Estimates Committee 2016
Questions Taken On Notice
(14/06/2016 to 23/06/2016)

Date: 14/06/2016

Output: Planning and Development

Sub Output: Lands Planning

Subject: Terms of Reference on infill infrastructure strategy.

From: Ms Natasha Fyles to Hon David Tollner
Lands & Planning

2-15

Question: Minister, your department engaged a $99 000 consultancy to develop an infill infrastructure strategy. What were the terms of reference, what was the advice of this report and has it been made public?

Answer:

Answered On: 14/06/2016

ESTIMATES COMMITTEE
Question Taken on Notice

Date:	14 June 2016	**Output:**	Land Development
Subject:	Infrastructure Infill Strategy		
From:	Minister for Lands and Planning		
To:	Member for Nightcliff		
Agency:	Department of Lands, Planning and the Environment		

Number: **2.15**

Question: **In relation to the $99,000 consultancy for Infill Infrastructure Strategy, what were the Terms of Reference, what was the advice of the report and has it been made public?**

Answer:

A contract to develop the Infrastructure Servicing Strategy to support the Darwin Inner and Mid Suburbs Area Plan was awarded to GHD consulting for $90,580 ex GST ($99,638 incl GST), as part of the suite of consultancy's undertaken to support the development of Area Plans.

The scope of work included modelling the impact of the change in land use proposed in the Darwin Inner and Mid Suburbs Area Plans on the PWC power, water and sewer network models. The consultant has significant experience in using the PWC modelling software, providing significant efficiencies to both PWC and DLPE. (See below)

This modelling was used to inform the development of a strategy to upgrade existing and construct new essential services infrastructure (power reinforcement, water mains, sewer pump stations and sewer mains) to support development in accordance with the Area Plans.

This report is not publically available. The outcomes are documented in the Needs Assessment reports associated with the Area Plans.

SCOPE OF CONSULTANCY FOR SERVICES MASTERPLANNING

1.1 Background

The Department of Lands, Planning and the Environment (DLPE) has identified potential changes in land use in the suburbs of Stuart Park, The Gardens, Woolner, Fannie Bay, Parap, The Narrows, Coconut Grove, Nightcliff, Rapid Creek and Millner. DLPE requires an Infrastructure Master Plan to determine headwork requirements for the development of the areas that will outlined in the Darwin Inner and Mid Suburbs Area Plans.

1.2 Objective - Power, Water, Sewer and Telecommunications

The objective of this project management scope of works is to procure and manage a suitably qualified and experienced engineering consultant to develop an Infrastructure Masterplan and associated report for the subject.

The Infrastructure Masterplan and associated report will need to address:

A. General Scope:

- Land use planning and growth/development forecasts.
- Identification and assessment of existing infrastructure.
- Identification of new infrastructure to support development.
- Development of infrastructure staging plans and associated load triggers
- Development of cost estimates, including options

B. Sewer Scope

- Utilising the existing PWC Sewer model, develop a Sewer Master Plan from information provided by DoT, Lands and PWC in relation to proposed development scenarios. The Master Plan should show sewer headwork requirements for the entire study area based on PWC standards. This may include sewer pump stations, trunk sewer mains and changes to reticulation.
- Identify the need for any Sewer Easements for sewer (trunk, rising mains & lot reticulation) and future pump stations within catchment area.
- Constructability / feasibility of sewer infrastructure within or outside existing road reserve based on available cadastral, existing contour & other land information, services, current & future lot layout.
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C. Water Scope

- Utilising the existing PWC Water model, develop a Water Master Plan from information provided by DoT, Lands and PWC in relation to proposed development scenarios. Develop a Water Master Plan showing water headwork requirements for the entire study area based on PWC standards. This may include review of existing tanks and supply availability for the study area.
- Identify need for Water Easements for distribution & reticulation mains within the catchment area.
- Constructability / feasibility of such water infrastructure within or outside existing road reserves based on available cadastral, existing contour & other land information, services, current & future lot layout and limited verification survey.

D. Power Scope

- Utilising the existing PWC Power model, develop a Power Master Plan from information provided by DoT, Lands and PWC in relation to proposed development scenarios Develop a Power Master Plan showing power headwork requirements for

the entire study area based on PWC standards. This may include review of existing substations and generation supply availability for the study area.

- Identify need for power easements for distribution & reticulation mains within the catchment area.
- Constructability / feasibility of such infrastructure within or outside existing road reserves based on available cadastral, existing contour & other land information, services, current & future lot layout and limited verification survey. Infrastructure may be either underground, overhead or both.

E. Telecommunications Scope

- Identify the existing telecoms easements and available services.
- Identify need for telecommunication easements within the catchment area where necessary.
- Layout of any new or upgraded telecommunications to be to NBN / Telstra as per the requirement. Adopt PWC standards for shared trenching alignments where suitable.

F. Survey Scope

- The consultant is to undertake basic survey / potholing of existing services where absolute knowledge of the service is not known. It is assumed that some existing services are not mapped or located.
- Where new services are proposed, the consultant is to ensure that there is no known clashes with existing services, or if there are clashes, these need to be identified and flagged to be addressed during the future detail design process.
- Any requirement to change from standard alignments within the road reserves will need to be flagged and addressed during detail design stage.

Project Requirements

Phase 1: Assessment of Existing Infrastructure:

- Undertake an infrastructure investigation and identify the location, condition and capacity of the existing infrastructure.
- Collection of all available land information including contours, land tenure, sacred sites or other available soil & environmental information required for concept design.
- Collection of all available information about existing services within the study area from various authorities.
- Collation of crown or private land development & lot layout plans including current & future zones (if known) within the study area.
- Collection of all available Power, water, sewage and telecommunications studies carried out in the study including PWC, DOT, & DLPE's future development plans within the study area.
- Coordination with various authorities about future development in this area.
- Understand current & future power, water & sewer strategies for the study area

Phase 2: Current and Future Development Assumptions:

- Confirm the anticipated development for the study area and determine appropriate load estimates for the current existing zoning fully developed.
- Confirm the anticipated development and growth forecasts for the study area and determine appropriate load estimates for the proposed future densification.

- Confirm the capacity or upgrading required to provide minimum services for the current and growth forecasts.

Phase 3: Review existing infrastructure Master Plans and proposed Capital Works Programme with Power Water Corporation (PWC) and Department of Transport (DoT) as they impact on the site:

- Identify planned Infrastructure upgrades to be undertaken by PWC / DoT beyond the existing capacity e.g. new substation, treatment plants, pump station, road upgrades/extensions etc.;
- Identify the expected timing of Infrastructure upgrades and associated trigger points (i.e. demand requirements to trigger upgrade);
- Investigate and identify any potential private developments that may or will impact on the triggers for development; and
- Investigate and report on any issues likely to limit development.

Phase 4: Develop an Infrastructure Master Plan:

- Consider options and recommend an infrastructure strategy to service the developments in accordance with the Area Plans or draft Development Plans with their associated trigger points;
- Prepare power, water and sewer services strategy for the entire study area.
- Prepare concept power, water, sewer and telecommunications headworks plan covering the entire study area based on available current and future development, land and ground information including contours.
- Carry out limited survey to identify critical information required for the concept design & master plan.
- Divide the entire zone with suitable subzones and prepare estimated EP loading (current, future & ultimate) based on PWC standards.
- Carry out water network model and identify where additional elevated or ground level tanks are required.
- Carry out trunk sewer layout assessment to allow discharge to the existing networks.
- Carry out concept design of trunk sewer layout, and identify any requirements for new Sewer pump station, lift pump station etc required on the study area based on PWC standard & other available information.
- Carry out concept design of water layout, second supply, security of supply required for the study area based on PWC standard & other available information.
- Carry out power modelling of the study area and identify new or upgrades required to electrical feeder, distribution and or substation. Include telecommunications where necessary.
- Propose suitable options & alternatives
- Assess constructability of such proposed power, telecommunications, water & sewer infrastructure based on available data and site condition.
- Identify Easement & lot requirements for the proposed infrastructure.
- Provide staging options for the infrastructure development, identifying preferred staging and reasoning;

- Undertake a risk analysis on implementation of the Master Plan and recommend where further survey and geotechnical investigations & detail survey should be undertaken to mitigate high risks;
- Clearly delineate between works that are the responsibility for DLPE, PWC or DoT and works that are the responsibility of the developer (it should be done outside the master plan at a higher level)
- Achieve endorsement of the recommended Infrastructure Master Plan from the relevant service authorities.

Phase 5: Order of Costs:

- Determine the costs associated with Head Works infrastructure requirements;
- Detail any recommended contributions payable by the developer to the service authorities; and
- Detail any assumptions and cost risks.