

# A SYSTEMS APPROACH TO EVALUATING THE ACHIEVEMENT OF COMMUNITY OUTCOMES

planning practice guide 5

by Peter Kouwenhoven



## OVERVIEW

This is the fifth guide in the Planning Under Cooperative Mandates (PUCM) Planning Practice series.

This guide is designed to help planners and councillors in the evaluation of both the activities and the outcomes in *Long-term Council Community Plans* (LTCCPs), produced under New Zealand's *Local Government Act 2002* (LGA): a) how to assess the extent to which proposed activities will promote achievement of community outcomes and b) how to evaluate the progress towards achieving these outcomes. It is a technical guide to the use of strategic analysis in the evaluation of LTCCPs and, in particular, their ability to achieve the stated outcomes in relation to plan activities.

LTCCPs describe community outcomes that have been identified through a consultation process initiated and driven by local authorities. Community outcomes are intended to reflect the intermediate to long-term goals and priorities of citizens within local authorities with respect to their social, environmental, cultural and economic well-being.

The guide thus enhances the strategic planning capability of local and central government by presenting a method that allows for evaluating the effectiveness of implemented activities in achieving community outcomes. The methodology is also applicable to assess the relative merits of alternative activities when the plan is in the making.

The guide opens with a description of prior knowledge assumed and tools needed for the assessment and an introduction. It is a companion to Planning Practice Guide 4: A Guide to Plan Outcome Evaluation.

A large part of the guide is devoted to a step by step process that describes the evaluation of community outcome achievement.

The guide also gives some further recommendations on the application of the methodology.

Concluding the guide are tips in the form of questions and answers on the evaluation of LTCCPs and references to resources with additional information.

The information in this guide is drawn from research into planning and governance under the RMA and the LGA from 2005-2009, a summary of which is included in the guide. Contracted by the Foundation for Science, Research and Technology, Planning Under Cooperative Mandates (PUCM), is undertaken by the International Global Change Institute at the University of Waikato.

Detailed findings from the PUCM research can be found on the PUCM-website: [www.waikato.ac.nz/igci/pucm](http://www.waikato.ac.nz/igci/pucm). Earlier guides can be ordered through this website.

# CONTENTS

|   |    |
|---|----|
| OVERVIEW .....                                  | 2  |
| CONTENTS .....                                  | 3  |
| GLOSSARY AND TERMINOLOGY .....                  | 4  |
| 0 PREREQUISITES .....                           | 5  |
| 1 A GUIDE TO COMMUNITY OUTCOME EVALUATION ..... | 6  |
| 2 SET UP THE ASSESSMENT .....                   | 7  |
| 3 DEVELOP A MODEL OF THE ISSUE .....            | 9  |
| 4 LINK LTCCP ACTIVITIES AND OUTCOMES .....      | 11 |
| 5 ASSESS EXPECTED IMPACTS .....                 | 13 |
| 6 IDENTIFY MONITORING INDICATORS .....          | 16 |
| 7 RECOMMENDATIONS .....                         | 18 |
| 8 QUESTIONS AND ANSWERS .....                   | 19 |
| REFERENCES .....                                | 20 |
| ANNEX RAP – RAPID ASSESSMENT PROGRAM .....      | 21 |
| ACKNOWLEDGEMENTS .....                          | 22 |

## GLOSSARY AND TERMINOLOGY

|       |  |
|-------|--|
| COE   | Community Outcomes Evaluation – methodology to assess progress towards achievement of community outcomes in an LTCCP |
| FRST  | Foundation for Research, Science and Technology – invests in R&D on behalf of the New Zealand Government             |
| IGCI  | International Global Change Institute – principal researcher of the FRST-funded PUCM project                         |
| LGA   | Local Government Act (as amended in 2002)  |
| LTCCP | Long-Term Council Community Plans – produced by regional and district councils in conjunction with their communities |
| PDP   | Professional Development Programme   |
| PGSF  | Public Good Science Fund   |
| POE   | Plan Outcome Evaluation  |
| PTP   | Practice Training Programme  |
| PUCM  | Planning Under Cooperative Mandates  |
| RAP   | Rapid Assessment Programme/Process   |
| RMA   | Resource Management Act 1991   |
| SA    | Strategic Assessment   |
| UoW   | University of Waikato  |

The RAP-tool that is used in this guide strategic assessment uses a slightly different terminology than is common in LTCCPs. The following maps the mutual terms:

| LTCCP      | RAP   |
|------------|---|
| outcome    | <i>objective</i> that is linked with <i>criteria</i> to measure the achievement of that objective                                 |
| activity   | <i>intervention</i> specified as direct changes introduced in the system through implementation of the plan, linked to objectives |
| indicators | <i>criteria</i> , linked to objectives  |

## 0 PREREQUISITES

The target audience for this guide are evaluators working in or for councils on assessing the effectiveness of Long Term Council Community Plans (LTCCPs).

To be able to use this guide optimally, the reader has to have access to a tool that supports “systems analysis”. The one used here is the Rapid Assessment Program (RAP, see Annex), which assists in building a qualitative model that can be interrogated for the effects that activities (from an LTCCP) ultimately have on community outcomes (from that LTCCP). RAP is distributed through IGCI.

This guide is about plan evaluation practice. To learn more about long-term council community planning under the LGA and the theory of evaluation, see the related PUCM reports, guides and documents (references are on page 19).

Evaluation is the process through which the effectiveness of a plan in achieving its outcomes is assessed in such a way that both the success of the plan and ways to improve it are addressed. As the results of evaluation feed back into the planning process, it closes the loop. Positioning evaluation in this way comes with some requirements: 1) it can only be successful if there is a wide participation of stakeholders, experts and decision makers; and 2) it is dependent on a high level of commitment from all parties because it must be implemented as an ongoing process.

*Target audience: evaluators in councils.*

*The evaluation uses a systems analysis tool, RAP (Rapid assessment program).*

*Background information on the methodology is on the PUCM website:  
[www.waikato.ac.nz/igci/pucm](http://www.waikato.ac.nz/igci/pucm)*

*Evaluation feeds back into the planning process.*

*Evaluation improves the quality of planning.*

*Evaluation is an ongoing process.*

*Evaluation benefits from wide participation of stakeholders, experts and decision makers.*

# 1 A GUIDE TO COMMUNITY OUTCOME EVALUATION

The evaluation of community outcomes is based on the theory and practice of Strategic Assessment (SA). In the setting of an LTCCP, SA can be used as a policy tool to determine the likelihood that LTCCP activities are responsible for achieving outcomes. The methodology follows these steps:

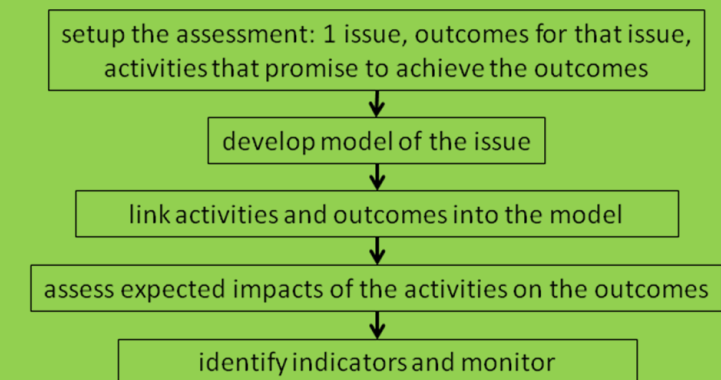
|  |   |
|--|---|
| <p><b>set up the assessment:</b> identify from the LTCCP:</p> <ul style="list-style-type: none"> <li>▶ a <i>confined issue</i></li> <li>▶ the <i>community outcomes</i> for that issue</li> <li>▶ the <i>activities</i> that are expected to achieve these outcomes</li> </ul> | <ul style="list-style-type: none"> <li>▶ the assessment is less complex when one issue is singled out</li> <li>▶ the single issue covers a subset from all the outcomes</li> <li>▶ the single issue covers a subset of all activities</li> </ul>  |
| <p><b>develop a model of the issue:</b> either a) modify an existing, or b) develop a new, RAP-model around the issue; making use of a variety of sources of information</p>   | <p>for the “systems model” that is required, an existing RAP model can be adapted or a new one created using RAP; plan-documents (like district and regional plans) could, and interaction with stakeholders and experts should, provide important information to improve the model</p> |
| <p><b>link LTCCP activities and outcomes</b> into the model</p>  | <p>the outcomes should be represented in the model (as “states” that can increase or decrease), while the activities should be incorporated as “interventions”</p>  |
| <p><b>assess expected impacts</b> of the activities on the outcomes</p>  | <p>RAP will show the impacts of the activities on the outcomes, usually as a range (i.e. “weak to strong increase/decrease”); these results can be tested against the expectations: are the activities indeed capable of achieving the outcomes?</p>                                    |
| <p>identify <b>indicators</b> to verify that outcomes are being achieved</p>   | <p>the RAP-model can also be used to identify those indicators that best reflect that a certain outcome has been achieved, while RAP will also estimate how well the indicator will perform</p>   |
| <p><b>monitor</b> the activities and the indicators</p>  | <p>verify that: 1) the activities from the LTCCP are implemented and 2) that the outcomes are achieved</p>  |

*Evaluation of Community Outcomes is based on Strategic Assessment.*

*Confine the assessment to a single issue at a time!*

*Build the model in stages, beginning with a single issue from, i.e. the district plan and then add community outcomes and activities from the LTCCP.*

*Stakeholders can contribute valuable information for the mechanisms in the model and the interpretation of the outcomes sought.*



## 2 SET UP THE ASSESSMENT

To assess outcomes and activities in an LTCCP it is best to break the analysis down into single issues. By confining the assessment it will be less complex and the chances that previous work can be re-used are more favourable. LTCCPs are commonly setup around single issues like “clean streams” or “air quality”.

The next task is to identify the community outcomes in the LTCCP that are related to the selected issue. This is usually a subset of all the outcomes that are listed in the LTCCP.

Then the activities related to these outcomes have to be identified in the LTCCP. Again this is usually a subset of all activities listed in the LTCCP.

As there are overlaps in issues, outcomes and activities, this is no trivial task: some outcomes might belong to more than one issue, while some activities might address more than one outcome.

It is also important to use clear and unambiguous definitions or descriptions of the elements that are identified here (the issue, the outcomes and the activities), preferably in interaction with the stakeholders. Starting with a shared understanding of what is going on and what is important creates a common base and acceptance later when results are evaluated.

### Tips & hints

*As most LTCCPs already list issues separately, this helps with the confinement.*

*Although the selected outcomes should be limited to those that are directly linked to the issue, the list of activities to be considered is likely to be larger: activities that are taken specifically to solve a different issue (and to achieve different outcomes), might have a side-effect on the outcomes under the confined issue.*

### Pitfalls

*If the issue and/or the outcomes are poorly defined, it will be much harder to verify if the outcomes are achieved.*

*The evaluation will be too narrow when activities are left out that are not linked with the confined issue, but still impact the outcomes.*

## EXAMPLE

Describe your problem below:

Brainstorm

Papakura:

Stormwater causes environmental problems through the impact on the water quality of the receiving water systems. It can also cause flooding. The amount of stormwater per occurrence is influenced by climate variability and change, and changes in landuse mainly because of subdivisions but also from economical drivers like urban development.

Provide lists of project objectives and of overall objectives:

Project ↑ ↓

1. Maintain or improve water quality
2. Satisfy residents amenity expectations
3. Satisfy residents recreational expectations
4. Maintain or improve water ecology
5. Satisfy Maori cultural expectations
6. Reduce risk of flooding

New Edit Delete

↑ ↓ Overall

New Edit Delete

What are the boundaries, scales and preconditions?

Spatial

All surface waters in the Papakura district (streams, ponds, harbour, wetlands).

Temporal

The effects of the plan should become evident within 10 years.

The top box describes the issue while the community outcomes (in terms of objectives) are listed below that. As a reminder, the spatial and temporal boundaries are also specified.

Below is a table with on the left the activities considered and on the top the outcomes sought. The purple boxes show which activity is expected to impact what outcome. Thus education programmes are expected to impact water quality and ecological value.

| Urban Stormwater Activities | COM water quality | COM amenity values | COM recreational opportunities | COM ecological values | COM maori | COM flood protection |
|-----------------------------|-------------------|--------------------|--------------------------------|-----------------------|-----------|----------------------|
| Project objectives          | 1                 | 2                  | 3                              | 4                     | 5         | 6                    |
| Unconstrained development   |                   |                    |                                |                       |           |                      |
| District & regional plans   |                   |                    |                                |                       |           |                      |
| Design guidelines           |                   |                    |                                |                       |           |                      |
| Increase network capacity   |                   |                    |                                |                       |           |                      |
| Education programmes        |                   |                    |                                |                       |           |                      |
| Riparian planting           |                   |                    |                                |                       |           |                      |
| Increase open space         |                   |                    |                                |                       |           |                      |
| Remove rubbish              |                   |                    |                                |                       |           |                      |
| All activities              |                   |                    |                                |                       |           |                      |

### 3 DEVELOP A MODEL OF THE ISSUE

The core of the analysis is a model of the “system” in which the LTCCP operates. This guide assumes that no model is available, but eventually, when the modelling approach is more wide-spread, planning models will be available from other planning activities like the district and regional plans under the RMA. Modifying such models for assessing an LTCCP is then a fairly simple task.

Developing the model starts with finding the “components”. These are high-abstract entities that are important in the system with respect to the confined issue, i.e. resources (air, water, land), actors (population, society), functions (drinking water) or “activities” (economy, transport). As it is not always immediately clear what level of abstraction is needed, it should be noted that modifications and additions can be made throughout the process.

In the next stage, the components need to be characterized: what defines each of the components in the system in relation to the issue. Defining characteristics for components is facilitated by the question “If you consider this component, how is it characterized in light of the issue?” Most characteristics are “state-variables”: they reflect the “state or status” of the system. Emphasis must be placed on the fact that an increase or decrease of the characteristic should have a meaning (so “colour” is not a good characteristic, while “quality of life” is).

Finally, relations between the characteristics are specified. For each characteristic the following question needs to be answered: “If this characteristic increases, which characteristics - within any component - will change as a *direct* result?” (so **no indirect** relations!). The direction of change (increase or decrease) must be indicated, as well as its intensity (three levels: +/-=*weak*, ++/--=*normal*, +++/---=*strong*). For example, an increase in the fluctuations in groundwater will strongly decrease (---) the quality of peat soils.

#### Tips & hints

*Keep the model as simple as possible. Focus on the issue that was selected. Make use of the fact that the model can be created in an iterative way, each time improving on the previous version. Use alternative knowledge sources: experts, documents, stakeholders.*

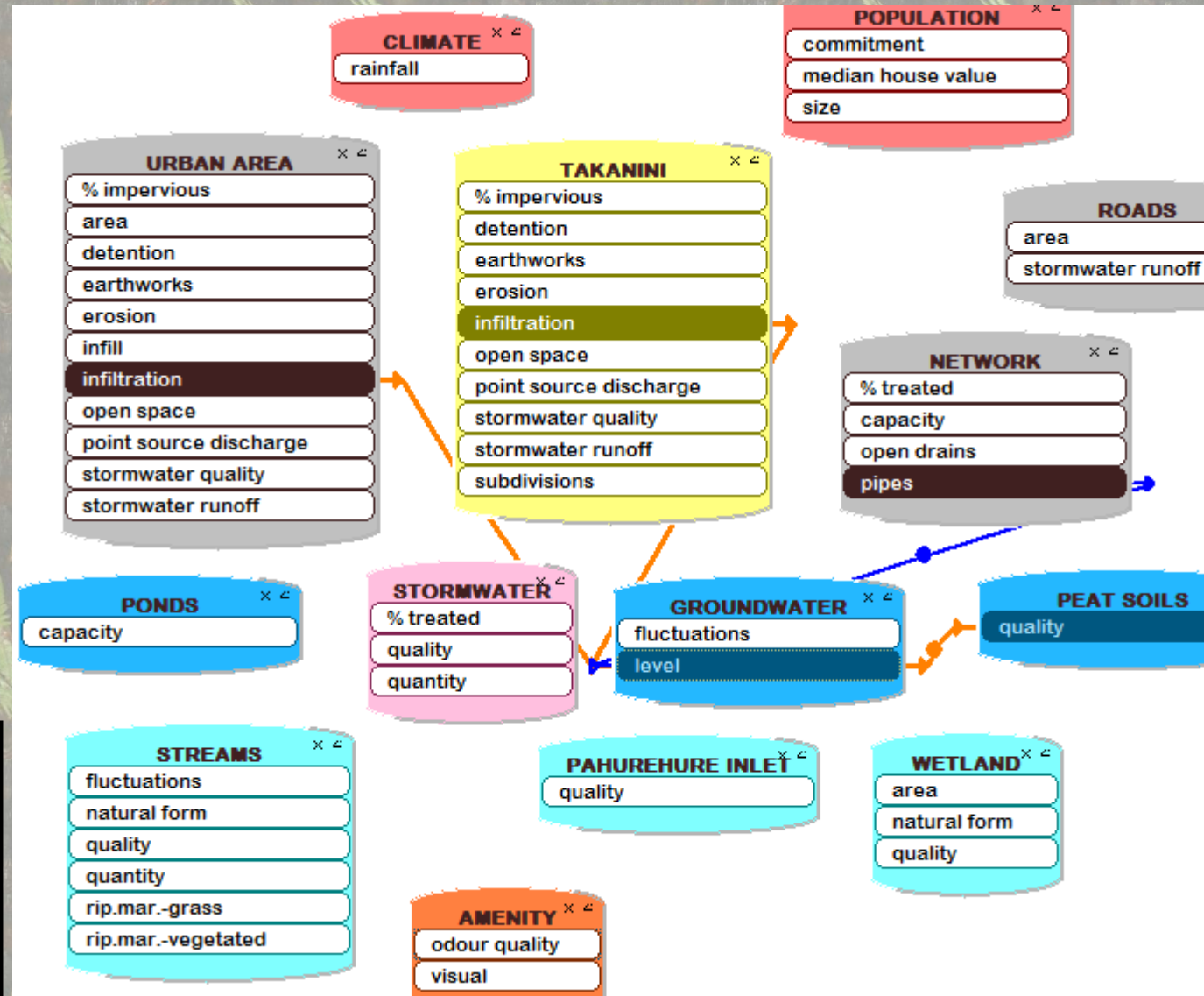
#### Pitfalls

*If the model is too limited, it will not be able to show the unintended effects (positive or negative). The methodology works best when dealing with direct impacts: relationships between characteristics should be direct. If not, it might be necessary to introduce an “in-between” characteristic.*

EXAMPLE

COMPONENTS:

- CLIMATE
- POPULATION
- URBAN AREA
- ROADS
- TAKANINI
- NETWORK
- PEAT SOILS
- PONDS
- GROUNDWATER
- STORMWATER
- WETLAND
- STREAMS
- PAHUREHURE INLET
- AMENITY
- COMMUNITY OUTCOMES



*On the right a model for stormwater management in Papakura is shown, with all the direct relationships between groundwater level and other characteristics: increase in infiltration (for both the Urban Area and Takanini) will directly increase the groundwater level, while more pipes in the network will decrease it; increase in groundwater levels also increases peat soils quality.*

## 4 LINK LTCCP ACTIVITIES AND OUTCOMES

Once the model has been created (or adapted and adopted from previous planning activities), the activities and outcomes that are defined in the LTCCP, relating to the issue that has been selected, must find a place in the model. Outcomes can usually be found in the model directly as one of the defined characteristics. Otherwise they can be introduced into the model and directly linked to the characteristics present.

The activities listed in the LTCCP are introduced as “interventions”, direct changes in the system as a result of the implementation of the plan. This can be a change in a characteristic or a change in a relationship between characteristics. For example the “use of design guidelines” will not only increase the “% water treated in the network”, but also reduce the impact of changes in “infiltration”, “infill” and “subdivision” on other characteristics

For a thorough evaluation it is important to also consider changes that occur “outside” the LTCCP: i.e. from other plans (like the district and regional plans under the RMA), or exogenous factors which cannot be controlled, like climate change or economic developments.

### Tips & hints

*At times it is necessary to modify the model to properly include the outcomes or enable the activities to operate on the system. It also can be useful to introduce a “component” (a set of state-variables) containing all the relevant outcomes, which link back to the proper state-variables in the system.*

*RAP has a “validation” function that checks for potentially contradictory relationships in the model, but also for “loose ends”.*

### Pitfalls

*Only the direct changes as a result of the activities need to be introduced. The RAP tool takes care of the indirect changes, all the way through the system, up to changes in the outcomes.*

## EXAMPLE

**Name**  
Design guidelines

**Type**  
 Internal intervention     External influence

**Description**  
Produced by ARC to promote good stormwater outcomes, e.g. low impact design (TP124), manual stormwater treatment devices (TP10)

Select the project goals to which this internal intervention is attached  
 Maintain or improve water quality  
 Satisfy residents amenity expectations  
 Satisfy residents recreational expectations  
 Maintain or improve water ecology  
 Satisfy Maori cultural expectations

Select and specify first order effects associated with your internal intervention or external influence

**Available from model**

- Urban Stormwater Activities LTCC1
  - CLIMATE
    - rainfall
  - POPULATION
    - commitment
    - median house value
    - size
  - URBAN AREA
    - % impervious
    - area
    - detention
    - earthworks
    - erosion
    - infill
    - infiltration
    - open space
    - point source discharge
    - stormwater quality
    - stormwater runoff

**Selected first order effects**

| Characteristic | Component | Minimal effect | Maximal effect |
|----------------|-----------|----------------|----------------|
| % treated      | NETWORK   | ++ Medium      | ++ Medium      |

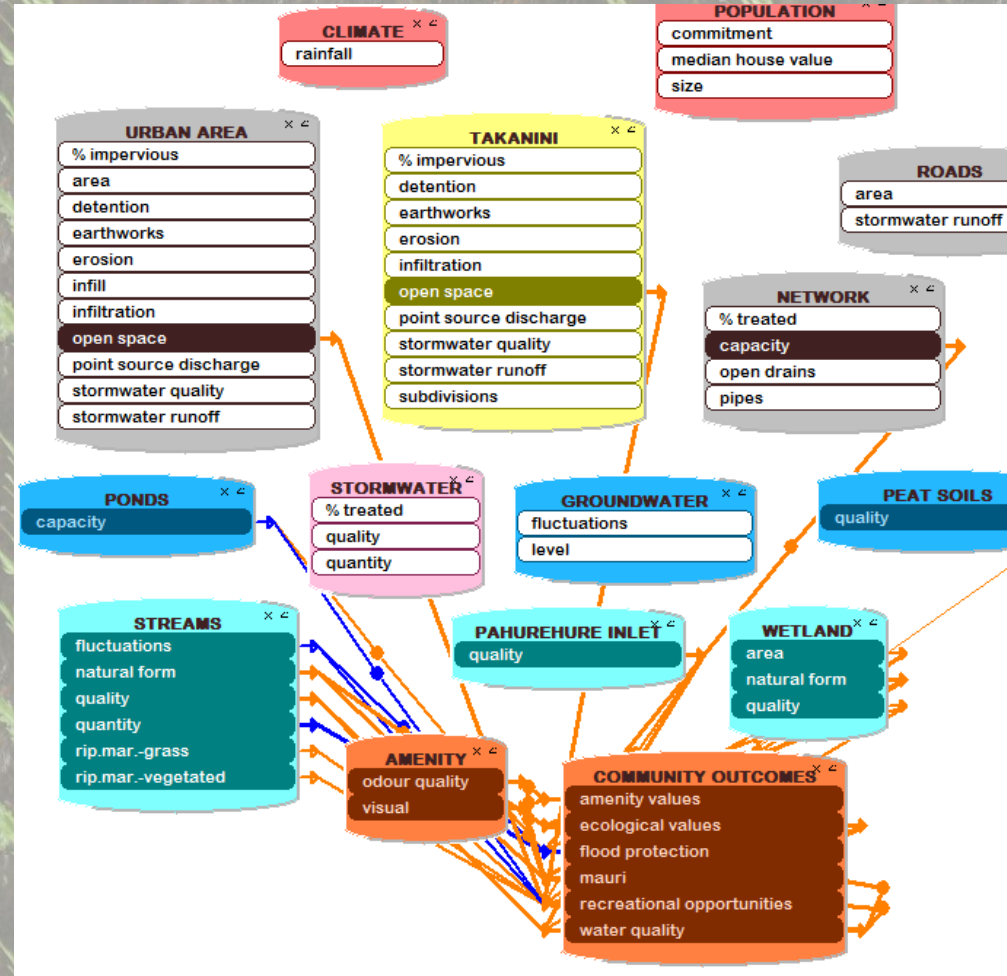
**Generated influences**    Criterion: water quality (COMMUNITY OU)    Order: 3

| Characteristic | Component   | --- | -- | - | +  | ++  | +++ | Pathlength |
|----------------|-------------|-----|----|---|----|-----|-----|------------|
| quality        | PAHUREHU... | --- | -- | - | +  | ++  | +++ | 1          |
| quality        | STREAMS     | --- | -- | - | +  | ++  | +++ | 1          |
| quality        | WETLAND     | --- | -- | - | ++ | +++ |     | 1          |

**Selected relations**

| From characteristic | From component | To characteristic | To component | Value |
|---------------------|----------------|-------------------|--------------|-------|
| infiltration        | URBAN AREA     | stormwater run... | URBAN AREA   | --    |
| infill              | URBAN AREA     | earthworks        | URBAN AREA   | ++    |
| infill              | URBAN AREA     | pipes             | NETWORK      | 0     |
| infill              | URBAN AREA     | % impervious      | URBAN AREA   |       |

*This is how activities are defined: a name and a description; because design guidelines are an internal intervention, links with the objectives (outcomes) are specified. As a direct effect of implementing design guidelines, there is a medium increase in the % of water treated in the network. Furthermore, a lot of relations are changed because of the implementation of the design guidelines.*



*The community outcomes are added to the Papakura stormwater management model. The links between the outcomes and the model are also shown.*

## 5 ASSESS EXPECTED IMPACTS

The RAP tool will show what the impacts from implementation of the activities will be on the outcomes and thus show whether the activities in the LTCCP can achieve the outcomes. If the activities are not capable of achieving the outcomes, then improper activities were selected in the planning process. This means that the community outcomes did not properly inform the prioritization of the activities.

It should be noted that the mere fact that the model shows that outcomes can be achieved through the plan, that in itself does not “prove” that that LTCCP was informed by the stakeholders as required under the LGA.

Understanding the impacts (or the lack of impacts) of the activities on the outcomes is an important part of the evaluation. Usually there are multiple cause-and-effect pathways between an activity and an outcome, with the following consequences:

- the system “resists” changes: one pathway may be impacted by an activity, but other pathways are unchanged and result in the outcomes not being achieved
- combinations of activities can achieve an outcome where any single activity cannot
- the results of the model do not depend on the choices made for a single pathway, which makes the results more robust

One of the objectives of evaluation is to improve the plan. With a better understanding of the system, and which activities contribute what effect on the outcomes, a better plan can be created. Some activities might not achieve a sizeable impact, and might be amended, or combined with other, new, activities. Activities might not take away negative impacts from development, or they may contribute to unwanted outcomes.

**EXAMPLE**

| Urban Stormwater Activities | COM water quality | COM amenity values | COM recreational opportunities | COM ecological values | COM mauri | COM flood protection |
|-----------------------------|-------------------|--------------------|--------------------------------|-----------------------|-----------|----------------------|
| Project objectives          | 1                 | 2                  | 3                              | 4                     | 5         | 6                    |
| Unconstrained development   |                   |                    |                                |                       |           |                      |
| District & regional plans   |                   |                    |                                |                       |           |                      |
| Design guidelines           |                   |                    |                                |                       |           |                      |
| Increase network capacity   |                   |                    |                                |                       |           |                      |
| Education programmes        |                   |                    |                                |                       |           |                      |
| Riparian planting           |                   |                    |                                |                       |           |                      |
| Increase open space         |                   |                    |                                |                       |           |                      |
| Remove rubbish              |                   |                    |                                |                       |           |                      |
| All activities              |                   |                    |                                |                       |           |                      |

The effects on the outcomes are shown in a table. The top row shows which outcomes are considered (i.e. water quality). The second row shows to which objective (earlier the text says that outcomes are expressed as objectives in the model) the outcomes are linked.

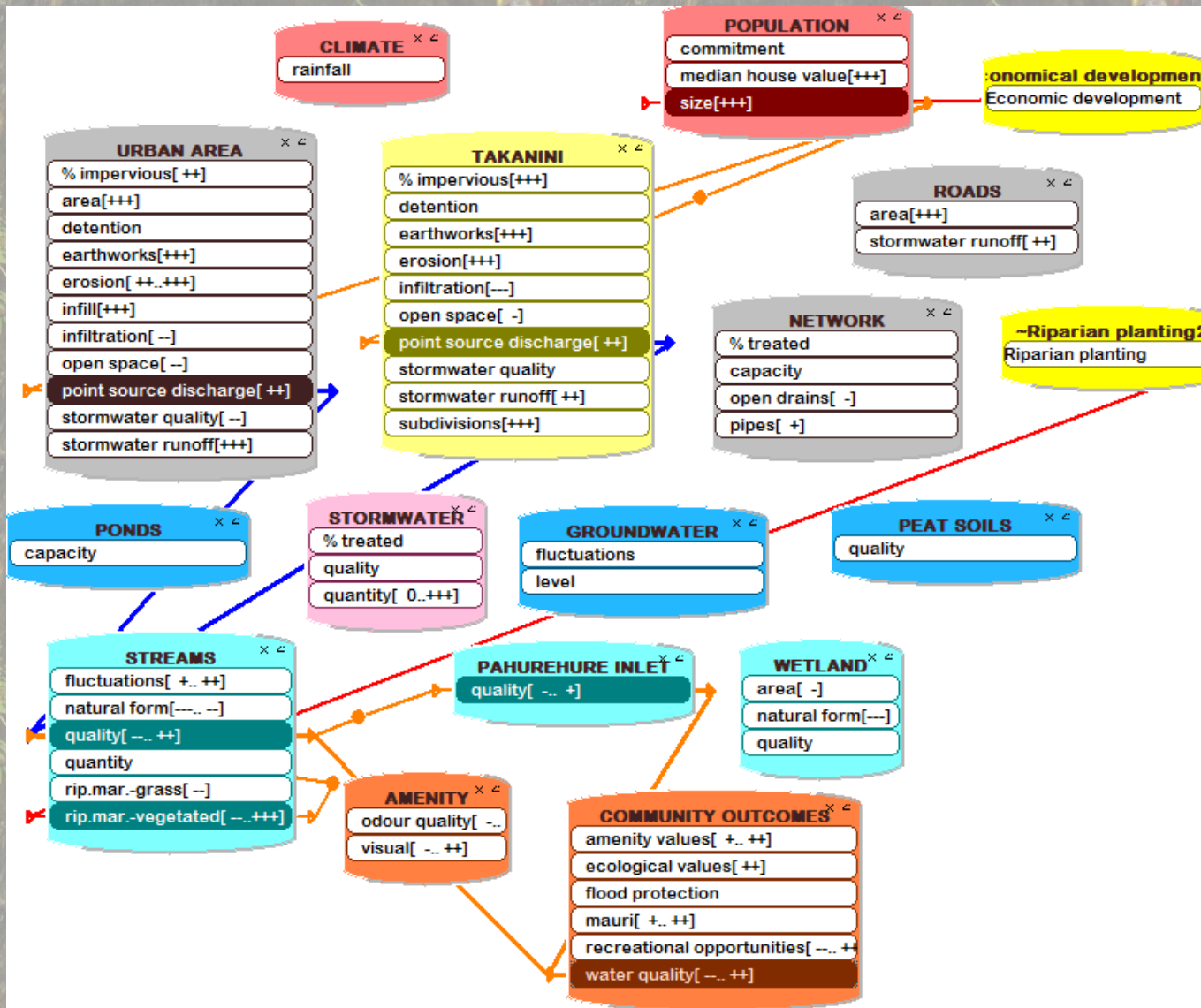
The left column lists which activities are analysed for their effects.

Effects are shown as ranges, in the form of left and right half-ellipses: the left half is the lower range, the right half is the upper range. Blue indicates a decrease, yellow an increase. The size (small, medium, large) indicates the magnitude of the change (weak, medium, strong). The ranges are the result of the multiple pathways between activities and outcomes.

The purple squares indicate for each activity which outcome they are targeted at. Effects are expected to occur at the purple squares. Side effects occur on the green squares.

So increasing network capacity will strongly decrease (big blue half-ellipse) to weakly increase (small yellow half-ellipse) the ecological values. This is a side effect, as it is on a green square.

When this is compared to the situation with no plans in effect (unconstrained development) increasing network capacity only impacts flood protection. This is an intended effect, as it is on a purple square.



The picture shows selected pathways between an activity (riparian planting) and its intended outcome (water quality). The changes happen under exogenous economic development.

The combined impact of development and riparian planting on the community outcome water quality is [-.. ++] (a medium decrease to a medium increase).

Economic development (amongst other effects) causes an increase (+++) in the size of the population in the area. This impacts(++) point source discharge in both the urban area and Takanini (new developments), which in turn impacts water quality in streams (-- ) and the Pahurehure inlet (-).

The riparian planting activity increases (+++) the riparian margin vegetated, which improves water quality of streams (++) and the inlet (+).

## 6 IDENTIFY MONITORING INDICATORS

A common property of outcomes is their “high level, abstract” nature. That can make it difficult to set-up a monitoring plan that keeps track of their changes. The RAP-model allows for identification of “proxy” indicators: indicators that provide supportive evidence that the outcome might have been achieved. RAP also provides correlation coefficients, between -1.00 and +1.00, which can be used to select proxy-indicators that will be sufficiently correlated with the outcomes.

The following hierarchy of indicators exists:

|                      |  |
|----------------------|--|
| primary indicators   | the community outcomes proper; if the outcomes are well-defined, and can be monitored efficiently (time, money and effort), while historic records are available (to establish a baseline), this is the preferred monitoring option                              |
| secondary indicators | these are characteristics in the system that directly impact the community outcomes: these might be better candidates for efficient monitoring   |
| tertiary indicators  | these are characteristics that directly impact the secondary indicators (which in turn directly impact the outcomes), and thus indirectly impact outcomes: there will be a trade-off in how efficiently they monitor, and how reliably they reflect the outcomes |
| activity indicators  | indicators that reflect if an activity from the LTCCP has been really implemented, which is essential to make the link between the plan and the outcome but not sufficient to show that the plan’s activity has created the outcome                              |

### Tips & Hints

*It pays to approach the monitoring issue in an integrative and holistic way: an indicator monitored might generate information for more plans, and contribute knowledge about the workings of the system.*

### Pitfalls

*Monitoring gets a low priority in most plans. That is based on the view that monitoring costs time and money, and that analysing the monitoring results is a complex process. This commonly results in a situation where a plan is implemented, and changes might occur, but it is unclear if the plan was responsible and effective. In the end monitoring will save money: policies can be selected on their effectiveness and efficiency, and activities that do not work can be weeded out.*

**EXAMPLE**

| Urban Stormwater Activ  | STR natural form | STR quality | STR quantity | STR rip.mar.-grass | STR rip.mar.-vegetated | PAH quality | AME odour quality | AME visual | COM amenity values | COM ecological values | COM flood protection | COM mauri | COM recreational opportun | COM water quality |
|-------------------------|------------------|-------------|--------------|--------------------|------------------------|-------------|-------------------|------------|--------------------|-----------------------|----------------------|-----------|---------------------------|-------------------|
| TAK infiltration        |                  | 4           | 3            |                    |                        | 5           | 3                 | 5          | 4                  | 6                     | 4                    | 4         | 3                         | 5                 |
| TAK open space          |                  |             |              |                    |                        |             |                   |            |                    |                       |                      |           | 1                         |                   |
| TAK point source discha |                  | 1           |              |                    |                        | 2           | 2                 | 2          | 3                  | 3                     |                      | 3         | 2                         | 2                 |
| TAK stormwater quality  |                  | 2           |              |                    |                        | 2           | 3                 | 3          | 4                  | 3                     |                      | 4         | 3                         | 3                 |
| TAK stormwater runoff   |                  | 3           | 2            |                    |                        | 4           | 4                 | 4          | 5                  | 5                     | 3                    | 5         | 4                         | 4                 |
| TAK subdivisions        | 2                | 2           | 3            | 1                  | 1                      | 3           | 4                 | 2          | 3                  | 3                     | 3                    | 3         | 2                         | 3                 |
| NET % treated           |                  | 2           |              |                    |                        | 2           | 3                 | 3          | 4                  | 3                     |                      | 4         | 3                         | 3                 |
| NET capacity            |                  |             |              |                    |                        |             |                   |            |                    |                       | 1                    |           |                           |                   |
| NET open drains         |                  |             |              |                    |                        |             | 1                 | 1          | 2                  |                       |                      | 2         |                           |                   |
| NET pipes               |                  | 3           | 2            |                    |                        | 3           |                   | 4          | 5                  | 3                     | 4                    | 5         | 4                         |                   |
| PEA quality             |                  |             |              |                    |                        |             | 1                 |            | 2                  |                       |                      | 2         | 1                         |                   |
| PON capacity            |                  | 3           |              |                    |                        | 3           | 1                 | 1          | 2                  | 4                     | 1                    | 2         | 1                         | 4                 |
| GRO fluctuations        |                  |             |              |                    |                        |             | 2                 |            | 3                  |                       |                      | 3         | 2                         |                   |
| GRO level               |                  |             |              |                    |                        |             | 2                 |            | 3                  |                       |                      | 3         | 2                         |                   |
| STO % treated           |                  | 2           |              |                    |                        | 2           | 3                 | 3          | 4                  | 3                     |                      | 4         | 3                         | 3                 |
| STO quality             |                  | 1           |              |                    |                        | 1           | 2                 | 2          | 3                  | 2                     |                      | 3         | 2                         | 2                 |
| STO quantity            |                  | 2           | 1            |                    |                        | 3           | 3                 | 3          | 4                  | 4                     | 2                    | 4         | 3                         | 3                 |

| Urban Stormwater Activ  | STR natural form | STR quality | STR quantity | STR rip.mar.-grass | STR rip.mar.-vegetated | PAH quality | AME odour quality | AME visual | COM amenity values | COM ecological values | COM flood protection | COM mauri | COM recreational oppo | COM water quality |
|-------------------------|------------------|-------------|--------------|--------------------|------------------------|-------------|-------------------|------------|--------------------|-----------------------|----------------------|-----------|-----------------------|-------------------|
| TAK infiltration        |                  | 0.22        | -0.67        |                    |                        | 0.20        | 0.33              | 0.11       | 0.25               | 0.21                  | 0.67                 | 0.21      | 0.19                  | 0.21              |
| TAK open space          |                  |             |              |                    |                        |             |                   |            |                    |                       |                      |           | 1.00                  |                   |
| TAK point source discha |                  | -1.00       |              |                    |                        | -0.67       | -0.50             | -0.67      | -0.56              | -0.83                 |                      | -0.71     | -0.72                 | -0.83             |
| TAK stormwater quality  |                  | 1.00        |              |                    |                        | 0.67        | 0.44              | 0.50       | 0.47               | 0.60                  |                      | 0.57      | 0.58                  | 0.67              |
| TAK stormwater runoff   |                  | -0.22       | 0.67         |                    |                        | -0.20       | -0.11             | -0.11      | -0.11              | -0.21                 | -0.67                | -0.18     | -0.19                 | -0.21             |
| TAK subdivisions        | -1.00            | -0.30       | 0.56         | -0.67              | -0.67                  | -0.37       | -0.33             | -0.37      | -0.35              | -0.39                 | -0.50                | -0.39     | -0.35                 | -0.39             |
| NET % treated           |                  | 1.00        |              |                    |                        | 0.67        | 0.44              | 0.50       | 0.47               | 0.60                  |                      | 0.57      | 0.58                  | 0.67              |
| NET capacity            |                  |             |              |                    |                        |             |                   |            |                    |                       | 1.00                 |           |                       |                   |
| NET open drains         |                  |             |              |                    |                        |             | -0.33             | -0.67      | -0.50              |                       |                      | -0.50     |                       |                   |
| NET pipes               |                  | -0.11       | 0.33         |                    |                        |             | -0.33             |            | -0.33              | -0.11                 | -0.33                | -0.17     | -0.11                 | -0.11             |
| PEA quality             |                  |             |              |                    |                        |             | 0.67              |            | 0.67               |                       |                      | 0.67      | 0.33                  |                   |
| PON capacity            |                  | 1.00        |              |                    |                        | 0.67        | 0.07              | 0.11       | 0.08               | 0.60                  | 0.67                 | 0.37      | 0.49                  | 0.67              |
| GRO fluctuations        |                  |             |              |                    |                        |             | -0.67             |            | -0.67              |                       |                      | -0.67     | -0.33                 |                   |
| GRO level               |                  |             |              |                    |                        |             | 0.67              |            | 0.67               |                       |                      | 0.67      | 0.33                  |                   |
| STO % treated           |                  | 1.00        |              |                    |                        | 0.67        | 0.44              | 0.50       | 0.47               | 0.60                  |                      | 0.57      | 0.58                  | 0.67              |
| STO quality             |                  | 1.00        |              |                    |                        | 0.67        | 0.44              | 0.50       | 0.47               | 0.60                  |                      | 0.57      | 0.58                  | 0.67              |
| STO quantity            |                  | -0.22       | 0.67         |                    |                        | -0.20       | -0.11             | -0.11      | -0.11              | -0.21                 | -0.67                | -0.18     | -0.19                 | -0.21             |

The figures show the smallest number of "steps" there are in the relationships between two characteristics: from "pond capacity" (left) to "water quality" (top) it takes 4 steps; "1s" show a direct link, "2s" show the shortest indirect links.

The figures show the correlation-coefficient between two characteristics. Close to ±1.00 is a good correlation, close to 0.00 means a poor correlation. Between "pond capacity" (left) and "water quality" (top) the correlation is 0.67. The higher the correlation, the better a change in one characteristic (i.e. community outcome) will be reflected by a change in another.

## 7 RECOMMENDATIONS

Applying a systems approach with a tool like RAP provides a disciplined framework for understanding cause and effect relationships ((theoretically and as perceived by stakeholders) between activities in plans and community outcomes. Models of the system are ideally built with stakeholder participation which fosters greater ownership of the outcomes by the community. It is recommended that systems models are created in stages beginning with one or two issues in the district plan or transport strategy, and then consolidated by the addition of key community outcomes. Staging develops skills in using RAP and, importantly, allows time to reflect on and improve the model.

It is further recommended that robust and affordable systems models like RAP be used to overcome the current barriers to monitoring. An important issue that comes up in most planning contexts in New Zealand is the lack of monitoring information. Either there is no information at all, or the information is limited to a verification of implementation of plan activities. Plan outcomes (intended or unintended) are rarely monitored. This is because getting the data and analysing it costs time and money. As the environment is changing anyway and the planning-context is moving, councils feel that these costs are unwarranted.

The current practice makes it difficult to show that it is the planning that ensures that community outcomes are achieved and that an LTCCP does make the difference. This guide presents a way to identify “proxy” indicators for the community outcomes capable of providing useful data of direct relevance to policy-makers that might be easier, cheaper or faster to measure.

## 8 QUESTIONS AND ANSWERS

**Q:** Does the methodology assess whether the prioritization of activities in an LTCCP was informed by the community outcomes?

**A:** This methodology is the second best way to show that the LTCCP is “doing what communities want”: it is able to highlight if and how the activities in the LTCCP (which should be a result of prioritization) will achieve the outcomes that are listed. It assumes that the outcomes are a reflection of what the community is after and it also assumes that the activities are implemented at best (the best way to show that the LTCCP is “from” the community, is to have an audit trail with all community interaction and all decisions recorded).

**Q:** What does it mean when the outcomes cannot be achieved through the LTCCP activities?

**A:** This means that the wrong activities were prioritized. The activities were defined in the model under the same assumptions that were used to create the plan, and thus the expectancy that the activities should work, should be reflected by the model. If they cannot, the inescapable conclusion is that the outcomes did not properly inform the selection (prioritization) of the activities.

**Q:** The methodology seems very involved and complicated with a lot of steps and expertise involved?

**A:** Strategic analysis, which is the basis of the methodology, is merely a formalization of a process that should be happening anyway. An instrument like RAP supports and structures that analysis. If planning is following the common steps (problem/issue → objective/goal → interventions) then the necessary information is available. Some specific

expertise can facilitate the process, especially in interaction with groups (i.e. experts and/or stakeholders).

**Q:** How is the methodology different from attacking the “attribution” problem (showing that a plan is responsible for achieving outcomes, see guide 4)?

**A:** The methodology builds on this. The challenge here is to link community outcomes and activities in an LTCCP into a systems approach. The methodology also offers options for setting up a monitoring program for the outcomes, using the information in the model of the system.

**Q:** This is a technological approach, which creates a gap with the community consultation process?

**A:** The methodology can be applied in such a way that it bridges the gap with the community. Stakeholders can contribute valuable knowledge about the system, enriching the model of the system and be more involved in the planning process. This makes them feel more responsible for the problems and solutions.

**Q:** The approach is completely based on RAP, are there any alternative tools?

**A:** There are many tools that support parts of a strategic analysis but at this time, there is only one tool that combines all the necessary elements: structuring, easy to use, qualitative modelling, verification and multiple analysis options. RAP was developed with exactly those questions in mind that are asked in the planning context. It has been tested in many settings and many improvements were made over time.

## REFERENCES

This guideline is based on the following report:

Peter Kouwenhoven, Greg Mason & Lorraine Leonard, *Community Outcomes Evaluation (COE) Methodology*, June 2009, ISBN 978-0-9864558-3-4, International Global Change Institute, University of Waikato, Hamilton, New Zealand.

Other available LGA reports are:

Leonard, L and Memon, A, *Community Outcomes Process as a Forum for Community Governance*, International Global Change Institute, University of Waikato, Hamilton, New Zealand.

Johnston, K and Memon, A, *Choosing Community-based Indicators to Monitor and Report Progress towards Community Outcomes*, International Global Change Institute, University of Waikato, Hamilton, New Zealand.

The following other guidelines are available:

Neil Ericksen, Sarah Chapman & Jan Crawford, *A guide to plan-making in New Zealand: the next generation*, 2003, ISBN 978-0-9582623-3-9, International Global Change Institute, University of Waikato, New Zealand.

M. Day, M. Backhurst, L. Laurian, J. Crawford and N. Ericksen, *Monitoring plan implementation in New Zealand, Planning practice guide 2*, 2005, ISBN 978-0-9582624-4-6, International Global Change Institute, University of Waikato, New Zealand.

Sarah Chapman, Maxine Day, Michael Backhurst, Jan Crawford, Neil Ericksen, *A guide to improving plan implementation in New Zealand*, 2005, International Global Change Institute, University of Waikato, New Zealand.

M. Day, G. Mason, J. Crawford, P. Kouwenhoven, *Evaluating the effectiveness of District and Regional Plans prepared under the Resource Management Act, Planning practice guide 4*, 2009, International Global Change Institute, University of New Zealand.

More information can be found on the PUCM website at: [www.waikato.ac.nz/igci/pucm](http://www.waikato.ac.nz/igci/pucm)

## ANNEX RAP – RAPID ASSESSMENT PROGRAM

The Rapid Assessment Program (RAP) is a Strategic Assessment tool that can be used for Long Term Council Community Plan (LTCCP) plan making. In the LTCCP context, one of the challenges is to show that communities have informed the planning process and that the outcomes that the communities indicated as preferential will be achievable (or have been achieved) by the plan.

RAP is both a methodology and a software tool and can be used to assess to what extent proposed activities in a draft or publicly notified LTCCP will contribute towards achievement of community outcomes (*ex ante* evaluation). RAP can help map and analyse the characteristics of any social, economical and/or environmental system. Once the mapping is done, the resulting model can be used to see how introduced changes (i.e. activities in a plan) are impacting other areas of the system, leading to further changes (i.e. outcomes) (*ex post* evaluation).

The steps in the process are as follows:

- 1) *Construct the model of the system together with the community stakeholders.* This requires interaction with the stakeholders about what they find important. This can be about characteristics of the system, but also about processes and mechanisms. Interaction can be in groups, and either on paper or using the RAP-functionalities.
- 2) *Define the outcomes with the stakeholders and find these in the model.* This might require an extension of the model, when the required outcomes cannot be identified in the model directly. This is another opportunity to gain further insights into stakeholders' considerations.
- 3) *Define the plan elements that aim to achieve these outcomes.* Describe the direct changes that the plan aims to introduce in the system. This can be done based on an existing plan, and/or in interaction with plan makers.
- 4) *Use RAP to verify that the outcomes can be achieved through the plan.* RAP uses all inputs to present the outcomes of the plan in a scorecard. Using the model, it finds all the pathways from plan actions to outcomes and combines these in a table.
- 5) *Use RAP to analyse and interpret the results.* RAP does not only show the results but can also demonstrate if and how the changes introduced by the plan ultimately contribute to the outcomes. This builds understanding and acceptance.

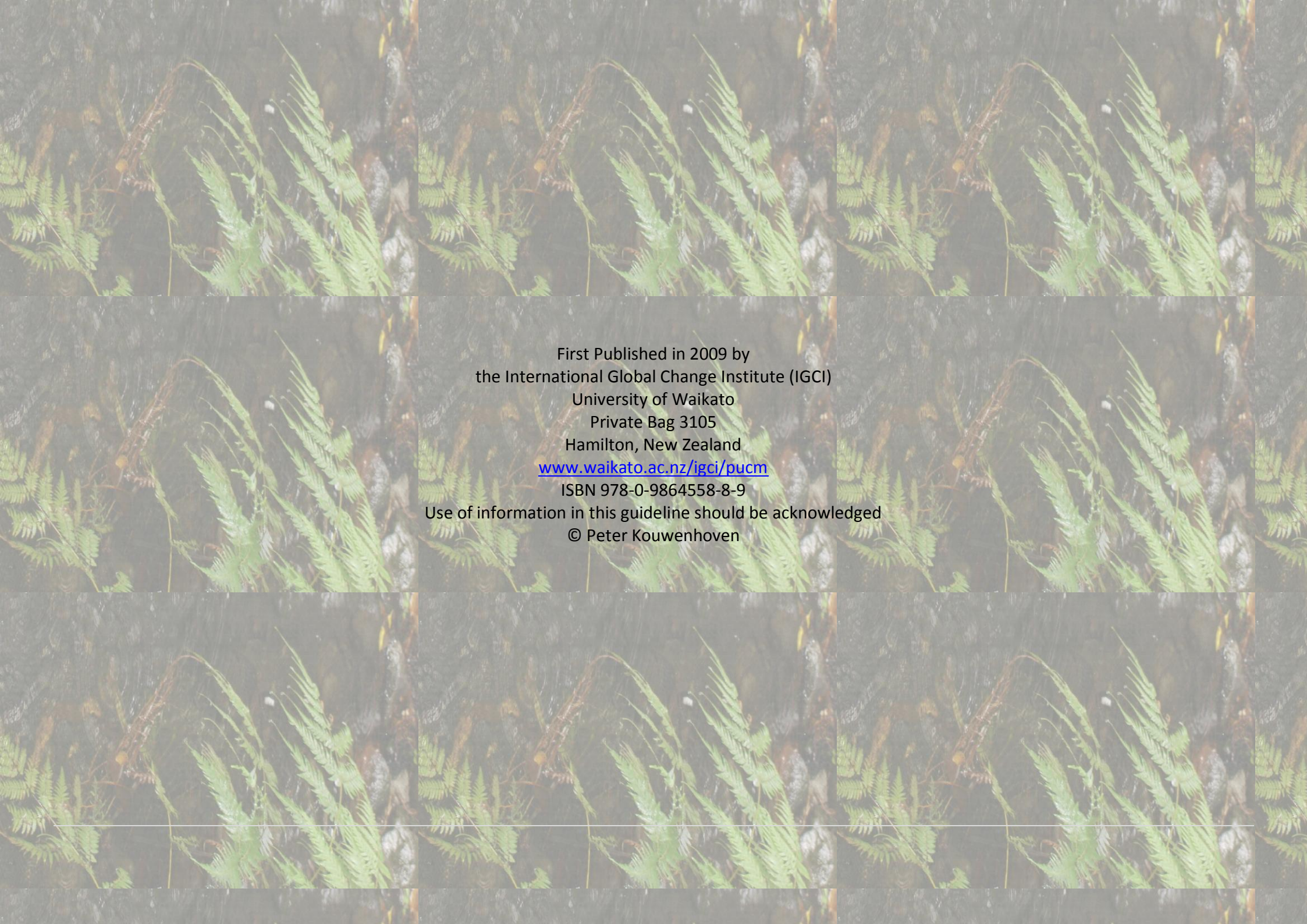
RAP origins are in the Netherlands: <http://www.arcadis-global.com/projectrefs/rapid+assessment+programme.htm>

## ACKNOWLEDGEMENTS

The PUCM Phase 4 Team: This guide draws on the PUCM Phase 4 research (2006-2009) under guidance of Prof. Neil Ericksen, project team leader. Members of the team were: Prof. Ali Memon (Lincoln University), Lorraine Leonard (Lincoln University), Greg Mason (University of Waikato) and Peter Kouwenhoven (University of Waikato). The team received inputs from other researchers in the PUCM project: Jan Crawford (Planning Consultants Ltd), Prof. Janet Bornman (University of Waikato), and Assoc. Prof. Lucie Laurian (University of Waikato).

The Participants: The Phase 4 research was made possible by the willing support of many people. We would like to thank the organising committee of the Tokoroa Warm Homes Clean Air Project (Environment Waikato, the Population Services team of Waikato District Health Board, South Waikato District Council, Raukawa Trust and South Waikato Pacific Island Health Committee). They gave us their time to come up with activities and solutions to problems in a theoretical setting. They went out of their way to talk to us, invite us to meetings, and show us their clean heat show room. We would also like to thank the participants from the Auckland Regional Council for their contributions to the water quality case study.

The Foundation or Research, Science and Technology: The Phase 4 PUCM Programme was funded by FRST-PGSF under contract number UOWX0308 at the University of Waikato with subcontracts to: Lincoln University.



First Published in 2009 by  
the International Global Change Institute (IGCI)  
University of Waikato  
Private Bag 3105  
Hamilton, New Zealand

[www.waikato.ac.nz/igci/pucm](http://www.waikato.ac.nz/igci/pucm)

ISBN 978-0-9864558-8-9

Use of information in this guideline should be acknowledged

© Peter Kouwenhoven