

**SKAGIT RIVER GEOMORPHOLOGY BETWEEN GORGE DAM AND
THE SAUK RIVER STUDY INTERIM REPORT**

ATTACHMENT E

HISTORICAL CHANNEL CHANGES MAPBOOK

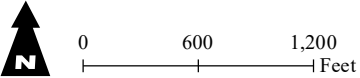
Document Path: N:\Projects\HDR\Skagit_Geomorphology_Stud\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1915.usgs.mxd



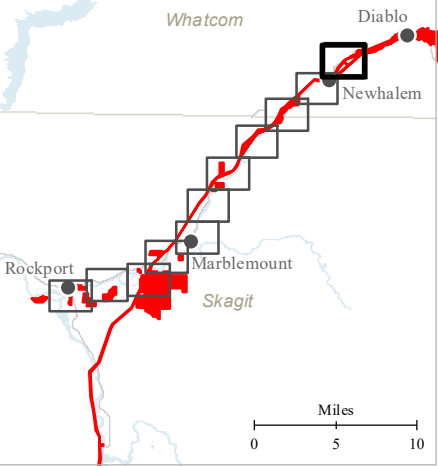
GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1915 MAP* - SHEET 1

+ Project River Miles (PRM)

*1915 topographic maps from USGS
mosaiced and overlaid with hillshade
derived from composite of 2016-2018
lidar



Page 1 of 11

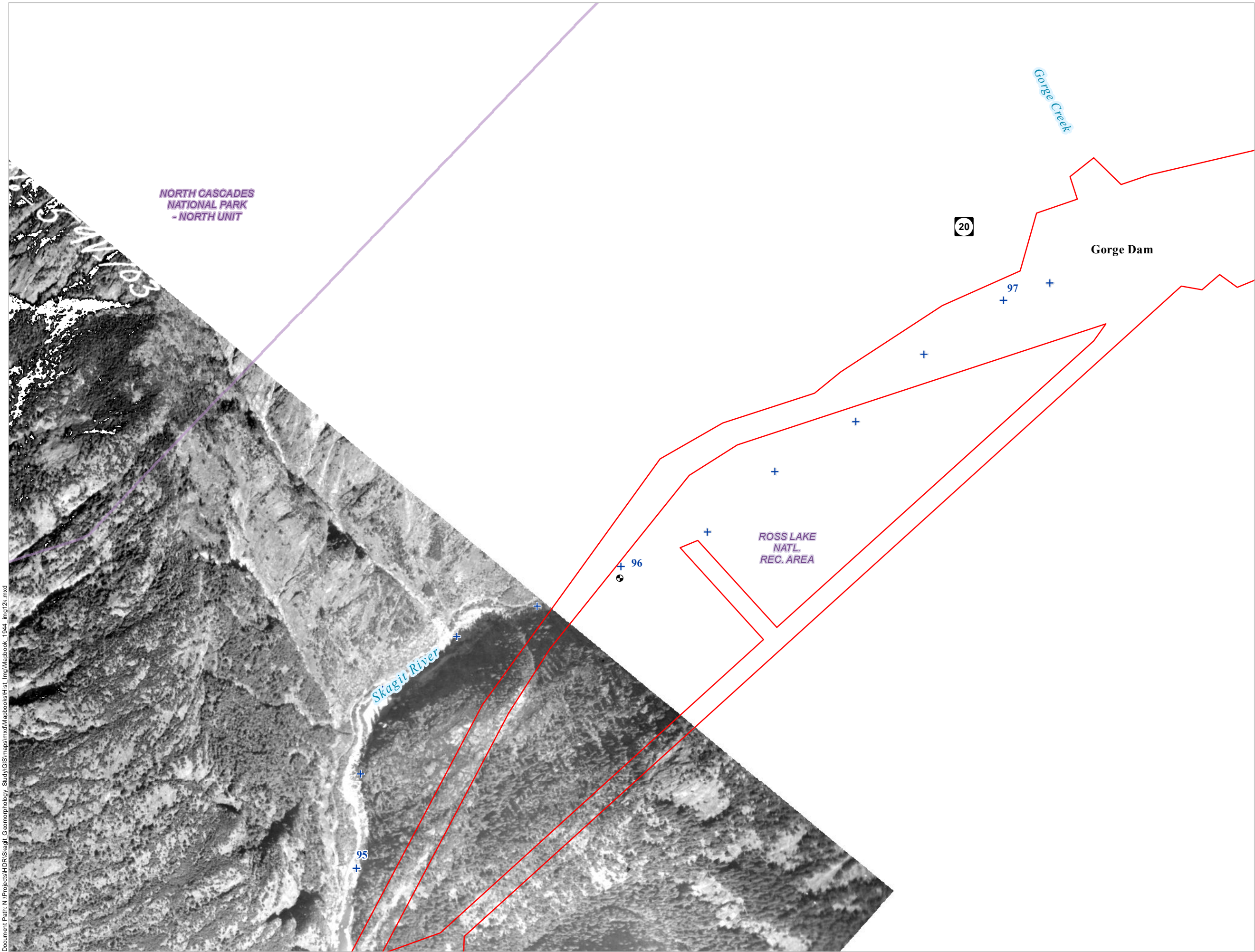


Seattle City Light

SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the
accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National
Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1944_img12k.mxd

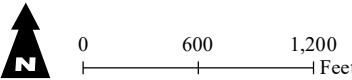


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1944 - SHEET 1**

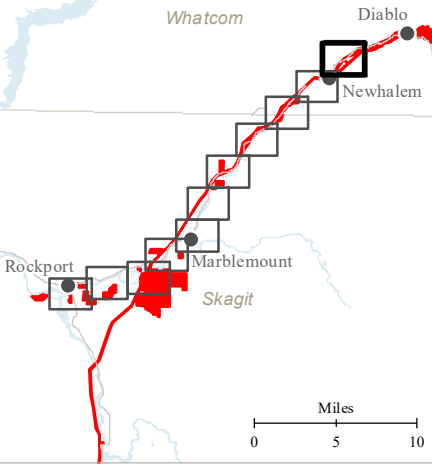
- FERC Project Boundary
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 1 of 11



Seattle City Light

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

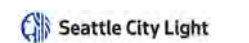
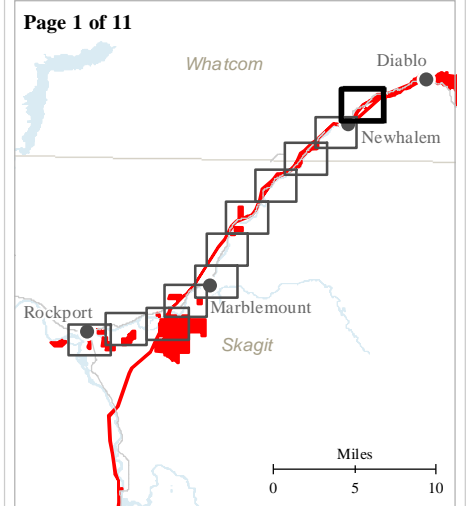
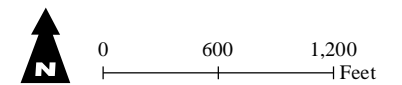
Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1964_img12k.mxd



**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1963/64 - SHEET 1**

- FERC Project Boundary
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary

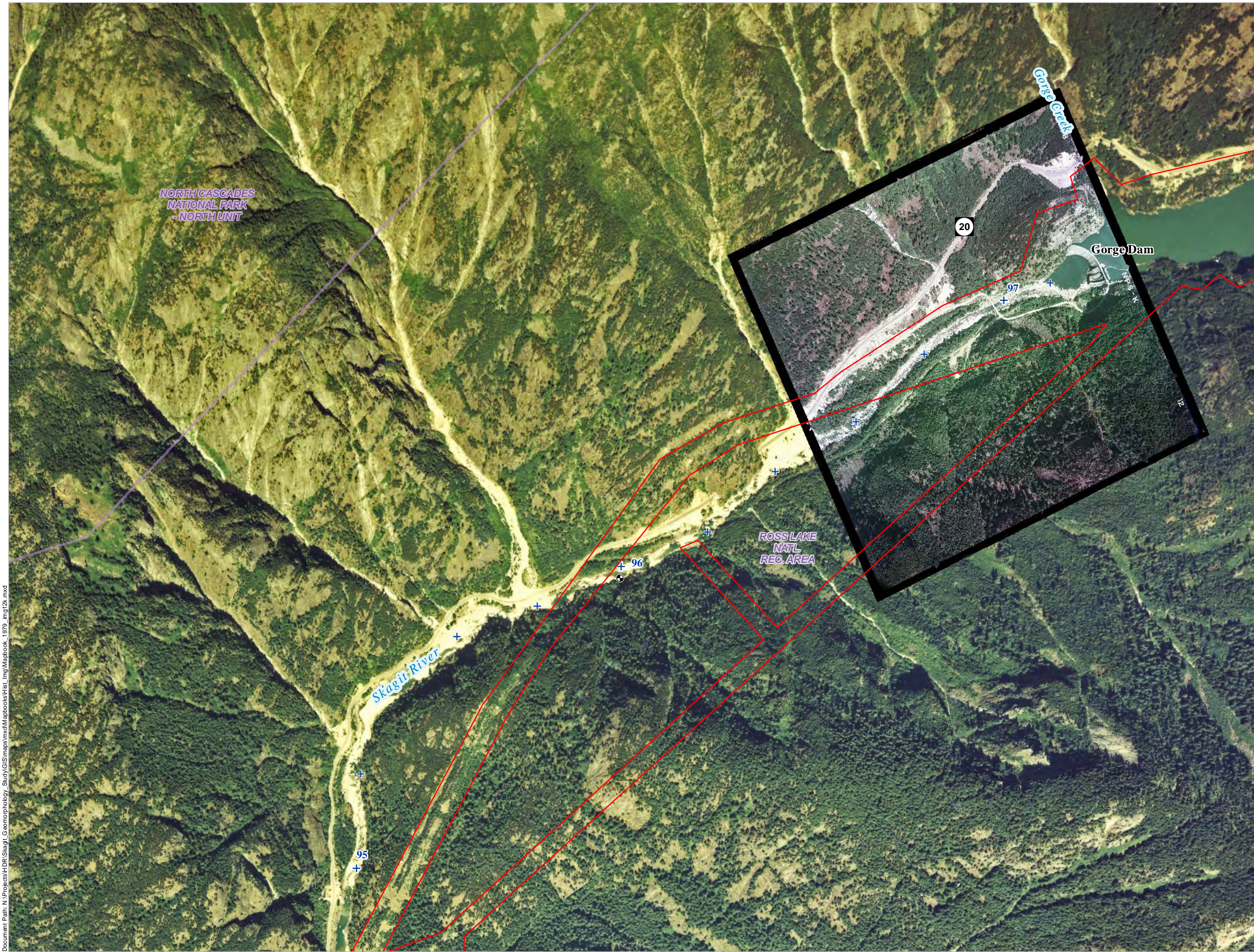
- Channel Type**
- Main Channel
 - Braid Channel
 - Side Channel



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1979_img12k.mxd

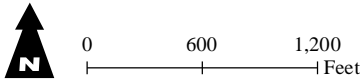


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1978/79 - SHEET 1**

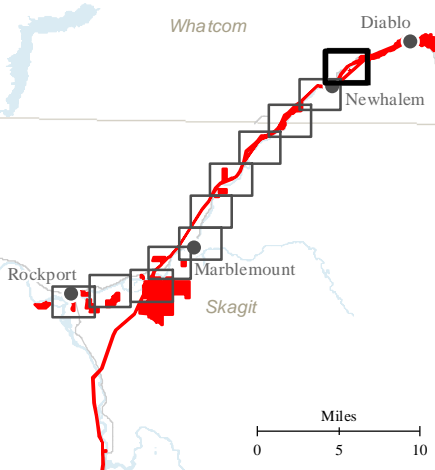
- FERC Project Boundary
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



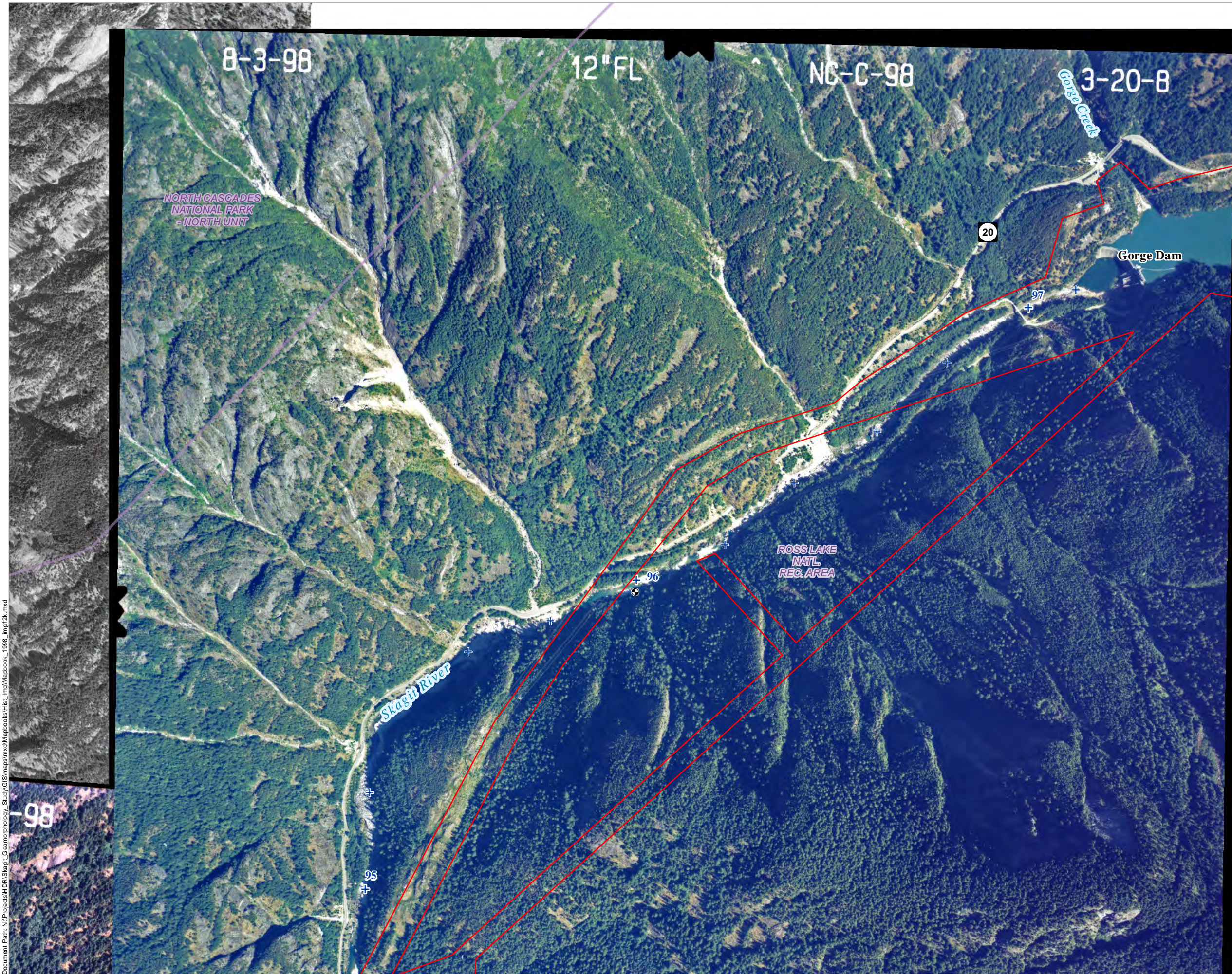
Page 1 of 11



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1998_img12k.mxd

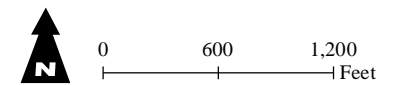


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1998 - SHEET 1**

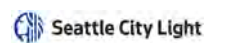
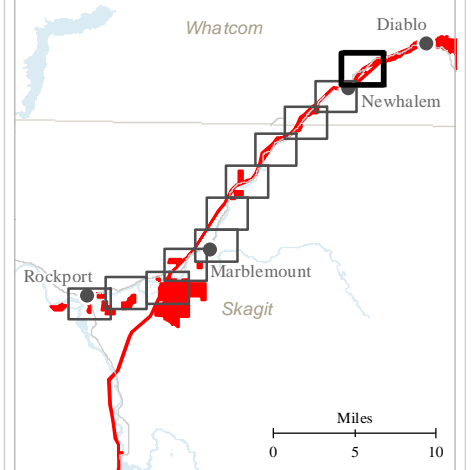
- FERC Project Boundary
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 1 of 11



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_2006_img12k.mxd

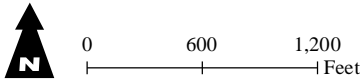


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2006 - SHEET 1**

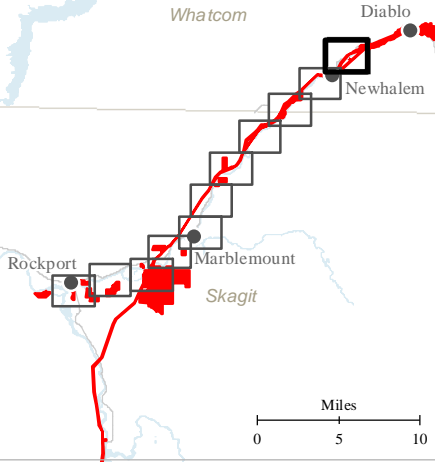
- FERC Project Boundary
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 1 of 11



Seattle City Light

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\2k-v2.mxd

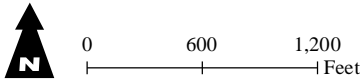


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2019 - SHEET 1**

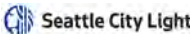
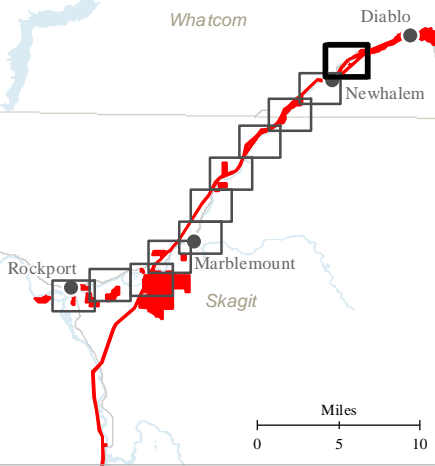
- FERC Project Boundary
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



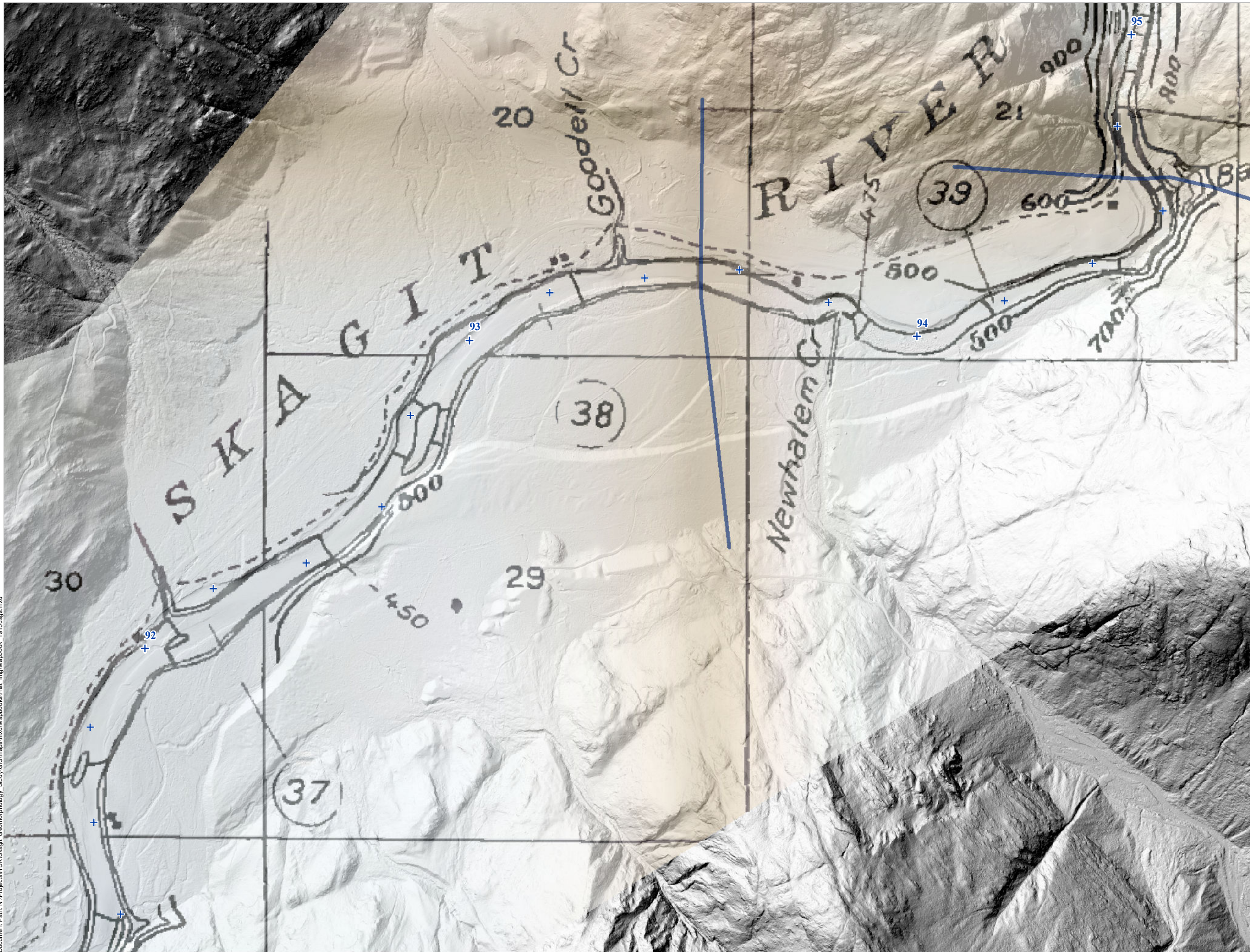
Page 1 of 11



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

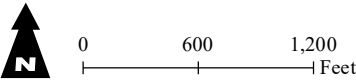
Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbook\Sheet_1915.usgs.mxd



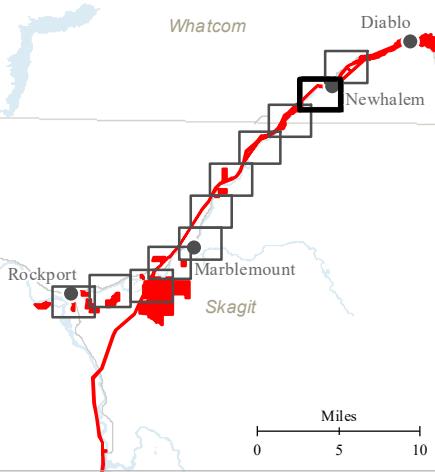
**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1915 MAP* - SHEET 2**

- + Project River Miles (PRM)
- Reach Boundary

*1915 topographic maps from USGS
mosaiced and overlaid with hillshade
derived from composite of 2016-2018
lidar



Page 2 of 11

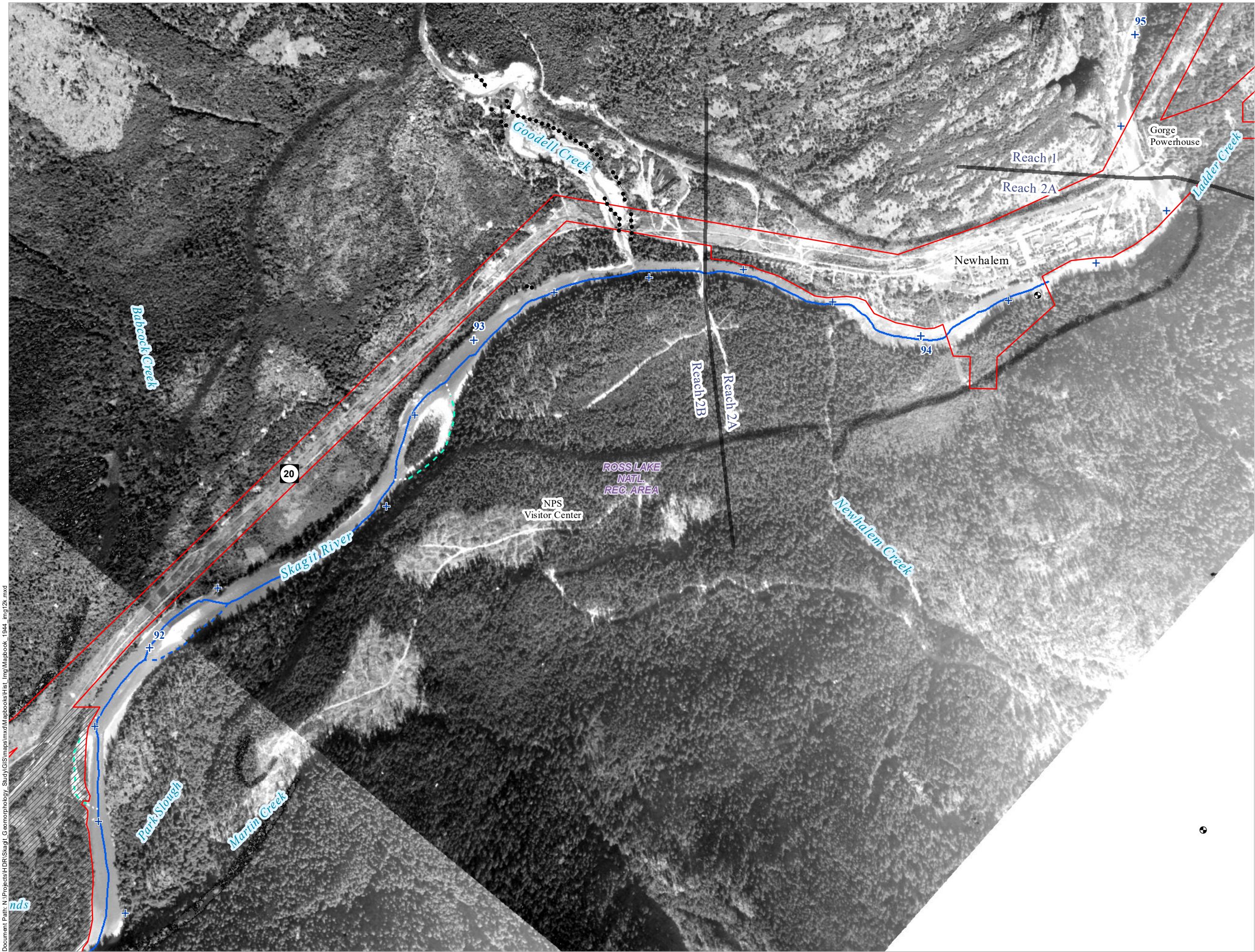


 **Seattle City Light**

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the
accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National
Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1944_img12k.mxd

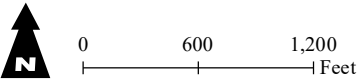


GE-04 GEOMORPHOLOGY STUDY HISTORICAL TIME SERIES 1944 - SHEET 2

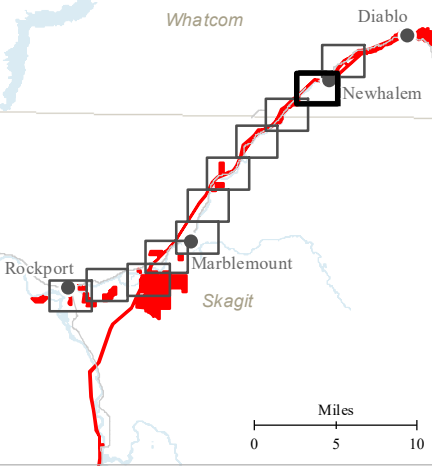
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 2 of 11

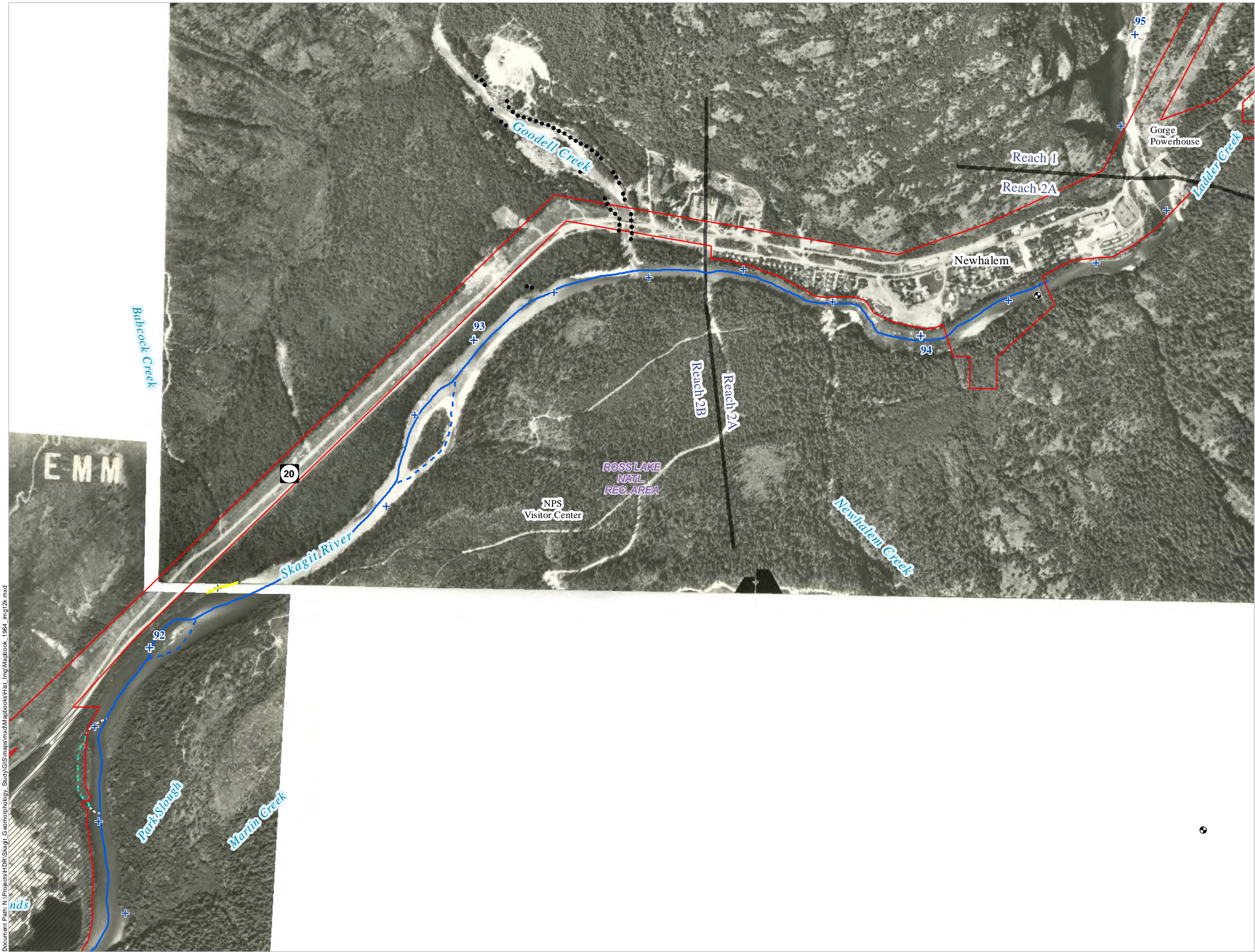


Seattle City Light

SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1964_img12k.mxd

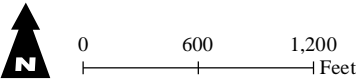


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1963/64 - SHEET 2**

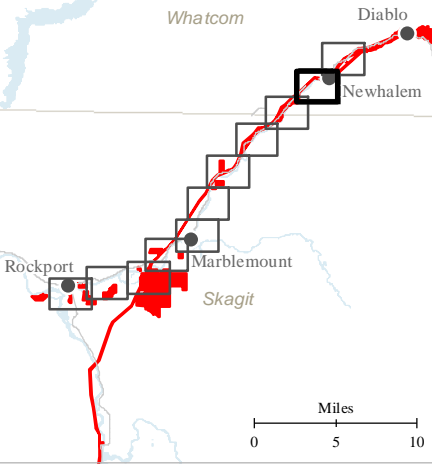
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary
- Reach Boundary
- Eroding Bank 1944-1964

Channel Type

- Main Channel
- Braid Channel
- Side Channel



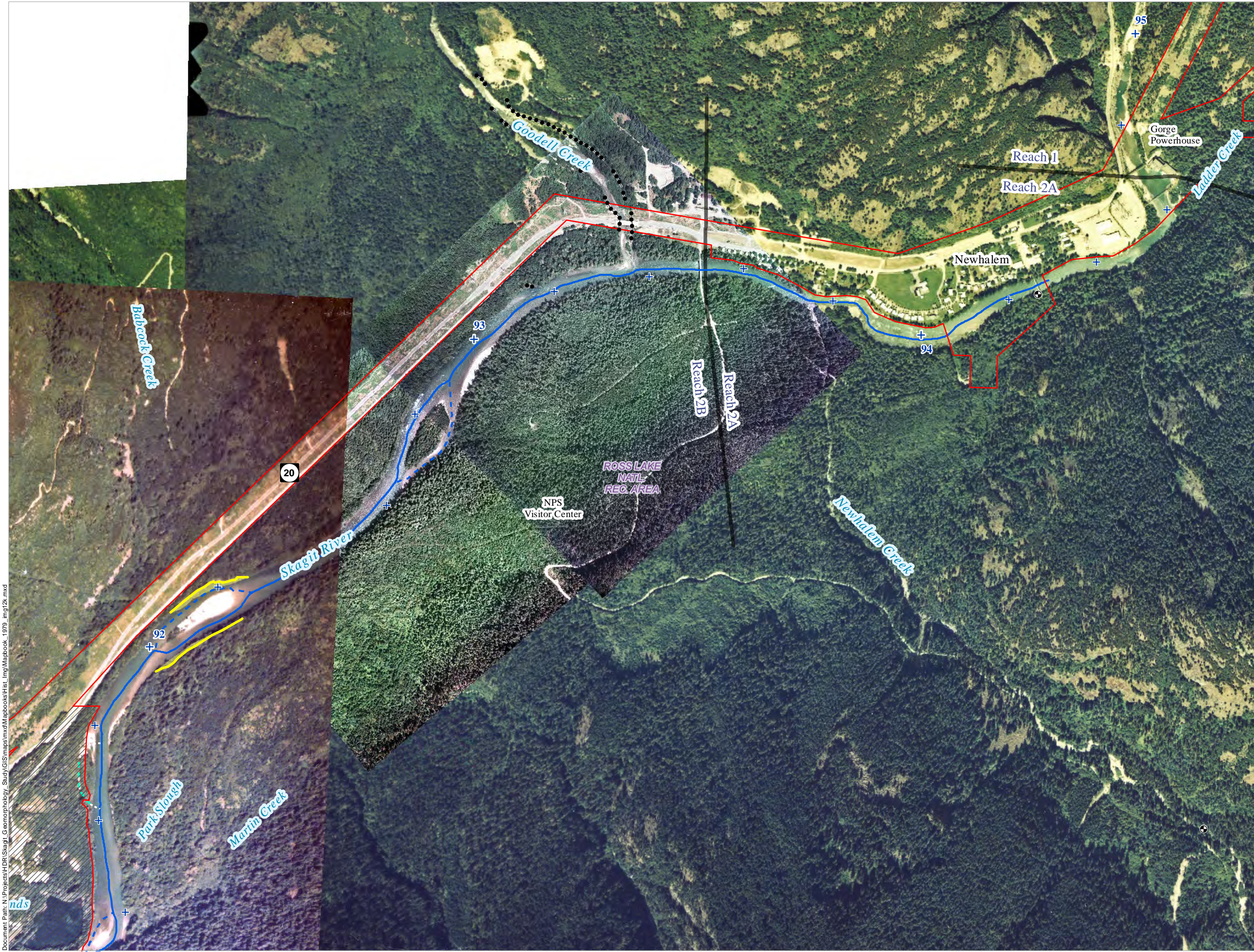
Page 2 of 11



Seattle City Light

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

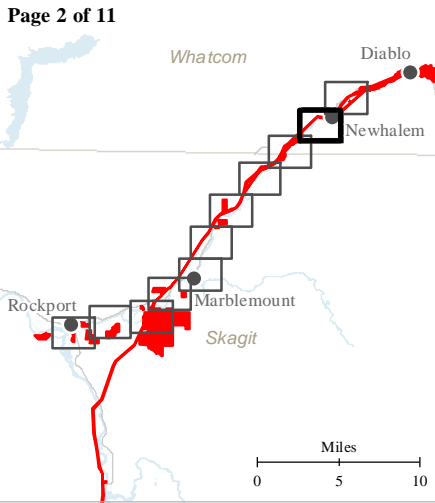
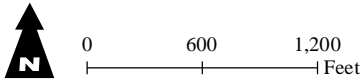


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1978/79 - SHEET 2**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1964-1979

Channel Type

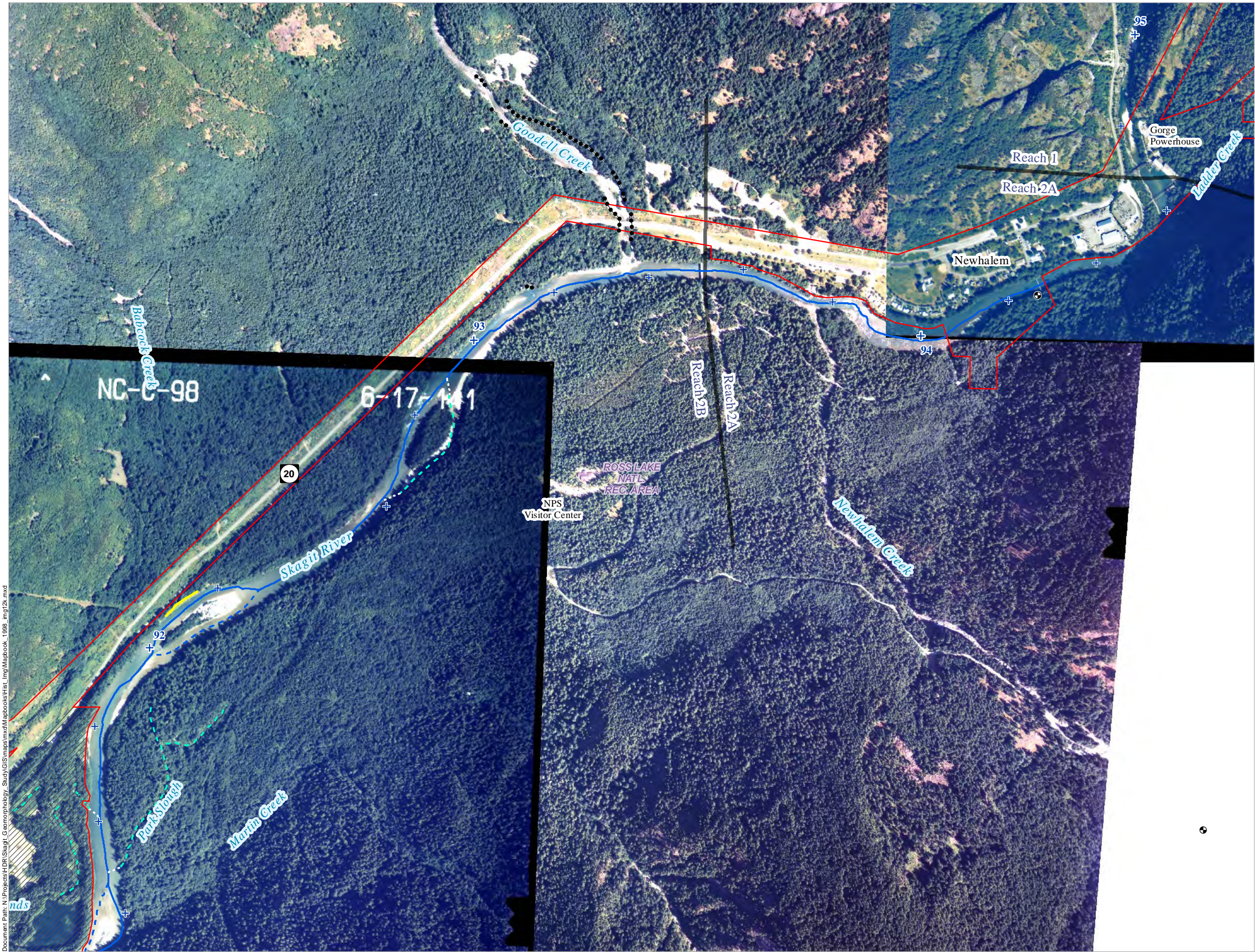
- Main Channel
- Braid Channel
- Side Channel



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1998_img12k.mxd

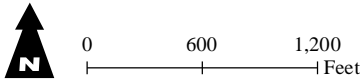


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1998 - SHEET 2**

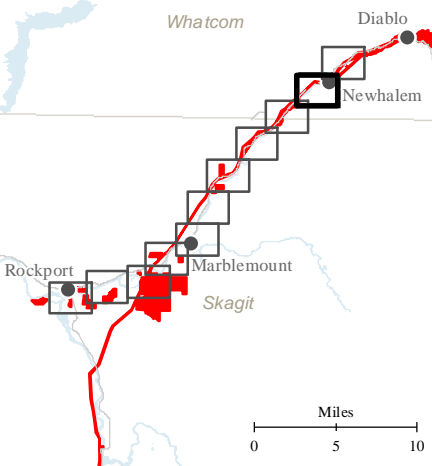
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1979-1998

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 2 of 11



Seattle City Light

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagitl_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_2006_img12k.mxd

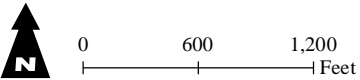


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2006 - SHEET 2**

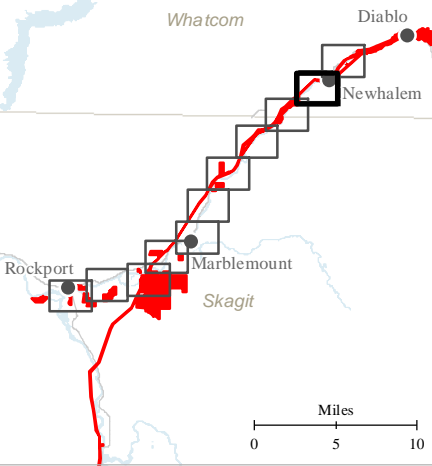
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1998-2006

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 2 of 11



Seattle City Light

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

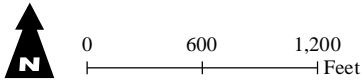
Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2019 - SHEET 2

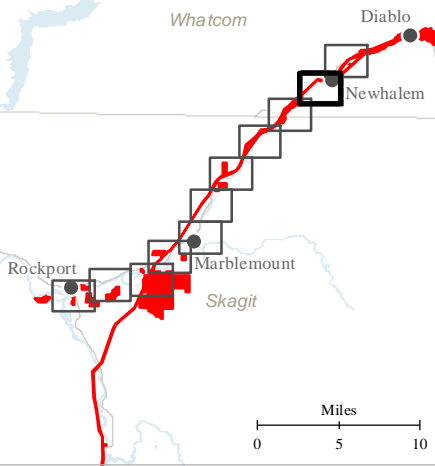
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 2006-2019

Channel Type

- Main Channel
- Braid Channel
- Side Channel

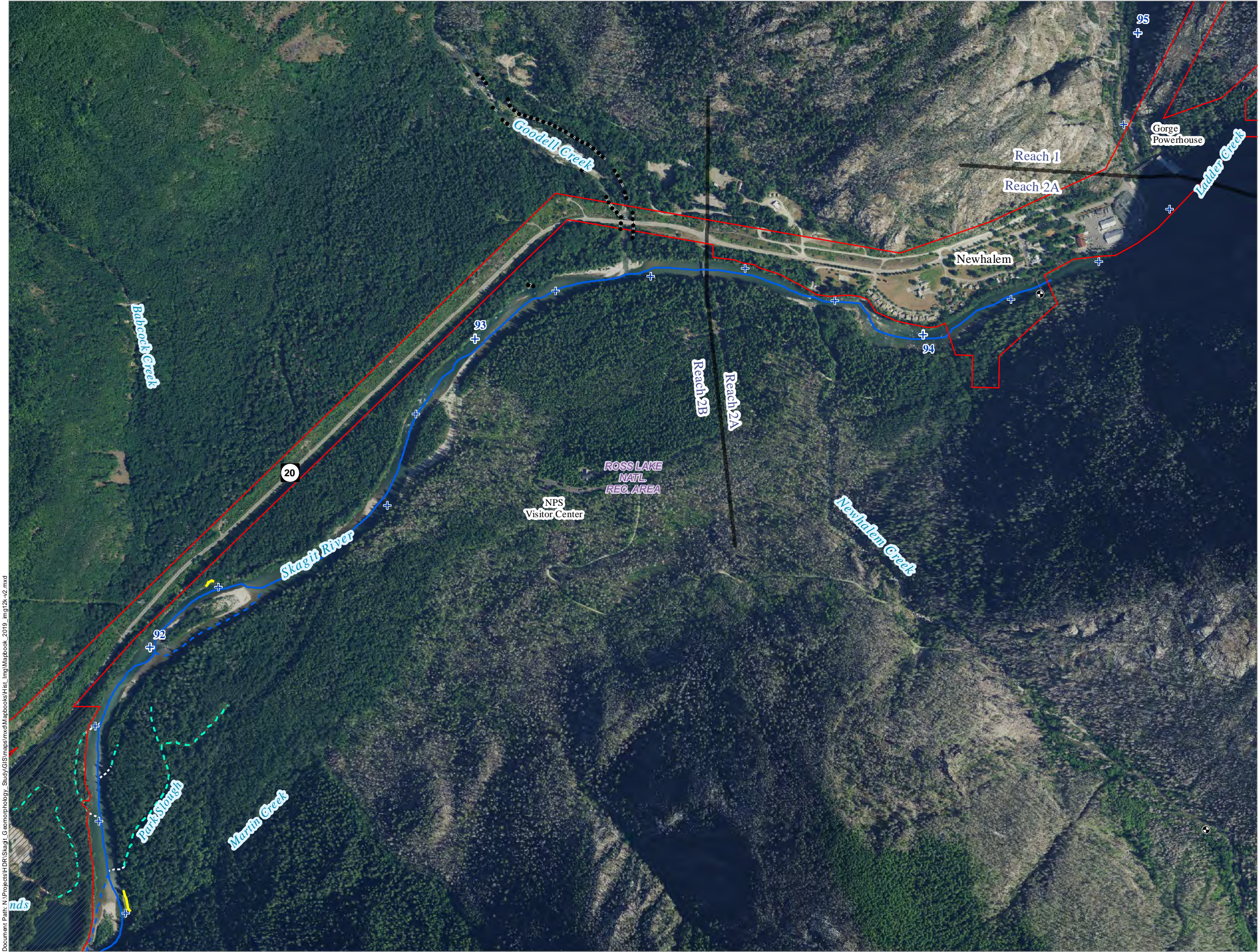


Page 2 of 11



SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS



Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\2k-v2.mxd

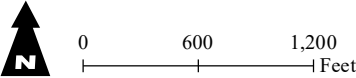
Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1915\usgs.mxd



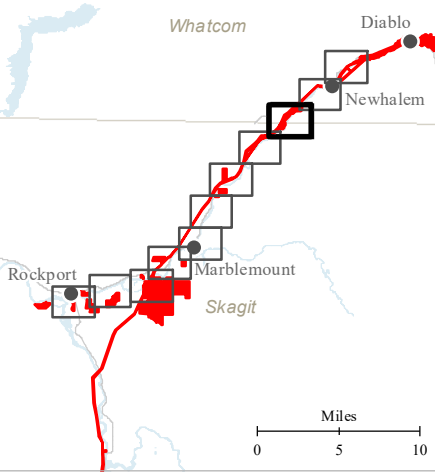
**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1915 MAP* - SHEET 3**

- + Project River Miles (PRM)
- Reach Boundary

*1915 topographic maps from USGS
mosaiced and overlaid with hillshade
derived from composite of 2016-2018
lidar



Page 3 of 11

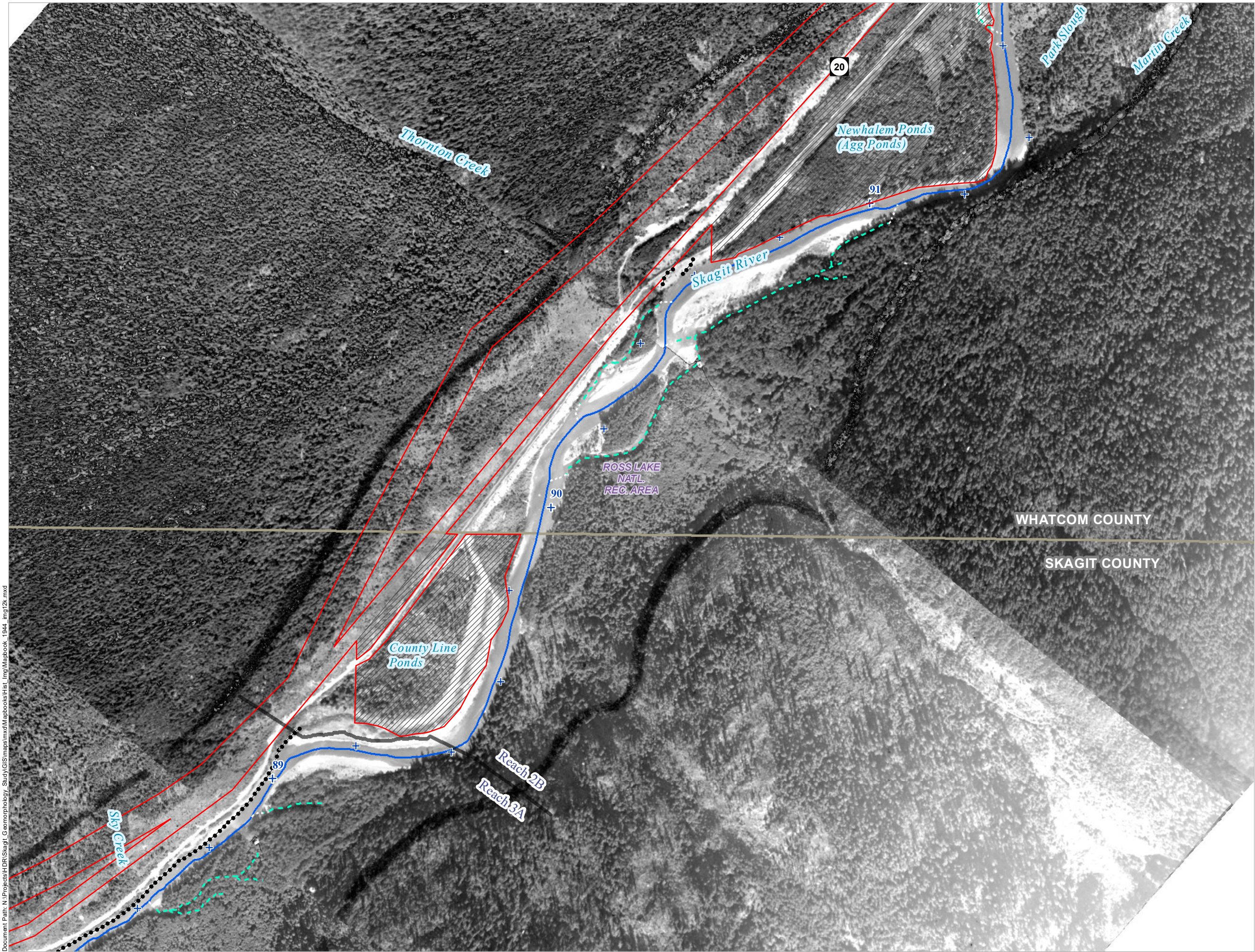


Seattle City Light

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the
accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National
Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1944_img12k.mxd

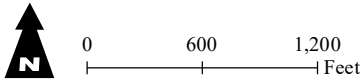


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1944 - SHEET 3**

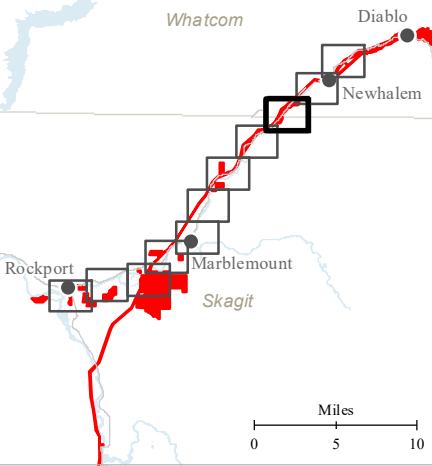
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 3 of 11

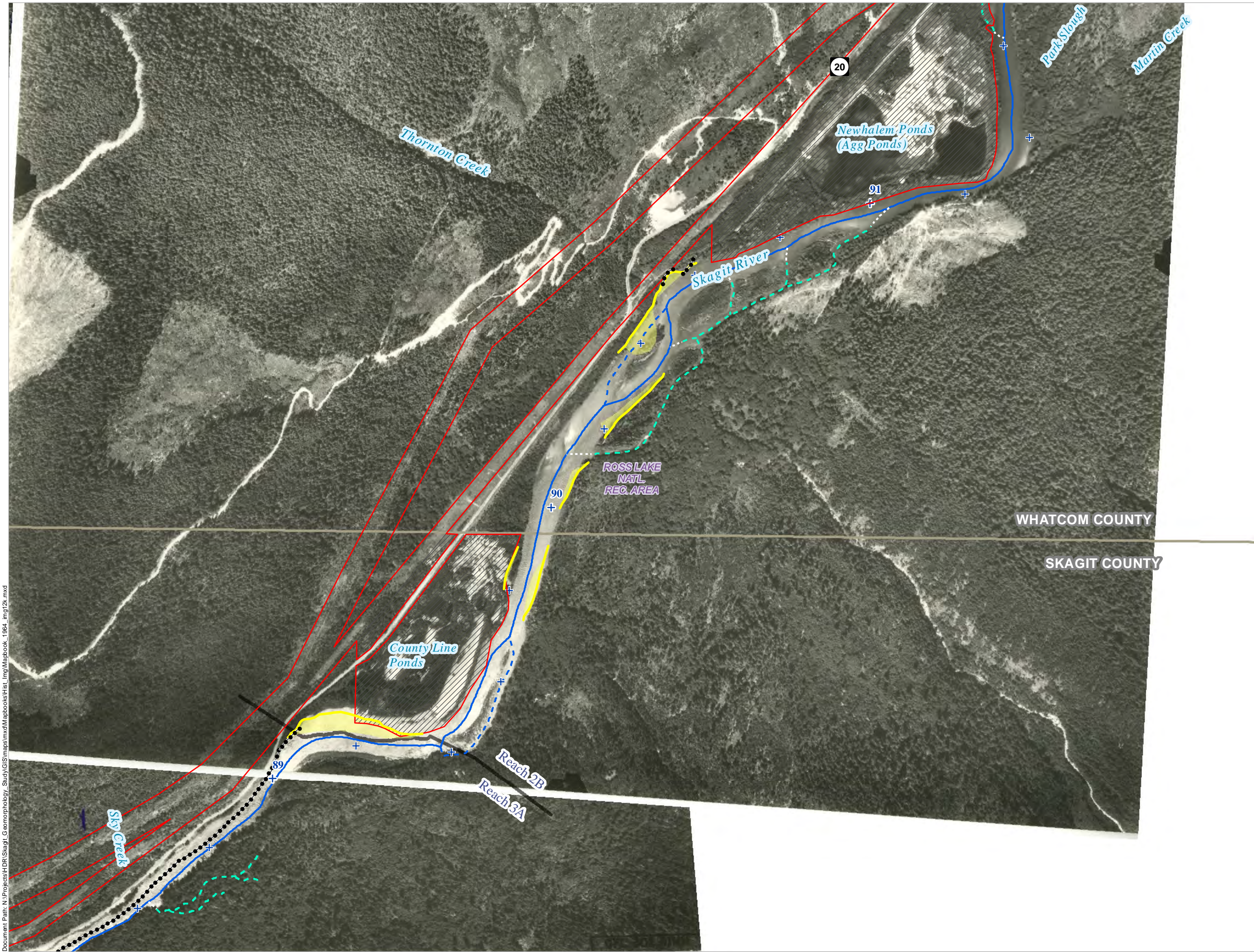


Seattle City Light

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1964_img12k.mxd

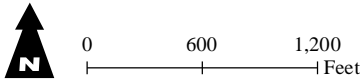


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1963/64 - SHEET 3**

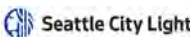
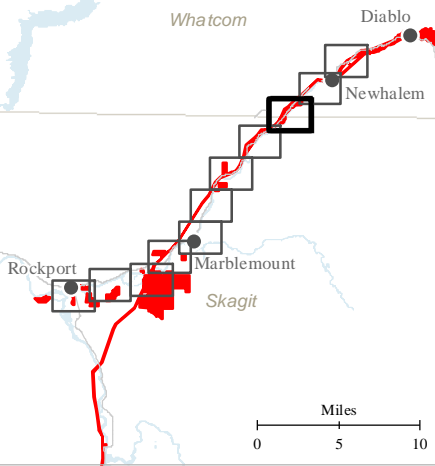
- FERC Project Boundary
- Mitigation Parcel
- + Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Reach Boundary
- Eroding Bank 1944-1964

Channel Type

- Main Channel
- Braid Channel
- Side Channel



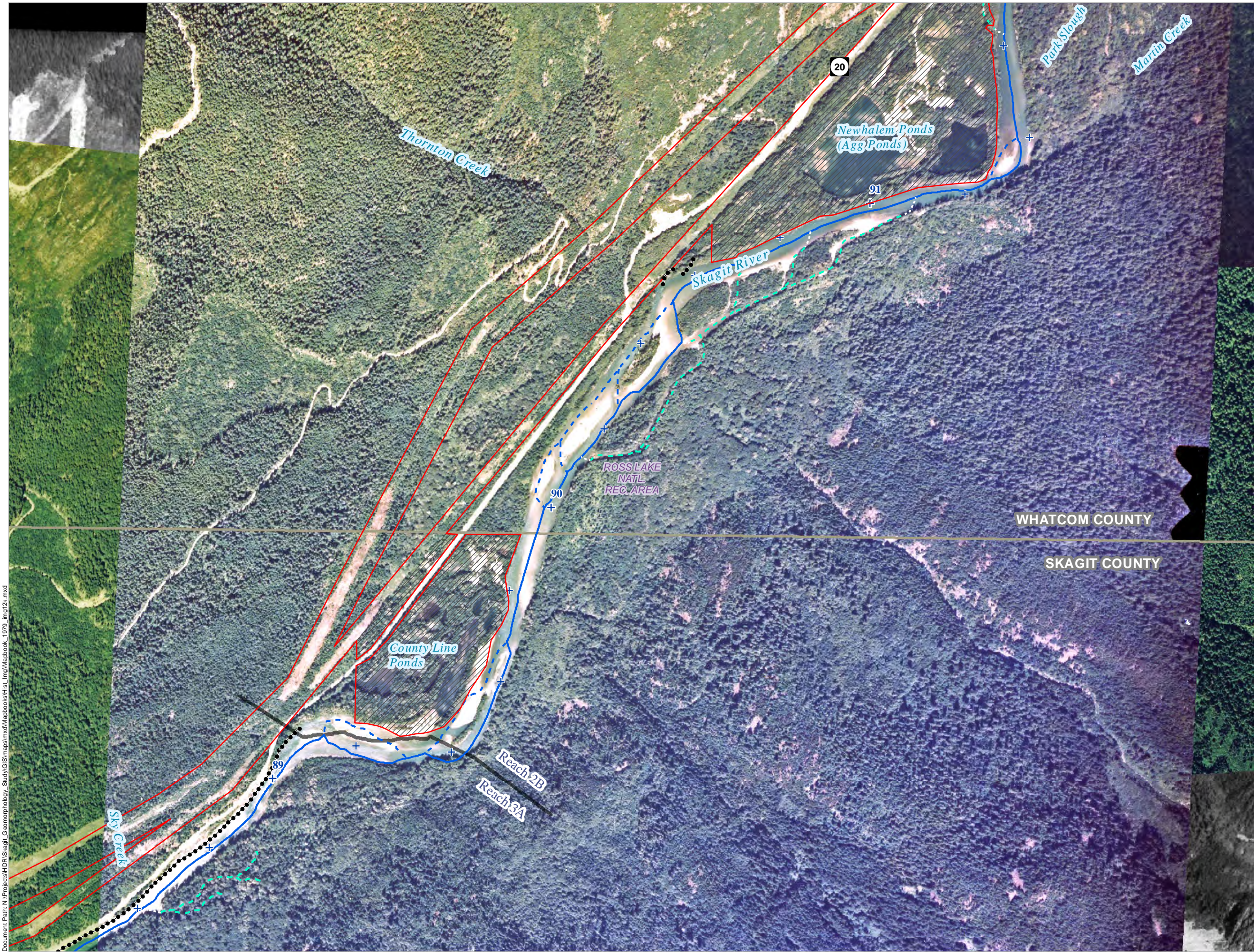
Page 3 of 11



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1979_img12k.mxd

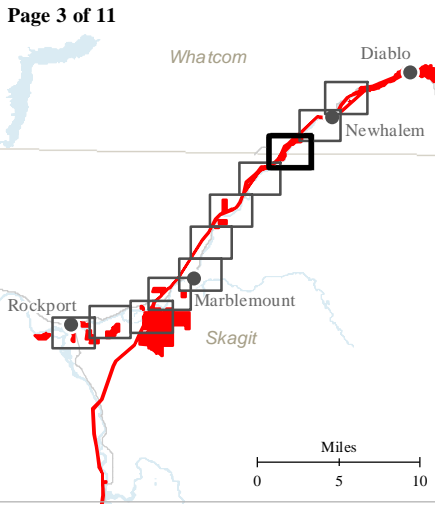
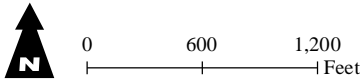


GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1978/79 - SHEET 3

- FERC Project Boundary
- Mitigation Parcel
- + Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Channel Type

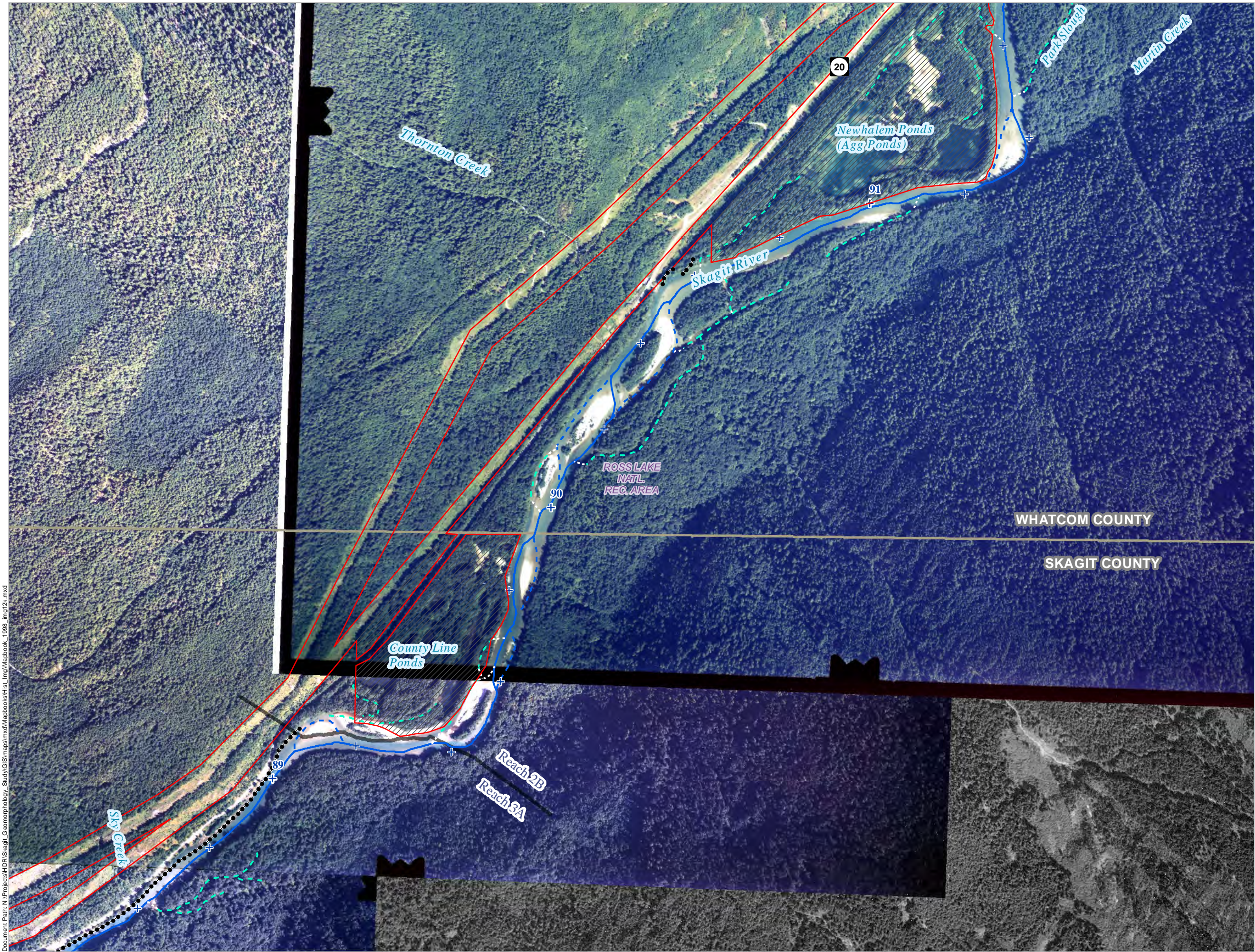
- Main Channel
- Braid Channel
- Side Channel



SKAGIT RIVER HYDROELECTRIC PROJECT (FERC NO. 553)

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1998_img12k.mxd

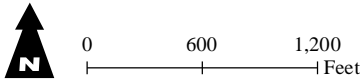


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1998 - SHEET 3**

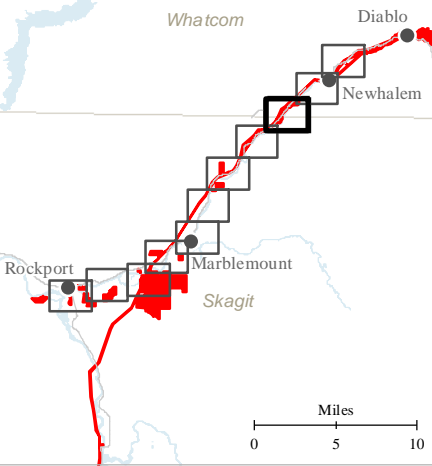
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 3 of 11

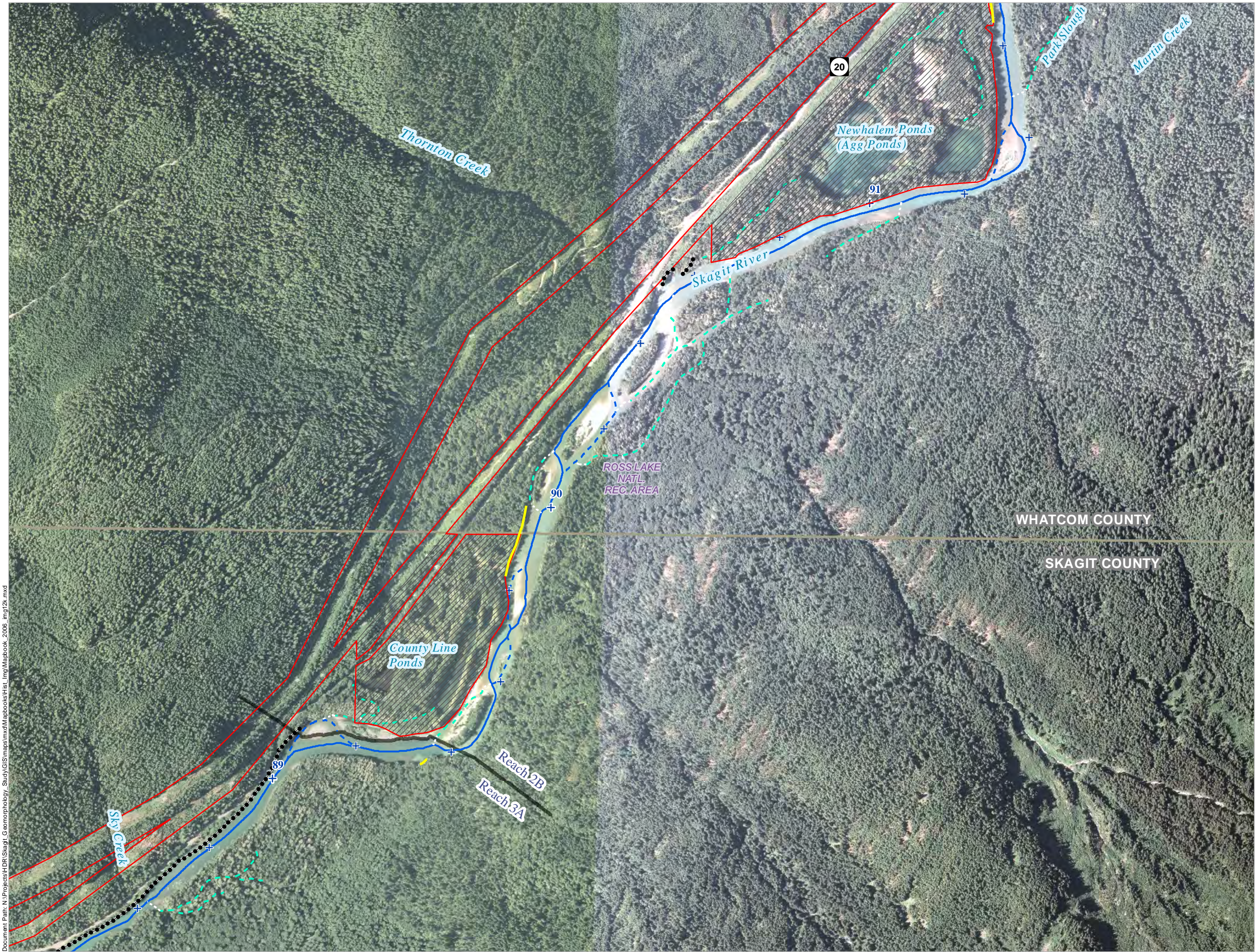


Seattle City Light

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Stud\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_2006_img12k.mxd

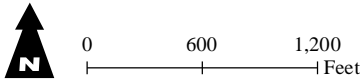


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2006 - SHEET 3**

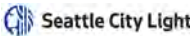
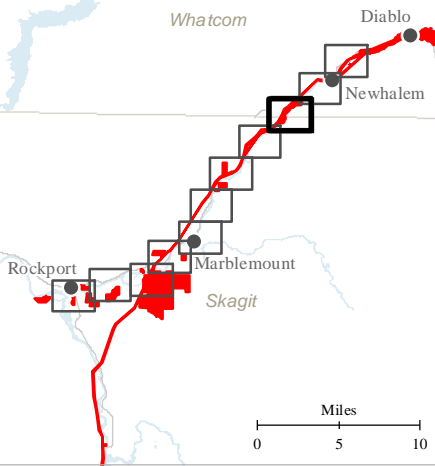
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1998-2006

Channel Type

- Main Channel
- Braid Channel
- Side Channel



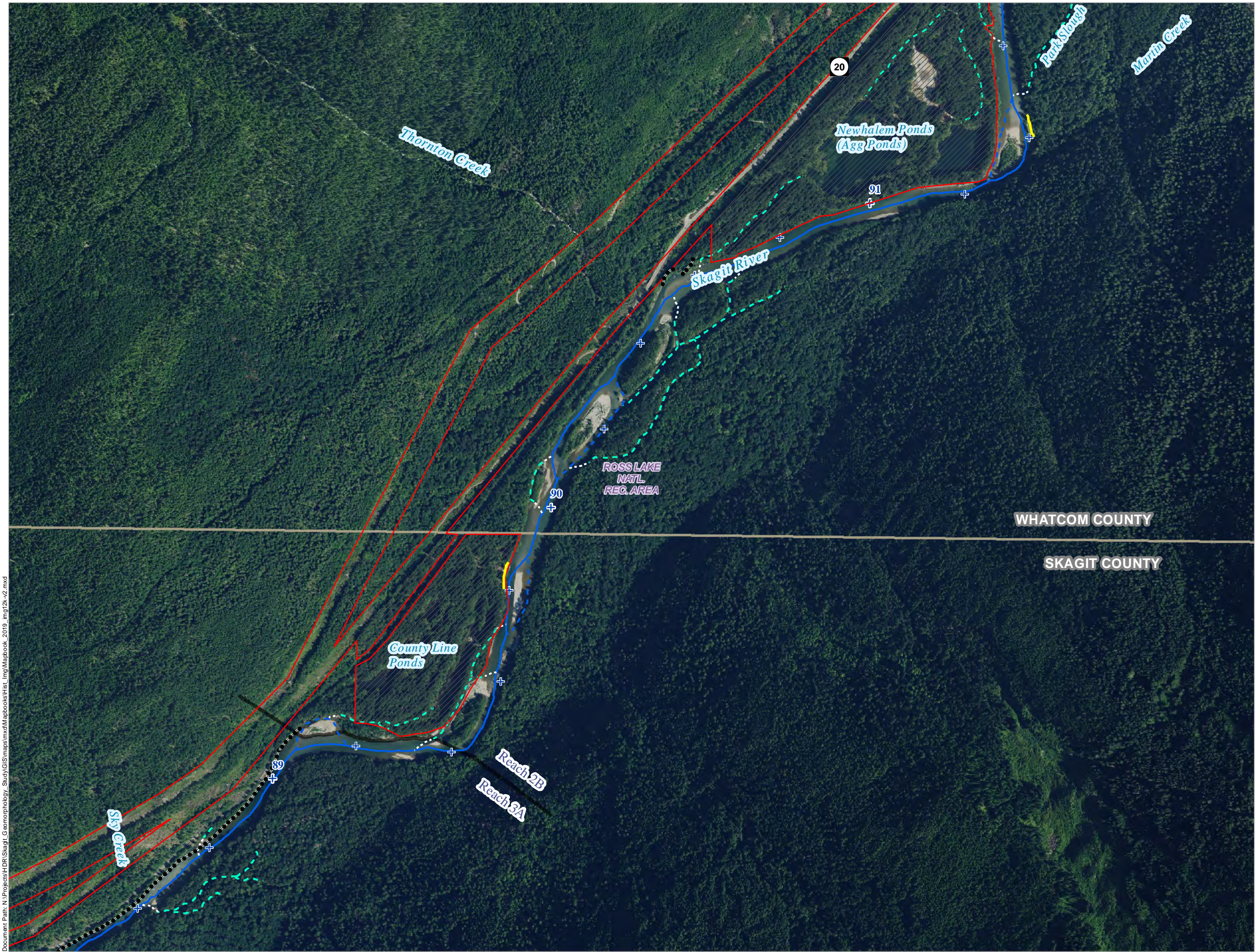
Page 3 of 11



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\SkagitL_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_2019_img\2k-v2.mxd

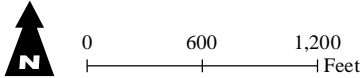


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2019 - SHEET 3**

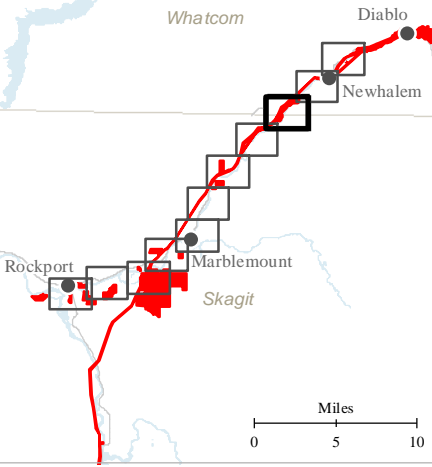
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 2006-2019

Channel Type

- Main Channel
- Braid Channel
- Side Channel

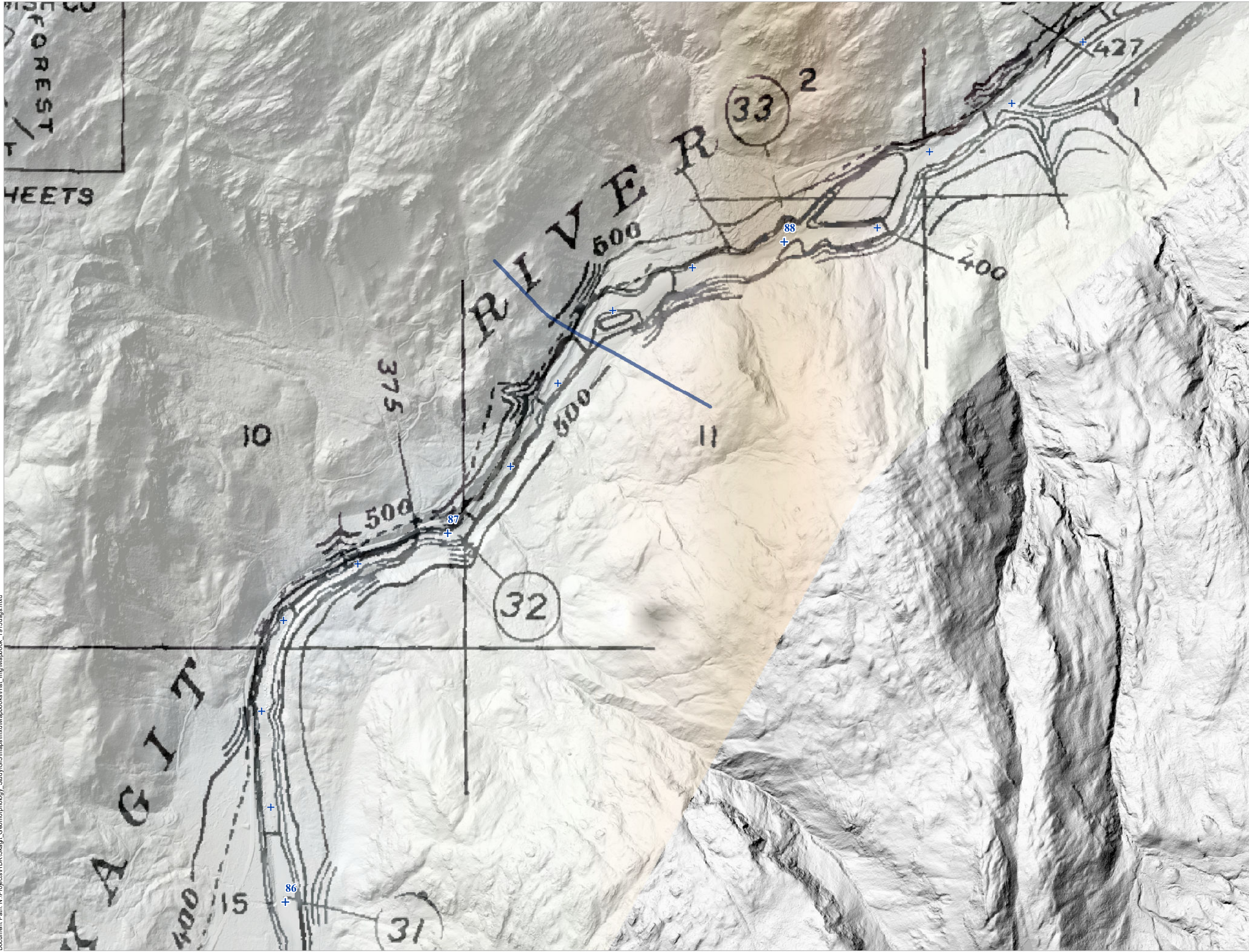


Page 3 of 11



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

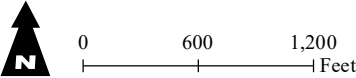
Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS



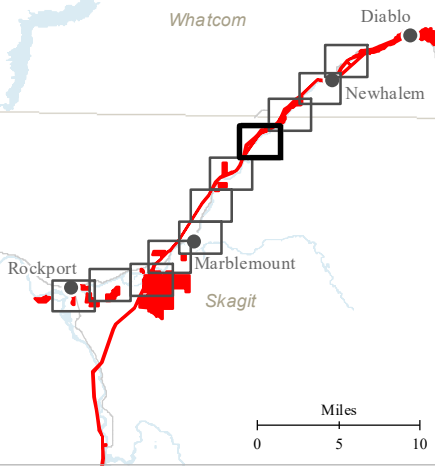
**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1915 MAP* - SHEET 4**

- + Project River Miles (PRM)
- Reach Boundary

*1915 topographic maps from USGS mosaiced and overlaid with hillshade derived from composite of 2016-2018 lidar



Page 4 of 11

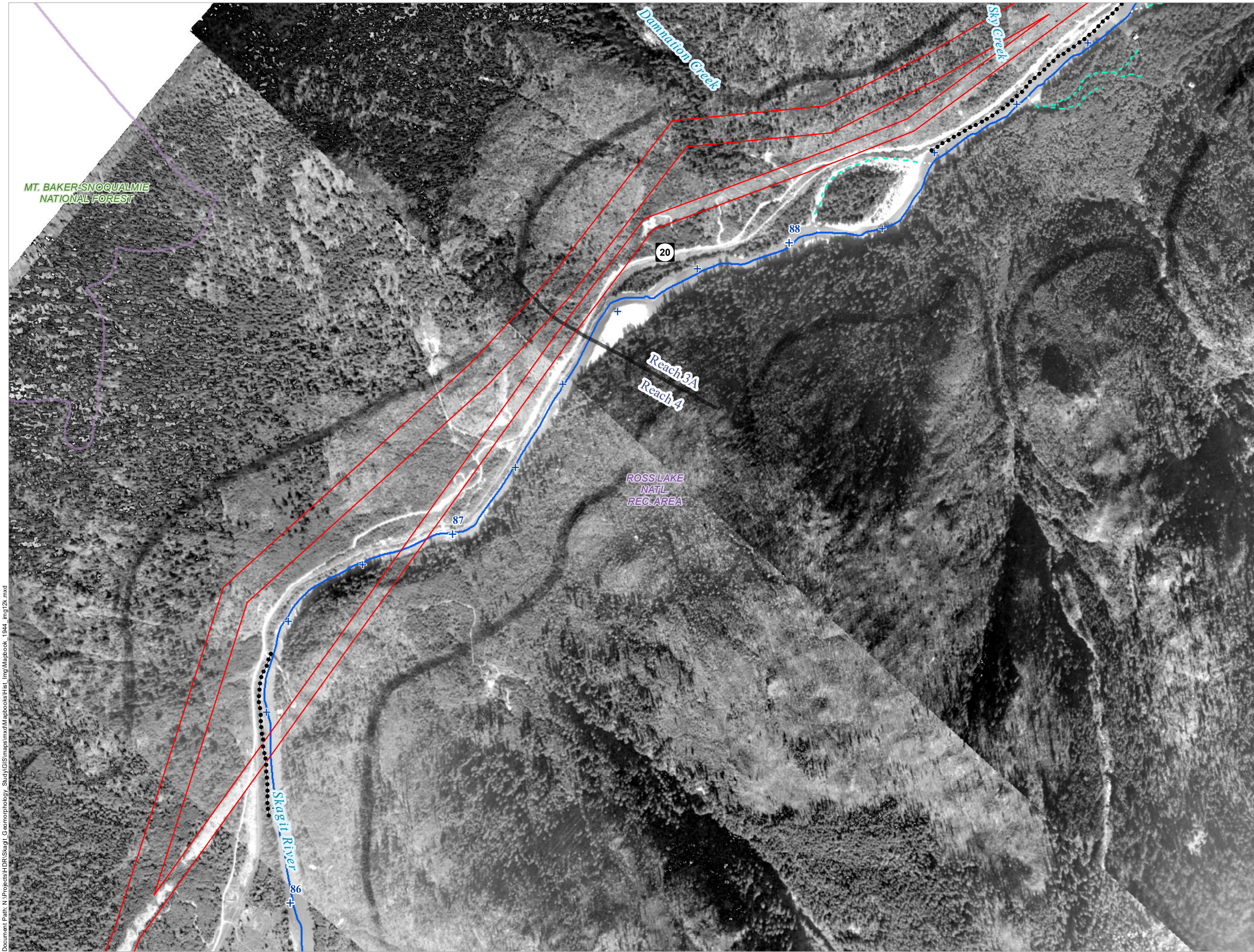


 **Seattle City Light**

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1944_img12k.mxd

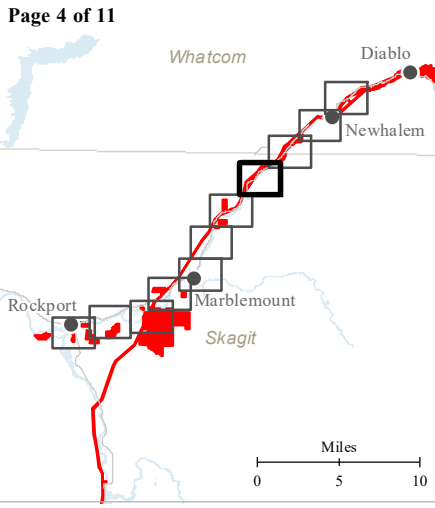
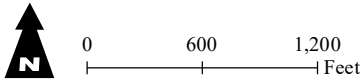


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1944 - SHEET 4**

- FERC Project Boundary
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Channel Type

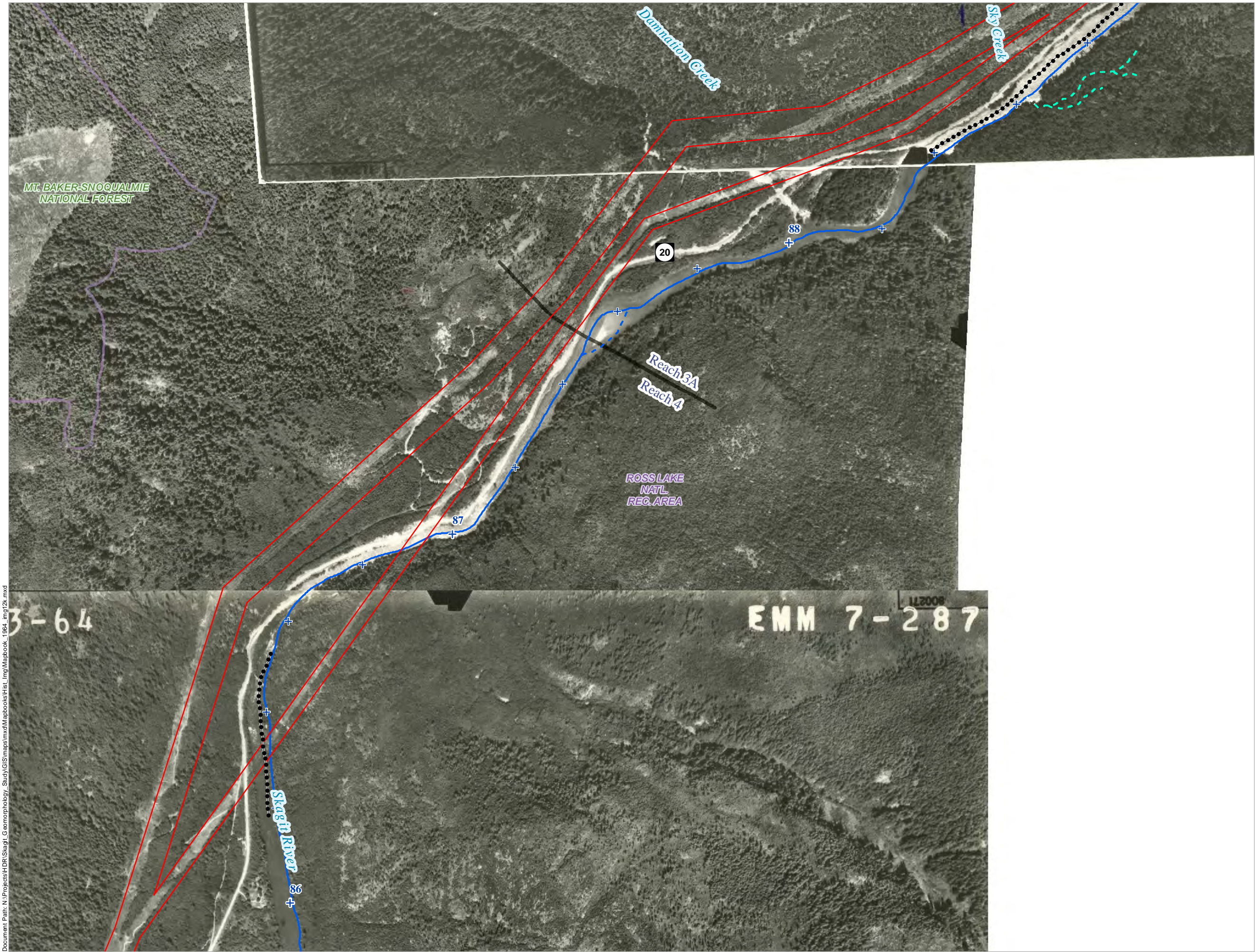
- Main Channel
- Braid Channel
- Side Channel



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1964_img12k.mxd

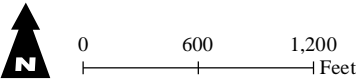


GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1963/64 - SHEET 4

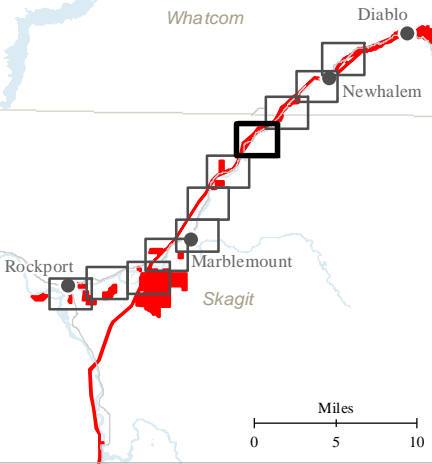
- FERC Project Boundary
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Reach Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 4 of 11



SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1979_img12k.mxd

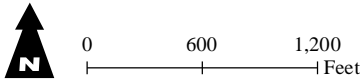


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1978/79 - SHEET 4**

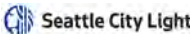
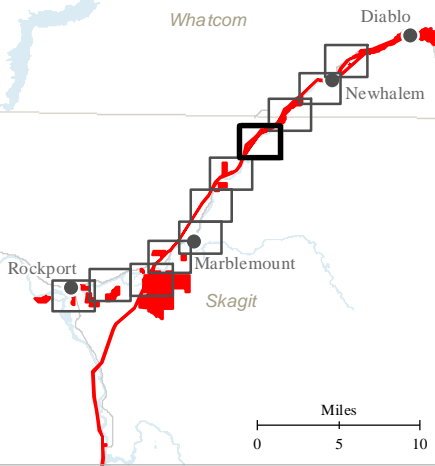
- FERC Project Boundary
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1964-1979

Channel Type

- Main Channel
- Braid Channel
- Side Channel



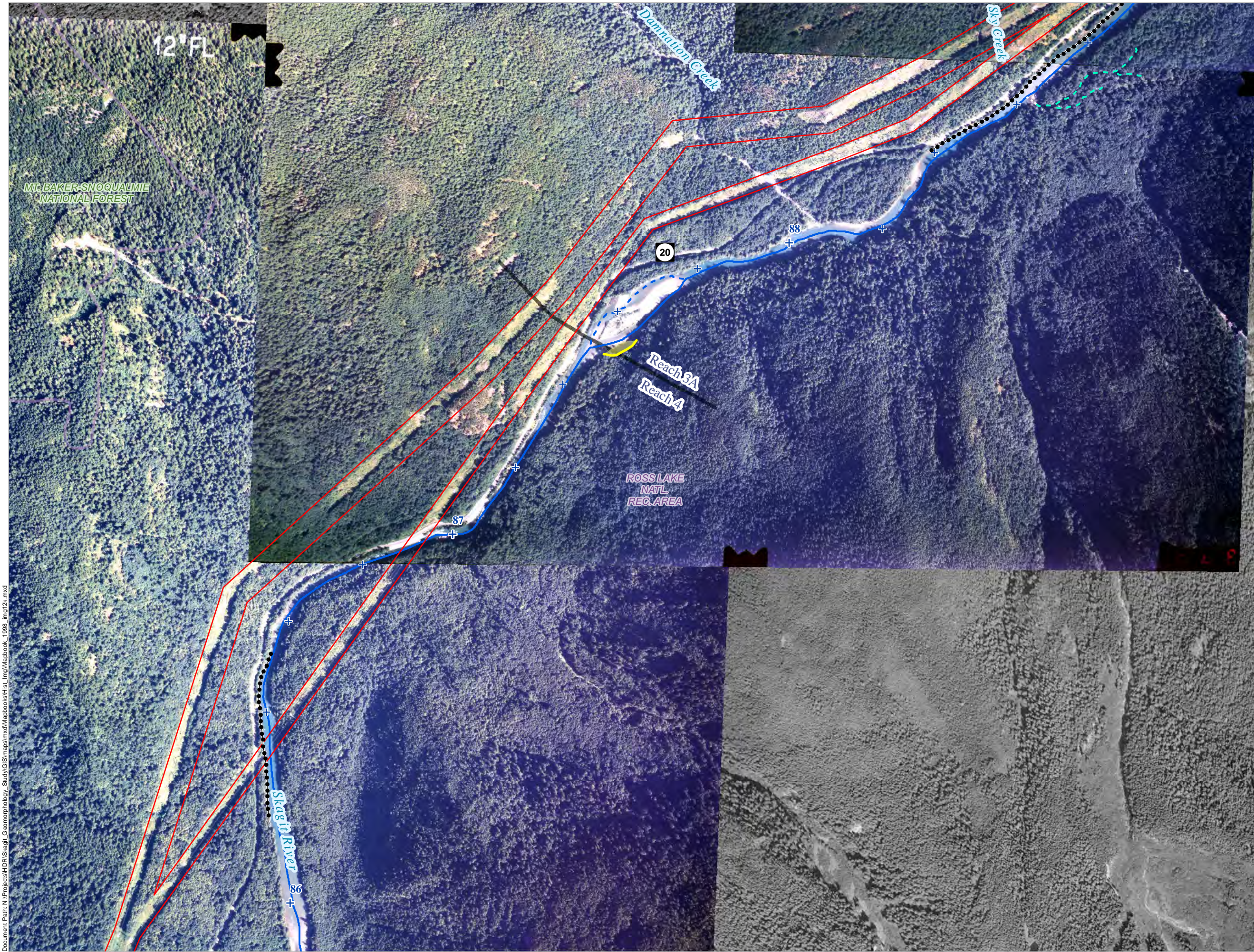
Page 4 of 11



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1998_img12k.mxd

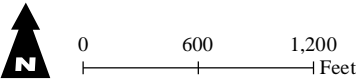


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1998 - SHEET 4**

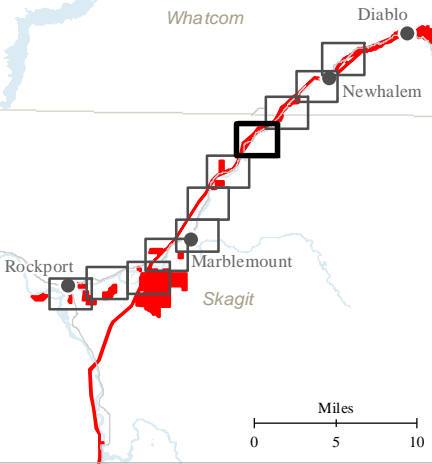
- FERC Project Boundary
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1979-1998

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 4 of 11



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Stud\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_2006_img12k.mxd

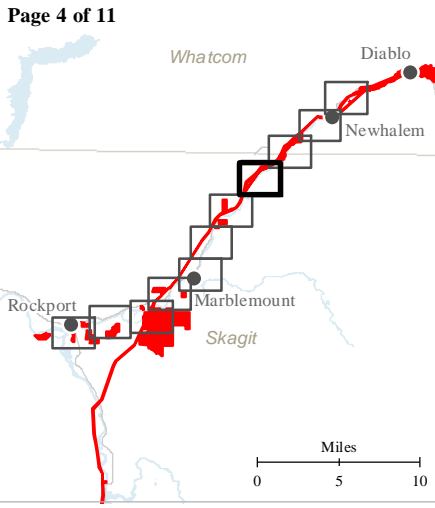
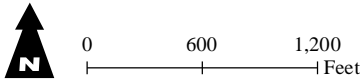


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2006 - SHEET 4**

- FERC Project Boundary
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Channel Type

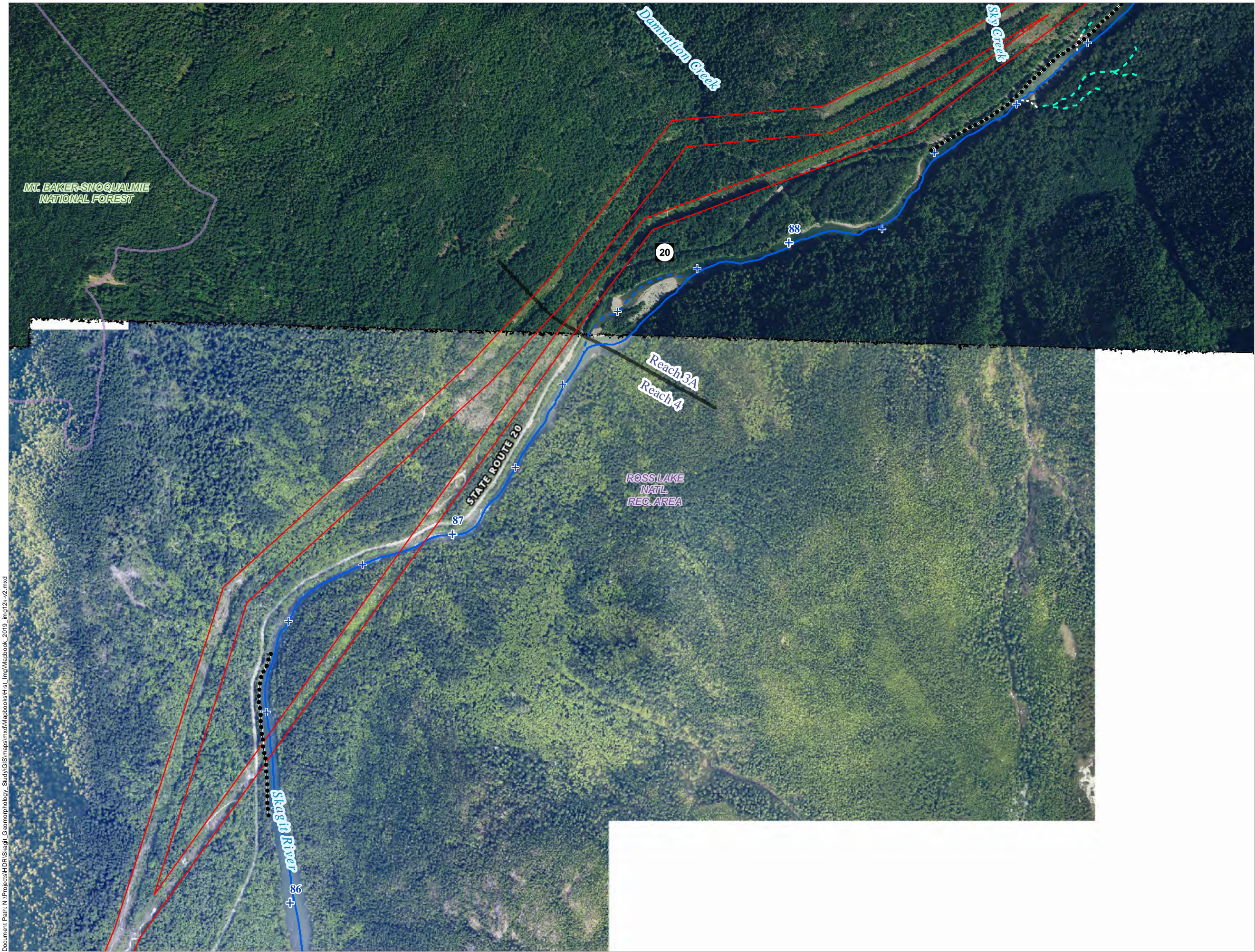
- Main Channel
- Braid Channel
- Side Channel



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_2019_img\2k-v2.mxd

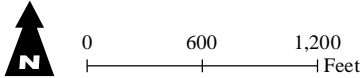


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2019 - SHEET 4**

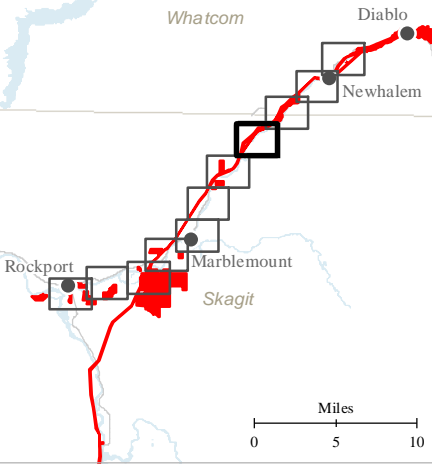
- FERC Project Boundary
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



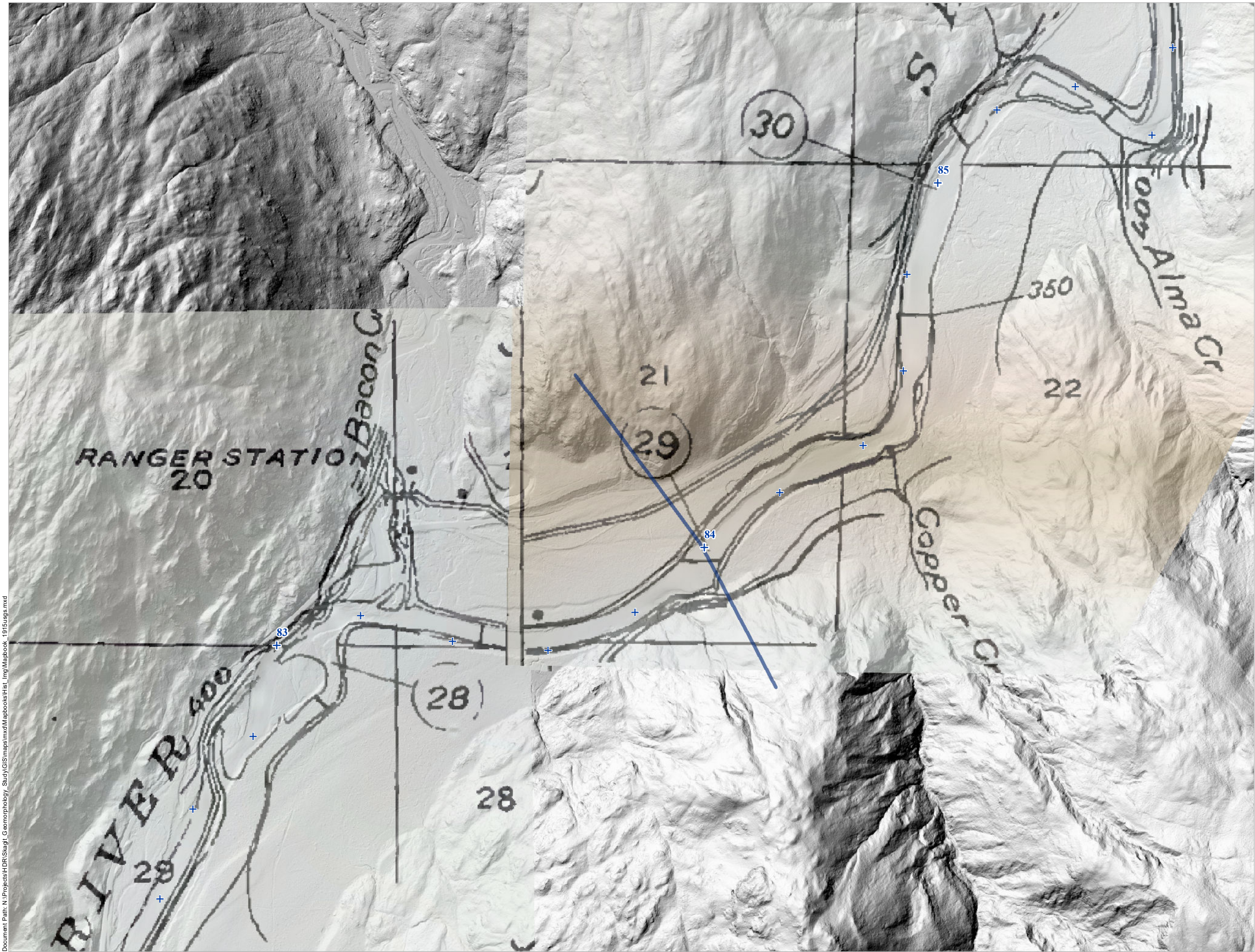
Page 4 of 11



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

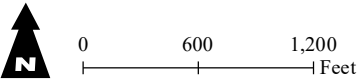
Document Path: N:\Projects\HDR\Skagitl_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1915\usgs.mxd



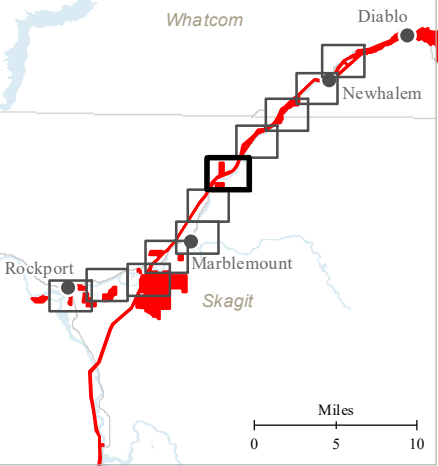
**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1915 MAP* - SHEET 5**

- + Project River Miles (PRM)
- Reach Boundary

*1915 topographic maps from USGS
mosaiced and overlaid with hillshade
derived from composite of 2016-2018
lidar



Page 5 of 11

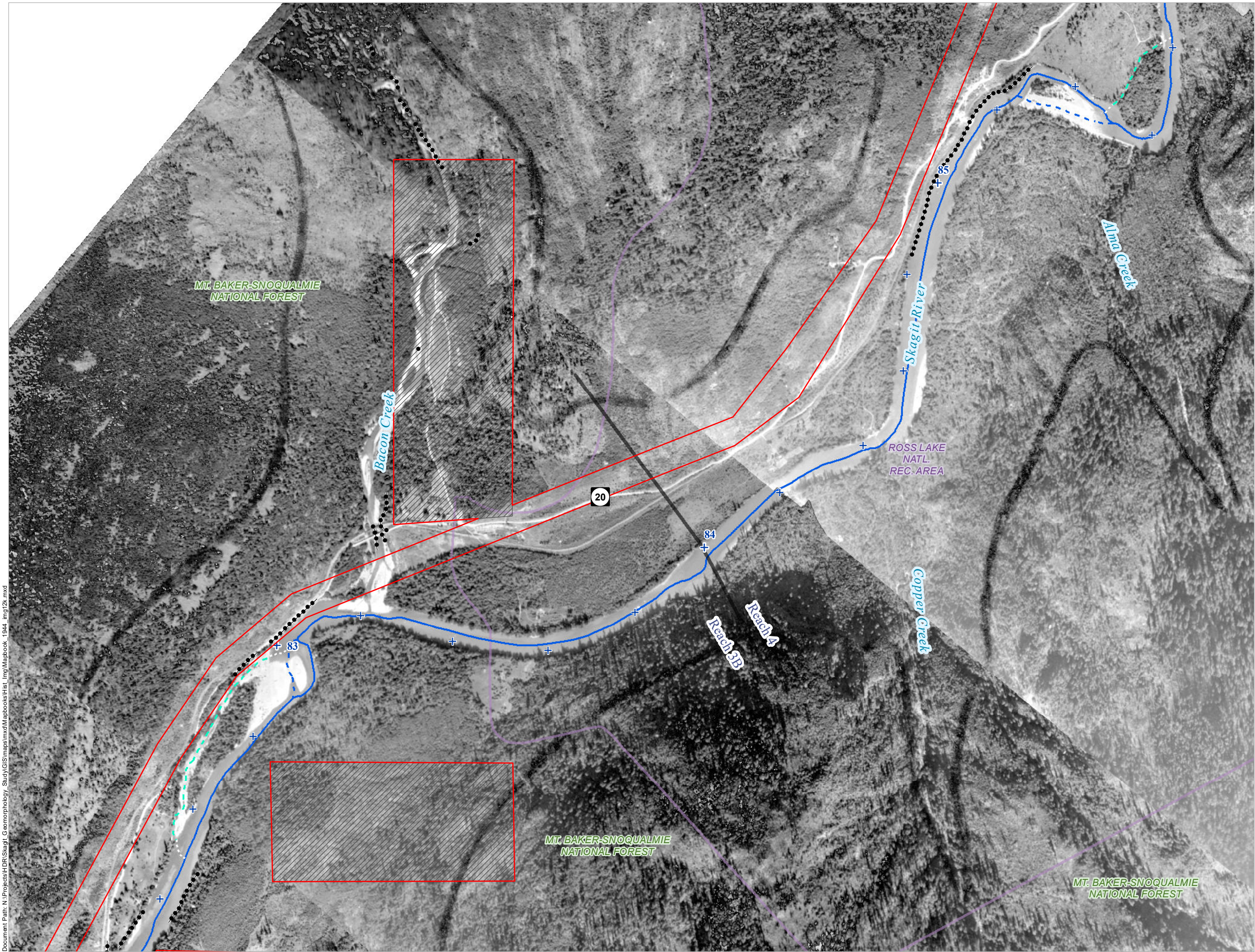


Seattle City Light

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the
accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National
Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Stud\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1944_img12k.mxd

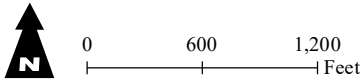


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1944 - SHEET 5**

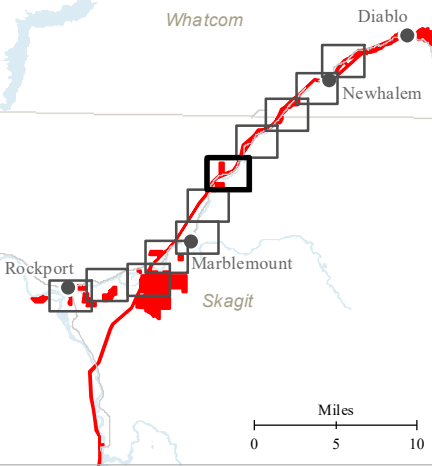
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 5 of 11



Seattle City Light

**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

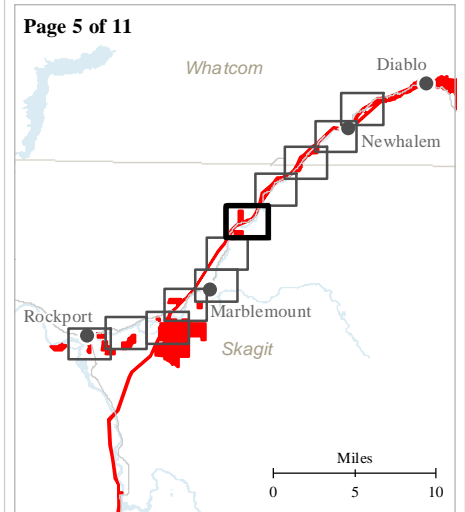
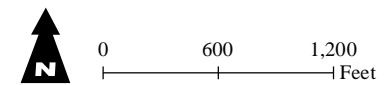
Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1964_img12k.mxd

GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1963/64 - SHEET 5

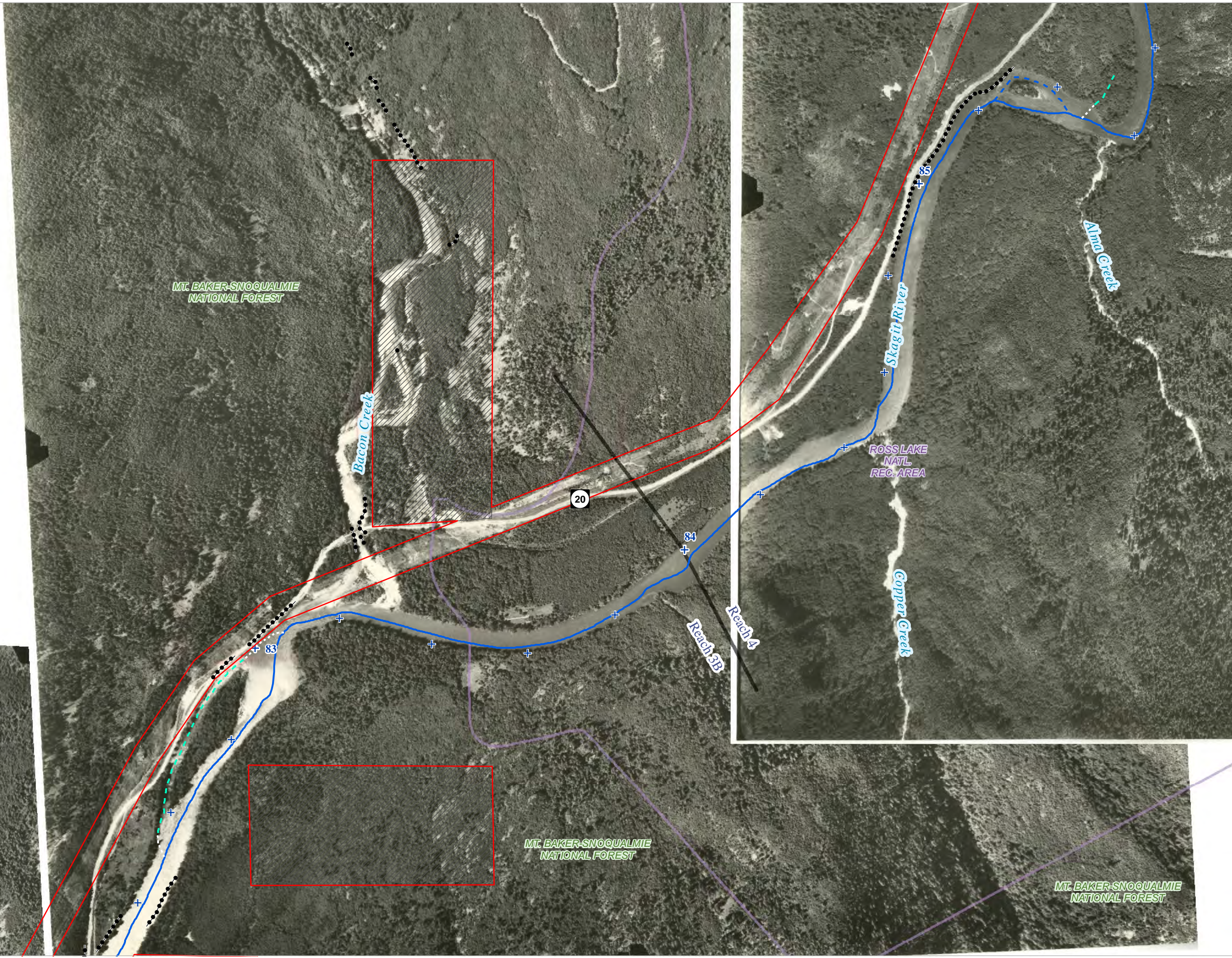
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Reach Boundary

- Channel Type
- Main Channel
 - Braid Channel
 - Side Channel

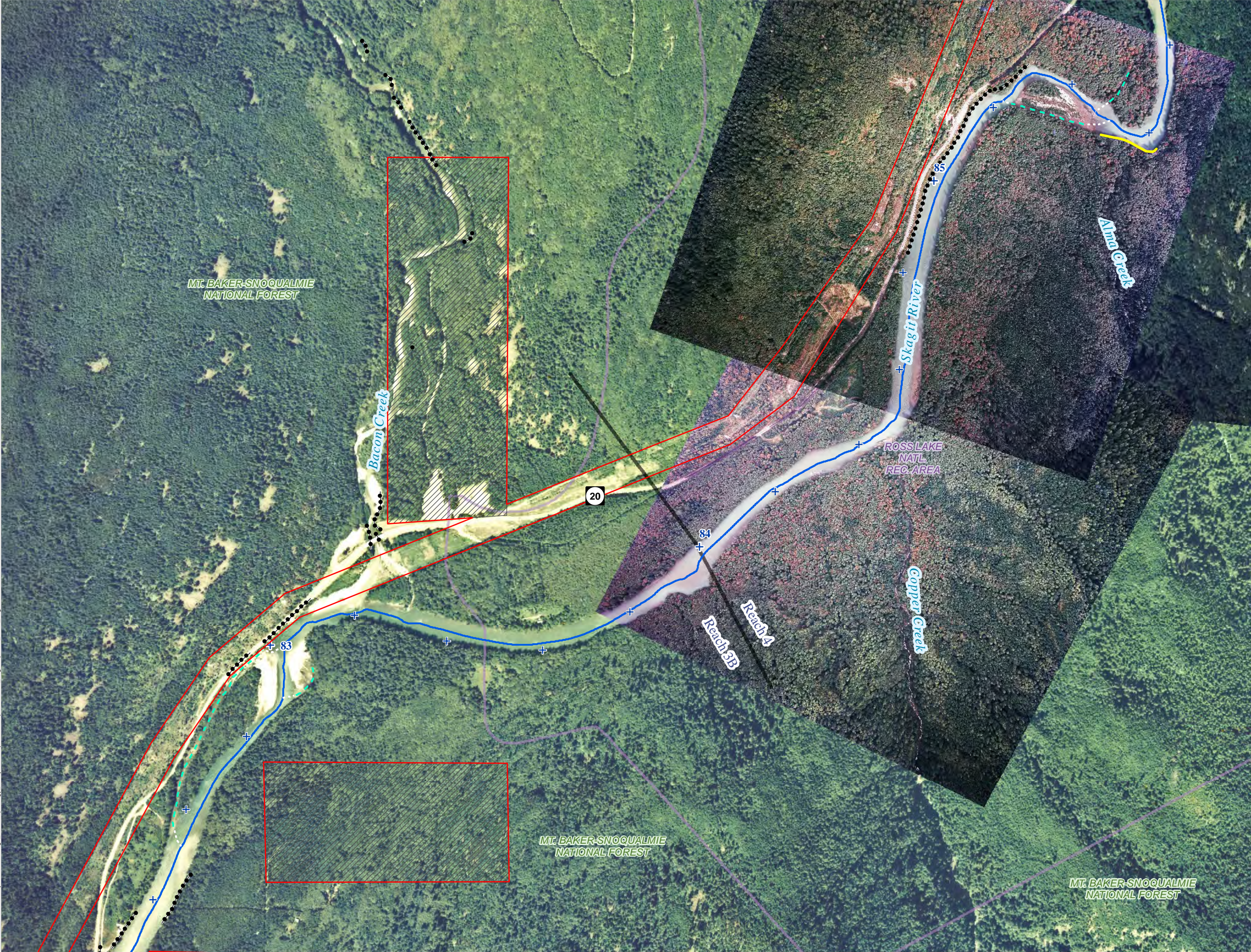


SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS



Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1979_img12k.mxd

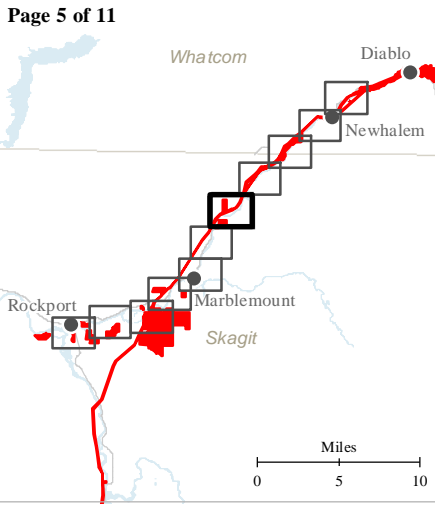
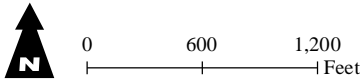


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1978/79 - SHEET 5**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1964-1979

Channel Type

- Main Channel
- Braid Channel
- Side Channel



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_1998_img12k.mxd

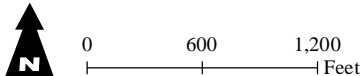


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1998 - SHEET 5**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1979-1998

Channel Type

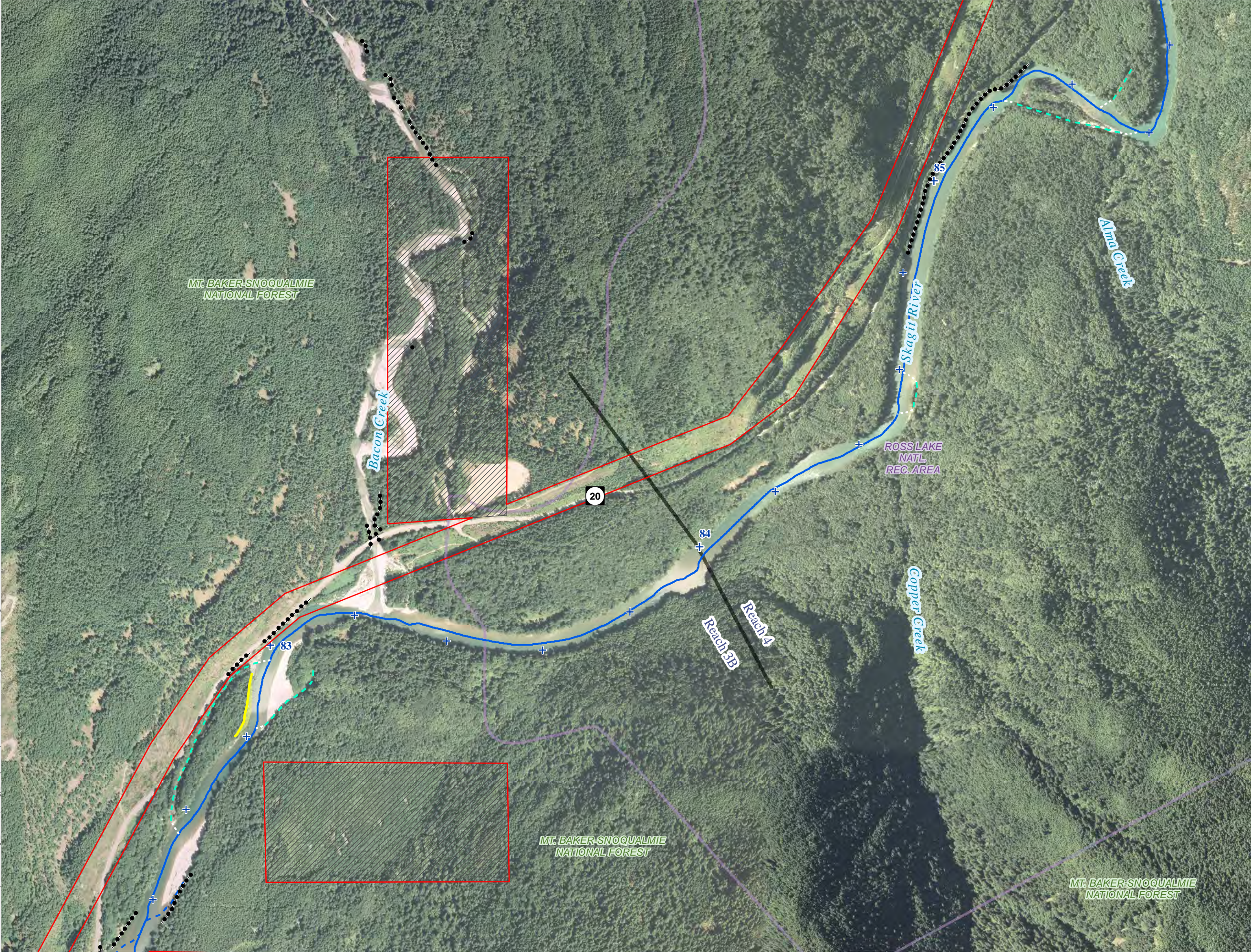
- Main Channel
- Braid Channel
- Side Channel



**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_2006_img\2k.mxd

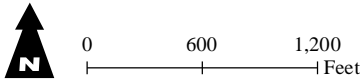


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2006 - SHEET 5**

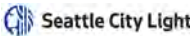
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1998-2006

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 5 of 11



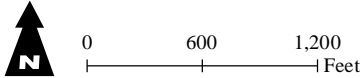
**SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)**

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS

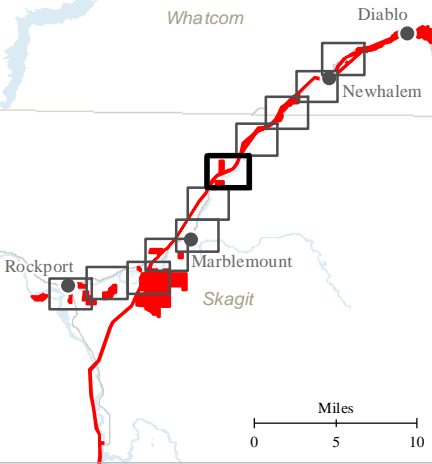
GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2019 - SHEET 5

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 2006-2019

- Channel Type
- Main Channel
 - Braid Channel
 - Side Channel

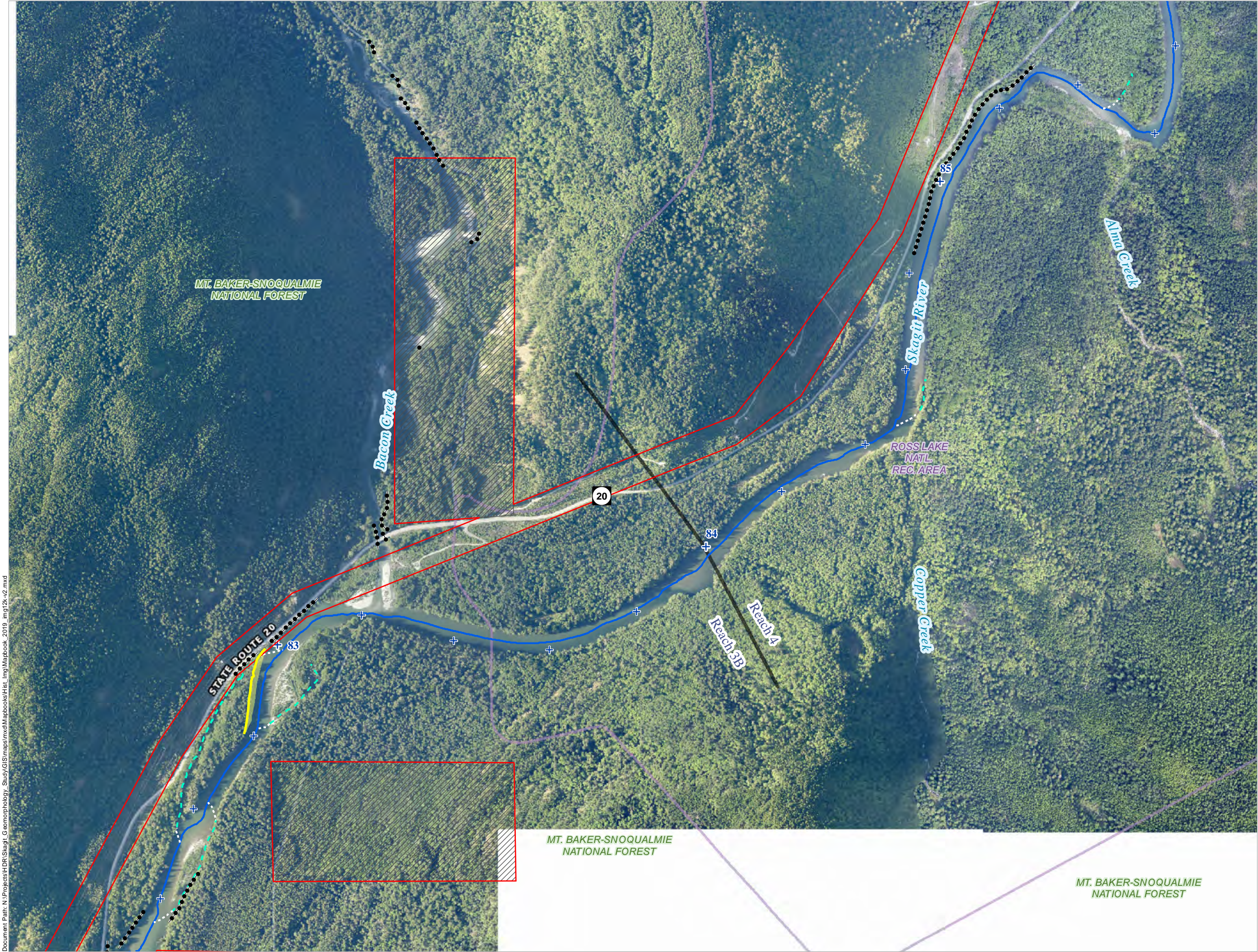


Page 5 of 11



SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)

Created on 2/7/2022 by NSD for Seattle City Light.
City Light provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of this data.
Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS



Document Path: N:\Projects\HDR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Hist_img\Mapbook_2019_img12k-v2.mxd