

**Queensland Spatial Information Infrastructure
for the
Queensland Spatial Information Infrastructure Council**

Property Interests Product

EXECUTIVE SUMMARY

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DISCLAIMER

The Property Interests Product Specifications and related reports have been prepared from information provided by Workshop participants; and from documented and anecdotal advice provided to Alexander - Tomlinson by employees of State and Local Government agencies subsequent to the Workshops. The product specifications and reports are believed to be accurate; however, Alexander - Tomlinson provides no warranty with respect their accuracy or completeness, nor accepts liability for errors or omissions arising from information provided during the course of its assignment.

Due care should be exercised in subsequent use or interpretation of information contained in the reports.

Property Interests Information Product Specification

SUMMARY OF RECOMMENDATIONS

(Refer to Section 5)

The following recommendations are drawn from Reports 1 to 4.

REPORT 1 - PRODUCT DESCRIPTIONS

Recommendation 1.1. - Initiate a project with local government to prototype the Property Interests Product and delivery infrastructure.

Recommendation 1.2. - Use the prototype to review institutional infrastructure options for the delivery of the Property Interests Product, in the light of potential requirements for an expanded delivery infrastructure for the 22 identified state information products and related spatial data.

Recommendation 1.3. - Use to prototype to confirm core and desirable functions of an infrastructure service provider; and the roles and responsibilities of data brokers.

Recommendation 1.4. - Consult with product managers and data custodians to clarify and prioritise aspects of product development, to produce a detailed prototype design. Design benchmarks for the prototype from the product specifications.

Recommendation 1.5. - Conduct industry briefing sessions in preparation for the local government prototype.

REPORT 2 - BUSINESS CASE

Recommendation 2.1 - Use the prototype to improve estimates on the number of searches per product; and estimated users by market segment.

Recommendation 2.2.- Use the prototype to improve estimated benefits of information products.

Recommendation 2.3. - Investigate the potential to increase government revenue arising from the Property Interests Product implementation, from improved quality of spatial data (requires agencies to record current sales by market segment).

Recommendation 2.4. - Investigate the impacts of providing transactional (on - line) access to land information data bases, on existing 'revenue - generating' government systems and data brokerage arrangements.

Recommendation 2.5. - Review the impacts of current DNR Pricing Policy for spatial data, on the potential to charge of individual data records, products or services on a transactional basis.

Recommendation 2.6. - Initiate a program to review the current status of data sets required to implement the Property Interests product in the 19 priority councils; as well as for state government and utilities data bases within this area; (completion of review to coincide with the completion of the prototype).

REPORT 3 - PRODUCT IMPLEMENTATION PLAN

Recommendation 3.1. - Develop a revised Product Implementation Plan following the completion of the local government prototype; including a plan to progressively develop data bases required to support the balance of the 22 representative state information products.

Recommendation 3.2. - Develop a Spatial information Industry Plan for submission to government by December 1998.

Recommendation 3.3. - Based on the results of the prototype and product specifications for the 22 state information products, review the requirement to call tenders for full implementation of an electronic spatial information service.

Recommendation 3.4. - Following completion of information product specifications for a critical mass of products related to specific themes (eg. 5 products related to land administration), undertake development of a data model for each theme to progressively build the Queensland Spatial Data Infrastructure (QSDI).

REPORT 4 - EXPRESSION OF INTEREST

Recommendation 4.1. - Call for national / international Expressions of Interest to develop the Queensland Spatial Information Infrastructure and related products and services.

Recommendation 4.2. - Customise requirements for the local government prototype based on the scope and cost of expressions of interest; and the time available to conduct the prototype.

Property Interests Product Specification Reports

(Queensland Spatial Information Infrastructure Development)

Executive Summary

This report presents results and conclusions arising from the Property Interests Product Specification project. It includes recommendations to progress to the next stage of development of the Queensland Spatial Information Infrastructure (QSII).

- Report 1** **Product Specifications** - This report comprises three sections: **1)** Institutional Environment for Development of Products and Services; - Section 1 outlines the scope of the Queensland Spatial Information Infrastructure and the role of information products in this environment: **2)** Product Specifications - Information Management; - Section 2 contains the 6 information product specifications, that when developed, will facilitate access to property related information maintained across state and local government; and the private sector: **3)** Technological Environment for Development of Spatial Products and Services; - Section 3 provides an overview of the technological environment required to provide access to property related information.
- Report 2** **Business Case** - Presents an assessment of the Property Interests Information Product in terms of its market potential, potential benefits to the state; and its financial viability. Estimates are included on the number of transactions within a typical local government agency; and projections developed for implementation of an on - line property information service for the 19 priority councils. The results of the financial analysis must be treated with caution, pending the availability of improved cost - benefit estimates on completion of the local government prototype.
- Report 3** **Implementation Plan** - Provides background and context to how the proposed products could be developed by the Spatial Information Industry in Queensland. Outlines a 3 year and 6 year plan for statewide implementation of the products, subject to the results of a prototyping exercise with the City of Caloundra.
- Report 4** **Request for Expressions of Interest** - An EOI document has been prepared addressing the need to prototype both the delivery infrastructure and information content (proposed information products) of an on - line property information service.

Structure of This Report . . . Executive Summary

This report draws together information from Reports 1 to 4 to provide a summary of the key points in each report.

The Recommendations arising from the project are provided on page (i).

Following a review of the objectives and background to the project, the major issues and outputs from each Report are summarised, with particular emphasis on the results of the Business Case.

The results of the financial analysis must be treated with caution at this stage, pending more accurate cost and benefit estimates that will become available following the completion of the proposed prototype with local government.

The Terms of Reference for the project are included in Appendix 1.

Two key diagrams showing a transition from the current unstructured spatial information industry in Queensland (Figure1) to the suggested coordinated environment (Figure 2) should be examined prior to reading this report. They provide context to the discussion and recommendations include in this report.

Property Interests Product Specification

For further information about these reports, contact:

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GLOSSARY

1 Information Product

The term *Information Product* is defined as the output generated by processing two or more data sets, where the newly generated product has greater information value than that of the individual data sets. (It is accepted that simply providing access to a single data set also has a certain value, but that simple data retrieval under-values the power of available spatial analysis technologies to add information value).

2 Property Interests Information Product

The term used in Reports 1 - 4 which refers to six specifications of property related information (maps and lists) commonly used by most business sectors throughout the state.

3 Electronic Information Service (EIS) [similarly 'On - Line']

The term used to describe live access between the client's computer / data entry device and another remote computer which contains data and programs required by the client. Examples: EFTPOS (Electronic Funds Transfer - Point of Sale)

4 Queensland Spatial Information Infrastructure (QSII)

In simple terms, the QSII has many similarities to functionality of a supermarket, comprising all of the necessary components (infrastructure) to allow suppliers of products and services to 'display their stock on the shelves'. The infrastructure is developed in such a way that the customers can browse stock; and have easy access to select the items they require. Products are individually priced; and customers are billed based on the number of items they buy. The quality of products is assured and procedures are in place to deal with non conformance.

Property Interests Product

Strategic Analysis /
Population Growth
1:25,000

Development Restrictions
1:10,000

Services Availability
1:2,500 - 1: 10,000

Legal / Tenure Analysis
1:500 - 1:2,500

Survey Data Availability
1:500 - 1:2,500

Building Approvals
1:500

100's of User customised Maps and Lists of text data in response

Property Interests Product
EXECUTIVE SUMMARY
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Property Interests Product Specification

Executive Summary

Synopsis:

The planned development of the Queensland Spatial Information Infrastructure (QSII - Appendix 2; Figure 2); reflects a departure from traditional approaches to spatial information management of the 1980's and 90's, which has seen most organisations develop 'silos of proprietary information' at great expense. The cost of duplicated infrastructure and databases over that time is inestimable. However, technology to share information (reducing the need for duplicative infrastructure and databases) has progressed rapidly in the latter half of the 1990's, to a stage where the proposed QSII model is now feasible. The proposed Property Information Product is the first step towards developing a coordinated Spatial Information Industry Plan to prepare Queenslanders to take advantage of the electronic (on - line) information age of the twenty - first century.

1 Project Purpose

In October 1997, the Department of Natural Resources (DNR) commissioned Alexander - Tomlinson to:

- develop an output specification for the Property Interests Information Product in preparation for its further development;
- demonstrate the applicability of systematic spatial planning methodologies to the development of the Queensland Spatial Information Infrastructure;
- confirm the approach and cost estimates to prepare product specifications and develop a business case for each product, outlined in the Information Product Implementation Strategy (August 1997).

The full Terms of Reference for this project are included in Appendix 1.

The project's objectives support four higher level objectives relating to the development of the Queensland Spatial Information Infrastructure, ie. to determine;

- what spatial information is needed to support business in Queensland. (prioritised, costed and scheduled).
- how it is best put in place; (options - costed).
- how it is best operated and sustainably maintained.
- what institutional / management infrastructure is required to support it.

The project deliverable's include:

- | | |
|----------|------------------------------------------------------------------------------------------------------------------------|
| Report 1 | Product Specifications. |
| Report 2 | Business Case for product development. |
| Report 3 | Implementation Plan for information product development, including a framework for the development of future products. |
| Report 4 | Expression of Interest -for product development. |

2 Background

The Property Interests Information Product is the first of 22 *representative* state information products to be specified to support the development of the Queensland Spatial Information Infrastructure [*QLIS Benefit Study, 1997*]. This information product will assist most business sectors in the State to operate more efficiently.

The Queensland Government recognises the value of information as an important component of state infrastructure [*Government Information Infrastructure Strategy, 1997*]. Access to information is critical to better plan and manage the State's natural and built assets in the best interests of the current community; and in the longer term interests of the State.

In the present land information environment, there is significant potential for private sector duplication of effort in spatial data maintenance; and variability in data standards and quality for the same data set. Potential longer term consequences include higher costs, and lower efficiency and functionality of systems used by Queenslanders to conduct business in the electronic information age of the twenty first century.

As the first stage of the QSIIS Strategy to maximise the benefits of an estimated \$0.5 billion already invested in spatial information technology in the state over the last two decades, a preliminary business case and implementation plan has been prepared to establish six specific property related information products; together with a conceptual design of the suggested delivery infrastructure required to provide access to this information through an electronic information service (EIS).

3 Project Results and Conclusions

The Business Case presented in Report 2 is based on a preliminary analysis of one information product and a conceptual design of product delivery infrastructure. It is an interim statement that justifies proceeding to the product prototyping stage. It will need to be substantially revised taking into account:

- the results of the prototype with local government, and;
- completion of product specifications for the 22 proposed state information products;

before a case for full implementation of the Queensland Spatial Information Infrastructure can be presented to government.

Before reviewing the results in detail, a number of strategic observations are made:

3.1 Strategic Implications

A number of changes are recommended to transition from the current unstructured spatial information environment in Queensland (Appendix 2; Figure 1), to a suggested QSII environment (Appendix 2; Figure 2). The main changes include:

- (i) Separating the provision of delivery infrastructure from the development of information products and services.

- (ii) Establishing a commercial trading environment for accessing and improving the quality of essential state spatial databases (including availability of information through an electronic information service; and transactional billing of user search enquiries)
- (iii) Developing an 'open' distributed spatial database environment to facilitate public access to a range of information products and services via the Internet; without the need for specialised processing tools or computer equipment.

3.2 Review of Project Deliverable's

Report 1 Information Product Specifications

Three Business Information Requirements Workshops conducted with State Government; Local Government / Utilities and Private Sector representatives lead to the identification of the following Property Interests Products:

PI-01	Strategic Development Analysis
PI-02	Development Restrictions Analysis
PI-03	Services Availability Analysis
PI-04	Legal / Tenure Analysis
PI-05	Survey Data Availability Analysis
PI-06	Building Development Analysis

These products reflect the land development / property lifecycle.

The real test is whether products can be implemented with State and Local Government data in its current form.

The potential market for the proposed 'on - line' information products includes:

- Financial institutions
- Legal practices
- Valuers
- Insurance agents
- Real Estate agents
- Property Developers and Land Assessors
- Surveyors
- Consultants / Advisory Services
- General Public / Community
- Town Planners
- Engineers
- Architects
- Local Government
- State departments
- Utilities companies
- Mining companies
- Transport planning and service agencies
- Market research / data brokers

It is estimated that under full development, the Property Interests Information service could generate as high as 20,000 search enquiries per day.

Report 2 Business Case

The following issues need to be addressed to present a full business case and implementation plan to government for both the statewide feasibility of implementing the Property Interests Information Product; and the development of the Queensland Spatial Information Infrastructure.

(i) Issues Relating to Statewide Property Interests Product Development:

- Obtain accurate information on the status (integrity; and extent of coverage) of state and local government spatial databases; and the extent

and cost of work required to upgrade data sets to benchmark standards (has major cost and time implications).

- Obtain State and Local Government commitment to support community access to spatial databases.
- (ii) Issues relating to the Development of the Queensland Spatial Information Infrastructure:
- Complete product specifications for the 22 proposed state information products to determine specifications for essential state spatial data; and hence the magnitude of costs and benefits of the overall state information infrastructure; and the level of resourcing required by government and the private sector.
 - Assess the potential for the spatial information industry to deliver an 'open' infrastructure solution; (has major implications for cost and functionality).
 - Gauge the level of community acceptance of 'on - line' information services (has major implications for cost and functionality).

It is intended that the proposed prototyping of the Property Interests product and delivery infrastructure with the City of Caloundra will supply much of this additional information.

In preparation for submitting a fully integrated and coordinated Spatial Information Industry Plan to government before the end of 1998, it is suggested that all of the above information requirements are resolved within the next 6 months.

(iii) Issues / Risks / Threats to the Development of a Coordinated State Spatial Information Infrastructure.

The Business Case identifies a number of immediate concerns related to the development of Property Interests Products including:

- the concerns relating to the potential loss of revenue by existing Government commercial systems; in the process of restructuring to achieve increased spatial industry and state benefits. (Some leakage of revenue from an estimated \$7 million received from Title Searches and sale of valuations data (Table 3.4 Report 2; Business Case); could occur if transactional (records based) access to these systems is permitted. In this study, it is assumed that the Property Interest Product will simply provide a convenient gate way to such existing systems; and that current services and revenue are unchanged).
- political uncertainty affecting the availability of resources.
- data custodians restricting access to data.
- lack of integrity in new systems and enhanced databases.
- the relevance of proposed products and services in an emerging market place.
- the availability of technology, data, resources and capital.
- data security / confidentiality.
- year 2000 impacts.
- legal liability.

A further concern is that the current window of opportunity will close on the Queensland Government's opportunity to influence the future structure of the spatial information industry as private sector investment in the current

inefficient information environment precludes their participation in proposed new coordination initiatives.

(iv) Potential for a Consortium to Provide Product Delivery Infrastructure

The Business Case presents three options for developing and operating the electronic delivery infrastructure for on - line access to information products and services:

- Option 1 Government
- Option 2 Joint Venture Government and Private Sector
- Option 3 Private Sector; and;
- Option 4 Do Nothing

A joint venture arrangement is preferred in the interests of growing a vibrant spatial information industry in Queensland; and given that the bulk of the systems development expertise currently lies within government.

(v) Key Stakeholders in Product Development

The following stakeholders are expected to play an important role in prototyping information products in the City of Caloundra:

- Local Government - 19 councils identified for early product implementation (refer to Report 3 - Implementation Plan).
- State Government Departments.
 - Mines & Energy
 - Environment
 - Emergency Services
 - Local Government and Planning
- Utilities; including Telecommunications (Telstra; Optus); Electricity (Energex).
- Private sector; including data value-adding suppliers; mining companies; development companies.

(vi) Financial Analysis

The financial analysis of the Property Interests Product implementation for a typical local government authority and for the 19 Councils and a proposed consortium must be regarded as an indicative financial assessment only at this stage, given that additional information is required from the prototyping exercise before a more accurate financial appraisal is possible.

There are many assumptions that need to be tested in the model that relate to capital and operating costs; and projected revenue based on assumed pricing regimes.

Consortium costs to develop and operate the delivery infrastructure are included in the financial model to demonstrate its impact on the feasibility of the proposed electronic information service. [At this stage, no agreement has been reached on the involvement of a consortium (joint - venture) option].

While benefit - cost ratios in the order of 5 : 1 are achieved, there is a significant shortfall in cash inflows (approximately \$20 million) over the first 6 years, given that the benefits are returned to the community rather than as revenue returned to consortium partners. Adjustment of the pricing strategy affects the magnitude of the shortfall. Given that the state stands to benefit significantly from the product, the Queensland Government and other consortium partners may be prepared to subsidise the shortfall in the wider community interests.

Another major assumption relates to the number of councils per year that will undergo a data upgrade and be added to the network over a three year period. Many different combinations are possible and potentially more desirable than the option of 6.3 councils per year used in the model. The analysis reflects one scenario. Many of the estimated costs and benefits will become clearer following the proposed prototyping exercise.

The current financial model clearly highlights the difficulties associated with introducing a major infrastructure initiative, where benefits are dispersed throughout the community.

It must also be recognised that the business case to develop the 22 proposed information products is expected to be far stronger than the case that has been identified for the Property Interests Product alone. To be in a position to attract private sector interest in any joint venture arrangements, specifications are required for the remaining state information products.

Local Government Benefits

The estimated benefit of the six proposed Property Interests Information Products to a typical local government agency of 33,000 properties, is in the order of \$700,000 per annum. These benefits are mainly from efficiency savings to local government and the community, not returned as cash inflows. For the City of Caloundra, with an annual salaries budget of \$12 million, access to the Property Interests Information Products has the potential to increase staff efficiency by an estimated six per cent per annum.

Report 3 Implementation Plan

The Property Interests Product Implementation Plan recommends conducting a prototyping exercise with a suitable Local Government Authority to clarify a number of issues related to statewide product implementation. The City of Caloundra has been identified as a suitable candidate for this purpose.

It is recommended that private sector resources are used to carry out the proposed prototyping exercise in local government, preferably a consortium with expertise in serving spatial data over the Internet, and capabilities in communication networking and transactional billing systems to act as the Service Provider; and data brokers / applications specialists to develop the proposed information products.

A prioritised list of 19 councils is proposed for Stage 1 implementation of the Property Interests products; and the balance of the state as Stage 2 (separate business case required). These priorities will be confirmed after the prototyping exercise with Local Government.

Brisbane
Gold Coast

Cairns
Thuringowa

Caloola
Logan

Caboolture	Hervey Bay	Ipswich
Maroochy	Redland	Beaudesert
Pine Rivers	Redcliffe	Kilcoy
Caloundra	Bundaberg	
Noosa	Mackay	

The 19 councils cover 966,268 land parcels (74 per cent of the State's 1.3 million parcels) and 2,554,757 people (75 per cent of the State's 3.39 million population).

It is recommended that the Property Interests product should be jointly developed by state and local government for these 19 councils over the next 3 years, (requiring sufficient resources to complete 6 councils per year - costs included in the Financial Model). The specification of the product as 6 sub-products provides opportunities for staged development of product application modules; and staged deliverable's.

The condition of the data is likely to be the major limiting factor preventing products from being implemented simultaneously across the 19 councils.

Creation of the products across the 19 Councils cannot be uniformly achieved at present because of:

- absence of data standards
- errors in data (lack of validation / reconciliation)
- infrequent maintenance

The most time consuming and costly task for local government is to complete and upgrade data required to implement the products. This includes reconciliation of land information records for 74 per cent of the State's land parcels. It requires six staff to be appointed within DNR as project managers / coordinators with an equivalent skilled technical position to be funded in each Council.

Report 4 Expression of Interest

Information from Reports 1 to 3 is drawn together in a format suitable for inviting Expressions of Interest to conduct the prototype with Local Government.

The EOI indicates consideration will be given to engaging two potential consortia partners and two product developers to demonstrate the feasibility of alternative technology solutions that address three major tasks:

[Task 1] The delivery infrastructure.

[Task 2] Information products and services development.

[Task 3] Assessment of resources required to complete, upgrade (to uniform standards); and maintain key datasets for the City of Caloundra.

The EOI includes the Property Interests Product Specifications and the suggested delivery infrastructure (Appendix 2; Figure 2) to assist in framing EOI responses.

4 Review of Estimates to Prepare Product Specifications

The Property Interests Product is the most comprehensive and complex product of the 22 representative information products identified in the QLIS Benefits Study. Similarly, the complexity of the business case provided added complications with the extent of work required to address the proposed delivery infrastructure, financial model and prototype project with local government. Given that a financial model has been developed to a stage where costs and benefits of all specified products could be relatively easily accounted for, future work should be simplified, allowing each product specification to be completed in the allocated 10 days.

5 Recommendations

In the course of specifying requirements to establish the Property Interests Information Product (refer to the Terms of Reference), a number of issues have been identified which require further investigation. The following recommendations arising from Reports 1 to 4, address the need for further action.

Report 1 - Recommendations (Product Descriptions)

1. Institutional Environment for Product Delivery Infrastructure.

The institutional environment proposed in Report 1 (joint Government - Private Sector Consortium) is one infrastructure option to bring about the magnitude of change required to improve the quality and accessibility of the 22 identified state information products and related spatial data. Further options should be explored through a prototyping exercise with local government.

Recommendation 1.1. - Initiate a project with local government to prototype the Property Interests Product and delivery infrastructure.

Recommendation 1.2. - Use the prototype to review institutional infrastructure options for the delivery of the Property Interests Product, in the light of potential requirements for an expanded delivery infrastructure for the 22 identified state information products and related spatial data.

Recommendation 1.3. - Use to prototype to confirm core and desirable functions of an infrastructure service provider; and the roles and responsibilities of data brokers.

2. Information Product Specifications

The six proposed information products represent the 'first cut' at specifying user requirements. Further consultation is required with data custodians and product managers to prioritise and refine specifications prior to the prototype.

Recommendation 1.5. - Consult with product managers and data custodians to clarify and prioritise aspects of product development, to produce a detailed prototype design. Design benchmarks for the prototype from the product specifications.

3. Technology Environment

The product delivery infrastructure requires a leading edge solution to serve spatial analysis tools and data over the Internet, including the need for customer billing. Early discussion with industry is essential to allow interested parties to prepare for the prototype.

Recommendation 1.6. - Conduct industry briefing sessions in preparation for the local government prototype.

Report 2 - Recommendations (Business Case)

The Business Case must be regarded as an Interim Document pending the results of the local government prototype. Significant difficulties were encountered in estimating potential numbers of product users (and hence search volumes), and in estimating benefits of information to the community. Pricing of data records accessed on a transactional basis is another major limiting factor in the current financial model. The cost of state and local government data enhancement is also largely unknown at this stage.

Recommendation 2.1 - Use the prototype to improve estimates on the number of searches per product; and estimated users by market segment.

Recommendation 2.2.- Use the prototype to improve estimated benefits of information products.

Recommendation 2.3. - Investigate the potential to increase government revenue arising from the Property Interests Product implementation, from improved quality of spatial data (requires agencies to record current sales by market segment).

Recommendation 2.4. - Investigate the impacts of providing transactional (on - line) access to land information data bases, on existing 'revenue - generating' government systems and data brokerage arrangements.

Recommendation 2.5. - Review the impacts of current DNR Pricing Policy for spatial data, on the potential to charge of individual data records, products or services on a transactional basis.

Recommendation 2.6. - Initiate a program to review the current status of data sets required to implement the Property Interests product in the 19 priority councils; as well as for state government and utilities data bases within this area; (completion of review to coincide with the completion of the prototype).

Report 3 - Recommendations (Product Implementation Plan)

The Information Product Implementation Plan must also be regarded as an interim plan pending completion of the local government prototype. To provide strategic direction and stability in the spatial information industry, the results of the prototype and information product specification phase should be drawn together into a Spatial Information Industry Plan for submission to government before the end of the year. To do this, specifications for the balance of the 22 representative state information products must be completed to be in a position to correctly scope the extent of resources; institutional requirements, and roles and responsibilities; needed to implement the Queensland Spatial Information Infrastructure.

Recommendation 3.1. - Develop a revised Product Implementation Plan following the completion of the local government prototype; including a plan to progressively develop data bases required to support the balance of the 22 representative state information products.

Recommendation 3.2. - Develop a Spatial information Industry Plan for submission to government by December 1998.

Recommendation 3.3. - Based on the results of the prototype and product specifications for the 22 state information products, review the requirement to call tenders for full implementation of an electronic spatial information service.

Recommendation 3.4. - Following completion of information product specifications for a critical mass of products related to specific themes (eg. 5 products related to land administration), undertake development of a data model for each theme to progressively build the Queensland Spatial Data Infrastructure (QSDI).

Report 4 - Recommendations (Expression of Interest)

The Expression of Interest document is intended to provide the spatial information industry in Queensland with the opportunity to suggest innovative solutions to provide spatial information products and services over the Internet.

Recommendation 4.1. - Call for national / international Expressions of Interest to develop the Queensland Spatial Information Infrastructure and related products and services.

Recommendation 4.2. - Customise requirements for the local government prototype based on the scope and cost of expressions of interest; and the time available to conduct the prototype.

* * * *

Appendix 1

Terms of Reference

Development of QSIS Information Product for Property Interests Analysis

The Terms of Reference for this Consultancy are:

As identified in the QLIS Benefit Study, one of the essential Information Products recommended for Land Administration purposes is the Property Interests Analysis product.

The purpose of this Consultancy is to:

- develop an output specification for the Property Interests information product in preparation for its further development;
- demonstrate the applicability of systematic spatial planning and decision engineering methodologies to the development of the Queensland Spatial Information Infrastructure
- confirm the approach and cost estimates to prepare product specifications and develop a business case for each product, outlined in the Information Product Implementation Strategy (August 1997).

Objectives of the Consultancy

The objectives for this Consultancy support four higher level objectives relating to the development of the Queensland Spatial Information Infrastructure, ie. to determine:

- what spatial information is needed to support business in Queensland. (prioritised, costed and scheduled).
- how it is best put in place. (options / costed).
- how it is best operated / maintained.
- what institutional / management infrastructure is required to support it.

Specifically for the Property Interests Analysis information product, the objectives are to:

1. Develop a product specification (identifying data and system requirements) for the Property Interests Analysis information product, as identified in the QLIS Benefit Study by:
 - involving key State, Local Government and the private sector stakeholders in land administration activities
2. Prepare a business case for the development of the Property Interests Analysis product.
3. Prepare a plan for the development of the Property Interests Analysis Information Product, including specifications suitable for inclusion in tender documents.
4. In the process of this project, establish a framework for the development of future Information Products.

Requirements of the Consultant

The consultant shall deliver a detailed Report acceptable to the Department of Natural Resources, to include the following.

1. Product Specification
2. Business Case, and
3. Plan for the development of the Property Interests information product.

The Report should specify institutional, data, and technology requirements pertaining to the Property Interests Analysis information product; and provide a strategy for statewide development and ongoing management of this product.

Institutional Requirements:

The following institutional requirements should be included in the Report:

1. recommended 'standard' spatial information planning methodology to specify the 22 products determined in the QLIS Benefit Study and Product Implementation Strategy.
2. goals and objectives for developing the Property Interests Analysis information product to the year 2003.
3. performance indicators to manage risks; and monitor the progress and effectiveness of the Property Interests information product over this period, acceptable to the Department of Treasury and Auditor-General.
4. cost-benefit analysis of the product complying with Department of Treasury Project Evaluation Guidelines.
5. options for the development, operation and maintenance of the information product.
6. roles and responsibilities of each stakeholder in the product.
7. product users and estimated product demand.
8. institutional arrangements / management infrastructure required to support users of the product / service.
9. options and preferred strategy to maintain the financial viability of the Property Interests product taking into account existing product revenue (profitability), statutory requirements and Government Service Obligations.
10. type and level of government and private sector contribution required to establish and maintain the product.
11. options for revenue sharing between investors in the product.

Data Requirements:

The following data requirements should be included in the Report:

1. definition of key information products that can be generated (variations or derivatives of the Property Analysis information product).
2. data custodians and definitive source of data used to create the product.

3. definition of all data sets including data items required for each product, included in a data dictionary for each data set; - taking into consideration current data standards.
4. a review of existing DNR land administration spatial data models and identification of shortfalls / deficiencies with respect to the Property Interests product specification.
5. definition of map (geographic) and list (text) data to be produced including information content, scale, symbolisation and legend.
6. requirements for document scanning and imaged document retrieval.
7. data handling functions.
8. accessibility / availability of required data sets.
9. volumes of data needed to produce each product.
10. logical linkages between data sets used to create the product.
11. referential, topological, relative, and absolute error tolerances for all information products (including degree of spatial concurrence to meet 'fitness for purpose').
12. inadequacies in existing data which impact on product generation.
13. a strategy to increase the integrity, quality and availability of data required to create the product.
14. a staged product implementation strategy addressing information priorities; and the feasibility of developing each product.
15. the product life cycle; and a recommended update cycle (including a timetable to periodically review the product).
16. examples and scenarios for each product and how they will assist the economy.

Technology:

The following technology requirements should be included in the Report:

1. options and recommendations for the most appropriate technology to deliver the product(s).
2. the present level of technology resources available to develop the product including recommendations to address specific deficiencies.
3. processing options and recommended processing environment; (for example, what will be one-time and what will be run-time?).

Requirements of the Principal

The Information Integration Group will support the appointed consultant in operational aspects to a limit of one full time staff member. The appointment of that person may vary during the period of the contract.

The consultant will be expected to refer to existing forums of land information users and providers including QSIIC member agencies, the Land Administration Theme Coordination Committee and the Local Government Land Information Group who will assist the consultant where necessary to achieve the objectives of the study.

Appendix 2

Queensland Spatial Information Infrastructure

The QSII Concept

The proposed infrastructure in Figure 2 reflects a departure from traditional approaches to spatial information management of the 1980's and 90's, which has seen most organisations develop 'silos of proprietary information' at great expense. The cost of duplicated infrastructure and databases over that time is inestimable. However, technology to share information (reducing the need for duplicative infrastructure and databases) has progressed rapidly in the latter half of the 1990's, to such an extent that the proposed QSII model is now feasible.

Features of a QSII Environment

There are three main differences between the current environment (Figure 1) and proposed infrastructure (Figure 2):

- 1 It is proposed that QSII rely heavily on Internet technology, to support customer access to small amounts of information, often in 'real time'. (The service is envisaged to be equivalent to making a telephone call, each transaction incurring a charge, which is billed to a customer number). There will no longer be the need to store information retrieved from each enquiry, as the most up to date information will be always available. (Note that conventional bulk data transfer will also be accommodated in the normal way).
- 2 It is proposed that QSII is developed largely by the private sector as a commercial information service (a similar service to Electronic Funds Transfer, commonly referred to as EFTPOS). It will provide a common environment, allowing data brokers and product developers to supply customers with quality products and services.
- 3 Local Government databases are the focus for reconciling information about a land parcel, on the assumption that a range of information should be stored against each parcel (smart parcel concept); and that it should be accessible from a single gateway to the computer system.
- 4 The range of data sets available for distribution, and the number of users of the proposed on - line information service must reach 'critical mass' if the QSII initiative is to be commercially viable.

Figure 1 - Current Queensland Spatial Information Environment
 - Fragmented; Non standardised; Highly inefficient (duplicative); Limited growth potential.

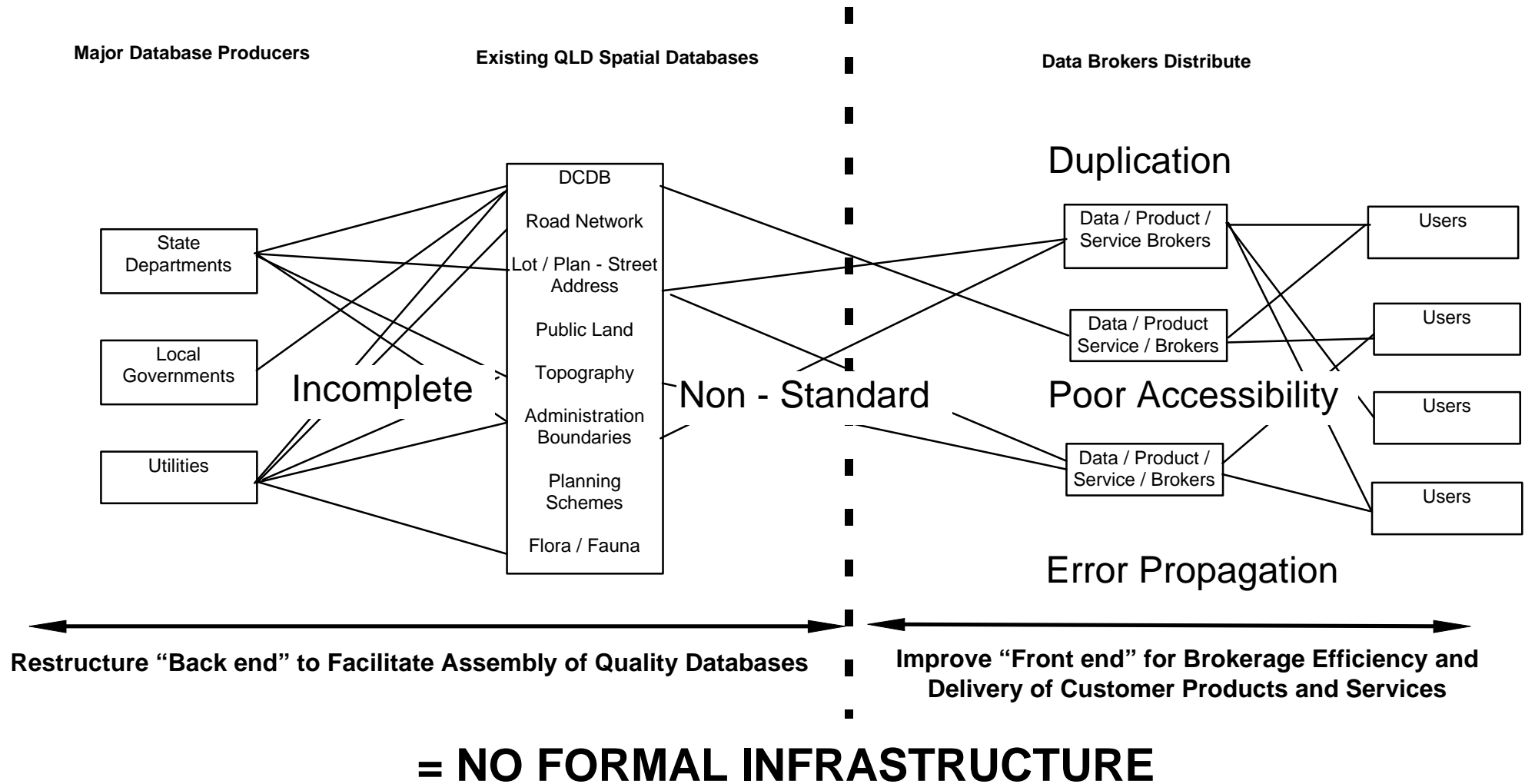
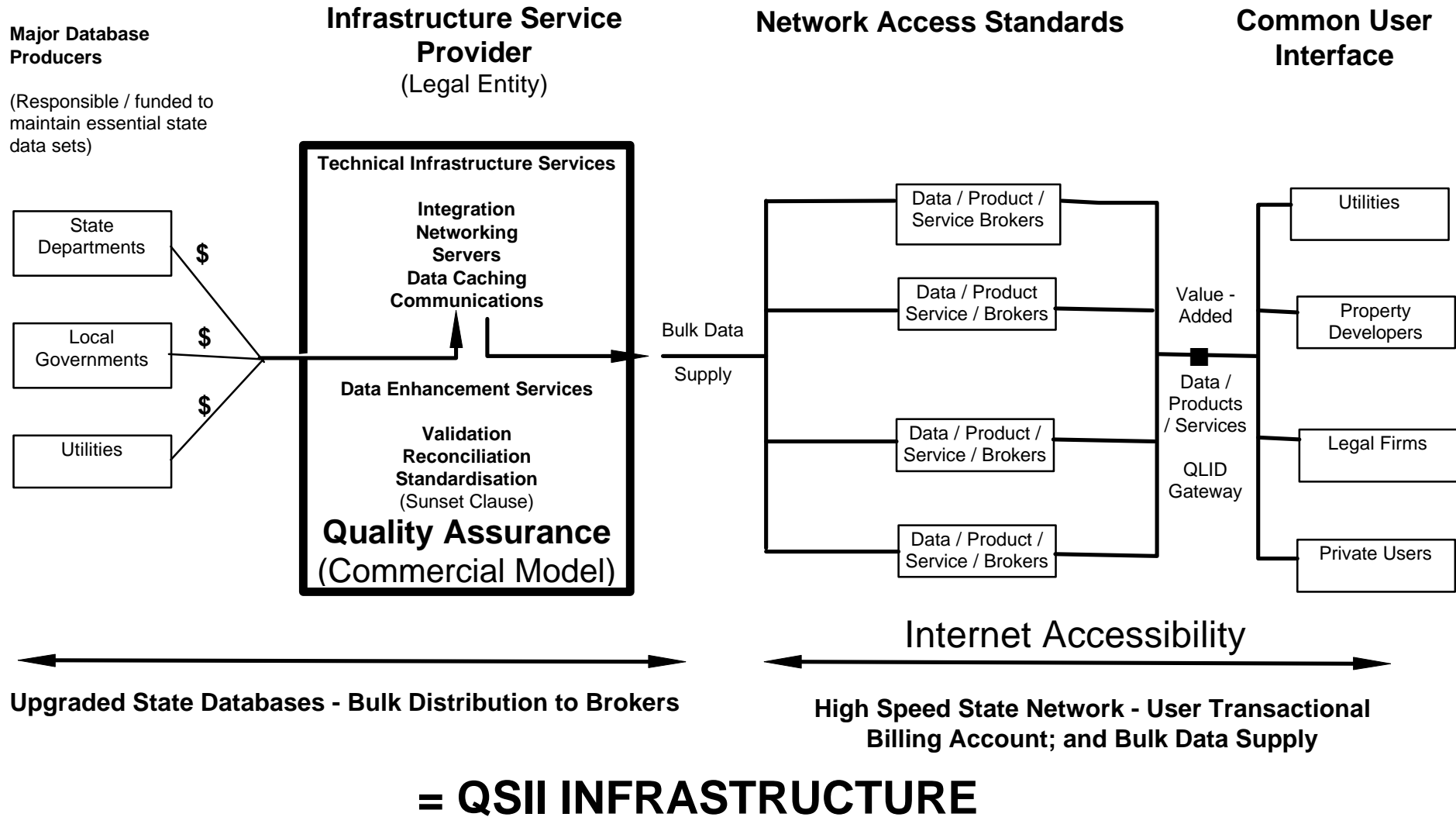


Figure 2 - Proposed Queensland Spatial Information Infrastructure



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