



## **PROJECT BRIEF.**

### **SUBREGIONAL INFRASTRUCTURE RESEARCH PROJECT.**

#### **(WASTEWATER)**

##### **Background:**

Substantial population and urban growth has occurred in the Western Bay of Plenty (WBOP) Sub-region for many decades. Strong growth is expected to continue into the foreseeable future.

To manage this growth the SmartGrowth Strategy for the WBOP sub-region was developed in 2004. This Strategy provides a 50 year vision for the development of the sub-region. An integral part of the Strategy is the Settlement Pattern. The Settlement Pattern identifies the geographic areas where urban development (residential, industrial and commercial) is expected to occur in the future within the sub-region as well as the general timeframes for this development based primarily on the adopted SmartGrowth population projections. The Strategy and the Settlement Pattern are currently in the process of being updated.

The SmartGrowth partners are now finding for a number of reasons that there is likely to be insufficient land identified within the SmartGrowth Settlement Pattern to accommodate expected growth in the coming 40 to 50 years. The reasons for this are:

- Lower densities being achieved in growth areas like Wairakei and Te Tumu and less residential intensification taking place (more land than previously anticipated is required to house approximately 11,750 people)
- Likelihood of further reductions to minimum residential yields below 15 lots per hectare resulting from the settlement of an appeal to the Tauranga City Plan (effect of this is unknown at this stage)
- Working to a higher total population in the sub region (approximately 300,000 people) because the SmartGrowth Strategy is likely to look out to 2061 instead of 2051 to retain a 50 year vision.
- The identified long-term shortage of industrial land (this is currently estimated to be 300 hectares but may change as the result of further research being undertaken on this issue)

In addition to this, further land may need to be found because of:

- The possibility that the infrastructure costs associated with servicing growth in some of the areas already identified in the settlement pattern may be prohibitive which, if true, would necessitate growth being relocated.
- The possibility that research underway by SmartGrowth into residential infill and intensification development may result in less growth being allocated to other forms of development.

The SmartGrowth Land Capacity and Suitability Study identifies and assesses a number of additional areas where urban development could occur in the sub region. Each of these areas identified in this report has specific challenges to future development but the one challenge common to all was future urban wastewater disposal and its affordability. As a result, the report identified that there was further work required to *“evaluate the options (post 2041) of transferring wastewater from identified development areas to Te Maunga, versus the possibilities of constructing new wastewater treatment plants, with ocean outfalls, in the vicinity of the proposed developments.”* A copy of this report is attached as appendix ‘A’. This project results from that work.

In addition to the wastewater challenges associated with the new areas that are not currently in the SmartGrowth Settlement Pattern, there are questions that need to be answered about the most efficient way to provide wastewater for some of the future growth areas that are currently in the SmartGrowth Settlement Pattern. This primarily relates to whether the best long-term option for wastewater treatment for Te Puke and Rangiora business area is a standalone treatment plant in Te Puke or whether it would be better to pipe the wastewater to the Te Maunga treatment plant.

#### **Project Goal:**

The goal of this project is to provide recommendations as to the most affordable and cost efficient wastewater systems to service growth in the area between Paengaroa in the south and Omokoroa in the north.

#### **Project Manager:**

The Project Manager is to be Lee Jordan – Utilities Planner, Tauranga City Council.

- Phone – (07)577 7064.
- Email – [lee.jordan@tauranga.govt.nz](mailto:lee.jordan@tauranga.govt.nz)

#### **Project Scope:**

The scope of this project is to review the current wastewater disposal plans between Rangiora and Te Maunga and also Plummers Point and Te Maunga to see if there are advantages and cost savings to be made through amalgamation of projects or the construction of new treatment plants in the most suited locations.

It is also required to investigate the maximising the capacity of the Southern Pipeline as well as the Omokoroa Pipeline by installing peak wet weather flow storage at strategic locations. This could result in a substantial increase in capacity compared with the current design philosophy.

This work is to provide high order costings sufficient to allow realistic comparisons to be made between options. This will require pipe sizes to be identified as well as treatment plant types, capacities and potential staging of development.

## **Project Inputs:**

SmartGrowth will supply the following:

1. A copy of the "SmartGrowth Residential Land Capacity and Suitability Study Post 2041" report plus plans giving the projected populations for each area.
2. A copy of the "Tauranga & Western Bay of Plenty District Councils Strategic Sewerage Study".
3. A copy of the "Overview Report on Issue of Land Application vs Ocean Discharge" (MWH) prepared for SmartGrowth Wastewater Investigations.
4. Reports and costings of the proposed expansion of the Te Maunga Wastewater Treatment Plant.
5. Reports and costings of the proposed expansion of the existing Te Puke Wastewater Treatment Plant.
6. Southern Pipeline report on accommodating additional growth.
7. Population projections for each area will be supplied.
8. A copy of the MWH report "Sustainable Techniques for the Provision of Infrastructure for Urban Development to Papamoa East" March 2004, including the Mauri model.
9. Aerial maps of the areas with cadastral boundaries and contours.
10. The following staff will be available to provide further input to the project as required.
  - a) Lee Jordan Ph. (07) 577 7064.
  - b) Kelvin Hill Ph. (07) 571 8008
  - c) Graeme Jelley Ph. (07) 577 7232

## **Project Outputs:**

There are five specific outputs required from this project.

1. It is currently planned that the future development of the Te Tumu area will require a wastewater pipe to be laid from Te Tumu to the Te Maunga Wastewater Treatment Plant. Is there any whole of life cost savings to be gained by;
  - a) Adding the Te Puke wastewater to this pipeline?
  - b) Adding the Te Puke and Rangiuru wastewater to this pipeline?
  - c) Building a new treatment plant with an ocean outfall to service these three areas?
  - d) What are the risks associated with this?
2. If further growth were to occur in the Te Puna / Plumbers Point area (estimated total population potential of 45,000), examine the feasibility and economics of servicing this area by :
  - a) Constructing a pipe and pumping system from Plummers Point to Te Maunga or
  - b) Constructing a new Wastewater Treatment Plant in the vicinity of the growth area with a discharge to the ocean.
  - c) Constructing a new Wastewater Treatment Plant in the vicinity of the growth area with a discharge to the harbour.
  - d) Maximising the use of the Southern Pipeline and Omokoroa Pipeline by way of strategically located wet weather storage tanks.
  - e) What are the risks involved with this?
3. If further growth were to occur in the Wairoa, Belk Road area, please investigate how much of this land could be serviced by the Southern Pipeline:
  - a) Given normal design flow and
  - b) By maximizing the use of the Southern Pipeline with the use of strategically located wet weather flow storage tanks.

- c) Costings on these options.
4. Identify any other viable wastewater servicing options that could be considered.
5. Provide five hard copies of a report detailing each option and providing recommendations as to the most preferred of these options and why, including an executive summary. An electronic copy of this report should also be supplied in a format that is web friendly.
6. Present the report to SmartGrowth Implementation Management Group and the SmartGrowth Implementation Committee.

**Methodology:**

The consultant is to provide, for the Project Management Team's approval, the methodology and time line to be used for this project.

Key tasks for this project are:

- a) Identify flow rates.
- b) Identify potential pipe routes. (desktop exercise)
- c) Identify pipe / pump station sizes.
- d) Identify treatment plant sizes and effluent disposal options.
- e) Identify any extra capacity that may be made available in the Southern Pipeline and the Omokoroa Pipeline.
- f) Cost each option.
- g) Prepare a report.

Note that project costings are to be in today's dollar values.

**Project Resources:**

1. It is proposed to set up a small project team to oversee this work. This team will consist of the Project Manager plus;
  - Kelvin Hill – Utilities Manager – Western Bay of Plenty District Council.
  - Graeme Jelley – Infrastructure Planning Manager – Tauranga City Council.
2. Supply of Geospatial data will need to be coordinated through the Project Manager

**Consultation Requirements:**

The consultant shall provide for a fortnightly meeting with the project management team.

**Timeframes:**

Project inception meeting	8 <sup>th</sup> June 2012
Regular fortnightly project meetings	On-going
<b>Target Dates</b>	
Flow rates identified	22 <sup>nd</sup> June
Pipe routes identified	6 <sup>th</sup> July

Pipe and pump station sizes identified.	20 <sup>th</sup> July
Treatment plant type, size and location identified.	3 <sup>rd</sup> August
Options costed	10 <sup>th</sup> August
First cut report completed.	17 <sup>th</sup> August
Draft report completed	24 <sup>th</sup> August
Presentation of draft report to IMG	4 <sup>th</sup> September
Presentation of draft report to SGIC	19 <sup>th</sup> September
Peer reviews completed	
Presentation of findings to IMG	2 <sup>nd</sup> October 2012
Presentation of findings to SGIC	End of October 2012

**Consultants Team.**

The consultant shall identify the team leader through whom all communication shall be directed, and other staff who will be involved in this project.

Team Leader..... Contact Phone.....

Staff members.....

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