

VicRoads Association

Newsletter No 192



Strengthening Bridges - Monash Freeway

Membership of the Association is available to all who have been members of VicRoads or forerunner organisations or the spouse of deceased members and bestows on them all the rights of the Rules of Association. Current cost of membership is a once only fee of \$30 plus a joining fee of \$5. Enquiries about membership or receipt of the Newsletter by e-mail should be directed to the Secretary at 60 Denmark Street Kew 3101 or by phone or e-mail as shown in the footer below. An application for membership of the Association can be found at the end of the Newsletter.

Dear Members,

I am afraid to say that this issue is heavily didactic – with a strong emphasis on environmental issues. I hope you don't mind too much. After all, you put up with Captain Bligh for a year.

I've included an address by the Prime Minister of Bhutan on what his country is doing to fight global warming. I saw him on the internet and his modesty and profundity moved me and made me lament some of the shenanigans on the environment we have endured from our politicians over the last decade or so. I hope you enjoy reading what he has to say. He talks about happiness. Happiness means different things to different people. I remember a character in an Allan Bennett story complaining that he was not happy but, on the other hand, he was not unhappy about it! Another author, Arthur Marshall, said that happiness results "from a combination of heredity, health, good fortune and shallow intellect" while Edith Wharton declared "If only we'd stop trying to be happy we'd have a pretty good time."

I have also included a sorry tale about Nauru and my association with one of its presidents – Lagumot Harris. Although climate change is an important part of this story, it is more about how prosperous, international governments and companies can ruin a small nation and take advantage of the naivety of its people. In fact I hold Australia to blame for much of what has happened there. Australia should have been a far more considerate neighbour.

Finally, I want to mention my daughter, Sara, once more. I had many appreciative messages from lots of people about the introduction I wrote in the last newsletter, but I had not mentioned to Sara that I had written about her. When I brought the box of newsletters home, she took one – as she always does – to read it before we started folding and enveloping. Unbeknown to her, I watched the expression on her face. Stern with concentration at first, she burst into a big smile as she read on. She did not stop until she had finished reading the full story. And then she looked up at me and said that I had forgotten to mention that she had also worked at Artcraft making road signs for the CRB. How could I have forgotten?

Enjoy the read.

David Jellie - Editor

Dates for your diary

Our program this year is as follows:

DATE	TIME	EVENT	
October	Monday 10	12 noon	Occasional Lunch, Shoppingtown Hotel
	Thursday 13	6.30 pm	Drinks and dinner at Waverley RSL
	Thursday 27	10 am	Visit to VicRoads western metropolitan projects
November	Monday 7	12 noon	Occasional Lunch, Shoppingtown Hotel
	Thursday 24	TBA	Visit to Transurban (Wester Distributor Project)
December	Monday 5	12 noon	Christmas lunch at Head Office
2017			
February	Monday 6	12 noon	Occasional lunch, Shoppingtown Hotel
	Friday 24	TBA	VicRoads Association Golf Day

Details of all these activities will be included in future newsletters. Please remember too that family and friends are always welcome to attend our functions. What's been happening



New members

We welcome Rob McQuillen

I am delighted to inform you that Rob McQuillen has joined the Association. Rob is a bit of a legend within VicRoads. He started his career with the Motor Registration Board that merged with the Road Traffic Authority which, in turn, merged with the Road Construction Authority to form VicRoads. He held many senior positions within VicRoads including that of Director of Regional Services and Deputy CEO. He was also the Chairman of the Steering Committee for the National Competition Policy review of Taxi-cabs and Small Commercial Passenger Vehicles Legislation, 2003. Rob also became involved in some of VicRoads projects in the Middle East, Asia and the Pacific Islands. On his retirement from VicRoads, he was appointed General Manager of Clubs and Resorts at the RACV.

He will probably be somewhat embarrassed by me mentioning this, but Rob is a beautiful singer blessed with a marvellous tenor voice. However lest you think this man might be perfect, I also mention that he barracks staunchly for the St Kilda Football Club. It is not so much the fact that he supports a club so passionately but it is more his way of celebrating successes with them. Rob had a garden gnome outside his office. Whenever they had a win, his gnome sat smiling on a small jardinière of dirt. When they lost, the gnome was stuck in the dirt-upside down. Apparently it had a lot of problems with blood going to its head.

What's coming up

Occasional Lunches – Shoppingtown Hotel Mondays 10th October and 7th November 2016

Bookings are not essential, but it would help with arrangements if you can let Kelvin York know on 9438 1028 if you can attend. We hope to see you there. Incidentally we had a record attendance for our luncheon in February.

Drinks and Dinner at Waverley RSL – 13th October

This is an opportunity for friends and colleagues and their partners to get together in very pleasant circumstances to enjoy dinner together - at a very reasonable price. It is a good opportunity to get your old work groups together for a bit of fun. If you can make it, please contact Ken Vickery on 0409 561 618 or kenvickery@tpg.com.au so that we can arrange the catering. We always have a good attendance at these - so if you haven't been before come and join us. It is a great night.

Visit to VicRoads Metropolitan Projects – Western, Thursday 27th October, 10 a.m. VicRoads Footscray Office, 1 McNab Avenue

As the office is located very close to the Footscray station, travel by train is suggested. There is no parking at 1 McNab Avenue but there are two parking stations in the area - for those who wish to drive.

The program is as follows:

- | | |
|----------|--|
| 10.00 am | Arrival and morning tea at the office |
| 10.30 am | Presentation by project staff including: <ul style="list-style-type: none">● West Gate Distributor (\$40M)● Swan Street Bridge widening (\$30M)● Chandler Highway Upgrade, Kew (\$110M)● Yan Yean Rd duplication (\$131M)● Hume Freeway/ O'Herns Rd interchange (\$80M)● Doherty's Rd Duplication (Grieve Parade to Fitzgerald Rd) (\$52M)● Plenty Rd Upgrade (McKimmies to Bridge Inn Roads) (\$140M) |
| 12 noon | Light lunch at the Project Office with project staff |
| 1.00 pm | Walk to inspect the West Gate Distributor Project |
| 2.00 pm | Coach tour of Wyndham growth area – including the implications for the arterial road network required to meet demand |
| 4.00 pm | Return to Footscray office and disperse |

Those intending to participate should let David Jellie (Tel 9077 1136, Mob 0418 105 276) know by Thursday 20th October. Friends and lovers are welcome to join in.

WHAT'S BEEN HAPPENING

Visit to Melbourne Metro Rail Authority – 28th July

Jim Webber reported on this excursion as follows:

Twenty six members, partners and colleagues attended an excellent presentation at the Melbourne Metropolitan Rail Authority (MMRA) office on Thursday 26 July. The presentation, which included an excellent video, was given by James Tonkin, Director Communications and Stakeholder Relations, supported by Peter Wilkinson, Director Development and Delivery, and Ellery Salida, Transport Modeling Co-ordinator. The MMRA, which employs 300 people, has been established to oversee the project.

James spoke about the background to the project - Melbourne's population growth (particularly in the fringe growth areas), the existing congestion on roads and public transport, and unlike Sydney, the lack of viable suburban nodes outside the CBD. The \$10.9B 9 km project has twin tunnels that extend from near Kensington to near South Yarra stations. Five new underground stations are to be built as part of the project, two of which interchange with existing loop stations at Melbourne Central and Flinders Street.

The removal of level crossings (by the LCRA) is required prior to the opening of the Melbourne Metro Rail in 2026 as the two projects will enable additional peak hours trains to be run on all suburban routes. Without the level crossing removals, the additional capacity resulting from Melbourne Metro Rail couldn't be utilized.

Sixty-five new high-capacity trains will be supplied as part of the Melbourne Metro Rail project, along with high capacity signaling and automatic braking. All stations will have platform screen doors. The current five station names are nominal only - and will almost certainly be changed prior to opening.

Aurecon Jacobs Mott McDonald (AJM) Joint Venture has prepared a concept but this may be varied by the eventual construction consortium. Most of the tunnel will be bored (with depths up to 39 metres), except for the section under Swanson St where a road header will be used. Care will be taken to reduce vibration and noise - vibration being a major issue for the University and medical research facilities near Parkville Station. A detailed tree strategy is also being prepared. Contaminated soil will be treated and taken to existing tip sites around Melbourne.

There will be extensive road closures during construction and traffic and bus diversion routes and traffic management measures will be undertaken in conjunction with VicRoads, Councils and public transport companies. Some road improvement projects that will assist traffic flow, such as the Swan St Bridge widening, will be brought forward. There will be a major urban renewal opportunity around Arden station. Renewal of the area (56 hectares), will be undertaken by Government rather than the project consortium.





A very interesting Q&A session followed - probably the main issue being the Government decision to not have a direct connection to South Yarra station. All attended received a very comprehensive folder about the project.

David Jellie thanked the presenters for a very informative session. About eight of those who attended crossed Exhibition St for lunch at The European. The visit was such a success that a return visit in 2017 will be included on our 2017 program.'

And now let me describe the project to you in general terms. The Metro Tunnel will be nine kilometres long and extend from Kensington to South Yarra via Swanston Street in the CBD. Tunnel entrances will be built in Kensington in the vicinity of South Kensington station, to connect in with the Sunbury line, and in South Yarra to the south of Toorak Road, to connect with the Cranbourne / Pakenham line.

Two seven metre diameter twin tunnels will be built creating space for more trains to run more often across Melbourne's rail network. A train-tram interchange will be constructed at Domain and high capacity signalling will maximize the efficiency of the new fleet of High Capacity Metro Trains.

When complete capacity will be created on the network to enable 39,000 more passengers to use the rail system during each peak period. The project is the first step towards a metro style rail network for a 'turn up and go' train service as enjoyed in many of the world's major cities.

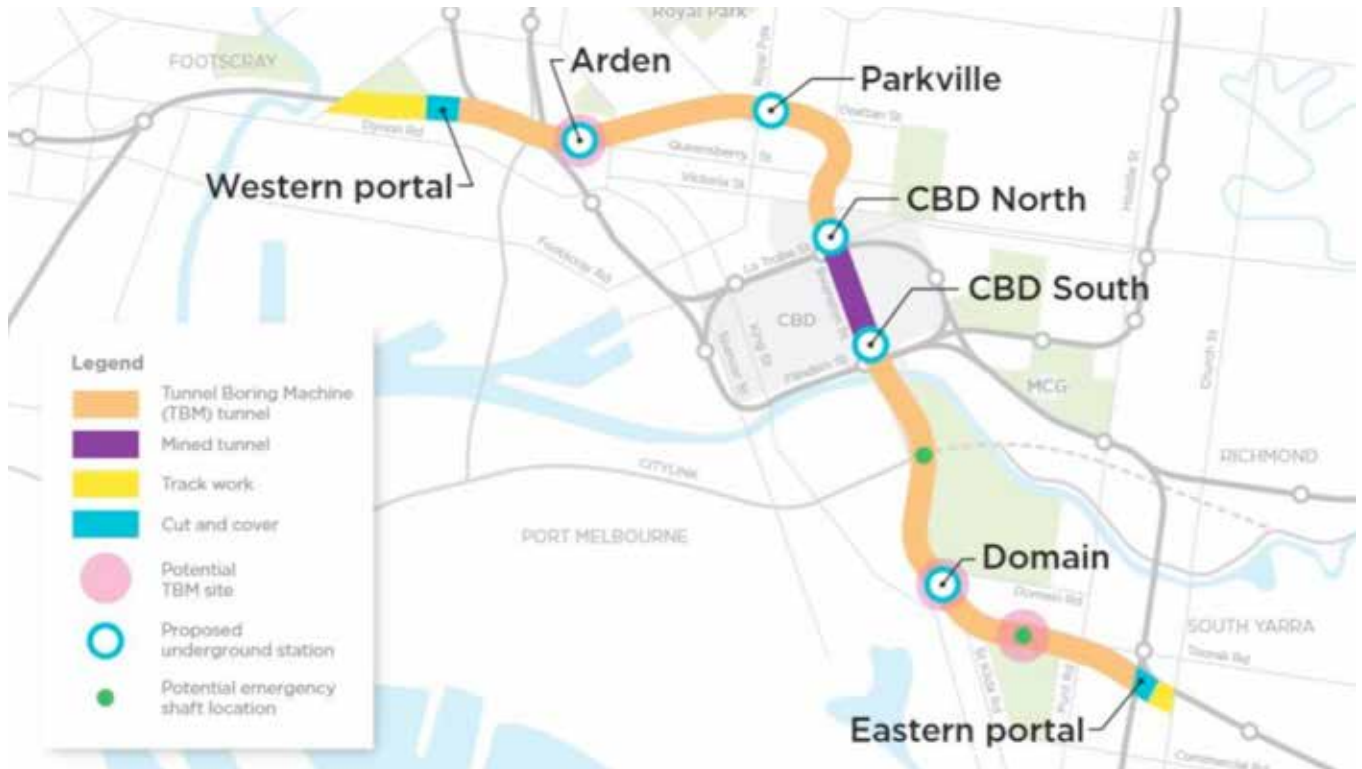
Building Melbourne Metro presents a number of challenges, including:

- managing disruption to residents, businesses and events
- mitigating the impacts on road traffic, pedestrians, cyclists and existing public transport and freight services
- navigating existing underground infrastructure including utilities, the City Loop and CityLink tunnels
- excavating through a range of geological conditions including rock, clay and silt
- tunnelling under two significant waterways, the Yarra River and Moonee Ponds Creek
- managing the logistical task of removing large amounts of excavated material.

Along the alignment, the depth of the Metro Tunnel will be up to 40 metres below ground level. The deepest point will be under Swanston Street, north of the CBD, where the new tunnels will pass under the existing City Loop tunnels. The shallowest point will be between CBD South and Domain stations where the tunnels could cross above the CityLink tunnels. An alternate option considered as part of the EES process is to pass below the CityLink tunnels.

The Metro Rail Authority will work with the contractors (once appointed) to identify ways to reduce the unavoidable construction impacts of the work required. Site investigations at various locations along the proposed alignment are helping to understand the existing geological conditions and confirm the location of underground services. This information will also assist in determining the preferred construction methodology for different sections of the project.

The contractors appointed by the Victorian Government to build the Metro Tunnel will refine the approach that will be used to deliver the project.



Some construction methods will be prescribed, such as the use of tunnel boring machines (TBMs) to build the rail tunnel outside the CBD and for excavating underneath the Yarra River. Other aspects or approaches may be optimised or altered by the contractors. They must meet Environmental Performance Requirements, which outline the environmental outcomes the project must achieve during its design, construction and operation.

Construction for the Metro Tunnel will be divided into a number of work packages and use established contract models, such as alliances and a Public Private Partnership (PPP), to deliver the project.

A number of different construction techniques will need to be used to successfully deliver a project as large and complex as Melbourne Metro. The proposed construction techniques have been, and continue to be, used to build many underground rail projects around the world and are tried and tested under a range of geological conditions and inner city urban environments.

Tunnel boring machines will be used to build the majority of the rail tunnels. Tunnel Boring Machines are large machines used in the construction of long underground tunnels. They are tailored for specific conditions and can be several metres in diameter, more than 100 metres long and weigh up to 1,000 tonnes. To minimise impacts on the Yarra River and surrounding areas, tunnelling using TBMs has been selected as the preferred method of construction for this section of the project.

A different method of tunnelling is proposed to conduct the excavation beneath Swanston Street to construct the Metro Tunnel between the two CBD stations. Due to the expected ground conditions and the number of building basements and foundations in the area, a mined tunnel is considered to be the most appropriate method of excavation.

The proposed mined tunnelling method uses road header machines to dig the tunnel. These machines have a rotating cutter head that is mounted on a boom. After the road headers carve out the tunnel, it is reinforced with a combination of rock bolts, lattice girders and sprayed concrete as a temporary support and then a final cast in-situ concrete liner.

Using this technique rather than 'cut and cover' reduces the impact of construction on the CBD, as the tunnel between the two new CBD stations can be built completely below the road surface. Trams, pedestrians and cyclists can continue to access the heart of the city on the surface while construction activity occurs underground.

I propose to provide further information about this very exciting project in future newsletters.



CENTENARY STORIES

VicRoads Brand

I was requested to write a short article for an internal VicRoads Magazine on the history of the brand of VicRoads. I wrote as follows.

The word "brand" comes from the Old Norse word – "brandr" – which means to burn. Farmers branded their stock and producers often burned their name (or brand) on to their products. Branding later became more sophisticated than merely burning your mark on a product. Devotees of the Antique Road Show will have learnt that the first thing to be looked for on silverware is the maker's mark which identifies when, where and by whom that silver object was created. This sort of branding also assisted in separating the highly skilled artisans from the more pedestrian ones.

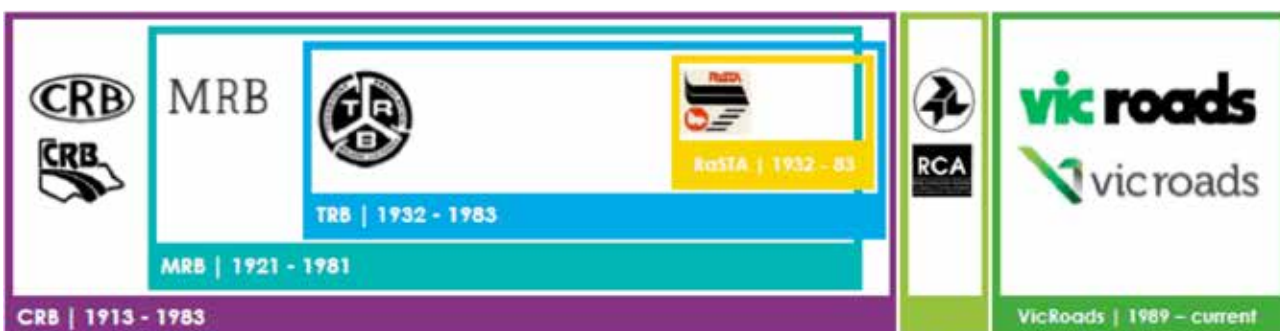
A modern take on brand is that it is an image, name, symbol, or design associated with a set of values which is easily recognisable and distinguishes its owner from competitors and creates a culture of customer satisfaction thus generating loyalty to a product or organisation.



All of VicRoads' predecessor organisations strived to enhance their brand – by providing the best quality services to their clients and customers – including road users, municipalities, industry/freight organisations, land-owners, research groups, and the government. We might not have recognized this service as a 'brand' but I'm sure we were aware that all our actions were aimed at preserving the good reputation of our organization. Take, for example, the relationship between the CRB and Victoria's municipalities. The Board members of the CRB visited all Victorian municipalities on a regular cycle over a number of years to ensure that their needs were taken into consideration. In those days there were 210 municipalities – compared to 79 today. Public forums were held for special projects to inform local communities on issues likely to affect them and to receive feedback from the communities to improve outcomes.

However VicRoads is a very different organisation to its antecedents. The Country Roads Board – and later, the Road Construction Authority - designed, built and maintained the road network. The Motor Registration Branch licensed drivers and registered vehicles. The Transport Regulation Board regulated commercial vehicles and managed vehicle standards. The Traffic Commission, the Road Safety and Traffic Authority, and the Road Traffic Authority managed at various times, road safety and control of traffic. All these functions are now carried out by the one organisation – VicRoads.

I think it is also fair to say that these antecedent organisations operated in a different management climate in that there was little political involvement in setting their priorities and programs. This meant that there were only a handful of communications officers in the organisations compared to VicRoads today. A senior manager in the Country Roads Board would fall over in surprise if he or she were to read the directions board on the fifth floor of head office now – including commercial, communications, marketing, customer insight, stakeholder engagement, media, corporate, digital and brand. Not an engineer in sight!

Another major difference between VicRoads and its predecessors is size. Back in the 1980s the Country Roads Board was a huge organisation. If I remember correctly it peaked at over 7,000 people. It did most of its engineering design and a significant proportion of its works were carried out by the Board's own direct labour gangs. The CRB owned the biggest fleet of road construction plant and equipment in the state and custom-built many items of plant for specific purposes such as line-marking. Our expertise in sprayed sealing was world-renowned and most of the equipment for construction and calibration was developed and built by the Mechanical Sub-branch. We had our own laboratory which undertook a broad range of research into materials, quality control, construction methods and new technologies and provided geotechnical services locating quality materials for construction around the state and assisting in design of roads and bridges.





Today, VicRoads is driven by systems and technology never dreamt of say 50 years ago. For example, my engineering career commenced in 1961 at a time when there were no computers. All calculations were done by slide rule using seven figure logarithmic tables. Other aids such as planimeters were used to measure areas from army ordinance maps. Photogrammetry was just being introduced and there was one photocopying machine in head office – with a designated operator. It was a “wet” type of system so you had to wait for a couple of hours before you could use the copy and the image faded away after about three months. Later when I was the Project Manager for the West Gate Freeway, my office was one of the first in VicRoads to have a fax machine installed – and I delegated one officer to be in charge of the machine!

So you see that branding of VicRoads today is a far cry from branding the Country Roads Board or any other of its partner organisations. By comparison, VicRoads is a very stream-lined organisation with sophisticated internal and external communications systems covering all the functions and responsibilities mentioned above. Perhaps the only thing we share in branding is that we all had a logo – although it is interesting to note that the first logo for the CRB did not appear until after the Second World War.

After writing this article – and to further emphasize the changes in corporate responsibilities – VicRoads has recently announced the Executive Roles in the new structure – as follows:

- Deputy Chief Executive
- Director Asset Services
- Director Corporate Transformation
- Director Integrated Network Planning (TfV role)
- Director Journey Services
- Director Road User and Vehicle Access
- Executive Director Access and Operations
- Director Commercial Roads
- Director Heavy Vehicle Access
- Director Integrated Services
- Director Pipelines and Programs
- Director Traffic Design Services

VICTORIA'S FUTURE POPULATION

The Victorian Government has recently published population and household projections to 2051. The information published below was obtained from that publication. It shows upward trends in birth rates, life expectancy and migration for Victoria. Published by the Department of Environment, Land, Water and Planning each year, it confirms that Victoria remains the fastest-growing state in Australia with population expected to reach 10.1 million by 2051.

Life expectancy is projected to continue to increase – Victorians are living longer, and projections show babies born in 2015 will live to 80 to 88 for males and 84 to 90 years for females. Trends in living million dwellings will be required to house the population.

While the majority of change will be in metropolitan Melbourne, strong growth is also expected in major regional centres. Greater Geelong, Ballarat and Greater Bendigo between them are expected to account for half of Victoria's regional growth to 2031.

Other trends include the life expectancy gap between men and women closing, a rise in the number of people aged over 65 and a significant increase in the number of school-aged children. A 40-year decline in fertility rates has also levelled out and more children will be born in 2051 than in 2000. Recognizing the challenges of this change will present for Victoria, the government has overhauled Plan Melbourne to manage growth and change over the next 30-40 years. It will help the government to manage growth and plan the delivery of infrastructure and services, such as transport, schools and hospitals.

The growth of Victoria between 2011 to 2051 is calculated thus: our current population is 5.5 million. Add to this a natural increase of 1.8 million (comprising 3.8 million births and 2.0 million deaths) and 2.8 million net migration (comprising 2.6 million net overseas migration and 130,000 net interstate migration) we arrive at a total (rounded) of 10.1 million population in 2051.

The largest and fastest growth occurs in Melbourne. The largest growth area is Wyndham (195,000) followed by Casey (176,000), Melton (153,000), Whittlesea (153,000) and Melbourne (130,000). In regional Victoria the greatest growth areas are Greater Geelong (81,000), Mitchell (46,000), Greater Bendigo (43,000), Ballarat (42,000) and Baw Baw (24,000).

These figures emphasise the urgent need to be planning our transport infrastructure now – especially our public transport network.



NEWS FROM OUR MEMBERS

Max Lay

Max has written another book entitled 'With Power and Purpose'. It is about transport developments in the 19th Century and is available on Kindle for a download fee of \$3.96. He provided the following summary for me.

'I was led to write this book as I prepared and presented an international review paper on the factors that had influenced road development in the 20th century. I drew somewhat glibly on the 19th century legacy that provided the basis for most of those 20th century events. The question that increasingly came to my mind was how that creative 19th century legacy had arisen? How did transport reach the transformative stage that it did at the end of the 19th century – so many changes, so many new technologies, and so many new markets?

As I thought more about these matters I came to realise the astonishing extent of the transport changes that had occurred during the 19th century. Nothing like it had ever occurred before, and the 20th century was mere incrementalism compared with the quantum changes of the 19th century. What a story there might be to uncover and to use to shed more light on our transport inheritance – where did all the 19th century's key transport features come from and why are there so many inventions, innovations, inconsistencies and illogicalities in the story?

Hence this book, which is my attempt to understand the origins of much of our current transport world. I write it as an engineer specialising in transport and certainly not as an historian additionally steeped in matters of economics, or politics or social structures. There were many great and fundamental changes occurring during the 19th century and my transport specialisation was just one sub-set of those changes. It is appropriate therefore for me to use the words of a leading English historian – Kitson Clark – to provide a broader context for my story. Clark described events of the 19th century as:



"a larger movement in history ... which went on throughout the 19th century ... and which swept through human affairs and carried away the ancient régime with its aristocracies, its hereditary monarchies, its prescriptive rights and left in its stead a world whose values, on the whole, we still accept."

I have written this book in my home town of Melbourne, Australia. Melbourne was not founded until the mid-1830s so I can view the 19th century without a strong parochial view. Indeed, my self-assigned task was to take a world view of 19th century transport changes. Nevertheless, much of the book has a strong British orientation as without question the Industrial Revolution was a period and a process predominantly initiated and implemented in Britain. However, when the Revolution lost momentum in mid-century – or entered its second stage in the view of some commentators – Britain steadily began to lose its leadership role. By the end of the century France and south-western Germany were dominant change-makers and the USA was appearing on the horizon. How Britain lost, or even threw away its leadership, is a story that I explore within the wider thrust of this book.

Finally, I have tried where ever possible to highlight and pay homage to the many individual inventors and innovators and entrepreneurs who caused the dramatic transport changes that occurred during the 19th century. They did this through individual initiatives to satisfy personal rather than corporate or national goals. And they were often hindered rather than aided by the various arms of officialdom.

It is easy to be swayed by the romantic idea of a few wonderful innovators such as Watt, Brunel, Telford, Siemens, Daimler and Benz creating major and almost instantaneous quantum jumps in technological advancement. However, if we take the prime cases of the external combustion steam engine and the internal combustion petroleum-fuelled engine, what we have actually seen are long series of incremental set-backs and advances, dead ends and new markets, misunderstandings and occasional new understandings. For example, the first really useful IC engine was Daimler and Maybach's 1885 "grandfather clock" engine, some 90 years after the first trials of such an engine.

One lesson that can be drawn from the 19th century is that the future will always be unknown. This is no excuse for communities not to express their social aspirations and to say that whatever unexpected changes might happen in the future, they should operate within some generally accepted guidelines. No such guidelines existed to prevent the excesses of the 19th century railway era and in the 20th century there were no articulated aspirations that produced guidelines preventing the over-supply and over-use of motor vehicles.



The second key lesson from the 19th century – and a lesson confirmed by the subsequent century – flows from the observation that no one, despite their personal brilliance, had in anyway predicted how the future would unfold as a consequence of the changes that they and their peers were producing.

The future is as unpredictable now as it was in the 19th century. So surely we must carefully define the guidelines for any man-made changes and we must, in the words of the finance industry, always hedge our bets to cover the gamut of possible futures.'

News from our members

Laurie Jones

Laurie wrote to me after he read the obituary for Ian Stoney submitting a few comments regarding the downsizing that occurred during his tenure. He had a few recollections of the times during Ian's tenure as CEO regarding the downsizing of government departments in those days. I have edited his comments as follows:

'I've read a number of articles in the Institution of Engineers magazine in the last year or two deploring the downsizing of Government Departments generally – not just in Victoria – but I have a gut-feeling that one area where this has had the most serious effect is in the Municipal field. In the 1950s and 1960s most of our Divisions moved their Junior Engineers through reasonably well organized training programs, and many of them subsequently left and moved into municipal work – often initially to become Shire Engineers in smaller municipalities. This didn't concern us overmuch, because after all a lot of the money they subsequently spent in their roadworks programs was provided by us, and we were concerned to have it well spent and efficiently used. I don't know however how and where young engineers would manage to get relevant and appropriate well-rounded experience today.

Before I close I'll perhaps mention the one personal experience where the changes brought about by amalgamations and down-sizing really concerned me. I don't remember much of the details, but I'd probably been retired 5 or 10 years when my son mentioned to me that Mildura Shire were having a lot of trouble on a VicRoads contract they'd undertaken on the Henty Highway. I think the job was outside their boundary in Karkarook Shire, but they'd tendered for it to provide a better balanced program for their direct labour work force.

The autumn break had come earlier than usual and they hadn't finished it – and couldn't achieve the specified density in their pavement. The more they compacted it the worse it became, and when I checked the pavement specification I found that it was basically (perhaps exactly) the statistical sampling high density specification I'd had developed specifically for the top-course 'Autograde' work on the Hume Freeway. There we were using only first grade basalt type crushed rocks, but the specification had apparently come into general use and on this job they were using local 'limestone' or similar material which broke down the more it was compacted.

I think I told my son that the best thing the Council could do was to maintain the road as a gravel pavement until they got drier weather, but I thought I should talk about it to someone in Vic Roads. That was when I ran into trouble. I think I asked for the D/E but he was unavailable and I ended up talking to a Class 3 Engineer who knew me, and I think generally understood what I told him. In the circumstances however I thought I should also mention it to someone more senior at Head Office, but got was unable to find an appropriate person in charge of the general works program.

I then thought I'd talk to some one in the ARRB on the Compaction Committee, only to find that the committee had been disbanded. That experience shook my confidence a bit in what was happening. However I still drive on Victorian roads – and at times these days I see worse things being done on roads in Far North Queensland.

I am keeping well except for osteo-arthritis in my left knee, but unfortunately my wife hasn't been at all well for some months now so I've become the chief cook and bottle washer. Because of the cooking part I was interested to read your introduction to the newsletter and almost thought you'd end up giving us your recipes for Tomato Sauce and Tomato Relish – we used to make Tomato Relish ourselves in Warrnambool when we were first married, and it was great stuff, but I've not heard mention of it for many years. And much as I'd like to make both, I haven't time and it's quicker and easier to buy sauce at the supermarket!'



News from Vicroads

Strengthening bridges on the Monash Freeway

Work commenced on strengthening some of the bridges on the Monash Freeway in mid-May. Work should be completed in October 2016. Most of the work is being undertaken at night to avoid the high traffic volumes during the day. Night-time lane closures are occurring between Ferntree Gully Road (Mulgrave) and Gladstone Road (Dandenong North) during the work period.

The reason these bridges are being strengthened is because of the anticipated future needs of the freeway. The Monash Freeway is one of Australia's busiest freeways and is an important link for freight vehicles, providing a link from the Port of Melbourne to industrial suburbs like Dandenong. The freeway will eventually become an approved route for High Productivity Freight Vehicles (HPFV). HPFVs are larger and heavier than standard heavy vehicles and are expected to considerably reduce freight costs as well as improving road safety. Preliminary research suggests they will prevent 114 fatalities nationally by 2030. The use of HPFVs will benefit the community through a flow-on effect that has been estimated at about 84 cents for every dollar saved by HPFV operators.

A number of existing roads and bridge structures need to be upgraded to allow HPFVs to operate safely. These upgrades will allow heavy vehicles to take more direct routes from our farms, towns and communities, improving their productivity as well as enhancing safety and efficiency for all motorists.

The Federal Government and the State Government are jointly funding the program. The bridges being refurbished are at:

- Ferntree Gully Road, Glen Waverley
- Jacksons Road, Mulgrave
- Police Road, Mulgrave
- Gladstone Road, Dandenong North

The project involves strengthening the bridges by attaching carbon fibre rods and laminates to the underside of the bridges. Guardrail and barriers will also be replaced at Ferntree Gully Road.



More News from Vicroads

Biodiversity in Road Projects

VicRoads takes many measures during construction and maintenance of roads, to maintain the flora, fauna and ecosystems that may be affected by their work. I have written about some of these in the past, but I think it is time to refresh. Their policy aims to maintain and improve roadside biodiversity, minimize the threats to plants and animals, maintain landscapes through native vegetation offsets and re-vegetation, and manage noxious weeds.

They use a three-step approach to minimize the impacts of road construction on native vegetation. Firstly they aim to avoid adverse impact. If they can't avoid impact, they minimize it through planning and design, and if clearing has to occur, the clearing has to be offset through the purchase and protection of similar vegetation.

Road projects are designed to have minimal impact on fauna-rich areas, such as wildlife corridors. Wildlife corridors are often located along creeks intersecting with motorways or within the road reservation where the projects are proposed. VicRoads protects fauna movement where possible by creating fauna crossings (underpasses or overpasses). This reduces destruction of habitats and improves and maintains species diversity.

VicRoads has developed Guidelines to assist staff in the assessment and management of fauna along roads to provide a better understanding around the impacts of roads and traffic on fauna movements and the options available for fauna sensitive road design.

VicRoads manages around 80,000 hectares of roadsides. Much of this consists of high quality vegetation. Our road reserves support a significant proportion of vegetation and make a major contribution to ecological landscape connectivity. In the regions of Victoria where native vegetation is fragmented, our roadsides provide valuable habitat for a number of threatened plants and animals.

When landscaping our roadsides, we prefer to use plants sourced from the seeds of local trees and plants. These plants are more adapted to local conditions and have a greater tolerance to withstand drought. By planting natives, we are supporting the continuation of local species and helping to enhance local biodiversity.

The VicRoads' Roadside Management Strategy sets the primary direction for holistic and integrated roadside management. It provides a framework for the balanced consideration of the four key objectives of roadside management:

- Enhance road safety and vehicle movement
- Protect environmental and cultural heritage values
- Manage fire risk; and
- Preserve and enhance roadside amenity.

It uses an asset management approach to balance the key objectives of roadside management and identify the most appropriate treatments to preserve roadside functions.



Calder freeway fauna underpass



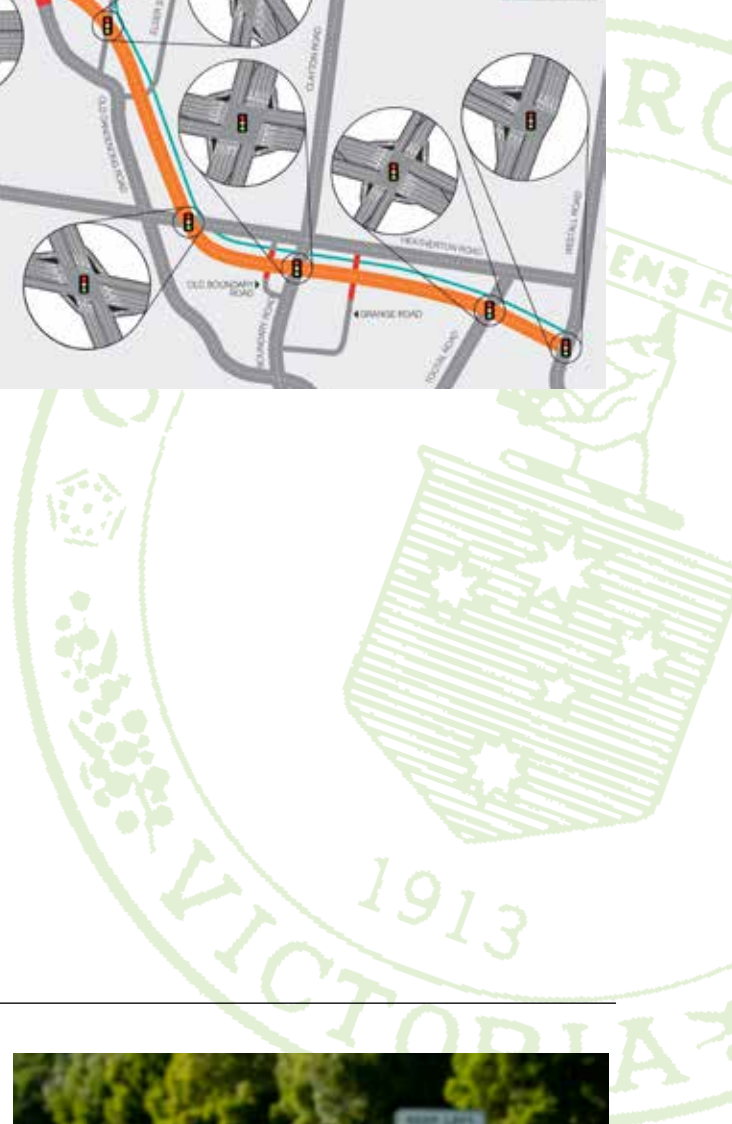
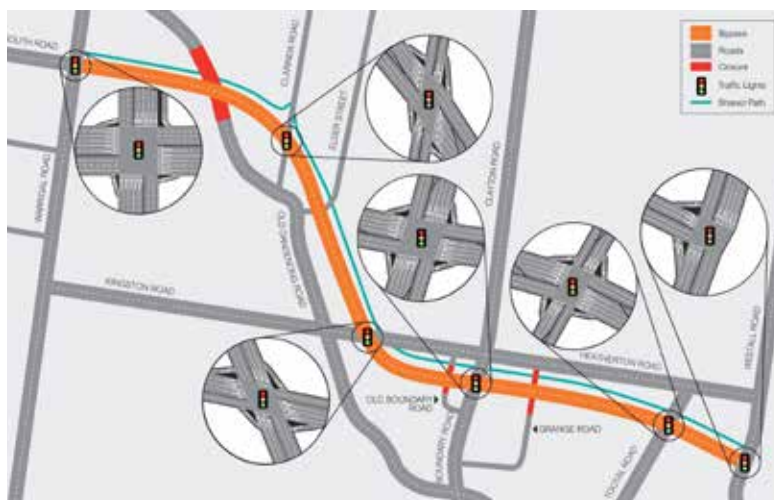
Dingley Bypass

The 6.4 km Dingley Bypass links Warrigal Road at Moorabbin and Westall Road at Dingley Village. It cost \$156 million. It has three lanes each way with an adjacent shared cycle and pedestrian path running along it. It is the next link in completing a continuous, fully divided arterial road for 19 km between Moorabbin and Dandenong South.

It was opened to traffic in March 2016, five months ahead of schedule.

Other features include: new signals at the intersections at Clarinda Road, Kingston Road, Boundary Road, Tootal Road and Westall Road; provision for a future pedestrian and cycle underpass at Mordialloc Creek; construction of the Elder Street South Underpass to maintain access from Elder Street South to Old Dandenong Road; closure of Old Dandenong Road, Grange Road and Old Boundary Road where they intersect with the Dingley Bypass; and relocation of the access point into the South Road service lane at the Warrigal Road intersection from Warrigal Road to South Road.

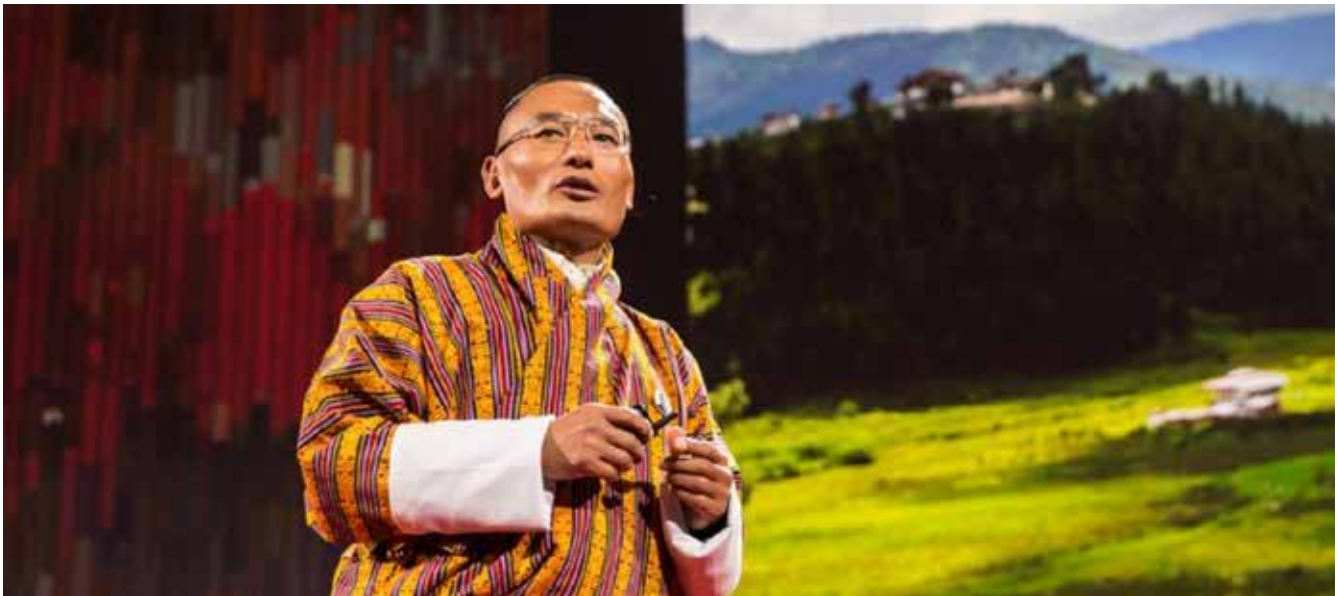
The new road will reduce delays and congestion in the area and improve traffic flow on the road network with more direct road connections. It will also provide safer conditions for road users, including pedestrians and cyclists, by taking through traffic, especially trucks, off nearby congested roads such as Heatherton Road, Old Dandenong Road and Centre Dandenong Road.



Wire Rope Barriers

A recent good news story involved the new centreline wire rope barrier on the Goulburn Valley Highway between Molesworth and Yea. This stretch of road had a terrible crash history of fatalities and about this time last year VicRoads took a difficult decision to drop the speed limit to 80 km/h. They also reached agreement with TAC to fast track funding for an innovative centreline wire rope barrier solution – because 9 out of 11 casualty crashes were caused by a vehicle crossing the centreline and either colliding head on with an oncoming vehicle or leaving the road to the right. In early June a driver on that road fell asleep and veered to the right into the centreline wire rope barrier just as a couple were coming towards him in the opposite direction. The barrier worked and no one was hurt. Both drivers generously participated in a video shoot to tell their story. I understand that a program of centerline wire rope barriers is being rolled out into other regions.





TRIVIA AND DIDACTIC WHIMSIES

The Prime Minister of Bhutan, Tshering Tobgay

I often watch talks given by people of different disciplines and cultures on TED.com and recently, I was entranced by a talk given by the Prime Minister of Bhutan which I have summarized below. I have been lucky enough to have visited Bhutan during the days I worked with the Overseas Projects Corporation of Victoria. Joe Gwizdek from Bairnsdale Division worked over there developing road maintenance practices and Lindsay Clay did a job for the United Nations in reviewing construction plant management strategies. I found it a fascinating country and, if my memory allows me, I will write about it in a later newsletter.

But let me introduce you to the Prime Minister, Tshering Tobgay. Tobgay attended secondary schooling at the Dr. Graham's Homes School in the city of Kalimpong, India, in the eastern Himalayas. In 1990, Tobgay received a Bachelor of Science in Mechanical Engineering from the University of Pittsburgh's Swanson School of Engineering after obtaining a scholarship from the United Nations. Tobgay also completed a Master's degree in public administration from the John F. Kennedy School of Government at Harvard University in 2004. The photograph above shows him addressing the TED audience.

I have slightly edited the text – but this is what he said.

'In case you are wondering, no, I'm not wearing a dress, and no, I'm not saying what I'm wearing underneath. This is a gho. This is my national dress. This is how all men dress in Bhutan. (He then showed a picture of Bhutanese women in their long, colourful national dress.) That is how our women dress. Like our women, we men get to wear pretty bright colors, but unlike our women, we get to show off our legs. Our national dress is unique, but this is not the only thing that's unique about my country. Our promise to remain carbon neutral is also unique, and this is what I'd like to speak about today, our promise to remain carbon neutral.

But before I proceed, I should set you the context. I should tell you our story. Bhutan is a small country in the Himalayas. We've been called Shangri-La, even the last Shangri-La. But let me tell you right off the bat, we are not Shangri-La. My country is not one big monastery populated with happy monks.

The reality is that there are barely 700,000 of us sandwiched between two of the most populated countries on earth, China and India. The reality is that we are a small, underdeveloped country doing our best to survive. But we are doing OK. We are surviving. In fact, we are thriving, and the reason we are thriving is because we've been blessed with extraordinary kings. Our enlightened monarchs have worked tirelessly to develop our country, balancing economic growth carefully with social development, environmental sustainability and cultural preservation, all within the framework of good governance. We call this holistic approach to development "Gross National Happiness," or GNH. Back in the 1970s, our fourth king famously pronounced that for Bhutan, Gross National Happiness is more important than Gross National Product.



Ever since, all development in Bhutan is driven by GNH, a pioneering vision that aims to improve the happiness and well-being of our people. But that's easier said than done, especially when you are one of the smallest economies in the world. Our entire GDP is less than two billion dollars. I know that some of you here are worth more – individually - than the entire economy of my country.

So our economy is small, but here is where it gets interesting. Education is completely free. All citizens are guaranteed free school education, and those that work hard are given free college education. Healthcare is also completely free. Medical consultation, medical treatment, medicines - they are all provided by the state. We manage this because we use our limited resources very carefully, and because we stay faithful to the core mission of GNH, which is development with values. Our economy is small, and we must strengthen it. Economic growth is important, but that economic growth must not come from undermining our unique culture or our pristine environment.

Today, our culture is flourishing. We continue to celebrate our art and architecture, food and festivals, monks and monasteries. And yes, we celebrate our national dress, too. This is why I can wear my gho with pride. So our culture is flourishing, but so is our environment. Seventy two percent of my country is under forest cover. Our constitution demands that a minimum of 60 percent of Bhutan's total land shall remain under forest cover for all time.

Our constitution, this constitution, imposes forest cover on us. Incidentally, our king used this constitution to impose democracy on us. You see we the people didn't want democracy. We didn't ask for it, we didn't demand it, and we certainly didn't fight for it. Instead, our king imposed democracy on us by insisting that he include it in the constitution. But he went further. He included provisions in the constitution that empower the people to impeach their kings, and included provisions in here that require all our kings to retire at the age of 65. Fact is, we already have a king in retirement: our previous king, the Great Fourth, retired 10 years ago at the peak of his popularity. He was all of 51 years at that time.



So as I was saying, 72 percent of our country is under forest cover, and all that forest is pristine. That's why we are one of the few remaining global biodiversity hotspots in the world, and that's why we are a carbon neutral country. In a world that is threatened with climate change, we are a carbon neutral country. Turns out, it's a big deal. Of the 200-odd countries in the world today, it looks like we are the only one that's carbon neutral. Actually, that's not quite accurate. Bhutan is not carbon neutral. Bhutan is carbon negative. Our entire country generates 2.2 million tons of carbon dioxide, but our forests, they sequester more than three times that amount, so we are a net carbon sink for more than four million tons of carbon dioxide each year. But that's not all.

We export most of the renewable electricity we generate from our fast-flowing rivers. So today, the clean energy that we export offsets about six million tons of carbon dioxide in our neighborhood. By 2020, we'll be exporting enough electricity to offset 17 million tons of carbon dioxide. And if we were to harness even half our hydropower potential, and that's exactly what we are working at, the clean, green energy that we export would offset something like 50 million tons of carbon dioxide a year. That is more CO₂ than what the entire city of New York generates in one year.

So inside our country, we are a net carbon sink. Outside, we are offsetting carbon. And this is important stuff. You see, the world is getting warmer, and climate change is a reality. Climate change is affecting my country. Our glaciers are melting, causing flash floods and landslides, which in turn are causing disaster and widespread destruction in our country. (He showed a slide). I was at that lake recently. It's stunning. That's how it looked 10 years ago, and that's how it looked 20 years ago. Just 20 years ago, that lake didn't exist. It was a solid glacier. A few years ago, a similar lake breached its dams and wreaked havoc in the valleys below. That destruction was caused by one glacier lake. We have 2,700 of them to contend with. The point is this: my country and my people have done nothing to contribute to global warming, but we are already bearing the brunt of its consequences. And for a small, poor country, one that is landlocked and mountainous, it is very difficult. But we are not going to sit on our hands doing nothing. We will fight climate change. That's why we have promised to remain carbon neutral.

We first made this promise in 2009 during COP 15 in Copenhagen, but nobody noticed. Governments were so busy arguing with one another and blaming each other for causing climate change, that when a small country raised our hands and announced, "We promise to remain carbon neutral for all time," nobody heard us. Nobody cared.

Last December in Paris, at COP 21, we reiterated our promise to remain carbon neutral for all time to come. This time, we were heard. We were noticed, and everybody cared. What was different in Paris was that governments came round together to accept the realities of climate change, and were willing to come together and act together and work together. All countries, from the very small to the very large, committed to reduce the greenhouse gas emissions. The UN Framework Convention on Climate Change says that if these so-called intended commitments are kept, we'd be closer to containing global warming by two degrees Celsius.



By the way, I've requested the TED organizers here to turn up the heat in here by two degrees, so if some of you are feeling warmer than usual, you know who to blame. It's crucial that all of us keep our commitments. As far as Bhutan is concerned, we will keep our promise to remain carbon neutral. Here are some of the ways we are doing it. We are providing free electricity to our rural farmers. The idea is that, with free electricity, they will no longer have to use firewood to cook their food. We are investing in sustainable transport and subsidizing the purchase of electric vehicles. Similarly, we are subsidizing the cost of LED lights, and our entire government is trying to go paperless. We are cleaning up our entire country through Clean Bhutan, a national program, and we are planting trees throughout our country through Green Bhutan, another national program.

But it is our protected areas that are at the core of our carbon neutral strategy. Our protected areas are our carbon sink. They are our lungs. Today, more than half our country is protected, as national parks, nature reserves and wildlife sanctuaries. But the beauty is that we've connected them all with one another through a network of biological corridors. Now, what this means is that our animals are free to roam throughout our country. Take this tiger, for example. It was spotted at 250 meters above sea level in the hot, subtropical jungles. Two years later, that same tiger was spotted near 4,000 meters in our cold alpine mountains. Isn't that awesome?

We must keep it that way. We must keep our parks awesome. So every year, we set aside resources to prevent poaching, hunting, mining and pollution in our parks, and resources to help communities who live in those parks manage their forests, adapt to climate change, and lead better lives while continuing to live in harmony with Mother Nature.

But that is expensive. Over the next few years, our small economy won't have the resources to cover all the costs that are required to protect our environment. In fact, when we run the numbers, it looks like it'll take us at least 15 years before we can fully finance all our conservation efforts. But neither Bhutan, nor the world can afford to spend 15 years going backwards.

This is why His Majesty the King started Bhutan For Life. Bhutan For Life gives us the time we need. It gives us breathing room. It is essentially a funding mechanism to look after our parks, to protect our parks, until our government can take over on our own fully. The idea is to raise a transition fund from individual donors, corporations and institutions, but the deal is closed only after predetermined conditions are met and all funds committed. So multiparty, single closing: an idea we borrowed from Wall Street. This means that individual donors can commit without having to worry that they'll be left supporting an underfunded plan. It's something like a kick-starter project, only with a 15-year time horizon and millions of tons of carbon dioxide at stake. Once the deal is closed, we use the transition fund to protect our parks, giving our government time to increase our own funding gradually until the end of the 15-year period. After that, our government guarantees full funding forever. We are almost there. We expect to close later this year. Naturally, I'm pretty excited.

The World Wildlife Fund is our principle partner in this journey, and I want to give them a big shout out for the excellent work they are doing in Bhutan and across the world.

I thank you for listening to our story, a story of how we are keeping our promise to remain carbon neutral, a story of how we are keeping our country pristine, for ourselves, our children, for your children and for the world. But we are not here to tell stories, are we? We are here to dream together. So in closing, I'd like to share one more dream that I have. What if we could mobilize our leadership and our resources, our influence and our passion, to replicate the Bhutan For Life idea to other countries so that they too can conserve their protected areas for all time. After all, there are many other countries who face the same issues that we face. They too have natural resources that can help win the world's fight for sustainability, only they may not have the ability to invest in them now. So what if we set up Earth For Life, a global fund, to kick-start the Bhutan For Life throughout the world? I invite you to help me, to carry this dream beyond our borders to all those who care about our planet's future. After all, we're here to dream together, to work together, to fight climate change together, to protect our planet together. Because the reality is we are in it together. Some of us might dress differently, but we are all in it together.

Thank you very much, and kadrin chhe la.

If you want to see this presentation go to:

facebook.com/gnhfilms/videos/1025791564148706/



Lagumot Harris with President Lee Teng-hui of Taiwan

Nauru – the Pleasant Island that lost its heart

One of my engineering classmates at the Gordon Institute of Technology was a Nauruan called Lagumot (pronounced Lagamont) Gagiemem Nimidere Harris. He was a reserved and gentle man with a soft voice and exquisitely neat handwriting. He was about six feet tall – in the old measurements – but he was very solid with muscular legs and arms. In fact we tempted him to enter the shot putt event in an inter-college sporting tournament and we coached him in the proper technique. I tucked the putt under my chin and pretended that the proper technique was familiar to me. I approached the plate as I've seen them do on television and heaved as far as I could. The putt did a gentle arc but the pull of gravity that day was particularly severe and it landed only twenty feet or so away. Lagumot picked it up and threw it much like a cricket ball – and with his first putt broke the record.

After graduation Lagumot returned home and twice became President of the Republic of Nauru. The first time was only for a month (in 1978) and the second time was in 1995-1996. He was the third head of state since Nauru's independence in 1968 and the shortness of his incumbency reflected the turmoil of politics in Nauru at that time. Wikipedia notes that 'Much of Lagumot Harris's active involvement in political leadership revolved around troubled issues surrounding the veteran Nauruan politician, seven-time President Bernard Dowiyogo. It may be recalled that, especially during Harris' periods of public office and political activity, Nauru's Parliamentary system did not have well-developed party organizations.'

To be honest, I could never imagine Lagumot being a politician. He seemed to be far too gentle and dare I say it – honest – for his own good. Lagumot had 10 children and was pastor of the Nauru Congregational Church. He later founded an Independent Church in the district of Boe on Nauru which won many followers. In the web-based MEMIM Encyclopedia it says that "Harris was in contrast to other Nauruan politicians a largely respected person without intrigues and affairs". Lagumot died in Melbourne in 1999 and I represented my classmates by giving a brief eulogy at his funeral.



And now Nauru looms large in our thoughts in Australia as being one of the remote sites of detention for refugees seeking asylum in Australia. I don't want to dwell on the moral legitimacy of this policy here but I do want to describe the exploitation of Nauru – and leave it to you to decide where you stand.

First of all let us pronounce the name properly. It is pronounced nah-oo-roo with the emphasis on the second syllable. It is not naar-roo. Nauru is a single island state lying 3,000 km northeast of Australia almost on the equator. It is part of Micronesia. Its nearest neighbour is Banaba Island in Kiribati, 300 kilometres to the east. Its population is around 10,000 and its area is 21 square kilometres. Nauru is the smallest state in the Pacific and second smallest state in the world by population – the smallest being Vatican City.

It was originally settled by Micronesian and Polynesian people and annexed and claimed as a colony by Germany in the late 19th century. After World War I, Nauru became a League of Nations mandate administered by Australia, New Zealand, and the United Kingdom. During World War II, Nauru was occupied by Japanese troops, who were bypassed by the Allied advance across the Pacific. After the war ended, the country entered into trusteeship again before gaining independence in 1968.



Decades of phosphate mining have left Nauru's landscape a lunar wasteland



Nauru boasted the highest per-capita income enjoyed by any sovereign state in the world during the late 1960s and early 1970s. Its prosperity (and ultimately its downfall) was that it is a phosphate rock island with rich deposits near the surface, which allow easy strip mining operations. When the phosphate reserves were exhausted, a trust was formed to manage the island's diminishing wealth. Today its phosphate resources are not economically viable for extraction.

To earn income, Nauru briefly became a tax haven and illegal money-laundering centre. From 2001 to 2008, and again from 2012, it accepted aid from the Australian Government in exchange for hosting the Nauru detention centre.

Nauru's recent history is a tale of exploitation, greed and neglect – a far cry from its beginnings as a lush, tropical island. Its fate was sealed by the graceful frigate birds. The huge wingspan of these birds enabled them to glide for days at a time on thermal currents swooping down to the sea to catch fish with their hooked beaks. They could even sleep on the wing. Their navigational ability was as good as anything devised by man. They flew for thousands of kilometres at a time and I suppose it is only natural that Nauru's isolation as a tiny dot in the vast Pacific Ocean made it a favourite landing spot. They rested and bred there and their droppings (or guano) built up to provide a rich soil which grew coconut palms, wild cherries, figs and breadfruit. When the first European sailing ship found the island in 1798, its captain named it Pleasant Island.

It may have remained in this pristine state had not a New Zealander named Arthur Ellis noticed a doorstep in a Sydney office in 1900. Ellis was a chemist and he worked for a mining company. He thought the doorstep was fossilized wood but, when he tested its composition, he soon realized that it was the best quality phosphate in the world. He found out that it was from Nauru and you can guess what happened from then on.

The central highland of the island which supplied most of the crops for the population was mined first and within the first five years of mining over half a million tons was shipped away. The Nauruans received a halfpenny a ton in royalties but nevertheless they became fabulously rich. By the 1990s the mining royalty trust fund was close to a billion Australian dollars. They invested heavily in real estate in Australia – especially Melbourne and they had an endless queue of carpetbaggers knocking on their door to assist them in spending their money.

In the meantime, more and more of the trees were cut down and the soil stripped to bare rock. The islanders owned more cars and motorbikes than any other Pacific island but they only had 20 km of road along the coast on which to drive them. The island's birdlife has disappeared and the central part of the island is a barren moonscape with pinnacles of bare coral covered in fine dust. The heat is intense. It is not possible for the citizens of Nauru to walk on most of their island.

But worse still is the effect on its climate. The intense heat reflecting off the island has caused an updraft of warm air high into the sky. It rises so swiftly and with such strength that it disperses all cloud formations in the sky above the island. Because this air rises from bare rock, it contains no moisture so there is nothing to condense as new cloud. As a result, rainfall has been severely reduced, trees have died and there is no grass left on the golf course. Nauru now experiences successive years of drought when once it enjoyed humidity, cloud, rain and sea breezes like most other Pacific islands.

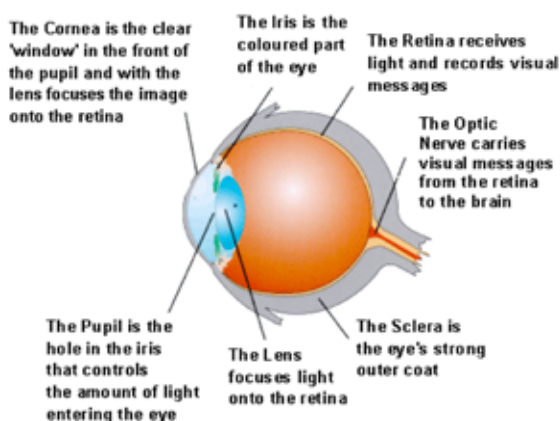
Sadly there is no money left. The trust fund fell foul of crooked scams, naïve and disastrous financial decisions, a loss-making airline, and exploitation by greedy, international companies intent only on making profits for their shareholders. Nothing was put aside to reinstate the land but – as a result of a compensation claim from its colonial masters (including Australia) – there are now plans to level the pinnacles, import soil from neighbouring countries, replant with traditional plants, and reintroduce wild life – especially birds.

But even more horrifying, Nauru will be one of the first countries to be inundated by rising seawater due to global warming. Its coastline is already subject to tidal surges and flooding. So even though the climate of the island has changed – entirely due to man-made interventions – the changing climate of the globe will likely destroy it.

I abhor what has been done to this island – and I abhor that the Australian Government sees fit to imprison innocent people there to satisfy purely political motives. Surely enough has been done to this place! Lagumot would be appalled.

Glaucoma – the creeping blindness

I don't want to harp on about my eyesight but I thought I should perhaps talk to you about glaucoma. I have recently been diagnosed with glaucoma caused probably by the trauma to my eyes over the years through various operations. However in most cases, glaucoma is an inherited (genetic) disease that is passed from one generation to another. Two percent of Australians will develop glaucoma at some time in their life and there are no apparent symptoms in the early stages. Glaucoma is the leading cause of irreversible blindness worldwide. In Australia, one in eight people over 80 will develop glaucoma and 50% of people with glaucoma are undiagnosed.



First of all I want to give you a short lecture on the functioning of the eye. I told you that this newsletter was going to be didactic! The eye works very much like an old-style camera. In the camera, the light comes in through the shutter, is focused by the lens, falls onto the film and then we take it to be processed.

In the eye, light comes in through the cornea and pupil. It is focused by the lens, falling onto the film in the eye (the retina) and then goes, via the optic nerve (the nerve of sight), to the brain (the processor) for developing. The shape of the eye is achieved through the circulation of a clear fluid (aqueous). It bathes and nourishes the eye, keeps it firm and gives the eye a certain pressure. High pressure left uncontrolled can lead to damage of the optic nerve and result in vision loss. Eye pressure varies from person to person. What is high pressure for one person may not be for another.

The word 'glaucoma' was first used in the 17th Century to describe blindness in general. Nowadays, glaucoma is the name given to a group of eye diseases in which the optic nerve at the back of the eye is slowly destroyed. In most people this damage is due to an increased pressure inside the eye - a result of blockage of the circulation of aqueous, or its drainage. In other patients, the damage may be caused by poor blood supply to the vital optic nerve fibres, a weakness in the structure of the nerve, or a problem in the health of the nerve fibres themselves.

Glaucoma has no symptoms until eyesight is lost at a later stage. Damage progresses very slowly and destroys vision gradually, starting with the side vision. One eye covers for the other, and the person remains unaware of any problem until a majority of nerve fibres have been damaged, and a large part of vision has been destroyed. This damage is irreversible. It is progressive and usually relentless.

Treatment cannot recover what has been lost. But it can arrest, or at least, slow down the damage process. That is why it is so important to detect the problem as early as possible, to be able to start treatment with as little damage to the vision as possible.

Although anyone can get glaucoma, some people have a higher risk, such as those with a family history of Glaucoma, diabetes, migraine, short sightedness (myopia), long sightedness (hyperopia), eye injuries, high blood pressure, and past or present use of cortisone drugs (steroids). For most people, it is recommended to have an eye check for glaucoma by the age of 40. If no glaucoma is found, health guidelines recommend regular eye health checks for Caucasians over the age of 50 and for those of African and Asian descent regular checks over the age of 40 years, because of the higher prevalence in the latter groups.

Regular eye examinations are the best way to detect glaucoma early. A glaucoma test usually includes an optic nerve check with an ophthalmoscope, an eye pressure check, and a visual field assessment to check peripheral vision - where glaucoma strikes first.

Although there is no cure for glaucoma it can usually be controlled and further loss of sight either prevented or at least slowed down. Treatments include:

- Eyedrops - these are the most common form of treatment and must be used regularly. In some cases
- Pills are prescribed. The drops can be varied to best suit the patient and the type of glaucoma.
- Laser treatment - this is performed when eye drops do not stop deterioration in the field of vision.
- In many cases eye drops will need to be continued after laser. Laser treatment does not require a hospital stay.
- Surgery - this is performed usually after eye drops and laser have failed to control the eye pressure. A new channel for the fluid to leave the eye is created.

Treatment can save remaining vision but it does not improve eyesight. I hope I have not alarmed any of you but if you have any suspicion of failing eyesight I urge you to get a referral from your GP to see an ophthalmologist to have it checked out.

Most of this information was obtained from the website of Glaucoma Australia

Infrastructure Victoria

Infrastructure Victoria (IV) is an independent statutory authority which has been established to provide expert advice and guide decision-making on Victoria's infrastructure needs and priorities.

- the draft Infrastructure Strategy will be released in October 16 and will then be open for public comment and consultation. It will contain a 5 Year Plan which will be reviewed every 5 years to accommodate changed circumstances.
- Infrastructure Victoria will report to the relevant Minister [not the Premier] with a Business Plan for each project, Priority Listing and a Cost Benefit Analysis to provide a detailed assessment and funding recommendation. It would be difficult for a government to overturn a recommendation from IV.
- there will be an increased emphasis on Asset Management including better use of existing assets, how assets are maintained and value capture including overall transport network pricing.

In terms of the relationship between IV and Infrastructure Australia there is presently no official link but both parties are working on a collaborative relationship. It is not IV's role to lobby the Federal Government for funds - that is the State Government's responsibility after IV set the priorities.

IV is working under the umbrella of Plan Melbourne on the basis that land use creates a need for infrastructure and needs to be planned in unison. IV will set time priorities for projects and draft legislation. Government departments will be required to comply with the 5 Year Plan.

Public Consultation is extremely important through the formation of Regional Citizen Juries having input to issues such as: energy, transport, health and human services, and education facilities. The consultation process will be controlled by IV and the outcomes referred to the Minister. IV want their strategies to be owned by the public with all recommendations made public.

Ethical Trading

A weary traveller, desperate for water, was plodding through the desert when he saw something far off in the distance. Hoping to find water, he hurried toward the shimmering oasis only to find a Scotsman sitting at a table under a large umbrella selling red and green tartan ties.

The traveller asked, "Do you have water?" The Scotsman replied, "There is no water, the well is dry. Would you like to buy a tie instead? They are only five pounds."

The traveller shouted, "You idiot! I do not need an over-priced tie. I need water! I must find water first!"

"OK," said the Scotsman, "It does not matter that you do not want to buy a tie and that you think badly of me. I will show you that I am bigger than that, and that I am a much better human being than you. If you continue over that hill to the east for about four miles, you will find a beautiful Oasis palms resort built on a spring with a huge swimming pool overflowing onto the desert sands belonging to my brother. It has all the ice cold water you need.."

Cursing him, the traveller staggered away over the hill. Several hours later he staggered back, collapsed with dehydration and rasped...

"Your brother won't let me in without a tie!"

How are you feeling?

