

Policy 11: Land Development Guidelines

Section 9

9.0 Construction Procedures

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9.1 Introduction

As a consequence of Council inheriting the future maintenance and ecological responsibility for the sub divisional elements of the development, the cost burden of this maintenance will ultimately be with the ratepayers.

Therefore strict compliance with Council's requirements is necessary to ensure that the inherited facilities perform adequately for their design lives. The works ultimately accepted by Council should become a public asset, not a public liability.

Council requires that the ecological values both short and long term be considered during the Construction and Maintenance phases of the development.

At very sensitive ecological sites (as identified by Council) the submission of a construction program that ensures the minimisation of the impact on the environment may be required by Council.

9.2 Procedures

9.2.1 Prior to Site Works

Prior to site works commencing Council is to be notified of the following:

- i) Consultant's Representative;
- ii) Name of the Contractor and its Representative;
- iii) Pursuant to the Workplace Health and Safety Act, the name of the 'Principal Contractor';
- iv) Confirmation that all relevant approvals have been obtained in accordance with the Conditions of Development;
- v) Date of a pre-start meeting to be arranged by the Consultant in order that Council can indicate its inspection and certification requirements.

9.2.2 Construction Phase

a) Project Notice Board

It is a mandatory Council requirement that a Project Notice Board be provided in a conspicuous location. The Project Notice Board (1200mm x 900mm minimum) shall clearly show the company name and contact phone number for the following:

- i) Developer;
- ii) Consulting Engineer;
- iii) Contractor;
- iv) Gold Coast City Council – Subdivision Section (Council's current Sub divisional Section phone number must appear).

b) Water for Construction Purposes

Where water for construction purposes is drawn from Council's reticulated Water Supply system it shall be through a metered standpipe and paid for at Council's prescribed fees and charges.

c) Recycled Water

The use of potable water is not permitted in activities associated with road and pavement construction, compaction of fill and dust suppression. The use of recycled water is encouraged, especially where other alternative sources do not exist. Where the applicant/ contractor/ developer decides to use recycled water, its use shall be in accordance with the requirements of the **Gold Coast Water Recycled Water Safety Plan** (the **Safety Plan**). The **Safety Plan** sets out the requirements for transport and use of recycled water. To register and obtain a copy of the **Safety Plan** and also to obtain a list of approved operators, the applicant/ contractor/ developer should contact Gold Coast Water.

'Potable water is defined as water treated to drinking water standards (**NHMRC Guidelines 1996**) and being available in Council's normal reticulated potable Water Supply system.'

'Recycled water is defined as treated wastewater in Class A, B or C in accordance with the **Queensland Guidelines for the Safe Use of Recycled Water (Draft 2004)**.'

d) Clearing, Grubbing and Earthworks

Clearing, Grubbing and Earthworks are to be performed in strict accordance with:

- i) The approved Erosion and Sediment Control Management Plan (if required by Council);
- ii) Application for Vegetation Management Approval (refer **Appendix C**) and associated Plan;
- iii) Stamped and approved Engineering Drawings/ Job Specification;
- iv) Council's current Standard Specifications and Drawings.

e) Earthworks

Construction and Compaction of Earthworks is to comply with Council's **Standard Specification SS4 – Earthworks and Imported Topsoil** and relevant Australian Standards and any recommendations from Geotechnical Consultants.

f) Blasting

Prior to any blasting work being carried out on site the Consultant shall instruct the Contractor to ensure that all relevant approvals and permits (including Council's Blasting Permit) have been obtained.

In addition, the Consultant shall ensure that the Contractor complies with the Council's Notification Procedures in particular the requirement that the Contractor notify Council's Sub divisional Section two (2) hours prior to blasting operations commencing on site.

g) Allotment Compaction

Unless otherwise specified by Council the Inspection and Testing frequency required shall comply with Council's **Standard Specification SS4 – Earthworks and Imported Topsoil**.

h) Sub-grade Testing and Pavement Thickness

Sub-grade Testing and Pavement Thickness information should be forwarded to Council by the Consultant as early as possible. These test results (carried out by a NATA Registered Laboratory) and the Consultant's proposed pavement design should be received and approved by Council prior to Council's sub-grade inspection.

Pavement material shall be supplied and placed in accordance with Council's current **Standard Specification SS7 – Unbound Pavements**.

The minimum pavement and course thickness shall be as determined in **Section 3.3**.

Each pavement course should not be commenced until the previous pavement course has been inspected and/or approved by Council (unless otherwise advised by Council). Compaction tests of each layer are required and the Consultant is to ensure that all tests are satisfactory.

i) Sub-Surface Drainage

Council requirements are that sub-surface drains be constructed in accordance with Council's Standard Drawings and located under all kerb and channel, and median kerbs. Flushing points are to be located as detailed on the Standard Drawings.

Sub-surface Drainage at locations other than indicated above are to be approved by Council prior to kerb and channel and pavement construction commencing.

If the sub-grade consists of free draining sand then Council may consider deleting sub-surface drainage.

j) Water Supply Reticulation

The construction of Water Supply reticulation shall comply with Council's **Standard Specification SS2 – Water Supply Mains and Associated Works**.

At the commencement of construction the Consultant shall provide Council's relevant sections with written notice (including a copy of the approved Water Supply Reticulation Drawings) of the anticipated date required for live water supply connections.

Council will not commence works associated with the live water supply connection or disconnections until Council is provided with:

- full payment of a current Council quote with receipt details;
- certification of the water main passing pressure and water quality testing.

In the event that the water quality test is a deemed acceptance pursuant to Council's **Standard Specification SS2 – Water Supply Mains and Associated Works**, the Consultant shall notify Council that Council's influent existing main does not comply with the water quality test limits set out in **Standard Specification SS2**.

k) Sewerage Reticulation

The construction of sewerage reticulation shall comply with Council's **Standard Specification SS1 – Construction of Sewerage Mains and Associated Works**.

At the commencement of construction the Consultant shall provide Council's relevant section with written notice (including a copy of the approved Sewerage Reticulation Drawings) of the anticipated date required for live sewerage connections.

Council will not commence works associated with the live sewerage connections or disconnections until Council is provided with:

- full payment of a current Council quote with receipt details;
- all certification details in accordance with **Section 9.4.2 d)**.

9.3 Council Inspections

9.3.1 General

During the construction phase the Consultant is expected to have adequate inspection systems in place and is responsible for exercising reasonable skill and diligence to ensure that the works are constructed in accordance with the approved Engineering Drawings and Specifications. Notwithstanding the Consultant's responsibility Council will conduct Inspections generally as set out in this Section.

9.3.2 Sub-Grade/ Sub-Grade Replacement Inspection

Sub-grade/ Sub-grade Replacement Inspection will be arranged with Council by the Consultant.

This inspection includes:

- i) Verification of approved pavement depth;
- ii) A check to ensure that all unsuitable material (including organic matter) has been removed;
- iii) Load testing of pavement sub-grade with a single axle loaded water truck or similar (minimum load on rear wheels shall be 8 tonne). Deflections detected in the sub-grade indicating weakness may require rectification and re-inspection.

9.3.3 Sub-Base Pavement Inspection

Sub-base Pavement Inspection may be required by Council depending upon the results of **Section 9.3.2** above. In this event, elements of the sub-grade test procedure may be employed.

9.3.4 Service Conduit Inspection

Inspection of the service conduits by Council shall be arranged by the Consultant prior to the request for the Pre-seal Inspection.

9.3.5 Pre-Seal Inspection

Pre-seal Inspection of the pavement will be arranged with Council (by the Consultant). This inspection includes:

- i) Inspection to verify an even and acceptable cross fall complying with the approved Engineering Drawings;
- ii) A check to ensure that sufficient depth is available to allow placement of the required thickness of the specified finished surface (asphalt surfacing, concrete segmental paving, stencilled concrete or 2 coat seal, etc);
- iii) A single rear axle loaded water truck or similar (minimum load on rear wheels shall be 8 tonne). Deflections detected will require rectification and subsequent reinspection;
- iv) Final approval of this inspection is dependent upon satisfactory pavement test results being submitted to Council.

9.3.6 Water and Sewerage Inspection

Where deemed necessary by Council random 'potting' inspections may be ordered in order to ensure compliance with Council's **Standard Specification SS1 – Construction of Sewerage Mains and Associated Works** and **Standard Specification SS2 – Water Supply Mains and Associated Works**.

The Consultant shall confirm all testing and certification is satisfactory prior to the 'On Maintenance' inspection.

9.4 Council On Maintenance Inspection

9.4.1 General

The purpose of the 'On Maintenance' inspection is to ensure that the Development has been completed in accordance with the approved Engineering Drawings, the Subdivision Conditions and Council requirements.

9.4.2 On Maintenance Inspection

'On Maintenance' inspections will generally include, but are not limited to, inspection of the following:

a) Earthworks and Roadworks:

- grades and profiles of roads, kerbing and footpaths;
- top soiling and seeding to prescribed areas;
- AC surfacing for texture and finish;
- street signs and line marking (in place or paid for);
- final allotment pegging;
- sub-surface drains flushing points, etc;
- street tree planting (if required);
- check all underground Public Utility Services (including water service) conduit markers in place;
- street furniture.

b) Stormwater Drainage:

- roads, pipes, structures, flow paths clear of silt and debris;
- no ponding of water on roads, in pipes, structures, kerbs or flow paths;
- turfing to prescribed areas;
- pipes laid to line and level;
- no damaged pipes or structures;
- no reinforcing steel exposed to cut off pipes;
- pipe penetrations to manholes finished off;
- quality of concrete work;
- check for unsound render work;
- converter slabs mortar bedded;
- manhole lids;
- correct drops through manholes;
- gullies and grates;
- overland flow paths to profile;
- inter-allotment drainage system;
- downstream culverts/ pipes and watercourses cleared of siltation;
- roof water drainage kerb outlets, if required;
- inter-allotment drainage pipes and manholes clean and dry;
- inter-allotment drainage pipes laid to line and level;
- correct manhole sizes, lids, locations;
- manhole lids finished to match finished surface levels and slopes.

c) Water Supply Reticulation:

- alignment and location check of system;
- hydrants and valves in accordance with the approved design;
- ensure height of valves and hydrants in accordance with Council's **Standard Drawing N^{OS} 59606** and **59607**, respectively;
- hydrant, valve and property service locations markers completed;
- specialised infrastructure complete (pumps, PRV's, reservoirs, etc).

Council requires that the Consultant provide written certification that Pressure and Water Quality Testing results have been carried out in accordance with Council's **Standard Specification SS2 – Water Supply Mains and Associated Works** and that these results be submitted with an accompanying plan ('as constructed'), for approval prior to any domestic connections to allotments. These test results should be submitted to Council as soon as they are available to ensure Council can expedite water connections.

In addition, the Consultant shall ensure live water supply connections have been completed.

d) Sewerage Reticulation

- alignment and location check of the system;
- manholes have been constructed in accordance with the Approved Engineering Drawings and the convertor slabs and surrounds are sealed watertight;
- visual inspection of all sewer lines including benching;
- where applicable pump and lift stations constructed in accordance with the Approved Engineering Drawings with all pumping and electrical facilities in working order.

Council requires that the Consultant provides:

- i) Written certification that the Consultant or an approved NATA registered testing company has witnessed:
 - Air Testing of Sewers;
 - Vacuum Testing of Manholes;
 - Ovality Testing of Sewers;
 - Hydraulic Testing of Pressure Mains

in accordance with Council's **Standard Specification SS1 – Construction of Sewerage Mains and Associated Works**;

- ii) Certification from the supplier of ready mixed concrete that all concrete supplied for sewerage pump/ lift stations is in accordance with Council's **Standard Specification SS1**;
- iii) A written warranty in Council's name jointly from the manufacturer and applicator of the protective coating system of sewerage pump/ lift stations in accordance with Council's **Standard Specification SS1**;
- iv) A copy of the CCCTV inspection report and video in accordance with Council's **Standard Specification SS1**.

In addition, the Consultant shall ensure live sewer connections have been completed.

e) General

- site is clean, tidy, free of rubbish, rocks, sticks, unauthorised stockpiles, etc;
- allotment earthworks to be free draining and generally in accordance with the approved design including any retaining structures;
- water quality and sediment control measures;
- integrity of environmentally significant areas;
- maintenance security deposit lodged;
- evidence that an Energex agreement is in place relevant to both reticulation supply and street lighting;
- eradication of state declared plants and/or recognised environmental weeds;
- irrigation systems are non-open space area (if appropriate) installed in accordance with approved plans.

f) Open Space Areas

'On Maintenance' inspections of dedicated Open Space Areas shall conform with **Section 6.3.1** of these Guidelines.

g) Road Bridge and Major Culvert Structures

Level 2 inspection according to **Bridge Inspection Manual** of **Department of Main Roads**, shall be carried out by a bridge inspector accredited by Main Roads. A paper and electronic copy of the report shall be submitted before on maintenance inspection and shall be included with the 'as constructed' drawings. The electronic copy of the report should be compatible with Council's bridge asset management software 'Bridge Offsider' developed by **Assets Management Services – Queensland Department of Main Roads**.

Notwithstanding the above, the development works will not be formally accepted 'On Maintenance' until the maintenance security deposit has been lodged, roads open to the public, 'As Constructed' Drawings lodged, Documentation and all testing results and certificates are submitted and approved in accordance with these Guidelines unless otherwise approved by Council.

Note: The maintenance period for bridges shall be 12 months (minimum). Bridges incorporating timber elements shall be maintained for 18 months.

Maintenance Management Plans for public open space areas are to be submitted prior to or concurrent with commencement of 'On Maintenance' phase.

9.4.3 Maintenance Period

The inspected works are to be placed 'On Maintenance' for a period of (12) twelve months, or as otherwise advised by Council, from the date of formal notification by Council.

During this period, responsibility and liability for rectification of defects and for any damage that may occur lies with the Developer, not the Council (unless the work may be directly related to Council activities). Steps should be taken to prevent damage occurring.

AC core tests and 28-day concrete cylinder tests not available at the 'On Maintenance' inspection must be supplied during the Maintenance Period.

In developments where there is an emergency situation, Council may under duty of care complete such work as necessary to ensure the safety of the public. Where such works are required due to defective works or materials supplied, Council will back charge the Developer.

9.5 Council Off Maintenance Inspection

9.5.1 General

The purpose of the 'Off Maintenance' inspection is to ensure that the constructed works have performed satisfactorily during the 'Maintenance Period' and that omissions and defects have been rectified.

9.5.2 Off Maintenance Inspection

The Consultant is responsible for ensuring that the works are presented in accordance with the approved Engineering Drawings/ Job Specification and accepted Engineering practice prior to requesting an 'Off Maintenance' inspection.

Failure to do so may result in cancellation of the inspection and/or the charging of a re-inspection fee.

'Off Maintenance' inspections will generally include, but are not limited to, inspection of the following:

a) Earthworks and Roadworks

- concrete kerbs and walkways/ bikeways;
- pavements and surfacing for deformation/ damage (including load testing);
- 80% coverage of specified grass to prescribed areas;
- street signs and line marking;
- street tree planting (if required);
- kerb numbering.

b) Stormwater Drainage

- roads, pipes, structure, flow paths clear of silt and debris;
- no ponding on roads, in pipes, structures, kerbs or flow paths;
- turfing to prescribed areas;
- pipes for damage/ movement;
- exposure or corrosion of reinforcing steel;
- overland flow paths for profile;
- inter-allotment drainage system;
- downstream culverts/ pipes and watercourses cleared of siltation.

c) Water Supply Reticulation

- hydrants, valves and other fittings functioning and surrounds and associated markings shall be still clearly visible;
- ensure height of valves and hydrants in accordance with Council's **Standard Drawing N° 59607**;
- signs of any surface subsidence along alignment;
- other infrastructure components operational, ie. reservoirs, pump stations.

d) Sewerage Reticulation

- a CCCTV inspection of defective sewer lines;
- manholes and associated benching;
- no infiltration of groundwater into sewer lines/ system;
- signs of any surface deformation along alignment;
- no ponding of surface water above manholes;
- other infrastructure components operational, ie. sewerage lift and pump stations.

e) Road Bridge and Major Culvert Structures

- all defects identified during the Level 2 inspection and by Council officers shall be rectified before the 'off maintenance' inspection. Photographs shall support rectifications carried out in areas where there is no easy access.

f) General

- street lighting installed in accordance with the approved plans;
- retaining structures for damage/ movement;
- irrigation systems in non-open space area (if appropriate) are functional.

g) Open Space Areas

- 'Off Maintenance' inspections of dedicated Open Space Areas shall conform with **Section 6.19.1** of these Guidelines.

Following a satisfactory 'Off Maintenance' inspection, the Consultant should submit a written request to Council for acceptance of the works 'Off Maintenance', and release of the Maintenance Security Deposit.