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PLANNING SCHEME POLICY 2—INFORMATION LOCAL GOVERNMENT MAY REQUEST

1. Information Local Government May Request

The local government may request the following information from the applicant to assist the assessment of a development application—

NOTE 1

- (1) If the information involves a technical assessment, the information is to be compiled and the assessment undertaken by a suitably qualified and experienced person.
- (2) Details of the person's qualifications and experience are to be provided to the local government.

Difficult Topography (Geologically Unstable Lands and Steep Slopes)

- (1) if an application involving land identified as difficult topography, a geotechnical assessment addressing the site's physical, environmental and visual suitability for the proposed development including—
- (a) a site analysis, which identifies contour lines to AHD (1 metre vertical intervals), existing vegetation and geological information; and
- (b) an assessment of the impact that the proposed development would have on the stability of the site and nearby land [including requirements necessary to be incorporated into the development to reduce the risk to life and property (on and off-site) to an acceptable level], and access to the site, addressing—
- (i) proposed earthworks [filling and excavation (cut)];
- (ii) the design, siting and method of construction of buildings, structures and infrastructure (e.g. foundations, roads, driveways, retaining walls, swimming pools and dams) including recommendation of design outcomes responsive to the site's physical, environmental and visual characteristics;

- (iii) on-site effluent and stormwater disposal;
- (iv) removal of existing vegetation and supplementary planting;
- (v) any other changes to the natural surface or underground drainage systems; and
- (vi) site maintenance and other management practices to ensure long-term site stability;

Key Resource Areas and Haul Routes

- (2) if an application for use or works located within a Key Resource Area or within 100m of a designated Haul Route – information identifying—
- (a) details of consultation with relevant Mining Lease and Mineral Development Licence holders particularly regarding their—
- (i) intentions for the extraction of the resource and the use of haul routes and other infrastructure; and
- (ii) views in relation to the proposed development;
- (b) the nature and location of resources in the vicinity and an assessment of how the proposed use and associated works may affect extraction and haulage of the resource;
- (c) the extent to which the extraction and haulage of resources may impact on the proposed use; and
- (d) whether measures may be undertaken, including positioning the proposed use, to minimise any potential adverse impacts;

Mining Subsidence

- (3) if an application involving land identified as disturbed ground associated with open cut mining or land affected by underground mining, or within the 'influence area' (ie draw angle) of a mine—



- (a) information regarding former, current or likely future mining activities, including—
 - (i) the findings of a site inspection;
 - (ii) a search of relevant mine plans, particularly those held by the Department of Natural Resources and Mines (DNRM); and
 - (iii) a review of all available literature regarding mining activities on, under or near the site;
- (b) in respect of disturbed ground associated with open cut mining—
 - (i) factual information, regarding—
 - (A) the name of the open cut operation;
 - (B) a plan to scale showing the perimeter of the open cut operation in relation to property boundaries or other known surface features;
 - (C) topographic sections or a statement giving the depths to the shallowest and deepest parts of the original void;
 - (D) a statement giving the angle at which the walls were constructed;
 - (E) whether the original void is now water-filled, partially or totally backfilled or overfilled with overburden or coarse reject mine fill;
 - (F) if the void is to be filled in the future, then information describing whether the fill will be mine waste or solid or putrescible waste;
 - (G) extracts from available literature;
 - (H) and details of any geological irregularities such as faults or folds;
 - (I) the name of the seam or seams mined;
 - (J) the presence of any instability features such as earth slides, low or high wall failures, etc;
 - (K) whether the site was undermined before or after the open cut activity;
 - (L) if undermined, then further information such as plans to scale and details or the number and names of seams mined as well as cover depths, heights of workings, etc;
 - (M) the presence or history of heating, burnings and fires; and
 - (N) whether a mining lease still covers the void and surrounding areas;
- (ii) an engineering assessment regarding—
 - (A) the stability of the low and high walls with particular regard to workers' and public safety and methods to reduce operations/activities near the top and the base of the walls;
 - (B) estimates of settlements from the existing or future backfilling;



- (C) the factor of safety against pillar crushing and comments on the stability of all underground workings together with potential subsidence, ground strains, ground compressions and ground tilts that could occur in the event that subsidence does occur;
- (D) details on the type of liner to be used, if putrescible fill is to be used, and whether the proposed liner is able to withstand the potential settlement and subsidence impacts;

NOTE 2

Depending on the development proposal, e.g. a waste landfill, a more intensive hydrogeological report may be required to be undertaken by appropriately experienced persons.

- (E) general comments on likely ground water levels and movements;
 - (F) comments on any other aspects e.g. heatings, potential sinkholes from shallow underground workings, future mining activity, etc that could impact on proposed uses or works;
- (c) in respect of land affected by underground mining—
 - (i) factual information, regarding—
 - (A) the name of the colliery or collieries that operated under or close to the site;
- (B) plans to scale showing the site, roads or original portion boundaries superimposed on the mine plans obtained from the Department of Natural Resources and Mines (DNRM);
 - (C) extracts from available literature;
 - (D) the geology under the site including rock types, dip on the strata and the details of any geological irregularities, such as faults and folds;
 - (E) the names of the seam, or seams mined;
 - (F) the mining method used;
 - (G) the cover depths and height of the workings;
 - (H) whether a history or subsidence problem is known in the area;
 - (I) whether the literature search, mine plans, information, etc supplied by the DNRM, deep drilling or down-hole video work, etc indicates that undocumented workings are liable to exist under the site;
 - (J) whether the workings are dry or flooded; and
 - (K) the mining lease details, if one exists;
- (ii) an engineering assessment, regarding—
 - (A) estimates of the cover depths of workings under the site;
 - (B) the factor of safety against pillar crushing and comments on the stability of all underground workings;



- (C) an estimate of potential subsidence, ground strains, ground compressions and ground tilts;
 - (D) the potential for the formation of sinkholes and any specialised techniques, e.g. mine filling, used or proposed to remediate the workings;
 - (E) the influence of any faulting on the stability of the workings and potential surface subsidence;
 - (F) whether the site is within the influence (draw angle) of one or more sets of adjoining workings, and if so, the potential surface subsidence impacts, if any, that could be expected;
 - (G) the identification of areas which are suitable for development and areas which are unsuitable for development;
 - (H) the best position(s) to locate structures in relation to potential subsidence impacts and the locations of shafts, tunnel entries, faults, etc;
 - (I) the most suitable types of structures and foundation systems to minimise the potential subsidence impacts;
 - (J) the preferred location and recommended construction techniques for infrastructure to serve the proposed development;
 - (K) any remedial measures required to seal off tunnel or shaft entries;
 - (L) any recommended management practices for the site; and
 - (M) any other comments on potential impacts that could impact on the proposed uses or works.
- (d) in respect of land which is within the potential subsidence 'influence area' (ie draw angle) of an underground or open cut mine - information contained within an abbreviated report which addresses the main issues of—
 - (i) potential ground strains, compressions, tilts and likelihood of subsidence; and
 - (ii) recommended measures to minimise potential impacts on structures and infrastructure;
- Cultural Significance and Streetscape Value**
- (4) if an application involving a place of cultural significance or streetscape value information regarding—
 - (a) the cultural significance and streetscape value of the place;
 - (b) the location of all buildings, features (including landscape features and vegetation) and structures on site;
 - (c) the arrangement and use of all buildings, structures and spaces on site;
 - (d) the sequence of major changes to buildings, structures, spaces and other features and uses on site;
 - (e) an assessment of the physical condition of the fabric of the place, including identification of intrusive elements which could/should be removed;
 - (f) a description of proposed new works;
 - (g) sketches and photographs depicting the visual impact of the proposal on the site and the streetscape;
 - (h) an assessment of alternative approaches to uses and works which may have a lesser impact on the cultural significance or streetscape value of the place; and
 - (i) an assessment of the likely impact of the proposed use and works on the cultural significance of the place (having regard to the provisions of the Burra Charter and its guidelines) and the streetscape value of the place;



Townscape Appraisal and Scenic Amenity

- (5) if an application involving land with townscape prominence or within an important area of scenic amenity, a visual assessment which—
- (a) identifies the key elements of townscape prominence or scenic amenity for the area (e.g. landmark features or sites, view corridors, approach routes, gateways, edge effects or the existing landscape pattern);
 - (b) provides sketches, photographs or other information depicting the visual impact of the proposal on the site and the nearby area; and
 - (c) details recommended measures to conserve the area's townscape or scenic amenity, such as—
 - (i) important townscape and landscape elements to be conserved;
 - (ii) appropriate locations for new buildings and infrastructure works;
 - (iii) appropriate design [including the form, scale, bulk, height, style, orientation and detailing (including use of materials and colour)] for new uses and works, and
 - (iv) appropriate landscape treatment, including screening of unsightly, or inappropriate elements and supplementary landscaping to enhance desired character and proposed treatment of important approach routes, gateways or edges;

Existing Vegetation and Wildlife Habitat

- (6) If an application involving land identified within an important wildlife habitat area, an ecological assessment which—
- (a) identifies the biodiversity values on and neighbouring the site including important linkages;
 - (b) utilises the Common Nature Conservation Classification System to determine biodiversity significance;
 - (c) utilises the Decision Support Process in the SEQ Regional Nature Conservation Strategy 2003-2008 for assessing proposed changes/intensification of use in areas of biodiversity significance; and

- (d) details recommended measures (including an Environmental Management Plan, where necessary) to conserve, and where necessary, to rehabilitate and link important habitat areas based on (b);

NOTE 3

- (1) Further information can be obtained from the SEQ Regional Nature Conservation Strategy 2003-2008 on the Common Nature Conservation Classification System (Page 76, Appendix 3) and for a copy of the Decision Support Process (Page 34, Figure 24).
- (2) A copy of the Common Nature Conservation Classification System can be obtained from the Western Regional Organisation of Councils' web page.

- (6A) If an application involving land identified as including existing vegetation which is of scenic or ecological significance, a vegetation assessment plan which—
- (a) locates and identifies existing trees with a diameter at breast height (DBH) of 200mm or greater;
 - (b) clearly identifies existing trees to be retained and those to be removed, including reasons for removal;
 - (c) outlines proposed measures by which trees to be retained will be protected during development activity on the site; and
 - (d) identifies any biodiversity values such as nests, hollows or food trees.

NOTE 4

Where the existing vegetation is limited to an individual tree or small group of trees, this information may be included on the development plans.

Site Contamination and Unexploded Ordinances

- (7) if an application involving a contaminated site or land known or suspected of containing unexploded ordinances an assessment which—
- (a) outlines the history of use of the site;
 - (b) identifies the likely extent and type of contamination or distribution of unexploded ordinances; and
 - (c) recommends—
 - (i) appropriate uses and associated buffers for affected areas;



- (ii) mitigation measures for affected areas; and
- (iii) appropriate management practices for the site and any relevant future use;

Flooding and Stormwater Flow Paths

- (8) if an application involving land which is subject to flooding or major stormwater flows, information and an assessment which identifies—
 - (a) the likely probability, depth, volume and velocity of flows (including the submission of relevant computer software model data files which are compatible with the Local Government's software to enable checking of data) across the site;
 - (b) the likely impact of the proposed development, including any associated earth works, both upstream and downstream from the site, particularly in terms of changes to the depth, duration or velocity of flood waters and the duration of warning time;
 - (c) likely impacts in terms of watercourse bank stability;
 - (d) preferred areas and non-preferred areas on site for various activities, based on the probability of inundation and the volume and velocity of flows;
 - (e) recommendations for—
 - (i) the use of flood resistant materials and construction techniques able to withstand relevant debris loads;
 - (ii) the location and height of means of ingress and egress, including possible flood escape routes;
 - (iii) the location and height of buildings, particularly habitable floor areas;
 - (iv) structural design, including the design of footings and foundations to take account of static and dynamic loads (including debris loads and any reduced bearing capacity owing to submerged soils);
 - (v) the location and design of plant and equipment, including electrical fittings;

- (vi) the storage of materials which are likely to cause environmental harm if released as a result of inundation or stormwater flows;
- (vii) the appropriate treatment of water supply and sanitation systems and other relevant infrastructure; and
- (viii) relevant management practices, including flood warning and evacuation measures;

Bushfire Risk Areas

- (9) if an application involving land identified as within a bushfire risk area, a site specific technical assessment which—
 - (a) provides an assessment of the bushfire risk for the site including consideration of the requirements of the Standard Building Regulations 1993 (including AS3959-1999 *Construction of Buildings in Bushfire-Prone Areas*) and includes—
 - (i) a slope and aspect analysis;
 - (ii) identification of the vegetation type;
 - (iii) details of fire history (if available);
 - (iv) identified risk from surrounding lands; and
 - (v) details of proposed measures to reduce the risk of bushfire within the subject land (such as road and lot layout, proposed water storage, fire trails, standards of building construction and clearing and landscaping) including addressing the requirements of Part 11 – Overlays, Division 4 – Development Constraints Overlays – Bushfire Risk Areas;
 - (b) provides details of proposed ingress and egress to the site;
 - (c) provides details regarding education of buyers and advice on any necessary ongoing maintenance programs; and
 - (d) includes details of consultation with the Queensland Rural Fire Services, if applicable;



Defence Facilities

- (10) if an application involving land identified as within Maps OV7A to OV7E, a site specific technical assessment providing the following information—
- (a) whether the development is likely to penetrate or affect the use of the Amberley Air Base operational airspace by way of—
 - (i) the height of any buildings, physical structures or vegetation;
 - (ii) the emission of plumes or airborne particulates;
 - (iii) aviation activities such as parachuting or hot air ballooning;
 - (iv) radio transmission or microwave links;
 - (v) a propensity to attract wildlife, particularly birds and bats, into operational airspace; or
 - (vi) significant external lighting;
 - (b) whether the development is likely to impair the functioning of a sensitive aviation facility at the Amberley Air Base by way of—
 - (i) physical structures, buildings or vegetation;
 - (ii) reflective surfaces on structures; or
 - (iii) significant electro-magnetic transmissions such as those associated with arc welding;
 - (c) the extent to which the land is affected by the Amberley Air Base ANEF contours or noise associated with the use of the Purga Rifle Range and whether the proposed use is compatible with the likely forecast noise levels;
 - (d) whether the development is within a public safety area or explosive safety distance area; and
 - (e) any strategies intended to manage any potential adverse effects—
 - (i) of the development proposal on a defence facility; or
 - (ii) on the development proposal itself and the ensuing uses and works.

Other Overlay Assessment

- (11) if an application requiring assessment against an overlays code (other than covered by sections 1(1) to (10) above—
- (a) an assessment of how the development or effects of the development may affect the values of the relevant feature or resource; or
 - (b) an assessment of how the development may create or increase a risk of significant adverse effects on the natural or built environment or human health or safety; and
 - (c) if applicable, an assessment of measures proposed to adequately manage the potential significant adverse effects arising from the development;

Infrastructure Works

- (12) if an application has an impact on existing infrastructure or involves infrastructure works, including works for reconfiguring a lot—
- (a) an assessment of the capacity of existing downstream or associated network infrastructure and the effect of the proposed use connecting, including proposed measures to overcome any identified problems and an assessment of the likely impacts of stormwater drainage on downstream and upstream properties;
 - (b) an assessment of any proposed variation of the standards stated in Planning Scheme Policy 3—General Works, including a description of the existing situation, the reason for the variation and an outline of other possible variations that have been considered but not proposed; and
 - (c) an assessment of any new works required both internal and external to the proposed development, including appreciation of the infrastructure needs of nearby existing or future development;

NOTE 5

Approval is required from affected property owners where stormwater is discharged onto or through private property.



Zone Assessment

- (13) if an application requiring assessment against a zone code—
 - (a) an assessment of how the development may contribute to or detract from achievement of the outcomes sought for the zone; and
 - (b) if applicable, an assessment of measures proposed to adequately manage the potential defraction from achievement of the outcomes;

Economic Impact Assessment

- (14) if an application involving the development of a town centre, new shopping centre, significant extension to an existing shopping centre or a 'stand alone' retailing facility, information and an assessment identifying—
 - (a) the extent of existing commercial floor space and approved new commercial floor space in the area likely to be serviced by the proposed facility and in surrounding areas which could be affected by it;
 - (b) the likely trade area of the proposed facility having regard to its size, the nature of the services proposed to be included within it, the configuration of the general road network which is likely to provide access to the facility, the location of any physical or psychological barriers to movement and the location of competing facilities;
 - (c) the nature and adequacy of existing facilities and approved new facilities in the trade area referred to above and the level of convenience provided by such facilities;
 - (d) the population, existing and projected, for the likely future trade area and the socio-economic characteristics of that population;
 - (e) the demand, or likely future demand, for commercial floor space in the area referred to above;
 - (f) whether the establishment of the proposed facilities would result in an excess of commercial floor space of the type proposed in the area or would result in an excess of commercial floor space generally and whether the proposal may be premature or inappropriate in this regard;

- (g) the likely impact of the proposed development together with the additional cumulative effect of any approved new commercial developments within the same area on existing businesses, with such impacts quantified in dollar terms and the implications of such impacts clearly articulated together with the means by which they can be ameliorated;
- (h) whether the proposed location is consistent with the function of the facility and the need to locate such a facility to maximise accessibility within its potential trade area and whether the centre is located where possible, to maximise use of public transport and pedestrian and cycle accessibility;
- (i) whether, if not satisfactorily located, it would jeopardise the provision of facilities in a location better placed to provide a higher level of choice or degree of convenience and accessibility;
- (j) the potential increases in trip generation within the transport system and the need to upgrade the transport system to accommodate these additional trips;
- (k) changing trends in shopping and other behaviour relating to community needs which may affect the proposal;
- (l) the environment effects and urban design implications of the proposal; and
- (m) any other benefits or detriments to the local area or the community in general;

Transport Impact Assessment

- (15) if an application involving a development which is likely to generate high traffic volumes or which is likely to cause or exacerbate a transport problem, information and assessment identifying—
 - (a) the likely impact of the development on the existing transport network (including a consideration, where relevant, of likely impacts on the road network, the public transport network, freight movements, pedestrians and cyclists);
 - (b) recommended changes to the transport network to accommodate the proposed development; and



- (c) whether adequate provision has been made for the manoeuvring, parking, loading and unloading of vehicles;

Social Impact Assessment

- (16) (a) if an application involving a development which is likely to create significant changes either directly or indirectly in—
- (i) people's way of life (inclusive of work, lifestyle and recreation);
 - (ii) people's cultural traditions;
 - (iii) population structure, cohesion, stability or character; or
 - (iv) community services and facilities;
- (b) information and assessment identifying—
- (i) the existing social conditions and assessing the significance of the predicted changes, in terms of advantages and disadvantages for the people involved;
 - (ii) evidence of the need for the project (may include statistics, surveys, community consultations and other research);
 - (iii) the likely impact of the development on the equity, costs and benefits across social groups represented in the impacted community (e.g. access to employment, education and training, appropriate housing mix, public transport etc);

NOTE 6

- (1) Particular equity target groups include people with disabilities, older persons, youth, Aboriginal and Torres Strait Islander groups and ethnic minority groups.
- (2) An indication or comment from appropriate community groupings within the impacted area, should be provided as to their opinion or concerns about the development.

- (iv) an assessment of community safety based on Crime Prevention Through Environmental Design (CPTED) principles;

- (v) opportunities to mitigate any potential impacts and the likely adequacy of proposed mitigation measures;
- (vi) the need or desirability of a mix of land uses;
- (vii) the likely impact on current and future provision of community services and facilities;
- (viii) the range of new community services and facilities (inclusive of public spaces and recreation areas) which may be required and appropriate benchmarks or timelines for their provision;
- (ix) likely impacts on community cohesion, image and morale; and
- (x) likely impacts on cultural development, interaction and engagement;

Rural Uses and Works Assessment

- (17) if an application involving a rural use or works which may have a significant impact on the surrounding area or the environment, information and an assessment regarding—
- (a) planning and site selection;
 - (b) legislative requirements;
 - (c) building use design, location and construction;
 - (d) feed storage facilities;
 - (e) animal numbers and proposed methods and densities of enclosure;
 - (f) animal carcass disposal;
 - (g) pest, weed and predator control;
 - (h) noise, dust and odour generation and potential impacts both on-site and off-site, with particular regard to existing or likely future residents or other sensitive receptors in the area;
 - (i) likely impacts on water and soil contamination, erosion and salt accumulation, stormwater run-off and effluent disposal;
 - (j) likely visual impacts, with particular regard to the existing and proposed character of the area;
 - (k) access and traffic generation and the adequacy and likely impact on the road network in the area;



- (l) the disposal and management of wastes, including liquids and solids, produced by the proposed development;
- (m) the identification and management of impacts associated with the development during both its construction and operational phases;
- (n) the source and adequacy of water to be used on site, including arrangements for water storage;
- (o) the use or potential alienation of Good Quality Agricultural Land; and
- (p) the ability of the site to ecologically sustain the scale and nature of the uses or works being proposed;

NOTE 7

Many of the above issues may be addressed by a farm plan or environmental management plan.

Public Safety and Security Assessment for Shopping Centres and Other Major Retail or Commercial Uses

- (18) if an application involving a shopping centre or another major retail or commercial use, an assessment which includes a streetscape and safety plan focussing on the design of the streetscape and areas within and around the development to be used by the public incorporating—
 - (a) a risk assessment and safety audit;
 - (b) security strategies for vulnerable people;
 - (c) street furniture and movement spaces appropriate to the size of the development and its use;
 - (d) footpath activities such as cafes and seating, both within and adjoining the development;
 - (e) signposting of the location of public facilities including telephones, baby change facilities and toilets; and
 - (f) the location of activities and movement routes which promote casual surveillance;

Noise

- (19) if an application involving a non-residential use near a residential use or residential zone or noise sensitive place, or alternatively a residential use near a beneficial asset or other significant noise source, an acoustic assessment which establishes that—

- (a) the use or works will have no significant detrimental impact upon the amenity of nearby areas; or
- (b) the beneficial asset or noise source will have no significant impact on the proposed residential use; or
- (c) appropriate acoustic screening or noise amelioration measures can be incorporated into the design of the site or the use which would eliminate any detrimental impact;

Wind turbulence

- (20) if an application involving a building or structure which may cause wind turbulence, a wind analysis which establishes—
 - (a) whether the proposed building or structure, as a result of its height or form, is likely to cause wind turbulence which would have a detrimental impact upon the amenity of the area; and
 - (b) appropriate measures (perhaps including a reduction in building height) that can be incorporated into the design of the site or the use which would eliminate detrimental impacts;

Overshadowing

- (21) if an application involves a building or structure which may cause overshadowing, a shadow analysis which establishes—
 - (a) whether the proposed building or structure, as a result of its height or form, is likely to cause overshadowing which would have a detrimental impact upon the amenity of the area; and
 - (b) appropriate measures (perhaps including a reduction in building height) that can be incorporated into the design of the site or the use which would eliminate detrimental impacts;

Pit-Burning of Cleared Vegetation

- (22) if an application involving a use or works in which it is proposed to dispose of cleared vegetation by pit-burning, a Cleared Vegetation Disposal Plan which—
 - (a) shows why alternative methods of vegetation clearing and disposal, which may have better, or at least equivalent economic and environmental implications, cannot be used;



- (b) includes a site plan showing the location of the pit burner in relation to property boundaries and sensitive areas;
- (c) includes methodology on how the pit is to be operated, supervision, and precautions taken to prevent the spread of fire; and
- (d) includes evidence that an application for an Environmental Authority to conduct pit burning has been made;

Hazard and Risk

- (23) if an application involving uses or works which have the potential for environmental harm, safety hazards or risks, information regarding—
- (a) a hazard/vulnerability analysis;
 - (b) a hazard and operability (HAZOP) study, or other qualitative risk analysis, and/or a quantitative risk assessment;
 - (c) a human health risk assessment;
 - (d) an environmental risk assessment;
 - (e) whether or not the facilities or processes which are to be undertaken on site will pose an environmental or safety hazard, or risk; or
 - (f) that in accordance with the hazard or risk identified, appropriate ameliorative design and environmental management measures have been included in the proposed development in accordance with the relevant Australian Standards or legislation;

Lighting Plan

- (24) if an application involving 'vulnerable development', a lighting plan which incorporates—
- (a) consistent lighting to reduce the contrast between shadows and illuminated areas;
 - (b) adequate lighting levels to cater for the form and function of the use and local security/safety considerations;
 - (c) consideration of vegetation, in both its current and mature form, or other elements that may have the potential to block out light;

- (d) lighting of inset spaces, access/egress routes, car parking areas and signage;
- (e) measures to reduce glare and light spill and particularly to avoid the creation of a nuisance to nearby residents or the creation of hazardous traffic conditions; and
- (f) photoelectric cells rather than time switches for night lighting.

Earthworks

- (25) if an application involving earthworks (including lot filling) as per the Earthworks Code—
- (a) a site analysis plan showing—
 - (i) the levels of the existing site, based on contour information;
 - (ii) existing vegetation;
 - (iii) final proposed contours; and
 - (iv) the existing watercourses and overland flow paths;
 - (b) a hydraulic study including details regarding flood levels and impact on adjoining, upstream or down stream properties;
 - (c) extent of new fill and compaction measures proposed;
 - (d) location and height of fill in relation to adjoining properties;
 - (e) details regarding the nature of the proposed fill material;
 - (f) details of any public utility services, particularly Local Government infrastructure within or near the site;
 - (g) location of easements on or adjoining the site;
 - (h) grades of slope between the road reserve and any existing or future building envelope;
 - (i) stability of existing and recontoured sloping ground and batters;
 - (j) suitability of the land (or recontoured land where earthworks are proposed) for the founding of buildings, roads and services;
 - (k) details in relation to truck haulage routes for delivery and removal of material from the site;
 - (l) information in relation to the control of potential air pollutants and noise emissions;



- (m) details of any earth retaining structures proposed, including construction materials, proposed landscaping treatment, stability and structural soundness;
- (n) the extent and nature of any site contamination;
- (o) potential for earthwork activity to cause vibrations that could damage to nearby structures both directly and indirectly;
- (p) details regarding vegetation to be retained and associated protection measures;
- (q) plans detailing the location of any existing infrastructure and future infrastructure works proposed within the vicinity of the earthworks, including the impacts such works will have on this infrastructure; and
- (r) drainage, sedimentation and erosion control measures proposed to be installed;

Applications for Material Change of Use or Building Works

- (26) If an application for Material Change of Use or Building Works, the application is to be accompanied by—
 - (a) a proposal plan drawn to an appropriate metric scale and accurately plotted with the north point towards the top of the page, clearly indicating the following information—

NOTE 8

(1) The following scales for the proposal plan are acceptable to the Local Government—

- (a) 1:100;
- (b) 1:200; or
- (c) 1:500.

(2) Should the size of the proposal necessitate a larger scale, the scale should be a multiple of 500.

(3) A reduced copy of all proposal plans are to be submitted to the Local Government in either A3 or A4 size.

- (i) scale;
- (ii) north point;
- (iii) date and drawing number of plan;
- (iv) name of person/company who prepared the plan;

NOTE 9

The proposal plan is to be prepared by a town planner, registered professional engineer, registered architect, or such other person approved by the Local Government.

- (b) the full real property description of the subject property/s;
- (c) site location;
- (d) the boundaries of the land to which the application relates or applies, referring to their length in metres and bearings;
- (e) the location, name and width of all existing roads, streets, lanes or pathways abutting the subject property;

NOTE 10

Refer to section 1(15) "Transport Impact Assessment" of this Planning Scheme Policy.

- (f) the size and location of all buildings or other structures both existing and proposed to be erected on the land, and the distance in metres from the nearest point of every such building or other structure to the boundary of the land;
- (g) elevations of any existing or proposed buildings or other structures, including the position of doors, windows, roof and wall projections, balconies, verandahs, steps and outbuildings;
- (h) the location of buildings on adjoining lots;
- (i) details of the internal layout of all buildings or other structures to which the application applies;
- (j) the location, width and purpose of all existing easements over, adjoining or affecting the land being reconfigured;

NOTE 11

The proposal plan is to note the location of any high pressure oil or gas pipeline within 200m of the land being subdivided.

- (k) location of zones (only applicable if more than one (1) zone applies to the subject property);
- (l) the location of any future strategic roads within or adjacent to the subject property (if applicable);



NOTE 12

Refer to Map 4 in Schedule 7 for the indicative location of the Strategic Transport Network.

- (m) location of areas of difficult topography within the land (if applicable);

NOTE 13

(1) Refer to section (1) 'Difficult Topography (Geologically Unstable Lands and Steep Slopes)' of this Planning Scheme Policy.

(2) Where slopes exceed 15%, the proposal plan is to show the location of building sites and accessways.

- (n) location of areas of wildlife habitat within the land (if applicable);

NOTE 14

Refer to section (6) 'Wildlife Habitat' of this Planning Scheme Policy.

- (o) location of Mining Leases, Key Resource Areas (including haul routes) to be protected and areas previously affected by undermining or open cut mining (if applicable);

NOTE 15

Refer to sections (2) 'Key Resource Areas and Haul Routes' and (3) 'Mining Subsidence' of this Planning Scheme Policy.

- (p) location of any area affected by an overlay;

NOTE 16

Refer to section (11) 'Other Overlay Assessment' of this Planning Scheme Policy and Part 11 of the planning scheme.

- (q) the position and layout of all existing and proposed vehicular accesses, driveways, loading areas, parking areas and provisions for pedestrians and cyclists;
- (r) details of existing vegetation and the extent of proposed clearing and the location of all proposed landscaping and recreation areas;

NOTE 17

A Landscaping Plan may be required as part of any application for Material Change of Use or Building Works.

- (s) the provision of areas for waste storage and removal (if applicable);
- (t) location, design and details of proposed signage;
- (u) for developments which are likely to have a significant adverse impact on water quality, describe and detail the site's water quality control methods, clearly outlining the following information—
 - (i) the water quality methods selected;
 - (ii) modelling results;
 - (iii) the location of water quality controls;
 - (iv) the timing for installation;
 - (v) the maintenance regime;
 - (vi) if required, an asset hand-over program; and
 - (vii) if required, a performance evaluation (i.e. monitoring) program;

NOTE 18

- (1) Further detailed information may be required in accordance with the provisions of this planning scheme policy.
- (2) A Water Quality Management Plan will be required as part of any application for a Material Change of Use which is likely to have a significant adverse impact on water quality (refer to Part 2, division 3 of Planning Scheme Policy 3—General Works).

Landscaping Plan

- (27) a Landscaping Plan, with information identifying—
 - (a) project description and location;
 - (b) landscape architect/designer's name and contact details;
 - (c) the date on which the plan was prepared together with a plan number which clearly identifies the plan and any amendments thereof;
 - (d) a north point;
 - (e) a dimensioned site plan drawn to an appropriate metric scale;



NOTE 19

- (1) The following scales for the landscape plan are acceptable to the Local Government—
 - (a) 1:100;
 - (b) 1:200.
- (2) Should the size of the landscape plan necessitate a larger scale, the scale should be a multiple of 500.
- (3) A reduced copy of all landscape plans are to be submitted to the Local Government in either A3 or A4 size.

- (f) location of property boundaries, road alignments and street names;
- (g) location of underground and overhead services, including drainage, sewerage, power lines, electricity, telephone and gas;
- (h) location, botanical name and size of existing trees and shrubs and intended retention or removal of these plants to be clearly nominated;
- (i) contours and spot levels, both existing and proposed to all surfaces, including levels at the base of all existing vegetation to be retained, and surface levels of paved areas and access covers;
- (j) location and design of proposed stormwater drainage works including direction of overland flow, location of field inlets (as required) and methods to ensure erosion control;

NOTE 20

Refer to section (12) "Infrastructure Works" of this Planning Scheme Policy.

- (k) details of the location of any earth cuts, fills or mounds within landscaped areas and details of proposed measures to ensure stability, including location, height and materials of retaining walls;
- (l) location of all existing and proposed buildings, landscape structures, storage areas, pathways, driveways and parking areas, outdoor furniture (where relevant e.g. centres) and fencing;
- (m) details including design, materials used and colours of proposed edging, surface treatments, fencing, pergolas and raised gardens;

- (n) evidence of measures taken for conservation, protection and maintenance of sites which have environmental, ecological, cultural, architectural, historic, scenic, visual, streetscape or scientific significance;
- (o) intended arrangements for maintenance of the landscaping, and the conservation, protection and maintenance of significant sites;
- (p) location and nature of all proposed vegetation;
- (q) a plant schedule which includes the following information—
 - (i) a graphic code/key (as nominated on the plan);
 - (ii) scientific or botanical names of plants;
 - (iii) common names of plants (not essential);
 - (iv) spread at maturity;
 - (v) height at time of planting (measured from pot soil level to top of growing tip) (not essential);
 - (vi) crown width at time of planting (not essential);
 - (vii) quantity of each species used;

NOTE 21

- (1) The plant schedule should be divided into separate categories for trees, shrubs and ground covers.
- (2) The information may be provided in one large schedule or in three appropriately titled smaller schedules.
- (3) When preparing the planting schedule, reference should be made to the Local Government's Environmental Weeds Policy.

Integrated Planning – Ripley Valley/Deebing Creek (FU1) Sub Area, Walloon/Thagoona (FU4) Sub Area and South Redbank Plains (FU2) Sub Area

- (28) if an application for urban uses or works within the Ripley Valley/Deebing Creek Sub Area of the Future Urban Zone—
 - (a) information identifying—
 - (i) the cadastral boundaries of the land;
 - (ii) existing contour information in metres;
 - (iii) the relationship of the land to the relevant master planning unit shown on the Land Use Concept Master Plan (LUCMP), refer Figure 4.8.1;



- (iv) the location of existing and proposed infrastructure;
 - (v) an indicative subdivision of the land including the road and lot layout and lot numbers and areas;
 - (vi) staging of the subdivision or land uses proposed (if required);
 - (vii) access points to the land and to each proposed lot (if required);
 - (viii) areas to be provided for open space and the proposed embellishment of those areas;
 - (ix) location of recreational paths and pedestrian thoroughfares;
 - (x) the location of any Neighbourhood Centre and an indication of the uses proposed in the Neighbourhood Centre;
 - (xi) location of community facilities;
 - (xii) the location of any site or area of cultural heritage significance or streetscape value;
 - (xiii) location and nature of all proposed uses;
 - (xiv) a development summary including—
 - (A) number of lots by use;
 - (B) the intended type of residential use of any proposed residential lot;
 - (C) gross area (including floor space areas, where relevant) of each proposed use; and
 - (D) road reserve widths and pavement widths;
- (b) a report, or a series of reports—
- (i) describing the use being made of the land (including any building or other structure thereon) at the date of application;
 - (ii) outlining how the proposal relates to the Land Use Concept Master Plan (i.e. Figure 4.8.1) and the criteria outlined in section 4.8.4 of the Planning Scheme;
 - (iii) outlining how the proposal will facilitate the orderly, integrated, efficient and coordinated development of the Ripley Valley/Deebing Creek Sub Area and the nominated master planning unit with particular regard to—
 - (A) transport connectivity and mobility, major road corridors and major collector streets and major access points to the road network;
 - (B) transit oriented development;
 - (C) an open space and recreation needs assessment, particularly to identify—
 - (I) connectivity as part of an integrated open space network;
 - (II) major recreational paths and facilities and major open space areas and linkages; and
 - (III) local parks and other local open space;
 - (D) a social impact assessment, particularly to identify—
 - (I) the need and appropriate locations for community services and education facilities; and
 - (II) an appropriate mix of housing densities;



NOTE 22A

Refer to section (16) "Social Impact Assessment" of this Planning Scheme Policy.

- (E) the location of centres and their likely economic impact, relative to the centres network as outlined in this planning scheme; and

NOTE 22B

Refer to section (14) "Economic Impact Assessment" of this Planning Scheme Policy.

- (F) the creation of a 'sense of place' for centres or community nodes and a 'sense of community' for each of the master planning units, as part of a visual impact and image assessment;

NOTE 22C

Refer to section (5) "Townscape Appraisal and Scenic Amenity" of this Planning Scheme Policy.

- (iv) providing a detailed Transport Impact Assessment of the proposed development;

NOTE 22D

Refer to section (15) "Transport Impact Assessment" of this Planning Scheme Policy.

- (v) outlining the extent to which the land is affected by overlays or other physical constraints and the measures which are intended to mitigate these constraints;

NOTE 22E

Refer to Part 11 "Overlays" of this planning scheme and to section (1) "Difficult Topography", (3) "Mining Subsidence", (6) "Wildlife Habitat", (7) "Flooding and Stormwater Flow Paths", (9) "Bushfire Risk Areas" and (10) "Defence Facilities" of this Planning Scheme Policy.

- (vi) where the plan nominates a site or sites for multiple residential uses or dwellings on lots less than 450m² in area, outlining the development criteria including the plot ratio, number of storeys, and a statement of design parameters in respect of each such site;
- (vii) outlining the nature of any site or area of cultural heritage significance or streetscape value, including recommendations on the protection and management of culturally significant areas following consultation with local indigenous groups and the Environmental Protection Agency;

NOTE 22F

Refer to section (4) "Cultural Significance and Streetscape Value" of this Planning Scheme Policy.

- (viii) detailing the landscape design and streetscape works proposed as part of any visual impact and image strategy associated with the creation of a 'sense of place' or 'sense of community';
- (ix) detailing the open space system including the type, location, extent and the key open space components to be provided at the time of development; and
- (x) outlining any specific planning or development requirements, including Assessment Tables and Assessment Criteria for the different land use precincts or sites;

- (c) information regarding—
 - (i) the infrastructure to be provided;
 - (ii) infrastructure affected by or required as a result of the development of the land;
 - (iii) how these items of infrastructure relate to the orderly and integrated development of the master planning unit; and



- (iv) a program showing for each item of infrastructure—
- (A) the estimated date on which the particular infrastructure item is to be provided;
 - (B) the intended provider;
 - (C) other works which are dependent on its provision; and
 - (D) any other relevant information, in particular any information contained in the planning scheme or a Planning Scheme Policy about the provision of infrastructure;
- (28A) if an application for urban uses and works within the Walloon/Thagoona Sub Area of the Future Urban Zone—
- (a) a report, or series of reports—
 - (i) outlining how the proposal relates to the Land Use Concept Master Plan (LUCMP) (Figure 4-8-2), Transport Plan – Strategic Road and Rail Network (Figure 4-8-3), Transport Plan – Strategic Pedestrian/Cycleway Network (Figure 4-8-4), Greenscape Plan (Figure 4-8-5), Visual Character and Landscape Plan (Figure 4-8-6) and the criteria outlined in section 4.8.5C of the Planning Scheme; and
 - (ii) outlining how the proposal will minimise impacts on koala habitat, within or adjacent to areas of native vegetation.
- (28B) if an application for urban uses and works within the South Redbank Plains Sub Area of the Future Urban Zone a report, or series of reports outlining how the proposal relates to the Land Use Concept Master Plan (LUCMP) (Figure 4-8-2A), Greenscape Plan (Figure 4-8-2B), Transport Plan – Strategic Road and Rail Network (Figure 4-8-2C), Transport Plan – Strategic Pedestrian/Cycleway Network (Figure 4-8-2D), Visual Character and Landscape Plan (Figure 4-8-2E) and the criteria outlined in section 4.8.5A of the Planning Scheme.

Reconfigurations

- (29) if an application involving the reconfiguration of land, the application is to be accompanied by a proposal plan, drawn to an appropriate metric scale and accurately plotted with the north point towards the top of the page, clearly indicating the following information—

NOTE 23

- (1) The proposal plan is to be a black and white print.
- (2) The following scales for the area of land to be reconfigured are acceptable to the Local Government—
 - (a) below 0.5 ha 1:500 or 1:1000;
 - (b) 0.5 to 2.0 ha 1:2000 or 1:2500;
 - (c) above 2.0 ha 1:5000.
- (3) A reduced copy of all proposal plans is to be submitted to the Local Government in either A3 or A4 size.

- (a) scale;
- (b) north point;
- (c) date and drawing number of plan;
- (d) name of person/company who prepared the plan;

NOTE 24

The proposal plan is to be prepared by a licensed surveyor, town planner, registered professional engineer or such other person approved by the Local Government.

- (e) the full real property description of the land being reconfigured;
- (f) site location;
- (g) all lots into which the land being reconfigured is presently configured;

NOTE 25

- (1) All existing lots real property descriptions, areas and dimensions are to be marked on the proposal plan.
- (2) If the land to be reconfigured is in separate ownerships, the proposal plan is to show clearly all separately owned parcels of land.

- (h) all existing lots adjoining the land being reconfigured together with their real property descriptions, areas and dimensions;
- (i) the location, name and width of all existing roads, streets, lanes or pathways abutting the land being reconfigured;

NOTE 26

The existing road or street formation/standard is to be nominated on the proposal plan.



- (j) the location, width and purpose of all existing easements over, adjoining or affecting the land being reconfigured;

NOTE 27
The proposal plan is to note the location of any high pressure oil or gas pipeline within 200m of the land being subdivided.

- (k) location of zones (only applicable if more than one (1) zone applies to the land being reconfigured);
- (l) location of future strategic roads within the land being reconfigured (if applicable);

NOTE 28
Refer to Map 4 in Schedule 7 for the indicative location of the Strategic Transport Network.

- (m) location of areas of difficult topography within the land being subdivided (if applicable);

NOTE 29
(1) Refer to section (1) 'Difficult Topography (Geologically Unstable Lands and Steep Slopes)' of this Planning Scheme Policy.
(2) Where slopes exceed 15%, the proposal plan is to show the location of house sites and accessways.

- (n) location of areas of wildlife habitat within the land being subdivided (if applicable);

NOTE 30
Refer to section (6) 'Wildlife Habitat' of this Planning Scheme Policy.

- (o) location of Mining Leases, Key Resource Areas (including haul routes) to be protected and areas previously affected by undermining or open cut mining (if applicable);

NOTE 31
Refer to sections (2) 'Key Resource Areas and Haul Routes' and (3) 'Mining Subsidence' of this Planning Scheme Policy.

- (p) location of any area affected by an overlay;

NOTE 32
Refer to section (11) 'Other Overlay Assessment' of this Planning Scheme Policy and Part 11 of the planning scheme.

- (q) dimensions and area of each proposed lot, each marked with a distinct lot number;

NOTE 33
(1) A summary of the total number and area of each proposed lot is to be set out in a table on the proposal plan.
(2) In some cases (particularly for major subdivisions), development will be of such magnitude to require staging.

- (3) Where staging is required it is suggested that applicants apply for a 'preliminary approval'.
- (4) This enables the Local Government to 'approve in principle' the conceptual layout of the development and formulate general conditions appropriate for the overall development.
- (5) Whilst a preliminary approval provides an 'approval in principle' it does not authorise the reconfiguring to occur.
- (6) Each subsequent reconfiguration application for a stage is to comply with the reconfiguration requirements applicable at the time of determination.

- (r) the existing and proposed means of access to each lot;
- (s) the location of all buildings and structures on the land being reconfigured and within ten (10) metres on adjoining land;

NOTE 34
Any building or structure within ten (10) metres of a road boundary or one (1) metre from other boundaries is to show actual distances from the boundary.

- (t) the location of all watercourses, waterholes or swampy land, dams and creeks on the land being reconfigured and within thirty (30) metres on adjoining lands;
- (u) the lines of all existing sewers and drains, on-site effluent disposal systems and all existing pipes or mains for the supply of water, gas, electricity or other services;
- (v) the contours of the ground as related to Australian Height Datum at an interval to adequately indicate the topography of the area to be reconfigured;

NOTE 35
The following contour intervals are generally acceptable to the Local Government—

(a) Rural Subdivisions	5m;
(b) Minor Subdivisions	1m;
(c) Moderate or Major Subdivisions	1m.

- (w) location, width and purpose of all proposed easements and utility services;
- (x) all land below the adopted flood level;



NOTE 36

Refer to section (8) 'Flooding Impact Assessment' of this Planning Scheme Policy.

- (y) location of tree groupings and significant trees (where applicable), any landscape features, any prominent ridgelines and places of cultural significance or streetscape value;

NOTE 37

Refer to sections 1(d) 'Cultural Significance and Streetscape Value' and 1(e) 'Townscape Appraisal and Scenic Amenity' of this Planning Scheme Policy.

- (z) for moderate rural subdivisions, moderate urban subdivisions or major urban subdivisions—
 - (i) provide road truncations;
 - (ii) location of internal roads (each numbered) showing hierarchical status, width, design grades, design speeds and depth of any cut and fill;
 - (iii) type and treatment of intersections;

NOTE 38

- (1) For minor subdivisions, truncations or intersection upgradings may be required where the lot created is at the intersection of two (2) or more existing roads or where access to the lot created requires the intersection to be negotiated.
- (2) The approximate area, dimensions, design grade, design speed and type of cross-section for each proposed road is to be set out in a table on the proposal plan.
- (3) Draft longitudinal sections, showing road centre line grade checks are required to demonstrate feasibility and conforming grades.
- (4) No grade check is required where grades are below 5%.
- (5) It is important that major earthworks do not create access difficulties on abutting lots.

- (aa) for urban subdivisions—
 - (i) proposed method of draining the land (including proposed drainage reserves/easements or inter-lot drainage); and

- (ii) the location of any areas proposed for use as parkland;

NOTE 39

The areas and dimensions of proposed parkland are to be nominated on the proposed plan.

- (iii) the extent of any cutting and filling to be carried out on the land to be reconfigured;

NOTE 40

This does not apply to earthworks less than 1000m² or 500mm in depth.

- (iv) if whole lot or lots cannot command sewerage, the location of land serviceable with sewerage; and
- (v) within the Springfield Structure Plan area, where required, the location of all nominated purposes on an Area Development Plan (ADP);

NOTE 41

All nominated purposes are to be in compliance with the Table of Development relating to the respective Structure Plan designations, classifications or precincts.

- (vi) for cottage lots, a plan of development is to accompany the proposal plan outlining the type of dwelling to be constructed on the lot; and

NOTE 42

Cottage Lots are to be developed as a house and land package prior to the Local Government approving the Plan of Subdivision containing such lots.

- (bb) for major urban subdivisions—
 - (i) location of proposed pathways;
 - (ii) location of proposed cycleways and footpaths;
 - (iii) location of any proposed lakes or water bodies (including wet detention basins);
 - (iv) location of any proposed water reservoirs, pump stations and trunk mains (include location of point of connection to network); and



- (v) location of sewerage pumping stations, trunk mains and likely overflow points (include location of point of connection to network);

NOTE 43

Likely overflow points should be determined assuming system failure for 48 hours.

- (cc) report providing the following information—
 - (i) proposed use following reconfiguration (i.e. intention of the proposal);
 - (ii) details of consultation (if any) with relevant public authorities (including the Local Government and State Government Agencies) responsible for the provision or upgrading of utilities and other services;
 - (iii) use of buildings and land on the subject and adjoining sites;
 - (iv) demonstrating that consideration has been given to the environmental impact of the development;
 - (v) setting out any steps to be taken to mitigate any likely adverse environmental impact;
 - (vi) details regarding 'lawful point of discharge' for stormwater;
 - (vii) that consideration has been given to the potential reconfiguration of the balance of the land and adjoining lots;
 - (viii) details of any proposed interference with existing services and utilities;
 - (ix) details of any proposals for the upgrading of existing roads;
 - (x) the need for suitable buffers/special provisions between incompatible uses/sensitive land uses;

- (xi) consideration has been given for the necessity of an assessment (if any) for those matters covered by sections 1(a) to (m), 1(o), 1(p), 1(s) and 1(v) above;
- (xii) details regarding the capacity of the water supply system (including within the Rural Zones requests for water main extensions or connections to the water supply system);
- (xiii) for urban subdivisions—
 - (A) demonstrating that consideration has been given to the drainage requirements for the adopted flood level;

NOTE 44

- (1) The areas of all catchments draining upon the land is to be detailed in the assessment.
- (2) Refer to section 1(h) 'Flooding Impact Assessment' of this Planning Scheme Policy.

- (B) details regarding capacity of the sewerage system;
- (C) details regarding the capability of the total lot to command the sewerage system;
- (D) details regarding on-site effluent disposal, where applicable; and

NOTE 45

- (1) Applicants are to provide, at their own expense, a written report from a Registered Professional Engineer Queensland (RPEQ), assessing the capacity of the lots to absorb their own sullage and liquid household wastes within the lot boundaries and without detriment to the area external to those lots, in all normal weather conditions.
- (2) The report is to comply with the Standard Sewerage Law and the On-Site Sewerage Code.

- (E) details indicating how the open space location and boundaries were determined;



- (xiv) for major urban subdivisions, details—
 - (A) indicating how the cycleways/pedestrian pathway system were determined;
 - (B) demonstrating compatibility of proposed roads with road hierarchy principles;
 - (C) demonstrating that consideration has been given to encouraging the use of public transport, including bus routes and bus stops;
 - (D) indicating how the range of lot sizes were derived having regard to physical site characteristics, requirements of people with different housing needs, the provision of housing diversity/choice and marketability; and
 - (E) demonstrating consideration has been given to water quality issues, particularly those outlined in the Water Quality Management Plan;

NOTE 46

(1) A Water Quality Management Plan is to be prepared as part of the application to reconfigure land.

(2) For details regarding a Water Quality Management Plan refer to Part 2, division 3 of Planning Scheme Policy 3—General Works.

Operational Works

- (30) in any reconfiguration, material change of use or building application involving works or site development works involving elements that are to become part of the Local Government's infrastructure (including roads, stormwater drainage, water reticulation and sewerage reticulation works) detailed working plans and specifications are to be submitted to the Local Government, providing (where applicable) the following information—

NOTE 47

(1) All detailed working plans and specifications are to be prepared by a Registered Professional Engineer.

(2) All detailed working plans and specifications are to be prepared using the following applicable Australian Standards—

- (a) AS1000 – The International System of Units (SI) and its Application;
- (b) AS1100 – Drawing Practice;
- (c) AS1101 – Graphical Symbols for General Engineering;
- (d) AS1102 – Graphical Symbols for Electrotechnology.

(3) Three (3) copies of the Engineering Plans clearly marked "Preliminary" (3 x A3 size copies and 1 x A1 size copy) and one (1) set of construction specifications are to be submitted to the Local Government.

Engineering Plans

General

- (a) all engineering plans drawn on standard size sheets, as follows—

<u>Size</u> <u>Dimensions</u>	<u>Overall</u>
A1	841mm x 594mm – normal maximum size
A3	420mm x 297mm

Scales

with the following scales to be used—

 - (i) plan – 1:1000 or 1:500;
 - (ii) longitudinal section—
 - (A) horizontal 1:1000 and vertical 1:100; or
 - (B) horizontal 1:500 and vertical 1:50;
 - (iii) intersection details – 1:250;
 - (iv) cross-sections—
 - (A) new road reserve – horizontal 1:100 and vertical 1:100;
 - (B) existing road reserve – horizontal 1:100 and vertical 1:10;
- (b) all linear dimensions on plans to be in metres;



- (c) standard pegging intervals as follows—
 - (i) for roadworks, centrelines (or other construction lines) are to be pegged and levelled at 20 metre intervals, with further division to 10 metres to 5 metre intervals where necessary owing to horizontal or vertical curvature; and
 - (ii) for stormwater and roofwater drainage at all manhole positions and major changes in topography;
- (d) chainage on plans to be expressed to 0.01 metres;
- (e) levels to be reduced to Australian Height Datum and expressed to three decimal places of a metre;

Roadworks, Stormwater and Roof Drainage

- (f) plans are to include the following information—
 - (i) title block;
 - (ii) locality plan, including the location of the subdivision in relation to adjacent main roads, major streets, etc; and
 - (iii) layout and stage plan;

NOTE 48

(1) For major subdivisions, the layout and stage plan is to show the relationship of all new roads to each other, and existing roads adjoining the subdivision.

(2) Where development is to be carried out by stages, the boundaries of proposed Stages should be shown on this plan, and the stages identified by numbering.

(3) For subdivisions where all new roads can be shown on one detail plan, the staging plan may be omitted.

- (iv) a plan of each new road, including—
 - (A) road reserve boundaries;
 - (B) allotment boundaries, both existing and proposed;
 - (C) centreline, or other construction line;

- (D) chainages, on centre-line or construction line or set out coordinates;
- (E) bearings of the centreline or construction line (if used);
- (F) offsets, if the construction line is not the centre line;
- (G) tangent point chainages or coordinates of each curve;
- (H) radius of each curve, tangent length, deflection angle and length of curve;
- (I) centreline and bearing of each intersecting road;
- (J) chainage or coordinates of the intersection point of road centrelines;
- (K) kerb lines, kerb radii and chainage or coordinates of all tangent points of the kerb line;
- (L) edge of pavement, where no kerb is to be constructed;
- (M) dimensioned road reserve, footpath and pavement widths;
- (N) location and details of signs and roadmarkings to be provided;

NOTE 49

The relevant sign reference number from the Queensland Department of Main Roads 'Manual of Uniform Traffic Control Devices' is to be included on the plans against each sign.

- (O) drainline locations, diameters and class of pipe;



- (P) manhole location, chainage and offset or coordinates and inlet and outlet invert levels;
 - (Q) gully locations, chainage and offset or coordinates and invert and kerb levels;
 - (R) location and levels of existing utilities or other existing works within the site;
 - (S) limits and levels of lot filling or excavations;
 - (T) location and levels of bench marks and reference pegs;
 - (U) north point; and
 - (V) footpaths and combined cycleways/footpaths;
- (v) a detailed plan of each intersection, including all the relevant information required for plans of each new road, as listed in (iv) above, together with additional details such as kerb levels on kerb returns (i.e. at tangent points plus 3 additional points on curve at equal intervals with max. interval 5 metres), pavement contours (0.2 metre vertical intervals) and channellisation works;
- (vi) longitudinal section of each road, including—
- (A) chainages;
 - (B) existing surface or peg levels;
 - (C) design road centreline and top of kerb levels;
 - (D) cut or fill depths;
 - (E) design grades – minimum 0.5% and radii of vertical curves;
 - (F) chainage and levels of grade intersection points;
 - (G) chainage and levels of tangent points of vertical curves;
 - (H) length and radii of vertical curves; and
 - (I) details of super elevation where applicable;
- (vii) standard cross-sections for each road including—
- NOTE 50**
 This information can be shown on the first cross section for the particular road.
- (A) road reserve width;
 - (B) pavement widths;
 - (C) footpath widths;
 - (D) crossfalls of pavement and footpaths;
 - (E) pavement depth;
 - (F) type of kerb and channel; and
 - (G) type of pavement surfacing;
- (viii) cross sections of each road are to be drawn such that the maximum interval between cross sections does not exceed 20 metres, including top of ridge and bottom of gully and—
- (A) road reserve boundaries with labels - i.e. northern property boundary;
 - (B) pavement centre-line (or other construction line);
 - (C) natural surface;
 - (D) design cross-section;
 - (E) crossfall of pavement and footpath, pavement and footpath widths, and pavement depths wherever these differ from the standard cross-section; and



- (F) where design is for a road in an existing road reserve, the design cross-section must show the existing profile and ultimate profile for the full reserve width;
- (ix) longitudinal section of each drainline is to be drawn along the centreline of the drainline and show—
 - (A) chainages;
 - (B) existing surface levels;
 - (C) proposed surface level;
 - (D) design invert levels, obvert level and hydraulic gradeline;
 - (E) manhole chainages and inlet and outlet invert levels;
 - (F) distances between manholes;
 - (G) grade of each pipe;
 - (H) diameter of each pipe length; and
 - (I) class of each pipe length;

Drainage

- (g) plans are to include the following information—
 - (i) drainage calculations and catchment plans for drainage design prepared in accordance with QUDM are to be submitted with the engineering plans, including the minor and major drainage systems, all drainage structures and drainage channels and a separate table showing the extent of the 1 in 100 Average Recurrence Interval (ARI) flow width in roadways;

- (ii) for developments which are likely to have a significant adverse impact on water quality, detailed working plans and specifications of the water quality control structures or works outlined in the Local Government approved Water Quality Management Plan.

NOTE 51

- (1) A catchment plan, showing the total catchment, and the Sub Areas used in the calculations, is also to be submitted.
- (2) Such plan is to show finished surface contours.
- (3) Any additional calculations in support of overland flow path capacities, weir flows over kerbs, flood fill studies, etc are to be submitted.
- (4) If the downstream system is not capable of carrying the increased discharge, measures are to be proposed to—
 - (a) ensure that the downstream system is capable of carrying the intended discharge (which may include upgrading the existing downstream system); or
 - (b) indicate the method of detention of stormwater on the site.
- (5) For details regarding a Water Quality Management Plan refer to Part 2, division 3 of Planning Scheme Policy 3—General Works.

Erosion and Sediment Control Plan

- (h) an Erosion and Sediment control program including plans and specifications is to be prepared for both temporary and permanent control of sediments, erosion and gross pollutants;
- (i) the erosion and sediment control plan is to be prepared in accordance with the Erosion and Sediment Control Policy and Operational Guidelines outlined in the Institution of Engineers, Australia (Qld) "Soil Erosion and Sediment Control", Engineering Guidelines for Queensland Construction Sites, June 1996.
- (j) The erosion and sediment control plan is to show the following information—



- (i) the site's existing topography (i.e. site boundaries, controls, drainage paths, discharge point);
- (ii) how and where it will be altered (i.e. any stockpile areas, proposed construction works);
- (iii) the sediment and erosion control measures that are proposed to be used (marked distinctively on the plan);
- (iv) the catchment boundaries and the direction of flow for the different drainage areas before and after development;
- (v) the stormwater management system proposed.

Water Reticulation

- (k) plans are to include the following information—
 - (i) title block, including—
 - (A) estate name (if any);
 - (B) real property description;
 - (C) locality;
 - (D) developer's name;
 - (E) scales – bar scales;
 - (F) plan number and sheet number;
 - (G) schedule and date of amendments;
 - (H) signed design certification by a Registered Professional Engineer (RPEQ); and
 - (i) street names (where applicable);
 - (ii) locality plan, including the location of the subdivision in relation to adjacent main roads, main street, etc;
 - (iii) layout and stage plan;

NOTE 52

(1) For major subdivisions, the layout and stage plan is to show the relationship of all new roads to each other, and to existing roads adjoining the subdivision.

(2) Where development is to be carried out by stages, the boundaries of proposed stages should be shown on this plan, and the stages identified by numbering.

(3) For lot reconfigurations where all new roads can be shown on one detail plan, a staging plan will not be required.

- (iv) layout and water reticulation plan, including—
 - (A) road reserve boundaries;
 - (B) allotment boundaries, both existing and proposed;
 - (C) kerb lines, or pavement edge where there is no kerb;
 - (D) location and levels of other utility services where affected by the water reticulation works;
 - (E) limits and levels of allotment filling or excavations;
 - (F) location and levels of bench marks and reference pegs;
 - (G) north point; and
 - (H) location of concrete footpaths;
- (v) layout and conduits;
- (vi) schedule of pipes and fittings to be used; and
- (vii) electrical layout and conduits as approved by Energex and the Local Government;

Sewerage Reticulation

- (l) plans are to include the following information—
 - (i) title block, including—
 - (A) estate name (if any);
 - (B) real property description;
 - (C) locality;
 - (D) developer's name;
 - (E) scales – bar scales;
 - (F) schedule and date of amendments;



- (G) signed design certification by a Registered Professional Engineer (RPEQ); and
- (H) street names (where available) and lot numbers;
- (ii) locality plan, including the location of the subdivision in relation to adjacent main roads, major streets etc;
- (iii) layout and stage plan;

NOTE 53

(1) For major subdivisions, the layout and stage plan is to show the relationship of all new roads to each other, and to existing roads adjoining the subdivision.

(2) Where development is to be carried out in stages, the boundaries of proposed Stages should be shown on this plan, and the stages identified by numbering.

(3) For subdivisions where all new roads can be shown on one detail plan, a staging plan will not be required.

- (iv) layout and sewerage reticulation plan, including—
 - (A) road reserve boundaries;
 - (B) allotment boundaries, both existing and proposed;
 - (C) location of all existing and proposed services;
 - (D) location of all existing and proposed sewer lines and manhole locations;
 - (E) location of all house connection branches;
 - (F) contours at one metre intervals (for terrains of less than 2% contours at 0.5 metre intervals are required);
 - (G) kerb lines or edge of pavement where no kerb exists;

- (H) north point;
- (I) roofwater drainage layout; and

NOTE 54

(1) The distance from the property boundary to the main line pipe centreline is to be shown as an offset from the property boundary.

(2) The private drainage system is to be shown using a different line type to that showing the sewer.

- (J) PSM or reference point and level;
- (v) longitudinal Sections of Sewer Lines, including—
 - (A) chainages;
 - (B) existing surface levels;
 - (C) finished surface levels and depth to invert;
 - (D) design sewer invert levels;
 - (E) design top of Manhole levels;
 - (F) type of manhole;
 - (G) type of manhole cover;
 - (H) house connection branch location, type, invert level;
 - (I) invert level of any connection of the private drainage system to the street drainage system;
 - (J) type of pipe, class, diameter and gradient; and
 - (K) bulkheads (where required);

Specifications and Standard Drawings

- (m) full specifications and drawings covering all aspects of the proposed works are to be submitted with the engineering plans;

NOTE 55

(1) All works are to be in accordance with the appropriate Standard Specification or Standard Drawing.



- (2) This requirement may be waived if the Local Government has formally accepted a "master copy" of the specifications by the particular consultant.
- (3) In this case, a document detailing any special specifications particular to the development being considered should be submitted.
- (4) Any specific requests for variation of the standards outlined in Planning Scheme Policy 3—General Works or the Standard Drawings are to be detailed and submitted with the Engineering Plans.

Schedule of Quantities

- (n) separate priced schedules are to be submitted for all works;

NOTE 56

All Schedules of Quantities are to be in metric units, as follows—

- (a) Length - metre (m);
- (b) Area - square metre (m²);
- (c) Volume - cubic metre (m³);
- (d) Weight - tonne (t).

Hydraulic Analysis of the Water Reticulation Network

- (o) where required, hydraulic analysis of the water reticulation network including the following information—
- (i) an assessment of the network's capacity and the effect of the proposed use connecting, including proposed measures to overcome any identified problems;
- (ii) an assessment of any new works required both internal and external to the proposed development, including an appreciation of the infrastructure needs of nearby existing or future development;
- (iii) an assessment of the current water supply planning for the area, the size and type of development and its anticipated impact on the water supply network and the need to address the following matters—
- (A) extent of the proposed development;

- (B) extent of the study area;
- (C) existing population;
- (D) future population projections;
- (E) timing and staging of development;
- (F) contour levels;
- (G) water consumption demand;
- (H) diurnal patterns;
- (I) review of previous water planning studies;
- (J) identify existing water supply infrastructure;
- (K) identify planned augmentation works;
- (L) identify works required to service the study area;
- (M) identify internal and connecting works required to service the proposed development;
- (N) identify any potential zone rationalisation; and
- (O) provide hydraulic model simulations under varying demand criteria;

Hydraulic Analysis of the Sewer Reticulation System

- (p) where required, hydraulic analysis of the sewer reticulation system including the following information—
- (i) an assessment of the system's capacity and the effect of the proposed use connecting, including proposed measures to overcome any identified problems;
- (ii) an assessment of any new works required both internal and external to the proposed development, including an appreciation of the infrastructure needs of nearby existing or future development;



- (iii) an assessment of the current sewerage planning for the area, the size and type of development and it's anticipated impact on the sewerage system and the need to address the following matters—
 - (A) extent of the proposed development;
 - (B) extent of the study area;
 - (C) existing population;
 - (D) future population projections;
 - (E) timing and staging of development;
 - (F) contour levels;
 - (G) sewerage discharge loadings;
 - (H) sewerage diurnal patterns;
 - (I) review of previous sewerage planning studies;
 - (J) identify existing sewerage system infrastructure;
 - (K) identify planned augmentation works;
 - (L) identify works required to service the study area;
 - (M) identify internal and connecting works required to service the proposed development; and
 - (N) provide hydraulic model simulations under varying demand criteria;

Structural Certification of Major Structures and Other Applicable Submissions

- (q) any major structure or earth retaining structures including—
 - (i) boulder walls;
 - (ii) gravity retaining walls;
 - (iii) cantilever retaining walls;
 - (iv) crib walls;
 - (v) sleeper walls;
 are to be shown on the engineering plans.

- (r) the major structures or earth retaining structures are to be shown on plan and in detailed cross-section elevation;
- (s) each major structure or earth retaining structure is to be covered by a Consultant's Structural Certification;

NOTE 57

Approval under the *Standard Building Regulation* is required for retaining walls over 1 metre in height.

Cut or Fill Area

- (t) proposed fill areas and cut areas are to be shown on the engineering plans and any significant fill or cut batters (i.e. steeper than 1:6 slope and greater than 0.8m in height) are to be covered by a separate Consultant's certification with respect to stability and erosion;

NOTE 58

- (1) The requirement for certification applies whether the batter or wall is within lots within the development boundary or on an existing or proposed dedicated road.
- (2) All batters and earth retaining structures are to be shown on the "As Constructed" drawings.

- (u) where cut or fill areas are adjacent to boundaries with existing residential or commercial uses, development cross-sections showing the batter or retaining wall in relation to the adjoining land use are to be shown on the engineering plans;
- (v) the effects on the drainage of adjoining properties of any cut or fill operation is to be considered and details shown on the engineering plans;

Contaminated Soils

- (w) any areas of soil known to be contaminated and required to be removed is to be shown on the Engineering plans;
- (x) specific details are to be provided of the means of removal or treatment of the contaminated soil;



Design Certification

- (y) submission of a design certificate (an example of which is outlined in Appendix 1), by a Registered Professional Engineer Queensland (RPEQ) certifying that the design is in accordance with all relevant engineering standards, the Local Government's specifications and standard drawings, the conditions of the development permit and sound engineering practice;

Other Relevant Matters

- (z) receipt of details that the Building and Construction Industry (Portable Long Service Leave) Levy has been paid for projects with a cost of \$80,000 or more and matching the definition of 'Building and Construction Industry' under the *Building and Construction Industry (Portable Long Service Leave) Act 1991*;

Infrastructure 'As Constructed' Submission

- (31) the content and format of information required for an Infrastructure 'As Constructed' Submission is outlined in Appendix 2 'Infrastructure As Constructed Standards';

Plans of Subdivision

- (32) in addition to the information required to be completed as part of the application form, the applicant is to submit to the Local Government with the Plan of Subdivision (where relevant)—
- (a) any easement documentation prepared by the applicant's solicitor (which is to be to the Local Government's satisfaction) or a request that the City Solicitor prepare the necessary documentation (at the applicant's cost);
 - (b) a licensed surveyor's certificate that all pipelines are wholly within the relevant easements (which are to be shown on the Plan of Subdivision);
 - (c) a licensed surveyor's certificate stating that all survey marks and reinstated survey marks are in their correct position in accordance with the Plan of Subdivision;
 - (d) service agreements from the relevant servicing authorities;

- (e) a licensed surveyor's Plan of Subdivision duly certified together with 5 copies, in accordance with the proposal plan approved by the Local Government, suitable for deposit with the relevant registering authority, complying with the directions contained in Part 3 of the Surveyors Regulation 1992 and containing all particulars which may be required by the relevant registering authority.

NOTE 59

The copy plans are to be printed or reproduced on a medium which is durable and stable in dimension.

2.

The employees and members of the Local Government, or any other person authorised by the Local Government may enter upon and inspect premises comprising a proposed development (including the reconfiguring of a lot) at any time until—

- (1) the development has been decided by the Local Government; and
- (2) all works (including infrastructure works) associated with the development have been completed.



APPENDIX 1—EXAMPLE OF DESIGN CERTIFICATION

ICC File: _____

Date: _____

Design Certification

For the Design of Roadworks, Stormwater Drainage, Sewer Reticulation, Water Reticulation and Associated Works,

AT

FOR

I, _____

_____ of _____

Consulting Engineers, being duly authorised in this behalf, do certify that the engineering plans as listed below have been prepared in accordance with Ipswich City Council requirements and standards, any relevant development approval conditions, appropriate engineering standards and sound engineering practice.

Designation _____

RPEQ No. _____

Certified this _____ day of _____ 20__

Plan No.

Revision



APPENDIX 2—INFRASTRUCTURE AS CONSTRUCTED STANDARDS

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1. Forward

1.1 Data Management Systems

NOTE 1

With the increased sophistication of Geographic Information Systems (GIS) software, Pavement Management System (PMS) software and Management Maintenance Systems (MMS) software the focus for processing and storing of Infrastructure As Constructed data within the Local Government has moved from the conventional hard copy plan produced in a CAD system to one which utilises spatial database technology.

1.2 Infrastructure Information

NOTE 2

- (1) The focus is now on infrastructure information being provided in a form, which can quickly be manipulated into the Corporate GIS system and subsequently, disseminated to the user base.
- (2) Core to this is the collection of accurate survey/engineering information as supplied to the Local Government by Consulting Survey firms as part of ongoing development construction.

1.3 Standards

- (1) Core to the standards outlined in this document is the Infrastructure As Constructed database.
- (2) This is a Microsoft© Access database file enhanced with forms, standard lookup tables, etc for the purpose of compiling spatial data with its various Engineering attribute components.
- (3) Consultants are to use this as part of the compilation of their data and is to be read in conjunction with a graphics file.

NOTE 3

- (1) The graphics file is an export from the Survey software package used by the Consulting Surveyor to download and reduce data.
- (2) There is no formal As Constructed drawing required.
- (3) Refer to Section 7 of this Appendix for data information flow and check lists.

2. Information Definitions

2.1 Information Types

NOTE 4

Information submitted in the Infrastructure As Constructed process is made up of three types—

- (a) Asset Information – This is location and attribute information detailing the constructed infrastructure.
- (b) Engineering Information – Ancillary information that in most cases supports asset information and includes such things as engineering drawings, design parameters, test results, maintenance specifications etc.
- (c) Certificates – These are hard copy submissions signed by the relevant Surveyor and Engineer or in the case of the Infrastructure Financial Certificate, the Project Manager or other qualified person.

2.2 Infrastructure Asset Types

NOTE 5

- (1) Infrastructure Asset types can be broken up into two types – Active and Passive
- (2) Active Assets—
 - (a) are typically complex in nature and include functional units and facilities that contain significant mechanical or electrical components;
 - (b) typically include—
 - (i) water and sewerage pump stations;
 - (ii) water and sewerage treatment plants;
 - (iii) reservoirs; and
 - (iv) traffic signals.
- (3) Passive Assets—
 - (a) are assets that are simple in structure and typically include pipe systems and road networks;
 - (b) generally lack any significant mechanical or electrical components; and
 - (c) typically include—
 - (i) water, sewerage, recycled water and drainage networks and associated structures;
 - (ii) roads, footpaths, bridges and culverts; and



- (iii) surface drainage, stormwater quality improvement devices (SQID's) and flood control devices including lakes, detention basins and gross pollutant traps.

3. Purpose

3.1 Document Purpose

NOTE 6

- (1) This document primarily addresses the submission of passive asset information.
- (2) If active assets are to be constructed, details of what is required for the data submission including detail drawings and operations and maintenance manuals of the asset, must be obtained by contacting the—
Infrastructure Planning Branch
Engineering Services Department
Phone: 3810 7873

3.2 Document Audience

NOTE 7

This document is intended for the Survey/Engineering professional involved in the construction of infrastructure works and subsequent submission of As Constructed information.

3.3 Document Role

NOTE 8

The purpose of the As Constructed standards is to—

- (a) define the level of detail required;
- (b) provide a consistent format for As Constructed submissions;
- (c) provide a methodology for submission;
- (d) provide ready and quick access to the Local Government on any difficulties with data submission or correction.

3.4 Information Submission Standards

(1) Larger than Five Lot Subdivision and Large Developments

A MGA based survey submission is required for all works that are nominally larger than a five lot reconfiguration or for works not associated with a reconfiguration where there is a significant number of constructed asset types (e.g. 3 or more). All attribute information to be completed and compiled within the Infrastructure as Constructed Database.

(2) Five Lots or Less Subdivision and Small Developments

For works less than a five lot subdivision or for works not associated with a reconfiguration where the number of asset types constructed is relatively small in number (e.g. two or less). The information is to be of sufficient detail to describe the location, level and type of constructed asset. In the case of subdivisional work this is to be tied to at least two Permanent Survey Marks whose origin is to be clearly indicated on the graphics submission.

Reference Authority

NOTE 9

If any doubt exists on the standard required for information submission, the Consultant should, prior to compilation of the submission, make contact with—

Works GIS Coordinator
Engineering Services Department
Phone: 3810 7873

4. Responsibilities

4.1 Surveying/Engineering Consultant

NOTE 10

It is the responsibility of the Surveyor/Engineering Consultant to—

- (a) request from the Infrastructure Planning Branch a copy of the current Infrastructure As Constructed Database prior to commencing data collection;
- (b) collect, organise and forward the required information for As Constructed submission in a timely manner;
- (c) complete the supplied database information for both administrative and infrastructure details;
- (d) supply graphic files;
- (e) supply engineering drawing files; and
- (f) complete, sign and forward required certificates.

4.2 Local Government

NOTE 11

It is the responsibility of the Local Government to—

- (a) ensure that the As Constructed submission is complete and includes—
 - (i) a database file;
 - (ii) a graphics file;
 - (iii) engineering drawings;



- (iv) appropriate certificates;
- (b) liaise with the consultant regarding any late, untimely or incomplete As Constructed submissions;
- (c) assess the As Constructed submission;
- (d) liaise with the consultant for additional information where the data is incomplete or in error;
- (e) update various asset information and management systems within its control; and
- (f) keep consultants informed of any changes or updates to information required for the Local Government's systems, databases or procedures.

5. Certification

5.1 Infrastructure As Constructed Certificate

- (1) The As Constructed Certificate is to be supplied and signed by the Surveyor and Engineer who have worked on the project to verify the accuracy of the data submitted.
- (2) The information is to be compiled within the Infrastructure As Constructed Database and include—
 - (a) the Infrastructure As Constructed Database input form (Admin A1);
 - (b) the Infrastructure As Constructed Database report form (Certificate C1).

5.2 Road Pavement Levels Certificate

- (1) A road pavement Certificate is to be supplied and signed by the Surveyor and Engineer who have worked on the project to verify the accuracy of the data submitted.
- (2) Pavement depths are to be verified by the provision of As Constructed levels of the subgrade and top of asphalt at a frequency of 3 levels (RHS, centre and LHS) every 50 metres.

NOTE 12
A copy of the road pavement levels certificate is to accompany the 'on maintenance' information.

- (3) The Information is to be compiled within the Infrastructure As Constructed Database and include—
 - (a) the Infrastructure As Constructed Database input form (Admin A2); and
 - (b) the Infrastructure As Constructed Database report form (Certificate C2).

5.3 Infrastructure Financial Certificate

- (1) The Infrastructure Financial Certificate is to be supplied and signed by the Project Manager or other person who is qualified to provide such information.

6. Survey Requirements

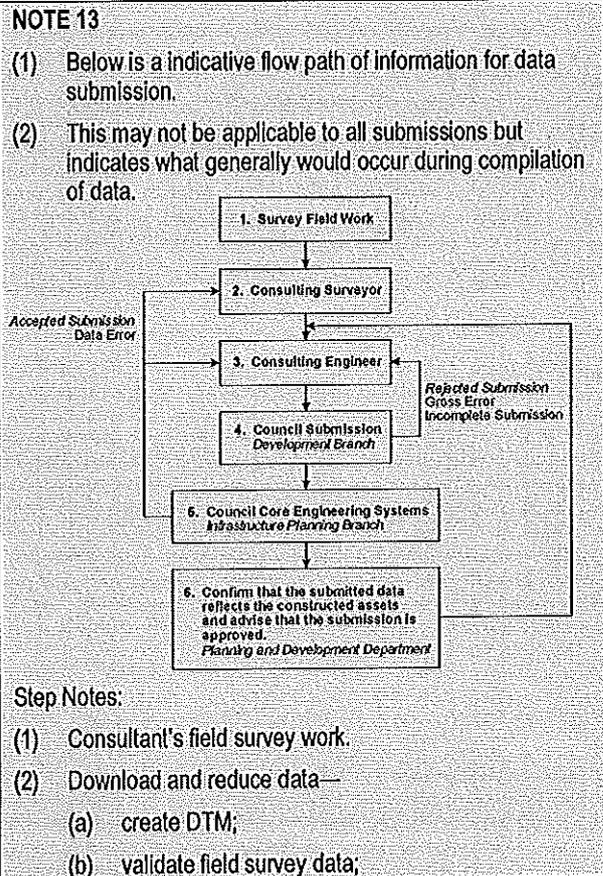
6.1 Development Survey Control

- (1) All Survey information is to conform to Mapping Grid Australia (MGA).
- (2) Level Datum for all information is to be Australian Height Datum (AHD).
- (3) Grid Datum for all information is to be Australian Geodetic Datum (AGD84 or 94), whichever is appropriate.
- (4) Survey control points are to be tabulated in the Infrastructure As Constructed Database with relevant information.

6.2 Survey Control Network

- (1) Where information is to be submitted on MGA, the survey is to contain at least three or more MGA coordinated marks of 4th order accuracy or better.

7. Information Flow



- (c) export x,y,z code ascii file;
 - (d) import export file into database;
 - (e) complete database;
 - (f) complete, print and sign relevant certificates;
 - (g) complete graphics file creation.
- (3) Validate data attributes in database, change where required—
- (a) various statistical reports from database may assist in validation (refer Reports for various outputs);
 - (b) sign relevant certificates;
 - (c) complete engineering drawings;
 - (d) data submission.
- (4) Verify completeness of data submission – pass onto Asset Section.
- (5) Process data and update GIS system – notify Consultant of approval of submission.
- (6) Planning and Development Department to confirm that the submitted data (now in graphical form in the Corporate GIS) reflects the constructed assets and advise the Infrastructure Planning Branch and the consultant the submission is approved.

8. Submission Process

8.1 Submission

NOTE 14

- (1) All relevant Engineering Drawings, Infrastructure As Constructed Database, road pavement test information and Graphics file are to be completed and submitted to the Local Government.
- (2) All relevant Certificates are to be completed, signed and submitted to the Local Government.

8.2 Non compliance

NOTE 15

- (1) If an incomplete submission is provided it will not be accepted and the Local Government will formally notify the applicant.
- (2) If minor errors occur with data content etc, the Local Government will contact the applicant to resolve problems.

8.3 Approval Notification

NOTE 16

- (1) The Local Government will notify the applicant on approval.

- (2) This approval should, in most cases, be within ten (10) working days of receipt of information by the Local Government (subject to the correctness of information supplied).

8.4 Approval Authority

NOTE 17

- (1) The responsibility for approving the Infrastructure As Constructed submissions resides with the Local Government.
- (2) Enquires regarding presentation, data content or general enquires are to be made to—
Works GIS Coordinator
Phone: 3810 7873
Fax: 3810 7974
- (3) To assist in reducing the time taken to process the submission, Consultants should make contact with the Works GIS Coordinator, Infrastructure Planning Branch wherever doubt exists over the As Constructed requirements prior to compiling of information.

8.5 Preliminary Submission

NOTE 18

- (1) If requested by the Local Government for the purpose of processing Development Applications for building works or similar activities a preliminary submission of As Constructed information may be supplied.
- (2) The format is to be consistent with all the requirements of this Appendix.
- (3) This submission will be treated purely as preliminary information and will not in any way constitute a formal submission and no approval or review based on this information will be undertaken.
- (4) Uploading of this information to any of the Local Government's core information systems will not be undertaken.

9. Submission Information

9.1 Engineering Design Information (Electronic Submission)

- (1) Engineering Design Information is to contain—
 - (a) a set of all of the last issue design drawings for the development, including all pump stations, stormwater quality improvement devices (SQID's), detention basins and any other drawings including operational and maintenance manuals;



NOTE 19

There is **NO** need to amend these drawings to reflect as constructed, but a complete set is required.

- (b) drawings may be in PDF, Tiff or DXF/DWG format. Where Dxf/Dwg format is submitted, all non-standard fonts, line styles and blocks are to be supplied and cross references are to be bound in the drawing;
- (c) drawings in a format so that hard copy output without loss of information or clarity is possible.

NOTE 20

No hard copy plans are required unless the development is of a size that hard copy submission is allowed (e.g. for works less than a five lot reconfiguration or where the assets constructed are of a small number).

9.2 As Constructed Graphic File (Electronic Submission)

- (1) As Constructed Graphic File information is to contain—
 - (a) DWG/DXF, 12d or any other approved format file of As Constructed information and other relevant data as defined by the Data Matrix (refer to section 10) of this Appendix;
 - (b) the file in GDA projection;

NOTE 21

The use of project coordinates or orientation of data is not acceptable to the Local Government.

- (c) the development clearly identified;

NOTE 22

There is no need for title blocks or any other superfluous information.

- (d) data that is legible and precise and that corresponds to the information held in the As Constructed database;

NOTE 23

- (1) A graphic file is to be used to verify the location and relationship of data held within the As Constructed Database and is to be generated from the software used by the surveyor to reduce and validate the field survey data.

- (2) Only line-work, symbols and text associated with constructed infrastructure is to be shown on the graphic file e.g. manhole numbers.
- (3) Table information does not have to be included in the graphic file.
- (4) There are no Local Government applied presentation standards for the graphics file.
- (5) Consultants can use their own layering, line/point styles, symbology, text styles and survey coding.

- (e) codes and levels.

9.3 Infrastructure As Constructed Database (Electronic Submission)

- (1) The Infrastructure As Constructed database containing infrastructure tables is to be completed for each infrastructure asset created or changed as a result of the development.

NOTE 24

No alteration of data structure is permitted by the Local Government.

- (2) The Infrastructure As Constructed database containing all the relevant administration tables and graphics layering/engineering plan tables are to be completed.
- (3) Standard data types are to be used.

9.4 Certificates (Hard Copy Submission)

- (1) The Infrastructure As Constructed Certificate, signed by both the Surveyor and Engineer is to form part of the As Constructed Submission.
- (2) The Road Pavement Levels Certificate, signed by both the Surveyor and Engineer is to form part of the As Constructed Submission.
- (3) The Infrastructure Financial Certificate, signed by the Project Manager or other person who is qualified to provide such information, is to form part of the As Constructed Submission.

NOTE 25

- (1) The above certificates are generated from the Infrastructure As Constructed Database.
- (2) A copy of these certificates is also to accompany the 'on maintenance' information.



10. General Data Notes

10.1 Data Matrix ⁽¹⁾

Theme ⁽²⁾	Element ⁽³⁾	Graphic Data ⁽⁴⁾	Database Data ⁽⁴⁾	Database Form ⁽⁵⁾
Sewerage	Mains/Manholes	Required	Required	Sewerage S1
Sewerage	House Connections	Required	Required	Sewerage S2
Sewerage	Rising Mains/Fittings	Required	Required	Sewerage S3
Sewerage	Recycled Water Mains/Fittings	Required	Required	Sewerage S4
Sewerage	Trade Waste	Required	Required	Sewerage S1
Water	Mains/Fittings	Required	Required	Water W1
Water	Conduits	Required	Required	Water W2
Drainage	Mains/Pits	Required	Required	Drainage D1
Drainage	House Connections	Required	Required	Drainage D2
Drainage	Gross Pollutant Traps/SQID's	Required	Required	Drainage D1
Topographical	Surface Levels	Required	Required	Roads/Topo RT2
Topographical	Contours	Required	Not Required	
Cadastral	Easements	Required	Not Required	
Cadastral	Survey Boundaries	Required	Not Required	
Roads	Pavement Levels	Not required	Required	Roads/Topo R1
Roads	Footpaths/Bikeways	Required	Not Required	
Roads	Kerbs/Medians/Islands etc	Required	Not Required	
Roads	Bridges	Required	Not Required	
Roads	Road Centre Line	Required	Not Required	
Flood	Open drains/Detention Basins	Required	Not Required	
Admin	Job Location Details	Not Required	Required	Admin A1
Admin	Survey Control Points	Required	Required	Admin A1
Admin	Data submission Checklist	Not Required	Required	Admin A2
Admin	Graphic Layering Details	Not Required	Required	Admin A3
Admin	Engineering Plan Details	Not Required	Required	Admin A4
Certificate	Infrastructure As Constructed	Not Required	Required	Certificate C1
Certificate	Road Pavement Levels	Not Required	Required	Certificate C2
Certificate	Infrastructure Financial	Not Required	Required	Certificate C3

Notes:

- (1) Data matrix indicates what information is regarded as core for the purpose of submission.
- (2) Theme indicates a grouping of particular assets based on type.
- (3) Element is the particular Asset/Data type and is considered core information to be supplied.
- (4) Graphic Data indicates whether the data is to be supplied in the As Constructed Graphics file. (This does not preclude other information supplied as part of the survey.)
- (5) Database Data indicates whether the data is to be supplied in the As Constructed Database file.
- (6) Database Form indicates, where data is to be supplied in the Infrastructure As Constructed Database, the appropriate database Tab and the particular database form which relates to that particular data compilation.



10.2 Sewerage Reticulation Notes

- (1) The sewerage reticulation information is to contain—
 - (a) attributes as per the As Constructed database;
 - (b) the location of all sewer mains, manholes, house connections and associated structures;
 - (c) the location of existing manholes where connections have been made;

NOTE 26
Existing manholes are to be clearly identified.

- (d) location of all house connection branches at ends and OB position.

NOTE 27
(1) The location of manholes is to be centre of chamber.
(2) Stub connections to manholes for future sewerage main extensions are to be treated as house connections.

10.3 Sewerage Rising Main Notes

- (1) Sewerage rising main information is to contain—
 - (a) the location of all mains, fittings, bends, deflection points and end points of rising mains and associated structures;
 - (b) the location/size of valve pit structures.

10.4 Recycled Water Main Notes

- (1) Recycled water main information is to contain—
 - (a) attributes as per the As Constructed database;
 - (b) the location of all mains, fittings, bends, deflection points and end points of mains and associated structures;
 - (c) the location of all conduits;
 - (d) the location of existing fittings/pipes where cutting into existing mains.

10.5 Water Reticulation Notes

- (1) Water reticulation information is to contain—
 - (a) attributes as per the As Constructed database;
 - (b) the location of all mains, fittings, bends, deflection points and end points of rising mains and associated structures;
 - (c) the location of all water conduits;

- (d) the location of existing fittings/pipes where cutting into existing mains.

10.6 Drainage Notes

- (1) Drainage information is to contain—
 - (a) attributes as per the As Constructed database;
 - (b) the location of all drainage mains, manholes, outfalls, headwalls, house connections and associated structures;
 - (c) the location of existing manholes/pits where connections have been made;

NOTE 28
Existing manholes are to be clearly identified.

- (d) the location of all house connection branches at ends and OB position.

NOTE 29
The location of manhole/pits is to be centre of chamber.

10.7 Topographical Notes

- (1) All embankments, retaining walls etc are to be surveyed.
- (2) Levels of all surface features used to derive terrain model (including pavement surface levels) are to be included in the notes.

NOTE 30
Density of level information is to indicate true fall and topography of ground.

- (3) For large lot residential subdivisions, contours and level information only are required within the road reserve.

10.8 Cadastral Notes

- (1) All cadastral boundaries are to represent the area of interest.
- (2) All easement boundaries are to represent the area of interest.

10.9 Roads Notes

- (1) Road information is to contain—
 - (a) the location and geometry of all road kerbs, medians, traffic calming measures etc;
 - (b) the location and geometry of all footpaths and bikeways;
 - (c) delineation and extent of kerb types;
 - (d) pavement levels of surface and subgrade.



10.10 Flood Notes (Open Drains/Detention Basins/Lakes)

- (1) Flood information is to contain—
- (a) the location and level of centre line/invert of channel at maximum 25 metre intervals, change of grade or tangent points;

NOTE 31

Spacing of survey points around curved sections is to be such that the curve geometry can be accurately positioned on the mapping systems.

- (b) sufficient topological information of any open drain to develop cross sectional profiles at the corresponding centre line survey points;
- (c) full extent of concrete inverts and other associated works;
- (d) for detention basins, sufficient topological information to determine extent, approximate highest and lowest points and volume.

NOTE 32

Where earthworks have been carried out to change the existing profile of the land, sufficient surface levels are to be provided to accurately depict the changed surface.

10.11 Administration Notes

- (1) The administration information is to contain—
- (a) job location details, Survey Consultant and Engineering Consultant details etc;
 - (b) survey control points for mark location and details;
 - (c) data submission checklist to indicate core data being provided;
 - (d) graphic layering to indicate graphic layer name and general description of contents; and
 - (e) engineering drawing naming indicating drawing name and general description of contents.

10.12 As Constructed Database Notes

NOTE 33

- (1) Reference should be made to the Version Tab within the database for online copies of the Database Procedure Manual and the Infrastructure As Constructed Standards.
- (2) Consultants should become familiar with the database and its structure and which fields need to be completed and which fields e.g. lengths, grades, OB chainages, and depths are calculated from within the database.

