

TECHNICAL GUIDELINE

Checklist: Water Network Requirements for Land Development Applications



Issued by: Principal Engineer Water & Wastewater Networks

Issue Date: 15 March 2011

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Changes Required To The January 2007 Edition

The following lists the major changes to the January 2007 edition of TG 19, which have been incorporated in this edition:

1. Additional Reference document added
2. Section 1 – expanded
3. Section 2 – new Section added
4. Section 3 – table expanded and additional information provided

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Referenced Documents

- Systems Planning - Water Planning & Design Manual - Technical Practice (SA Water)
- SA Water’s Water Supply Manual

Section 1: Purpose

This Technical Guideline TG 19 is intended as a document outlining the existing practice of providing a water reticulation network design for major land developments in South Australia, to ensure all aspects/concerns are addressed when assessing the impact of land development proposals on SA Water's water distribution network.

Section 2: Background - Water Reticulation Planning and Design Process

Water supply planning and design process involves a number of activities and specific tasks which are performed by SA Water, Developers and their agents (Surveyors and Consulting Engineers), Planning SA and other utilities.

Initially the Developer engages a Surveyor who lodges the plan of division with the Development Assessment Commission (DAC). The Commission is supported by the Department of Planning and Local Government (DPLG) who then refers the application to SA Water, Local Government Authority and other utilities.

SA Water undertakes initial assessment of the proposal and makes preliminary recommendations on the water networks requirements to the Development Assessment Commission and to the Developer's agent.

If extensions of main are necessary, the Developers are required to provide water reticulation infrastructure for their developments.

SA Water enters into an Agreement with each Developer which states that upon satisfactory completion of the infrastructure, SA Water agrees to take over ownership of the infrastructure.

The agreement requires the Developer to engage a Consulting Engineer and Civil Contractor, both of whom must be accredited by SA Water. The Consulting Engineer prepares the water network design drawings in accordance with SA Water's current standards and specifications and lodges them with SA Water for audit. Once the water design drawings are accepted, SA Water is able to calculate the Developer's contribution and issue the Land Developer Agreement.

The Civil Contractor is required to complete the construction of water networks in accordance with the approved design. On completion of the works the new network is tested and following a satisfactory test outcome the Developer's agent is required to prepare "As Constructed" drawings and lodge them with SA Water.

SA Water's assessment of the proposed land division and the water networks requirements are the result of the extensive analysis and investigations undertaken by officers from Customer Services (CS), Systems Planning (SP), Estimating (Est) and Water and Wastewater Networks (WWN) Teams.

Section 3: Water Network Design Checklist

Item	Aspects to be Considered	To be Done By
Obtain Data and Assess Information	<ul style="list-style-type: none"> Obtain a current Land Division proposal and a contour plan of the proposed development. 	CS/SP
	<ul style="list-style-type: none"> Check the zoning for the development. 	SP (initial assessment)/WWN (detail design)
	<ul style="list-style-type: none"> Calculate the likely peak demand from the land development, eg: <ul style="list-style-type: none"> Number of Services Type of Service Demand per Service 	SP
Proposals for Land Development	<ul style="list-style-type: none"> Obtain comments from Operators on the proposal and inspect the site if deemed necessary. 	SP (initial assessment)/WWN (detail design)
	<ul style="list-style-type: none"> Check that the Developer's proposals for the Land Development complies with the design criteria documented in the Water Planning and Design Manual. 	WWN
Assessment Land Division Proposal	<ul style="list-style-type: none"> From the development layout check: <ul style="list-style-type: none"> Identify possible needs for longer term planning as a result of the land division proposal. 	SP
	<ul style="list-style-type: none"> Internal easements/land (which will be acquired as a condition of the subdivision) 	SP (initial assessment)/WWN (detail design)
	<ul style="list-style-type: none"> Existing water services within the development 	CS/WWN
	<ul style="list-style-type: none"> allotments within the development which can be served by water mains that already exist 	WWN
	<ul style="list-style-type: none"> allotments outside the development which can be served by the new infrastructure for the development 	SP (initial assessment)/WWN (detail design)

Item	Aspects to be Considered	To be Done By
New/Upgrade of Headworks and Trunk Mains Required to Serve the Development.	<ul style="list-style-type: none"> • Check that the headworks/trunk main/feeder main system network has the available capacity and sufficient pressure to cope with the additional demand generated from the Land Division. • Identify and assess any changes and additions to existing infrastructure such as: <ul style="list-style-type: none"> ○ approach mains, pumping stations, HOCV installations, Tanks sites etc required and any special conditions relating to each installation and ○ land required for any new infrastructure. • Update hydraulic network model if applicable. 	SP
	<ul style="list-style-type: none"> • Identify any further development that may occur and the effect this may have on the present infrastructure. 	SP (initial assessment)/WWN (detail design)
	<ul style="list-style-type: none"> • Obtain estimate of cost of infrastructure and establish augmentation charge areas and financial contributions. 	CS/Est
Prepare Concept Design	<ul style="list-style-type: none"> • Prepare CAD drawings showing the pipe network, appropriate pipe sizes and location of stop valves and fireplugs. 	WWN
	<ul style="list-style-type: none"> • Ensure all allotments are appropriately serviced 	WWN
	<ul style="list-style-type: none"> • Ensure stop valve location permits the isolation of not more than 50 customers. 	WWN
	<ul style="list-style-type: none"> • Ensure that the distance between any property and the nearest fire plug is not more than 80 metres. 	WWN
	<ul style="list-style-type: none"> • For developments within more than one pressure zone, ensure stop valves are marked on drawing as closed and have fire plugs on both sides of these valves. 	WWN
	<ul style="list-style-type: none"> • Show additional works required eg approach main, duplication main, PRV, booster pump etc 	WWN
Report	<ul style="list-style-type: none"> • Compile a Minute / Report and prepare drawings/sketches in appropriate format 	SP (initial assessment)/WWN (detail design)
	<ul style="list-style-type: none"> • Draw pipe network in Corporate GIS 	SP (initial assessment)/WWN (detail design)

Item	Aspects to be Considered	To be Done By
	<ul style="list-style-type: none"> • Include any new infrastructure needed to serve the development and any land / easements that would need to be acquired. 	SP (initial assessment)/WWN (detail design)
	<ul style="list-style-type: none"> • Return reply in the docket to the Customer Services. 	SP (initial assessment)/WWN (detail design)
	<ul style="list-style-type: none"> • Forward preliminary recommendations / Report on the water networks requirements to the Developer / Developer's agent 	CS
Audit of Detail Design	<ul style="list-style-type: none"> • Assess the Consulting Engineer's water network design drawings lodged with SA Water for audit. Once the water design drawings are accepted, notify Customer Services so the Land Developer Agreement could be issued 	WWN

Abbreviations:

CS - Customer Services

SP - Systems Planning

Est – Estimating

WWN - Water and Wastewater Networks