



*caring about you & your environment*

## **Public Excluded**

### **Report PE 01.502**

30 July 2001

File: T/12/2/1

[PE 01.502.bml.doc]

Report to the Passenger Transport Committee  
By Barry Leonard, Manager Customer Services

## **Contract 1198: Real Time Information System Results of Tender**

### **1. Purpose**

To advise the Committee of the outcome of the tender process seeking bids for the installation and operation of a Real Time Passenger information System in the Region.

### **2. Exclusion of the Public**

Grounds for the exclusion of the public under section 48(1) of the Local Government & Information and Meetings Act are:

*That the public conduct of the whole or relevant part of the proceedings of the meeting would be likely to result in the disclosure of information for which good reason for withholding exists, (i.e. to preserve commercial confidentiality)*

### **3. Background**

Council has been interested in the benefits available from Automatic Vehicle Identification and Real Time Information displays for a number of years. Thus far each time such systems have been examined the costs have proved to be prohibitive. In October 1996 Council funded an automatic vehicle identification trial based on vehicle mounted transponders which were activated by loops in the road. Around 20 vehicles were tracked through five locations. While this trial proved the reliability of the loop based transponder system, technology was advancing at a rapid rate with new and improved systems being offered on a regular basis.

These improvements included the ability to interface directly with the electronic ticketing machine so that the journey could be identified rather than the vehicle. This eliminated the need to allocate the vehicle identified to a specific journey so that the information to display at the bus stops could be calculated. The original road loops were susceptible to damage whenever roadworks were undertaken and the subsequent development of a disc which could be buried up to 100mm under the road minimised this risk. At the same time radio communications were improving both in terms of technology and through market competition. These now offer a realistic alternative to the earlier "hard wired" systems and significantly reduce the costs of system expansion.

At this stage it was not difficult to conclude that the systems of the future were going to be based upon the use of geographic positioning systems (GPS) in conjunction with wheel counters of some type to cope with transmission "shadows", and that this system offered the ability to expand the base system at minimal costs.

Interest in Real Time Information Systems was growing at this time and both Auckland and Christchurch had pilot systems in place. Subsequently Christchurch have expanded their system and Auckland have called tenders for a \$8M upgrade and expansion of their system which will include an additional 149 signs and signal pre-emption for public transport services at selected intersections.

In late 1999 Indicative Non Binding bids were sought for 88 bus stop/station displays and up to 355 vehicles. Bids were received from companies in New Zealand, Australia and Denmark and the bids received varied from \$1.5M to over \$10M.

The information provided in these indicative bids provided the background for the preparation of a substantive tender.

#### **4. Benefits of Real Time Passenger Information.**

A real time information system displays the waiting time until the arrival of specified bus services. As the position of bus is updated on a regular basis (as often as once each 30 seconds with some systems) the displayed waiting time can be altered to reflect the latest anticipated arrival time. This information informs the waiting passenger of the status of the service they wish to catch. Depending on the information the passenger, reassured of the position of their service can elect to use the waiting time for some other purpose such as buying a paper as there is no longer the need to stay at the stop in case the bus arrives. If the service is late then a decision can be made to catch an alternative bus service or if necessary take a taxi. The information provided by the real time information system removes the anxiety of not knowing "has the bus gone?", "is it late?", "when will it be here?"

An analysis of the complaints received through the Ridewell Service Centre for the months of May and June 2001 show that 54 calls related to lateness, 48 to services which did not appear and 44 to services which did not stop. Although all of the affected bus stops would not be equipped with a Real Time Passenger Information display, a proportion would have and waiting passengers would have been able to ascertain how long they would have to wait for their service to arrive. They would also know the order in which the buses would arrive and would therefore be less likely to be left behind.

Overseas experience suggests that patronage increases of up to 5% can be attributed to the introduction of Real Time Passenger Information displays at bus stops. With an initial proposal to equip only 65 stops within Wellington this level of increase is unlikely but on overseas experience as the distribution of the displays spreads a cumulative increase in patronage can be expected to follow.

## 5. 2001 Tender Round

PPK Environment and Infrastructure were engaged to assist with the tender process. In order to avoid the restrictions on Council ownership of transport assets the tender was structured on the basis that Council was purchasing the outputs of the system for a period of five years, but not the system itself. The documentation required the tenderer to allow for the removal of the system at the completion of the contract unless some other arrangement was agreed at the time and in the light of the legislation of the day. Should Council be permitted to own the system at that time consideration could be given to purchasing it outright. Alternatively an extension of contract could have been offered to the incumbent with or without further conditions relating to further upgrading of the system.

The documentation specified that Council required :-

At each of the nominated bus stops:

- information on up to the next 9 buses expected to pass the stop to be displayed in three screens of three services.
- information on the last departed bus to be displayed for up to 1 minute after departure.

Operating data to be retained so that reports could be generated showing:

- buses which ran early.
- buses which failed to run.
- buses which ran later than a predetermined time. For example all services more than 5 minutes late.
- buses which failed to follow the correct route.

This data could then be used to withhold payment for contracted services which failed to run, or were excessively late. Operators could also be required to reschedule services which consistently ran late or early. This would improve public confidence in the services overall.

The system was to be initially installed with 65 Passenger Information Signs through the "Golden Mile", the 'greater CBD area and significant stops elsewhere within Wellington. A full list of stops is attached as **attachment 1**. Tenderers were expected

to equip all vehicles, which would pass any of these stops so that the signs were displaying accurate information. In order to achieve this level of accuracy it would be necessary to equip all Stagecoach Wellington, Eastbourne vehicles of Cityline Hutt Valley and all Newlands vehicles. In all over 280 vehicles required to be tracked within the system.

The tender documentation also required the system to be capable of expansion to a total of 500 signs and all vehicles (350) as well as the rail electric multiple units. Unit costs were required for each additional sign or vehicle added to the system. In order to avoid a bias between the base costs and the incremental costs of additional units, comparisons between complying bids was to made by assuming an equal number of additional signs were purchased each year to reach the full 500 by the end of the contract.

The tender documents also specified a maximum budget price for the project which was set at \$NZ600,000 per annum for five years.

## 6. **Proposed Tender Structure:**

Tenders were to be considered in accordance with a Quality/Price Trade Off Method, which had been approved by Transfund New Zealand. Bidders were required to submit non price information relating to skills, experience, resources and methodology in one envelope and all price information in a second envelope. In order to qualify for consideration a bidder had to submit a conforming bid, but having done so was free to submit as many alternative bids as they wished.

The non price envelopes were opened and the performance of each bidder was assessed against six weighted non price attributes.

The relevant weightings were:

-	Relevant Experience	25
-	Track Record	20
-	Technical Skills	10
-	Resources	5
-	Management Skills	10
-	Methodology	30

The non price attributes of each tender were graded on a points basis, from zero (fail) to one hundred (excellent). For each tender, the points awarded were then multiplied by the weight assigned to each attribute, and a weighted sum of attribute scores determined.

The tenders were then ranked in descending order of the weighted sum of attribute scores.

The price envelope of the highest ranked bidder was then opened. Where this price exceeded the budget maximum then it was discarded and the next highest ranked

envelope was opened. This process was to be repeated until the price fell within the published budget.

Council was then to calculate the net present value of that bid assuming,

- by contract end date the contract provided for a total of 500 signs
- over the contract period, an equal number of additional signs were added in the middle of years 2,3,4,and 5
- a discount rate of 10%
- an inflation index of 2.5% applied to operating costs only.

For each successive lower ranked tender, Council would then determine the maximum net present value at which that tender would, in Council's view, represent better value for money than the remaining highest ranked tender. Any remaining price envelopes would then be opened and their net present value calculated. This was to be deducted from the maximum net present value to show the assessed merit of the bid.

The preferred tender was to be that with the highest positive value assessed merit.

Although this process seems complicated it was designed to enable Council to accept the most highly specified bid within its published budget. If assessments were made on price factors alone it would have been necessary to identify and assess all the enhancements bidders may have been prepared to offer and to include these in the documentation to ensure all bids were comparable. The process adopted gave bidders the freedom to offer enhancements and provided an equitable method of comparison.

## 7. Tender Analysis

Although over 60 sets of documents were forwarded to potential bidders only five bids were received when tenders closed.

These bids were from:

- Brisbane City Enterprises and Saab of Australia (BCE/S)
- Connexionz Ltd. Christchurch
- Infocom ITS Denmark
- Transfield Services Melbourne
- Tyco Integrated Systems

The bids of Connexionz, Infocom, and Transfield were non complying in terms of the non price information provided and thus they were declined and the price envelopes returned unopened.

The two remaining bids were assessed in accordance with the contract documentation with the result of the non price attributes being:

Attribute	Weighting	Points		Scores	
		Tyco	BCE/S	Tyco	BCE/S
Relevant Experience	25	40%	72%	10	18
Track Record	20	50%	75%	10	15
Technical Skills	10	80%	90%	8	9
Resources	5	100%	100%	5	5

		6			
Management Skills	10	75%	90%	7.5	9
Methodology	30	50%	73%	15	22
	100			55.5	78

---

The tender ranking from highest quality to lowest quality adopted for identifying the order in which the price envelopes should be opened was as follows:

BCE/S Bid 1  
BCE/S Bid 2  
Tyco Bid 1  
Tyco Bid 2  
Tyco Bid 3

### **Quality / Price Trade Off**

In accordance with the published tender evaluation process, the evaluation then proceeded to opening of tender price envelopes in the order shown above.

#### **BCE/S Bid Reference 1**

The annual sum was \$600,000 p.a., but required the first two years of the contract payment to be paid as a lump sum advance payment. In effect, that would have increased the year one and year two price to around \$620,000 to \$625,000 when the interest component of the early payment was included. This exceeded the stated budget maximum and was excluded from further consideration.

The price envelope for the next highest ranked tender was opened.

#### **BCE/S Bid Reference 2**

\$619,739 p.a., paid monthly. One again, this exceeded the stated budget maximum and was excluded from further consideration.

#### **Tyco Bid Reference 1**

\$1.2 Million p.a.. This exceeded the stated budget maximum and was excluded from further consideration.

#### **Tyco Bid Reference 2.**

\$600,000 p.a., but only equipping 190 buses with required equipment (as against the estimated 290 buses required to provide full coverage for the identified locations). This significant difference in non-price attributes should have been clearly identified in the previously opened non-price part of this tender. It was not, so no assessment was able to be made of Council's quality / price trade off for this reduced level of service, before opening the price envelope.

This tender was excluded from further evaluation on the grounds that:

- It had not been submitted in a way that allowed a proper quality / price trade-off to be performed; and
- In any event, only providing around 2/3rds of the required coverage would fall well short of an acceptable system.

By this time there was only one tender remaining eligible for evaluation (Tyco Bid Reference 3). It was known from the non-price information that this tender was for six years. However, the already identified quality (55 out of 100) made it an unattractive proposition to enter into a possible six year contract, and the team decided that it

would have to be 'substantially' cheaper than the 'almost affordable' BCE Bid Reference 2) to warrant the extended contract duration

The price envelope for the next highest ranked (and final) tender was opened.

Tyco Bid Reference 3

\$600,000 p.a. for six years, but as noted above for a proposal that was regarded as merely 'passable'.

Being the only tender that came within the maximum annual budget, the decision was made to recommend not proceeding to contract award, due to both the assessment of the non-price attributes and required extended contract term.

## 8. Conclusions

Overall, while the quality of the products offered were high, the technical quality of the tenders was disappointing, particularly given the extended time allowed for tender preparation. Although a pre tender meeting was held at which the process to be followed was spelled out and a statement was made that the budget could not be extended three bidders failed to meet the mandatory criteria and the two that did both submitted bids in excess of the stated budget maximum or significantly below the service level required.

## 9. Funding Issues

The tender specified the installation of an initial 65 bus stop displays and the equipping of all vehicles which served these stops. The annual budget to fit out and operate the system for a period of five years was set at \$600,000. The favoured tender submitted a unit price of \$13,019 per additional sign with additional annual operating costs of \$1,640 and \$3,515 per additional vehicle with annual operating costs of \$264.

On this basis costs over the next five years assuming a staged increase to say 400 signs and 400 vehicles (excluding rail services as issues relating to vehicle identification, data transmission, and signal isolation have yet to be resolved) would be:-

### CAPITAL & OPERATING COSTS

YEAR	BASE OPEX	NEW SIGNS	NEW BUSES	NEW CAPEX	NEW OPEX	ANNUAL TOTAL
	\$			\$	\$	\$
		65	198	445,339	174,400	600,000
1	174,400	75	50	1,152,175	136,200	1,462,775
2	310,600	75	50	1,152,175	136,200	1,598,975
3	446,800	75	51	1,155,690	136,464	1,738,954
4	583,264	75	51	1,155,690	136,464	1,875,418
5	719,728	35		455,665	57,400	1,232,793
Ongoing	777,128					

The total investment over 5 years would total \$8,508,915.



The additional patronage attracted by this system will qualify for patronage funding through Transfund New Zealand. The assessed income from this source is set out below:-

#### ASSESSED PATRONAGE FUNDING

YEAR	STAGECOACH	CITYLINE	MANA	PEAK	OFF PEAK	TOTAL	NEW FARES
	New pax	New pax	New Pax	\$	\$	\$	\$
1	248,219	0	0	240,618	61,315	301,934	392,186
2	0	0	43,559	46,593	9,878	358,405	453,604
3	248,219	47,569	0	284,057	72,018	714,481	930,462
4	0	0	43559	46,593	9,878	770,952	991,881
5	124,110	47,569	0	163,748	41,361	976,061	1,272,647
Total	620,547	95,139	87,118			3,121,833	4,040,780
	5%	4%	4%				

At the assumed patronage growth funding of \$5,387,082 would be required from Council over the first five years of the project. This is after patronage funding of \$3,121,833 from Transfund. Beyond this time the ongoing operating costs of \$777,128 can be met out of the “steady state” funding from Transfund of \$976,061.

If patronage growth was only half that predicted the, “steady state” payment from Transfund would reduce to \$488,028 which would require additional annual funding of \$289,100.

If the project was commenced within the qualifying period for “Kickstart” funding and the project was accepted, an additional \$4,188,108 would be available from Transfund. Over the first seven years this additional funding would reduce the funds required from Council to \$230,917.

## 10. Options

All of the tenders received appeared to offer robust systems, which would, in general, meet our requirements. The nearest tender to our published budget was an offer of \$619,739 by BCE/Saab. It was a condition of the tender that prices remain valid for a period of 6 months so this price should not lapse until 30 November 2001 so Council could still expect to be able to accept this offer until that time.

Funding for this project was not carried through in the current budget round so no funding is available at this time. The first opportunity to obtain funding would be if sufficient funds were released as part of the six monthly budget review in February 2002. This process would not be completed in sufficient time to allow the offer above to be taken up but as a compromise the two complying bidders could be invited to offer amended bids against the same specifications.

Alternatively it would be possible to increase the “base” set up of the system from 65 signs to around 150 signs and include the project in the 2002/03 budget round. The risk with this option is that it would be necessary to call new tenders with no guarantee that similar prices would be offered.

In either case it would need to be approved by Transfund New Zealand as a kick start project. It would be worth seeking indicative approval early as it is a major project.

## 11. **Communications**

As no bid has been accepted on this project no external communications are appropriate.

## 12. **Recommendations**

*1. That the committee notes that:*

- (a) no tenders were accepted as no complying tender fell within the published budget figure.*
- (b) the offer of \$619,738 from BCE/Saab remains valid until 30 November 2001.*
- (c) if the offer above is not accepted it may be necessary to recall tenders.*
- (d) no funding has been provided in the 2001/02 budget.*

*2. That the Committee consider this project again at the six monthly review in February 2002.*

*3. That the project be submitted to Transfund New Zealand as a kick start project with a starting date yet to be determined.*

Report prepared by:

Approved for submission by:

BARRY LEONARD  
Manager, Customer Services

DAVE WATSON  
Divisional Manager, Transport

Attachment 1: Tender Documents for City Centre Bus Stops

Attachment 2: Examples of Real Time Information Displays