GEOLOGIC MAP GM-21

STATE OF WASHINGTON

DEPARTMENT OF NATURAL RESOURCES

BERT L. COLE, Commissioner of Public Lands
DON LEE FRASER, Supervisor

DIVISION OF GEOLOGY AND EARTH RESOURCES

VAUGHN E. LIVINGSTON, JR., State Geologist

GEOLOGIC MAP GM-21

MINERAL RESOURCES OF THE SOUTHERN HOOD CANAL AREA, WASHINGTON

By

MACKEY SMITH and R.J. CARSON

Prepared in cooperation with
UNITED STATES GEOLOGICAL SURVEY

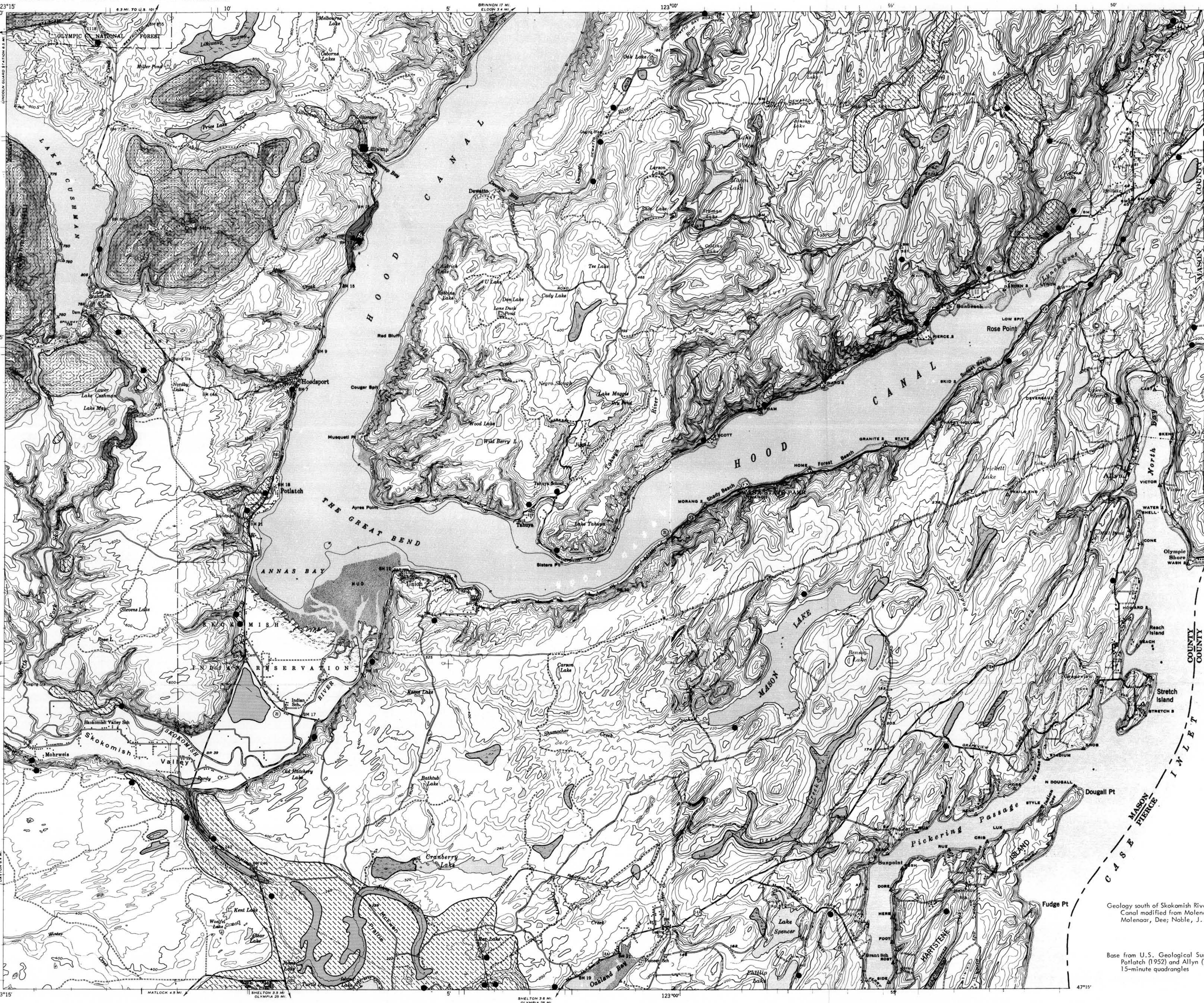
1976

For sale by Department of Natural Resources, Olympia, Washington
Price $1.00

WASHINGTON DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND EARTH RESOURCES

PREPARED IN COOPERATION WITH THE
U.S. GEOLOGICAL SURVEY

GEOLOGIC MAP
GM-21



Geology south of Skokomish River and east of Hood Canal modified from Molenaar, Dee, 1965 and Molenaar, Dee; Noble, J. B., 1970

Base from U.S. Geological Survey Potlatch (1952) and Allyn (1938) 15-minute quadrangles

Principal mineral resources in the southern Hood Canal area are sand, gravel, peat, and rock (crushed and riprap); no significant metallic minerals have been found in the area. Locations of known deposits of potential value should be considered when establishing land use controls and, to the best possible extent, these areas should be preserved for future resource development.

Both the location of existing pits and quarries and the known distribution of potential non-metallic mineral resources are shown on the map. The resource information is based, in part, on geologic mapping and on mineral inventories by previous workers (see References).

Most of the sand and gravel of economic potential was deposited by streams that drained the receding glaciers at the close of the ice age. These deposits were formed as outwash plains, deltas, alluvial fans, and valley fills; as a result, they lie above the till (hardpan) that was deposited directly by the glaciers. Sand and gravel, deposited as the glaciers advanced into the area, underlie the till and are highly compact because of the weight of the ice that subsequently overrode them. Some gravels, especially the older, more compact deposits, contain excessive amounts of clay, fine sand, and iron staining; they are not suitable aggregate for concrete. In a few places, older deposits are usable even though they lie beneath a layer of overburden, which may make their extraction more costly. The sand and gravel pits shown on the map vary in size and their current use has not been determined. Most pits are not in areas mapped as having potential gravel resources because they were not used as a source of aggregate, only as landfill.

Peat deposits with economic potential cover a total area of 2,000 acres. The peat lies in shallow depressions on the till-covered upland, in old glacial melt-water channels, and on flood plains. Lenses of fine-grained sediment may be interbedded with the peat at some locations. Almost all of the bogs contain fibrous peat, and about half of the bogs contain sphagnum peat. There are also numerous small bogs (less than 4 acres in size) scattered throughout the area; they are not shown on the map because of their limited economic potential.

Outcrops of bedrock shown on the map are confined to the area west of Hood Canal. They include basalt of the Crescent Formation, of Eocene age, and a limited amount of sandstone of the Twin River Formation, of Oligocene age. These rocks are strongly deformed, being well jointed and fractured, and steeply dipping. The Crescent basalt is suitable for riprap where there is not strong wave action. The bedrock is overlain by a thin veneer of loose soil in most places.

REFERENCES

Carson, R. J., 1973, Environmental geology of the northwestern portion of the Potlach quadrangle, Washington: Geological Society of America Abstracts with Programs, v. 5, p. 384-385.

Huntting, M. T., 1956, Inventory of Washington minerals, Part 2—Metallic minerals: Washington Division of Mines and Geology, Bulletin 37, 495 p.

Molenaar, Dee, 1965, Geology and ground-water resources. In Water resources and geology of the Kitsap Peninsula and certain adjacent islands: Washington Division of Water Resources, Water Supply Bulletin 18, p. 24-50. Plate 1 (2 sheets).

Molenaar, Dee; Noble, J. B., 1970, Geology and related ground-water occurrences, southeastern Mason County, Washington: Washington Department of Water Resources, Water Supply Bulletin 29, 145 p.

Ness, A. O.; Fowler, R. H; Parvin, R. G.; Roberts, R.C., 1960, Soil survey of Mason County, Washington: U.S. Department of Agriculture, Soil Survey Series 1951, no. 9, 76 p.

Rigg, G. B., 1958, Peat resources of Washington: Washington Division of Mines and Geology, Bulletin 44, 272 p.

Valentine, G. M., 1960, Inventory of Washington minerals, Part 1—Nonmetallic minerals, 2nd edition, revised by M. T. Huntting: Washington Division of Mines and Geology, Bulletin 37, 258 p.

EXPLANATION

Areas of sand and gravel deposits of possible economic value; thicker than 20 feet; free of clay and iron staining. Generally at the surface, but in places overlain by up to 15 feet of glacial till.

Existing pits in sand and gravel deposits. Many are in poor quality deposits and are used as sources of landfill; only a few have been developed as aggregate sources. Current use of these pits was not determined.

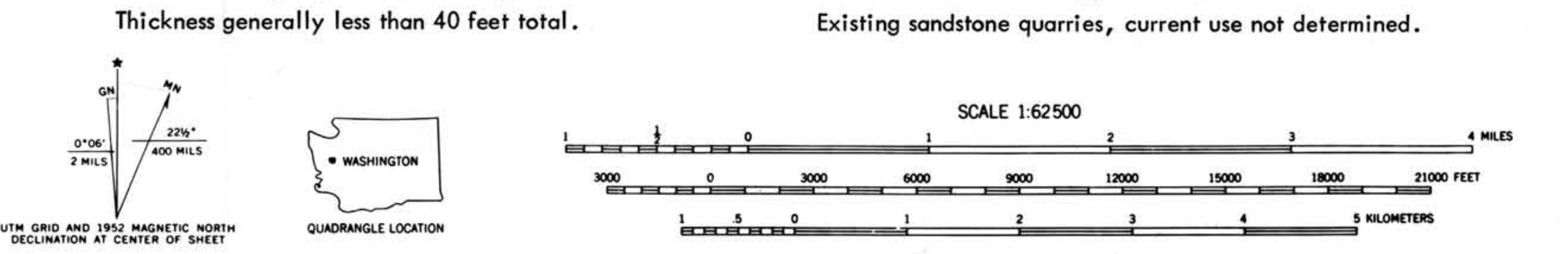
Areas of peat deposits of possible economic potential; includes both sphagnum and fibrous peat. Thickness generally less than 40 feet total.

Areas of basalt of possible economic value for road-building and riprap where there is no strong wave action. Located in mountains and gorges in the northwestern part of the area. Generally overlain by a thin veneer of glacial deposits or other loose material.

Existing basalt quarry, not currently in use.

Area of sandstone of possible economic potential largely suited for riprap and landscape rock. Fine-grained in places, and generally overlain by a thin veneer of glacial deposits or other loose material.

Existing sandstone quarries, current use not determined.



MINERAL RESOURCES OF THE SOUTHERN HOOD CANAL AREA, WASHINGTON

by
MACKEY SMITH and R. J. CARSON

1976