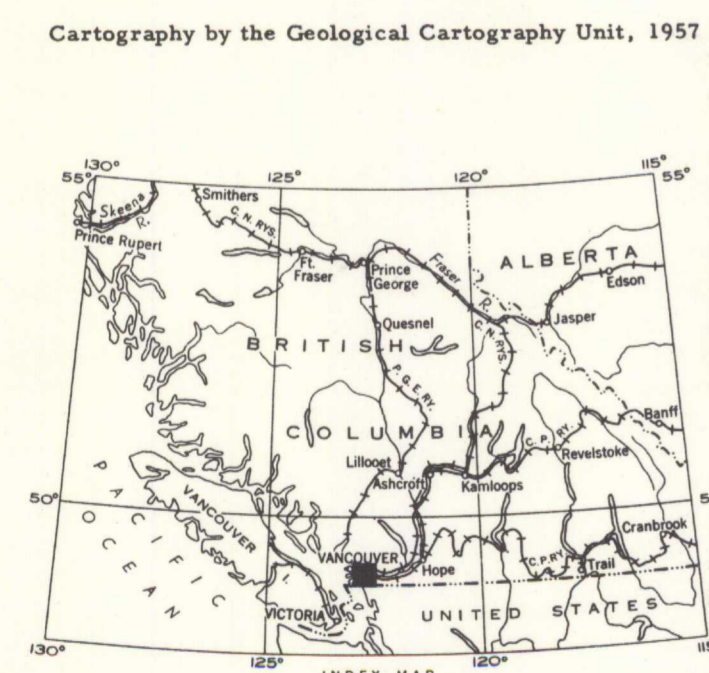


- LEGEND**
- PLEISTOCENE AND RECENT**
- POST-GLACIAL**
- 19 SALISH GROUP (15-19)  
Swamp and FRASER FLOODPLAIN DEPOSITS (floodplain and channel deposits): 19a, lowland peat up to 35 feet thick in most places, resting on silty clay and clayey silt, in some places overlies sand and sandy silt; 19b, clayey silt and silt up to 5 feet thick, rests on 6 inches to 3 feet of lowland peat; 19c, upland peat up to 25 feet thick, resting on glacio-marine deposits, silt, and alluvium
- 18 FRASER FLOODPLAIN AND RICHMOND DELTA DEPOSITS (floodplain channel, estuarine, and deltaic deposits): 18a, silty clay, clayey silt, and silt up to 12 feet thick, resting on 50 feet or more of marine and non-marine sand; 18b, silty clay, clayey silt, and silt less than 5 feet thick, resting on 50 feet or more of marine sand; 18c, sandy silt and silt up to 5 feet thick, resting on 50 feet or more of marine or non-marine sand; 18d, fine to medium sand and minor interbedded silt, 50 feet or more thick
- 17 Lowland stream deposits: channel and floodplain deposits, may be in part deltaic; 17a, channel and floodplain; medium to coarse sand and gravel up to 25 feet or more thick; 17b, clayey silt and silt, thickness unknown, deposits overlie similar materials of Fraser Floodplain Deposits (18) and Cloverdale Sediments (7)
- 16 Mountain stream deposits: channel, floodplain, and marine deltaic deposits: 16a, channel and floodplain; medium to coarse sand and gravel up to 25 feet or more thick; in most places sand at surface; 16b, channel and floodplain; fine to medium sand and minor silt and clay thickness unknown; deposits overlie and intermix with similar materials of Fraser Floodplain Deposits (18); 16c, marine delta gravels, up to 50 feet thick; 16d, channel gravel and sand up to 50 feet thick; in most places gravel at surface
- GLACIAL**
- 14 SUMAS GROUP (13, 14)  
ABBOTSFORD OUTWASH (glacio-fluvial deposits): 14a, recessional outwash sand and gravel up to 125 feet thick; Newton Stoney Clay (5); 14b, recessional outwash gravel and sand, gravel at surface; 14c, ice contact deposits: gravel, sand, and lenses of silt and glacio-marine stony clayey silt
- 13 WHATCOM GLACIO-MARINE DEPOSITS: stony clayey silt and silty clay, silt, and sand 25 to 300 feet thick; Newton Stoney Clay (5) and Whatcom Deposits cannot be separated in places and were mapped as one or the other based on geographical location and association with other deposits
- POST-GLACIAL AND GLACIAL**  
(in part younger, in part contemporaneous, and in part older than Sumas Group)
- 12 SALISH AND CAPILANO GROUPS  
Marine and non-marine deposits: 12a, sand up to 25 feet thick, probably includes floodplain, channel and slopewash sand of Salish Group (15-19) and littoral and beach sand of Capilano Group (7-11); 12b, gravel and minor sand up to 25 feet thick, probably includes slopewash gravel of Salish Group (15-19) and beach gravel of Capilano Group (7-11)
- 11 CAPILANO GROUP (7-11)  
BOSE GRAVEL (raised marine shore deposits): beach gravels, up to 25 feet thick. Also occur throughout the area as a thin mantle up to 10 feet thick, but generally less than 3 feet thick of well washed lag gravels overlying Newton Stoney Clay deposits and Surrey Till (see 3, 4, and 5)
- 10 SUNNYSIDE SAND (raised littoral and beach deposits): medium to coarse sand; 10a, resting on Newton Stoney Clay and Surrey Till (3); 10b, resting on Newton Stoney Clay (5); 10c, resting on Whatcom Glacio-Marine Deposits (13); 10d, resting on Cloverdale Sediments (7). Some slopewash sands of Salish Group (15-19) included
- 9 CAPILANO GRAVEL (raised, marine deltaic and channel deposits): medium to coarse gravel and sand up to 50 feet or more thick, may be in part glacio-fluvial deposits of Sumas Group (13, 14)
- 8 HUNTINGDON GRAVEL (channel and floodplain deposits): gravel and sand up to 100 feet or more thick, underlie Whatcom Glacio-Marine Deposits (13). Probably in part equivalent of Capilano Gravel (9). Some pre-Vashon gravels may be included
- 7 CLOVERDALE SEDIMENTS (marine deposits): stony clay, clayey silt, silt, and clay, minor sand, gravel, and poorly sorted till-like mixtures up to 900 feet thick
- GLACIAL AND INTERGLACIAL**
- 6 VASHON GROUP (3-6)  
HANEY OUTWASH (glacio-fluvial deposits): recessional outwash gravel and sand up to 100 feet or more thick, includes eskers
- 5 NEWTON STONEY CLAY (glacio-marine deposits): stony clayey silt and poorly sorted till-like mixtures, minor clayey silt, silty clay and sand, up to 200 feet thick. Throughout much of the area Newton Stoney Clay is mantled by Bose Gravel (11). In places till-like mixtures that probably form part of Cloverdale Sediments (7) have been mapped with Newton Stoney Clay. See also Whatcom Glacio-Marine Deposits (13)
- 4 SURREY TILL (glacial deposits): 4a, sandy to silty till and minor sub-stratified drift up to 75 feet thick but generally less than 25 feet thick. Throughout much of the area Surrey Till Deposits are mantled by Bose Gravel (11); 4b, areas in which the deposits included in 4a are generally less than 25 feet thick and rest on bedrock
- 3 NEWTON STONEY CLAY AND SURREY TILL (glacio-marine and glacial deposits): sandy to silty till up to 75 feet thick but generally less than 25 feet, overlain in most places by glacio-marine stony clayey silt and till-like mixtures up to 25 feet thick but generally less than 10 feet. Throughout the area these deposits are mantled by Bose Gravel (11)
- 2 VASHON, SEMIAMU, QUADRA, AND SEYMOUR GROUPS  
2a, PRE-SURREY TILL DEPOSITS, UNDIVIDED (glacial, marine, and non-marine deposits): sand, gravel, silt, clay, varved silt and clay, and till; 2b, MARYHILL OUTWASH (glacio-fluvial deposits): medium to coarse advance outwash gravel up to 100 feet thick, minor till lenses; 2c, COLEBROOK GRAVEL (deltaic, channel, and floodplain deposits): gravel and sand, up to 85 feet thick; 2d, NICOMEKL SILT (deltaic and floodplain deposits): sand, silt, and minor gravel up to 110 feet thick; 2e, SARGENTON SEDIMENTS (marine, deltaic, and glacio-marine deposits): gravel, sand, silt, clay and till-like mixtures up to 50 feet thick; 2f, PRE-SURREY TILL (glacial deposits): silty till up to 25 feet or more thick. May be Semiamu Till or Seymour Till
- PRE-GLACIAL**
- 1 TERTIARY AND EARLIER  
1a, Tertiary basalt at or within 10 feet of surface. Commonly overlain by till; 1b, Tertiary sandstone, siltstone, shale and conglomerate at or within 10 feet of surface. Commonly overlain by silt; 1c, rough mountainous country in which granitic and associated rock types occur at or near surface. Commonly overlain by till and outwash sand, gravel, and silt
- Geological boundary, mainly gradational .....  
Sand and gravel pit .....  
Clay pit .....  
Operating peat plant .....  
Dry hole drilled in search of oil and gas .....  
Pleistocene fossil shell locality .....
- Geology by J. E. Armstrong, 1951-1953 and W. L. Brown, 1949-1951



BOUNDARY BAY

Canada  
United States

MAP 16-1957  
TO ACCOMPANY PAPER 57-5  
SURFICIAL GEOLOGY  
**NEW WESTMINSTER AREA**  
NEW WESTMINSTER DISTRICT  
BRITISH COLUMBIA

Scale: One Inch to One Mile = 1/63,360 Miles

1 1/2 0 1 2 3

**LEGEND**

Main highway .....  
Other roads .....  
Electric power line (along road) .....  
Municipality boundary .....  
Marsh .....  
Contours (interval 500 feet) .....

Approximate magnetic declination, 23° 27' East

MAP 16-1957  
NEW WESTMINSTER  
BRITISH COLUMBIA

Printed by the Surveys and Mapping Branch

In response to public demand for earlier publication, Preliminary Series maps are now being issued in this simplified form, thereby effecting a substantial saving in time. There is no loss of information, but the maps will be clearer to read if all or some of the map-units are hand-coloured.