhouse-- Bunkhouse #23, later referred to as the Hotel--on the northwesterly corner of Main Street (Resource #11); the Office, south of the bunkhouse; the Warehouse, on the northeasterly corner of main street, next to and parallel to the tracks; the Commissary (Resource #12), south of the Warehouse; and the Mess Hall (Resource #15), located at the southeast corner of the street. These structures all were wood frame buildings, sided with one-by vertical boards and one-by-three battens. They had two-ply Malthoid roofing, secured by battens, and multi-light wood sash double-hung windows. In March of 1921, two additional buildings were designed for the camp, and construction on both began simultaneously in April. Located at the southwest end of Main Street, the Theater and Amusement Hall became the center of camp, and later town, social activities. The Theater--later referred to as the Big Hall--measured thirty-seven by eighty-one feet and was located on the southwesterly corner of Main Street. It was to serve both the town residents and tourists, who, in years to come, would gather there in summer evenings to view colored lantern (slide) shows, narrated by the Superintendent of Lighting, J.D. Ross, and, later, movies about the project, and participate or watch skits produced on its stage. The Amusement Hall--also referred to as the Club Room, and later, the Little Hall--measured twenty-six by seventy-two feet. The Little Hall served as a gathering place for small groups of townspeople. For some years it also served as a library, and between 1927 and 1952, was to be used as a school for younger grade school children. Both halls were gable-roofed buildings with board and batten siding, multi-light double-hung wood sash windows, and wood shingled roofs.

In the summer of 1921, the warehouse was extended towards the east, making it one of the largest structures in camp, measuring forty by one-hundred feet; it was later extended another eighty-four feet. The warehouse, with a platform extending along its northerly edge for unloading materials and supplies from the railroad, contained all items needed to operate and build the camp. It also housed the Skagit Project's railroad dispatchers, and included an office for Dana Carrier, the superintendent of the Project's general division.

Five north-south rows of twenty-four man bunkhouses--a total of eighteen--were located to the northeast of Main Street. With the exception of the row closest to Main Street, each consisted of four rectangular, twenty-six by eighty foot gable-roofed buildings, with the ridges oriented east-west. The westernmost row had two standard bunkhouses, and a smaller forty-four by twenty-six foot gable-roofed "Cook's Bunkhouse (Resource #16)," north and east of the Mess Hall. Small twenty-seven by eight foot gable-roofed wash houses were located between the first and second, and third and fourth bunkhouse in each row. All of the one-story bunkhouses were sided with rough-sawn vertical boards. They had pairs of multi-light wood sash windows flanking centrally-located doors on the side elevations, doors on each end, leading to interior double-loaded corridors, and

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roofs sheathed with two-ply roll roofing, secured by battens. Each twelve by twelve bunkhouse room was equipped with two beds and a table.

A gable and shed roofed building north of one of the bunkhouse rows served as a heating plant, providing steam heating to the bunkhouses and principal service buildings. By the fall of 1921 all of the bunkhouses had been erected, and an addition had been made to the west end of the Cook's Bunkhouse, which made it virtually identical to the other bunkhouses in the group. In addition, a "foremen's" bunkhouse, similar to the others, had been built about fifty feet southeast of the Mess Hall.

A gabled hospital building was built approximately 100 feet southwest of the Office on Main Street in the summer of 1920. By 1927, a concrete slab for a tennis court had been poured to the south of it, and nets installed.

Four streets running parallel to Main Street were originally planned, although only two were actually developed: First Street, directly west of Main Street, and Second Street. A portion of Third Street was installed in the 1960s. A total of nineteen three-room wood frame cottages were built on rectangular lots along both sides of both streets in the summer of 1920, designed to house families of men working on construction, and later for families of workers at the power plant. The cottages had one by twelve rough sawn vertical board siding--no battens--and, like most of the other structures in camp, Malthoid roll roofing. Outhouses were placed behind the buildings.

Functional structures were built along the railroad tracks, which split into two lines just west of Bunkhouse #23 (the Hotel), and split again into spurs north of the steam plant. Designed and built in 1920 and 1921, most were erected on the northerly side of the tracks. From west to east, they included two forty by fourteen gable-roofed structures, the Speeder House and a coal house; a gable-roofed building with a shed-roofed wing, which served as an oil house, and a T-shaped cross-gable roofed car barn and engine house, which terminated a short spur directly north of the warehouse. A horse barn, machine and blacksmith shop, and a second car barn were built in the northeast area of the flat, interspersed with structures built by R.C. Storrie and Company, who had been hired to drill the power tunnel for the Gorge plant. The Storrie buildings included a warehouse and shop, a blacksmith shop, a combination office and boarding house, and a large compression plant building housing electrically powered air compressors connected to eight inch pipe which carried the compressed air to jack hammers at the power tunnel site. A large gable-roofed car barn measuring 62 by 156 feet, with four railroad spurs leading into it, was built just south of the Storrie and Company compression plant. The car barn was later converted to use as a machine shop, and was not demolished until the present-day service center on the east end of Newhalem was built in the 1960s.

By July of 1921 a two-span Howe truss railroad bridge, 250 feet long, was built above the westerly turn of the Skagit, connecting City Camp with the site of the Gorge Powerhouse and the dam beyond. The bridge was replaced after 1928 and before 1948 by a two-span Pratt truss bridge, 308 feet long.

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Lower Camp

Approximately 450 feet southwest of the last row of cottages on Second Street the city erected a one room school house, which was completed in the fall of 1921. The school was one of the few structures in camp at that time with some ornamental detailing and finished siding; it still stands in Newhalem, although it has been much altered. To the west of the school was Lower Camp. Its streets, Fifth through Ninth, were parallel to each other, but at a slight angle--approximately 25 degrees--to the grid established by Main Street and the bunkhouses, reflecting the westerly curve of the river and the railroad, which began in the vicinity of the school. Lower Camp consisted of a total of fourteen two-room wood frame cottages, and thirty-five additional three-room cottages, arranged on lots perpendicular to the "streets." People living in these structures had no indoor plumbing, relying, like the cottages in upper camp, on outhouses.

Silk Stocking Row

In early September of 1921, Dimock sent J.D. Ross, the superintendent of the Seattle City Lighting Department, a layout for what he referred to as "...permanent houses for operators at the Skagit," along with drawings for one of them. Ross had apparently asked the engineering department to prepare designs for such buildings, already planning for the time when dam construction would be finished and permanent housing would be necessary. Asking Ross for suggestions, Dimock advised that "...we should try to make them [the houses] as attractive and pleasant as may be possible within the limits of reasonable expense."¹⁴

An April, 1921, drawing of the layout showed twelve proposed buildings, arranged along a southwest-northeast axis, between where Sixth and Third Streets would end near the river. In this drawing, the buildings were arranged in response to the axes of the streets; the drawing sent to Ross in September had ten cottages, extending between where Third Street would terminate and an area to the east of the end of First Street. The structures still served as the spatial termination of the streets, but they were arranged in a gentle curve, responding more to the orientation of the Skagit and the change in topography than to the grid imposed by the streets. Their front elevations faced the river, rather than the town.

The designs sent to Ross were for Design Number 1, drawn in March of 1921. The design was to be used in two houses--numbers four and eight, the numbering system extending from east to west. Ross apparently approved of the designs, for by the late fall these two houses were under construction per the plans submitted to Ross in September (Resources #1 and 4). According to Dimock, the houses would be built "...in the interim of other work, thus keeping our forces employed to better advantage."¹⁵

That is how both design and construction proceeded on the permanent cottages that came to be known as Silk Stocking Row, a common construction camp term for the most desirable housing assigned to managers and key personnel. The bungalows on this row "...were built for the operators and not for any other class of men and were bought there in the hope of making a more contented operating force....when operators are changed the new man should take the home of the one leaving or at least take one of the homes built for this purpose."¹⁶

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Design Number 3, drawn in May of 1921, was used in cottage numbers three (Resource #6) and nine, built in 1922. Design Number 2, drawn in May of 1922, was used in houses two, five and seven (Resources #2, 4, and 7). In June, Design Number 4 was drawn, the only cottage with a gambrel roof; the only cottage built with this design, number 6 (Resource #3), and building number 1, using design number 1 (Resource #8), were completed by June of 1923.

The Silk Stocking Row houses were built in the "Bungalow" style; until the late 1920s, they, and the school building, were the only Newhalem buildings exhibiting a finished appearance, with shingled roofs, milled siding, daylight concrete basements, and ornamental detailing. Until the 1960s, they were the most sought-after housing in Newhalem, sheltering families of the project's top managers.

By early summer of 1923, two additional three-room cottages, identical to others built in the camp, had been built east of the first Silk Stocking Row building, and south of the Theater. With the exception of a few rail-related structures along the tracks, including a large car barn near the east end of town, and the upgrading and remodeling of some of the Main Street structures, Newhalem's first building program was essentially complete.

By the late 1920s, twelve of the construction camp bunkhouses had been removed; the two easternmost rows were demolished, and three bunkhouses in the next row to the west were torn down. The washhouses were left standing. The town, now operating on electricity provided by Gorge Powerhouse, relied on electric heaters, and the steam plant was demolished. Five R.C. Storrie buildings, including the compression plant building, had been removed. In 1925 the city purchased the R.C. Storrie office and boarding house on the north side of the tracks, and used it to house approximately 15 single men.

Five three-room cottages in Upper Camp had been removed--one or two of these had burned down in accidental fires. In the lower camp, the two-room cottages had all been demolished, as well as the first easterly row of three-room cottages. Seven additional three room cottages in Lower Camp were also gone, including four nearest the river and subject to flooding. No additional changes were effected in the town until the early 1930s, when J.D. Ross's vision of the town as a tourist resort and city public relations tool spurred new development.

There were approximately seventy individuals employed at the powerhouse and in camp in 1927, all of whom required housing. There were forty-eight units in camp available for housing families, including the nine structures on Silk Stocking Row. Individuals without families lived in the remaining bunkhouses. With limited numbers of family housing units, a policy of housing seniority was applied to employees in different "classes" of work on the project. Recently hired employees, particularly laborers, were unable to bring their families to the Skagit, due to lack of housing. The housing policy, frequently revised and increasingly complex over the years, was to become a major source of dissatisfaction for workers on the Skagit, exacerbated by the growing emphasis on facilities for tourism.

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Newhalem: Tourist Town

Small tours comprised of Seattle politicians, influential businessmen and organized clubs had been visiting the Skagit Hydroelectric Project, usually accompanied by J.D. Ross, since 1918. Ross used these tours to promote support for development of the project, at first with key opinion makers, and later with the general public. In 1924 City Light advertised one day excursions to the Skagit in the *Seattle Times*. In 1925, Ross was publicly promoting the project as a future summer resort in national magazines.¹⁷

In the summer of 1927, as construction on Diablo Dam got underway, hundreds of Seattle's citizens took "...the opportunity to get acquainted with the wonders of the scenery and incidentally to inspect their own giant hydro-electric development and watch construction of one of the greatest water power projects in the world."¹⁸ Some construction camp bunkhouses east of Main Street, and Bunkhouse Number 23, now the "Hotel," were used to house overnight visitors, who arrived by train from Rockport in the afternoon. The tourists were served dinner, breakfast and lunch in the Newhalem Mess Hall.

The two-day tours, with continuously increasing numbers of sites to visit as project construction advanced, first at Diablo, and later at the Ruby dam site, eventually brought thousands of people to the Skagit every summer; they continued until 1941, when the project, considered a vital wartime-associated industry, was closed to outsiders. The seasonal influx of people increased the population of Newhalem many times over during each tour, and became a major factor in the development of the town. In 1928, Ross had ornamental iron light standards with five globe clusters installed along Main Street, Silk Stocking Row, along the railroad tracks where visitors disembarked from the train, and along paths in the bunkhouse complex east of Main Street. This lighting system was not installed on the streets where the three-room cottages were built--and the bulk of city light employees and their families lived-- either in the upper or lower camp areas. The old standards and fixtures were removed and replaced in the 1950s.

By May of 1928 Ross had begun to develop additional plans for beautifying the project, where "...Skagit admits of being a fairyland though it would cost money." He told T.F. Kane, the project's chief operating engineer, he wanted to "...make the place more livable and likeable." His plan included painting the houses and mobilizing "the ladies" who lived in Newhalem into a sort of landscape auxiliary to advise on locations for planting trees, shrubs, flowers and bulbs near the cliffs behind Gorge Powerhouse, near the site of the Diablo plant, and along the river's bank. He also asked for suggestions from them on the types of plants and trees to install, including fruit, nut and ornamental trees, and for lists of shrubs, flowers and seeds they might use for their own houses. Ross planned to do "...a lot of work myself and get all the plants needed if I can get care and cooperation from them [the ladies]."¹⁹

Ross had also, by this time, secured the interest of Jake Umlauff, head gardener for the City of Seattle; in the following years the Skagit was to receive many trees and plants, transplanted from the city's greenhouses. Within a year of his initial correspondence with Kane on making the project more livable, Ross was looking upon the horticultural projects as tourist draws, asking Umlauff to consider tree planting schemes "...so that all those who go up there [the Skagit] will

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admire them..." and that City Light was "...getting out a little pamphlet for the visitors and will tell them how we got the trees."²⁰

Also in May of 1928 Ross had a city building department draftsman prepare sketches for the future development of Newhalem, clearly oriented towards developing the town into a major resort, a goal which, for the rest of his life, Ross pursued for the entire project as assiduously as he pursued the development of hydroelectricity there. The design shifted the emphasis of the entire town from Main Street to the west, in the area then occupied by family cottages between First and Third Streets. Here, a formal oval-shaped drive, picking up the curved layout of Silk Stocking Row to the south, enclosed a bilaterally symmetric arrangement of lawns, gardens and structures. At the north center was a rectangular hotel building, flanked by wings perpendicular to the easterly-westerly ridge line of the main building. A path from the south side of the hotel led to a circular path, sixty feet in diameter, in the center of the oval, within which was a fountain and rock garden. The oval was bisected by another path, running along an east-west axis, terminating in a ring path which ran around the edge of the oval. Lawns would fill the spaces between the paths, and a ring of shrubs would run between the perimeter path and the oval-shaped drive. A new railroad station would be located north of the hotel, beyond an new east-west service road and the railroad tracks. The hotel would have a rustic Chateausque design, with clipped gable ends and gable-roofed dormers, similar in style, form and massing to major lodgings built in western regional national parks during the 1920s. The sketch indicated the warehouse, office, theater, commissary and recreation buildings on Main Street would remain, but the mess hall and hotel would be gone, presumably replaced by the chateau. There was no indication of what would replace the family housing, already in short supply on the project.

In May Ross was planning to start work on the "...oval gardens where there are no houses to interfere," however, the scheme was never realized.²¹ Construction delays on Diablo Dam and political battles in Seattle regarding future development on the Skagit--including City Council refusal to vote for funding appropriations for completion of the Diablo Powerhouse--may have prevented its early implementation. The stock market crash in 1929, and a subsequent collapse of the bond market was to delay completion of the powerhouse until 1936, although the dam was finished in 1930.

This particular grand scheme of chateau and formal gardens was set aside. It did not, however, prevent Ross from developing other features on the project that would attract thousands of visitors. By July of 1929 Ross was reporting, "Of course I think the power project is the thing to be sought after but in addition I think all of the people should keep in mind that we also have a tremendous asset in the Skagit as a playground of Seattle...and anything that we can do to add beauty and ease of transportation ...will be well worth while. Since the power is well on its way, perhaps we should begin to think of these things also at this time and to this end I have planted about 100 trees and will plant several hundred more this fall."²² That summer he began to develop Ladder Creek Falls, a combined arboretum and *son et lumière* show rarely seen or heard in the United States to that time, outside of world's fairs and expositions.

By the 1930 tourist season, Newhalem could accommodate 150 overnight tourists. They were housed in six of the eight remaining construction camp bunkhouses east of Main Street, and in the Hotel. Tent cabins were erected to the east and north of the bunkhouses, in rows with their ridges

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running north-south. Single men working for City Light were assigned quarters in the tents during the summer months; in the winter months, during non-tourist season, they were allowed to live in the bunkhouses.

By 1933 the number of overnight tourists had grown to 250; by this time, they were housed in the former Storrie and Company bunkhouse, in the Hotel, and three to a room in the bunkhouses. In October of that year, sketch plans were made for eleven new bunkhouses to be erected on the sites of the old construction camp bunkhouses on the east side of main street, to serve as dormitories for tourists, and a new recreation hall south of them, on the riverbank, was also proposed. The recreation hall appears to have been a substitute for Ross's unrealized chateau scheme; plans for the building surfaced again in 1936, when the city asked for WPA funding assistance for a \$10,475.00 recreation hall--never received-- and again in 1937. In March of 1937 sketches of a low rectangular recreation building in the Rustic style, with stone and shingled walls, board and batten gable-ends, and recessed porches and terraces were prepared by City Light's chief architect, George Stewart. The design was clearly related to housing under construction in the Hollywood section of Diablo, which had been influenced by Forest Service architects. Later that year, there was some debate regarding the proposed new hall's siting, with William McKeen and Glen Smith, Ross's principal directors, favoring a site at the easternmost end of the town, diagonally across from the Gorge Powerhouse, which would allow a view of the waterfalls and mountain.²³ The new recreation building was never built.

In November of 1934, Ross told his managers that a dormitory for single men was one of the "most important in the building program," probably because a number of single workers were being lodged in tent cabins during the summer.²⁴ Between the winters of 1933 and 1934, two additional structures were built in Newhalem. These were bunkhouses, but smaller than those dating from the construction camp period, and apparently not intended to house tourists.²⁵ They were located between Main Street and the first row of construction camp bunkhouses, and were similar, though not identical, in appearance. One, now referred to as the "Pansy House," (Resource #13) was built just east of the Commissary; the second, now referred to as the "Cook's Bunkhouse," (Resource #14) was built east of the northerly projecting kitchen wing of the Mess Hall, and west of the older construction camp Cook's Bunkhouse. Both buildings have steeply-pitched gable roofs with exposed rafters, nine-light wood sash windows, shingled, shed-roofed dormers and shingled gable ends. The walls were clad with lapped siding. The "Cook's Bunkhouse" was somewhat smaller, with gable-roofed overdoors sheltering the entry doors centered on the longitudinal elevations. The "Pansy House," about twelve feet longer, had entry doors on the west end and in the center of the south elevation.

Ross also told his managers that arrangements needed to be made for housing at least five hundred tourists. By July of 1935, there were four new tourist dormitories on the sites of the early construction camp bunkhouses, west of the westernmost row of existing bunkhouses. Their footprints were close or identical in size to the original bunkhouses, and their roof pitches were similar, however, each had long shed-roofed dormers, creating eight second story rooms, and doors in the gable ends leading to exterior wood stairs. One, Building #70 (Resource #17), had a raised daylight basement facing south, due to its location on a slight slope. The buildings had nine-light wood sash windows; lapped board siding, and principal entry doors centered on the longitudinal elevations with gable-roofed and bracketed overdoors. With three beds to a room, the

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new dormitories could accommodate around fifty people each, or about two hundred more tourists per tour. The remaining seven tourist dormitories shown on the 1933 scheme were never erected. However, House #1 on Silk Stocking Row was converted into a six-person bunkhouse. Some time between 1932 and 1938, a small building with a clipped gable roof was built directly west of the Hotel; it served as a public restroom for the tourists, located near the railroad platforms (Resource #21). In 1938 a small tourist bunkhouse, called Bunkhouse "D" was built to the west of the Main Street office; it was to serve as a residence for important transient visitors. The building was demolished in the 1970s.

Landscaping

In the fall of 1929 Ross received a large shipment of ornamental and evergreen trees and shrubs from the city parks department, apparently in exchange for lighting schemes Ross prepared for the city's golf course. These included over two dozen each barberries, spiraea and cotoneasters; laburnum, pyracantha and viburnums; a wide variety of cypress, junipers and cedars; elms, sycamores, mountain ash, willows, chestnuts, flowering cherries and maples. In 1930 the U.S. Forest Service, in cooperation with Oregon State College (now Oregon State University) at Corvallis, offered a variety of deciduous and coniferous shade trees to various forest supervisors for planting at administrative sites. L.B. Pagter, forest supervisor for Mount Baker National Forest, forwarded a suggestion for cedar trees from Oregon State for Ladder Creek or for the construction camp at Diablo to Ross.

Continuous planting of trees and shrubs in Newhalem, at Ladder Creek Falls, and in Diablo continued throughout Ross's tenure as Superintendent of Lighting. In 1935, Ed Kemoe, who conducted the Skagit Tours, put out a department-wide memo requesting seeds from mountain ash, cotoneaster, barberry and pyracantha bushes and trees for planting on the Skagit, specifying "...Trees or bushes that have seeds for the birds, preferred."²⁶ In the spring of that year, Ross convinced Seattle nurserymen and florists to donate hundreds of flats of flowers and plants for the Skagit.

By 1930 a small greenhouse had been built north of the Gorge power plant, in which tender plants and flowers were grown. By 1936 two large nurseries had been established in Newhalem near the car barn, in which five varieties of Asiatic chestnut trees--a total of almost 400 trees--from the U.S. Department of Agriculture were growing in seven rows, apparently in some kind of reciprocal arrangement Ross made with J.L. Bedwell of the Division of Forest Pathology of the U.S.D.A. in Portland. The nurseries also contained butternuts, Lawson cypress, hybrid walnut trees, barberries, juglans, and castanea tamba. However, landscaping on the Skagit generally suffered after Ross's death and in the wake of the war. Eight years after he sent the trees, Bedwell wrote for information on the survival, growth and nut production of the various species sent, and was told by Ross's successor, E.R. Hoffman, that all had been planted in permanent locations, and that some had survived and a few bore nuts. However, he reported, "...a good many...have failed to survive," and, further, that the tags identifying the variety of each tree were unreadable. By 1939 a third nursery had been built in the area behind the school house, in which flowering cherries, white mulberry, apple and plum trees were grown.

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Ross received trees, plants, cuttings and seeds from all over the country; donated whenever he could arrange it, and usually purchased from his personal funds when he couldn't. He worked closely with the city's head gardener, who provided advice on where and how to plant the trees and assistance in grafting. In 1937 a box of eighteen to twenty trees arrived at the Skagit from the Roosevelt compound at Hyde Park, including oaks and elms--two of them--named Franklin and Eleanor--were set out near the suspension bridge at the foot of Main Street, although apparently both have since died. One story repeatedly recounted by long-time residents of Newhalem tells of Ross frequently standing at the rear of the train from Rockport, tossing out wildflower seeds along the railroad right of way, as the train traveled into town. Apocryphal or not, the story gains credence from the lists of seeds--California poppies, asters, and coreopsis--he frequently ordered from such outlets as Wayside Gardens in Ohio.

By 1935, Ross had had a grape arbor installed at the head of Main Street, in the approximate location of the present main office. The arbor was a place where townspeople would meet, and a focal point terminating the axis of Main Street from the suspension bridge at its south end. The grapevines were started in the greenhouse west of the car barn. The arbor was removed when the present office building was erected in 1954.

The landscape of Newhalem has been altered with the removal of buildings, boardwalks, and railroad tracks, and the resodding of many areas. The greenhouses are gone, with the exception of a more recently constructed greenhouse and cold frames near the site of the original greenhouse north of the Gorge Powerhouse, where flowers and plants for the project are presently nurtured. However, many of the trees grown and planted during the historic period are extant within the town's boundaries. There is an allee' of trees along the former railroad right-of-way, both east and west of Main Street, which are landscape features defining the historic route of the railroad. There are also allee's north of Silk Stocking Row and west of the Tourist Restroom (Visitor's Center) which define the location of unpaved streets in Upper Camp; landscape patterns which are historically associated with the development of the municipally-owned town of Newhalem, although the streets they lined and the buildings they shaded have since been removed. In addition, there are informal and formal plantings of trees, both exotic and native, along the riverbank behind Silk Stocking Row, and east of the Commissary, which appear to date to the historic period. No planting plans have been found to indicate the extent to which the landscape was designed, or produced "ad-hoc," and there is evidence to indicate that some trees have been added and removed since the historic period. Nonetheless, the extant patterns are significant for their association with the town of Newhalem and the railroad, and contribute to the understanding of the the town's circulation and organization.

Poverty Row

In response to a critical housing shortage, in 1936 and '37 the Lighting Department began to prepare plans for houses in both Newhalem and Diablo. In the spring of 1937 L.H. Rose, a Lighting Department draftsman, prepared a sketch for nine new houses in Newhalem, which were to be built under the supervision of the General Division supervisor, Dana Currier. These would be the first family housing units to be erected in the town since the early 1920s. Initially, they were to be located on lots left vacant after accreted destruction of some of the three-room cottages west of the

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school house. In May, it was decided to build seven on the school house ballground, west of Upper Camp, and two in the vicinity of the three-room cottages. Ross, however, redirected the location of five of the houses to a strip of land west of the Lower Camp cottages on the south side of the railroad tracks. They were slated for construction in the 1938-39 budget. In December, 1938, Glen Smith, one of Ross's two top assistants, based in Seattle, pointed out to Ross the small incremental increase in costs if the original number of seven was to be built, and soon thereafter construction for seven four and five room houses began. The buildings were aligned in a row facing the tracks. They were completed in May of 1939, two months after Ross's death. Two other houses, using the same basic plan, were built in the fall of 1938. One was located north of Sixth Street, in the Lower Camp area, and one was sited at the east end of Silk Stocking Row (Resource #9).

The row of houses west of Lower Camp came to be referred to as Poverty Row.²⁷ Five years after completion, although the newest houses in Newhalem, they were rated by the city as "Type 2" houses:

Their general condition is good; however, they do not meet the minimum requirements of any family who might live in them. The design is poor, laundry facilities are not adequate, there is not sufficient storage space, the kitchen does not contain enough cupboards, there has been no consideration of dining requirements and they need to be insulated.²⁸

They received the Poverty Row appellation, according to one source, because the houses had no furnishings and families spent "...more than they could afford" to make the structures habitable. Poverty Row houses have been moved or demolished as City Light employees have vacated the buildings. Several of these residences remain in the Skagit Valley, west of Newhalem.²⁹

Ross Crypt (Resource #25)

North of Highway 20, on the east end of Newhalem, is a narrow, curving concrete path, lined with native and non-native trees and plants, which leads to a crypt built into the native rock base of Ross Mountain. The front of the crypt is recessed into a niche, protected by simple wrought-iron gates. Mounted on the crypt are two brass plates which bear inscriptions regarding the occupants. The crypt holds the remains of James Delmage Ross, Superintendent of Lighting for the City of Seattle between 1911 and 1939, and his wife, Alice. Ross's cremated remains were interred in the crypt some time prior to 1940. After her death in April, 1956, Alice's remains were also placed there.

The 1940s and Later

Because of the war, and the project's security designation as a vital wartime industry, the Skagit Project area was closed to tourists in 1941. A security fence was installed along the western boundary, and two gates erected. In the early 1940s the tourist dormitories were subdivided into apartments to house Skagit workers; by 1943, ten such apartments had been created in the old Storrie and Company bunkhouse, in the four 1935 dormitories, and the bunkhouse now referred to as the "Pansy House." In the dormitories, the first floors were divided in half, and former bunk

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rooms in each half were converted to a kitchen with a sink and some cupboards, and a dining room. The sole bathrooms on the first floor were shared by the families occupying each apartment. During the war, around thirty Italian prisoners-of-war, employed in construction of Ruby--now Ross--Dam, were housed in bunkhouses in Newhalem.

After the war ended, six inexpensively built apartment houses were erected at the southeast end of Newhalem; laundry and shower facilities were shared by occupants of apartments on each floor. The apartments were used throughout their fifteen year existence to house some construction workers from various companies working on Ross Dam, and later the extension to Gorge Powerhouse and the new concrete Gorge dam, and City Light workers. The apartments were built on the tailings from the construction of the Gorge Powerhouse tunnel, in the general location of the present day machine shop. The rocky tailings gave the housing area its name, Rock Hill. The buildings were torn down in 1960.

In 1948 six new wood frame houses were added to the west end of Poverty Row; these gable-roofed buildings, somewhat more substantial than their neighbors to the east, were called Engineer's Row. Most housed powerhouse engineers and their families. Most of these structures were sold and moved or demolished in the late 1970s and early 1980s.

When preliminary surveys and drilling for Gorge High Dam began in 1952 and 1953, a construction camp for the contractors was built just east of Goodell Creek, north of the present state highway. The camp included bunkhouses, a mess hall, several small cottages and a construction camp commissary, garages and a gas station. A Whirley Crane was located north of most of the construction camp buildings, for unloading heavy material. A trailer court was established west of Engineer's Row for additional crew housing. The buildings and structures associated with this camp were removed in the 1970s. In 1954 the Gorge High Dam engineer's field office was built at the head of Main Street, where the grape arbor stood. Today the building serves as the Main Office for the entire Skagit Project. A road for hauling equipment to the Gorge High Dam was built along the base of the cliffs, between the camp and the Gorge Powerhouse bridge.

In 1946 the City Council finally approved funds to construct a school teacher's house in Newhalem; for years the school teacher had lived in various apartments throughout the town, including one carved out of one of the Silk Stocking Row houses. The hip-roofed duplex could house two teachers; it was located on the east edge of the school field. In 1950 a quonset hut was erected southwest of the Newhalem School to serve as an indoor gymnasium. In 1955 a second room was added to the original school building, with a new entry room connecting the two. That year City Light provided materials, Skagit engineers provided the plans, and over one hundred men from Diablo, Newhalem and the contractor's camp provided the labor to prepare and install the Newhalem ballfield, northeast of the school, complete with grandstand, backstop, lights and drinking fountain.

For years the railroad was the principal means of access to Newhalem from Rockport and points west. By the end of the 1930s, a passable U.S. Forest Service road from Marblemount provided access for bolder drivers, but most Newhalem occupants still used the railroad for the journey in and out of the Project. After the war, an improved twenty-three mile state highway allowed greater access to the site, and employees began to bring their private cars to Newhalem. In 1939 the first

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garages for residential use were built on the west side of Second Street (Resource #10), the site of several three-room cottages that had been demolished. The garages had shed roofs and were clad with corrugated iron. In the 1940s additional garages were built on the north side of the road. Today all the garages are used for material storage.

Because the new high dam would flood the railroad track between Gorge Creek and Diablo, and relocation of the tracks was deemed both expensive and unnecessary, then Superintendent Hoffman announced, in May of 1953, that City Light would terminate operation of the railroad in the spring of 1954. In April of 1954 contractors began removing the tracks, after a last Skagit Tour by railroad, held April 3 for the Northwest Resources Group of the Seattle Public Schools.³⁰ The tracks, long a principal functional and spatial element in the town, were gone by 1955; the present state road follows much the same alignment as the old right-of-way east of Goodell Creek. Between 1954 and 1957, a road was blasted into the hillside well above the railroad right-of-way between Newhalem and Diablo. The single-lane road required three tunnels and a new bridge to span Gorge Creek. In 1962 the road was widened to two lanes, and a little over a decade later one of the three tunnels was removed entirely.

Between 1960 and 1962 work began on the Skagit Service Center at the southeast end of camp. The Rock Hill apartments were demolished, and a new machine shop, garage, paint shop and paved yard were built to house support functions for the hydroelectric project and both towns.

The Main Street area of Newhalem experienced some changes after the war. In 1957 both the Big and Little Halls were demolished and replaced with a new theater-meeting hall structure on the southwesterly corner of Main Street, named Currier Hall. The office building, which had served over the years as the post office and later as a first aid station operated by nurses living in town, served as an engineers' office in the early 1950s, until the new engineer's office was built at the head of Main Street. Following that, the Women of the Episcopal Church Mission were allowed to use the building to sell Skagit souvenirs to tourists driving through Newhalem. It was demolished in the 1970s. The long warehouse at the north end of the street, which had served as the central warehouse for thousands of items, and as an office for Currier and the railroad dispatchers, had outlived its usefulness: with the removal of the railroad in 1954, it was no longer a viable facility, and had suffered from lack of maintenance. It was demolished in 1967-68, after completion of the new service center. Other functional buildings in the vicinity of Main Street, north of the tracks, such as the carpenter's shop and paint shop, had been removed several years earlier.

As City Light began planning to automate the hydroelectric project, it became evident that less personnel would be needed to operate the facilities, and further, that fewer employees would have to be housed at the project. Fewer employees would require maintenance on less houses. Initially, Seattle-based City Light planners proposed that all existing housing be demolished, and new, low-maintenance quadraplexes built. Skagit-based personnel objected. In 1961 eleven new wood single-family frame houses with low-pitched gable roofs were built along the river in a semi-circular loop around the school grounds. The street was lined with flowering cherry trees, and a sidewalk and curbs were installed. One quadraplex was built in 1963, near the east end of the circular road, and three additional residences were built on the loop in 1965.

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Fifteen Upper Camp three-room cottages along First and Second Streets remained in use until the early 1970s, when ten were demolished; five survived until the late 1970s, when they, too, were finally removed. The vacant lots and the streets themselves were replanted in lawn. Today there are three structures along the First Street alignment: the 1939 garages, and a small gable-roofed garage built in the 1950s to house the volunteer fire department's fire truck. While the construction camp era cottages are gone, the spatial organization and circulation patterns of Upper Camp are still evident in the alignment--along the vanished streets--of the many varieties of trees, many of them planted in the 1930s to beautify the town and "make it livable."

In the 1960s, all the remaining construction camp era bunkhouses, with the exception of the original Cook's Bunkhouse (Resource #16) were demolished, one by one, along with their washhouses. Their sites were seeded with lawn. By 1979, three of the four tourist dormitories east of Main Street--the exception was Building #70 (Resource #17)--and the 1938 Tourist Bunkhouse "D," west of the old office building, had suffered the same fate. The old Storrie and Company Office-Bunkhouse on the north side of the road was also demolished. The last three remaining three-story cottages in Lower Camp were leveled in the mid 1970s, and a picnic area installed. The Frank Young Park, named for a long-time City Light employee, complete with tennis courts, was dedicated on the Lower Camp site in July of 1989.

Ladder Creek Falls Gardens (Resource #30)

Ladder Creek is a glacier-fed stream originating on Snowfield Peak. It spills down the granite cliffs in a series of waterfalls, several of which cascade in sheer drops several hundred feet above and to the east of Gorge Powerhouse. The stream debouches into the Skagit River just south of the pedestrian suspension bridge (Structure #31) leading to the powerhouse. The creek drops approximately 3,000 feet during its six mile run to the Skagit.

The Ladder Creek Falls gardens occupy approximately two acres of land adjacent to the powerhouse, to the east and southeast. The terrain of the gardens is steep, rising to a comparatively flat area about eighty feet above the powerhouse. Its heavily wooded slopes of old and new growth timber are periodically interrupted by granitic outcroppings. A series of paths wind up the slopes behind the powerhouse, leading to the garden's highest point, a concrete staircase from which the lower falls can be viewed, spilling down granite-faced walls less than sixty feet away. The paths, most of which are historic, have a variety of surfaces; there are several rustic wood bridges crossing streams which run through the gardens. Paths in the lower area of the gardens, once referred to as the rock gardens, have granite steps; some steps of concrete appear to be later additions. Several rest areas adjacent to the paths have benches: three of these, made of rustic wood logs, appear to date to the historic period. Periodically along the paths, streams have been diverted to form small waterfalls spilling into granite-lined and concrete pools. -

There are a variety of native trees within the gardens, including fir, cedar, hemlock, spruce, dogwood, vine maple, alder and birch. Non-native trees, some dating to the historic period, include Japanese maple, Colorado blue spruce, hawthorne and holly. Native shrubs are planted along paths and appear in natural groupings beyond the paths: these include rhododendron,

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azaleas, salal and Oregon grape. There are some remnants of historic exotic plant material introduced by J.D. Ross, including a species of bamboo. The lowest area of the gardens, near the west side of the powerhouse, have been planted with annual flowers and maidenhair and sword ferns: at present, it is not clear how true to the historic period the annual bedding plants are.

Today the gardens may be reached by three different paths: by stone stairs located near the northeast end of the powerhouse; by an asphalt path leading past a non-historic "iris pool" on the south end of the powerhouse, and from a concrete platform projecting from the center of the east side of the powerhouse, on axis with the visitors gallery at the second level within the powerhouse. The falls and some parts of the garden are illuminated at night, in keeping with the spirit of the original concept of the gardens, although it is not clear how closely the present lighting scheme reflects the historic design. An on-going study by Seattle City Light, in association with its Recreation Plan for relicensing of the Skagit Hydroelectric Project, is assessing the resource for restoration.

The lower falls' proximity to the powerhouse provided City Light's superintendent J.D. Ross with an opportunity to create a unique mountain arboretum, employing two of his principal enthusiasms, horticulture and artistic illumination. By 1924 he was conducting visitors up the paths behind the powerhouse to view the falls, and by 1928 he had turned his attention to the installation of gardens on the cliffs. In January of 1929 he wrote of his plans to surpass the illuminated shows he had created in Seattle, stating "I expect to produce something at Skagit in the coming summer that will eclipse anything else we have done in illumination..."³¹ In May he asked L.B. Pagter for a way for the city to gain control of the lower portion of Ladder Creek, explaining that he wished to protect the falls vegetation, where increased use due to City Light tours--numbering at that time around 150 people per week--was threatening such fragile plants as orchids. He also indicated he wished to install a special illumination system along the canyon: "...we could make it a wonderful sight, but we would have no control of the public who might go there."³² In June the Forest Service granted the city permission to use two acres around Ladder Creek as a park, authorized construction of trails and bridges to make "...the natural beauty easily accessible," and granted permission to light the area from the Gorge Powerhouse. By early July Ross had installed six lamps in the canyon to light the falls, and had directed Theodore Kane and Dana Currier to submit plans for bridges and other permanent developments to him for consultation with the U.S. Forest Service before installation. By the end of September, he had added six additional lamps illuminating the falls and trees along the canyon paths, which, he reported to Umlauff, "...many have said...is the most beautiful thing they ever saw, without any exception."³³

While no documentation has been found regarding when Ross first began to plant trees and other vegetation in the Ladder Creek falls area, it is almost certain he appropriated at least part of the shipment from the city parks department to the Skagit in 1929 for use at Ladder Creek; his correspondence with the city gardener, Jake Umlauff, is full of references to Ladder Creek.

By the 1930 tourist season, thousands of tourists were visiting the Skagit, taking night tours of Ladder Creek Falls, illuminated "...in all the varying colors of the rainbow, a spectacle never to be forgotten."³⁴ By 1933 Ross had established rock gardens behind the powerhouse, at the base of the trail to the falls, and although he had begun to collect and display exotic plants, the emphasis in

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tourist literature that year was still on native plants and flowers along the trail. Tourists were cautioned not to pick the flowers, however, brochures noted the lighting department would help secure plants from other locations for people who wished to have their own live transplanted Skagit souvenir.³⁵

In 1933 or 1934 Ross had city crews install a sound system in the Ladder Creek area, operated out of the Gravity Oil Tank House behind the powerhouse (Resource #29). Members of the power plant's operating crew were assigned to sit in the structure and play recordings following a pre-arranged schedule which coincided with an evening walk up to the falls through the rock gardens. The earliest records played were primarily organ recordings of such songs as *Dawn of Tomorrow*, *Meadow Lark*, *Diane*, and *When the Organ Played at Twilight*, interspersed with some vocals, including tenor John McCormack's *I Hear You Calling Me*, and the *Gypsy Love Song*. By 1934 the ascent began with recorded bird calls--canaries and a record called *Dawn in the Old World Garden*, which was a recording of native birds. When the falls were reached, *The Holy City* boomed from a hidden speaker, which, one observer noted, "You may expect to find it all faintly distasteful, but you will, on the contrary, fall into the spell and want with all your heart to join in that song which so perfectly suits this setting."³⁶

In 1935 Umlauff sent Seattle landscape architect E. Soderquist to Ross with an introduction noting that Soderquist "...has a very wide knowledge of plants and is expert in rock work." It is not clear whether Ross hired Soderquist to work on the Ladder Creek rock gardens, but it was in this year that Ross began to step up the introduction of exotic plants at the base of the falls and to tout that area of Ladder Creek as a tropical jungle. One variety of palm had been brought to the Skagit in 1934, and had survived the winter there; several other varieties were added the following year.³⁷ Ross continued to experiment with lighting arrangements at the falls, and in 1936 his managers reported to him that the falls had been lit without any white lights, apparently a goal of Ross's for some years.

In 1936, a newspaper columnist described the appearance of the "tropical jungle" during the daytime visit:

I was all prepared to complain at the tropical plantings up here when there was so rare an opportunity to mass our native shrubs and flowers and show them off as they still wait to be shown off. But I came off my high horse when I saw how skillfully this versatile genius, Ross, has combined the exotic with the native plants. Goats beard, elderberry, wild columbine, buttercups and wild iris look fully as exotic as the tropical plants whose names I do not know! Indeed, I think a stranger would be hard put to it to say which are tropical and which native.³⁸

The evening walk attracted the most attention. A 1938 tourist described it:

...we were directed up the hillside along paths to the illuminated ladder falls. It was completely dark out except for small stars which couldn't have been brighter shining down through openings in those tall, spreading trees. Up in the branches it was quiet and mysteriously dark while down below, the path wound up and around a veritable fairyland. Small rocks and

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waterfalls had colored glows about them and under bridges rushed colored torrents [sic]. Leaving the paths, we climbed the stairs above the tropical gardens. Up and up toward the singing ahead of us. At last we reached the top and looked over the side. It was breathtaking. With cool spray on our faces we looked down on the unforgettable [sic] wonder of the illuminated falls. They rushed down through huge boulders and down 4,000 feet over a series of drops in a swirl of rainbow colors. It ran down under the bridge where the color flowed into a deep blue and on into the darkness of the mountains.³⁹

When the tours ceased in 1941, Ladder Creek Falls garden maintenance went into decline. The falls illumination succumbed to blackout conditions imposed by the war. When tours resumed in 1953, the city began to refurbish the gardens. Many of the exotic species had failed without special care; they were replaced with hardier plants. Today the gardens contain over 150 species of flowers and plants. In 1962 City Light attempted to recreate the spirit of the illuminated evening walks, relying on surviving historic lighting diagrams and pieces of damaged colored glass from lamps and equipment found in the gardens. The falls have, since that time, been illuminated with colored lights in the evening, and foliage and pools along the paths have been relit with ground-based illumination.

Diablo Hydroelectric Power Plant

Although initially intended to be the last of the three Skagit plants, the Diablo Power Plant was built following Gorge. By 1925 Ross was reporting: "The most economical unit and the one most easily constructed at this time is made up of a dam at Diablo Canyon, creating a reservoir to supply 54,000 H.P. addition at the present power house."⁴⁰ Despite some opposition to Diablo on the Seattle City Council, led by Oliver T. Erickson, who believed the city should erect a concrete buttress dam at what was called the Hanging Rock location to replace the Gorge crib dam, and then cease development of the Skagit, construction on an extension of the railroad to Diablo began in 1926.

In the spring of 1927 the design contract for the dam was let to the Constant Angle Arch Dam Company, a consulting firm whose principal was Lars Jorgensen, and in September of 1927, a contract for construction of the dam (Resource #42) was let to Winston Brothers of Minneapolis. The constant-angle arch was eminently suitable for Diablo Canyon, which rose to 200 feet above the river: it used significantly less materials than an arch dam, and even less than the massive gravity dams; its structure was especially applicable to narrow canyons, and the savings in materials saved both direct costs, and the costs of transportation into remote sites. At the time of its construction, it was, at 389 feet, the tallest thin arch dam in the world.

The Skagit River Railroad was extended up the canyon from Newhalem, and electrified to assist in moving cars laden with construction materials. At Reflector Bar, six miles from Newhalem, the line connected with a funicular railroad--the Incline (Resource #37)--which lifted the rail cars up a 68 percent grade for almost 600 feet, where they connected to tracks leading to the dam site. On August 27, 1930, the dam was complete and a dedication ceremony was held. The 1,170 foot-long dam --the arch is 540 feet long, and the gravity abutments total 630 feet in length--has a 16 foot wide

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crest, and a base thickness of 140 feet. There are 19 taintor spill gates, three of which were motorized in the mid-1960s; the remainder are lifted with a rail-mounted hydraulic hoist. A valve house is located at the 1,045 foot elevation on the downstream side of the dam, and is reached via an elevator or ladder. There is one Larner-Johnson valve and three butterfly valves, all provided by the Pelton Water Wheel Company.

Construction of the Diablo Powerhouse (Resource #35) was halted in 1930: its foundations, as well as the penstocks, surge tank and power tunnel had been built as part of the dam project, and generators and other equipment had been ordered. However, the bond market had dried up in the wake of the 1929 stock market crash, and the city was unable to sell its bonds, although it tried in both 1932 and 1933. Ross applied to obtain 7.5 million dollars in loans from the Reconstruction Finance Corporation, which was denied, but countered with an offer of purchasing 1.6 million dollars of city bonds if the city would clear outstanding warrents from its construction fund; when this offer was made, in December of 1930, the city had over 1.8 million dollars in outstanding warrents, and was unable to meet the conditions of the loan. By 1933 the federal government was engaged in building two other major dams in the state: Grand Coulee and Bonneville, and it was the general federal sentiment that Washington state was already receiving a generous share of public money. It wasn't until 1934 that the city was able to find purchasers for 4.9 million dollars in bonds to complete the powerhouse. It was built by Rumsey and Company of Seattle.

The powerhouse, with a Moderne exterior, is representative of the type of architecture applied to industrial buildings of this period. The interior lobby features terrazzo floors, a brass water fountain, wrought-iron staircase railing with aluminum top rails, and a unique tiled goldfish pond with City Light's logo, in tile, incorporated into the design. These were all installed in anticipation of public viewing: the powerhouse was a showcase for the city's hydroelectric project, and a promotional tool for completion of the final power plant, Ruby (re-named Ross, after his death). The generators were installed on pedestals on a single floor, accessible from the lobby, rather than dropping between two floors, making them a prominent visual feature. They are the largest, and possibly the last generators ever installed in this manner, a good example of technology in transition.⁴¹

The equipment used in the powerhouse was state of the art, when delivered. The generators were the highest rated in the country for the time, with ratings of 66,700 kva. An enormous overhead power crane--reputedly the largest ever built to that time--was installed in the powerhouse to move the large generators and turbines. It had two crabs, each with a main hoist capacity of 150 tons, and an auxiliary hoist capable of lifting 25 tons. The powerhouse was dedicated on September 23, 1936. For further information on the Diablo Power Plant, refer to the National Register of Historic Places Multiple Property Documentation Form, *Hydroelectric Power Plants in Washington State, 1890-1938*, prepared by Lisa Soderberg, and approved by the National Register on December 15, 1988. Please note that errors or inconsistencies in that nomination have been corrected in this present nomination.

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Diablo

The town of Diablo is 7 1/2 miles upstream from Newhalem, located just above the confluence of Stetattle Creek with the Skagit River, where the river makes a sweeping horseshoe bend. The present town has three distinct areas, defined by the river, creek and cliffs. The area furthest upstream, situated on a gravel bar created by the river's bend, is Reflector Bar, encompassing approximately 20 acres. A narrow strip of land between the cliffs and the river, on which Diablo Powerhouse is located, connects Reflector Bar to Hollywood (downstream) which is on a relatively flat peninsula formed by juncture of Stetattle Creek and the river.

By the spring of 1927, the design contract for the Diablo Dam had been awarded to the Constant Angle Arch Dam Company, and by fall the Federal Power Commission had approved its design and the construction contract had been awarded to Winston Brothers of Minneapolis.

Towards the end of 1926, construction had begun on an extension of the railroad line from Newhalem, six miles upriver to its future terminus at Reflector Bar, below the dam site. By early March, 1927, the railroad grade had been completed to two miles upstream from the Gorge intake on the south side of the river. It was here that the first railroad bridge crossing the Skagit was built, in April.⁴² The railroad line had a steep grade, following the rise in elevation up the gorge, crossing the river several times, and hugging the walls of the canyon on roadbeds blasted out of the granite cliffs. To handle the grade and heavy construction material loads, the line was electrified, but a steam locomotive, "Old Number Six," purchased by the Lighting Department in 1928, was also used to negotiate the grade and haul equipment, materials and tourists to the dam site (Resource #19).

When the railroad line reached the north edge of Reflector Bar, in the early spring of 1928, it split into several spurs. The main line, with two side tracks, continued south, near the base of the cliffs. A spur branched to the east, running parallel to the main line, rising along the base of the cliff. This easterly spur split in two, with one line serving as a storage track, and a second spur continuing across a trestle to the base of the Incline railroad, and then dropping back down to the grade of the main line along another trestle. The Incline (Resource #37), completed in March of 1928, was designed to haul loaded freight cars up a 68 percent grade. A second spur off the main line branched to the west as the line entered Reflector Bar, servicing a gravel plant on the northwest edge of the Bar. A coal bunker was built at the end of the gravel plant spur.

Reflector Bar

Reflector Bar was the site of a U.S. Forest Service ranger station, and included a cabin and barn and three large, fenced pastures, when the City began surveying at the Diablo Dam site. Initially the City had applied to the Forest Service for permission to occupy only a portion of the Bar, but by September of 1927, Winston Brothers had notified the City that the buildings necessary to house and service the construction crews would require the entire area of the Bar, including the ranger station. Construction on bunkhouses, cabins and a mess hall began that month, northwest of the ranger enclosure, while the City negotiated with the Forest Service for occupancy of the entire Bar,

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and including the area down river as far as the Davis Ranch boundary, West of Stetattle Creek. On October 25 the U.S.F.S. granted the City permission to occupy the entire area.⁴³

By May of 1928 the area of the Bar, which had been cleared by the U.S.F.S. for their station, was covered with wood-framed buildings, most of which were built by Winston Brothers, existing in uneasy proximity to the Forest Service house and barn, which were hemmed in on all sides by construction camp buildings.

The camp was laid out in a U-shaped pattern, with the open end of the U facing east, towards the cliffs, rail line and Incline. Each leg of the U consisted of several long, low gable-roofed latrines, with their ridges running on an east-west axis. These were flanked on both sides by a row of six small cottages housing construction camp workers. The base of the U, closest to the river, was formed by three latrine buildings, with ridges running north-south, flanked on the east by twelve cottages and on the west by eleven cottages. The southernmost cottage in the westerly row served as a hospital. A double T-shaped, cross-gable roofed structure, the largest in camp, was located in the center of the U: it served as the camp mess hall.

Across the top of the U, running parallel to the railroad line, were three long gable-roofed buildings, with their ridges running north-south. They were, from north to south, a commissary, the camp's construction office, and a hotel for visiting engineers, functionaries and overflow workmen.

The Forest Service buildings were flanked on the south by the innermost row of the cottages on the south leg, and on the east by the mess hall; the pasture fences were still partially in place, but no longer complete enough to house pack animals.

Sandwiched between the main railroad line and the storage track, at the base of the cliff, were a gable-roofed warehouse for camp materials and supplies, located just east of the commissary, and a steeply-pitched, gable-roofed building, erected by the City, which served as a substation for the electrified line. A transformer yard was located just north of the substation.

The City also built three steeply-pitched gable-roofed bunkhouses to the south of the U, running in a row perpendicular to the main rail line. Each bunkhouse sheltered ten men. One bunkhouse stood alone; the other two were connected by breezeways to a smaller gable-roofed wash house located between them. These structures were referred to as the Engineer's Camp. They, and the substation building were larger and better built than the construction camp buildings, with shingled roofs and finished siding; all four city buildings were whitewashed, contrasting sharply with the vertical board-sided construction camp buildings, which had Malthoid roofs secured by battens.

In the summer of 1928, as a result of an agreement between the U.S.F.S. and the City, the contractors erected a new house and barn for the Forest Service, west of Engineer's Camp and south of the construction camp. The area selected was full of scrub and logging debris, unlike the cleared area formerly occupied by the U.S.F.S. buildings. This became a minor point of contention, beginning in May of 1928 with one Forest Service representative agitating for a larger barn, in exchange for the removal of the buildings to a less desirable site, and continuing through April of 1930, when L.B. Pagter, the Mount Baker Forest supervisor, wrote the Seattle city engineer:

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"In our old location the ground was clear of old logs and debris, but in the new location there is quite a lot of old logs and the like which should be cleaned up, as it is more or less a fire menace, and not at all attractive to the setting. It is my opinion that the City should clean up this debris, especially as the old location was free of the same."⁴⁴

Also in the summer of 1928, the City began to build a series of larger cottages on the south and west edges of the Bar, located within a still relatively heavily forested site. These four-room buildings, better built than any others in Reflector Bar, and including indoor plumbing, were Diablo's much-scaled down equivalent of Silk Stocking Row in Newhalem. They were designed for top managers of the Diablo project, and, after their completion, would house the City's operating engineers and other managerial staff. They were referred to as the City Engineers and Contractors Residences. Unlike Silk Stocking Row, the building sites had no formal organization. In plan they were organized in rows, ringing the south and west sides of the new Forest Service pasture. When viewed three-dimensionally, it could be seen that they were generally placed where cleared spots occurred near the river's edge, adjusting to some extent to the changes in topography and the ragged configuration of the Bar. Most had gabled roofs with shed-roofed porches on both front and rear elevations, double-hung windows and finished siding. There were a total of six located along the south end of the Bar, overlooking the river, and four along the west edge of the Bar. They were built entirely of two-by-four materials, with studs, rafters and joists all on twenty-four inch centers, and plasterboard partitions.

In 1929 Reflector Bar looked like a rough construction camp, enclosed on two sides by rail lines and filled with rude shacks. The principal circulation paths, other than the railroad lines, were a twenty-foot wide road which ran along the interior of the U, and an equally wide dirt road which ran at the base of the U, extending south to the ranger station and north to the gravel plant. Secondary dirt paths ran between buildings in the legs and base of the U, with diagonal paths leading to the centrally-located mess hall. With the exception of the perimeter of the Bar, and the engineer and contractor residential areas, almost all native trees and vegetation had been removed. The one built amenity in camp was a tennis court, which was located at the southeast end of the Bar, next to the terminus of the railroad.

In March, 1932, two years after completion of the dam, the City had many of the construction camp buildings razed; unlike Newhalem, an on-going need for housing, however primitive, was not envisioned at the time. In fact, J.D. Ross was already beginning to consider alternative uses for the site, unmistakably oriented towards his vision of the Skagit as a resort. But first, it was necessary to finish the Diablo plant, which meant completion of the powerhouse, long on hold due to lack of funding. The city retained the southernmost leg of the U, the hospital shed, all ancillary buildings--such as the commissary, contractor's office, mess hall, hotel and warehouse--and one latrine from the north leg of the U. All other residential structures and latrines were demolished.

In September of 1932, anticipating funding from the Reconstruction Finance Corporation (RFC) for completion of the powerhouse, the City moved an immense power crane, built by the Harnischfeger Corporation, onto Reflector Bar, temporarily locating it in the northwest corner of the Bar. The 300-ton crane had two crabs, each capable of hoisting 150 tons, and an auxiliary hoist with a 25 ton capacity. The crane was purchased to move the two massive Westinghouse generators and other heavy equipment the City had already purchased for the Diablo Powerhouse.

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Surrounding the crane and a derrick located next to it, the City erected four shed-roofed warehouses in a semi-circle, designed to store the equipment until completion of the powerhouse. At that time the building's foundations, the power tunnel, the surge tank and penstocks were all that had been completed when the money ran out. The RFC offered an unacceptable counter-proposal to the city's request for a loan in December, and it wasn't until the summer of 1935 that the installation of the equipment stored in these temporary sheds began.

When the city was finally able to sell bonds in 1934 to complete the Diablo plant, a new construction crew, this time belonging to Rumsey and Company, moved into Reflector Bar to finish the powerhouse, the tailrace, assemble the powerhouse machinery, install the equipment necessary to bring the plant on line, and build a transmission line to connect with the Gorge line six miles down river. With many of the earlier housing units destroyed, Rumsey and Company was forced to lodge some of their men in tent cabins clustered around the surviving latrine building on the former northerly leg of the U. The contractor's office near the railroad line was converted to two apartments.

In 1934 the tracks to the crane and gravel plant were relocated; the spur which branched west, along the northerly end of the Bar was moved towards the center of camp, just north of the mess hall building, where it branched to the south to pick up the side tracks, and to the north, joining the main line past the powerhouse. The spur's relocation led to the demolition of the original commissary building. The mess hall was converted into a commissary, a carpenter's shop, a store room and a recreational hall, reserved for City employees. The mess hall was moved into the former hotel building. Also in 1934, Diablo's water system was improved and a water tower (Resource #40) was erected west of the City's "Engineer's Camp" buildings, serviced by a water pipe line located on a suspension bridge at the southwest corner of the Bar, which drew water from a creek on the south side of the Skagit. The tower remains in service today. In 1935, two additional four-room houses were added to the Contractors' and Engineers' Residences on the edge of the Bar.

Unrealized Diablo

In March of 1934 Ross had his drafting department prepare plans for two structures in Diablo, neither of which were built.⁴⁵ They were part of his vision of the Skagit as a resort and tourist center. Surviving drawings--there are also two plans for Diablo--demonstrate that Ross always intended Diablo to serve principally as another highlight for tourists on their trip up the Skagit.

One 1934 design was for a visitor's restroom. Its exact location is unknown, however it appears to have been planned for the trail between the top of the Incline and Diablo Dam. The second building was a gatekeeper's house at Diablo; again its location is unknown, but it, too, was probably sited near the dam. Both structures reflected Ross's continuing interest in rustic architecture, and the influence of National Park and U.S. Forest Service designs on his vision for the Skagit.

The visitor's restroom was a concrete structure partially set into the cliff. The building had a low-pitched gable roof, hidden by a parapet. Faced with uncoursed cyclopean stone, the structure would appear, from a distance, to be rubble left from a rock slide. The gatekeeper's house had steeply-pitched cross-gable roofs. The entry porch was arched, and an exterior brick chimney rose along

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one wall. It was sheathed entirely with wood shingles. Atypically, it was Ross himself who signed the plans as having been checked.

By 1934 the tour attendance was growing rapidly. The following year, additional tourist dormitories were built in Newhalem, and Ladder Creek's tropical garden installation was well underway. Also, Ross had begun to assemble his "zoo," with its Mexican black squirrels, swans, parakeets, and other exotic animals not native to the Pacific Northwest. The real zoo--which actually existed in Diablo--was located on the Bar, west of the construction camp mess hall, and was built in 1934 or 1935. It consisted of an enclosure for native deer and a white deer Ross had imported; a large wire-enclosed aviary, and two small buildings--one gable-roofed and one shed-roofed--for the care and treatment of the animals. The zoo lasted until Ross's death, and the advent of World War II, when it was demolished and some of the surviving animals were sent to the Seattle Zoo.

But the existing zoo was clearly, in Ross' mind, a stop-gap measure, for in 1935, a schematic plan for the future development of Reflector Bar had been prepared under his direction. In this plan, tourists would disembark at a waiting station directly below the Incline, and would either wend their way up stairs or ramps, past a pool to the Incline car, or would cross the railroad tracks and head west, down a wide street, at the end of which was a game reserve with enclosures for deer and whatever else Ross planned to purchase, borrow or receive as a gift. Gardens were to be located beyond the game reserve, and a path down to the Skagit. To the south of this street, just after crossing the tracks, the tourists could enter a U-shaped community lodge, which held a store, dining room, and mens' and women's dormitory rooms, which looked out onto a central court. East of the game reserve, flanking the east-west road, would be a tennis court and a thirty-man dormitory, presumably for City Light employees. The plan also included a field house, apparently the hub of public sports activities, and a thirty by eighty foot swimming pool. Approximately two-thirds of the Bar's entire area was devoted to these tourist structures. The remaining southerly third was to be retained for housing employees and accommodating the U.S.F.S., which was allowed to retain its barn, house and enclosure. Seven additional residences were to be built in the Engineers' and Contractors' Residences on the south and west edges of the Bar, and a new warehouse would be erected south of the new waiting room.

This plan was not specious, drawn on the spur of the moment to satisfy Ross. It --or a variation of it--was discussed with the U.S.F.S. in late 1937, where it was understood that a large part of the Bar would change "...into a combination park and zoological gardens." However, it was decided to lodge a portion of the Ruby (Ross) Dam construction crew at Diablo early in 1938, and Diablo was destined to continue as a combination construction camp and employee town for years to come.⁴⁶

Of this scheme, only four buildings were to be realized. Three additional houses were built in the westerly row of the Engineers' and Contractors' Residences, and the Incline Waiting Station was erected in the summer of 1935 (Resource #36).

The Incline Waiting Station was strictly a tourist structure, designed for visitors who, after spending the night in Newhalem, would reboard the train for a trip up the gorge to Diablo. They would first visit the Diablo Powerhouse, and then the zoo. They would then meet at the Incline station, visit the restrooms within it, if necessary, and board an open freight car for the trip up the

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Incline, one of the highlights of the tour. They would disembark and walk along the trail to Diablo Dam, and, following that, board a boat--for years, the *Alice Ross*--for a trip up Diablo Lake to the site of Ruby--later Ross--Dam. As with Ladder Creek Falls, Ross had wired a portion of the edge of the lake for sound, and as the boat headed towards Ruby, visitors would hear the sounds of the *Indian Love Call* and other inspirational music echoing across the water.

In 1939, shortly before Ross' death, Glen Smith prepared a sketch map of yet another plan for Reflector Bar. This scheme, more elaborate than the 1935 plan, indicates Ross was considering the time when Ruby Dam would be completed, and Diablo left free of construction camp restraints. In this plan the Incline Waiting Room, barely four years old, was eliminated, replaced by a rock garden which was flanked by two rest rooms. The "lodge," now the "hotel," was moved further south, and reoriented, so that its principal elevation faced the track. The game reserve had become a swan pen, surrounded by marsh and "wild gardens." All engineers' and contractors' houses were to be removed, and the area planted in "wild garden." The south end of the Bar would serve as a deer park, with the exception of the existing tennis courts, which were to be retained. The U.S.F.S. enclosure was allowed to stand where it was. Other features included a large bowling green or croquet field, which the plan noted, could be converted to a skating rink in the winter; vast expanses of lawn; a rock garden located in the powerhouse tailrace. A dense hedge of cypress would screen the northerly railroad tracks from the gardens and tourist buildings, and, on the other side of the tracks, employee housing would be located, "if necessary." Principal buildings would be surrounded by lawns and formal plantings of rhododendrons and other flowering shrubs.

The entire scheme appears to have been organized on the basis of formal attributes which gradually faded into a natural, "wild," look closer to the river. Some of what could be considered the least important parts of this plan were actually realized in the 1970s, when the engineers' houses were torn down, although the area was seeded in lawn, rather than planted as a wild garden.

Hollywood

Downstream from Reflector Bar is a small, flat area of land, nestled at the base of Sourdough Mountain. Due to the river's circuitous course through the area, Hollywood, as this area is called, is north of Reflector Bar, and east of Stetattle Creek, which forms Hollywood's west boundary. Hollywood was part of a ranch owned by the Davis family, who had moved to the Diablo canyon from a site on the river near Marblemount in 1898, when their homestead there was destroyed by a flood.

The Davis ranch, established near Stetattle Creek, became a stopping place for miners traveling into the North Cascades. Their roadhouse served hundreds of backcountry visitors during the years of its operation. Known as Cedar Bar, the ranch and roadhouse was owned and operated by Lucinda Davis and her three children, Glee and Frank, and a daughter, Idessa. When the Forest Homestead Act passed in 1906, the Davis' applied for homestead entry on the land they had improved. Their claim for 100 acres was reduced by the Forest Service, who wanted forty acres for a ranger station and land on and around Reflector Bar. After years of wrangling, the claim went

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to patent in 1910, and title papers were finally signed in 1917. When the City began to cast its eye on the areas above the Gorge for future development, it began condemnation proceedings against the Davis Ranch. While the Davis' fought City Light's procedures, in 1929 Seattle succeeded in acquiring the homestead for \$15,000. The ranch at Cedar Bar was used to house employees and guests for a number of years; the structures were removed in the 1950s when the dammed Skagit began to flood the property, most of which is now underwater.

Sometime in the mid-1920s, around twenty shacks were erected in the Hollywood area, on City-owned land. It is not clear who built the structures, but it appears that they were erected by the Davis family to rent to City Light workers, prior to the condemnation and purchase of their ranch by the City. They were scattered about the Hollywood area in an apparently random fashion, accompanied by small outbuildings, such as wood sheds. Most were situated along Stetattle Creek. By 1937 City Light employees were recorded as living in these buildings, almost all of which appear to have been crudely constructed. None had sewer or water connections.

As a result of agitation for more and better housing in Diablo--and Newhalem--City Light, in 1936, began to plan for new housing. A row of over twenty houses was to be built along the bank of the river between the powerhouse and Stetattle Creek. The scheme ran into several roadblocks: financing was a problem, and the Forest Service intervened, since, as Smith and McKeen reported to Ross in November of that year:

As you know from our telegram, they [the Forest Service] claim jurisdiction over the entire layout of housing and accommodations for the public at Reflector Bar. They say they are only anxious to get the best development possible, and to give us the benefit of their long experience and special study. They don't like the idea of a long row of houses, nor the idea of painting each one a different collar [sic]. They say the houses should blend into the background of forest, and that Reflector Bar seems a much better place for them, unless we have other plans for it, in which case they would favor the Stetattle Creek area, or even the upper end of Davis Ranch below Stetattle Creek. They suggest that the Forest Ranger station be moved from the Bar to Stetattle Creek...if the proper layout of the Bar would be helped thereby. We told them that you were our landscape architect, and that we would not be able to give them our plan for the Bar until we heard from you.⁴⁷

Within a few days, James Frankland, assistant regional forester for the North Pacific Region of the U.S. Forest Service, wrote to Ross to complain about the agency's lack of involvement in the development plan, and to confirm the Service's architects and landscape architect's visit to the site, offering their services in the development of a "...well defined plan for Reflector Bar." Frankland noted that the U.S.F.S. had developed "...a very satisfactory style of architectural treatment of the exteriors of our buildings located in such rugged country and I have been hoping that this, or an adaption of it, might be selected by the City for their permanent buildings."⁴⁸

Ross availed himself of the U.S. Forest Service offer for design assistance, although he did not seriously reconsider his ultimate plans for developing the Reflector Bar area as a tourist-oriented

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facility, and therefore did not entertain the suggestion to build the new houses at the Bar. Hollywood, it was determined, would be the location of the new permanent houses. In March, 1937, McKeen, as acting superintendent of the Department of Lighting--Ross was at Bonneville--received scale drawings of the new buildings from Linn Forrest, an assistant architect for the U.S.F.S. North Pacific Region. There were three housing schemes for four-room residences and one for a ten-man apartment. The drawings, Forrest noted, "...show that type of architecture which we have found to be harmonious in rugged surrounds similar to those at Diablo."⁴⁹

Two weeks later F.V. Horton, an assistant regional forester based in Portland, sent City Light a plan for the entire development at Hollywood, which included both four and five room residences, a bachelors' quarters, a school, and a railroad waiting shelter. The scheme was designed to take advantage of the topography of the area, and was organized by a series of loop roads, where buildings were "...oriented on the ground for their best adaptability to the immediate site for topography, trees and views. A landscape feature has been planned for the drainage area, dividing the residence groups, as a water course featuring a stream and pools."⁵⁰ The scheme included approximately twenty new houses, but, by this time, the number of houses to be built had been reduced to five.

Two days later, McKeen sent the plans to Ross, telling him the survey crew was going to Hollywood to stake out the buildings as suggested by the U.S.F.S., and asking him to make his comments as soon as possible. By May the location of the houses were staked out, and McKeen was reporting to Ross that they were planning to start two of the buildings, which had been redrawn and probably altered to some extent, by City Light's architect, George Stewart. McKeen was also sending a Mr. McMonies to the Skagit to select rock for use in the foundations and chimneys of the buildings, as suggested by the Forest Service.

Construction began on the houses in the early summer of 1937, and continued through early 1938. A total of five were built, in addition to an apartment building, referred to as "The Lodge." Disputes over housing policy, pressure on the Lighting Department to cut its budget, and the funneling of resources to begin construction on Ruby (Ross) Dam were some of the factors intervening to reduce the number of much-needed houses. The railroad station and pool suggested by the Forest Service were not built. The Lodge, which had also been reviewed and altered by the Forest Service--the initial design by City Light had been for a two-story building, emphatically vetoed by the Forest Service--was initially designed to house single men, who would share common eating and lounging facilities. In the 1940s it was converted to apartments housing families.

The houses each had two bedrooms, a bath, a kitchen, dining room and living room, and an unfinished attic space in which laundry facilities could be located. They had steeply-pitched gable roofs and horizontal board siding; vertical board siding with scalloped ends were located in the gable ends. The foundations were faced with stone, and stone chimneys were located near the center of each structure, projecting from the gabled roofs. Several plans were prepared, each slightly different, and a prototype of each plan was erected, apparently with the idea that future structures based on the different plan types already built would be erected later. They were located near the apex of a triangular road, whose base followed the Skagit to the south. They were grouped in an informal cluster, reflecting the prevailing rustic architecture planning philosophy of

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informal schemes adjusting to the site. The lodge was located on the east side of the triangular road, near the south end of Hollywood.

By 1938 only five of the old shacks that had first occupied Hollywood were still standing. In April of 1938, a draftsman from City Light, J.R. King, who had been directed to conduct a survey of housing on the Skagit, prepared a report suggesting that twenty new houses be built in Hollywood. He drew a scheme following the general layout originally proposed by the U.S.F.S. in 1936. It included twenty new houses along the triangular road, and incorporated a pool--but not the railroad station, nor the school--into his design, opposite the lodge. King's proposal was never acted upon.

In December of 1938, Charles Flory, supervisor of the Mount Baker National Forest, attempted to intervene one last time in the Hollywood development. The Forest Service apparently failed to appreciate the irony of the name, "Hollywood," which had been appended to the area when the small shacks were built in the late 1920s and early '30s. In April Flory's assistant, R.L. Fromme, met with McKeen, and an agreement was reached to change the name of the area from Hollywood to Stetattle. However, in December, City Light was still referring to it as Hollywood, as were all the occupants on the Skagit. Flory wrote to City Light about this, in association with rental payments for occupied houses in the area, which City Light was required to remit to the U.S. Forest Service. He noted:

Preference for this change in names [Hollywood to Stetattle] was based on the fact that the name Stetattle is unusual and distinctive as well as being the geographic name for the stream on which this development is being made. The name Hollywood, on the other hand, is foreign to the Skagit locality, and the contemplated development has nothing in common with the over-publicized Hollywood, California.⁵¹

Hollywood languished as a partially-built housing project until 1952, when a number of new houses were built. Gradually the 1938 rustic houses fell into disrepair, and were removed, one by one, when maintenance was deemed too costly. The sole remaining house from this era is Number 2, now referred to as H-6 (Resource #34). The lodge also survives, in part, although half of it--the former dormitory area--was demolished within the last ten years. The original street plan was altered in the 1950s, when the new residences were erected.

Diablo During and After the War

In the late 1930s, General Construction Company, hired to build Ross Dam, erected a camp area at the north end of Reflector Bar, in the former location of the crane and circular warehouse sheds. There were two H-shaped bunkhouses with gabled roofs, some storage buildings, a boiler room and a small construction office. In 1952 a Butler building was erected to the west of these structures. While the Butler building still stands, the construction camp buildings have been demolished and the site is presently undergoing paving for a parking lot. Top managers of the construction project, and their families, were housed in the Engineers' and Contractors' Camp, along with City Light's top operators.

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In 1935 the City donated a building in Diablo for use as a school--School District #105 of Whatcom County--to teach eight children. In addition, City Light provided living quarters for a teacher, who lodged with a City Light family until the 1940s, when a school teacher's cottage was finally built near the southeast corner of the Bar. The school was located in a small gable-roofed building near the water tower; later a second building was connected to it via a small hall, which served as a cloakroom. This second building was detached from the original school building in 1952, and moved south of the Incline Waiting Room, where it was reused as a communications building (Resource #39). While the building dates to the historic period, it has been significantly altered, and moved from its original location.

In 1940, then City Light Superintendent, E.R. Hoffman, consulted with a representative of Naramore, Bain and Brady, a Seattle architectural firm specializing in school construction. Floyd Naramore, in fact, had been the Seattle school district's architect for over ten years, responsible for designing most of the junior high and high schools still standing in Seattle, as well as a number of masonry elementary schools. In May of 1940 the firm recommended Hoffman build a twenty-two by thirty foot building, which would adequately house fifteen children, and offered general advice on the location of windows, ceiling heights and furniture arrangement. It wasn't, however, until 1946 that City Light actually engaged the firm to design a school building in Diablo--the war had intervened, and by then, the population of Diablo, swollen by the construction crews working on Ross Dam, required more than a small building for the education of its children. The new school was located west of the old mess hall, since converted to a commissary and carpenter's store. It had a T-shaped plan, with cross-hip roofs, and was faced with brick. This structure, which still stands, has been altered by additions, and presently serves as the dining hall for City employees, for tours, and as a visitor center and museum.

In October of 1944, anticipating the push for Ruby (Ross) Dam construction and under pressure to provide adequate housing, Hoffman had a survey of Diablo houses prepared. It reported a total of seventeen houses in Reflector Bar, and eight, plus the "Lodge," in Hollywood. Three of the pre-1938 shacks were still standing, one sheltering a City Light employee and his family of five, and one a U.S.F.S. employee and his wife and two children. In the Lodge, one city employee, Orville Look, lived with his wife and two daughters, and three additional families were housed in apartments City Light had carved out of the single men's rooms in the bunkhouse wing.

Of the Reflector Bar houses, twelve were part of the original Contractors' and Engineers' Residences along the south and west edges of the bar, only five of which were considered to be in good condition, although poorly constructed. Five were construction camp shacks left from the southerly leg of the U; the rest had been demolished. Only two of the construction camp shacks were occupied at the time of the survey--one by the school teacher, and one by a General Construction Company employee. Four of these were considered useable, "...but they are useable only for a few more years." By 1951, when a new evaluation of houses on the Bar was completed, in preparation for new housing for Ross Powerhouse employees, three construction camp shacks were recommended for removal. The remaining houses, Contractors' and Engineers' Residences, were:

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...standing on wooden blocks and some of these houses are settling badly, and...they are not located in the center of the lots or the proper distance from the [proposed] sidewalk or the road...Some of these houses have only four rooms, therefore we should consider the advisability of adding a room to each house before we move it to its permanent location.⁵²

In 1950 Hoffman had told Phil Bradner, the Mount Baker Forest supervisor, that City Light planned to build sixty houses for the Ross Powerhouse operators and boatmen plying Diablo Lake, and to install a narrow road to Diablo. However, by April of 1952, when the contract for new residences in Diablo was let to the Seattle firm of Thorburn and Logozo, the number of houses to be built had almost been halved, to thirty-six. Of these, eleven were to be built in Reflector Bar, and the remaining number in Hollywood.

The decision was made to retain the older engineer's houses in Reflector Bar on their original sites, anticipating their replacement in "five or ten years, when "material and labor would be more available than it is now." If moved, it was argued, City Light would be spending money for new foundations and moving, and "...we would still have old houses with not too good arrangement and not well built."⁵³ So the structures stayed until the 1970s, when most were demolished or moved from the Project.

In the summer of 1952, construction began on the Reflector Bar houses and on a new hip-roofed Commissary (Resource #38), located to the immediate north of the Incline Waiting Station. Most of the new houses were located in the U.S.F.S. enclosure, on three new east-west streets converging on a road running north-south along the edge of the railroad tracks, soon slated for removal. The Forest Service house, which was deemed well-enough built to move, was shifted to its present site, slightly southwest of the corner of the school. The barn was torn down, and a new combination barn and warehouse built for the U.S.F.S. on the southwest corner of the Bar. Two additional houses were located just east of the easternmost Contractors' and Engineers' Residence building. The old mess hall-turned-commissary was demolished, however City Light's "Engineer's Camp" buildings, still in use as bunkhouses--with one of the three converted to a mess hall--were retained for a few more years.

The new houses, in both Diablo and Hollywood, were one-and-one-half story wood-framed structures with steeply-pitched, aluminum-sheathed gable roofs. They had gable-roofed front and rear porches, and a gable-roofed dormer located in the center of one elevation. The structures had both large fixed glass, multi-paned windows and fixed glass over awning windows. All were built with basements and sheathed with vertical board siding. They stand today in both areas, still in use.

In Hollywood, the Skagit had overflowed its banks in the winter of 1949-50, flooding part of the low lying area, and killing a number of trees along the bank. In conjunction with the plan for additional housing for Ross Powerhouse operators, City Light decided to fill in the low areas of Hollywood, raising the elevation to 890 feet. This raise in elevation was partially to counter the effects of future flooding, and partially in anticipation of the rise in water when the new dam at Gorge was completed. The plan was to fill along the railroad line and shape it so that it rose in a gentle slope upstream on Stetattle Creek.

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The scheme for an additional twenty-eight houses in Hollywood required new roads, sidewalks, a street lighting system, and reconstruction of the sewer and water lines installed in 1938, when the five rustic houses and lodge were built. In September of 1951, the Hollywood regrading began. The remaining pre-1938 shacks were demolished, and the west leg of the triangular road was raised, following the original alignment to its apex at the north. The road along the river, next to the tracks, slated for removal in several years time, was also regraded. The angle of the east side of the original triangular road was altered, and an east-west link installed, forming a loop at the peak of the triangle. It continued to the east, connecting to the former easterly leg of the triangular road, which was extended north and terminated in a cul-de-sac. Plank walks were installed, later replaced by concrete sidewalks, and, after completion of construction, trees were planted along the streets and in yards. With completion of this construction, Hollywood appeared much as it does today. Four of the five 1938 structures were gradually demolished, roads were paved, and trees have matured. The rail right-of-way was covered with asphalt, and became part of the present road leading to Reflector Bar and the Diablo Powerhouse.

Late in 1927 or early in 1928 a railroad bridge was erected to cross Stetattle Creek during the extension of the line from Newhalem to Reflector Bar, below the Diablo Dam site. To handle the steep grade and heavy construction material loads, the line was electrified, although a steam locomotive--Old Number Six (Resource #19)--purchased in 1928--was also used to negotiate the grade and haul equipment, materials and tourists to the dam site. When the railroad tracks were removed in the 1950s, the roadbed of the bridge was repaved. Insufficient documentation and conflicting oral interviews place the age of the Stetattle Creek Bridge in question: insulators on the single-span Pratt truss steel bridge indicate the structure was used for the electrified railroad, however several interviewees have stated the structure was rebuilt when the tracks were removed. If the structure falls within the historic period, then it is a contributing resource, which served as the only transportation link to the town of Diablo and the dam above. Further investigation is needed to assess National Register eligibility and possible amendment to this nomination.

The present town of Diablo bears little resemblance to the construction camp town of 1928. A road from State Highway 20 runs along the river to the bridge across Stetattle Creek, and along the former railroad right-of-way next to the river, through Hollywood, where the 1952 houses are located on vast expanses of lawn planted with various shade trees. It turns and continues south, past the Diablo Powerhouse, following the former railroad line past the 1952 Commissary, the Incline Waiting Room, and the relocated Communications Building, and continuing for a short way before terminating at the south end of Reflector Bar. A paved road leads from the entrance to Reflector Bar west, to a parking area now undergoing upgrading, and the 1952 Butler building. West of the Incline and road is a large area seeded in lawn, formerly the location of the old mess hall, and west of it, is the 1940s Diablo School, now serving as a visitor center. West of the school is the relocated U.S.F.S. house, and beyond it, across a lawn, is the 1950s U.S.F.S. barn and warehouse. South of the school and lawn are the 1952 residences. The south and west edges of the Bar are now seeded in lawn, with some older trees and shrubs interspersed along the grounds. The 1934 water tower rises like a beacon above the town, an immediately visible landmark.

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Continuation SheetSection number 7 Page 42**Ross Powerhouse and Dam**

Neither Ross Dam nor Ross Powerhouse at present qualify for listing in the National Register, since they post-date the historic period. However, the powerhouse and dam are the third and final phase of hydroelectric development on the Skagit River, and construction of the plant was first proposed by J.D. Ross at the inception of the entire Skagit Project. With the concept of Ross Dam an integral part of the Project's story, it is recommended that this nomination be amended to include Ross Dam and Powerhouse when the resource reaches fifty years of age.

Ross Dam is a constant-angle thin arch dam, 540 feet high. The crest is 1300 feet long and thirty-three feet wide. The dam includes two fixed wheel headgates, each weighing 210 tons; twelve tainter gates which pivot on a 21.5 foot radius, and two butterfly relief valves with a six foot diameter and broome gates on the upstream side. The dam has two 1,900 foot long power tunnels, twenty-four and one-half feet in diameter. The face of the dam is waffled. The reservoir behind the dam--Ross Lake-- stores 1.43 million acre feet of water.

The site at Ruby Creek, where Ross Dam is located, was the location where J.D. Ross wanted to build the first dam on the Skagit project, because it was here that the gorge widened to form a large natural storage reservoir. However, the logistical problems of building at that remote site were too challenging, and too expensive for the City to surmount in 1917-18, and the Gorge site was selected as the first power plant location. It wasn't until 1936, when the City received three million dollars from the Public Works Administration, enabling it to float an additional four million dollars in bonds, that work began at the site. By 1937 crews were at work on site, drilling test holes for the dam, and building the new transmission line. City Light crews, lodged in Diablo, were put to work building a floating cookhouse and bunkhouses on Diablo Lake to service a construction camp site to be located near the dam site.

It was decided to build the dam in stages, or steps. Preliminary design work of Ross Dam was done by Lars Jorgensen's firm, The Constant Angle Arch Dam Company, which designed Diablo Dam. Additional designs were prepared by the consulting firm of J.L. Savage after Jorgensen's death in 1937. The construction contract was awarded to General Construction Company in mid-1937, which included construction of the first step of the dam, of a by-pass tunnel, and of a work camp for the crew at Ruby. In January of 1940, the first step of the dam, three hundred feet high, was completed. After City Light crews built a fifteen foot high timber crib dam atop the first step, the lake behind it backed up nine miles. Construction of the second step was halted by the War, but, in 1943, with assistance of the federal government, construction at Ruby began again, with a consortium of three companies--General, Shea, and Morrison-Kundsen-- working at the site. After the war, three hundred additional men were brought in to speed construction, and the third step was contracted for, using the contractors already on site. On August 18, 1949, the dam, re-named in honor of J.D. Ross, was dedicated. In 1953, when spillway gates were added, the reservoir reached its full height of 1,600 feet above sea level.

Work on the foundations for Ross Powerhouse began in 1948, and three generators were ordered from Westinghouse in 1949. Late in 1949 construction of the building began, but was halted in 1951 when the contract with the construction firm of Peter Kiewit and Sons was broken by City Light. A new contract with Guy P. Atkinson Company was signed later in 1951, and this firm completed the

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building by the end of 1952. With one generator operating, it was, by the end of that year, supplying power. The second and third generators were installed in 1953 and 1954. The fourth generator was installed in 1956.

The powerhouse is 200 feet high, from sump floor to generator room ceiling. There is a twenty-nine foot concrete bulkhead between the electrical gallery and the turbine pit walkway. The building is 288 feet long and includes an observation deck. Equipment includes four 100,000 kva three-phase Westinghouse generators. Three of the turbines were designed and built by Baldwin Locomotive Corporation, and one by Newport News Corporation; their efficiency varies between ninety-two and ninety-four percent, when operating near the rated load.

Descriptions of Individual Contributing and NonContributing Resources

The following is a description of each contributing and noncontributing resource within the Historic District, organized according to geographic location.

Town of Newhalem

#01 Silk Stocking Row House #8	1921
Contributing Resource: Building	
Location: South of Highway 20, west of Main Street	Style: Bungalow
Original Function: Housing	Present Function: Housing
Physical Appearance: A rectangular, one and one-half story wood-frame structure with narrow lapped siding and shingles on the gable ends. A gabled roof has exposed rafter ends and plain fascia boards. There is a shed-roofed dormer on the west elevation. Principal entrance faces south with raised hip-roofed porch, battered columns and vertical wood slat balustrade. Secondary entrance on north has bracketed, gabled overdoor and concrete steps with pipe handrails--not original to the structure. Windows are single and grouped multi-paned sashes. A concrete chimney is located on the west roof slope. Original cedar shingle roof covered by ribbed metal in the 1950s and replaced again in 1984; all windows, with exception of basement, replaced c. 1984 with double-glazed sash which mimic, but do not match the original fenestration. It is in good condition.	
Significance: This house is one of nine "permanent" houses built along the Skagit River for Seattle City Light supervisors, foremen and operators, part of an ensemble known as "Silk Stocking Row." It is nearly identical to Houses #1 and #4. It is still used today as company housing. The building represents, both historically and architecturally, an early phase of the development of the company town of Newhalem. It has integrity of design, materials, workmanship, setting, location, feeling and association and remains an integral part of both Silk Stocking Row and the historic town.	

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#02 Silk Stocking Row House #7

1922

Contributing Resource: Building

Location: South of Highway 20, west of Main Street

Style: Bungalow

Original Function: Housing

Present Function: Housing

Physical Appearance: A rectangular, one and one-half story wood-frame structure with wood shingle siding laid in a decorative course pattern. The cross-gable roof has a plain cornice and boxed eaves. The principal entrance faces south, with a full-bay raised porch recessed beneath the main roof plane, battered wood columns and vertical wood slat balustrade. A secondary entrance on the north is reached via concrete steps with pipe handrails--not original to the structure.

Windows are single and grouped multi-paned sliding and fixed sashes. There is a concrete chimney on the west roof slope. Original cedar shingle roof covered by ribbed metal in the 1950s and replaced again in 1984; all windows, with exception of basement, replaced c. 1984 with double-glazed sash which mimic, but do not match the original fenestration. It is in good condition.

Significance: This house is one of nine "permanent" houses built along the Skagit River for Seattle City Light supervisors, foremen and operators, part of an ensemble known as "Silk Stocking Row." It is nearly identical to Houses #2 and #5. It is still used today as company housing. The building represents, both historically and architecturally, an early phase of the development of the company town of Newhalem. It has integrity of design, materials, workmanship, setting, location, feeling and association and remains an integral part of both Silk Stocking Row and the historic town.

#03 Silk Stocking Row House #6

1922

Contributing Resource: Building

Location: South of Highway 20, west of Main Street

Style: Bungalow

Original Function: Housing

Present Function: Housing

Physical Appearance: A rectangular, one and one-half story wood-frame structure with wood shingle siding laid in a decorative course pattern. The gambrel roof has plain fascia boards and boxed eaves: there are two hip-roofed dormers on the westerly elevation, and one shed-roofed dormer on the easterly elevation, all sides with decorative shingle coursing. The principal entrance faces south, with a full length shed-roofed porch supported by squared columns with flared capitals; the porch has a simple wood slat balustrade. There is a concrete chimney rising just off-center along the ridge. Original cedar shingle roof covered by ribbed metal in the 1950s and replaced again in 1984; all windows, with exception of basement, replaced c. 1984 with double-glazed sash which mimic, but do not match the original fenestration. It is in good condition.

Significance: This house is one of nine "permanent" houses built along the Skagit River for Seattle City Light supervisors, foremen and operators, part of an ensemble known as "Silk Stocking Row." It is nearly identical to Houses #2 and #5. It is still used today as company housing. The building represents, both historically and architecturally, an early phase of the development of the company town of Newhalem. It has integrity of design, materials, workmanship, setting, location, feeling and association and remains an integral part of both Silk Stocking Row and the historic town.

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#04 Silk Stock Row House #5

1922

Contributing Resource: Building

Location: South of Highway 20, west of Main Street

Style: Bungalow

Original Function: Housing

Present Function: Housing

Physical Appearance: A rectangular, one and one-half story wood-frame structure with wood shingle siding laid in a decorative course pattern. The cross-gable roof has a plain cornice and boxed eaves. The principal entrance faces south, with a full-bay raised porch recessed beneath the main roof plane, battered wood columns and vertical wood slat balustrade. A secondary entrance on the north is reached via concrete steps with pipe handrails--not original to the structure.

Windows are single and grouped multi-paned sliding and fixed sashes. There is a concrete chimney on the west roof slope. Original cedar shingle roof covered by ribbed metal in the 1950s and replaced again in 1984; all windows, with exception of basement, replaced c. 1984 with double-glazed sash which mimic, but do not match the original fenestration. It is in good condition.

Significance: This house is one of nine "permanent" houses built along the Skagit River for Seattle City Light supervisors, foremen and operators, part of an ensemble known as "Silk Stocking Row." It is the only gambrel-roofed bungalow on Silk Stocking Row, as such is distinct within the ensemble. It is still used today as company housing. The building represents, both historically and architecturally, an early phase of the development of the company town of Newhalem. It has integrity of design, materials, workmanship, setting, location, feeling and association and remains an integral part of both Silk Stocking Row and the historic town.

#05 Silk Stocking Row House #4

1921

Contributing Resource: Building

Location: South of Highway 20, west of Main Street

Style: Bungalow

Original Function: Housing

Present Function: Housing

Physical Appearance: A rectangular, one and one-half story wood-frame structure with narrow lapped siding and shingles on the gable ends. A gabled roof has exposed rafter ends and plain fascia boards. Principal entrance faces south with raised hip-roofed porch, battered columns and vertical wood slat balustrade. An entrance on the east has concrete steps and pipe handrails. A secondary entrance on the north has a bracketed overdoor, concrete steps and pipe handrails--not original to the structure. Windows are single and grouped multi-paned sashes. A concrete chimney is located on the west roof slope. Original cedar shingle roof covered by ribbed metal in the 1950s and replaced again in 1984; all windows, with exception of basement, replaced c. 1984 with double-glazed sash which mimic, but do not match the original fenestration. It is in good condition.

Significance: This house is one of nine "permanent" houses built along the Skagit River for Seattle City Light supervisors, foremen and operators, part of an ensemble known as "Silk Stocking Row." It is nearly identical to Houses #1 and #8. It is still used today as company housing. The building represents, both historically and architecturally, an early phase of the development of the company town of Newhalem. It has integrity of design, materials, workmanship, setting, location, feeling and association and remains an integral part of both Silk Stocking Row and the historic town.

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#06 Silk Stocking Row House #3

1922

Contributing Resource: Building

Location: South of Highway 20, west of Main Street

Style: Bungalow

Original Function: Housing

Present Function: Housing

Physical Appearance: A rectangular one-and one-half story wood-frame structure with lapped horizontal board siding below a molded wood drip, and coursed wood shingle siding above. The gabled roof has wide fascia boards with flared ends and boxed eaves. The principal entrance faces south, with a single bay gable-roofed porch with an enclosed pediment, boxed wood columns, and a simple wood slat balustrade; the gable end treatment matches that of the main roof. A secondary entrance on the north has a bracketed shed-roofed overdoor, concrete steps and pipe handrails--the latter not original to the structure. Windows are single and grouped multi-paned sashes. A concrete chimney rises near the center of the house. Original cedar shingle roof covered by ribbed metal in the 1950s and replaced again in 1984; all windows, with exception of basement, replaced c. 1984 with double-glazed sash which mimic, but do not match the original fenestration. It is in good condition.

Significance: This house is one of nine "permanent" houses built along the Skagit River for Seattle City Light supervisors, foremen and operators, part of an ensemble known as "Silk Stocking Row." It is nearly identical to Houses #1 and #8. It is still used today as company housing. The building represents, both historically and architecturally, an early phase of the development of the company town of Newhalem. It has integrity of design, materials, workmanship, setting, location, feeling and association and remains an integral part of both Silk Stocking Row and the historic town.

#07 Silk Stocking Row House #2

1922

Contributing Resource: Building

Location: South of Highway 20, west of Main Street

Style: Bungalow

Original Function: Housing

Present Function: Housing

Physical Appearance: A rectangular, one and one-half story wood-frame structure with wood shingle siding laid in a decorative course pattern. The cross-gable roof has a plain cornice and boxed eaves. The principal entrance faces south, with a full-bay raised porch recessed beneath the main roof plane, battered wood columns and vertical wood slat balustrade. A secondary entrance on the east is reached via concrete steps with pipe handrails--not original to the structure.

Windows are single and grouped multi-paned sliding and fixed sashes. There is a concrete chimney on the west roof slope. Original cedar shingle roof covered by ribbed metal in the 1950s and replaced again in 1984; all windows, with exception of basement, replaced c. 1984 with double-glazed sash which mimic, but do not match the original fenestration. It is in good condition.

Significance: This house is one of nine "permanent" houses built along the Skagit River for Seattle City Light supervisors, foremen and operators, part of an ensemble known as "Silk Stocking Row." It is still used today as company housing. The building represents, both historically and architecturally, an early phase of the development of the company town of Newhalem. It has integrity of design, materials, workmanship, setting, location, feeling and association and remains an integral part of both Silk Stocking Row and the historic town.

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#08 Silk Stocking Row House #1

1923

Contributing Resource: Building

Location: South of Highway 20, west of Main Street

Style: Bungalow

Original Function: Housing

Present Function: Housing

Physical Appearance: A rectangular, one and one-half story wood-frame structure with narrow lapped siding and shingles on the gable ends. A gabled roof has exposed rafter ends and plain fascia boards. Principal entrance faces south with raised hip-roofed porch, battered columns and vertical wood slat balustrade. An entrance on the east has a shed-roofed overdoor supported by simple wood posts, concrete steps and pipe handrails. Windows are single and grouped multi-paned sashes. A concrete chimney is located on the west roof slope. Original cedar shingle roof covered by ribbed metal in the 1950s and replaced again in 1984; all windows, with exception of basement, replaced c. 1984 with double-glazed sash which mimic, but do not match the original fenestration. It is in good condition.

Significance: This house is one of nine "permanent" houses built along the Skagit River for Seattle City Light supervisors, foremen and operators, part of an ensemble known as "Silk Stocking Row." It is nearly identical to Houses #4 and #8. It is still used today as company housing. The building represents, both historically and architecturally, an early phase of the development of the company town of Newhalem. It has integrity of design, materials, workmanship, setting, location, feeling and association and remains an integral part of both Silk Stocking Row and the historic town.

#09 Schoolteacher's House/ House #222

1938

Contributing Resource: Building

Location: South of Highway 20, west of Main Street

Style: Bungalow

Original Function: Housing

Present Function: Housing

Physical Appearance: A square, one and one-half story wood-frame structure on a concrete foundation. It has narrow lapped wood siding and a gable roof with chamfered purlin ends below a simple fascia. A pedimented, gabled single-bay entry porch projects from the center of the house on the south, supported by round metal posts, which replaced original wood posts. The original shed-roofed porch on the back was removed in 1955, and a gable-roofed addition with a recessed entry was built to house a laundry room. Windows are now four-over-one vertical sliding sash. A brick chimney has been removed. Original cedar shingle roof was covered by ribbed metal in the 1950s and replaced again in c. 1984. It is in good condition.

Significance: In July of 1939 Seattle City Light built a cottage for the town's schoolteacher, who had, throughout the 1920s and '30s lodged with families of employees, in apartments carved out of Silk Stocking Row House Number 2, or in temporary cottages. The house is similar to those designed by the department's draftsman, L.H. Rose, for the "Poverty Row" houses on the west edge of town. The building represents, both historically and architecturally, a later phase of Newhalem's development, and is a integral part of the historic community. It has integrity of design, materials, workmanship, setting, location, feeling and association.

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#10 Garges #1-22

c.1939

Contributing Resource: Building

Location: South of Highway 20, west of Main Street

Style: Vernacular

Original Function: automobile storage

Present Function: Storage

Physical Appearance: A pair of rectangular one-story service structures, each approximately 90 feet long, and located with ridges parallel to each other, approximately twenty feet apart. The buildings have low-pitched, metal-sided gable roofs with plain wood fascia boards on the gable ends, and each are sided with corrugated steel. Each structure contains eleven paired hinged doors, covered with corrugated metal siding, on one lateral elevation. The easterly garage has a low, shed-roofed extension on the northeast corner. They are in fair condition.

Significance: These units were built by Seattle City Light crews for employees living in Newhalem in houses that did not have garages. They are located on the site of earlier temporary cottages removed around 1924. The buildings are representative of the shift in transportation links with the outside world, as employees came to rely more on private automobiles and less on the railroad for access to the town. Within the context of a historic district, the buildings contribute to our understanding of Newhalem as an example of company town planning and development. They possess integrity of location, design, setting, materials, feeling and association.

#11 The Hotel (Bunkhouse #23)

1920

Contributing Resource: Building

Location: South of Highway 20, west of Main Street

Style: Vernacular

Original function: Bunkhouse

Present Function: Housing

Physical Appearance: A narrow, rectangular, one-story, gable-roofed structure, approximately 60 feet long, on a raised concrete foundation. The building has narrow, horizontal lapped siding with cornerboards, and a ribbed metal roof, which replaced earlier "malthoid" composition roofing secured by battens. Original windows replaced with metal sliding sash without trim; original wood doors replaced by a metal raised panel doors on the north, east and west. A door on the north has a bracketed shed-roofed overdoor; a door on the west has a pedimented gable overdoor supported by square wood posts. Concrete steps and stoops lead to doors on the west and north. The original gabled entry porch on the east was replaced c. 1970 with a full-length, pedimented gable-roofed porch supported by wood columns; its roof is at a lower pitch than that of the main building. Original siding was vertical wood boards; present siding probably dates to the late 1920s. It is in good condition.

Significance: The building was initially intended as a bunkhouse for Skagit workers, and is one of four remaining structures dating from the first period of construction in City Camp. In the mid-1920s the building accommodated overnight visitors taking a tour of the project, and was used to house transient employees and visitors from that time to the present. The building is significant for its association with the Skagit Project and the company town of Newhalem, representing the early years of the town's development. It is a principal contributor to the historic core of the town, Main Street.

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#12 Commissary

1920

Contributing Resource: Building

Location: South of Highway 20, east of Main Street

Style: Vernacular

Original function: Commercial--Store

Present Function: Commercial--Store

Physical Appearance: A 90 foot long T-shaped wood-frame building on a wood pier foundation with a steeply-pitched gable roof. The original shingled roof has been replaced with ribbed metal. The original board and batten siding was replaced with coursed wood shingles in a decorative pattern in the 1920s, still in place on the north and east facades and the south end of the west elevation. Drop siding is located on the west elevation below the windows, and the south elevation is clad with lapped wood siding. Two original nine-light fixed sashes are located on the east and west elevations; other original door and window openings are covered with plywood panels. The principal metal and glass entry doors, located roughly in the center of the west elevation are not original. A gable-roofed addition (c. 1950) on the east has corrugated metal siding and serves as a refrigerated storage room. A full-length shed-roofed porch extends the length of the west elevation, with a gabled, pedimented entry bay supported by square metal posts was added c. 1984. Despite alterations over time, the building retains the form and rustic appearance of its original design. It is in good condition.

Significance: Designed and built in 1920, the Commissary is one of four extant structures on Newhalem's Main Street dating to the town's earliest development. The building served as the company store for Seattle City Light employees living on the Skagit; it was the source of clothing, food and staples for all community residents. Prices were competitive with other accessible stores--for example, Rockport, which could be reached by train. Employees paid for items in scrip. In the 1950s an addition to the east was built to provide freezer locker storage for residents; no longer in use now, it serves as dry storage for the store operation. While it still functions as a company store, it now also serves tourists. The Commissary is significant for its association with the Skagit Hydroelectric Project and the company town of Newhalem.

#13 Bunkhouse Number 13 (Pansy House)

c.1934

Contributing Resource: Building

Location: South side of Highway 20, east of Main Street

Style: Bungalow

Original Function: Bunkhouse

Present Function: Housing

Physical Appearance: A rectangular, one and one-half story, wood frame building on a concrete foundation. It has a steeply-pitched gable roof with shed-roofed dormers on two elevations. The original wood roof shingles have been covered by a ribbed metal roof, c. 1958. The building is clad with narrow lapped siding, with decorative patterned shingles in the gable ends and on the dormers. Entries are centered on the west and south elevations, with bracketed gable-roofed overdoors. Fenestration is primarily single and paired nine-light hinged wood sashes with plain trim; entry doors are wood paneled and glazed. Doors are reached by wood steps and stoops. It is in good condition.

Significance: Designed as a bunkhouse for City Light employees working on the Skagit Hydroelectric Project, it was one of several built over the course of the project to accommodate single men. In the 1940s its interior was altered to house families, a response to the perennial shortage of family housing on the Skagit. It is still used periodically to house City Light crews. The name Pansy was appended to the building when it house dishwashing crews--"pansy" referring to the men working on the crews. The structure is historically and architecturally significant for its association with the Skagit Hydroelectric Project and the company town of

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Newhalem. It represents the second phase of the town's physical development--the mid-1930s. It possesses integrity of design, location, materials, workmanship, setting, feeling and association.

#14 New Cook's Bunkhouse (Bunkhouse #10)

c. 1934

Contributing Resource: Building

Location: South of Highway 20, east of Main Street

Style: Bungalow

Original Function: Bunkhouse

Present Function: Storage

Physical Appearance: A rectangular one and one-half story wood frame building set on a partially raised concrete foundation. It has a steeply-pitched gable roof with shed-roofed dormers on two elevations. The original wood roof shingles have been covered by a ribbed metal roof, c. 1958. The building is clad with narrow lapped siding, with decorative patterned shingles in the gable ends and on the dormers. An entry door is centered on the north elevation, with a bracketed gable-roofed overdoor. Fenestration is primarily single and paired multi-light hinged wood sashes with plain trim; the entry door is wood paneled and glazed, reached by concrete steps and stoop. It is in good condition.

Significance: Designed as a bunkhouse for City Light employees working on the Skagit Hydroelectric Project. It appears the cooks for the City Light Mess Hall (Resource #15) were housed in this building after construction; they were first housed in the original Cook's Bunkhouse, still extant (Resource # 16). The structure is historically and architecturally significant for its association with the Skagit Hydroelectric Project and the company town of Newhalem. It represents the second phase of the town's physical development--the mid-1930s. It possesses integrity of design, location, materials, workmanship, setting, feeling and association.

#15 Mess Hall (Gorge Inn)

1920

Contributing Resource: Building

Location: South of Highway 20, east side of Main Street

Style: Vernacular

Original Function: Dining and Kitchen

Present Function: Vacant

Physical Appearance: A rambling, irregularly-shaped one-story wood-frame building set on a wood pier foundation. The original portion of the building was T-shaped, with moderately-pitched gable roofs and vertical board siding. It included a 30 by 99 foot mess room with entries centered on the east, west and south; a 30 by 30 foot kitchen to the north of the mess room, with a small gable-roofed store room on the kitchen's northwest corner. The year after construction, a pantry, an L-shaped bakery and extensions to the east and west ends of the mess room were built, with gable, hipped, and shed roofs of varying pitches, giving the structure a rustic appearance. By the late 1920s the most visible elevations--the west and south--were clad with wood shingles laid in a decorative pattern; the less public elevations are clad with vertical and wide horizontal board siding. The roofs were covered with ribbed metal in the 1950s. The fenestration consists principally of the original single and paired multi-paned fixed wood sashes with plain trim; doors are either wood paneled and glazed or three-panel wood. Bracketed shed-roofed overdoors are located on the west, south and east, sheltering principal entries. A shed-roofed addition on the south, which served as the main entrance to the dining room for some years, was removed in 1989. The building is in fair condition.

Significance: The building is one of four on Newhalem's Main Street dating to the first period of construction. It was designed as a mess hall and kitchen for City Light employees working on the Skagit Hydroelectric Project. When the Skagit tours were initiated in the late 1920s, tourists, in addition to single--unmarried--City Light employees, ate in this facility, and apparently at this

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time the building was named the "Gorge Inn." When the tours stopped in 1941, the facility continued in use for workers; it was last used in the late 1970s. Since then, it has been vacant. The structure is significant historically and architecturally for its association with the Skagit Hydroelectric Project, the company town of Newhalem, and the Skagit tours. It possesses integrity of design, materials, setting, location, workmanship, feeling and association.

#16 Old Cook's Bunkhouse (Library)

1921

Contributing Resource: Building

Location: South of Highway 20, east of Main Street

Style: Vernacular

Original Function: Bunkhouse

Present Function: Library

Physical Appearance: A rectangular one and one-half story wood frame building set on a wood pier foundation. It has lapped siding with cornerboards and a steeply-pitched gable roof with exposed rafters, originally covered with "malthoid" secured by battens, and now with ribbed metal, added in the 1950s. There are wood panelled and glazed entry doors on all elevations. Windows are both single and paired multi-paned wood sashes; some are double-hung, some are fixed and some are hinged. There are bracketed shed-roofed overdoors sheltering the entries on the north and south, and bracketed gable-roofed overdoors on the east and west. The foundation is clad with metal skirting. The original structure was 26 by 44 feet, and clad with vertical board siding. In 1921 an addition doubled the building's size, and the two parts were united visually through the application of the present siding. It is in poor condition.

Significance: Designed as a bunkhouse for City Light workers, the building is referred to on early maps as the "Cook's Bunkhouse." Later it served as a bunkhouse for tourists. It came to be referred to as the Cambridge House (reason presently unknown), possibly in the mid-1930s when the "New" Cook's Bunkhouse was built. Today it is used as a community library. The building is significant historically and architecturally for its association with the Skagit Hydroelectric Project, the company town of Newhalem, and the Skagit tours. It represents the early years of Newhalem's development, and is the sole remaining bunkhouse of the first eighteen erected in the town in 1920-21. It has integrity of design, materials, workmanship, location, setting, feeling and association.

#17 Tourist Dormitory #70 (Bunkhouse #70)

1935

Contributing Resource: Building

Location: South of Highway 20, east of Main Street

Original Function: Tourist Bunkhouse

Present Function: Housing

Physical Appearance: A rectangular one-and one-half story wood frame building on a concrete foundation. Sited on a slope, the the basement level on the south is above grade. The structure is clad with narrow lapped siding, with wood shingles laid in a decorative pattern on the gable ends and on the long shed-roofed dormers on the south and north elevations. The steeply-pitched gable roof, originally covered with wood shingles, is now clad with a ribbed metal roof dating from the late 1950s. The roof has a narrow fascia and exposed rafters and purlins. Centered entry doors on the north and south are glazed and paneled; the south entry is accessed via a wood staircase. Entry on the east and west end of the south elevation is via wood doors to the basement level. A wood paneled door in the second story on the west is reached via a wood staircase, and is probably not original. Fenestration consists principally of paired multi-paned hinged wood sashes with plain trim. It is in good condition.

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Significance: This building is the only extant tourist dormitory dating from the mid-1930s, designed specifically to house the increasing numbers of overnight tourists visiting the Skagit Project. In the off-season City Light workers were allowed to live in the dorms. After the tours ended in 1941, workers could live in the buildings year-round. In 1943 the interior of this building was altered to provide apartments for families. In the 1950s the building was used to house Gorge Powerhouse operators; it is still used intermittently today. The building is historically and architecturally significant for its association with the company town of Newhalem and the development and promotion of the hydroelectric project through the Skagit tours. It is representative of the second phase of physical development of the town. It possesses integrity of design, location, materials, workmanship, setting, feeling and association.

#18 U.S.G.S. Stream Gauging Station and Cable Car 1909/1923

Contributing Resource: Structure

Location: South of Highway 20 and Silk Stocking Row House Number 3

Original Function: Water measuring station Present Function: Same

Physical Appearance: The stream gauging station is a ten by ten foot reinforced concrete structure built into the slope of the bank of the Skagit River, and steel steps leading down to the river where a wooden staff gauge is located at the water's edge. The structure has a shed roof, an entry door on the east, and a square window on the west. The gauge has gradations marked every tenth of a foot. The station is in good condition. A wood and steel cable car operates on pulleys across a steel cable, which spans the Skagit River between a steel A-frame on the north bank, and a tree on the south bank. The car has a metal umbrella roof and a shallow wagon from which is suspended a smaller wagon. The original cable car support on the north bank was an A-frame of squared timbers 10 feet high, with a concrete deadman anchorage system through which a galvanized U-bolt passed and fastened a clevis to the lower eye of a turnbuckle. The south bank support was a hemlock tree with a three foot diameter. The cable car has been upgraded for safety, but there is no record of what was done, or when. Some time prior to 1970 the original A-frame on the north bank was replaced by the present system.

Significance: The United States Geological Survey selected this site along the Skagit River as one of its stream gaging stations, collecting data--including water depths--to ascertain the quantity of water expected to "run off" the mountains each year, beginning in November of 1908. The information gathered by the U.S.G.S. was critical for City Light Skagit Project and the production of hydroelectricity. In 1909 a cable car was installed to take measurements from the center of the river (see Resource #19). On June 5, 1923, a staff gage and a Stevens Continuous Recorder in a concrete shelter were installed. In May of 1940 a water stage recorder was installed. Readings in the 1920s were taken by F.E. Davis of Davis Ranch. The site is significant for its historic association with City Light's Skagit Hydroelectric Project.

#19 Old Number Six

1928

Contributing Resource: Object

Location: South of Highway 20, east of Main Street

Original Function: Train locomotive

Present Function: Exhibit

Physical Appearance: An oil-fired 2-6-2 Prairie type Baldwin clan 10-30-1/4-D, 61 locomotive.

The wagon type boiler weighs approximately 67 tons; the tender behind weights approximately 32

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tons. In September of 1973 the locomotive was refurbished for operation as a tourist excursion train. It presently serves as a permanent outdoor exhibit in Newhalem.

Significance: This locomotive played an important role in the construction of Diablo and Ross Dams, and served as a major transportation source for tourists visiting the Skagit Project. It ran on Seattle City Lights' Skagit River Railway, which ran from Rockport, twenty-three miles west of Newhalem, and later was extended to Diablo. The railroad, under construction in 1920, was built to carry construction materials, equipment and workers to the towns, dams and powerhouses. However, beginning in 1924, the railroad was also used to carry tourists, and did so until 1941, becoming a principal feature in the two-day Skagit tours. The road operated steam, electric and diesel-fired equipment. Old Number Six operated on the line until the railroad was removed in 1954. In 1973 Old Number Six was removed to the town of Concrete, Washington, where it remained until February 5, 1986, when it was returned to Newhalem and installed in its present location. It is significant for its association with the construction of Diablo and Ross Dams, and for its association with the Skagit tours. It has integrity of design, materials, workmanship, setting, feeling and association. In 1973 the locomotive was listed in the National Register without approval by the Washington State Review Board. The board determined it was not eligible for listing, and requested its removal on December 27, 1973, and it was "delisted" in January, 1974. It remains listed on the Washington State Register of Historic Places.

Non-Contributing Resources

#20 Fire Hall

c.1956

Non-Contributing Resource: Building

Location: South of Highway 20, west of The Hotel

Style: Vernacular

Original Function: Garage

Present Function: Storage

Physical Appearance: A wood-frame, rectangular gable-roofed structure with horizontal board siding.

Significance: Built on the site of demolished worker's cottages, the fire hall was erected to house a fire truck for the Newhalem Volunteer Fire Department. It post-dates the historic period and therefore is not eligible for listing in the National Register.

#21 Tourist Restroom (Visitor's Center)

c. 1934

Non-Contributing Resource: Building

Location: South of Highway 20, west of The Hotel

Style: Bungalow

Original Function: Restroom

Present Function: Visitor's Center

Physical Appearance: A rectangular one-story wood frame building on a raised concrete foundation. It has a jerkinhead gable roof with extended eaves, exposed purlins and simple fascia boards. It is sided with horizontal lapped wood siding and shingles in the gable ends. The roof is covered with metal. There are louvered wood vents on the north elevation. The original entry was a door centered on the north elevation, flanked by two windows. This has since been covered by an addition built in the early 1970s which consists of a rectangular, one-story flat-roof structure: its easterly end is a breezeway with metal posts; the westerly end is enclosed by diagonally-laid wood boards.

Significance: The structure was built some time between 1932 and 1938, as J.D. Ross pushed for more tourist accommodations for his Skagit tours. It served as a public restroom for tourists who

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arrived daily by train during the summer months. The building still functions as a public restroom; the addition houses exhibit space and an information center. The building no longer has integrity of design, feeling and association, and therefore is not eligible for listing in the National Register.

#22 Currier Hall

1957

Non-Contributing Resource: Building

Location: South of Highway 20, west of Main Street

Style: Vernacular

Original Function: Auditorium and Recreation

Present Function: Same

Physical Appearance: A one-story rectangular gable-roofed building, with a wrap-around shed-roof extension on the east and north elevations. It has a metal roof and wood siding.

Significance: The building replaced the Big Hall, social center for the town of Newhalem since the 1920s, and later the location for presentations to tourists. It was named for Dana Currier, a long-time employee of Seattle City Light on the Skagit. The building post-dates the historic period and therefore is not eligible for listing in the National Register.

#23 Gazebo

c.1982

Non-Contributing Resource: Structure

Location: South of Highway 20, west of Main Street

Original Function: Gazebo

Present Function: Gazebo

Physical Appearance: A small, almost square wood frame structure with wood lattice siding.

Flowering plants in pots are placed in and hang from the structure during the summer months.

Significance: The structure is located on the site of the original office building for the Skagit Project, which stood until the 1970s. It post-dates the historic period and therefore is not eligible for listing in the National Register.

#24 Trail of the Cedars Suspension Bridge

c. 1975

Non-Contributing Resource: Structure

Location: South of Highway 20, end of Main Street

Original Function: Pedestrian Bridge

Present Function: Pedestrian Bridge

Physical Appearance: A suspension bridge, terminating the north-south axis of Main Street. It now leads to a path through a cedar grove on the south bank of the river, developed by University of Washington forestry students in 1970 as part of Newhalem's 50th anniversary celebration. The trail then follows a historic path to the Newhalem powerhouse.

Significance: The bridge replaced an earlier suspension bridge in the same location, which served to link the north and south banks of the Skagit River. This, the third bridge at this site, was entirely rebuilt in the mid-1970s, thus, although the site is significant, the structure post-dates the historic period and therefore is not eligible for listing in the National Register.

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Gorge Powerhouse and Dam Complex

Contributing Resources

#27 Gorge Powerhouse

1924

Contributing Resource: Building

Location: East end of Newhalem

Original Function: Powerhouse

Present Function: Same

Physical Appearance: A one-story steel and reinforced concrete building, approximately 60 feet tall, with a flat roof. An addition in 1949 lengthened the building by six bays. The original portion's exterior is a stripped-down industrial version of Neoclassic design, with ten bays of tall, multi-paned industrial sash windows on the west, divided by concrete piers with ornamental capitals, topped by a concrete cornice above which is an attic story with smaller paired multi-paned windows. The original building corners terminated in projecting bays which give the illusion of towers, rising above the parapet and neatly enclosing the window bays on the west--and most public--elevation. The "towers" had narrow industrial sashes recessed in an arched niche which ran from the window base to the attic story. When the addition was built, the rhythm of the bays was respected through the use of large steel doors on the west, and the attic story with paired windows was extended. The original westerly tower was removed for the addition, and a new one built at the west end of the addition. The public entrance to the building is on the east and the second level of the building, accessed paved ramps or steps from the lower portions of Ladder Creek Gardens. The interior lobby offers a view of the generators on the floor below. The equipment includes two original Westinghouse generators, initially rated at 30,000 kva, and since rewound; and two additional units added in 1929 and 1951. The turbines were modified to use a gross head of 380 feet after completion of Gorge High Dam in 1961. Two were installed in 1924, and in 1959 were given new runners with a rating of 45,000 horsepower. Two additional turbines were installed in 1921 and 1951. The powerhouse was designed to house three units, but the third generator wasn't installed until 1929. The building is in good condition. For further information on equipment, refer to the National Register of Historic Places Multiple Property Documentation Form, *Hydroelectric Power Plants in Washington State, 1890-1938*, prepared by Lisa Soderberg, and approved by the National Register on December 15, 1988. Please note errors and omissions contained in that nomination have been rectified in this nomination.

Significance: The Gorge Powerhouse is historically significant for its role in the development of the Skagit Hydroelectric Project; it was the first of three major power plants constructed on the Skagit. It is representative of hydroelectric technology of the 1920s, and is significant for being the first powerhouse designed with a long power tunnel, with a surge tank before the penstocks, rather than the typical forebay with surge tanks. The building's exterior is a prominent visual feature, terminating the east-west axis of the town of Newhalem; the 1949 addition is sympathetic to the original building.

#28 Gorge Railroad Bridge

c.1935

Contributing Resource: Structure

Location: East end of Newhalem

Original Function: Railroad Bridge

Type: Pratt Truss

Present Function: Automobile Bridge

Physical Appearance: A two-span Pratt truss iron bridge, 308 feet long. It is one lane wide, with a pedestrian walkway. It replaced an earlier two-span Howe truss railroad bridge, 250 feet long,

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built by 1921. The structure is built above the westerly turn of the Skagit River, linking the Gorge Powerhouse and Ladder Creek Falls to the town of Newhalem.

Significance: The present structure dates from the second period of development of the town of Newhalem, and was probably installed to accommodate service automobiles and trucks carrying materials for the powerhouse. The earlier bridge was designed for trains to carry equipment and materials for construction of the Gorge power plant. It is historically significant for its association with the Skagit Hydroelectric Project, and retains its integrity of design, workmanship, setting, location, feeling and association.

#29 Gravity Oil Tank House

c.1928

Contributing Resource: Building

Location: Ladder Creek Falls Park

Original Function: Oil House

Style: Vernacular

Present Function: Storage

Physical Appearance: A reinforced concrete structure, approximately ten feet square, located within the Ladder Creek Falls Gardens. There is one entry door on the easterly side. Oil tanks in the interior were removed in the mid-1980s.

Significance: The structure was used to store oil for the gravity oil lubrication system for the equipment in Gorge Powerhouse until the mid 1980s. However, by the 1930s it served double-duty as a "sound studio." During tours, a City Light employee was relegated to sit in the structure with a clock, record player, records, and a list of music to be played according to a strict timetable, prepared by J.D. Ross. The recorded music was amplified throughout the park grounds, timed to coincide with various highlights of the park viewed by parties of tourists as they were guided through the park. The building is now used for storage. It is historically associated with the Skagit tours and the Gorge power plant, and retains its integrity of design, workmanship, setting, location and association.

#30 Ladder Creek Falls Gardens

1928

Contributing Resource: Site

Location: East of Gorge Power House

Original Function: Strolling Garden

Style: Rustic

Present Function: Strolling Garden

Physical Appearance: Ladder Creek Gardens occupy approximately two acres of steep terrain which rises to a comparatively flat area about eighty feet above Gorge Powerhouse. Unpaved paths with spurs wind up the slope in serpentine fashion to concrete steps, which lead to a viewpoint of Ladder Creek Falls. Stone steps are set into the hillside in places to facilitate walking; there are level areas for resting and viewing spaced throughout. The landscape includes native trees and plants, although some exotics, such as bamboo are woven into the scheme. Also, the gardens contain artificial ponds and pools of concrete and stone; fountains, and three rustic wood benches dating to the mid 1930s. There are several wooden bridges, designed in a "rustic" fashion, which span small streams or dry gullies. A lighting system illuminates the gardens at night, and colored lights illuminate the falls. Since no site plan of the original designed garden exists, it is not known how many changes in specific plant material have occurred to impact the integrity of the original garden, designed and planned by J.D. Ross. It is known that some exotic plants, carefully tended in winter months, died from neglect after the tours ceased in 1941. The garden today has over 150 species of flowers and plants. In the 1930s, tourists viewing the gardens at night were treated to a light show, created by an illumination scheme of plants and the falls, created by Ross, and a sound show, with selections by Ross.

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Significance: J.D. Ross was responsible for the development and design of the gardens, and began to plan them in 1928. Each year the scheme expanded, eventually encompassing a rock garden at the base of the park, which included such exotic plants as banana trees and palms. The unique combination of gardens, sound and light appears to have precedence only in World's Fairs of the prior three decades, most particularly the Panama Pacific Exposition. The illuminated tour of the gardens was the highlight of the Skagit tours, and a major promotional tool in drawing the public to the Skagit. The gardens are significant for their association with Ross and for the promotion of the Skagit Hydroelectric Project through the Skagit tours.

Non-Contributing Resources

#31 Gorge Pedestrian Suspension Bridge c.1983
Non-Contributing Resource: Structure
Location: East end of Newhalem, south of Gorge Powerhouse
Original Function: Pedestrian Bridge Present Function: Same
Physical Appearance: A steel suspension bridge with steel towers and wood deck, spanning the Skagit River, approximately 300 feet. Replaced an earlier suspension bridge dating to the 1920s. An iris pool and resting area is located at its east terminus, south of the Gorge Powerhouse.
Significance: The original bridge served as pedestrian access to the Gorge Powerhouse for workers, and later for tourists. It was replaced in 1983 by the present structure, which post-dates the historic period, and therefore is not eligible for listing in the National Register.

#32 Gorge High Dam 1961
Non-Contributing Resource: Structure
Location: Approximately 3 miles east of Newhalem Type: Thin arch dam
Original Function: Dam Present Function: Same
Physical Appearance: A thin arch dam with a gravity section: the arch is 450 feet long and 70 feet thick at its base, and the gravity section 220 feet long and 170 feet thick at its base. Spillgates and spillways are located in the gravity portion of the dam. The crest is 16 feet wide; the dam is 300 feet high from bedrock. The dam was designed by the consulting firm of J.L. Savage and built by Merritt-Chapman and Scott Corporation of New York. The dam replaced a concrete diversion dam, built in 1950, which in turn had replaced the original timber dam (1924), which had initially been projected to last five or six years. The reservoir behind the dam, Gorge Lake, is four and one-half miles long, with a normal elevation of 875 feet, capable of storing 5000 acre feet. The 1921, horseshoe-shaped pressure tunnel, driven through solid granite, is approximately 11,000 feet long. The concrete-lined tunnel, with an internal diameter of twenty and one-half feet, was built by R.C. Storrie and Company of San Francisco. The lower end of the tunnel has a surge tank and a riser with a restricted orifice. There are four penstocks, each approximately 1,600 feet long, three of which date to the historic period: 1919, 1924 and 1929. The fourth was built in 1951. The vertical lift, fixed wheel headgate weights 200 tons and is raised with a hydraulic hoist. The dam is in good condition. For further information on equipment, refer to the National Register of Historic Places Multiple Property Documentation Form, *Hydroelectric Power Plants in Washington State, 1890-1938*, prepared by Lisa Soderberg, and approved by the National Register on December 15, 1988.
Significance: The initial plan for the first Gorge dam called for a 240-foot high dam with two 11,000-foot long power tunnels. However, construction costs and time led to the erection of a

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temporary rock-filled timber crib diversion dam with a 285-foot head. Water was diverted through an intake into one long power tunnel, which took more than two years to build: jackhammers were supplied with compressed air via an eight inch pipe linked to air compressors in a specially-constructed compression plant at the east end of Newhalem. The timber dam was replaced in 1950 by a low concrete structure; at this time an additional generator was added to an enlarged Gorge Powerhouse. In 1961 the present dam was built; the earlier masonry dam is now below the reservoir waters. The structure now conforms to the original design intentions for the power plant, however the dam post-dates the historic period, and therefore is not considered a contributing resource.

#33 Gorge Diversion Dam

1950

Non-Contributing Resource: Structure (Submerged)

Location: Approximately 3 miles East of Newhalem

Original Function: Dam

Type: Concrete Diversion Dam

Present Function: None

Physical Appearance: A low concrete diversion dam now submerged beneath waters impounded by Gorge High Dam.

Significance: A "temporary" rock-filled timber crib dam was built in 1923 to raise the Skagit River thirty feet, and divert the flow into an 11,000 foot long, concrete-lined power tunnel, serving Gorge Powerhouse. In 1929 the city raised the existing crib dam two feet in height to help alleviate problems with gravel sweeping into the intake, and low water levels which affected the plant's efficiency. At this time a third generator was installed in the powerhouse. In 1950 a concrete diversion dam was built to replace the original wooden crib dam for Gorge Powerhouse, which had lasted far longer than its anticipated life of four or five years. A fourth generator was added to the Gorge Powerhouse, increasing the plant's capability to 108,000 kw. The dam was submerged after completion of Gorge High Dam in 1961. It post-dates the historic period and therefore is not considered a contributing resource.

Diablo Powerhouse and Dam Complex

#35 Diablo Powerhouse

1936

Contributing Resource: Building

Location: East edge of Reflector Bar

Original Function: Powerhouse

Style: Moderne

Present Function: Same

Physical Appearance: A one-story reinforced concrete building, 60 feet tall from floor to parapet. The rectangular building is 68 by 225 feet in plan. The reinforced concrete slab roof is supported by steel trusses and I beam purlins. Concrete piers on the exterior rise above the roof line, creating a spiked parapet on its principal (westerly) elevation; multi-paned steel sash windows rise almost the height of the building in the eight bays formed by the piers, broken by spandrels approximately two-thirds up their length. The northerly elevation, designed as a temporary wall, was built of brick, with steel sash windows between the piers, and sheathed with aluminum in 1954. An unprepossessing solid entry door leads to the building's interior lobby, which rises to the height of the building and is partially encircled by viewing platforms, which also serve as means of access to the generators, and to office space on the easterly edge of the building. The principal means of access to the platforms and offices is a staircase with wrought-iron railing and aluminum handrails. The lobby floor is laid with terrazzo in an ornamental pattern. A tile fish pond is

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located against the staircase, with the Seattle City Light logo of the 1930s laid in mosaic tile on the fountain wall. The equipment includes two Westinghouse 82,000 kva generators, the highest rated in the world when built--initially rated at 66,700 kva, but rewound in 1958-- and two 108,500 horsepower (then 90,700 horsepower) turbines, also the largest built to that time. The main generating units are placed on pedestals and reached by catwalks with brass railing. A 300 ton, two-trolley travelling crane with seven motors was installed to move the large generator and turbine parts; the crane was also the largest to be built at that time. Other equipment includes two house unit turbines and generators; Westinghouse transformers; exciters, oil pumps and tanks. A reinforced concrete tailrace, on the westerly edge of the powerhouse, also serves to support transformers, switching apparatus and a cross for a single-track railroad. The powerhouse is in good condition. For further information on equipment, refer to the National Register of Historic Places Multiple Property Documentation Form, *Hydroelectric Power Plants in Washington State, 1890-1938*, prepared by Lisa Soderberg, and approved by the National Register on December 15, 1988. Please note errors and omissions contained in that nomination have been rectified in this nomination.

Significance: The powerhouse is a historically significant example of hydroelectric technology of the 1930s, particularly the large generators, turbines and crane. The building's interior features, especially the lobby and the raised generators, were specifically designed to showcase the Skagit Hydroelectric Project and were a special feature of the tours used to promote it. The Diablo dam and powerhouse are inextricably linked with the growth and development of the Skagit Hydroelectric Project. The structure has integrity of design, workmanship, setting, location, feeling and association.

#36 Incline Waiting Station 1934

Contributing Resource: Building

Location: East edge of Reflector Bar at base of Incline Style: Vernacular

Original Function: Restroom and shelter Present Function: Same

Physical Appearance: A one-story rectangular wood frame building set on a concrete foundation. The moderately-pitched gable roof, originally covered with shingles, is now clad with ribbed metal dating to the 1950s; it has extended eaves and simple fascia. The northerly and southerly ends of the building are enclosed for restrooms, and clad with cedar shingle siding. The central portion of the building is a breezeway with exposed square woods with knee bracing and a concrete floor; original wood benches are located within the breezeway. The restrooms have vertical slatted wood screened entries; originally the screens were lattice. The original horizontal one by four cedar siding has been covered by the cedar shingles. There are metal sash windows facing the breezeway on the northerly portion of the building for ticket sales; some original windows have been covered. It is in good condition.

Significance: The waiting room was built as a shelter and rest stop for tourists on the City Light Skagit Tours. Situated at the base of the Incline Railroad, an integral part of the Skagit Railway system, which provided the means for transporting construction materials to the dam site, the waiting shelter was added during the height of the promotional activities for the project. By 1936 the rest area and trip up the incline was enhanced by amplified music played as tourists rode the Incline. The tours, halted in 1941, began again in 1953, and it is believed the alterations were made at this time. The structure is significant as an integral part of the Skagit Tours program, which in turn was significant in public support for the hydroelectric project. It has integrity of design, workmanship, setting, location, feeling and association.

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#37 Incline Lift and Powerhouse

1928

Contributing Resource: Structure

Location: East edge of Reflector Bar

Original Function: Funicular railroad

Present Function: Same

Physical Appearance: A 563 foot long funicular railway, with a vertical lift of 313 feet, enabling transportation of freight cars up a 68 percent grade. It consists of three standard-gauge tracks, with a total width of forty-two feet. The center track is used by a 45 ton counter weight passing under a transfer platform at the midpoint. The moving steel platform is sixty feet long, supported by four four-wheel standard gage trucks; it weights 55 tons and is capable of carrying 79 tons. The hoist is a Model D Lilly Hoist Controller, powered by a 400 horsepower Allis-Chalmers motor. The machinery is housed in a gable-roofed one-story structure with corrugated metal siding at the top of the lift. The Incline is in good condition and continues to operate today.

Significance: The Incline was built as a permanent feature of the project, and used in the construction of both Diablo and Ross dams. It was also a highlight of the Skagit Tours, transporting tourists to the top of the dam in an open railroad car. The Incline served to transfer railway cars bringing equipment and materials from Newhalem, Rockport, and beyond, to the top of the dam, without having to move or transfer materials to special cars. The structure is significant, both as an engineering feature and historically, as an integral part of the development of the Skagit Hydroelectric Project and the Skagit Tours. It has integrity of design, materials, workmanship, setting, location, feeling and association.

#42 Diablo Dam

1930

Contributing Resource: Structure

Location: East of the town of Diablo

Original Function: Dam

Type: Constant-Angle Single Arch

Present Function: Same

Physical Appearance: A constant angle single arch dam with two gravity abutments, 389 feet high from bedrock to crest. The crest is 16 feet wide and 1,170 feet long. The arch portion is 540 feet long; the gravity abutments total 630 feet. The dam has 19 tainter type spill gates, three of which were motorized in the mid-1960s; the rest are lifted by means of a rail-mounted hydraulic hoist. A reinforced concrete valve house, supported by concrete brackets, is located on the downstream face of the dam and is accessible by elevator or ladder; the interior contains four relief valves. The head gate is a 15 by 20 broome gate. The 1,990-foot long concrete-lined power tunnel, finished in 1931, is nineteen and one-half feet in diameter; its last 190 feet are steel lined. The tunnel feeds into two 290-foot long penstocks, each fifteen feet in diameter. Just before it splits, a smaller 5-foot penstock taps into the tunnel to supply water to two house units. The differential type surge tank, completed in 1931, is located at the steel-lined portion of the tunnel. A reinforced concrete slab bridge connects the piers between the spillway gate openings, and carries track for a travelling gate-hoist which operates most of the tainter gates. Sixteen reinforced concrete arches with 32-foot clear spans support a roadway on the dam; it is these arches which most distinguish the dam aesthetically--they were not necessary for construction of the roadbed, which is lined with ornamental lighting standards. The dam impounds 90,000 acre-feet of water, and creates Diablo Lake, four and one-half miles long and 390 feet at its deepest point behind the dam. The structure was designed by the Constant Angle Arch Dam Company, a firm established by engineer Lars Jorgensen, and built by Winston Brothers of Minneapolis. For further information on equipment, refer to the National Register of Historic Places Multiple Property Documentation Form,

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Hydroelectric Power Plants in Washington State, 1890-1938, prepared by Lisa Soderberg, and approved by the National Register on December 15, 1988. Please note errors and omissions contained in that nomination have been rectified in this nomination.

Significance: The dam is a historically significant example of hydroelectrical technology from the 1930s. The construction of the facility, with its remote location and topography, ideal for an arch dam but difficult to build, was a major engineering feat requiring innovative approaches to both the excavation and construction. When completed, it was, briefly, the highest thin arch dam in the world. The Diablo Dam and power plant are inextricably linked with the growth and development of the Skagit Hydroelectric Project. The structure has integrity of design, materials, workmanship, setting, location, feeling and association.

Non-Contributing Resources

#38 Diablo Commissary 1952
Non-Contributing Resource: Building
Location: East edge of Reflector Bar Style: Vernacular
Original Function: Commissary Present Function: Storage
Physical Appearance: A large rectangular building with cedar shingle siding and a hipped roof covered with ribbed metal. A veranda extends around the building, supported on metal posts.
Significance: The present structure replaced an earlier commissary dating to the historic period. It was built to serve the residents of Diablo, and was part of a larger construction project in the 1950s, when a number of the present residences in Reflector Bar and Hollywood were erected. It post-dates the historic period and therefore does not qualify for listing in the National Register.

#39 Diablo Communications Building c.1935
Non-Contributing Resource: Building
Location: East edge of Reflector Bar Style: Vernacular
Original Function: Schoolhouse Present Function: Office
Physical Appearance: A one-story rectangular wood frame structure on a concrete foundation. The gable roof is clad with corrugated metal, and has extended eaves with exposed rafter ends. A glazed and panelled door is located on the east elevation. There is a bank of nine-light hinged wood sashes on the west elevation, and additional double-hung windows on the south, north and east elevations. The structure, originally clad with narrow lapped siding, is now covered with large cedar shingles. The building was moved from the west side of the Bar in 1952, and adapted as an office building. It is in good condition.
Significance: The building dates to the historic period, having served as a small schoolhouse for Diablo-based employees' children until the new school was built in 1949. However, the structure was moved from its original site, and has been altered, disqualifying it for listing in the National Register.

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#41 Incline Manlift

1953

Non-Contributing Resource: Structure

Location: East edge of Reflector Bar

Original Function: Transportation Lift

Physical Appearance: An eight-man lift. It is enclosed in a corrugated steel-clad shed which follows the grade of the Incline. It is in good condition.

Significance: The manlift was built to provide transportation for small groups of employees during the winter, when snow prevented the use of the Incline. The manlift post-dates the historic period and does not have the exceptional significance required for listing in the National Register.

Single Discontiguous Resources

Contributing Resources

#25 Ross Crypt

1939

Potentially Contributing Resource: Site

Location: North of Highway 20, east end of Newhalem

Style: Landscape--naturalistic style

Original Function: Burial Site

Present Function: Burial Site

Physical Appearance: A narrow, semi-circular concrete path, lined with native and non-native plants--including flowering Japanese cherry trees--leads from a sidewalk bordering Highway 20 to the base of Ross Mountain. Rather than a freestanding object, the crypt is recessed into the rock face of the mountain, protected by a painted decorative iron gate. Two large rectangular brass plaques, placed one above the other are mounted in a recessed niche. The top plaque reads: "James Delmage Ross. Born November 9, 1889, 'J.D.' Died March 14, 1939. J.D. Ross, one of the greatest Americans of our generation was an outstanding mathematician and an equally great engineer. He had also the practical ability to make things work in the sphere of public opinion and successful business. More than that he was a philosopher and a lover and student of trees and flowers. His successful career and especially his long service in behalf of the public interest are worthy of study by every American boy. Franklin D. Roosevelt, President of the United States." The bottom plaque reads: "Alice Maud Ross. Born September 10, 1883, Died April 5, 1956. Devoted and loving wife to 'J.D.'"

Significance: The crypt is significant for design value; rather than a freestanding object, it was built into the base of Ross Mountain, designed to harmonize with the the natural rock, becoming one with the site. As an integrated element in the natural environment, augmented by an informal approach and plantings, the crypt stands as a symbol of the design aesthetic its occupant envisioned--but only occasionally realized--for the entire Skagit Project. It is also significant because it is the grave of James Delmage Ross, Superintendent of Lighting for the City of Seattle's municipally-owned power company between 1911 and 1939, the principal developer of the Skagit Hydroelectric Project, and its most zealous promoter. Ross was an outstanding figure in the development of Seattle's municipally-owned utility, and a figure of national significance in the public power movement between 1918 and 1939. For a more complete discussion of Ross's life, refer to the significance section of this nomination. After his death in 1939 he was entombed in the

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crypt. Then-president of the United States, and a personal friend of Ross's, Franklin D. Roosevelt, donated the brass plaques and prepared the testimonial inscribed on the J.D. Ross's plaque. It is unclear when Ross was actually entombed in the crypt, although he was located there by June of 1940, when *Harper's Magazine* published an article noting his ashes had been buried there. Alice Ross, J.D.'s wife, died in 1956 and was placed in the crypt soon after.

#26 Newhalem Creek Powerhouse Site 1921

Contributing Resource: Site

Location: South of Highway 20 on Newhalem Creek

Original Function: Hydroelectric Power Plant

Present Function: Same

Physical Appearance: The plant consists of a powerhouse, concrete diversion dam, power tunnel and penstock. The wood frame powerhouse, with vertical board siding and a gable roof, and the nine-foot high, 4 1/2-foot thick, 47-foot wide concrete diversion dam were built in 1969 after a fire destroyed the original power house, erected in 1921. The diversion dam, part of the rebuilding, was located near the site of the original crib dam. The new powerhouse encloses the original machinery, which survived the fire. This includes two Pelton impulse turbines and a 2000 kva horizontal shaft Westinghouse generator, both installed in the original 1921 building. The original 2,770 foot power tunnel, approximately 5 by 7 feet, built in 1920, is still in use, as is the 500 foot long steel penstock, which bifurcates just outside the powerhouse, to supply water to the two Pelton wheels. The rebuilt plant went back on line in February of 1970. In 1984 the diversion dam, apron and gatehouse of the plant were substantially rebuilt.

Significance: Initially intended as a temporary plant for construction purposes, the Newhalem plant is the first and earliest of four hydroelectric plants built by Seattle City Light in the Skagit River area. It began operation in August of 1921, and was semi-automated in the early 1950s. The plant remained in operation, supplying Newhalem with 2,000 kva until July of 1966 when the powerhouse burned. After its reconstruction the turbines and generator were placed under remote control from the Gorge Powerhouse's control room. The Newhalem Creek Hydroelectric Project is licensed and operated independently of the Skagit Project, but is staffed by City Light personnel from the Gorge Powerhouse. It is significant for its association with the Skagit Hydroelectric Project and the town of Newhalem.

#34 House Number 2 (Building H-6) 1938

Contributing Resource: Building

Location: Northwest corner of Hollywood

Style: Late Rustic

Original Function: Housing

Present Function: Housing

Physical Appearance: A one and one-half story, L-shaped wood frame building set on a roughly coursed stone foundation. The moderately-pitched gabled roofs have plain fascia boards. The structure is sided with wide lapped wood boards; the gable ends are clad with scalloped vertical boards. A brick chimney rises from the center of the principal gable ridge. The windows include paired double-hung wood sash, and half double-hung wood sash with narrow trim. The entry porch, nestled in the corner of the ell on the east, has a shed roof supported by square posts which are flared to form a variation of a segmental arch; the wood panelled entry door has nine-light glazing and original "craftsman" style hardware. Stone steps lead to a stone stoop covered with a thin layer of concrete on the north--a secondary entrance porch--and the east. A metal roof was placed over the original wood roof shingles c. 1950. There is a rock-lined pool and fire pit behind the house which dates to the period of construction. The building is in good condition.

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Significance: One of two extant buildings dating to the first planned period of development of Hollywood--the second structure is partially in ruin, making this the sole example of 1930s rustic architecture in the Hydroelectric Project. Seattle City Light cooperated with the United States Forest Service in the design of this "new" residential section in Diablo; ultimately only five structures with this rustic style were built, now surrounded by housing erected in the 1950s. The building reflects the traditional U.S.F.S. design ethic, and retains integrity of design, materials, workmanship, setting, location, feeling and association.

#40 Diablo Water Tower

1934

Contributing Resource: Structure

Location: Southwest area of Reflector Bar

Original Function: Water storage

Present Function: Water storage

Physical Appearance: A standard design water tower, approximately 115 feet tall. It has a circular storage tank with a conical top and rounded bottom, on a diagonally-braced steel frame, with the principal vertical supports anchored to raised concrete piers. The tank holds 50,750 gallons of water. The structure is virtually unaltered; plans for it were drawn by "Ford" of Western Engineering Company, in Seattle.

Significance: The water tower was built to serve the residents of the City Light company town of Diablo. It was manufactured by Jones and Laughlin. It was an integral part of the town's infrastructure, and retains integrity of design, materials, workmanship, location, setting, feeling and association.

¹Gray Fitzsimons of the Historic American Engineering Record staff has indicated that in the evaluation of historic engineering significance of storage lakes and reservoirs associated with hydroelectric projects for listing in the National Register the focus is ordinarily given to the significant engineering or technology employed in the creation of a reservoir or lake. In such cases as the construction of Gorge, Diablo or Ross lakes, where trees are simply cut and removed, and the valley behind the dam is simply allowed to fill with water, the most significant engineering work concerns surveying, soils testing and hydraulic studies within the watershed. Other than tree removal, very little construction work was required to form the three lakes of the Skagit hydro system, and hence they were not considered eligible for listing in the National Register from an engineering or technological standpoint.

²Please note exact number of resources for Gorge Power Plant and Diablo Power Plant are not finalized due to discrepancies noted within the existing National Register of Historic Places nomination forms.

³Washington Board of State Road Commissioners, Records 1895-1896, Washington State Library Manuscripts, Olympia, Washington: 1896, p. 2, as cited in Gretchen Luxenberg, Historic Resource Study: North Cascades National Park Service Complex, Washington (USDI: Cultural Resources Division, Pacific Northwest Region, National Park Service, 1986), pp.45-46.

⁴Luxenberg, pp. 95-96.

⁵Will D. Jenkins, *Last Frontier in the North Cascades: Tales of the Wild Upper Skagit*, Skagit County Historical Series, no. 8 (Mount Vernon, Washington: Skagit County Historical Society, 1984), pp. 126-141.

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⁶C.F. Uhden to W.F. Paddock, 22 November 1919, Engineering Subject Files, Record Series #RA 2627-03, Skagit River Power Supply Correspondence, Seattle Municipal Archives.

⁷Willis T. Batcheller, "The Skagit River Power Project," (Seattle: Seattle Lighting Department, 1918), p. 41, Box 13, Willis T. Batcheller Papers, Accession 195, University of Washington Libraries.

⁸Unrecorded interview with T.N. Bucknell, retired Manager of Generation, City of Seattle. 1 September 1989.

⁹Bucknell, 1 September 1989.

¹⁰A.H. Dimock to A. P. Davis, 4 October 1920, Engineer Subject Files, Record Series #RA 2627-03, Skagit River Power Supply Correspondence, Seattle Municipal Archives.

¹¹C.F. Uhden, "Seattle Building Large Hydro-Electric Development," *Engineering New-Record* 85:994-996, p. 995.

¹²A.H. Dimock to C.B. Fitzgerald, 20 January 1920, Engineering Subject Files, Record Series #RA 2627-03, Skagit River Power Supply Correspondence, Seattle Municipal Archives.

¹³Ibid.

¹⁴A.H. Dimock to J.D. Ross, 2 September 1921, Engineering Subject Files, Record Series #RA 2627-03, Skagit River Power Supply Correspondence, Seattle Municipal Archives.

¹⁵Ibid.

¹⁶Ross to T.F. Kane, 29 December 1925, SCL 33-1, 12-27.

¹⁷Thomas R. Horner, "The Mountains Light a City," *Scientific American*, August 1925, p.113.

¹⁸Department of Lighting, City of Seattle, *Annual Report for 1927* (Seattle: City of Seattle, 1927), p. 38.

¹⁹Ross to T.F. Kane, 7 May 1928, SCL 33-1, 11-31.

²⁰Ross to Jake Umlauff, 20 September 1929, SCL 33-1, 19-22.

²¹Ross to T.F. Kane, 7 May 1928, SCL 33-1, 11-31.

²²Ross to A.M. Lewis, 22 July 1929, SCL 33-1, 19-12.

²³Smith and McKeen to Ross, 1 May, 1937, SCL 33-1, 145-8.

²⁴Ross to Smith, McKeen, et. al., 23 November, 1934, SCL 33-2, Box 84.

²⁵Maps in various tourist brochures show them not to be tourist lodging.

²⁶Ed Kemoe to Bulletin Boards an Foremen, 30 October 1935, SCL 33-1, 52-4.

²⁷F. Forsander to E. R. Hoffman, 23 December 1948, SCL 33-2, Box 84.

²⁸Survey of Diablo and Newhalem houses, 10 October, 1944. SCL 33-2, Box 84.

²⁹Unrecorded interview by Patricia Erigero with Jack Roper, retired superintendent Ross Powerhouse, 14 August 1989.

³⁰*Last Skagit Tour with the Seattle Skagit River Railway*, 3 April 1954 (Seattle: Seattle City Light, 1954).

³¹Ross to Charles Poulson, 4 January 1929, SCL 33-1, 18-10.

³²Ross to L.B. Pagter, 27 May 1929, SCL 33-1, 19-3.

³³Ross to Umlauff, 20 September 1929, SCL 33-1, 19-22.

³⁴Your City Light and Power, pamphlet (Seattle: Seattle City Light, 1930), p. 8.

³⁵Your City Light, pamphlet (Seattle: Seattle City Light, 1933).

³⁶June Burn, "Week-End at Diablo," *The Puget Sounder*, July, 1936, p. 7.

³⁷Press release, "Skagit Power Plants Combine Art with Commerce," July 1935, SCL 33-1, 144-21.

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³⁸June Burn, "Week-End at Diablo."

³⁹Areta Ferguson, Skagit Tour Letter Contest, 12 May, 1938, SCL 33-1, 49-7.

⁴⁰*Annual Report of the Seattle Lighting Department* (Seattle: 1925) p. 35.

⁴¹Pedestal mounted generators were a transitional feature in powerhouses of the 1920s, for example, the Cushman Number Two plant of Tacoma, Washington, as the industry moved from horizontal to vertical shafting. As generators increased in size, concerns about vibration and stress led to in-floor placement of the equipment.

⁴²Letter to S.J. Sanders, 2 March 1927, SCL 33-1, 66-2.

⁴³Morse to Pagter, 22 September 1927, Engineering Subject Files, Record Series #RA 2627-03, Skagit River Power Supply Correspondence, Seattle Municipal Archives.

⁴⁴Pagter to Ross, 20 April 1930, SCL 33-1, 97-9.

⁴⁵The Lighting Department got its own engineering department in March of 1931; until this time the engineering and drafting were handled by the City's engineering department.

⁴⁶Charles Flory to Department of Lighting, 25 January 1938, SCL 33-1, 97-17.

⁴⁷Smith and McKeen to Ross, 23 November 1936, SCL 33-1, 145-12.

⁴⁸Frankland to Ross, 27 November 1936, SCL 33-1, 97-14.

⁴⁹Forrest to McKeen, 6 March 1937, SCL 33-1, 97-15.

⁵⁰F.V. Horton to City Light, 26 March 1937, SCL 33-1, 97-15.

⁵¹Charles Flory to City Light, 13 December 1938, SCL 33-1, 97-17.

⁵²M.E. Fahlstrom to E.R. Hoffman, SCL 33-2, Box 75.

⁵³Ibid.

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

nationally statewide locally

Applicable National Register Criteria A B C D

Criteria Considerations (Exceptions) A B C D E F G

Areas of Significance (enter categories from instructions)

- Engineering
- Politics/Government
- Entertainment/Recreation
- Community Planning
- Landscape Architecture
- Architecture

Period of Significance

1917-1940

Significant Dates

Cultural Affiliation

N/A

Significant Person

James DeImage Ross

Architect/Builder

City of Seattle Engineering Department

Lars Jorgensen

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

The Skagit Hydroelectric Project is a physically and historically linked system of four power plants--Newhalem, Gorge, Diablo, Ross--and two company towns--Diablo and Newhalem--owned and operated by the City of Seattle. The entire project is representative of American utility politics and development, spanning over fifty years, beginning near the end of the Progressive Era of American City Government and the era of standardization in hydroelectric plants. Its development ensured the existence of the City's Lighting Department, engaged in direct competition with an investor-owned utility for fifty years, and influenced the public power movement in the 1920s and beyond. The Project represents the general trend of developing more costly and remote hydroelectric sites in the 1920s; its construction in the rugged terrain of the Skagit Gorge required new solutions for significant engineering problems. Its 120 mile distance from Seattle required the construction of two towns for employees, both rare--perhaps unique--examples of municipally-owned towns, still in operation today. Inextricably intertwined with the aspirations of one individual, James DeImage Ross, the City's Superintendent of Lighting for twenty-eight years, the Project was a nationally-known showcase promoting hydroelectricity and municipal ownership of same. The Diablo Dam and powerhouse were intentionally outfitted with unique features, such as a goldfish pond in the powerhouse lobby, designed to appeal to the public. Thousands of tourists flocked to the Skagit each summer to participate in two-day tours of the Project by rail and boat, including visits to an unusual designed landscape created by Ross, which featured tropical and native plants displayed in a carefully -orchestrated son e lumière show.

See continuation sheet

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Fifty Years of Progress

The Skagit Hydroelectric Project, begun in 1917-18, is the city of Seattle's culminating symbol of the Progressive Era of American city government. Its establishment ensured the survival of a weak municipal power system engaged in direct competition with a strong investor-backed utility, after a fifteen year struggle characterized by municipal reform themes--particularly the fight against vested interests--which swept the country. The issues surrounding its development during the 1920s and '30s were representative of the national trend in utility politics, where privately-owned utilities--the "Power Trust"--attempted to discredit, thwart, and assume control of publicly-owned power companies, and public utilities and their supporters sought to extend their services.

Reform

Between 1881 and 1900, the number of electrical utility systems in the United States grew from eight to over 3,200. In the last decade of the nineteenth century, the percentage of municipally-owned systems expanded significantly, to twenty-two percent of the total by 1900. The growth of municipally-owned systems reflected the expansion of other city services, generally placed under the aegis of Progressivism--fire protection, transportation, water, public health, and the like--necessitated by increasing urbanization in the years following the Civil War, and the dislocations associated with rapid industrialization and technologic development.

Seattle's population almost doubled, from 42,837 in 1890, to 80,670 in 1900, and increased over one-hundred percent in the first decade of the twentieth century, as did the populations of other west coast cities, such as Oakland, Los Angeles, Portland (Oregon), Spokane and Tacoma. Seattle faced the problems of urban transition typical of the time--political corruption and accountability; limited democratic franchise; social and economic inequality; lack of a sense of community; inefficient funding; labor exploitation, control of the "natural monopolies," and so forth. As the civic reform movement swept the country, the city adopted measures which placed it in the mainstream of Progressivism. The establishment of the City of Seattle Lighting Department--later called Seattle City Light--was one of these.

The state of Washington, fairly early, adopted a number of legislative amendments with attributes generally associated with the Progressive movement. In 1907 the State legislature enacted the direct primary law; by 1909 Washington was one of nineteen states in the union where direct popular vote was substituted for caucus or delegate systems. In 1909 woman suffrage was enacted, eleven years before the franchise was extended to women on a national basis by constitutional amendment. In 1911 the initiative, referendum and recall laws were passed, along with a pure food and drug act, which included the creation of a State Food Commission, and an eight-hour-day law for women workers.

In Seattle, when the city council refused to act on land acquisition for parks, the citizens, under the city initiative process (1904), brought in an overwhelming vote for comprehensive park

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development. A succession of bond issues approved by the voters between 1906 and 1910 increased the amount of park acreage from 225 to 1,280, including playgrounds associated with city schools. This view of the role of the city in providing recreational opportunities to all its citizens fell squarely within the civic reform movement of the Progressive era. The staging of the Alaska-Yukon-Pacific Exposition of 1909 was a result, in part, a reflection of the civic pride typical of major cities during the Progressive years. "SEATTLE SPIRIT," always printed in capital letters, became a slogan used in promoting the city.

Seattle received national attention for the corruption and dishonesty of its politicians. The best-known of these was Mayor Hiram Gill, elected in 1910, who presided over a "wide-open town" in which gambling and prostitution flourished. Among his appointments, the police chief, C.W. Wappenstein, was particularly noted for graft. In 1911 Gill was recalled and Wappenstein was sent to jail. Gill was re-elected in 1914 on the basis of his promise of a closed town, which he kept until his reelection in 1916, when the doors of the city swung "wide" again.

It was against this backdrop of urban ills and progressive reform that the city Lighting Department was established and developed.

Establishment of City Light

Seattle was the site of early pioneering efforts in the use of electricity: in 1886 the first Edison incandescent central station lighting plant on the west coast was built by the Seattle Electric Light Company. Three years later the Seattle Electric Railway and Power Company began operation of an electrified street railway, the fourth such system in the world. During the '90s, the electric industry expanded. In 1899, the Boston-based electrical engineering and management firm of Stone and Webster organized several competing Seattle utilities to form the Union Electric Company, later reorganized as the Seattle Electric Company. That same year, the Snoqualmie Falls Power Company, under the direction of a civil engineer, Charles Baker, used the 268 foot falls on the Snoqualmie River east of Seattle to bring the first hydroelectric power to the state and Seattle. By 1902, through a series of political, legal and illegal machinations, the Snoqualmie Falls Company was selling power to the Stone and Webster company, which did the retail distribution to Seattle, effectively establishing a distribution monopoly. Under its later incarnation as the Puget Sound Power and Light Company, the Seattle Electric Company was to compete with the City of Seattle in providing electric power to its citizens for the next half century. The city's development of the Skagit River Hydroelectric Project in the 'teens, was key to the city's young public power system's survival and ultimate triumph.

In the 1890s the notion of municipal ownership of a lighting plant for the city surfaced periodically, with committee reports generally stressing the economy and apparent lower prices of city-owned plants. However, the city was embarked on expansion of other services, including streets and sewers, and, in 1890, purchase of its own water system. In searching for additional water supply sources for its new system, the city determined the Cedar River, flowing into Lake Washington from Cedar Lake, forty miles southeast of Seattle, was the best source, and that the excess water

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could possibly be used for electricity. At the same time, private interests were attempting to raise capital to develop both the power and water resources of the river. When, in 1895, the financially-strapped city determined that, like the city of Spokane, it could issue bonds based solely on the revenue of the water system, and not on its general credit, Seattle politicians moved to place an ordinance allowing a 1.25 million dollar bond issue to develop the water supply on the December ballot.

In the ensuing campaign for passage of Ordinance 3990, the anti-corporate, anti-monopoly sentiment which characterized the Progressive theme of taming the utility came to the fore. The forces in favor of municipal ownership coalesced during this campaign, setting the tone of public debate on the "natural monopolies" in Seattle for the next twenty-five years. This campaign foreshadowed many of the better-known battles for municipal ownership across the country--in Cleveland and Toledo, in Chicago, in San Francisco. It was also in this campaign that public ownership of a lighting system became an issue in Seattle, setting the stage for the establishment of the Lighting Department, because, although the ordinance did not provide for power development, its supporters stressed its potential should the Cedar River water supply be developed.

The pro-ordinance forces, included a loose coalition of some populists, city bureaucrats--notably city engineer R.H. Thomson and George Cotterill, and a few prominent Republican businessmen. The principal theme was summed up in a resolution presented by a city councilman, J. Eugene Jordan, which stated "...no city should be under tribute for its light, for its heat, and for its water, to any corporation."¹ Further, the corporation under question--the Seattle Power Company, formed to develop the river by private interests--was a "foreign corporation," with capital and control resting, according to pro-ordinance groups, outside of Seattle. Other pro-ordinance propaganda stressed the relatively new notion of "city building," in which development of the river would lead to the establishment of hydroelectric power owned and operated by the city, which would in turn lead to lower rates and inexpensive power which would draw industry to Seattle. The opponents of the ordinance used the city's indebtedness as the principal reason for opposing the plan. The ordinance passed on December 10, 1895.

The following spring, a city charter amendment was submitted to the voters to streamline city government. Included in the provisions was an article forcing the city council to place before the voters a proposal for the city to construct or buy a light and power system, at the first city election following the extension of the Cedar River water system. Another provision reserved the right to the city to own its own transit system. Following a campaign which included anti-corporate and city building rhetoric similar to that of the ordinance debate, the charter amendment passed.

The years between 1896 and 1901, when the Cedar River water system was completed, were characterized by increasing antipathy towards the private electrical concerns operating--or attempting to operate--in Seattle. It was generated by allegations of bribery in the granting of franchises for electric power and operation of a street railway, by perceived threats to the city's water supply and potential for developing its own power system, by political machinations and legal maneuvers in battles between competing private interests, and by high rates and poor service. By 1900, the Seattle Electric Company--the Stone and Webster concern which had

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consolidated smaller private companies--had become a symbol of the evils of monopoly operated by an out-of-town syndicate. In 1902 the city council placed the question of a lighting plant on the ballot, as required by the 1896 charter. The proposal was to establish a dam below Cedar Falls and build a plant which could generate electricity for both commercial and public use. The ballot favoring municipal ownership, submitted during a general city election, was supported by all leading candidates and political parties, who correctly read the tenor of public sentiment and who differed only in the scope of services to be provided by a city-owned lighting plant.² General public support of the measure was attributed to the public's view of the private systems operating in Seattle; the fact that the city was already operating its own water system, and that the system had a potential for hydroelectricity; the general expansion of city services during this period; the sense of civic pride and city building--SEATTLE SPIRIT--growing in the city, and the notion of the use of the city plant as a "yardstick" to regulate the rates of the private systems. The measure carried by a seven to one margin.

The 1902 ordinance determined that the city would build a municipally-owned plant. However, the scope of the project was yet to be determined. In December of 1904 a bond issue for \$250,000 was submitted to the voters, for the purpose of building a plant which would supply both business and residential consumers. Despite revisions in the operation of the private electric systems late in 1904, in an attempt to compromise support for the public plant by reducing rates, the bond issue passed.³ At that time, it was anticipated that hydroelectric power furnished by the Cedar River development would provide the city with energy for many years into the future. In fact, by the end of the decade the city would be searching for additional power sites to offset shortages.

On October 14, 1904, the city's first generators powered by hydroelectricity were started; by the end of January, 1905, the city began to light its own streets, and in September the city began to provide power to the private sector, primarily residences. A series of bond issues increased the initial 1,400 kilowatt capacity of the plant to a 10,400 kilowatt output in 1910. By the end of the decade the municipally owned system provided Seattle with one of the lowest electrical costs in the country: 8 1/2 ¢ per kilowatt hour was the maximum residential rate charged by the city, and the private companies followed suit---averaging generally 1¢/kwh higher, compared to the 20¢/kwh the Seattle Electric Company had charged until 1904, and the reduction to 12¢/kwh during the 1904 bond issue debate. The street lighting system, with a 600 per cent candle-power increase between 1905 and 1910, made Seattle, according to the city, the "Best Lighted City in America."⁴ In addition, the city had extended its service, competing with the private firms, to 15,000 residents and businesses by 1910, outnumbering the number of customers served by the Seattle Electric Company. The city had also extended power to suburban areas not served by the private concerns. By the end of 1910, the city was reporting surplus revenues of \$103,427.00.⁵

The Early Years

In 1910 the citizens of Seattle approved an ordinance establishing a lighting department, whose functions had previously been lodged under the supervision of the water department. The mayor, Hiram Gill, soon to be recalled for alleged corruption, appointed Richard Arms as superintendent

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of the new lighting department. Arms's appointment provoked some unease in the community, since he had been an employee of the city's chief competitor, the Seattle Electric Company, for nine years. In October, as pressure mounted for investigation of vice and corruption within Gill's administration, one anti-administration newspaper, the *Seattle Star*, began a campaign asserting that Arms's appointment was the result of an agreement between Gill and Seattle Electric, exchanging political support for the appointment of a superintendent who would work for the Stone and Webster interests. The administration of the city's lighting department became one of the major issues in the recall campaign against Gill. Charges by anti-administration activists against Arms included allegations of turning down profitable business contracts which would balance the cost of service extensions to sparsely populated areas producing low revenues; refusing service to two recently annexed suburbs--Ballard and Georgetown--where the Seattle Electric Company was charging higher rates because it did not compete with the city; failing to aggressively compete for new business. Late in 1910 a city council investigating committee attributed Arms' actions to inexperience, not lack of integrity, however, anti-Gill forces kept the lighting department issue in front of the public through the recall election, held in February of 1911. Gill was replaced by George Dilling, who had campaigned heavily on the lighting department issue.

When Arms resigned following the recall, Dilling appointed James Delmage ("J.D.") Ross to head the lighting department. Ross, a self-trained engineer, had been in charge of construction of the city's electrical facilities between 1903 and 1905, and served as an electrical engineer for the city until his appointment by Dilling in 1911. Ross had gained public attention with an article published in the *Seattle Post Intelligencer* in 1905, defending the city's new utility against attacks by municipal ownership adversaries who claimed the new electric facility was a failure. In the article, Ross set forth a vision of a greater Seattle, noting "What a city needs for her industrial growth is plenty of power at reasonable rates, and if this is given by a municipality, or if a municipal plant can hold prices at a reasonable figure, as it does...then the object of the people in instituting such a concern is attained."⁶ His ideas of "city building"--one of the principal Progressive Era themes-- were part of the agenda leading to expansion of the city's power system under his superintendency, culminating in the development of the Skagit Hydroelectric Project. In the 1911 Annual Report of the Department of Lighting, Ross stated that one of the primary uses of the city's utility was to establish Seattle as a manufacturing center by offering plenty of power at low rates to attract new industries. The program for city building was adopted in cities across the country between 1905-15, spurred by intra-city competition. The program was manifested in developing municipal services, such as streets, parks, sewers, schools, waterworks, and so forth, and in competition to attract industry to broaden the tax base, provide jobs, and, generally contribute to the city's growth and development. The city building theme, an integral part of the Progressive Era, was one which J.D. Ross was to refer to again and again in his efforts to develop and expand Seattle's electric utility. The municipal program for city building picked up again after the war; Seattle's lighting department expansion, through the Skagit River Hydroelectric Project, is representative of the post-war city building programs enacted throughout the country, such as the 130 million dollar improvements made by the city of Detroit between 1919 and 1922.

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Ross was one of the city's most enthusiastic boosters in a period characterized by widespread, optimistic expectations of rapid development of the west coast's principal cities, spurred by the anticipated opening of the Panama Canal. In annual reports of the Lighting Department, in advertisements in local newspapers, and in interviews, Ross continuously stressed the great future awaiting Seattle in the "new industrial era," to be furthered by inexpensive hydroelectric power. In 1914 he wrote, "The City plant has pioneered the way to cheap light and power and now is the time for our citizens to reap the advantage of the favorable position they hold in this new industrial era because of the public ownership of this splendid public utility."⁷ Ross' vision of Seattle's bright industrial future, sustained by inexpensive power, was shared by a wide range of political and economic leaders; the city's competitor, Puget Sound Traction, Light and Power Company (formerly Seattle Electric), even established a department to attract new industry in 1913. America's entry into World War I, and the subsequent stimulus to economic activity in Puget Sound, particularly in maritime-related industries, bolstered the "city building" visions, and reinforced Ross' efforts to secure additional hydroelectric sites for the city.

Seattle's electric rates were among the lowest in the nation in the pre-war years; the competition provided by the city plant contributed to a reduction of the maximum residential rates from \$.20 per kilowatt hour to \$.08 between 1900 and 1910, and were reduced further to \$.07 per kilowatt hour in 1911, and again to \$.06 in 1912. As the city lowered its rates, its competitor did likewise, in a race to extend service and increase customers. In 1915 rates were lowered again to \$.05 1/2. The leader for the rate reductions was Oliver T. Erickson, a businessman serving on the city council. Ross opposed every reduction, which he viewed to be at the expense of servicing industrial customers, as well as a subsidy by taxpayers to consumers, since street light rates were raised during this period. The city's system was, in effect, nationally recognized as a "yardstick" for setting electric rates, when the federal government, in the war year of 1918--where cities were directed to confine construction to war-related projects-- gave the city permission to float bonds to finance the Skagit Hydroelectric Project. The chairman of the Capital Issues Committee of the Federal Trade Commission, in granting the city permission to pursue development of the project noted that the municipally-owned system was "...a very important factor in the fixing of rates for power in the district."⁸

The development and administration of the city's electric system had a direct impact on both state and city government and politics. After Washington established a state Public Service Commission in 1911, Seattle's municipal ownership champions, including Ross, Oliver Erickson, civil engineer and politician George Cotterill, and University of Washington professor J. Allen Smith spent years battling legislative attempts, prompted by Puget Sound Power, to empower the Commission to fix rates for all utilities. Their successful campaigns against extension of the Commission's power were centered on two typical Progressive Era issues--home rule and municipal ownership. Municipal ownership advocates believed the Commission was under the control of private companies, who influenced appointments.

The Department of Lighting also had a significant impact on local politics, as noted earlier in relation to the Gill recall. Ross, who rose to prominence as a result of a recall in part due to the battle over municipal ownership, was to become the central figure in the city's next mayoral recall

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election, twenty years later, while the Skagit project was undergoing expansion. Between 1910 and 1918, the Department of Lighting was a frequent front-page and editorial topic in Seattle's newspapers which were the forum for debates on the management and expansion of the city system between municipal ownership forces and those who sought, for a variety of reasons, to limit the development of the city's system. Much of the debate focused on increasing the capacity of the city's electrical system, as residential and industrial demands continued to rise.

Even before 1910, it was apparent the Cedar River dam, a rock-filled timber crib weir that had always been viewed as a temporary dam, was not sufficiently exploiting the potential power available from the river. In 1908 the height of the weir was raised, and the city installed two 4,000 kilowatt generators to boost the power to 10,400 kilowatts. Recognizing the need for a permanent structure, plans for a plant which would provide enough water storage to produce 45,000 kilowatts were developed, and in 1910 Seattle voters approved a 1.4 million dollar bond issue for construction of a masonry dam downstream from the crib dam. That same year, however, a board of geologists asked to investigate the site's feasibility noted that the presence of glacial moraine could make the site unsuitable for a masonry dam, and their report recommended extensive preliminary testing. While preliminary work began on the dam, the city council appointed a special investigating committee of engineers in the spring of 1912 to evaluate the site, and this committee recommended the crib dam be repaired to last several more years while investigations on the suitability of the site were conducted. A Board of Public Works committee, consisting of Ross, A.H. Dimock, the city engineer, and A.L. Valentine, Superintendent of Public Utilities, overrode the engineer's report, minimizing the perceived seepage problem raised by both the geologists and the engineers, and stressing the loss in revenues and prestige to the city plant if work on the new dam were halted. Their report and further publicity in the local papers intimated that opponents of municipal ownership--particularly the Seattle Electric Company-- were seeking to limit the city system's expansion. Throughout 1912, the debate was waged in public, with additional issues, such as allegations of inefficiency and excessive costs, fueling opponent's arguments. Work on the dam proceeded, and was completed in November of 1914. By the spring of 1915 it was apparent the reservoir was leaking; seepage increased the size of Rattlesnake Lake, below the dam, flooding the town of Moncton. While various efforts to seal it were tried, the city, now growing short of electricity, added an additional steam generator to its Lake Union steam plant, built in 1914, as a back-up system, and erected a small hydroelectric plant using water from the Volunteer Park reservoir. In 1918, the city allowed water to accumulate behind the repaired plant, resulting in a wash out of the north bank and a flood which washed down the Boxley Creek valley, destroying railroad tracks, a small town and sawmills.

The "Cedar Dam Blunder" provided fodder for anti-municipal ownership propaganda. The "Boxley Blowout" politically jeopardized the principal supporters of public ownership, and impacted elections in the city in the mid-teens; Oliver Erickson, inextricably linked with the Cedar River fiasco was defeated in his bid for mayor in 1916 by Hiram Gill, who had been recalled from that post only six years earlier. Municipal ownership proponents were referred to in the conservative press as socialists and cranks, and Erickson as a "slobbering demagogue." Ross, too, was subjected to bitter attacks. Ironically, it was the lack of sufficient electric power and the

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reliance on precious fuels at the steam plant, due to the Cedar River fiasco, which helped sway the Federal Government, during the war, to approve the city's plans to develop the Skagit River.

Expansion

Near the end of his first year of superintendency, J.D. Ross began to search for a second hydroelectric site to ensure survival of the municipal system. Although the Cedar River dam was scheduled for enlargement, and the auxiliary steam plant on Lake Union was soon to be built, Ross, with his city building vision, was anticipating great development in Seattle, and he wanted the city's system positioned to help create it. In 1913 he reported: "The city plant has passed the experimental stage, and has proved its efficiency as a rate maker in competition with a powerful private corporation. Its field should...broaden into that of a city builder, winning and holding commercial supremacy of the Pacific Coast and Seattle."⁹ But by the end of 1916, the city was relying on the expensive auxiliary power supplied by the steam plant, due to the Cedar River "blunder," and the municipal system was unable to supply its industrial customers with the previously agreed upon low rates. The principal issue became one of supplying enough current to stay ahead of demand, and to stay in competition with Puget Sound Traction Light and Power Company (Seattle Electric), which had sufficient power.

Throughout the 'teens, Ross endeavored to secure and develop an additional hydroelectric site for the city. In 1912 voters approved a bond issue for the purchase of one of two sites: the Hebb site on the White River, which would divert the river's waters via conduit to a reservoir and power site near Buckley, Washington, and Lake Cushman on the Skokomish River, which would divert water to a power house site on the Hood Canal. When Cushman proved their more attractive site, and it was determined that condemnation was the best way to secure it, City Light instigated proceedings for condemnation and the plan was placed on the ballot in March of 1914. The proposal failed; it was a serious setback for Ross and City Light, facing power shortages, and a victory for anti-municipal ownership forces, who had campaigned heavily against it. With the Cedar River Dam crisis in 1915, and the ballot defeat for condemnation of the Cushman site, it took the city council until December of 1916 to authorize three million dollars in bonds to construct a hydroelectric facility; bids were called for in March of 1917, due for opening in July. In those few months the Puget Sound Traction, Light and Power Company had purchased the two most promising sites the city had been considering--Hebb and Sunset Falls--and had tied up the possibility of pursuing condemnation of the Cushman site with court injunctions.

In August of 1917 Ross began to seriously lobby the federal government to release a site on the Skagit River, which the city had studied in 1915 as a possible hydroelectric site, but had not pursued because permits for its development had already been issued to the Skagit Power Company, which had since been absorbed by the Puget Sound Traction, Light and Power Company. Using the wartime demands of Seattle's shipyards and other war-related industries as a wedge, noting that the city's municipal electric system was approaching its maximum production and relying heavily on precious fuels, Ross and other city representatives were able to secure permission to

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apply for a permit on the Skagit, and in 1918 the city was issued a permit to build a hydroelectric facility in the Skagit gorge.

By securing the Skagit River, the city ensured the survival of its municipal plant. The plant had been established to serve as a rate regulator, a "yardstick" to control the perceived rapaciousness of the private utilities. It had been successful in fulfilling that role, but its ability to maintain it depended on securing additional power sources: with the development of the Skagit River, Seattle, and eventually the entire region became the yardstick against which power rates in the country were measured.

Public Versus Private Power: The 1920s and 1930s

In the months it took to secure all the federal approvals necessary to build on the Skagit, the Lighting Department had the support of the city's leading politicians. Both candidates for mayor in 1918 supported the project, although some members of the city council opposed pursuing development beyond the first power plant. The permit was delayed by the Capital Issues Committee of the Federal Trade Commission, which had jurisdiction over the ability of municipalities to issue bonds during the war. Its sub-committee, which was considering the project, received letters from the Puget Sound Traction Light and Power Company opposing the issuance of the bonds, and then, later proposing that the city system be interconnected with PSTLP, if the city was so short of power. The sub-committee adopted the proposal; through the intervention of Washington's senator, Wesley Jones, the Capital Issues Committee reconsidered the Skagit bond approval, and based on projected power shortages--for both the city and PSTLP--before the anticipated end of the war, then 1920, the city received the bond issuance approval it needed.

This political maneuvering on both the city's and the private company's parts, was one aspect of the private versus public power issue that characterized the debate on the operation of utilities in this country in the 1920s. Throughout the decade, electrical utilities were consolidated into large concerns throughout the country; the public ownership took a back seat to the spirit of private enterprise. To counter this, the Super Power League was organized in Washington, D.C., by Senator George Norris of Nebraska, and Samuel Gompers, president of the AFL, with the goal of public ownership of all electric utilities. The League's organization in Washington State was headed by Ross, Oliver Erickson and state representative Homer Bone: Ross and Bone favored a link between the municipally-owned Seattle and Tacoma plants and rural power districts, which would distribute the current. In 1923 Seattle and Tacoma established a tie line to interconnect their two systems, allowing an exchange of 15,000 kilowatts. The local league sought to enable cities to sell power beyond the city limits, and the Bone bill, as came to be known was drawn up to effect this. During this same period, the private companies introduced a bill to place municipal utilities under the jurisdiction of the state's public utilities commission. The effort to place the Bone bill on the ballot was resisted by the private companies--to the extent of hiring people to collect signatures in favor of the ballot, and then destroying them.¹⁰ When finally placed on the ballot, the private companies propagandized heavily against the bill throughout the state, beating the drums of private enterprise and questioning the benefits that would supposedly accrue to farmers and other

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rural folk if the bill passed. It failed statewide in the November, 1924, election, but passed in both Seattle and Tacoma.

Following the defeat of the Bone bill, Ross began to counsel small municipal plants in the state in their struggle with private companies, and tried to assist small towns in establishing their own plants, looking forward to establishing a tie line linking all the public plants in the state. Small plants throughout the state had been established in the first decade of the twentieth century, when no private firm would undertake the costs. In the 1920s, large private companies were gobbling up the small municipal plants, many of which could not meet the demands for electric power. Ross hoped to forestall these takeovers, until a tie-line could be established between municipal plants. Tie-lines were indeed ultimately established between many small towns--but they were between and within private utilities, as one small town after another opted to purchase power from the large private companies with initially substantially reduced rates.

During this decade, Seattle was one of a proportionately small number of cities which upheld the role of municipal ownership, in a period generally dominated by the enlargement and expansion of private utility firms. The Skagit Hydroelectric Project had ensured the municipal plant's survival, where many other, albeit smaller, towns and cities succumbed.

Towards the end of the decade, the Federal Trade Commission began an investigation of power company activities throughout the nation--the findings revealed a story of politician chicanery, bribery, and illegal financial deals. In Washington state, the FTC revealed that the Voter's Information League of Seattle was financed by Puget Sound Power and Light Company (formerly Puget Sound Traction Light and Power), and the principal purpose of this purportedly non-partisan organization was to discredit City Light. Ross countered such attacks by establishing The Friends of City Light, in 1926, a loose coalition of municipal ownership advocates, and later by the creating the Citizen's Municipal Utilities Protective League. In the propaganda released by these groups, Puget Sound Power and Light was referred to as THE POWER TRUST. Ross, in advertisements and literature released by PSPL, was "full of hokum," and a zealot. Seattle, Washington's senator C.C. Dill noted, "...is a hotbed of the national fight. The power interests will stop at nothing in their dying struggle to gain control of the great natural resources."¹¹

During this period, the organizations that had initially supported municipal ownership--the Chamber of Commerce and the Municipal League, shifted allegiance. Following the general trends in the country, and reacting against such proposals as the Bone bill, these two business-based organizations withdrew support from City Light.

In 1930 Ross, long dissatisfied with having to work with the city engineer's office, asked the city council to place a charter amendment measure on the ballot, which would allow City Light to establish its own engineering department, answerable to the superintendent. With the support of a report by an independent engineering firm hired by the city to assess the lighting department, Ross was able to persuade the council to place the measure on the spring, 1931 ballot. The plan was attacked as a self-serving power ploy by opponents of Ross, and fears and accusations were expressed regarding the measure's ability to give Ross the power to distribute patronage and create

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a political machine. The amendment was opposed by the city's mayor, Frank Edwards, who saw it as a costly addition to the city payroll. There was sufficient disincentive--and no perceived measurable incentive--in the issue to project a defeat at the polls.

Then, on the eve of the election, Mayor Edwards dictated a letter of dismissal of Ross, charging him with inefficiency. The letter was leaked to Ross that evening--it wasn't to be sent until the day of the election, after the newspapers had published--and in a special edition of the liberal *Seattle Star*, which had supported Ross throughout his political career, the news of his firing was made public. With news of Ross' dismissal, the voters, enroute to the ballot box, passed the charter amendment that had seemed only the day before to be doomed to defeat. In addition, supporters of Ross running for city council were elected by large margins to the city council. Even before the results were in the Citizen's Municipal Utilities Protective League began planning for Edwards' recall.

The recall issue was front page news until the election was held in July. Edwards was characterized as a stooge for the private utility companies, and as a representative of the privileged elite by the League and its supporters. The grounds for the recall were based on the mayor's firing of Ross for false reasons. While the recall campaign continued, Ross left for New York in the capacity of consulting engineer on the St. Lawrence hydroelectric project, laying the foundations for future appointments at the national level, when he and then-Governor of New York, Franklin Roosevelt became friends. The recall drew support from labor, the county Democratic organization--the first time it had been drawn into a conflict on the public power, and the most of Seattle's daily newspapers. On July 13, 1931, Edwards was recalled from office by an overwhelming majority of the voters. When city councilman Robert Harlin was elected to serve as interim mayor the following day, he immediately reappointed Ross as Superintendent of Lighting.

The recall battle had become inextricably associated with the issue of private--Power Trust--power and municipal ownership. In the wake of the successful recall, a number of principal supporters of public ownership came into leadership positions in Seattle politics. "It is City Light's victory," commented Superintendent Ross. "The success of the recall serves notice on friends and foes of public ownership that Seattle is definitely committed to protection and progress for its city-owned utility."¹²

Skagit Hydroelectric Plant Engineering, Technology and Aesthetics

The dams and powerhouses of the Skagit River and Newhalem Creek Hydroelectric Projects--Newhalem, Gorge, Diablo, and Ross--were built over a period of fifty years. As an ensemble owned by a single public power agency in one geographic area, they clearly illustrate the patterns, variations, evolution and transitions of hydroelectric technology between the 'teens and the 1960s. The three plants on the Skagit River are representative of the technology developed in the West to store water in isolated and remote locations, utilizing the thin arch design in dam construction to

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reduce amount and cost of materials, high heads, and sophisticated long, high voltage, point-to-point transmission. Many of the engineering procedures used to build the dams were unique solutions to construction problems posed by the rugged terrain. While the plants are generally representative of typical hydroelectric technology of the 1920s and '30s, with features common to other plants built during the same period, features in some Skagit plants are significant for being the first of their type. Some of the country's best-known engineers were associated with the planning, design and construction of the plants. In addition, the Project was a nationally-known showcase promoting hydroelectricity and municipal ownership, reflected in various features of its design.

The River of a Million Horsepower

Even before the City of Seattle was granted permission to apply for hydroelectric development on the Skagit, J.D. Ross had considered the site at Ruby Creek to be the key to development, because it was here that the gorge widened to form a natural large storage reservoir. The first plan for Skagit development proposed by Ross included one dam, located at Ruby Creek, and one powerhouse ten miles down river, connected by a long, twenty by twenty foot power tunnel. However, as preliminary survey work proceeded on the Skagit in 1917, it became clear the logistics involved in building a dam miles upriver from even the future site of Newhalem, still only accessible by means of a pack horse trail, would preclude the Ruby site's early development. Ross adjusted his proposal to a three-stage development of the Skagit, where a dam and powerhouse would first be built below Gorge Creek, followed by the Ruby dam, which would create the large storage reservoir, and then, third, a powerhouse downstream, somewhere in Diablo Canyon. After the Gorge plant was completed, in 1924, it was apparent transportation to the Ruby site was still a major problem, and the Diablo Canyon site, only six miles upriver from Gorge, was selected as the second stage of development. A dam built there, it was reasoned, would provide means of water transportation to the Ruby site, rather than the much more costly measure of building a railroad through the precipitous canyon above Reflector Bar. Thus, the progression of construction of the plants started with Gorge, the furthest downstream, proceeding to the Diablo site, and finally Ruby-later Ross. As noted in Section 7, it was not until Gorge High Dam was completed in 1961 that the "River of a Million Horsepower" reached its full potential, as envisioned by Ross forty years before.

As early as 1908, with completion of the Cedar River project, city power proponents realized the plant would soon be loaded to its maximum capacity, and that another source of power would be necessary if the city was to continue to compete with the private power company. In the years following, up to 1917, the Lighting Department scrambled to develop sources within its control--the establishment of the Lake Union steam plant in 1914; the establishment of the small hydroelectric facility at the Volunteer Park Reservoir; and the hasty decision to build the new Cedar River dam, which was completed in 1914. Simultaneously, the city began to investigate the possibilities of more remote hydroelectric sites throughout the state. In March of 1912 voters approved the purchase of the Hebb site on the White River and the Lake Cushman site on the Skokomish. Investigations in the following months showed Cushman to be the preferable site, and that acquisition by

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condemnation was more feasible than purchase. The condemnation plan failed in a March, 1914, vote.

The city, with Ross pushing for the site, continued to survey Cushman as well as to evaluate additional hydroelectric sites, including Sunset Falls on the Skykomish River; Packwood Lake, south of Mount Rainier; the Stillaguamish River, the Elwha River, with an extant hydroelectric plant operated by the Olympic Power Company, and several other sites. These latter included the Skagit River, which the Skagit Power Company, controlled by Stone and Webster, had filed a claim on, but in 1915 City Light exchanged letters with the United States Forest Service, which retained jurisdiction over the site, in an attempt to determine if the site was available, since the Skagit Power Company had made no move to develop it. With additional information coming in on other sites, Ross dropped the idea of pursuing the Skagit site in December of 1915.

With the 1914 ballot defeat, and struggling with the fallout from the Cedar River Dam failure, it was not until December of 1916 that the city council authorized issuance of 3 million dollars in bonds to construction a hydroelectric facility. However, it was not until March of 1917 that bids were called for the project, due on July 20, 1917. Within weeks of opening the bids for a hydroelectric facility on one of the principal sites, municipal ownership proponents learned, to their dismay, that the Puget Sound Traction, Light and Power Company had purchased both the Hebb site and the Sunset Falls site, in June of 1917, effectively blocking the city's plans for the two most promising sites.¹³ Almost at the same time, both Seattle and the city of Tacoma were served with injunctions, preventing them from acquiring or developing the Cushman site, in large part due to the private company's squatter's claim and the legalities of the condemnation proceedings. The bid openings were postponed.

In early August of 1917 the city posted a notice of filing at the Skagit site and on August 2 Ross wired the State Hydraulic Engineer, Marvin Chase, asking for a state permit to "...appropriate the waters of the Skagit River to the extent of fifty thousand cubic feet per second at a point just below the Thundercreek trailbridge..."¹⁴. Between August and December Ross and other city officials lobbied officials in the U.S. Forest Service and the U.S. Department of Agriculture to release the Skagit site, since Puget Sound Traction, Light and Power Company had failed to develop it over the years it had held a permit to do so (since 1913), and had since purchased other sites--e.g. Hebb and Sunset Falls--for development. In September, Ross and the city's corporate council, Hugh Caldwell, went to Washington D.C. to meet with the Secretary of Agriculture regarding acquisition of the Skagit site. One of the persuading strategies was the fact that the city was mainly relying on the Lake Union Steam Plant for power, and was rapidly approaching its power limits, and that Ross was funnelling as much power as possible into the city's shipyards, operating on double shifts due to the war effort. On December 25, 1917, the city received permission to apply for a permit, and in January, Caldwell returned from Washington with a letter from the Secretary authorizing the city to call for bids for construction of a hydroelectric plant and granting a preliminary permit for the site.

Although the city called for bids in January and opened them in March of 1918, it was determined that detailed surveys and drillings would have to be performed before an adequate design could be

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prepared, and these first bids were rejected. The Diamond Drilling Company, owned and operated by the Lynch Brothers, was hired to drill test holes in the area of Gorge Creek, which had been identified as the location of the first dam, when it became clear the Ruby site was simply too inaccessible. The city also had survey crews in the field, and had sent the city hydrographer to the Skagit to identify a location for a temporary power station to provide construction electricity--ultimately, Newhalem Creek was selected, and the Newhalem plant built. The plan in 1918 was to build a 100-foot high masonry gravity dam at the Gorge site, with an unlined 10,000 foot long tunnel, terminating in a surge chamber, with penstocks leading to a powerhouse containing six generators. The second step was to build Ruby dam, necessary to maximize the capacity of the Gorge plant, which at that time was also envisioned as a gravity dam. The final development would be the Diablo plant. The cost estimates prepared in 1918 were based on the prices of contracts recently let by New York City for the Shandaken Tunnel, by San Francisco for the Hetch Hetchy project, and by Los Angeles for the Los Angeles Aqueduct.¹⁵ After several months of local and national political machinations, the city, on August 2, 1918, was granted permission to sell utility bonds to finance the Skagit Project by the Capital Issues Committee of the Federal Trade Commission. The decision was based on reports by three different investigators, all of whom assumed the war could last until 1920, and that the city would soon experience a shortage of power by the end of the year.

In the summer of 1919 drilling crews were able to locate bedrock in both the Gorge and Ruby sites which would support dam construction, and the Seattle City Council issued an ordinance to allow construction. Along with the ordinance, the city passed a resolution to hire the best available engineer in the country to supervise construction: Carl F. Uhden, a former employee of the Washington Water Power Company, was hired for the job, and he, in turn, hired A.P. Davis, Chief Engineer of the Reclamation Service as an advisor for the project. The development of the Skagit was underway.

Newhalem Creek Power Plant (Resource #26)

The history of the physical development of the Newhalem Creek Hydroelectric Project, the first City Light dam to be constructed in the Skagit River area, is described in Section 7. Its purpose was to provide temporary power for construction of the first dam and City Camp (Newhalem). Although rebuilt after a fire in 1966, the powerhouse still uses the original machinery, and the original penstock and power tunnel were retained when the dam was rebuilt. Since these elements and features are in place and functioning today, the plant qualifies as a contributing site. Its significance lies in the role it played in the development of the first dam on the Skagit River--Gorge--and in its development of the company town of Newhalem. Further, it has continued to play an important part in the operation of the City of Seattle's principal hydroelectric facility, providing an additional source of power to Newhalem, and serving as station service power for Gorge Powerhouse, providing backup for the larger plant. Until it was automated in the early 1970s--the first plant on the Skagit to undergo automation--it was a training aid for all new operators who came to the Skagit. It is the oldest operating power plant in the Skagit area.

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Continuation SheetSection number 8 Page 15Gorge Power Plant

The history of the physical development of Gorge Power Plant is described in Section 7. The Gorge Power Plant is the first of the three plants built on the Skagit River by the City of Seattle. The erection of the Gorge plant ensured the survival of the municipal utility, which in 1918 had almost reached maximum capacity, and was, for a time, threatened by the specter of joint operation with the private company, Puget Sound Traction, Light and Power Company, under wartime conditions laid out by the federal government. Its plan of development--to be on-line within eighteen months of the start of construction, as projected repeatedly by J.D. Ross--secured the necessary federal approvals to initiate construction and thereafter to proceed, despite many local political battles, to develop the rest of the project, including the additional two power plants. That construction took over twice as long as predicted by Ross is in part due to the nature of one of its then unique features --the 11,000 foot-long, horseshoe-shaped power tunnel and its associated surge tank, which is significant for being the first of its type, and necessitated the development of a special gun which shot mixed concrete into the area between the forms and the rock walls of the tunnel.

The plant itself was typical of hydroelectric technology of the 1920s, although the realization of the originally-planned high dam took over forty years. The machinery used in the plant--S. Morgan Smith Company vertical Francis turbines and Westinghouse generators--are representative of the type used in other plants dating from this period of hydroelectric development. These generators, rewound, are still in use today, driven by the water from the Gorge High Dam. The high dam, although post-dating the historic period, also employed new engineering techniques, particularly an engineering procedure used to freeze water which had percolated through gravel under the existing diversion dam to dewater the channel for construction.

The plant is significant for its role in the development of a major regional power supply system. Its construction ensured the survival of Seattle City Light, a municipal utility engaged in competition with the private company, Puget Sound Traction, Light and Power Company. For further discussion of significance, refer to the National Register of Historic Places Multiple Property Documentation Form, *Hydroelectric Power Plants in Washington State, 1890-1938*, prepared by Lisa Soderberg, and approved by the National Register on December 15, 1988. Please note: the errors and omissions in that nomination have been corrected in this nomination. The powerhouse (Resource #27) has integrity of design, materials, workmanship, setting, location and association.

Diablo Power Plant

The history of the physical development of the Diablo plant is discussed in Section 7. By 1924 Ross had come to the conclusion that the development of the site at Ruby Creek--with its great potential for water storage and high head--would have to be the last phase of development. Despite the completion of the Gorge plant, power demand continued to outstrip output by the city: in 1926 an upsurge in demand required the city connect a small hydroelectric unit to the overflow of one of the

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city's reservoirs. The Diablo plant was the next logical, practical, accessible and least expensive step in the Skagit Project.

In explaining the final development plan--Gorge, Diablo, with its own powerhouse, and Ruby--Ross declared:

Our whole City Light System must double in a little over three years and its activities acquired over twenty years must be doubled in the next three and a half years...City Light has passed its small town stage. Its future construction must be of the most enduring and dependable kind. Large units are cheaper per kilowatt to operate. Interruptions to service through inferior plants or through shortage of power are fatal to our success. All this points to Skagit as the dependable source...This plan lends itself well to construction and financing steadily over the time that the rising demand for power will allow for completion.¹⁶

Despite some opposition to Diablo on the City Council, led by Oliver T. Erickson, who believed the city should erect a concrete buttress dam at the Hanging Rock location to replace the Gorge crib dam, and then cease development of the Skagit, construction on an extension of the railroad to Diablo began in 1926.

In the spring of 1927 the design contract for the dam was let to The Constant Angle Arch Dam Company, a consulting firm whose principal was Lars Jorgensen. In September of 1927, the construction contract was let to Winston Brothers of Minneapolis. Educated in engineering in Germany, Jorgensen had worked for General Electric in Schenectady; Edison Electric in Los Angeles; Pacific Gas and Electric in San Francisco, and the consulting firm of F.G. Baum. He formed his own firm in 1914. He patented the concept of the constant angle arch dam, a thin arch dam based on a conical geometry, rather than a cylindrical geometry. The Salmon Creek Dam in Alaska in 1914, designed by Jorgensen, was the first constant angle arch dam built in the world, and is considered one of the most important early 20th century dams.

The constant angle arch was eminently suitable for Diablo Canyon, which rose to 200 feet above the river: it used significantly less materials than an arch dam, and even less than the massive gravity dams; its structure was especially applicable to narrow canyons, and the savings in materials saved both direct costs, and the costs of transportation into remote sites. While the Diablo Dam (Resource #42) is not one of the first constant angle arch dams built, it is representative of the structural dams erected in the first thirty years of the 20th century, and particularly of concrete arch dams, which were frequently, like Diablo, located in canyons where rock walls could resist the lateral thrust of the arches. At the time of its construction, it was, at 389 feet, the tallest thin arch dam in the world. The roadbed over the dam, on raised arches, is unique, clearly an aesthetic design decision, rather than a structural one, and the ornamental light standards which line the roadway reinforce the attention paid to visual details, apparent throughout the plant.

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The construction of the dam presented significant engineering challenges. One of these was access to the site. The Skagit River Railroad was extended up the canyon from Newhalem, replacing the narrow mule trail, a construction process that in itself was no small feat, with blasting of the steep canyon walls required to create a standard-gauge rail bed. The rail line was electrified to accommodate the steep grades of the canyon; even so, it took both a steam and electrified locomotive to haul some heavily-laden cars to Reflector Bar. It terminated at Reflector Bar, where a funicular railway was built to transport the cars up a 68 percent grade for almost 600 feet, to connect with additional rail tracks laid at the top of the mountain. Winston Brothers erected a 1,985-foot high cableway of two and one-quarter inch wire rope, spanning the width of the canyon. The cableway was anchored in twenty-ton concrete cylinders, reinforced with sixty pound rails, embedded in the mountain walls. It was used to transport the pipes, gates, and other dam elements to their location in the dam; it was capable of carrying fifteen tons. At the time, the cableway was one of the longest ever used with such a large capacity.¹⁷ Other unique or impressive construction techniques included a series of belt conveyors and hoist towers to move concrete from the mixing plant at the upper level near the dam, to the dam site, and an elephant trunk at the end of the conveyor to allow continuous delivery directly to its intended location on the dam, minimizing hand labor. On August 27, 1930, the dam was complete and a dedication ceremony was held.

The penstocks, surge tank and 1,990-foot long power tunnel, as well as the powerhouse foundations had been built and financed during the dam construction. Also, the generators and other powerhouse equipment had been ordered and stored in sheds on Reflector Bar. However, in the wake of the 1929 stock market crash, the bond market fell, and construction on the powerhouse was stalled until 1934, when the city was able to find purchasers for 4.9 million dollars in bonds. The Moderne powerhouse (Resource #35) is representative of the type of architecture applied to industrial buildings of this period. However, its interior features are unusual, if not unique: the terrazzo floors, the tiled fish pond, the wrought-iron staircase with its curved aluminum handrail, the elevated generators, were all installed in anticipation of public viewing. The powerhouse was a showcase for the city's hydroelectric project, and a promotional tool for future project development.

When delivered, the equipment used in the powerhouse was state of the art. The generators were the highest rated in the country for the time, with ratings of 66,700 kva, and the crane was reputed to be the largest in the world. The powerhouse was finally completed in September of 1936.

Completion of the Diablo dam altered the flow of the Skagit, and guaranteed an increased output of power at the Gorge Powerhouse, adding approximately 33,000 kilowatts of capacity to the Gorge plant. At this stage of the Skagit Project development, the city had increased its generation of power from 59 million kilowatts in 1917 to over 384 kilowatts; it had become a major public utility.¹⁸

The Diablo Power Plant is a historically significant example of hydroelectric technology of the 1930s; while none of the technology was new, some elements were the largest or tallest ever built to that time. The construction of the dam rectified irregular water flow to Gorge Powerhouse, and the

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entire plant contributed to the growth of power output by the city, which enabled it to stay in competition with the private company operating in Seattle. A number of unique and innovative construction techniques were used to build the dam. Both the dam and the powerhouse, with the attention to architectural and engineering details, served as a showcase for hydroelectric technology, for the Skagit Project, and for promotion of further development on the river. The dam and funicular railway were--and still are--highlights of the Skagit Tours. The structure has integrity of design, workmanship, setting, location, feeling and association. For further discussion of significance, refer to the National Register of Historic Places Multiple Property Documentation Form, *Hydroelectric Power Plants in Washington State, 1890-1938*, prepared by Lisa Soderberg, and approved by the National Register on December 15, 1988. Please note: the errors and omissions in that nomination have been corrected in this nomination.

Ross Power Plant

The history of the physical development of Ross Power Plant is discussed in Section 7. The dam is the third and largest dam on the Skagit River, and its completion in 1949 was the fulfillment of the original design intention of the Skagit Hydroelectric Project.

With construction delays at Diablo and the Depression, it wasn't until 1933, when Ross was searching for government funding to finish the Diablo powerhouse, that he also asked for money to begin work at Ruby Creek. Those funds were never forthcoming, however, in November of 1936, City Light received three million dollars from the Public Works Administration for clearing timber from Ruby Basin and for building a new transmission line to Seattle, and in December, with the commitment of the federal grant, City Light was able to sell over four million dollars in bonds to begin the Ruby project. Some preliminary design work of the dam was done by Jorgensen's firm, the Constant Angle Arch Dam Company, which had designed Diablo Dam; additional designs were provided by the consulting firm of J.L. Savage, and by the City Light staff. In August of 1937 General-Shea-Columbia Company, a consortium of contracting firms, was awarded the contract to build the first step of the planned three-step construction of the dam. There were some delays associated with construction of the first step: the level of bedrock was approximately forty feet lower than anticipated, which slowed excavation, and in 1939 the contractor was hit with a strike, which delayed construction by several months. The first step, 300 feet high, was completed in January of 1940; by May of that year the new lake behind the reservoir was nine miles long.

Because the dam was slated for erection in stages, the design called for construction of vertical and horizontal keys on the downstream face of the dam, giving the structure its "waffle face," and allowing for an interlocking system as the different stages were built.¹⁹ During its construction, approximately 350 million board feet of merchantable timber was removed from the basin behind the dam. By 1951, the timber was being towed to a loading dock upstream, and loaded onto trucks which hauled them through Canada to the Fraser River, where they were dumped and floated in rafts to Puget Sound. Construction materials for the dam were transported by barge up Diablo

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Lake: when the third step of the dam was finished in 1949, over 20,554 railroad gondolas full of gravel and 2,558 car loads of cement had been moved by water to the dam site.²⁰

The second step raised the dam an additional 195 feet. Work began in 1943, funded in part by a grant from the federal government. The contract, with General-Shea and Morrison-Knudsen companies-- also included the construction of the 1,900 foot-long power tunnels. When the Second World War ended, three hundred workers were added to the construction force, and the work was completed in 1946. With the work force in place on the Skagit, the third step, raising the dam to a total height of 540 feet, was begun that year and completed in 1949. The reservoir reached its full height of 1,600 feet above sea level in 1953, when the spillway gates were added. The dam was re-named in honor of J.D. Ross, who had died in March of 1939, prior to completion of the first step. The plan to add an additional 121 feet to the dam, as a fourth and final stage, was abandoned in the 1980s, after intense opposition from various public interest groups.

Ross powerhouse post-dates the historic period; begun in 1948, it was completed in 1952, and reached its full operational capacity in 1956, when the fourth generator was installed.

J.D. Ross, Willis Batchellor, and others were attracted to the Skagit by the enormous potential they could see in Ruby Canyon. The possibilities for a million horsepower power project were evident in the steep canyon walls, with the potential for impounding over a million acre feet of water. When closer, smaller sites which the city had investigated in the 'teens became unavailable, the Skagit's potential was appealing. Lacking the funds and means to develop that high and remote site, Ross opted for developing the Gorge site first, but it was Ruby to which he looked over the years to meet the needs of a rapidly growing urban center. The Ross Dam was the key to developing the "River of a Million Horsepower," a slogan which appeared in almost all City Light literature. The dam is an integral part of the Skagit Hydroelectric Project, and its impounded waters are what enabled the city to truly claim the Skagit produced the "million horsepower," once Gorge High Dam was finished. When the dam and powerhouse reach fifty years of age, it is recommended that this nomination be amended to include their listing as contributing resources.

Showcase

The entire Skagit Project was on display to the public, almost from its inception. Ross would frequently take politicians, engineers, club presidents and other "opinion makers" up the Skagit canyon to sell its potential. In 1924, the first publicized tours were held on the Skagit, consisting of one-day excursions. By 1938 the tours, now two-day affairs, complete with meals and transportation to and from Rockport, served thousands of people every summer. The history of the tours is outlined in Section 7, under the headings "Tourist Town," and "Unrealized Diablo," because of the impact the annual influx of visitors had on the company towns. However, it was the power plants Ross wanted to sell, and it was the plants which served as the backbone of the tours. The trip up the Incline in an open-air gondola; the evening slide shows on the project, frequently conducted by Ross; the visit to the attractive and impressive Diablo Powerhouse and Dam; the boat tour up Diablo Lake, accompanied by amplified music from the lake's edge, to view the Ruby Dam

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site--all these were highlights of the tours, introducing or confirming the belief in technology as the solution to the problems of humankind.

A typical two-day tour in the 1930s would include an afternoon arrival at Newhalem via Seattle City Light's private railroad; lodging assignment; dinner at the Commissary ("Gorge Inn"); an evening walk across the pedestrian suspension bridge to the Newhalem Powerhouse; a slide show--later a color film--of the project in the Newhalem Recreation Hall; an evening walk in Ladder Creek Falls park. The second day included breakfast; a six-mile train ride to Diablo; a tour of the Diablo Powerhouse, and, in later years, a visit to the zoo; the trip up the Incline to view the dam; a boat ride on Diablo Lake to the Ruby site, and later to see the progress on the dam there; lunch back in Newhalem; a daylight visit to the rock gardens of Ladder Creek Falls Park and a visit to Gorge Powerhouse, and departure in mid-afternoon. Frequently, organized groups would take up part of the tours, or be given special tours: these ranged from the Seattle Plumbing Supply Salesmen's Association to the Public Ownership League of America, which visited Diablo Dam in 1928.

The tours not only attracted support of Seattle and Washington State residents, they served to make the project nationally famous. They served as a perfect vehicle for attracting national attention to the plants. A writer for *American City* noted:

"The Skagit, owned by the city of Seattle, Wash., might have been just another big hydroelectric development. Instead, it has been so dramatized and socialized that it has become a major tourist attraction and a famed community adventure. The project alone, with its ultimate installed capacity of 1,120,000 horsepower, in its wild mountain setting in the high Cascades 100 and more miles north of Seattle, is well worth a visit. But it has been so embellished...that it has taken on unreal, thrilling, beauty."²¹

In regards to the tours, a special correspondent for the *Engineering News-Record* stated, in 1935, "...Seattle is doing a very excellent job of getting its citizens to believe in municipal ownership of power...In all this [the tours] the citizen of Seattle is made to feel personal ownership, and he has pointed out to him the economies of municipal management."²² *Collier's*, *Harper's*, and *Public Ownership*, were other national magazines and journals which featured stories on the Skagit Project in the 1920s and '30s, all mentioning the tours.²³

Thus, while the technology of the hydroelectric plants, in general, may have been typical of the times in which they were built, and perhaps not as significant for engineering break-throughs as some other plants built during that period, they achieved popular recognition on a national scale, through the implementation of the Skagit Tours.

After an eight-year hiatus, during and following World War II, the tours recommenced. They continue today, in a more abbreviated format. They start at Diablo, in the old 1940s school building, where a small museum displays the history of the Skagit Project, and continue with a ride up the funicular railroad, a boat tour of Diablo Lake, and a visit to Ross Dam and the Ross Powerhouse interior.

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The Municipally-Owned Company Towns

The two company towns associated with the Skagit Project--Newhalem and Diablo--began as construction camps housing and servicing workers and engineers building the hydroelectric plants. Early public buildings, such as Newhalem's Commissary, were intended for continued use by crews operating the plants, after construction was complete. Early housing was intended for construction workers--the bunkhouses and three-room cottages were not initially intended to house permanent employees. In fact, there were only a few periods throughout the history of the Project when construction was not underway somewhere, and housing availability throughout most of the Project's history was limited. Both towns, despite periodic attempts by Ross to alter their physical appearance and function to conform to his idea of mountain resorts showcasing the city's hydroelectric facility, evolved into an architectural melange of "temporary" and "permanent" structures in which the residents of the town lived, did their business, and developed their communities.

The company town of Newhalem, although altered, retains integrity of location, setting, materials, workmanship, feeling and association. The site retains both historic buildings and historic patterns of land use, spatial organization, and circulation. The buildings and structures dating from the historic period continue to provide a strong sense of the place as it appeared in the 1920s and '30s: the principal buildings serving the town from its earliest years--the Commissary, Mess Hall, and Hotel--still provide the spatial organization of the Main Street axis, which still terminates at a pedestrian suspension bridge over the Skagit River, located in the same site as the original bridge. The houses on Silk Stocking Row--the "permanent cottages"--are substantive reminders of the grand plans Ross had for development of the town.

The historic growth and development of the town are recorded in several extant structures: the old Cook's Bunkhouse, never intended to last beyond the construction camp period, represents the earliest period of development on the site; the new Cook's Bunkhouse, the "Pansy House" and Building #70, built in the '30s to serve the thousands of tourists who visited the Skagit, all reflect the town's role as a promotional tool for the hydroelectric project. Although the town's original recreation halls are gone, they have been replaced by a building in the same location serving the same purpose. While the temporary construction camp cottages--never intended to last as long as they did--and unpaved streets serving them have been removed, a sense of how the Upper Camp area was organized is evident in the trees planting patterns from the historic period, which remain intact, adding to our understanding of the historic landscape.

The company town of Diablo no longer retains its visual integrity. All historic residential structures, with the exception of House #2 (Resource #34) and the remnants of the "Lodge" have been replaced by buildings post-dating the historic period. All historic service buildings and structures, with the exception of the water tower, have also been removed, replaced or moved: the original Diablo school building, now the Communications Building (Resource #39), was moved,

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and both its function and appearance altered, and its replacement post-dates the historic period. The camp commissary was replaced by the present 1950s commissary near the Incline. The spatial organization of the present town at Reflector Bar is almost a figure-ground reversal of its original configuration, with lawns replacing building sites, and buildings located where there was once open space. The organization of Hollywood retains some sense of the historic plan, but the structures lining it all post-date the historic period.

The Skagit towns are rare--perhaps unique--examples of municipally-owned company towns in the United States. While there are a number of examples of construction camp towns owned by cities in association with the development of municipal utilities--specifically, water and power--none known to date lasted much past the construction period of the project. A few houses would be left for operators, but support facilities and amenities, such as stores, recreation halls, hospitals, and schools were rarely, if ever, built to last beyond the projected construction end date in such camps. In many cases, such as some of the hydroelectric projects developed in Utah, it was because there were already existing towns near the construction project, providing the services required to support a construction camp. Even those municipally-owned construction towns in remote locations surviving beyond their construction periods did not last more than a decade, for example Camp Mather, built for workers employed on San Francisco's Hetch-Hetchy Dam. Diablo and Newhalem are still operating as company towns, with employees still living on site, although the automobile has irrevocably altered the towns' self-sufficient characters, and automation of the powerhouses has reduced the workforce and the subsequent need for housing.

Even within the realm of publicly-owned company towns, the Skagit communities are rare. Most of the towns associated with the big, federally-funded hydroelectric projects of the 1930s, such as Bonneville and Hoover (Boulder City), have long since been released into the private domain.

The company town--a community built to support the operation of a single company--was an institution which rose rapidly in the west in the late nineteenth century, as entrepreneurs began to identify and exploit natural resources in remote locations. The growth of the institution slowed, and possibly even declined in the 1930s--with the exception of the large federal projects and their associated company towns--but picked up again, in a limited fashion, after the outbreak of World War II, and the identification of minerals and other resources that could be used in the war effort. Since the 1950s, with improved transportation and communication links, many company towns have been sold to employees, abandoned, or razed. There were over two-hundred private company towns built and operated between the late 1800s and the early 1950s in Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Oregon and Washington.²⁴ In addition, company towns were built in association with the federal projects of the 1930s--Boulder (Hoover) Dam on the Colorado River; Bonneville and Grand Coulee dams on the Columbia, and Fort Peck Dam on the Missouri River in Montana. Of these, the town of Fort Peck is still administered by a public agency--the Corps of Engineers.

The administration, operation, social life, education, housing issues, and general functioning of the Skagit towns were similar to company towns owned by private companies--based on lumber, coal, and copper--operating in the western states during the same period. There were, however,

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some critical differences which had a significant impact on the communities. The most important of these were related to the public ownership of the towns and the nature of the work done by the employees. Such common company town issues as substandard housing, management responsibility, and education were exacerbated by the reliance on the City of Seattle's ability--or inability-- to fund both the towns and the massive construction projects underway throughout the historic period. With limited funding, particularly in the 1930s, the dams and powerhouses received top priority. To enlist and retain public support for the project, at least in J.D. Ross' opinion, any additional available funds in the 1930s went to pay for tourist facilities in the towns. The needs and welfare of the communities' residents came last.

A second difference was the establishment of a rigid two-class society, which rose in part from the nature of the project which led to the establishment of the towns. One "kind" of Project personnel were the people employed by the city to operate the powerhouses: generally, they were engineers or had had some kind of advanced education. They were hired in Seattle, they were civil service employees, and they were paid better than the second group. The second "kind" of employees were hired to build and maintain the town and project infrastructure--operating the railroad, serving as grounds crew, plumbers, electricians, operating the boats on Diablo Lake, serving in the commissary and mess hall, and so forth. Some--but not all--of these employees were civil service, but were mostly in categories with lower pay and less privileges. Periodically, there would be a huge influx of a third group of people who would live on the Skagit for a period of years--the engineers and construction crews working for the contractors building the dams and powerhouses, who would tend to split along the same lines. While the two-tiered class organization in these towns--"managers" and "laborers"--was not unusual in company towns, on the Skagit it became a major issue, affecting almost every aspect of the lives of everyone in the community, from housing to social activities.

Administration and Operation

In 1924, when the Gorge Power Plant became operational, there were approximately sixty permanent employees working at the Skagit, all under the supervision of Theodore Kane, chief operator of the Gorge plant, who reported directly to J.D. Ross. These included plant operators, oilers, machinists, linemen, carpenters, a storekeeper, cook, kitchen helpers, and laborers. Kane was responsible for the operation of the entire day-to-day operation of the Skagit Project, including running the railroad from Rockport, the commissary, and warehouse, as well as the power plant. Assignations for housing was also under his control. Late in 1926 or early in 1927, one of the employees under Kane's supervision, a Dana Currier, was fired by Kane: the stories now told of the circumstances of the firing differ widely, but it is generally agreed that the two men just did not get along well together. Currier, who has been described by those who knew him as one of the most masterful politicians ever met, drew on political support from allies in Seattle, and a few days later he returned to the Skagit, not only re-hired, but with new orders from Ross which split the camp's operation in two. Kane was relieved of all responsibilities beyond the operation of the power house, and, oddly, the school, and Currier was now in charge of everything else--the general maintenance, the railroad, the commissary, the mess hall, and so forth. Currier, like Kane,

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would report directly to Ross. This administrative split was potentially disruptive to the efficient and harmonious operation of the camp--any disagreement between the two administrative units would now be forwarded to Ross for arbitration. With one administrator on site, such references would be less frequent. With the personalities involved, from all accounts, the split was disastrous, and reverberated through the communities until the 1960s, when a single on-site manager was placed in charge of all the operations on the Skagit.

The town divided into two camps: those who worked for Kane, and those under Currier's supervision. There was some bickering over responsibilities, and in March of 1927 Ross sent both Kane and Currier a memo outlining the responsibilities of each. On what was already becoming the touchiest issue--housing--Ross told his Skagit managers to refer all changes to him, "personally," before being carried into effect. The complaints to Ross had apparently become so specific, that, in his memo, he specified that the operating division (Kane) would be required to "...maintain their own lawns and houses. The general maintenance of the Camp will rest with Mr. Currier." The split created some challenging dilemmas for Ross, who specified that the operation of the intake for the power plant was under the construction division (Currier), but that the worker charged with closing the intake gates would do so only on the orders of the station operator, who reported to Kane. Regarding the recreation hall, Ross stated "The hall should be applied to the fullest educational and recreational uses possible and in this you are requested to help by an unselfish cooperation. It is for the children as much as the older ones and they look to you to protect their use of it."²⁵

This organization led to a social division of the town. Education and income level already tended to divide the town, with better educated and paid workers mostly employed in the power plant. With the administrative split, the division became even more pronounced. Employees tended to take the "side" of their particular supervisor--there were "Kane's men," and "Currier's men." There was little socializing between the two groups, and families from the different camps did not tend to mingle. In a small community, this led to some bitterness. Even today, people who grew up in Newhalem speak with rancor over the actions of "the other side."

While the split most serious affected the community's operation in regards to housing (see below), it frequently disrupted other aspects of community life. Each manager tended to favor his employees over the other's. With Currier in charge of the railroad--the only means of access to Newhalem from the outside world--disputes over seats for trips to Rockport would occur. Currier's employees, generally less well paid, were often given priority by him for available materials for repairing or improving their cottages. As late as 1942, when the seventy percent of the employees on the Project were under Currier's jurisdiction, the rivalry was still in full force. One employee of Kane's stated that the construction section employees, whom he called "tarheels," were not interested in education, and because of that, the school board was manned by Kane's employees.

Ross was to directly supervise Kane and Currier until he left for Washington, D.C. in 1931. Thereafter he delegated this responsibility to his two subordinates, Bill McKeen ("Mac") and Glen Smith. Smith was appointed temporary superintendent when Ross was fired by Mayor Edwards, but, in effect, he and McKeen operated together to administer City Light and the Skagit Project,

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under Ross, who made every major decision--and many small ones--even when he had been removed from his post. In the 1930s, Ross, frequently out of the state, and later administering Bonneville--while retaining superintendency of City Light--came to rely more and more on McKeen and Smith, but their almost daily letters and wires to him and from him are full of references to some of the smallest details of the project--for example, where to set out certain trees on the grounds.

Generally, the day-to-day operations of Newhalem, and later Diablo, were similar to those of many company towns in the 1920s and '30s. The store was operated on the basis of scrip, a method of credit based on future earnings of the employee. Cold locker storage was provided to employees. Transportation via the railroad to Rockport was free. The Newhalem school became part of the county school system, and when the Diablo school began operation, it also became part of the system. Seattle paid the salaries of the teachers, and City Light provided housing for them. City Light also built, maintained and enlarged the Newhalem school at its own expense, and later the more substantive brick school building in Diablo. When children reached high school age, a City Light employee had to decide whether to send his family to town without him, or to quit his job. After World War II, the county operated a school bus which would take high school age children to the town of Concrete to attend classes.

City Light employed nurses for medical care, based in Newhalem: the nearest doctor was in the town of Concrete, and any severe emergency required train transportation. After World War II, one of the nurses was the wife of a powerhouse employee. Later, when roads became more reliably passable, the Seattle Fire Department provided emergency medical training to the volunteer fire department in Newhalem.

It appears life was rugged in the towns. Apparently many wives would not stay beyond one or two years. The isolation of the communities, and the limited schooling opportunities for children was too much for some to face. However, despite the tensions between the Currier and Kane factions, there appears to have been a strong sense of community. Both groups would attend frequent dances held in the recreation hall in Newhalem, and later, movies. In the 1930s, Diablo and Newhalem each had a small band that would play at community events. Typical activities included card parties, crafts groups and the like, and many families took advantage of the setting to hunt and fish.

Some time in the early 1940s the citizens of Newhalem formed the Newhalem Improvement Association, to provide some sort of united voice for negotiating with Seattle about improvements to the community. Prior to that, any concerns were expressed either by petition to Ross directly, or through the union representative. The school board had some power, since City Light was required to meet with them and consider their demands.

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Housing

Sufficient housing was not a major issue in the Skagit towns until construction began on the completion of the Diablo Powerhouse. Adequate housing was another matter. The construction camp structures, both in Newhalem and Diablo, were thrown up quickly, with no attention to basic amenities. As late as the 1940s, in the three-room cottages still standing in Newhalem, snow would drift through the exterior boards and into rooms, driven by the wind, despite attempts by occupants over the years to improve the structures.²⁶ Until the 1940s and later, workers would build their own breadbox heaters to run on the power supplied by City Light. The construction camp houses were small--three rooms--for a family of four or five.

The architecture and physical organization of privately-owned company towns varied wildly, according to geography, time built and the interest of the company in community planning. However, there seemed to be some "typical" features, many of which the Skagit towns shared. One of these was the use of rectangular blocks in platting the town. To the extent possible, given the nature of the bar, Newhalem was partially laid out in this fashion. The beautification projects undertaken by Ross, to encourage residents to plant trees and shrubs in Newhalem, were similar to inducements offered by a few other companies owning towns--the Union Pacific Coal Company hauled carloads of trees to its town of Hanna, Wyoming, in 1915, giving them away to any resident willing to plant them.²⁷ The early housing in many company towns appears comparable to Newhalem's and Diablo's construction camp period--small, wood-frame structures with board siding and composition paper roofs; in the 1920s a survey of company houses in coal-mining towns revealed that only 13 percent had running water and 3 had flush toilets inside, a situation similar to that of Newhalem during the same period. However, at the Skagit, housing became the principal community issue.

By the end of 1934, the inadequate housing situation had reached crisis proportions on the Skagit, both in Newhalem and in Diablo. Successful sale of the 1934 bond issue to complete Diablo Powerhouse had brought more workers to the Skagit--both city light crews to build transmission lines and install equipment, and Rumsey and Company construction crews to erect the powerhouse. Workers faced a complicated housing allocation policy, further tangled by the ill feelings between Kane's operating crews and Currier's construction men. There was an insufficient number of houses for married men, and the quality of existing houses, everyone agreed, was inadequate. In addition, City Light, under Ross, appeared to place public relations above the needs of the people who worked for the agency, especially as it became known that new housing construction on the Skagit would be for tourists. When the dissatisfaction was reported to

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Ross, he responded by asking his advisors--McKeen, Smith, Currier and Kane--to evaluate a proposal of charging those living on the Skagit for rent and electrical service, the proceeds of which, he said, could fund housing. Ross was facing tight budgets in the midst of the Depression, and his eyes were already on completion of the hydroelectric system through construction of the final dam. Ross wrote his managers:

There seems no doubt that the greatest satisfaction to everyone is to pay for what they get, but once in possession of free housing and light those having these privileges think they have something for nothing. We meter the current of all our customers because that is cheaper for everyone.

Some of our people have said that we should have facilities for them instead of building for those making up the tours. They forget that the tourist pays his way. Tell them that any time they wish to do likewise we will have a reason to build for them.

Therefore, make a survey of the number of houses needed, their size, and where they might be located. And last but not least, the rental that should be charged for them, and all existing houses, and submit these details and details of cost in metering power.

I will then see what can be done to add this amount to the salaries and if it can be done we can start right and settle the housing problem and wasteful uses of current, and we can then build all houses needed.²⁸

Construction of two new bunkhouses in Newhalem in the winter of 1934-35, may have alleviated some of the worst of the housing crunch, at least for single men. But a number of married workers arriving at the Skagit were forced to leave their families in Seattle. The agitation for housing appears to have subsided somewhat, possibly because City Light began to plan for single family houses in the Hollywood area of Diablo in the fall of 1936. However, in the spring of 1937 a large new influx of construction crews arrived at the Skagit to begin work on Ruby Dam. While most of the dam workers--over 250, ranging from laborers and "jackhammer men" to commissary clerks and timekeepers--were to be housed in dormitories built by the contracting firm, General Construction Company, near the construction site, those buildings were not erected until late in the year. In the spring Ross received a letter signed by thirty-four Lighting Department workers living on the Skagit, in response to his solicitation for discussion of community problems. The request for worker input was apparently released in conjunction with a renewal of his proposal to

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charge for rent and electricity when the new houses were completed, partially due to pressure from the city to cut thousands of dollars per month from the Lighting Department's budget. The Department's Skagit employees attempted to address two issues:

First is the definite need for good houses. We realize that Diablo has been, until now, a construction camp, and have not expected to see things in a finished state, but even at Newhalem things have been far from satisfactory. A few families have livable houses; more have not. Some of the houses are so poor that unless one has seen them he would not believe the descriptions. Then there are those of us who have no place for our families and have had to live apart from them. Together with unmarried men we have been crowded into quarters that are not fit for the purposes to which they have been put...Since the winter is long and rather severe the houses should be well built and should be large enough to afford a small measure of social activity during the months when everything we do must be done indoors.

The second point...is that these houses, or their equivalent in cash or board for unmarried men, should be furnished to us. The Skagit camps are beautifully located and we like it here, but in living here we incur many additional expenses and give up numerous advantages enjoyed by those in town...Some of the additional expenses are these: the cost of maintaining our Seattle homes, cost of traveling between Seattle and Rockport, cost of keeping our cars in Rockport, higher prices paid for food, higher cost of fire insurance, and many other things...True, there are a few things we have here that those in town do not enjoy, but we have nothing they could not reach in a short drive.²⁹

Housing in general was clearly substandard. Employees who wished to improve their houses over the years were usually allowed to do so--on their own time, and generally at their own expense. Ross's concern regarding, ironically, excessive use of electricity, was due to the poor construction of all Skagit housing. Dana Currier, manager of the Lighting Department construction crews, noted that "...the plumbing is installed in such condition that at least from the 1st of December to the latter part of March, it is necessary to keep electric heaters in the bath rooms and under the kitchen sinks...I have not figures to bear out the statement, but I would estimate that during the winter months it would take at least 800 kilowatts a month in a great many houses. I would suggest that the electric current be free up to this amount."³⁰

In July, as draftsmen prepared sketch plans for family housing in Newhalem and Diablo, Ross asked Dana Currier for his opinion on the housing situation. Currier reported on reactions to the proposal for charging rent:

The essence of the whole question in the camp is an harmonious personnel. The question of rental of houses and the payment of electric current did not originate with the rank and file living at Newhalem. Since the question

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has arisen it has caused more dissension and breaking down of the morale than any other thing in the history of the camp...

After all Mr. Ross, you can get as many different opinions as to what is fair as the number of people you request them of. I have come to the point in life where I am convinced that what the world needs is more of the milk of human kindness, and to impress the men working for the Department that we have their interest at heart also; and I have arrived at the conclusion that the most convincing way of doing so is to keep our hand out of their pocket as much as possible.³¹

A survey taken by McKeen and Smith early in 1938 indicated fifteen Skagit employees would be willing to pay rent for new houses, if they were available--five were in the process of completion at Hollywood in Diablo at the time. The survey also indicated that people living in the three-room cottages in Lower Camp in Newhalem insisted the Department repair foundations and "...make the houses livable if they are to pay rent, even as much as \$8 per month."³²

By February of 1938 McKeen and Smith had prepared a plan to provide additional housing by charging rent and billing for electricity; the monthly rental fees would be partially offset by raising employee wages. Ross's managers had hoped the adjustments in pay and rent would balance, and would solve the housing issues raised by the department's Skagit employees. However, an analysis of the proposed budget showed an overall monthly increase of \$2,395.00 in costs to the Lighting Department, due principally to wage increases. Taking note of the city's financial conditions, the bond payments and the "...heavy construction program we are carrying on during the depression," they concluded the plan to raise wages and "...charge a small part of it back in rental," should be deferred. To solve the housing situation, they included provision for twenty new houses in the construction budget, which included the five Hollywood houses under construction at the time of the report. This, they reported, "...should relieve the situation and provide livable quarters for everyone." In addition, they noted, the Diablo cookhouse, which the department had been trying to close, would remain in operation to provide board for single men living in bunkhouses in Diablo. Only fourteen houses--nine in Newhalem and five in Diablo--and one bunkhouse--"The Lodge" in Diablo--were built.³³

However, the issue of adequate housing was far from closed. Within days of E.R. Hoffman's appointment as the new Superintendent of Lighting, following Ross' death in March of 1939, the debate on the housing problem--inadequacy of existing houses; lack of sufficient houses; fairness in allocation--resumed. With completion of the new houses on Poverty Row in the spring of 1939, the now years-old grievances regarding housing policy fairness was raised in association with their allocation. In this instance, the question was whose employees--Kane's operating division or Currier's general division--would "get" the new houses. A survey commissioned by Smith and McKeen showed that of the 151 Lighting Department employees living on the Skagit--both in Newhalem and Diablo--sixty-seven were living in houses with their families and eighty-four in bunkhouses. Twenty-nine bunkhouse employees desired housing, so their families could join them; there were only nine new houses at Newhalem available.³⁴ J.R. King, on the department's

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architecture staff, developed a four room house plan. He proposed the Department build twenty of these, at an estimated construction cost of \$4,000.00 each, to be funded by inclusion in a bond issue or from a \$1,000.00 per month allotment to a housing program capitalized directly from the Lighting Fund. The proposal was not acted upon.

In June of 1939, barely two months after assuming the superintendency, Hoffman received a letter from City Councilman Hugh DeLacy, who had been contacted by the Skagit laborers, members of the Building Laborers' and Hod Carriers' Union regarding wages, board and room at the project. DeLacy wrote Hoffman:

I know of my own knowledge that the housing provided for many of the Skagit workers is not one whit better than that in Hooverville. Built in the early days of construction as temporary shelter for crews then employed, their foundations rotted, their stringers sagging, their ceilings cracked, their walls and doors out of line, these houses, however ingeniously patched and papered by their present occupants, are unfit to be lived in...

One bunk house...is divided into small, ugly, unpainted rooms and has no showers or toilets in it. In sunshine, rain or four feet of snow, its occupants are forced to use outside bath and toilet facilities.

Nearly ten months ago, I reported these facts to the City Utilities Committee which agreed to take up the housing problem with the Superintendent of City Light to see what could be worked out to put an end to these shocking conditions.

So far nothing has been done; nothing, that is, except to take from City Light's 1938 Budget as a departmental saving, the \$28,000.00 originally earmarked for Skagit housing improvements.

I hope you will make it one of your first items of business to relieve the intolerable Skagit housing conditions...so that people of Seattle, who are justly proud of owning one of the finest municipal power plants in the country, may be equally proud of the conditions under which the producers of our light and power live and work.³⁵

It is possible some of DeLacy's concerns may have been addressed in the following years. Two weeks after Hoffman's receipt of his letter, Glen Smith prepared a \$16,000.00 budget for repair of nineteen of the three room cottages in Newhalem, and for upgrading and installation of sewer and water systems. The budget also included over \$1500 worth of work on the foreman's bunkhouse, to which DeLacy had specifically referred. The plan was to move each family into a designated vacant cottage while repairs were effected on its own house. It appears that some minor repairs, including painting and partitioning, were done on the houses. However, new houses on the Skagit would not be built until the late 1940s.

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In June of 1939, Hoffman formulated a housing policy based on seniority of residence at the project, seniority as an employee of City Light, and on salary. There was a long list of exceptions, including supervisory personnel. Of a total of seventy-six houses in both towns, forty were assigned to the general division under Currier, thirty-three to the operating division under Kane, and three to the transmission line division, operating under a Mr. Harney. The policy was revised in May of 1941, and was to undergo subsequent revisions in the next decade. The policy did little to alleviate the bitter competition for housing. Since foremen were exempted from the house bidding process, and given preference for houses as they became vacant, on at least two occasions, Dana Currier used the foreman clause to appropriate housing for his employees by temporarily raising their status to foreman, bumping Kane's employees down the list. On the other hand, because the bidding "points" were in part based on salary, Kane's better educated powerhouse crews, who generally made more money than the general division staff of Currier's, were often able, on the basis of salary, to obtain the "better" houses. The rivalry did not end until the position of Manager of Generation was created around 1962, creating an on-site senior manager with authority over the entire project.³⁶

With the nation's entry into World War II, and restrictions on building materials in effect, housing opportunities at the project became even more precarious. During the war, six tourist dormitories were altered to provide apartment housing for City Light families. After the war, the Rock Hill apartments were built in the southeast end of Newhalem to provide additional housing for City Light and construction crews, and finally in 1948, six new wood frame houses were built to the west of Poverty Row, which, because they were new, were among the first to be bid for. Powerhouse engineers, with salary points, occupied most of the houses, which came to be referred to as Engineer's Row.

The company towns of Newhalem and Diablo are rare--perhaps unique--examples of extant municipally-owned towns. The history of the towns, from construction camp to continuously-functioning community, deepens our understanding of the development, planning and operation of company towns of the 1920s and '30s. The vernacular architecture is typical of towns of this type, and in Newhalem, one can still see examples of both the construction camp buildings (Resource #16) and the "permanent" cottages (Resources #1-8). The bunkhouses built for workers (Resources #11, 13, 14 and 16) are typical examples of company town institutional housing of the period. The tourist dormitory (Resource #17), while similar in type and style to the other bunkhouses, is a rare example of a large structure whose function was to house tourists at minimal cost.³⁷ The sole remaining house in Hollywood (Resource #34) is a good example of Rustic architecture of the period, as practiced by the U.S. Forest Service, and stands as an example of the type of architecture J.D. Ross envisioned for the Project in the 1930s.³⁸

James Delmage Ross: "Father of City Light"

J.D. Ross served as superintendent of the Seattle Lighting Department--later Seattle City Light--from 1911 to his death in March of 1939. Under his aegis, the small municipal utility, competing with a privately-owned company backed by one of the most powerful firms in American

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hydroelectric history, grew to such strength that it eventually purchased the Seattle interests of the competing firm--Puget Sound Power and Light--in 1950.

During his tenure as superintendent, Ross had a significant effect on Seattle politics. He rose to prominence, in part, due to recall of a Seattle mayor where municipal ownership of a power plant was a significant recall issue. Thirty years later he was involved in another mayoral recall--in fact, his retention of the superintendency of City Light was the issue in the recall. And his reinstatement heralded a period in Seattle when many principal politicians were firm supporters of municipal ownership. His agenda for expansion placed him squarely in the center of Seattle politics, and he was both a frequent contributor to and feature of many stories in the Seattle press.

During his superintendency, the power rates in Seattle were among the lowest in the nation--half the national average in the 1930s. The municipal utility's competition forced the competing private firm to match every downward rate adjustment. Seattle City Light became nationally recognized as a "yardstick" for power rates, and helped to keep the Pacific Northwest the region with the lowest power rates in the country. He used his position as superintendent to influence statewide power issues, both directly, through lobbying against a private utility-controlled utilities commission, and indirectly, through the perceived success of Seattle's municipal system, which Grange leaders viewed as a model when pushing for public utility districts.

When Ross was fired by Mayor Frank Edwards in 1931, he moved into a more prominent national spotlight. He had been a contributor to *The Journal of Public Ownership* for years, and was well-known in national municipal ownership circles, as well as by private utility organizations waging a bitter war against public ownership. When Senator Homer Bone sponsored a bill to allow Washington cities to sell power beyond the city limits in 1924, Seattle--and Ross--became a symbol of municipal ownership. The National Electric Light Association, an organization of private utilities, recognized that the "Seattle situation is of national importance." When Ross was fired, he took a consulting job where he advised Governor Franklin D. Roosevelt of New York about the St. Lawrence public power project. Ross was back in his superintendent's seat by the end of 1931, however, the meetings with Roosevelt were to bear fruit a few years later, when he was hired as a consulting engineer for the Federal Power Commission's national power survey and the power division of the Public Works Administration, which he did while retaining his superintendency of City Light.

In August, 1935, Roosevelt, now President, appointed Ross to the Securities and Exchange Commission, in charge of utility restriction and regulation. "Almost as surprising as a banana plant in the State of Washington is a Republican in the high councils of the New Deal, but such is Mr. Ross," *Time* magazine noted.³⁹ In October of 1937 Ross resigned from the SEC to take the job as first administrator of the new Bonneville hydroelectric project on the Columbia River in Oregon, a position he held simultaneously with his continuing superintendency of City Light. His responsibilities at Bonneville including both managing the project and promoting the sale of power at rates approved by the Federal Power Commission. Holding both positions, he began to agitate for a tie-up between Grand Coulee Dam, Bonneville, the Skagit, Tacoma and other public plants, looking forward to a national network originating from the Columbia River basin. With

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Ross, it appears, the grand visions never stopped: from Cedar Falls to Gorge to Diablo to Ruby; from individual consumers to cooperatives for distribution; from independent Federal power plants to regional networks...each accomplishment was a step towards a greater goal of his.

Ross had a wide range of interests and hobbies, several of which he brought to bear on the development of the Skagit Project. One, already mentioned was his interest in artistic illumination, an outgrowth of his passionate and lifelong interest in physics in general and the nature of electricity in particular. He never received an engineering degree, although by 1934 the notation, "Fellow, American Institute of Electrical Engineers," was appended to his name on articles he wrote for magazines and journals. His formal education consisted of attendance at Chatham Collegiate Institute in Ontario, the equivalent of a two-year college; he was born in Chatham in 1872. He taught school in Ontario for six years, and then spent some time prospecting in the Northwest Territories--contemporary accounts of his life said he spent time outdoors hiking and exploring to overcome tuberculosis. He arrived in Washington in 1900, and began an electrical contracting business in Seattle; in 1903 he was hired by then-Seattle city engineer Reginald H. Thomson to serve as electrical engineer of the city lighting system. His career progression from that point has already been discussed.

In 1907 he returned to Ontario to marry Alice Wilson, who participated--in a supporting role--in many of his professional and personal activities. Among these was his enthusiasm for horticulture and gardening. He raised a variety of figs, experimenting with grafting and breeding, and was a lily breeder. His direction of the creation of Ladder Creek Falls Gardens and the landscaping of Newhalem and Diablo has been discussed: Alice, according to Ross's nephew, shared his horticultural enthusiasms, and participated in the design and planting of the Ladder Creek gardens. The Rosses were childless, but raised several informally adopted children in their home, including Ross's nephew, James.

Ross's home included a large laboratory in which he performed a number of experiments in physics, magnetism, and photography--he took many slides and films of the Skagit, almost all of which, stored in his home after his death, deteriorated to the point where they could not be restored. In 1931 he published *New Views of Space, Matter and Time*, a 400 page book providing a "new viewpoint in science."

Ross's contribution to the public power movement and the development of Seattle City Light received national press during his lifetime, but has been overlooked since. He was a nationally-prominent spokesman for public power, and the Skagit Project is significant for its association with him. Ross's remains, and those of his wife, are entombed in Ross Crypt (Resource #25), at the east end of Newhalem. The crypt is built into the native rock base of Ross Mountain, and is significant for its design, which was deliberately developed to blend with the natural environment, rather than stand as an isolated monument. The understated and beautifully integrated crypt tends to imply that the entire Skagit Project is the true monument to Ross, and it may be that was the intent of his wife when approving the design.

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Garden of Sound and Light

The history of the physical development of the Ladder Creek Falls Gardens is discussed in Section 7. Individual features of the gardens were rarities when Ross designed them; in combination they produced a unique landscaped garden, the patterns of which survive today. The "jungle," the rock gardens, the artistic illumination, and the amplified sound effects were cited in almost every nationally-published popular magazine article on the Skagit Hydroelectric Project, and even in engineering journals. Washington State journalists invariably mentioned the gardens in their write-ups on the Project, and they prompting gushing reports by tourists who visited them--in at least one instance, a Skagit visitor, Mrs. S. Morgan Smith of York, Pennsylvania, told William McKeen that she had "been everywhere, but just 'hadn't seen nuthin" until visiting the gardens, and was so thrilled she was sending Ross some weeping flowering cherry trees.⁴⁰

By the mid-1930s, Ladder Creek Falls had become a highlight of the tours. It was a measure of the city's own recognition of the success of the gardens that a propaganda piece published by City Light announced:

Every year droves of Seattleites and thousands of visitors from all over the world visit the upper basin of the Skagit river to gasp in amazement at fantastic spectacles--palm trees and huge tropical jungle plants growing luxuriantly in high mountain canyons where blizzards howl and snow piles six feet deep in winter; majestic organ music pouring out of rugged pine-covered cliffs...

In the course of their two-day trip to Skagit, these thousands of visitors get an incidental eyeful of powerhouses, dams, reservoirs, giant generators and transformers.

It's for the sake of that incidental look the visitors get at Seattle's million-horsepower Skagit project...that J.D. Ross planted a tropical jungle in these northwest mountains and made the cliffs reverberate with mighty organ tones.

"People are funny that way," chuckles the City Light superintendent. "They wouldn't make a trip of that kind just to see a dam or a powerhouse, even tho it belongs to them. So we lure 'em with a display of beautiful growing things they've always been taught couldn't thrive in regions this far north...When they get here, they see the dam and the powerhouses--and that's what we want 'em to see."⁴¹

The "jungle," which referred to a part of the gardens in which Ross had planted such exotics as bamboo, palm trees, elephants' ears and banana plants, attracted quite a bit of press: the notion of

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seeing such species growing in the Cascades was startling to most observers. Ross apparently told Jim Marshall of *Collier's* that "Tropical things don't die in cold climates because of the cold, but because they can't get their natural food...the trick is to reproduce, for the plant, its natural food...Ross' [sic] success with tropical plants lies in reproducing for them the sort of soil from which they are accustomed to draw their nourishment."⁴² While Ross probably did amend the soil for the exotics, and while he may have believed the climate wouldn't affect them, he, in fact, took the precaution of having the most tender plants moved into Gorge Powerhouse each winter to ensure their survival.

Ross, not content with horticultural experiments, also experimented with exotic animals. Many found homes at the Diablo "zoo," described in Section 7, but Ross actually released orange and gray Brazilian squirrels and black Mexican squirrels he had imported into the Falls gardens. Some articles also noted the presence of parakeets, parrots, macaws and other tropical birds, and documentation exists proving the purchase of such birds, however, it is believed that these creatures were not released into the gardens, and were probably displayed in cages at the "zoo."

The combination of native plants, exotics adapted to the climate, and the tropical exotics in a designed landscape where winter temperatures often fell to zero degrees, was unique in its time. But the plant material was only one aspect of the gardens. Relying on the rustic architecture theme, which Ross, judging from his design schemes for the unbuilt hotels, clearly admired, the gardens were furnished with rustic bridges, granite steps set in winding paths, artificially-diverted mountain "streams," and rustic benches placed in locations affording views of the Gorge Power Plant and Newhalem.

To augment this, Ross created his much-remarked upon artistic illumination of the gardens, and of Ladder Creek Falls, around which the gardens were built. Early in his superintendency Ross had exhibited an interest in artistic illumination, and had colored lights mounted on the Lake Union Steam Plant to illuminate steam issuing from urns at night during special city-wide events, soon after its construction. The precedent for artistic, electrically-powered illumination had its roots in the world's fairs and expositions held in America, perhaps most notably, the outline illumination of buildings at the 1892 World's Fair in Chicago, and the much-vaunted incandescent outlining used at the Pan-American Exposition at Buffalo, New York. But it was at the Panama-Pacific Exposition in San Francisco in 1915, where W. D'A. Ryan created a new concept of indirect illumination of structures and gardens, which clearly influenced Ross. Ryan's illumination scheme at the Exposition utilized colored lanterns, floodlights, luminaires spray-painted various colors, open projectors, searchlights with lenses, and an array of other appliances to integrate the buildings and grounds of the exposition, creating "moods" according to the themes each of the fair's courts expressed. Much of the experimental work for the fair was donated by the General Electric Company's illumination department in Schenectady, New York under Ryan's direction.⁴³ In 1916 the American Institute of Electrical Engineers published a paper by Ryan, *The Illumination of the Panama-Pacific International Exposition*, which was widely distributed. It detailed the technical aspects of the lighting design, and, while it's dangerous to speculate on what Ross may or may not have read, it appears, given his enthusiasm

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for artistic lighting, that he had seen a copy of this book, or, at the very least, was familiar with this new style of illumination through promotional literature for the fair.

The lighting scheme in the gardens began with illumination of the falls, and, over the years, spread to indirect illumination of particular plant specimens, and artistic lighting of selected features: a bank of maidenhair fern would be illuminated with cerise light; a grotto would appear "...cold and azure, then suddenly warm and orange..."⁴⁴ At the time of Ross's death, in 1939, the falls' lighting had become extremely elaborate, with a gnarled stump illuminated to appear as a dragon's head, and with multi-colored lights in shades of violet, purple, orange and red illuminating the falling water. This "fairylend" was certainly a unique feature of any hydroelectric facility in the country, and was probably unique to any recreational spot, as well. Ross's artistic illumination almost certainly influenced lighting at other hydroelectric facilities: in 1933 officials at the Tennessee Valley Authority expressed an interest in decorative illumination, and B.B. Bessesen, superintendent of the Wilson Dam Power Plant wrote to Glen Smith at City Light asking about the use of using a revolving colored screen Ross had developed to illuminate the dam's large spillways.

Ross's use of amplified sound, described in Section 7, further distinguished this designed landscape from any other of the period. Ross not only used music--such as *The Holy City*, timed to coincide with the tourists' climb to the falls--but recorded bird sounds, to enhance the effect of passing through a forest--tropical or Cascadian.

The Ladder Creek Falls Garden site is significant in its own right as a unique designed landscape associated with recreation. It is also historically significant for its association with the Skagit Hydroelectric Project. Although the gardens were allowed to fall into disrepair during World War II, over the years they have been refurbished. After the war City Light repaired some of the lighting in an attempt to capture the spirit of the place Ross created. Much of the site's infrastructure--altered topography, pools, streams, steps, benches and the like are extant, and the native plants have thrived and matured. There is still one exotic--bamboo--extant in the garden.

A Living Symbol of its Time

The Skagit River and Newhalem Creek Hydroelectric Projects embody distinctive characteristics of that time in our history when "progress" was linked to a belief in the promise of technology. The driving force behind the project, J.D. Ross, believed in harnessing the "River of a Million Horsepower" to serve and create what he hoped would be the premier city on the west coast, one rich with industry operating on municipal power. He looked forward to a time when "...power will be as free as the air."

The Skagit Project reflects that belief in its physical appearance. The power plants are each representative of hydroelectric technology of their time; Diablo Dam and Powerhouse go beyond merely housing representative technology to symbolizing the era's faith in progress, as reflected in the powerhouse's "showcase" interior and the dam's aesthetic features. The town of Newhalem

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contains buildings, structures and sites which provide a physical record of the infrastructure needed to support the dams, from the old Cook's Bunkhouse dating to the era of the construction camp, to the school teacher's house of 1938. The Incline Waiting Station, the tourist bunkhouses in Newhalem, and Ladder Creek Falls Gardens all are physical reminders of the drive to get the project built, by getting the public to come and see it. The combination of towns, power plants and landscape is a living, operating system, with principal features from its past still intact and contributing to the present.

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Captions for Photographs and Figures

Figure Description

- 1 Skagit River and Newhalem Creek Hydroelectric Projects, Showing Boundaries of Areas A,B, C in Historic District
- 2 Map of Newhalem and Vicinity, Showing Contributing and Non-Contributing Resources; note Resources #B-32 and B-33 are shown on Figure 1
- 3 Map of Diablo and Vicinity, Showing Contributing and Non-Contributing Resources; note Resource #C-42 is shown on Figure 1

Photo Description

Note: All photographs are of the Skagit Hydroelectric Project, Whatcom County, Washington. Original negatives for Photographs #1-20 are filed at Seattle City Light, Seattle, Washington. Remaining photographs are filed in the Cultural Resources Division, Pacific Northwest Regional Office of the National Park Service, Seattle Washington.

- 1 Sketch of the Skagit Hydroelectric Project, c. 1930, anticipating development of Ruby--later Ross--Dam and of the proposed new dam at Gorge. Courtesy Seattle City Light.
- 2 Site of Newhalem after logging began Photo courtesy Seattle City Light, unknown photographer, c. 1919. View looking east.
- 3 City Camp with Commissary and warehouse to the right and office and Bunkhouse #23 to the left. Photo courtesy Seattle City Light, unknown photographer, November 1920. View looking north down Main Street.
- 4 City Camp: construction camp bunkhouses are still in place; Lower Camp is visible at the top of the bar. Photo courtesy Seattle City Light, unknown photographer, July 1921. View looking west.
- 5 Silk Stocking Row cottages with front elevations oriented towards the Skagit River, to the right in the photograph. Photo courtesy Seattle City Light, unknown photographer, June 1923. View looking east.
- 6 Newhalem: some cottages have already disappeared from both Upper and Lower Camps; neither the new Cook's Bunkhouse nor the Pansy House have been built. Photo courtesy Seattle City Light, unknown photographer, c.1929. View looking west.
- 7 Newhalem's Main Street during a tour; the addition to the Commissary has not yet been built. Photo courtesy Seattle City Light, unknown photographer, c.1930. View looking north.
- 8 Newhalem with tent cabins replacing the earlier construction camp bunkhouses; the large structure in the foreground is the car barn. Photo courtesy Seattle City Light, unknown photographer, 1934. View looking southwest.
- 9 Newhalem with new tourist dormitories under construction, replacing tent cabins; the Foremen's Bunkhouse nearest the river was the subject of Councilman DeLacy's scorn in a letter to Superintendent Hoffman in 1939. Photo courtesy Seattle City Light, unknown photographer, c.1935. View looking south.

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- 10 The "tropical gardens" or jungle at Ladder Creek Falls. Photo courtesy Seattle City Light, unknown photographer, c.1933. Unknown camera angle.
- 11 A rustic bench in Ladder Creek Falls park, admired by the U.S. Forest Service. Photo courtesy Seattle City Light, unknown photographer, c.1935. Unknown camera angle.
- 12 Gorge Powerhouse and Howe Truss bridge across the Skagit; note greenhouse on the flat beyond the bridge. Photo courtesy Seattle City Light, unknown photographer, c.1929. View looking northeast.
- 13 Reflector Bar as seen from the Incline Railroad; the U.S. Forest Service house and barn are near the center of camp, just south of the mess hall in the center of the "U." Photo courtesy Seattle City Light, unknown photographer, March 1928. View looking west.
- 14 Reflector Bar with the contractors' and engineers' residences and tennis courts in the foreground. Photo courtesy Seattle City Light, unknown photographer, September 1929. View looking northwest.
- 15 Reflector Bar with the dam site visible to the right of the photograph. Photo courtesy Seattle City Light, unknown photographer, September 1929. View looking east.
- 16 Reflector Bar: the crane in the foreground was used to hoist powerhouse equipment from the railroad into storage sheds; by this time many construction camp structures are gone. Photo courtesy Seattle City Light, unknown photographer, c.1934. View looking east.
- 17 Tourist train leaving Rockport. Photo courtesy Seattle City Light, unknown photographer, c.1929. View looking east.
- 18 Tourist train heading up the gorge to Newhalem; note the freight cars at the head of the train. Photo courtesy Seattle City Light, unknown photographer, c.1929. View looking east.
- 19 The tourist boat, Alice Ross, on Lake Diablo. Photo courtesy Seattle City Light, unknown photographer, c.1930. Unknown camera angle.
- 20 Typical tourist room in one of the construction camp bunkhouses, possibly the present-day hotel. Photo courtesy Seattle City Light, unknown photographer, 1935. Unknown camera angle.
- 21 View of Main Street, Newhalem, Hotel on right, Commissary on left. NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 22 Silk Stocking Row. NPS photograph, Gretchen Luxenberg, July, 1989. View looking east.
- 23 Tree Allee' along Highway 20 in Newhalem. NPS photograph, Patricia Erigero, July 1989. View looking east.
- 24 The town of Diablo looking upstream, with Diablo Powerhouse, surge tank and spillway visible behind trees. NPS photograph, Gretchen Luxenberg, July 1989. View looking east.
- 25 View of town of Diablo from top of Incline. NPS photograph, Patricia Erigero, July 1989. View looking west.

Contributing Resources

- 26 Silk Stocking Row House #8, Newhalem (Resource #1). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northeast.

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- 27 Silk Stocking Row House #7, Newhalem (Resource #2). NPS photograph, Patricia Erigero, July, 1989. View looking north.
- 28 Silk Stocking Row House #6, Newhalem (Resource #3). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northeast.
- 29 Silk Stocking Row House, Newhalem #5 (Resource #4). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northeast.
- 30 Silk Stocking Row House #4, Newhalem (Resource #5). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northwest.
- 31 Silk Stocking Row House #3, Newhalem (Resource #6). NPS photograph, Gretchen Luxenberg, July, 1989. View looking north.
- 32 Silk Stocking Row House #2, Newhalem (Resource #7). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northeast.
- 33 Silk Stocking Row House #1, Newhalem (Resource #8). NPS photograph, Gretchen Luxenberg, July, 1989. View looking north.
- 34 School Teacher's House, Newhalem (Resource #9). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northeast.
- 35 Garages #1-22 in Newhalem (Resource #10). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northwest.
- 36 Garages #1-22 in Newhalem (Resource #10). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northwest.
- 37 Hotel (Bunkhouse #23) in Newhalem (Resource #11). NPS photograph, Gretchen Luxenberg, July, 1989. View looking southwest.
- 38 Commissary in Newhalem (Resource #12). NPS photograph, Gretchen Luxenberg, July, 1989. View looking southeast.
- 39 Bunkhouse #13 (Pansy House) in Newhalem (Resource #13). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northeast.
- 40 New Cook's Bunkhouse in Newhalem (Resource #14). NPS photograph, Gretchen Luxenberg, July, 1989. View looking southeast.
- 41 Mess Hall (Gorge Inn) in Newhalem (Resource #15). NPS photograph, Gretchen Luxenberg, July, 1989. View looking east.
- 42 Mess Hall (Gorge Inn) in Newhalem (Resource #15). NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 43 Old Cook's Bunkhouse (Library) in Newhalem (Resource #16). NPS photograph, Gretchen Luxenberg, July, 1989. View looking southeast.
- 44 Tourist Dormitory #70 in Newhalem (Resource #17). NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 45 U.S.G.S. Stream Gauging Station and Cable Car in Newhalem (Resource #18). NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 46 U.S.G.S. Stream Gauging Station and Cable Car in Newhalem (Resource #18). NPS photograph, Gretchen Luxenberg, July, 1989. View looking southeast.
- 47 Old Number Six, now on exhibit in Newhalem (Resource #19). NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 48 1924 Gorge Powerhouse (Resource #27); 1940s addition to left. NPS photograph, Patricia Erigero, July, 1989. View looking east.

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- 49 C. 1935 Gorge Railroad Bridge, leading to Gorge Powerhouse (Resource #28). NPS photograph, Gretchen Luxenberg, July, 1989. View looking north.
- 50 Gravity Oil Tank House, which also served as a sound studio for tourist walks through Ladder Creek Gardens (Resource #29). NPS photograph, Gretchen Luxenberg, July, 1989. View looking west.
- 51 Ladder Creek Falls Gardens bridge and pool (Resource #30). NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 52 Ladder Creek Falls Gardens bridge with stone steps in background (Resource #30). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northeast.
- 53 Ladder Creek Falls Gardens pond and fountain (Resource #30). NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 54 Ladder Creek Falls Gardens rustic bench (Resource #30). NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 55 1936 Diablo Powerhouse (Resource #35). NPS photograph, Gretchen Luxenberg, July, 1989. View looking north.
- 56 1934 Incline Waiting Station (Resource #36), Diablo Powerhouse in background. NPS photograph, Gretchen Luxenberg, July, 1989. View looking northeast.
- 57 Incline Lift (Resource #37) with Incline Waiting Station in foreground. Steel building at top of incline is the Incline powerhouse; the gabled shed running next to the Incline is the non-contributing Manlift. NPS photograph, Gretchen Luxenberg, July, 1989. View looking east.
- 58 Incline Lift powerhouse at top of Incline (Resource #37). NPS photograph, Patricia Erigero, July, 1989. View looking north.
- 59 Diablo Dam overview (Resource #42). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northeast.
- 60 Diablo Dam gates (Resource #42). NPS photograph, Gretchen Luxenberg, July, 1989. View looking north.
- 61 Diablo Dam roadway (Resource #42). NPS photograph, Patricia Erigero, July, 1989. View looking south.
- 62 Newhalem Creek Hydroelectric Plant site (Resource #26); non-historic building houses historic operating equipment. NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 63 Newhalem Creek Hydroelectric Plant site; pipeline (Resource #26). NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 64 Newhalem Creek Hydroelectric Plant site; tailrace (Resource #26). NPS photograph, Gretchen Luxenberg, July, 1989. View looking southwest.
- 65 House #2 (Building H-6) in Hollywood; sole surviving 1930s rustic house (Resource #34). NPS photograph, Gretchen Luxenberg, July, 1989. View looking southwest.
- 66 Diablo Water Tower (Resource #40). NPS photograph, Gretchen Luxenberg, July, 1989. View looking up.
- 67 Approach to Ross Crypt (Resource #25). NPS photograph, Gretchen Luxenberg, July, 1989. View looking north.
- 68 Ross Crypt, embedded in Ross Mountain (Resource #25). NPS photograph, Gretchen Luxenberg, July, 1989. View looking north.

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NonContributing Resources

- 69 Fire Hall, Newhalem; post-dates historic period (Resource #20). NPS photograph, Gretchen Luxenberg, July, 1989. View looking northeast.
- 70 Visitor's Center, Newhalem; much altered (Resource #21). NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 71 Currier Hall, Newhalem (Resource #22); replaced original "Large Hall.". NPS photograph, Gretchen Luxenberg, July, 1989. View looking southwest.
- 72 Gazebo on Main Street, Newhalem (Resource #23). NPS photograph, Gretchen Luxenberg, July, 1989. View looking west.
- 73 Trail of the Cedars Pedestrian Bridge, Newhalem (Resource #24); bridge has been rebuilt.. NPS photograph, Gretchen Luxenberg, July, 1989. View looking south.
- 74 Gorge Pedestrian Bridge, Newhalem (Resource #31); bridge has been rebuilt. NPS photograph, Gretchen Luxenberg, July, 1989. View looking east from base of Ladder Creek Falls Gardens, with Gorge Powerhouse to right.
- 75 Gorge High Dam, post-dates historic period (Resource #32). NPS photograph, Gretchen Luxenberg, July, 1989. View looking upstream.
- 76 Commissary in Diablo (Resource #38) replaced earlier building on same site. NPS photograph, Gretchen Luxenberg, July, 1989. View looking southeast.
- 77 Communications Building in Diablo (Resource #39) is the moved and altered original Diablo School. NPS photograph, Gretchen Luxenberg, July, 1989. View looking northwest.

Other Seattle City Light Skagit River structures of Interest

- 78 Ross Dam post-dates the historic period, but should be considered for listing in the National Register when eligible. NPS photograph, Gretchen Luxenberg, July, 1989. View looking north.
- 79 Ross Dam with view of powerhouse. NPS photograph, Gretchen Luxenberg, July, 1989. View looking north.
- 80 Stetattle Creek Bridge; sources differ on date of construction. NPS photograph, Gretchen Luxenberg, July, 1989. View looking west.

¹Seattle Post-Intelligencer, November 26, 1895.

²The Socialist Party had some reservations, considering the proposal a palliative which did not address deeper social ills.

³In 1903 the Snoqualmie Company succeeded in removing franchise restrictions which had made it fiscally impossible to compete with the Seattle Electric Company; by 1904 the Snoqualmie

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Company, now the Seattle-Tacoma Power Company, had terminated its wholesale contract with the Seattle Electric Company, and was advertising it was ready to enter the market and provide competition in service and rates to the Seattle Electric Company. The latter firm reduced its rates in October of 1904, as the bond issue headed towards a vote.

⁴City of Seattle, *Annual Report of the Department of Lighting*, 1911, p. 66.

⁵City of Seattle, *Annual Report of the Department of Lighting*, 1922, p.40.

⁶J.D. Ross, *Seattle Post-Intelligencer*, February 15, 1905.

⁷J.D. Ross, *Seattle Sun*, February 3, 1914.

⁸C.E. Hamlin memorandum, August, 1918, in Federal Trade Commission, Capital Issues Committee papers, Univeristy of Washington Library.

⁹Municipal League News, January 18, 1913.

¹⁰William Sparks, *J.D. Ross and Seattle City Light*, Master of Arts Thesis (Seattle: University of Washington), p. 89.

¹¹*Seattle Post Intelligencer*, 15 April 1931.

¹²Robert L. Hill, "Power and Politics in Seattle, *The Nation* (March 2, 1932), p.253.

¹³Willis T. Batcheller, "The Skagit River Power Project,"(Seattle: Seattle Lighting Department, 1918), p. 41, Box 13, Willis T. Batcheller Papers, Accession 195, University of Washington Libraries.

¹⁴Telegram from Ross to State Hydraulic Engineer, Olympia, Washington, 2 August, 1917. Folder 8-25, Seattle Lighting Department 33-1.

¹⁵Batcheller, "The Skagit River Power Project."

¹⁶*Report of the Superintendent of Lighting*, 31 October, 1925, as cited in *Annual Report of the Seattle Lighting Department* (Seattle: 1927), p. 35.

¹⁷W.R.Harrison Company, *Diablo: Highest in the World* (Seattle: W.R. Harrison Company, 1929), n.p.

¹⁸*Annual Report of the Seattle Lighting Department* (Seattle: 1931), p. 51.

¹⁹Glen Smith, "General-Shea-Columbia Work on Ruby Dam Progresses, *Pacific Road Builder and Engineering Review* (June 1938): 20.

²⁰Paul Pitzer, *Building the Skagit* (Portland, Oregon: The Gallery Press, 1978), p. 88.

²¹Kate Mullen Archibald, "Selling the Skagit to the People," *The American City* 54 (November, 1939): 22-23.

²²N.B., "Current Issues in the Pacific Northwest States," *Engineering News-Record* (July 4, 1935): 6.

²³The project was covered by the national press before the elaborate two-day tours were instituted: in 1925, for example, *Scientific American* devoted two pages to the project, see Thomas R. Horner, "Mountains Light a City, *Scientific American* (August, 1925): 112.

²⁴James Allen, *The Company Town in the American West* (Norman, Oklahoma: University of Oklahoma Press, 1966), p. 5.

²⁵Ross to Kane and Currier, 14 March 1927, SCL 33-2, Box 84.

²⁶Unrecorded interview with Jack Roper by Patricia Erigerero, 14 August 1989.

²⁷*Ibid.*, p. 84.

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²⁸Ross to McKeen, Smith, et. al. 23 November 1934, SCL 33-2, Box 84.

²⁹Potter, Reid, et. al. to Ross, 2 June, 1937, SCL 33-2, B 84.

³⁰Currier to Ross, 5 August 1937, SCL 33-2, B 84.

³¹Ibid.

³²McKeen and Smith to Ross, 25 January 1938, SCL 33-1 B49, F2.

³³McKeen to Ross, 4 February 1938, SCL 33-1, B 49, F3.

³⁴By this time, the Hollywood houses had been allocated.

³⁵Hugh DeLacy to R. Hoffman, 9 June, 1939, SCL 33-2, Box 84.

³⁶Unrecorded interviews by Patricia Erigero with T.N. Bucknell 10 August 1989, and Jack Roper 14 August 1989.

³⁷Compared to, for example, the small cold water cabins in National Parks of the period, or to the comparatively well-equipped and architecturally-styled tourist hotels in National Parks of the time.

³⁸ This house--one of five, with the partially ruined "Lodge,"--should be viewed with the drawings Ross had prepared for the Chateausque lodge in Newhalem, and a restroom and gatekeeper's house in Diablo, as an indication of the architectural plans Ross had for the Project (See "Unrealized Diablo" and "Newhalem: Tourist Town" sections of this nomination).

³⁹"Bonneville's Bananaman," *Time* (October 25, 1937), p. 59.

⁴⁰"Steve" Stevens to Ross, 2 June 1938, SCL 33, B49, F10.

⁴¹Gilbert Brown, *Romance of City Light* (Seattle: *Seattle Star*, 27 January 1937), p. 39

⁴²Jim Marshall, "It Can't Be Done, Can't It?", *Collier's* (March 7, 1936), p. 36.

⁴³Frank Morton Todd, *The Story of the Exposition*, vol. 2 (New York: G.P. Putnam's Sons, 1921), p. 343.

⁴⁴Kate Archibald, "Selling the Skagit to the People," p. 22.

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Newby, Bill. Seattle City Light, Newhalem, Washington. Interview, September 7, 1989.

Roper, Jack. First Superintendent Ross Powerhouse, Seattle, Washington. Interview August 14, 1989.

Ross, James. Nephew J.D. Ross, Seattle, Washington. Interview August, 1989.

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UTM References

The principal UTM points for each area encompassing more than one resource are identified with letters as prescribed by the National Register Bulletin #16; individual discontinuous resources are identified by single letters. Secondary points for areas encompassing more than one resource begin with CC and continue to MM.

<u>Resource</u>	<u>Point</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>
A. Town of Newhalem	A	10	628960	5392240
	B	10	629330	5392630
	C	10	629300	5392540
	D	10	628890	5392360
	CC	10	629060	5392240
B. Gorge Powerplant Complex	E	10	629460	5392660
	F	10	629550	5392560
	G	10	629870	5392780
	H	10	629780	5392870
	I	10	632060	5395170
	J	10	631950	5395340
	K	10	631810	5395270
	L	10	631950	5395100
	DD	10	629670	5392620
	EE	10	629610	5392770
	FF	10	632080	5395200
C. Diablo Powerplant Complex	M	10	636810	5397380
	N	10	636730	5397320
	O	10	636890	5397100
	P	10	637000	5397220
	Q	10	636940	5397330
	R	10	637380	5397310
	S	10	637540	5396980
	T	10	637360	5397000
	GG	10	636900	5397370
	HH	10	636960	5397140
	II	10	637350	5397270
	JJ	10	637460	5397340

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D Discontiguous Resources

Newhalem Creek Powerhouse	U	10	628920	5391940
	KK	10	629160	5390910
	LL	10	629240	5390940
	MM	10	629000	5391950
Ross Crypt	V	10	629390	5392600
House #2 (Building H-6)	W	10	636300	5397610
Diablo Water Tower	X	10	636800	5397010

Boundary Justification

A. Town of Newhalem: Boundaries were drawn to encompass the central area of the town; the edges of the historic town have lost integrity and are not included within the proposed boundaries. The southerly boundary is the Skagit River, historically the edge of the town; the northerly boundary is Highway 20, which replaced the historic railroad line which served as the east-west edge of the town proper; the westerly boundary is Third Street, the historic edge of Upper Camp; the easterly boundary is the easterly edge of the location of the tourist bunkhouses, the historic edge of the residential area of the town until the 1950s.

B. Gorge Power Plant Complex: The boundaries encompass the historic and non-historic features in the immediate vicinity of the powerhouse, extend the length of the power tunnel and include the headworks. It is a compound site, with two polygonal areas enclosing the Powerhouse and associated resources, and the Gorge High Dam, connected by the linear, manmade 11,000 foot-long power tunnel. The powerhouse and associated resources boundaries are determined by the manmade and natural resources which are historically associated with the site, including the two bridges crossing the Skagit River; the powerhouse, and Ladder Creek Falls Gardens. The Gorge High Dam boundary encompasses the dam and the underwater site of the 1950s diversion dam.

C. Diablo Power Plant Complex: The boundaries encompass the historic and non-historic resources along the easterly edge of the town of Diablo, and extend to the east to include the Incline, the power tunnel, and Diablo Dam. The boundaries include the historic powerhouse and associated headworks, the historic Incline and its associated waiting room building, and buildings immediately adjacent to the waiting room.

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E. Single Discontiguous Resources. #26 Newhalem Creek Powerhouse Site: the boundaries include the non-historic powerhouse, which contains the historic objects associated with the first hydroelectric development of the Skagit by Seattle City Light, the penstock and power tunnel which also date to that time. #25 Ross Crypt: The boundaries include the crypt, and the rock-faced opening into which it is carved, and the landscaped grounds immediately to the south of the crypt. #34 House #2: The boundaries include the residence and extend to the north of the building, approximately 50 feet, to Stetattle Creek, encompassing the rock pool and fire pit which also date to the historic period and are associated with the house. #40 Diablo Water Tower: the boundaries include the area encompassed by the base of the tower.

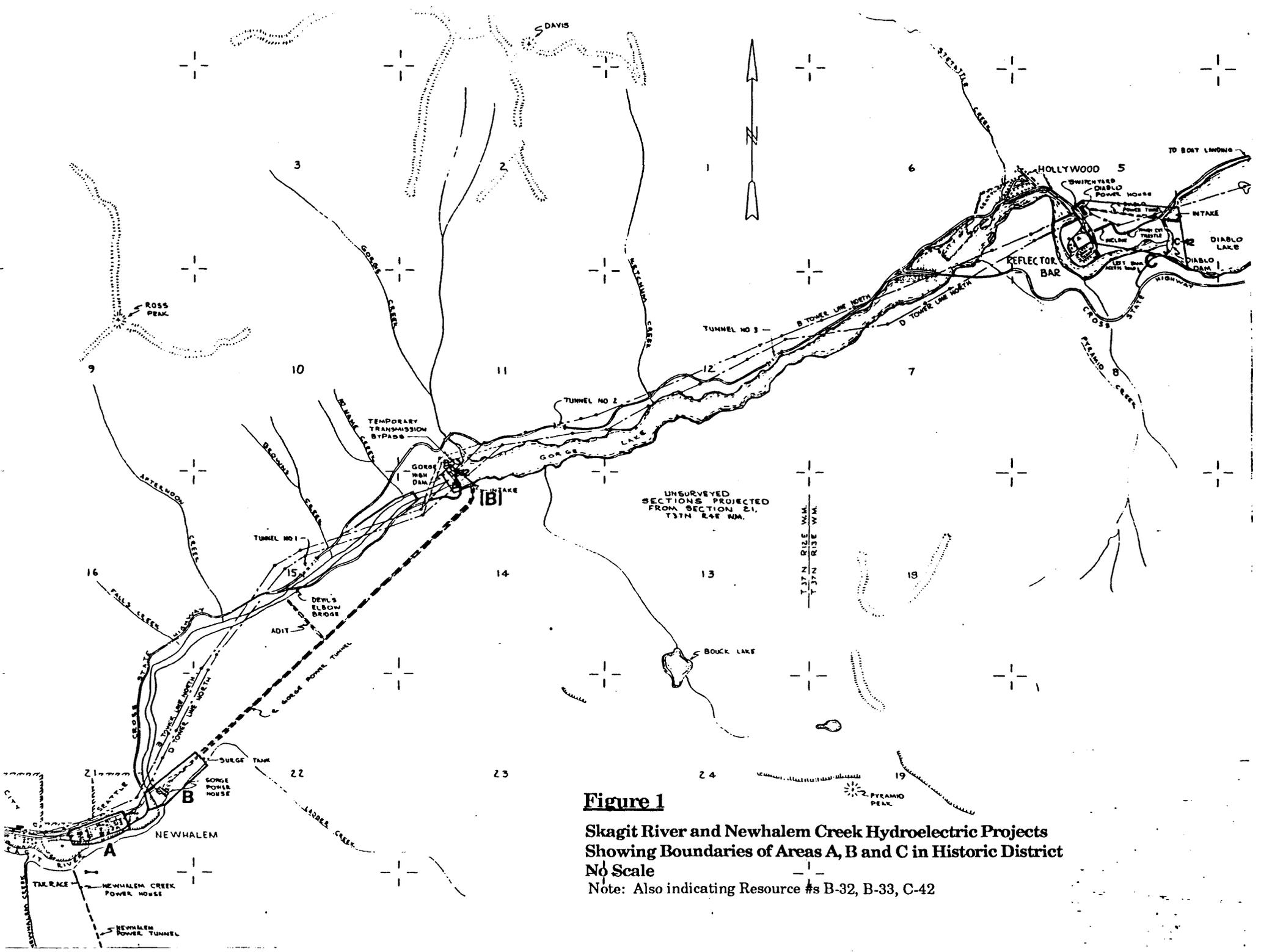


Figure 1

**Skagit River and Newhalem Creek Hydroelectric Projects
Showing Boundaries of Areas A, B and C in Historic District
No Scale**

Note: Also indicating Resource #s B-32, B-33, C-42

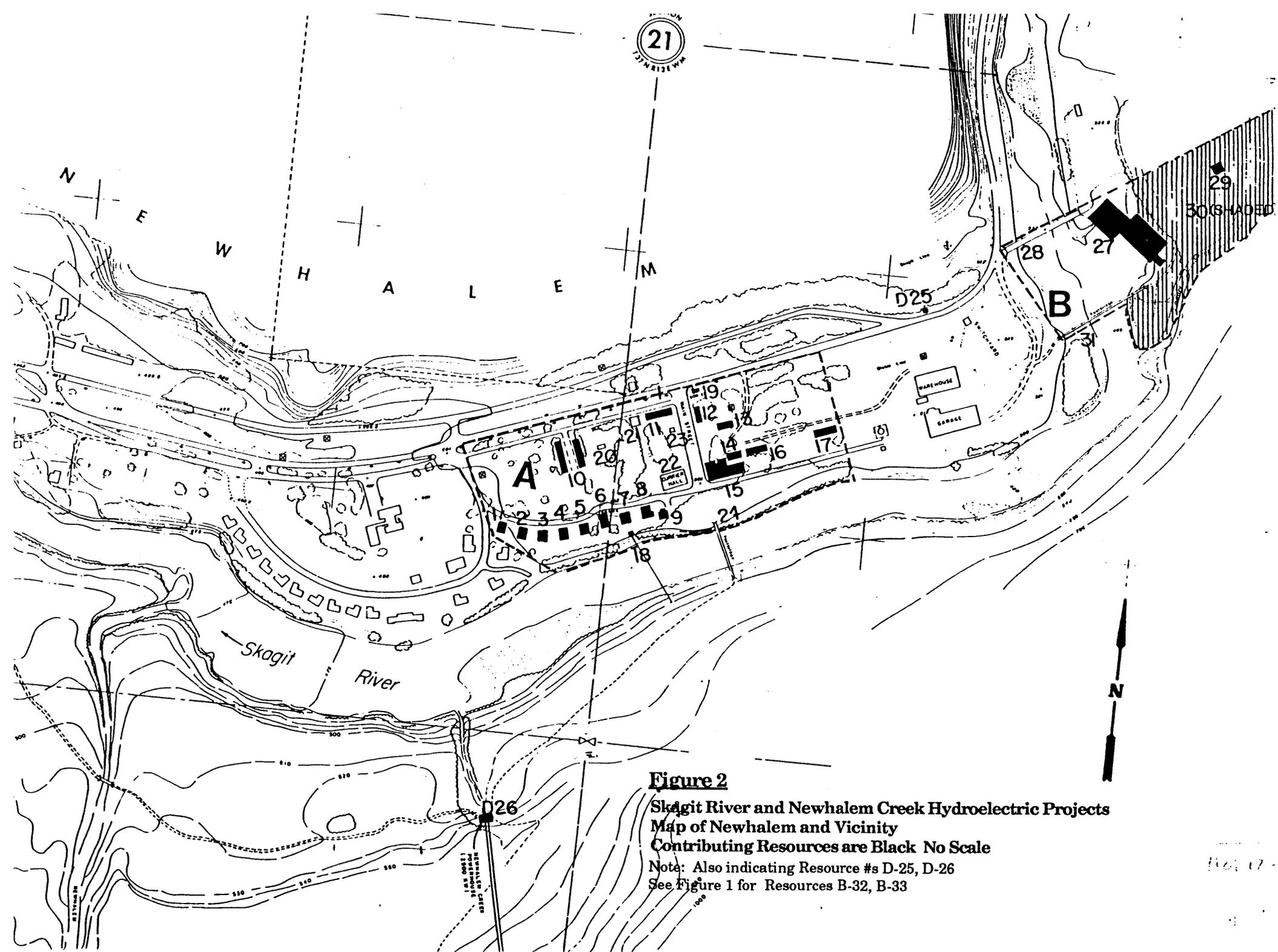


Figure 2
Skagit River and Newhalem Creek Hydroelectric Projects
Map of Newhalem and Vicinity
Contributing Resources are Black No Scale
 Note: Also indicating Resource #s D-25, D-26
 See Figure 1 for Resources B-32, B-33

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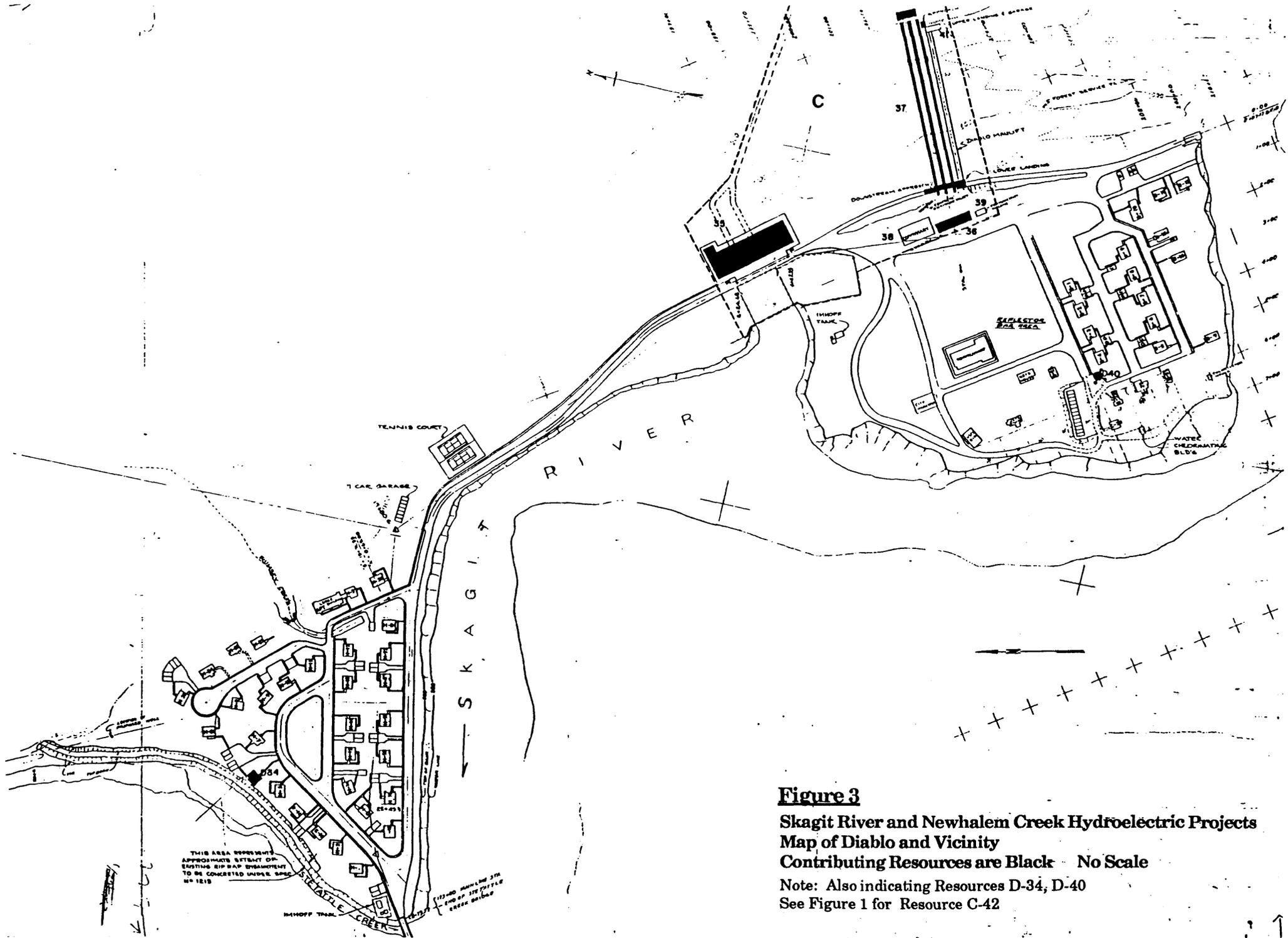
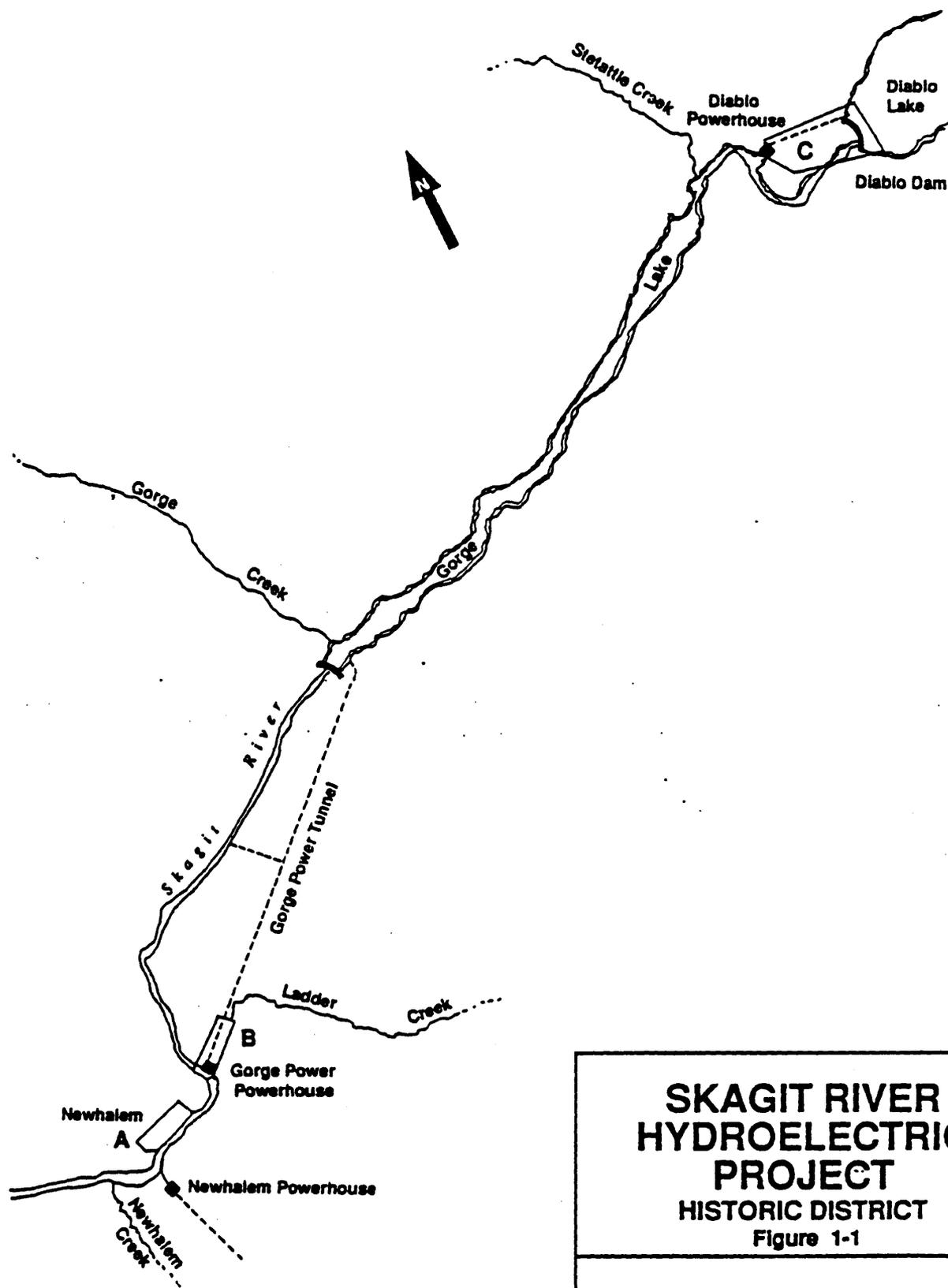


Figure 3
Skagit River and Newhalem Creek Hydroelectric Projects
Map of Diablo and Vicinity
Contributing Resources are Black - No Scale

Note: Also indicating Resources D-34, D-40
 See Figure 1 for Resource C-42



**SKAGIT RIVER
HYDROELECTRIC
PROJECT
HISTORIC DISTRICT
Figure 1-1**

- Boundaries of Historic Areas:**
- A. Town of Newhalem**
 - B. Gorge Powerplant Complex**
 - C. Diablo Powerplant Complex**