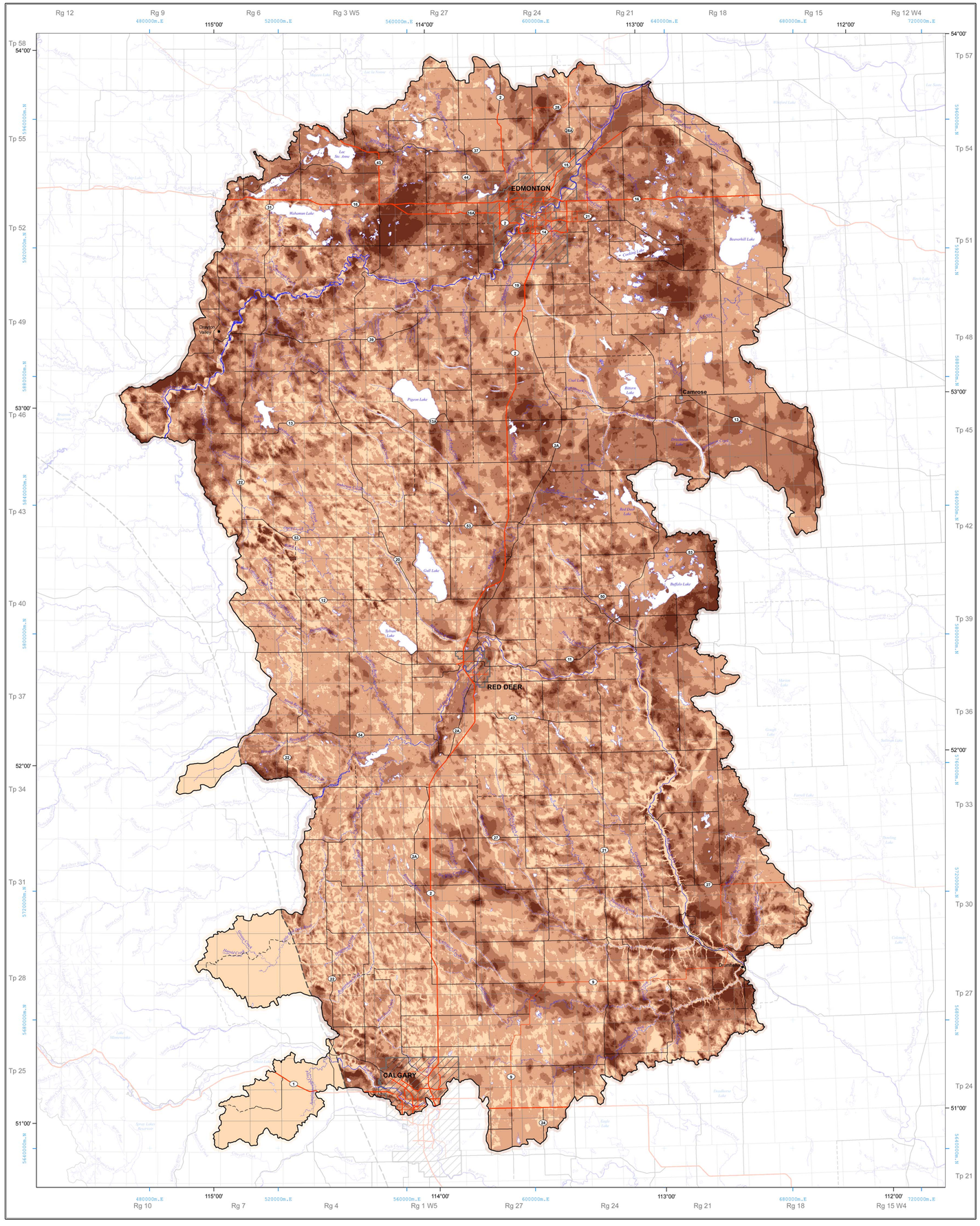
QUATERNARY AND NEOGENE SEDIMENT THICKNESS
NTS 82O, 82P, 83A, 83B, 83G and 83H



Study Area Location

The Edmonton-Calgary Corridor (ECC) occupies an area of approximately 49 500 km^2 and lies within portions of National Topographic System map areas 83A, 83B, 83G, 83H, 82J, 82I, 82P and 82O. The boundary of the ECC is defined by ten subwatershed boundaries located within the Red Deer River, Bow River, Battle River and North Saskatchewan River basins (Figure 1). Collectively, the boundaries of these subwatersheds form the irregularly shaped boundary of the ECC (Figure 1).

Data Sources

Data used to generate this map were compiled from a variety of sources. These sources included water well records obtained from Alberta Environment's digital water well database, oil and gas well records maintained by the Energy Resource Conservation Board, geological maps produced by the Alberta Geological Survey, a Shuttle Radar Topography Mission 60 m grid-spaced digital elevation model (DEM), a bedrock topography map for the ECC (Figure 2) and unpublished geological data. Data sources are referenced below, and data density on a per-township-basis for the ECC is illustrated in Figure 1.

Interpretation

This map represents the thickness of sediments that occur between ground surface and the top of the bedrock surface (Figure 2). Sediment thickness in the ECC is highly variable ranging from less than 1 m to more than 100 m (refer to main map). Although variable, an overall trend between sediment thickness and the physiographic regions, as defined by Pettapiece (1986), can be observed (Figure 3). In general, areas of thin sediment cover (less than 5 m thick) occur where the bedrock surface is near or forms the ground surface. This relationship occurs in the Front Ranges, Foothills, Benchlands and Uplands physiographic regions, where sediment thickness is typically between 0 to 5 m thick (refer to main map, Figures 2 and 3). In general, areas of thick sediment (greater than 5 m thick) occur in the Plains physiographic region. As evident from Figure 2, the Plains physiographic region overlies three main paleochannel complexes within the ECC (Figures 2 and 3). These include the Beverly-Onoway, Red Deer River and Drumheller paleochannel complexes. These complexes contain the thickest accumulations of sediment within the ECC. Exceptions to this general trend include the Cooking Lake Uplands, Cherhill Uplands and the Olds Plains physiographic regions (Figure 3). In the Cooking Lake and Cherhill uplands, sediment thickness typically exceeds 10 m, whereas sediment thickness in portions of the Olds Plain is generally less than 5 m (refer to main map and Figure 3).

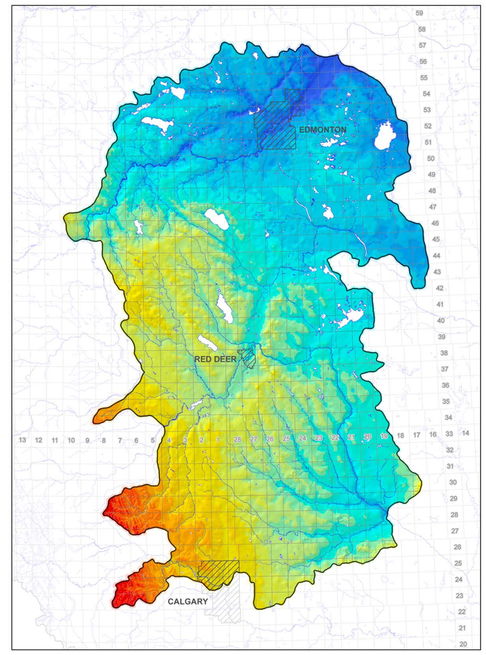
Legend

- Major City
- City
- Town
- Divided road
- Undivided road
- Paved road (other)
- Gravel road
- Edmonton-Calgary corridor project boundary
- Deformation Edge Boundary

Sediment Thickness (metres)

- 0 - 5
- 5 - 20
- 20 - 35
- 35 - 50
- 50 - 110

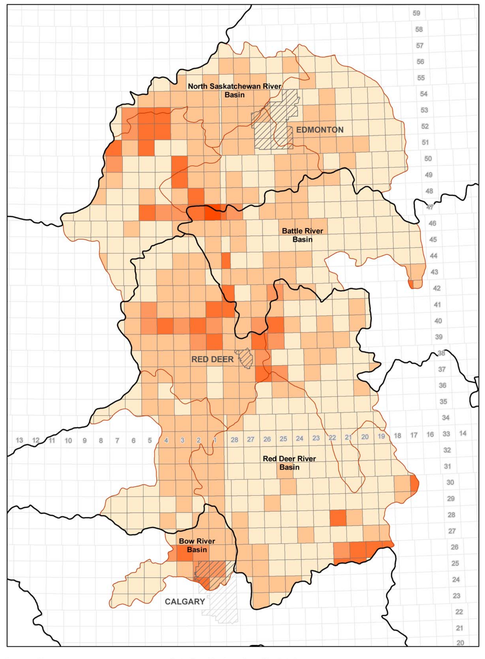
Figure 2. Bedrock Topography



Bedrock Elevation (metres above mean sea level)

- 568 - 625
- 626 - 650
- 651 - 675
- 676 - 700
- 701 - 750
- 751 - 800
- 801 - 850
- 851 - 900
- 901 - 950
- 951 - 1000
- 1001 - 1100
- 1101 - 1200
- 1201 - 1300
- 1301 - 1400
- 1401 - 1500
- 1501 - 2348

Figure 1. Data Density and Watershed Boundaries



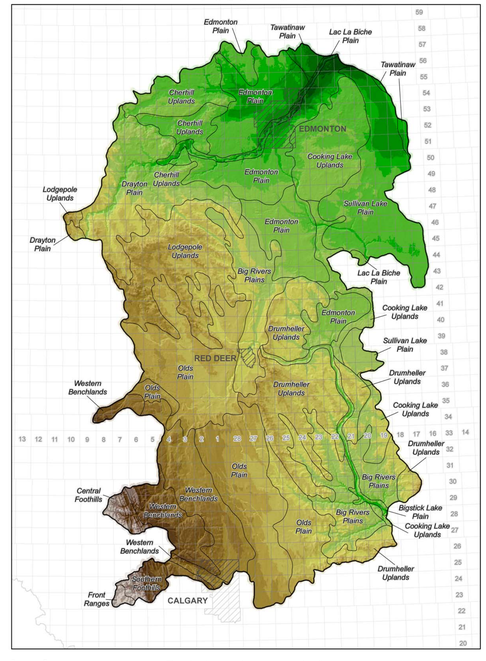
Legend

- City
- Major watershed basin boundary
- Watershed subbasin boundary

Data Density (number of points)

- 0 - 100
- 101 - 500
- 501 - 1000
- 1001 - 5000
- > 5000

Figure 3. Surface Topography and Physiographic Regions



Legend

- City
- Physiographic region boundary

Elevation (metres above mean sea level)

- 586 - 625
- 626 - 650
- 651 - 675
- 676 - 700
- 701 - 750
- 751 - 800
- 801 - 850
- 851 - 900
- 901 - 950
- 951 - 1000
- 1001 - 1100
- 1101 - 1200
- 1201 - 1300
- 1301 - 1400
- 1401 - 1500
- 1501 - 2471

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Acknowledgments

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* Alberta Environment

Recommended reference format:
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Copies of this map may be obtained from:

Information Centre
Alberta Geological Survey
Telephone: 780-422-1927
Website: www.ags.gov.ab.ca

Map 548

Thickness of Quaternary and Neogene Sediments in the Edmonton-Calgary Corridor

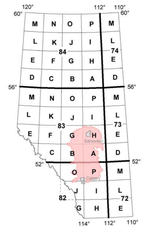
NTS 82O, 82P, 83A, 83B, 83G and 83H

Geology by: S.R. Slattery and A.A. Barker*

Scale 1:500 000

10 5 0 10 20 30 40 50 kilometres
5 2.5 0 5 10 15 20 25 miles

Projection: 10 Degree Transverse Mercator (10TM)
Datum: North American Datum, 1983 (NAD83)



ERCB Energy Resources Conservation Board | AGS Alberta Geological Survey

Government of Alberta