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11 February 2011

RECEIVED 17 FEB 2011

The Infrastructure Coordinator
Infrastructure Australia
GPO Box 594
Canberra, ACT, 2601

Attention Paul Roe

Dear Sir

In response to the telephone discussion between [redacted] and myself on the 8 February 2011, I have included additional information about CPAGE in relation to my submission to Infrastructure Australia.

CPAGE is a concept to provide convenient and affordable transport for people so that they do not have to use their car. It would mean that the public sector could make significant expenditure savings in upgrading road networks to carry more and more vehicles. There would also be significant savings in subsidies that are currently provided to existing public transport networks that do not generally service the transport needs of many people.

CPAGE now requires funding to develop the concept.

CPAGE is a combination of two separate systems coordinated to maximize convenience for passengers to be able to go about their normal business without the use of a car.

The first part is a combination of small buses / maxi taxis to deliver passengers to any location within a designated area via the existing local road network. These vehicles may have a designated route during peak periods, but are at call during off peak. Each area has a CPAGE station.

The second part is an intelligent highway system connected to the first part at a CPAGE station. The intelligent highway system is completely separate from all other traffic whether it be cars, trains, pedestrians, etc.

The intelligent highway system is a method of moving vehicles along a highway without the assistance of a driver's input. Installing the system on an existing highway has many problems. However, when the system is adapted to a stand alone system such as CPAGE, these problems are minimal.

The vehicles proposed to be used are modified vehicles from the auto industry. They would carry 6 seated passengers in each of 2 separate compartments within the general network. Within a CBD or similar area, single compartment vehicles would carry 20 passengers, with 10 of those standing.

The CPAGE Goods Concept is a system that maximizes the use of the intelligent highway and at the same time reduces heavy vehicles on the road network. The maximum CPAGE load is 5 tonnes nett, and there are 3 separate concepts:- packages, depots, and delivery to a business within an industrial area or shopping centre.

Once CPAGE is shown to be a viable option, CPAGE could be built where rail and busway systems are nonexistent or it could be built instead of extensions to rail and busway systems.

It is considered the CPAGE system will give a higher BCR figure compared to a rail or busway project because of the initial reduced construction costs, reduced running costs, and better service.

The following information follows the Summary template and Stage 1 template

CPAGE sits within Infrastructure Australia's "Transforming Our Cities" theme. It does not sit within the "National Freight Network" theme but could sit within a regional freight network theme.

The pipeline category nominated is Ready to Proceed as to the development of the concept into a prototype system. But when looking at actually developing a CPAGE network, then it has not yet reached the Early Stage category.

Commonwealth Funding sought is \$15 million, with expenditure expected to be \$7 million in 2011/12 and \$8 million in 2012/13. There is no other funding proposed for the development of the prototype, however, some private funding will be sought for construction of the initial network.

A BCR is not applicable to the development of the prototype, but it is applicable in the construction of a network.

The overall goal is to provide a passenger transport system in areas not already serviced by rail or busways that is efficient, cost effective, and that people will want to use. The initial goal is to prove that CPAGE is capable of achieving the overall goal.

The existing rail and bus systems are efficient in a limited way. The proposal is to have the option of CPAGE as an alternative to extending the existing rail and busway networks.

CPAGE aligns well with Infrastructure Australia's Strategic Priorities **SP5, 6 and 7**, and it could be argued that it would have some impact on the other four categories.

SP5 – Developing our Cities and Regions.

CPAGE is designed to provide a superior public transport system to an area. It also has the capability to provide an efficient goods transportation system for any goods weighing less than 5 tonnes that can fit within the CPAGE vehicle.

The CPAGE system will reduce the overall number of cars and delivery vehicles as well as the size of delivery vehicles within an area. It is expected that it will have a significant effect at peak periods as the service will be fast and will be demand driven, not timetable driven.

SP6 – Reducing Greenhouse Gas Emissions

The vehicles expected nett weight is around 3 tonnes. The vehicles will only be running when they are needed, unlike rail and buses that are required to run to a timetable and are often seen with less than 10% of seated capacity. The rail and bus operators appear to calculate their greenhouse emissions at peak periods or on vehicle capacity and not averaged over a day for the total of passenger kilometers completed.

The vehicles will be based on the hybrid system, with only their electric motors running within a station area. Therefore, passengers will not be subject to fumes when entering or leaving vehicles.

SP7 – Improved Social Equity and Quality of Life

CPAGE will provide a convenient service for all people to any location within the CPAGE network at any time and at a low fare structure.

The proposal is to provide a service that people want to use, so that the numbers using it are high, hence the cost to patrons can be low. It is intended to provide a sliding scale of pricing so that the more you spend on CPAGE travel, the cheaper the rate of travel.

With the ageing of the population, CPAGE will assist patrons with possible mobility problems as they travel within their region.

There is also a possibility of some CPAGE ambulances being utilized to distribute patients between hospitals for specialist services or to assist with overcrowding of a particular hospital. This could have a net benefit to the hospital system. With CPAGE connected to hospitals, the need for large car parks for staff and visitors is greatly reduced.

The other stages, **2 to 7, of the Proposal templates** have not been included as they appear to cover projects at specific locations. CPAGE is a concept which should be developed so that it can be considered as an alternative to specific projects put forward by state governments and councils for funding.

It appears that it is not easy to get private capital into public transport. There have been extensions of rail lines in New South Wales and Queensland, and the taking over of the operations of trains and trams in Melbourne. None of these could be described as a success. However CPAGE has the capability of being able to draw in significant private capital once it can be shown as a viable option. This private capital will then free up public funds for other works, as well as deferring upgrade works on the road network as the rate of growth on the road network is likely to decrease.

Trains and buses serve a purpose within their market. In Australia where the population density is lower, particularly in the middle to outer suburbs, there are insufficient passengers to allow increased frequency of trains and buses, which is one of the catalysts to increasing patronage.

This additional information is supplied to allow you to understand the basics of the system. At the proposed meeting, I will outline

- the CPAGE system in more detail,
- which auto industry optional equipment is required for CPAGE
- why I consider it will be advantageous to implement it,
- where CPAGE could be implemented
- why CPAGE would be cheaper than extending rail networks
- a comparison of costs
- proposed funding for the delivery of a CPAGE network
- the proposed fare structure
- how CPAGE can assist other utilities

As per our telephone discussion, I will need about one month to prepare for the presentation. This includes drawings and other supporting data.

Because CPAGE is an innovative approach to public transport, a meeting is essential to fully demonstrate the CPAGE concept through a detailed presentation. I would also be able to answer questions as they arise.

I would appreciate an initial meeting with you to discuss CPAGE, and then I could repeat the presentation to a wider group on the same or next day.

Yours Faithfully



Neil Brady
Director

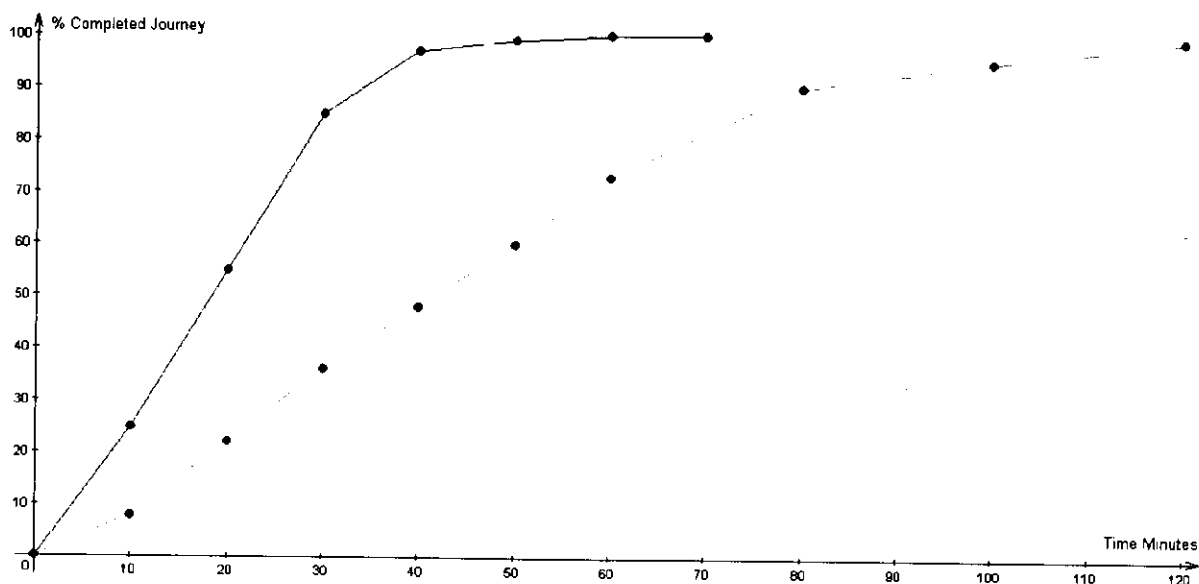
Summary of the Proposal

The purpose of the proposal is to acquire funding to build a prototype for the efficient movement of passengers that people want to use.

The proposed transportation system, CPAGE, Coordinated Passenger and Goods Express, is capable of providing door to door service, within its designated area, for those who need it. Alternatively, the system will provide transport within a short walk of the passengers' origin and destination. The system would provide a fast and reliable service 24 hours per day.

The system uses existing technology and re-organises it to provide an efficient and reliable method of transport that most people will use for many of their journeys within the designated CPAGE operating area.

A computer program was written to show how the CPAGE system would operate during the 4pm to 6pm peak period over a 106km and 53 station network, and then the results were compared to the same passengers completing the same journey by train. The results are shown below:-



85% of the CPAGE passengers completed their journey 30 minutes after arriving at their departure station, with the last passenger completing their journey within 1 hr. 10mins.

36% of the train passengers completed their journey 30 minutes after arriving at their departure station, with the last passenger completing their journey 3 hours and 13 minutes after arriving at their station.

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1. Neil Brady / Nesh Pty Ltd

Neil Brady, a director of Nesh Pty Ltd, is a civil engineer with over 38 years experience in the road industry.

Nesh Pty Ltd is a small project management firm in the civil engineering industry associated mainly with the design and construction section of the road industry.

2. Present Systems

The major system of transport in Australia for the movement of people is the car.

Other forms include trains and buses, and if you live in Melbourne, trams. Light rail and monorail to a lesser extent, are other forms which have also been built.

Trains, light rail and trams are all of the one family and differ only in size and type of corridor and can be grouped as rail.

Australians generally use public transport, trains and buses, only when necessary. The size of the public transport network together with the population of the city and the frequency of the services, have a major effect on the usage of public transport.

Brisbane public transport appears to be typical of public transport in Australia with stop/start funding.

- Trams were phased out from 1962
- Bus network started in 1962
- Closure of the Gold Coast rail in 1964
- Electrification of the train network started in the late 1970s
- Construction of the rail line to Helensvale and continuation to Robina on the Gold Coast in the late 1990s
- Start of the construction of the first busway in Brisbane in the late 1990s

Public transport has been around for a long time and except for modernization of the trains and buses, it has not kept pace with improvements in other fields associated with life in the 21st century. The exception is the fast train concept that has been adopted in some countries.

Trains and buses still suffer the problem of not keeping to timetables, such that a person waiting doesn't know whether the bus has arrived early, is late, or has been cancelled. One significant improvement has been the erection of electronic notice boards at some bus stops to advise when the next buses are expected to arrive.

Brisbane, Sydney and Melbourne's public transport systems have received extensive media criticisms for a number of years with respect to services supplied.

3. What are People Asking For?

When new public transport is proposed, the main call seems to be for trains or trams but rarely buses, although Brisbane City Council are considering elongated buses for the CBD that can carry hundreds of people.

My argument is that people only request what they have experienced previously. They ask for more of the same type of public transport that they already have and doesn't work for the majority of their trips, while hoping that things might improve, which they do, but to a limited degree.

4. What do People Require in Transport?

- Reliability
- Frequency
- Short Time of Travel / Speed
- Quality of Travel
- Connectivity
- Price

Generally, public transport does not meet the above requirements unless you live within the inner areas of a large city. Therefore, people don't use public transport unless they have to.

The car meets all of the above requirements, but there could be debate about time of travel/speed at peak periods, as well as the price of owning a car.

5. What do State Governments Require?

In one word – Money

To build more freeways / motorways, more rail, busways and tunnels.

Does the old saying still work? – Throw enough money at it and people will use it.

And what will the majority of people continue to use? - Their cars.

6. Is there a solution?

Yes, which is:-

- Significantly greener than rail, (either heavy, light or tram), buses and cars
- Faster than rail, buses, and sometimes cars
- Cheaper to build than new rail, busways and freeways
- People would be happy to use when considering the six points mentioned above in section 4
- User friendly
- Low fares

Other advantages include:-

- Families may not even need to purchase the second car
- Teenagers may delay the purchase of a car
- Seniors will be mobile without the need of a car

7. What is the Proposed System?

CPAGE – Coordinated Passenger and Goods Express

The system uses existing technology and re-arranges it to provide a good workable method of providing transport that most people would be willing to use.

To show how the system would work and to compare it to an existing system, a computer program was developed to determine how successful it could be when compared to a standard rail network.

Two lines comprising 53 stations of the existing cityrail network in Brisbane were used to provide a comparison.

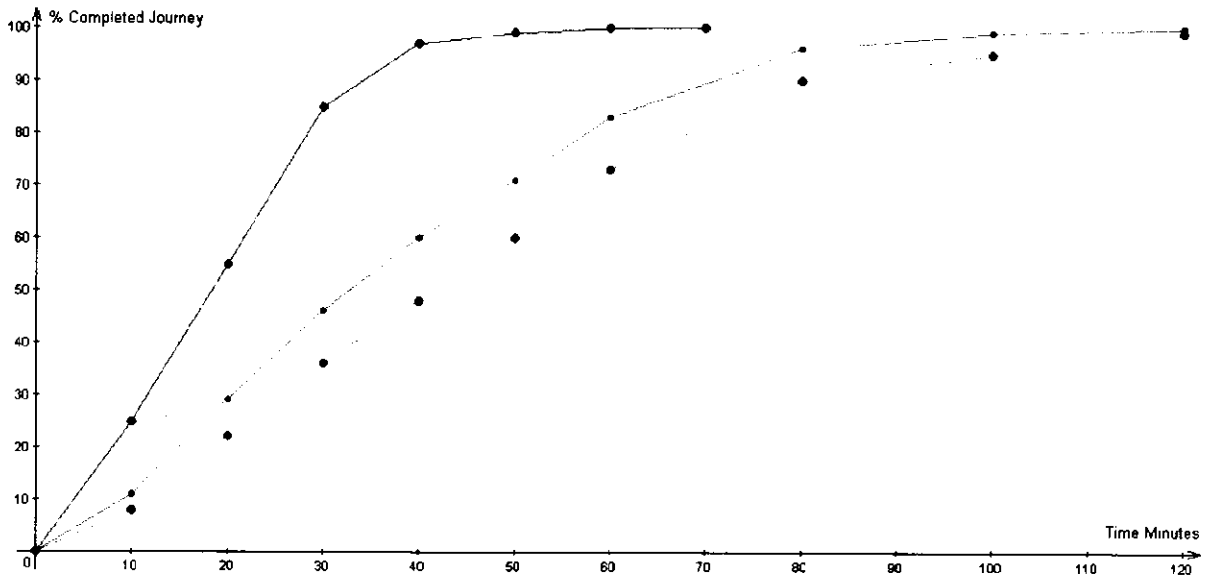
- Northern line to Caboolture, 50 km north of Central Station,
- Western line to Rosewood via Ipswich, which is 56 km west of Central Station.

The program runs for the 4pm to 6pm peak with 10,000 passengers generated per hour with a modified random pattern to simulate the afternoon peak exodus from the city. The system then delivered the passengers to their respective stations via the CPAGE system. At the end of the 2 hour period, the computer program compares the passengers who have reached their station with the existing train timetable of Queensland Rail.

16,563 CPAGE passengers reached their destination within the 2 hour period.

11,884 train passengers reached their destination within the 2 hour period.

The results are shown in the graph on the next page.



_____ % by time of the 16,563 CPAGE Passengers who reached their destination between 4pm & 6pm

_____ % by time of the 11,884 Train passengers who reached their destination between 4pm & 6pm

_____ % by time if the 16,563 CPAGE Passengers went by train

At the 30 minute mark, it can be seen that 85% of the CPAGE passengers had reached their destination compared to only 46% of the 11,884 train passengers. It would only be 36% of train passengers who had reached their destination when comparing to the 16,563 CPAGE passengers.

At the 60 minute mark, almost 100% of the CPAGE passengers had reached their destination. Only 32 of the 16,563 passengers hadn't reached their destination. The corresponding train figures are 83% and 73%.

At the 120 minute mark, the red line shows 100% of the 11,884 train passengers had reached their destination, but the green line shows that 0.6% or 100 passengers were still traveling, 2 hours after arriving at their departure station.

For example: a passenger arrived at Caboolture, Stn 1, at 16:52 and was going to Rosewood, Stn 53

Travelling by CPAGE, the passenger arrived at 18:00, a time of 1 hr and 8 minutes
 Travelling by train, the passenger took 2hrs and 44mins. Leaving Caboolture at 17:02 and arriving at Ipswich at 18:58, then changing trains and leaving Ipswich at 19:13 to arrive at Rosewood at 19:36.

The longest train trip was by a passenger travelling from Walloon, Stn 51, to Caboolture. The train trip took 3hrs 13mins compared to 1 hour by CPAGE.

8. Where Would CPAGE be Used?

- CPAGE would connect major destinations, e.g. CBDs of adjacent cities/towns, major business districts within a city, universities, hospitals, airports, suburbs not already serviced by trains, shopping areas, entertainment precincts, light industrial areas, product distribution areas, etc.
- CPAGE is ideal for passengers, light to medium goods, or to transport patients or staff between hospitals.
- CPAGE is a system which allows for door to door service, if required
- CPAGE can be linked with existing train and bus networks by placing CPAGE stations adjacent to existing train and bus stations.
- CPAGE is not suitable as a small stand alone system. It requires a significant network to make it viable.
- It is not intended to take over existing rail networks but is ideal to be built instead of new rail and busways or extending existing networks.

9. Funding Required and Why

The funding required to develop a small system is estimated at \$15 million, but this may be reduced depending on the extent of the system and the location of the site. The intention of this small system is to provide a working model so that:-

- People can see and understand how it will work
- Show there is an alternative to the standard public transport systems
- Suggest a real alternative to the car for many journeys
- Demonstrate a better alternative to the existing train and bus networks.
- Show future investors that there are sound investments available that will be a direct benefit to themselves, both financially and physically.

10. Why Should the Funding be Approved?

Any new type of transportation system will not be successfully implemented unless it has the support of the people who are the intended customers. Therefore, a small CPAGE system needs to be built so that people can experience it, as a similar system does not exist anywhere in the world.

By providing the initial funding for CPAGE, the future benefits include

- People will have access to CPAGE which will allow them transportation within the network with all the benefits of the six points mentioned previously in section 4.
- All levels of government will benefit by alleviating the need to provide significantly more funding for public transport and improvements to road and rail networks. They will still have commitments to public transport and the road

network, but a successful CPAGE network will significantly reduce the amount of future funding required.

11. Will the Car be Replaced?

Not in the foreseeable future. But a system like CPAGE can reduce the reliance on the car, such that less costly upgrades of existing road networks will be required. Without a CPAGE type system, the car will remain the main transportation mode requiring major upgrades of the road network, all with a multi billion dollar price tag. The CPAGE system will provide a reasonable alternative to using the car.

12. Can Governments Continue on the Present Path?

No, not when you consider the present path of car usage and public transport usage. The costs to governments will be billions if not trillions of dollars.

13. Will this Submission be Sufficient for the Funding Request?

No.

CPAGE is an innovative system, and further details will be provided in person upon request from those able to make funding decisions.

I am prepared to travel to Canberra during November/December 2009 to present the full details of CPAGE.

I will be in Europe during most of August to the 6 October, and would anticipate and appreciate a response to my proposal on my return. While away, I can be contacted via the email address.

Neil Brady