MINERAL RESOURCES TASMANIA

Tasmania

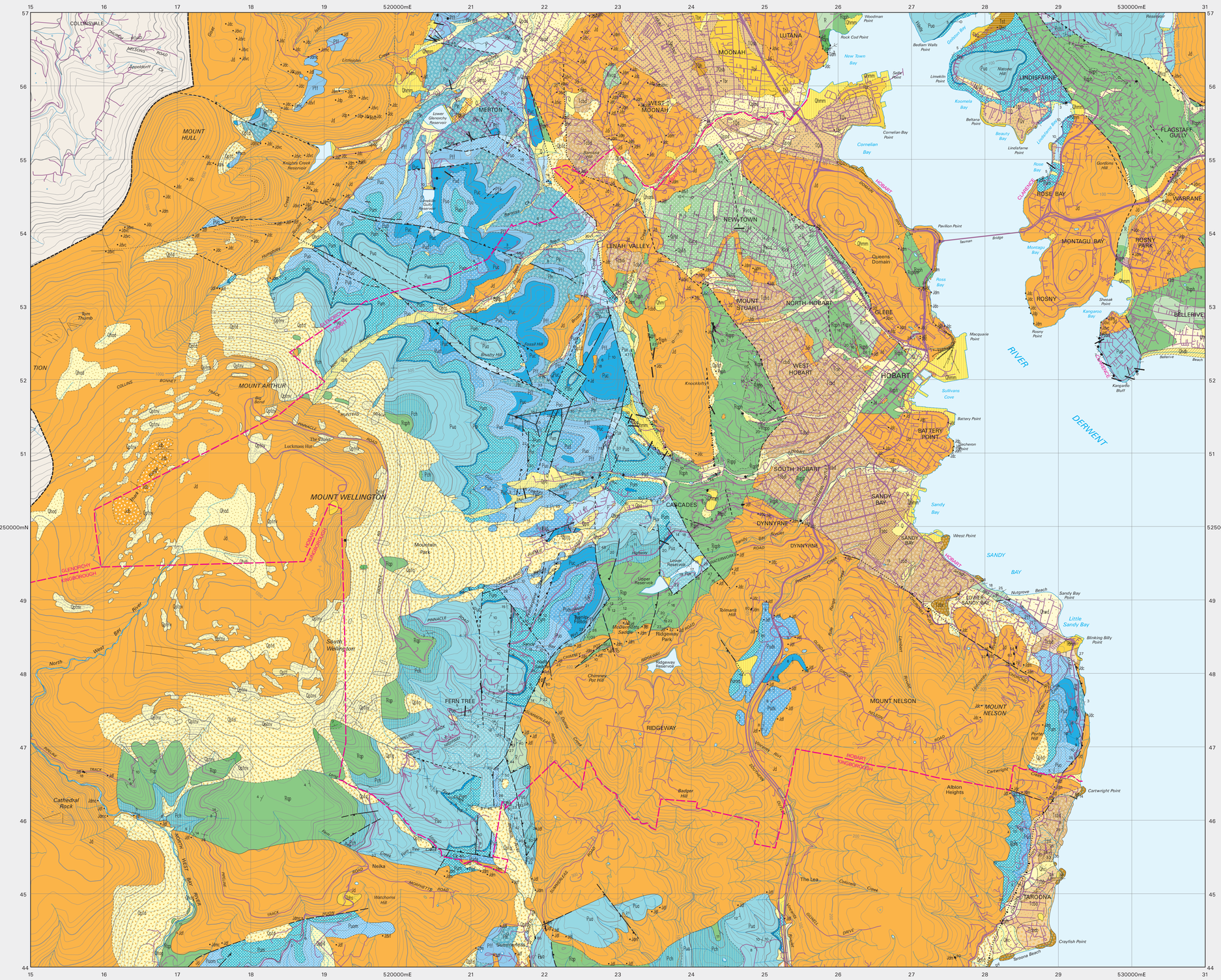
DEPARTMENT of INFRASTRUCTURE ENERGY and RESOURCES

HOBART CITY COUNCIL

## LANDSLIDE HAZARD SERIES

# HOBART – GEOLOGY

## MAP 2 OF 5




Scale: 1:25 000

0 500 1000 1500 2000 2500m

AGD66 – AMG Zone 55. Contour interval 20m

### QUATERNARY

- **Q** — *Undifferentiated Quaternary sediments (Q).*
- **Qa** — *Alluvial gravel sand and clay (Qa), alluvial fans (Qaf).*
- **Qhab** — *Marsh and swamp deposits (Qhab), highland marsh deposits with common protruding dolerite outcrops and boulders (Qhad).*
- **Qhag** — *Alluvial gravel deposits (Qhag), alluvium and marsh deposits of modern flood plains (Qham).*
- **Qhc** — *Colluvium (Qhc), – clayey gravel derived from dolerite (Qhcd), sandy, derived from Upper Parmeener rocks (Qhcp), derived predominantly from Lower Parmeener rocks (Qhcl).*
- **Qhds** — *Modern shore face and associated aeolian dune sand (Qhds).*
- **Qhm** — *Selected mine tailings and man disturbed ground indicated (Qhm), man made deposits (Qhmm).*
- **Qhw** — *Aeolian and locally derived sand deposits locally reworked by alluvial processes (Qhw), aeolian dune and sheet sand (Qhwd).*
- **Qi** — *Undifferentiated bay, estuarine, deltaic and alluvial deposits of sand, shelly sand, pebbly sand, pebble to boulder size gravels, clayey sand, silt and clay (Qi).*
- **Qpa** — *Deeply dissected alluvial fan, proximal alluvial terrace and minor talus deposits containing boulders of weathered dolerite and Parmeener derived rocks in places (Qpa).*
- **Qpad** — *Older alluvium of river terrace, predominantly dolerite derived (Qpad).*
- **Qppd** — *Probable Pleistocene low gradient alluvial fan and alluvial terrace deposits clasts predominantly of dolerite (Qppd).*
- **Qpt** — *Talus and remobilised talus deposits (Qpt), talus consisting dominantly of dolerite boulders (Qptd), talus dominantly of Lower Parmeener Supergroup rocks and Jurassic dolerite (Qptdp), talus of dolerite with notable amounts of Upper Parmeener quartzose sandstone (Qptdq), talus dominantly Lower Parmeener rocks (Qptlp), talus dominantly Upper Parmeener quartz sandstone (Qptq), talus consisting of dolerite and subordinate Upper Parmeener rocks (Qptup).*
- **Qptf** — *Toppled dolerite masses (>100m), coherent or partly disaggregated, by cliff failure (Qptf).*
- **Qptnv** — *Periglacial non vegetated scree deposits (Qptnv).*
- **TQ** — *Undifferentiated Cainozoic sediments (TQ).*
- **TQbd** — *Boulder deposits dominantly of weathered to extremely weathered dolerite and Parmeener clasts (TQbd).*
- **TQd** — *Undifferentiated fluvial/le and swamp deposits of poorly–consolidated to unconsolidated sand, clayey table sand and silt with wood pieces and cross–bedding at places and interbedded subordinate clay, minor fine–gravel includes deposits related to probable former course of Derwent River, surficial swamp deposits and supra–basalt sand (TQd).*
- **TQh** — *Undifferentiated piedmont, alluvial fan, alluvial terrace, exhumed alluvial, lag and possible beach gravel and poorly–cemented conglomerate containing pebbles and cobbles of dolerite or Parmeener derived rocks (TQh).*

### TERTIARY

- **TQt** — *Silica stone and lag of silica stone (TQt).*
- **TQab** — *Undifferentiated Cainozoic deposits with possible subsurface Tertiary basalt (TQab).*
- **TQv** — *Supra–basalt moderately lithified conglomerate with interbedded sandstone at places clasts of well rounded siliceous cobbles and pebbles, of Tertiary derived silica, and rarely of dolerite (TQv).*
- **T** — *Undifferentiated Tertiary (T).*
- **Tb** — *Basalt (Tb), alkali basalt (Tba), basaltic lava (dominantly sodic hawaiite) and pyroclastics, with rare to locally abundant therzolite xenoliths (Tbhx), inferred basalt beneath soil or Cainozoic deposits (Tbi), basaltic lava (nepheline mugearite to nepheline benmoreite), locally interbedded with pyroclastics (Tbnm), transitional olivine basalt (Tbr).*
- **Tbat** — *Basaltic volcanic agglomerate, tuff and associated rocks (Tbat).*
- **Tcba** — *Red sandy–silty clay with rare quartz pebbles, large dolerite boulders abundant in the lower part of this sequence. Clay colour at Crayfish Point is yellow–orange with large dolerite boulders (1–3m3) exposed on the surface (Tcba).*
- **Tcbab** — *Clay and gravelly clay with abundant surficial boulders (Tcbab).*
- **Tcbb** — *Green to orange–brown (khaki) sandy–clay contains pebbles and boulders mainly of Jurassic dolerite and occasionally Permian sandstone origin (Tcbb).*
- **Tcbc** — *Dolerite boulders in light–brown clayey–gravel matrix (Tcbc).*
- **Tcbd** — *Poorly–sorted large boulder to pebble grade deposits – clasts dominantly of dolerite with traces to rarely dominant amounts of Parmeener mudstone and other rocks, clayey matrix (Tcbd), inferred dolerite boulder beds with possible shallow subsurface dolerite or Parmeener rock (Tcbdi).*
- **Tcbx** — *Deposits of very large (>2m) dolerite boulders in clay, and derived boulder/ lag deposits (Tcbx).*
- **Tse** — *Poorly–consolidated interbedded claystone, sandstone and pebble conglomerate (Tse), poorly–consolidated claystone with some horizons with fjnilic material (Tsec), dominantly semiconsolidated silt and clay (Tses).*
- **Tsi** — *Poorly–consolidated white siltstone, sandstone and claystone with Tertiary fossil flora (Tsi).*
- **Tsfl** — *Upper Freshwater Unit – consolidated fine–to medium–grained sandstone, siltstone, minor conglomerate and clay with Tertiary fossil flora (Early or Middle Eocene age) (Tsfl).*
- **Tst** — *Travertine spring deposits with fossil plants and freshwater fauna, associated with basalt at Geilston Bay (Includes Geilston Travertine) (Tst).*

### TRIASSIC

- **R** — *Undifferentiated Upper Parmeener Supergroup rocks (R).*
- **Rqm** — *Interbedded micaceous brown, red–purple, green and grey carbonaceous siltstone, shale, mudstone and planar bedded, ripple–laminated or cross–bedded sandstone and notable thin beds of silicified bioturbated sandstone (Rqm).*
- **Rqp** — *Freshwater predominantly cross–bedded quartzose to feldspathic sandstone commonly with overturned cross–bedding and subordinate micaceous siltstone with some red–purple beds, sparse plant and vertebrate fossils (Rqp), – Knocklofty Formation (Rqph), contact metamorphosed by Jurassic dolerite (Rqphm), intervals predominantly of siltstone, shale, mudstone and sandstone indicated (Rqpc) and (Poets Road Member) (Rqpp).*
- **Rv** — *Undifferentiated volcaniclastic, quartz–rich lithic and quartzose sandstone, siltstone, mudstone, carbonaceous beds and coal seams (Rv).*
- **Rvcq** — *Thick–to thin–bedded volcanic lithic sandstone, siltstone, mudstone and coal seams, fossil plants on some horizons (Newtown Coal Measures) (Rvcq).*
- **Rvcq** — *Interbedded cross–bedded white quartzose sandstone, quartz–rich lithic sandstone, siltstone and mudstone; upper interval with much dark grey carbonaceous mudstone, thin lenticular coal seams and fossil plants in places (Rvcq).*
- **Rvcd** — *Interbedded yellow brown or grey carbonaceous siltstone, mudstone and thin–to thick–bedded quartz–rich lithic, arkosic sandstone, some fossil plants, common siltstone paleosols (Rvcd).*

### PERMIAN

- **P** — *Undifferentiated Permo–Carboniferous sediments (P).*
- **Pch** — *Freshwater cross–bedded arkosic to quartzose sandstone and micaceous siltstone, lower interval with some carbonaceous sandstone, rare coalified wood and calcareous concretions and commonly with thin lenticular beds of quartz pebble conglomerate near base (Pch).*
- **Prf** — *Paralic, massive, laminated, flaser bedded or ripple cross–laminated micaceous sandstone and siltstone, thin beds of wavy– or cross–bedded sandstone and pebbly granule sandstone, marine bioturbated intervals with pebbles and rare shell fossils (Faulkner Group) (Prf).*
- **Ppr** — *Sparsely to richly fossiliferous marine siltstone, mudstone, sandstone and impure limestone with lonestones (correlate of Bundella Formation) (Ppr), contact metamorphosed by Jurassic dolerite (Pbrm).*
- **Plo** — *Uniform, poorly–bedded, coarsely fretting grey marine siltstone with sparse lonestones and probable glendonite moulds (correlate of Woody Island Siltstone) (Plo).*
- **PR** — *Undifferentiated Parmeener Supergroup rocks (PR).*
- **Puo** — *Generally unfossiliferous glaciomarine interbedded non–fissile and fissile siltstone and silty sandstone, with common bioturbation and lonestones, rare pebbly beds and fossiliferous beds; top beds of laminated grey to brown siltstone with thin beds of well sorted sandstone (Abels Bay Formation) (Puo), contact metamorphosed by Jurassic dolerite (Puom).*
- **Puc** — *Richly fossiliferous glaciomarine grey bioclastic to argillaceous limestone, calcareous siltstone and rare metabentonite (Berriedale Limestone), lower fossiliferous siltstone and calcareous siltstone (Nassau Siltstone), basal pebbly sandstone (Rayner Sandstone) (Puc), contact metamorphosed by Jurassic dolerite (Pucm).*
- **Pucr** — *Dark grey richly–to sparsely–fossiliferous siltstone and calcareous siltstone and basal poorly–sorted pebbly sandstone (Nassau Siltstone and Rayner Sandstone) (Pucr).*
- **Pua** — *Dominantly interbedded, richly fossiliferous glaciomarine siltstone and subordinate thin beds of granule sandstone, lonestones present, thin–to medium–bedded, commonly leached yellow–cream coloured (Deep Bay Formation) (Pua), contact metamorphosed by Jurassic dolerite (Puda).*
- **Pch** — *Generally poorly fossiliferous interbedded glaciomarine fine–to medium–grained sandstone, fissile and non–fissile siltstone, lonestones and pebble–rich patches, productid bed at top, basal interval commonly with thick beds of coarse–grained sandstone (Mabina Formation) (Pum), contact metamorphosed by Jurassic dolerite (Pumm).*
- **Pua** — *Undifferentiated fossiliferous glaciomarine sandstone, siltstone and limestone (Deep Bay Formation, Berriedale Limestone, Nassau Siltstone and Rayner Sandstone) (Pua), contact metamorphosed by Jurassic dolerite (Puam).*
- **Pur** — *Cliff forming massive, bioturbated to homogeneous, moderately well–sorted fine–to coarse–grained marine feldspathic quartz sandstone with thin layers containing abundant pebbles or cobbles (Risdon Sandstone) (Pur).*
- **Pux** — *Undifferentiated generally unfossiliferous glaciomarine fissile and non–fissile siltstone and silty sandstone with lonestones (Abels Bay Formation, Mabina Formation, Risdon Sandstone) (Pux).*

### JURASSIC

- **Jd** — *Dolerite (Jd), with orthoquartzite (Jds), granophyre and pegmatite indicated (Jdp), dolerite inferred beneath soil or Cainozoic deposits (Jdi), dolerite of grainsize D – 0.7mm (Jdvf), grainsize 0.7 – 1.5mm (Jdf), grainsize 1.5 – 3mm (Jdm), medium to coarse–grained > 1.5mm (Jdmc), grainsize > 5mm (Jdc), grainsize > 6mm (Jdvc) indicated.*
- **Jdb** — *Dolerite fragmented by periglacial processes (Jdb).*

- *Strike and dip of bedding, right way up.*
- *Strike of vetical bedding, facing indicated by single tic.*
- *Horizontal bedding.*
- *Trend and plunge of lineation of unspecified type.*
- *Strike of outcrop–scale fault, type unspecified; downthrown side indicated.*
- *Strike and dip of outcrop–scale fault, type unspecified; vertical; thrust fault.*
- *Strike and dip of dominant joint set.*
- *Strike of dominant joint set, vertical.*
- *Trend of dyke or vein, rock type or mineral specified by RCODE in Point Attribute Table.*
- *Generalised palaeocurrent direction, showing sense of movement.*
- *Trend and plunge of palaeocurrent lineation polarity down–plunge.*
- *Dip of contact.*
- *Field station for adjacent readings on the map.*

- *Geological boundary – position accurate or approximate.*
- *Geological boundary – inferred.*
- *Geological boundary – transitional.*
- *Geological boundary – concealed.*
- *Intrusive boundary – position accurate or approximate.*
- *Intrusive boundary – inferred.*
- *Intrusive boundary with associated chilled or fine–grained marginal zone in igneous body – position accurate or approximate.*
- *Slope break.*
- *Scarp.*
- *Photo lineament.*
- ( white line ) *Limit of mapping of sub–unit within undifferentiated rock unit.*
- *Fault – unspecified type, position accurate or approximate.*
- *Fault – unspecified type, inferred.*
- *Fault – unspecified type, concealed.*
- *Fault – position accurate or approximate, downthrown side indicated.*
- *Fault – inferred, downthrown side indicated.*
- *Fault – concealed, downthrown side indicated.*
- *Small outcrop or lag occurence.*
- *Limit of mapping of 1:25000 digital geological series.*
- *Municipality boundary.*

### Citation:

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### Acknowledgements:

Geology based on Mineral Resources Tasmania, Digital Geological Atlas 1:25,000 series. For source information refer to 1:25,000 series map sheets – see Location Diagram below.

Base data from the LIST, © State of Tasmania.

Map produced by the Data Management Branch, Mineral Resources Tasmania using G.I.S. software.



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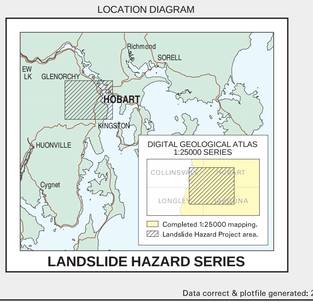
LOCATION DIAGRAM




**LANDSLIDE HAZARD SERIES**

Data correct & plotfile generated: 24-MAY-2006

WARNING:INKS ARE LIGHT SENSITIVE