How to value the indescribable: looking to the past to create the foundation of the future

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**Abstract:**

For many smaller organisations or Councils, the capacity to complete large, significant projects can seem insurmountable. While seeking outside help is valuable, and a necessary resource for many, the value of the existing knowledge and understanding of the region should never be disregarded.

Regardless of the competency and drive of an outside party, locals must maintain an active role throughout the project as this illusive information and understanding cannot be easily packaged and handed over completely to the consultant. As a Council that is looking to renew significant strategic plans for water, sewer, roads, parks, cemeteries etc while increasing community engagement throughout, the need for an accurate and in-depth understanding of the expected population and demographic for each region is a vital building block.

This presentation will look at the methodology, consultation and continual learning that is occurring as a result of Gladstone Regional Council completing their updated population model and how this may affect their future planning of all major asset types.

**Keywords:** In-house, Outsourcing, Population, Strategic, Planning, resourcing

**Introduction:**

Strategic planning for local government bodies is an essential tool for identifying current and future needs to service the community. While its importance is not always understood, the reality is that the quality of the final product can only ever be as good as the input sources used. It is therefore paramount for the work to be completed by personal with high skill set in this field, which for many smaller or more regional Councils may not be available in-house and as such, working with outside consultancies can be an incredible lifeline for many Local Councils.

There are, however projects that will still require significant input from the local knowledge within the Local Council to ensure the product reflects the best possible outcome. For the Gladstone Regional Council, this was the case when the need to review and update the existing population model was identified. As the foundation that all strategic planning is based on, a population model establishes a baseline of current population, while identifying where the expected growth (and therefore demand) is expected in the following 5, 10, 15, 20 plus years time.

In order to develop the basic methodology and development of a population model, the internal knowledge of the region’s history (including growth, development, demographics) builds confidence
in the expected growth built within the model, however the ability to 1) value and 2) capture this knowledge varies.

**Population Model:**

A population model is a representation of the existing and future expected growth for the region, down to a detail level by lot assessment in 5 year increments. To ensure consistency in approach across all Local Government Councils, census data, statistical areas and projected population growth is publicly available from the Australian Bureau of Statistics (2018). Combining this data with Council’s GIS mapping information, current development applications and priority growth order, the population model can be developed that best reflects the existing population and expected growth.

*Figure 1: Input Data required for Population Model (Roche, 2018)*

Based on these required inputs in Figure 1, it is evident that when completely this project with external consultants, significant contribution from in-house knowledge is still required. Census data, Projected Population Growth, Statistical Areas, Council GIS Mapping and Development Applications are all based on actual data and therefore easily capable for any party to collate and manipulate the data. To put it simply, this information provides the base population and the projected population the population model is required to align to at a high level guidance. The final source data, Priority Growth Order, is completed provide guidance when allocating this growth to individual property lots and is therefore, heavily reliant on assumptions made. While these assumptions may be theoretically completed by either party, there are increased benefits by completing them with the significant historical growth, demographics and understanding of the region that Local Councils hold.

**Communicating Local Knowledge:**

One challenge that organisations face when outsourcing projects is the increased risk of misplacing information or overlooking key information. This is not a reflection on the external consultant, the project manager or the actual project – the reality for many is just simply that “you don’t know, what you don’t know”.

Understanding the limits of communicating local knowledge can be an amazing tool to help drive the need for communication, regular contact and input from multiple departments. While this is likely to increase the timeframes or costs to a project, the benefits can typically be seen in the final outcomes as it can help make difficult, but ultimately informed decisions throughout the project.

Like many local government organisations, there has been a deliberate effort within the Gladstone Regional Council to improve on consultation with key stakeholders, active workshops and mentoring/up-skilling of staff throughout a project.
Methods to ensure this local knowledge is valued and captured include:

- Documentation of the assumptions made (including reasonings and justification where possible);
- Stakeholder engagement (inter-departmental, external organisations and public);
- Building in training/up-skilling where possible;
- Focus on understanding end user needs; and
- Developing internal processes to maintain and monitor as needed.

**Strategic Planning Cycle:**

Due to the nature of the surrounding industry within the Gladstone region, the population demand within the area can be highly difficult to predict. The region is significantly impacted by the ‘boom’ and ‘bust’ cycles which directly impact the economy and subsequent growth. The need to review and update Gladstone Regional Council’s Population Model was determined due in part to the age of Council’s previous strategic plans and the belief of local Council officers that the previous demand expected was not an accurate representation of what is currently happening.

![Figure 2: Input Data required for Population Model (Roche, 2018)](image)

By completing the population model, the expected demand on the region’s current and future asset capacity for roads, water, sewer, stormwater and parks can be completed, which will then feed into the Local Government Infrastructure Plan. The Local Government Infrastructure Plan (LGIP) outlines the expected demand, timing and upgrade/new trunk infrastructure for the whole region. As the LGIP is to be completed every 5 years, Gladstone Regional Council has outlined a continual cycle of review for continual improvement and monitoring of these plans over a 5 year cycle.

**Building a Population Model:**

As discussed above, a population model is developed based on multiple different sets of input data. The Australian Bureau of Statistics has developed the Australian Statistical Geography Standard (ASGS) to allow statistics to be compared and geospatially integrated to provide consistent application of the data. There are multiple levels of hierarchy, dependent on the how the data is required to be used, and can be combined with Census data or projected populations to assist in building a population model. For the purposes of the Gladstone Regional Council’s Population
model, the census data was applied according to the Mesh Block level, and the Projected Population Growths which was the greatest level of detail available for those sets of data at the time.

![Australian Statistical Geography Standard Hierarchy](image)

*Figure 3: Australian Statistical Geography Standard Hierarchy (Roche, 2018)*

Within each Mesh Blocks the total number of dwellings, total number of population and the resultant occupancy rate is provided. For demand purposes, this occupancy rate can greatly affect the actual usage expected in the area and therefore has a significant impact on future development plans. Typically, we would expect an average occupancy rate of around 2.7, however this can vary significantly according to the region. This information was collated by the consultants, in conjunction with Council’s GIS mapping (aerial imagery, water meter locations, building permits etc) to establish a baseline of the existing population within the model at a property lot level.

**Dependence on Local Knowledge – Trend Analysis:**

One of the first hurdles when completing the population model was to identify any potential trends or customer behaviour with the data. As the baseline was being developed, the Council officers were approached to identify or explain potential trends within the Census Data.

![Comparison of 2011 Occupancy Rate (left) V 2016 Occupancy Rate (right)](image)

*Figure 4: Comparison of 2011 Occupancy Rate (left) V 2016 Occupancy Rate (right) (Gladstone Regional Council, 2018)*
While external knowledge could identify that the data ‘didn’t feel right’, Council officers were able to quickly theorise that the occupancy rate drop from 2011 to 2016 was likely caused by the economic downturn (as to be expected), however additional trends were identified including the migration of families (or higher occupancy rates) appeared to be moving from the older suburbs, out to the newly developed and larger lots sub divisions on the outskirts of the urban fringe as house prices became more affordable. In addition to this Council Officers also identified that:

- Agnes Waters Occupancy Rate (0.97 on average) would be expected due to high tourism industry and development, with low permanent residents
- Population was identified in industrial areas as part of the Census Data however houseboats are within this region and would have therefore been included
- High Occupancy rates easily identified as workcamps/retirement facilities etc.

**Priority Growth Order:**

Once the baseline of the population was established, the growth could then be applied to align with the ABS projected populations. This Priority Growth Order needed to be developed completely in house, as the growth needed to align at a property lot level and therefore required significant assessment and assumptions. To ensure Council was considering multiple factors, the project scope included workshops with multiple departments within Council including Planning, Technical Services, Asset Management, Water Services and Road Services. It was determined that vacant lots or infill (within existing subdivisions and services are considered first priority, and then existing Development Applications. Each Statistical Area 2 was also divided up into Refined Areas and allocated a Priority Growth Order to provide guidance on growth currently not recorded within the Council’s data. Although the works are high level, it provided guidance when applying growth to the population model.

*Figure 5: SA2 Clinton – New Auckland with Refined areas (black) and Priority Growth Order example (Gladstone Regional Council, 2018)*
Realignment Project:

Once the final deliverable was received, it was determined that due to the large expected growth as a result of the 2015 projections (approx. 2.22% per year), and now available 2018 projections (approx. 0.7% per year), that a realignment project should be undertaken (ABS, 2018).

It was determined that as:

- the baseline of the population model was completed (only minor changes needed);
- Council officers had been up-skilled to a satisfactory level during the project;
- Priority Growth Order and methodology requires significant (if not exclusive Council officer direction and input)

the realignment works could now be completed in-house. The realignment was to be completed to a standard of +/- 10% alignment of the SA2 2018 projections and monitored throughout the progress to ensure the correct lots were identified within each SA2. As seen below, the final amended model was able to be aligned to the 2018 Projected Population to a satisfactory standard.

Project Learning:
The Gladstone Regional Council's Population Model and Realignment Project is a great example of the importance and value of building in-house capabilities and local knowledge. As part of the Realignment Project, three additional Council Officers have been up-skilled and exposed to the development of population models that will be directly responsible for the future maintenance and monitoring of the strategic plans that will be relying on this information. In addition to this, Council has strengthened inter-departmental relationships with regards to sharing of knowledge with multiple parties and increased understanding, sense of ownership and the importance of stakeholder engagement.

Acknowledgements

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References


