COMMUNITY CONNECTIONS WITH THE LIFECYCLE OF ASSETS

2013 – MEFVic Study Tour

Ossie Martinz, Director Infrastructure, City of Monash

Bathing • Clothing • Feeding • Toileting • Lifting • Cleaning • Shopping • Medicating

Roads on show down under !

NEW road schemes designed in house by staff have been showcased to a delegate of Australian engineers.

Five engineering and project managers from local authorities in and around Melbourne chose to visit Tameside as part of an international study tour, earlier this month.

The group were particularly keen to understand how we deliver major capital engineering projects and were briefed on the recently completed Ashton Northern Bypass, the current works with the new road at Godley and upcoming projects such as the Pinch Point safety schemes at Ashton.

Executive Director Robin Monk, who was joined by Assistant Executive Director Damien Bourke and Environmental Services Manager Lee Holland to meet the visitors, said: "It was great to showcase the projects that have been designed and delivered in house by our own staff and to discuss the various methods of engineering management around the world. We enjoyed the discussion as much as our visitors."

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COMMUNITY CONNECTIONS WITH THE LIFECYLE OF ASSETS

i. Executive Summary

One of the early realisations with the journey of Asset Management is that Assets are provided for the sole intention of delivering services to our communities.
The study tour topic explored the opportunities for developing better connections from the community to the lifecyle of assets and the positive benefits of doing so. Community Connections opportunities were considered in the lifecycle journey of involving the community from long term planning, influencing design, maintenance, community ownership, information reporting and to eventual upgrade or disposal of an asset.
Four main pillars were explored in this report and these relate to vision from leaders , integration of planning and design, asset management sustainability and community ownership.

As part of the MEFVic Study Tour 2013, visits were made to USA, Canada and the UK with Local Government and other public authorities. Some of these Cities and Authorities had similar problems to those experience in Victoria and Australia. Attendance at the American Public Works Authority (APWA) Conference in Chicago also provided a lot of learnings. While there were similar problems, there were differences in approaches and challenges and this in itself was interesting to compare.

The four main pillars were:

Leadership – Creating the Long Term Vision, Long term planning, courage to challenge the norm, Life cycle costings and understanding Benefit/Cost factors, building capacity of staff, Reporting to be understood at all levels
Integration – Planning and Design incorporating Artwork, Sustainable Design, active transport, public transport, urban landscapes, Water Sensitive Design
Asset Management Sustainability - Lifecycle – Factoring in maintenance, Business cases, long term planning. Funding including Congestion tax, designing for events like natural disasters, climate change and terrorism
Community Connections in Maintenance – Volunteers, Graffiti – residents/owners taking ownership, community assets, tourism, working with community and staff connections to infrastructure, Maintenance models which connect with the community.

ii. Acknowledgements

The tour would not have been possible without the financial and coaching support from the Municipal Engineering Foundation, Victoria Division (MEFVic) and acknowledgement is provided to the trustees of the board and especially to Warren Roberts, the CEO of Stonnington who provided the tour group with support in terms of preparing for the trip, leveraging on his overseas contacts and providing mentoring and coaching. The Treasurer

of the board, Merv Paton also gave up a lot of his time to assist with the logistics of the travel and accommodation. Acknowledgement and gratitude to the number of dedicated overseas public works officials that gave up their time, to pass on their knowledge and experiences to the Study Group.

iii. Recommendations

Specific Recommendations to improve Community Connections to the Lifecycle of assets are:

- Long Term Vision from Leadership is required with community input to ensure Long Term Planning for Assets. It is recommended that a minimum of 10year plans with lifecycle costing for all assets are developed.
- If the long term programs are easily accessible and communicated then consider moratorium or penalties for any works from other Authorities that will disrupt or damage the new assets.
- Consultation and communication with the community during the all phases of Projects, with the information readily available for the community, preferably on line. Design or naming competitions can create interest in a project.
- Design with the community in mind to integrate Public Art, flexible community spaces, transport options, Water Sensitive Urban Design and Environmental Sustainable Designs.
- Consider some of the major themes to be achieved with capital works, eg Public Art and consider dedicating a percentage of each budget to achieving that. eg 2% of every project has to be dedicated to Public Art or sustainability.
- Design for the long term including requirements for climate change, behavioural issues like graffiti or specific issues like terrorism or natural disasters eg earthquakes.
- Seek to build relationships and ownership with the community recognising cultural differences, opportunities with volunteers, correctional services, and the use of disability resources.
- Seek to engage your staff by building a solid culture to understand the value of community connections and to develop an ownership of assets.
- Develop easily understood report cards for all assets types so that their overall condition and status can be communicated.

iv. Learnings and Observations

The Study Tour provided the group with the experience of a large public works conference and inspiration speakers, on ground sharing of knowledge with public officials from large and small municipalities and authorities, experience with innovative community connections opportunities, onsite visits to inspirational public works projects which has enabled comparisons with Australian approaches and a broadening of thinking.

v. Conclusion

If the whole reason for assets is to provide services to the community then the community needs to be part of the planning, design, construction and maintenance/use, and the key to that is communication and realising opportunities to develop ownership. This report explores opportunities to enhance those links. The Study Tour funded by MEFVic provided opportunities to see firsthand innovative solutions in the USA, Canada and UK to expand our thinking. It is encouraged that MEFVic continue to fund these opportunities and to continue to build links with overseas local and national public work bodies. This enables local engineers and public work operators to challenge our norms and to learn from each other.

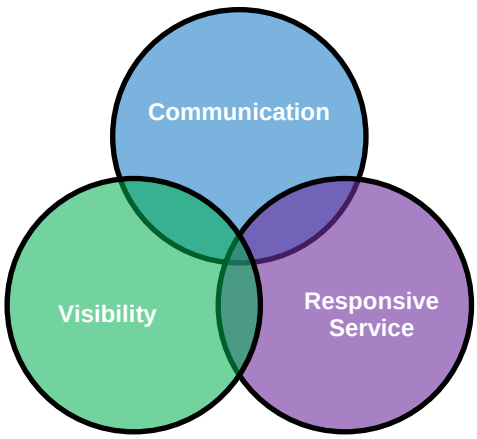
Introduction

The Study Tour was funded and supported by Municipal Engineers Foundation, Victoria (MEFVic)[1] and provided the opportunity for 5 Engineers from Victoria to travel through the USA, Canada and England. Community Connections to the Lifecycle of Assets was the chosen topic by the author of this report.

Background of Tour Topic

The study tour topic was determined by an interest in some innovative programs commenced at my current Council, City of Monash and to previous councils including Frankston City Council, Moonee Valley City Council and Moreland City Council particularly in the space of community connections in regards to asset infrastructure planning, and maintenance. The Overseas tour provided opportunities to research and observe international experience and context of similar issues with different solutions. Some of these programs include:

- Working with various community groups and neighbourhoods in the planning of works, whether it was Local Area Traffic Management, Less Traffic Programs[2], Friends Groups for Reserve planning and maintenance or trader groups with design of activity centre infrastructure.
- Working with Community Groups like the Rotary Club in Ballam Park, Frankston where the Rotary Club took ownership of the local park by way of graffiti management and also constructed a number of assets including a disability swing through funds raised by their members.
- Monash City Pride Crew who work in local activity centres and implement cleansing regimes with the three pillars of Responsiveness, Visibility and Communication. The Monash Model also includes resourcing from a disability group 'Waverley Industries'. Key to this program is the community connections with traders and shoppers. A similar program called One Stop Squad is also operational in Frankston.



MONASH PRIDE MAINTENANCE MODEL- 3 PILLARS

[1] The Municipal Engineering Foundation provides 4 to 5 scholarships a year to broaden the thinking of Victorian Engineers

[2] The Less Traffic Program was an initiative trialled at the City of Moreland

- Working with Correctional Services on programs for cleaning of graffiti on non-council assets eg Reserve fencing, laneways etc.
- Working with the community as per the Clayton Community Strengthening Group to build ownership of assets and to form an effective lobbying group. The Clayton traders contribute to a fund that allows for a graffiti cleaning service.
- Working with the Frankston Foreshore Committee and the Kananook Creek Community in Frankston to provide a foreshore that has won the Sustainability Victoria 'Best Beach' award a number of times.

Study Tour Experience

Preparation

The Study Tour was funded primarily by the Municipal Engineering Foundation, Victoria (MEFVic) who funded 5 Engineers for this tour. All 5 participants had different topics and areas of interest and the tour was designed to provide an opportunity to explore each topic of interest and provide examples of leading edge and innovative approaches.

Learning from each other

One benefit of travelling with 4 other Engineers from different Councils was the learnings from each other. Benefit was gained from the discussions after each visit and exploring the different perspectives from each other as well as the discussions about the experiences from other Councils. Understanding the different approaches from other Councils to things like Capital Works Planning was also of value. Our tour leader, Warren Roberts, CEO of Stonnington, provided great guidance in focussing on our study tour topics.

APWA Conference in Chicago

Attendance at the 2013 APWA Conference in Chicago was one of the highlights of the tour. Apart from the size of the conference with an estimated 6000 Delegates in attendance and 90,000- sq ft. of exhibit floor space available and 400 exhibitors, there were also a number of inspirational presenters amongst the 125 technical and professional development sessions. It also served to engender a feeling of pride in the profession.

Of particular note in terms of the presentations and of relevance to this paper were:

- **Cy Wakeman** a dynamic speaker on a revolutionary approach to leadership. She spoke about her new book entitled 'The Reality Based Rules of the Workplace'[3] . Her presentation provided an insight into the characteristics of good leaders. The Rules were.
  - Reality Based Leaders Refuse to Argue with Reality.
  - Reality Based Leaders Know that the Stress in Life Is Caused by Thoughts, not Realities.
  - Reality-Based Leaders Greet Change with a Simple "Good to Know."
  - Reality Based Leaders Value Action over Opinion.
  - Reality-Based Leaders Work with the Willing.
  - Reality Based Leaders Lead First, Manage Second.
  - Reality Based Leaders work to Bullet Proof Employees so that They Can Succeed, regardless of the Circumstances
  - Reality Based Leaders Make the News Rather Than Report the News.
  - Reality Based Leaders Are Very Careful About What We Think We Know for Sure.
  - Reality Based Leaders Work to Be "Happy" Rather Than to Be "Right"

[3] The Reatlity-Based Rules of the Workplace Know What Boosts Your Value, Kills Your Chances and Will Make you Happier by Cy Wakeman (Jossey-Bass, 2013)

- **Thomas l Friedman** an author[4] who has analysed globalisation. He spoke about the shift required by countries, companies and globalisation.The presentation highlighted the need to create change and cope with change.
- **Gabe Klein,** The City of Chicago's Transport Commissioner who grew up in the cycling industry and has helped set some real targets for transport including targets for cycling, public transport and walking. He has estimated that there is potentially $800m savings annually to the economy by using bikes. Gabe's presentation highlighted the importance of creating a vision and action plans to deliver on the vision.

Other Study Tour Participants

Steven White – Director Infrastructure Services – Bayside City Council

Steven's topic was Project Governance in Local Government with the objective of examining the way projects are planned and delivered, contract models used, the key steps taken and methods used to progress through the project management process including project governance and project risk.

Samantha Krull – Manager Major Projects – Wyndham City Council

Sam's topic was project management, long term infrastructure planning and implementation of annual capital works program with investigation of approaches and innovations in business case development, integration of asset management processes and service planning to inform long term capital works programs

Brett Martini – Manager Engineering and Public Spaces – City of Greater Bendigo

Brett's topic was focused on Infrastructure to support active transport with the objective of exploring public infrastructure works that support active transport and investigate the justification for their funding and implementation.

Trevor Dando – Building Projects Coordinator – Bass Coast Shire Council

Trevor's topic included facility management strategies for aging and diverse property portfolios in a financially constrained economy, with a particular interest in making buildings more sustainable.

Study Tour Itinerary

All together there were approximately 21 site visits in 17 days including attendance at the APWA (American Public Works Association) Conference in Chicago. Site visits included:

- San Francisco – City of San Francisco
- City of Napa Valley, California (outside San Francisco)
- San Francisco – Golden Gate
- City of Chicago – Chicago Water Treatment Plant
- Arlington Heights , Illinois (just outside Chicago)
- Skokie Waste Treatment Plant (Chicago)
- Soldier Field Stadium – Chicago
- Chicago Metropolitan Agency for Planning – Chicago

[4] Thomas Friedman's recent book is 'The World is Flat: A Brief History of the Twenty First Century' (Farrar, Straus and Giroux)

- Donald Trump Tower - Chicago
- APWA Conference
- Chicago Midway International Airport
- Skyway Waste Water Treatment Plant – District of Halton, outside Toronto
- Halton Regional Council, outside of Toronto
- Dr Frank J Hayden Secondary School in Alton Community, Burlington, Halton Region, Ontario, Halton District Board, Library and Sporting Facilities
- City of Burlington, Halton Region, Toronto
- City of Toronto
- London Thames Barriers
- City of Westminster, London
- City of Manchester
- City of Tameside, Tameside Metropolitan Borough Council (outside Manchester)
- Kuala Lumpur, Malaysia

1. Community Connections in Maintenance Volunteers, Graffiti Management– residents/owners taking ownership, community assets, tourism, staff connections to infrastructure

1.1. Community Connections in Maintenance

One of the exciting learnings was the good detailed information on projects that were available with some of the Councils visited. For example the "Online On Time" information which ultimately means that the information collected on site is readily available to customer service staff. Eg Arlington Heights, Chicago. San Francisco has a good information database on all projects that allowed for real time updates and this in turn could be used to inform the public about projects and also allow for good information for future planning and for sharing of information with other authorities.

1.2. Innovative Maintenance Management Practices

Graffiti Management

A number of the municipalities took a hard line on graffiti and the positive results showed, for instance San Francisco had regulations that required property owners to clean up graffiti within 48 hours. This recognised that graffiti was a shared problem and could not be tackled by government alone. While this may have been seen as being a bit harsh on the 'innocent victim', the underpinning philosophy was that a city clean of graffiti discourages further graffiti, i.e if you can clean the graffiti off quickly, it discourages other graffiti crime.

1.3. Community volunteering

A group of volunteers (refer picture) provide cleansing services and assistance to homeless people. A number of volunteer groups had also provided greening projects both in terms of funding and resources eg street trees planting. Friends of the Urban Forest in San Francisco claims to have planted 40% of the street trees. The Street Angels of San Francisco, while primarily set up to help the homeless on the street, also performed street cleansing duties to make the street environment more pleasant.

THE STREET ANGELS OF SAN FRANCISCO

FRIENDS OF THE URBAN FOREST –PROMOTION SIGN

1.4. Staff Connections to Assets - Infrastructure Inspections – making it easy

Field Staff should be empowered with hand held devices that are easily used eg in Arlington Heights, Chicago, staff were allowed to familiarise themselves for 2 months with an IPad before having to use it. – seen as a change management process. Works Orders are easily accessible via GIS. The ultimate benefit is that the information collected on site is readily available to customer service staff. It also provides for easier reporting and an opportunity to report and update from the field. Thus field staff can gain a better ownership of the assets out there.

1.5. Working with your community

Chicago Midway International Airport was a good example of a business working with the community despite having on average 580 flights per day in a very tight land space (1sq mile). They have been able to develop good relationships with the adjoining neighbourhoods by providing sound insulation (some funded by grants) and local employment. The Airport also has a sustainable Airport Manual – with LEED certification.

CHICAGO MIDWAY AIRPORT - NOTE THE PROXIMITY TO SURROUNDING RESIDENTIAL DEVELOPMENTS

1.6. San Francisco Town Hall

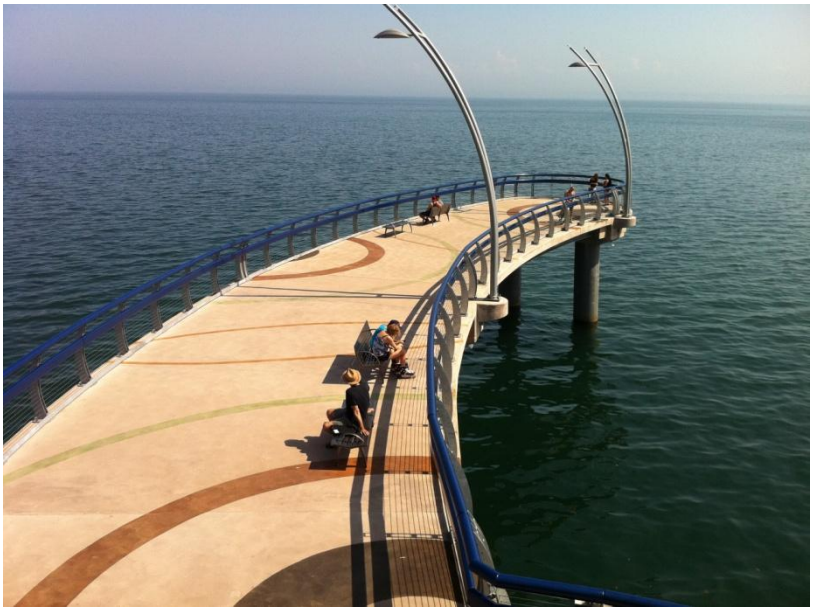
The San Francisco City encourage use of this magnificent building for public use including weddings. A very knowledgeable voluntary historian is also available to provide guided tours of the facility.

SAN FRANCISCO TOWN HALL

1.7. Community Design Competitions

Community Design Competitions are a great opportunity to get the community interested in a project and can also lead to some great designs, for example

Burlington - Brant Street Pier in Burlington achieved community buy-in to the project by having a community competition for artwork.



BRANT STREET PIER – BURLINGTON, TORONTO

1.8. Tourism

A number of the major Cities like San Francisco, Chicago and London understand the importance of Tourism and they design their cities around the tourism theme to encourage and promote it. These include understanding the importance of good architecture, designing spaces for people, public art.

Frank Lloyd Wright Architecture in Oak Park, outside Chicago

The magnificent architecture of Frank Lloyd Wright especially in Oak Park, Chicago is a huge drawcard for tourists from all around the USA and overseas. One example of his building is the Unity Chapel. Locals are currently volunteering to reinstate the building to its original majesty.

FRANK LLOYD WRIGHT UNITY CHAPEL - OAKPARK

2. Integration of Planning and Design

The integration of Artwork, Environmentally Sustainable Design (ESD), active transport, public transport, urban landscapes, Water Sensitive Urban Design (WSUD) and working with community, is further explored

2.1. Imbedding Art in Capital Works Projects

A number of the municipalities had fairly stringent guidelines on the amount of funding for Capital Works Projects that had to be put aside for public art – Chicago specifies a minium of 4% and San Francisco specifies a minimum of 2%. This stipulation provides a culture of embracing artwork within the cities and also means that the artwork becomes part of the design work rather than an afterthought. One viewpoint from some of the cities we visited is that it also encourages innovation and seizing opportunities with the design process. For instance, some left over steel may be used to provide a sculpture.

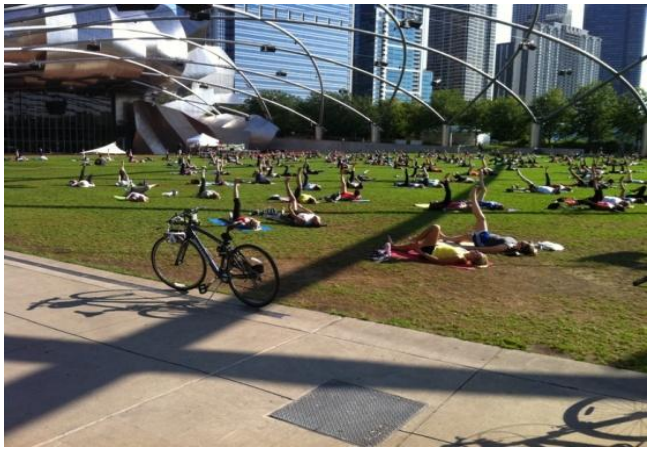
SAN FRANCISCO INTEGRATED DESIGN - TRAMSTOP, ROAD BARRIER AND PLANTING BOX!

PUBLIC ART SCULPTURE AT NAVY PIER CHICAGO - CELEBRATING CHILDREN FROM DIFFERENT RACES PLAYING TOGETHER

2.2. Innovative Urban Landscaping Ideas

Designing spaces for people

Chicago's Millennium Park is a good example of designing spaces for people. From 'The Bean' to public concerts in parks and the water fountains with people images, what was evident was the use of the space by people at all hours of the day.



MILLENNIUM PARK - EARLY MORNING PILATES SESSION

MILLENNIUM PARK - WATER FOUNTAIN WITH IMAGES

Cloud Gate -- referred to by locals as "The Bean", for obvious reasons -- is a public sculpture by talented British artist Anish Kapoor. Cloud Gate weighs in at over 110-tons, and is 66 feet long and 33 feet high. "The Bean" was created using a huge number of individual stainless steel plates. Cloud Gate's seamless surface is the result of thousands of hours of polishing. The sculpture has the appearance of a giant drop of liquid mercury, and the mirrored surface offers an amazing reflection of the city skyline, even more breathtaking on a bright, clear day. One of its features is that visitors can walk underneath the Cloud Gate, which is surprisingly concave. Kids and adults alike enjoy the fun house mirror effect that this creates. Cloud Gate is quickly becoming one of the more popular photo opportunities in the city.

CHICAGO CLOUDGATE OR 'THE BEAN'

Built over carparks and improved public realm

There were a few examples of good use of space via the building of carparks generally underground with an impressive public realm above. A Good examples of this was the City of Toronto Town Hall Plaza that was built over a carpark.

While there are many multi-storey car parks being built in Victoria, the idea of underground parking while maintaining a public realm is still a new concept, but it seems to be imbedded thinking in places like Toronto and San Francisco, possibly driven by lack of good public realm space and space in general.

PUBLIC REALM OVER CARPARK IN SAN FRANCISCO

2.3. Sustainable Transport

2.3.1. Walking

Street signage and information signs and brochures

An important part of encouraging walking as a mode of transport and for tourists is the provision of good information. A good example of this is the on-line information available on 'Tour London' website. It was available as an 'App' which provided information on public transport, walking distances and information on tourist and government destinations. London was also very good with signage in terms of destinations and distances. A number of the Cities visited also had good tourist brochures and public information maps that provided information on current location.

2.3.2. Cycling

Provision of cycling facilities

A number of the buildings visited are incorporating bicycle parking and showers to encourage cycling to work. Cities are planning well for cycling.

Bike Lanes and bike paths

The provision of bicycle routes, bike lanes and bike paths in the Cities of San Francisco, Chicago, Toronto and London shows a growing trend amongst international cities to improve opportunities for Bicycle usage. The bicycle infrastructure provides encouragement for bicycle usage for both commuter and recreation cyclists. Commuting with bicycle, provides a cleaner (in terms of pollution) alternative to private vehicles, has the potential to improve general fitness and due to traffic congestion can be a quicker way of getting around the city.

Transportation Master Plan – City of Burlington, Ontario

The City of Burlington has employed a Transportation Technologist to drive the City's New targets in terms of improving Active transport with an aggressive modal split target of 20% by 2031. Their Masterplan is entitled 'Go Your Way' and the role of the Transportation Technologists also includes engendering cooperation with Transportation, Engineering, Planning, Environment and Transit.

Bicycle Hire Schemes

Bicycle Hire Schemes were available in San Francisco, Chicago, Toronto and London. They proved to be a good way to get around the cities. There were generally two options available for the hire of bikes, at a set rate for longer period of times mostly by private providers or bicycle hire schemes for shorter periods from bicycle stations with the ability to pick up and drop off the bikes at different stations. These short term hire systems are generally designed for tourist or commuters to use a bicycle at their convenience. Whilst the City of Melbourne provides a similar scheme, the difference is that Melbourne requires the use of bicycle helmets which, while improving the safety of the riders, provides for an inconvenience.

BICYCLE HIRE SCHEMES

Bikeways Chicago

Chicago used to be one of the best cities for cycling in 2001 but has slipped back since then. It has set a Goal of 5% of work trips to be made by bicycle and a target to build 100 miles of protected bike lanes by 2015.
Interestingly, Chicago has sold their parking meters so they are restricted in their ability to reduce parking. The biggest reason given for cycling to work is that it is convenient, fast etc.

2.3.3. Public Transport

Public Transport was recognised as being a key sustainable transport initiative. City of San Francisco runs a system called BART (Bay Area Rapid Transport) which recognised the need to move over 1.5M people who lived out of the city – in and out of the City.
The Transbay Transit Centre in San Francisco is a good example of forward planning for Transport and of a good collaboration project. San Francisco has been planning for the replacement of the outdated and seismically deficient Transbay Terminal at First and Mission streets for some time. The new one million square foot Transbay Transit Center will serve as San Francisco's next landmark and will feature a 5.4-acre public park on the roof of the Transit Center. The five-story Transit Center includes: one above-ground bus level, a ground floor entrance on Mission Street, concourse level, and two below-ground rail levels serving Caltrain and future California High-Speed Rail. The $4.2 billion Transbay Transit Center Project is funded by various funding partners, including the Federal Government, the State of California, the Metropolitan Transportation Commission, the San Francisco County and San Mateo County. Stage 1 is currently being constructed at $2B but the construction allows for the future stages despite the fact that funding is not available as yet.

2.4. Burlington/Hulston Transportation Masterplan

The Burlington/Hulston transportation Masterplan is a good example of a long term visionary plan. It is looking at investing $1.4B with an aim to move mode of travel to 20% active transport and a plan for no more wholesale widening of roads. The plan includes Mobility Hubs called Metrolinks Transit Station (4 in Burlington) with a campaign slogan of 'Go your way'. The Masterplan also targets behavioural change programs. While the City of Melbourne and some inner municipalities have good plans for improving pedestrian and cyclist infrastructure, an overall funded plan for greater Metropolitan Melbourne is still lacking.

2.5. Sustainability Initiatives and Environmental Sustainable Designs (ESD)

Roof Gardens eg San Francisco General Hospital

The use of roof gardens is becoming more common place. Interestingly, the cities that have to deal with high snow falls, already factor in high dead loads in the design of their roofs, so the addition of the loading from roof gardens is a small increase in comparison. The Roof Gardens have to be designed to be light (minimum soil depths generally), use hardy plants that require minimal watering

and able to survive all weather conditions and in the case of San Francisco, Chicago and Toronto, heavy snow falls.

Chicago Water Treatment Plants

Chicago has a program of upgrading water treatments plants and we visited a number of these. The upgrade is aimed at making them more energy efficient. They also took the opportunity to upgrade ESD of the buildings and one example of this was a roof garden and more energy efficient plants that provided the ability to reduce energy requirements when not needed with variable speed drives and use of gas and electricity rather than inefficient steam turbines.

Toronto Town Hall

A substantial roof garden has been installed on top of the Toronto Town Hall. Staff are encouraged to access this area for lunch breaks etc. and the roof garden plays a role in terms of cooling the building. The Town Hall also had an innovative heating ventilation air conditioning cooling system with cold water pumped out of Lake Ontario. The plaza is built on top of an underground carpark and it has a pond which has a fountain in summer and is used for skating in winter.

Cold in place recycling of bitumen – Napa Valley

The City of Napa Valley received a Green House Grant for the innovative cold in place recycling technique which includes about four inches of the existing pavement being ground up, crushed and mixed on site with emulsifying agents before being laid and compacted back onto the roadway from which it was taken. There is nothing wrong with the rock on Napa's deteriorating roads so it can be reused."They're able to take the roadways that really have a quality product and grind it up rather than going out and looking for new places to quarry road base,". "It's taking a resource and maximizing it and it's probably a better quality than if we went out now and got something that was recently quarried." Had traditional paving methods been used on the 1.5-mile stretch along Freeway and Golden Gate drives, between 60 and 80 trucks would have been used to haul away the old pavement and bring in new pavement. With cold-in-place recycling, only one truck is needed to bring in oil, along with a few pieces of equipment necessary to complete the on-site work.

California encouragement of Electric and Hybrid Cars

The previous Governor of California, Arnold Schwarzenegger, encouraged the use of hybrid cars like the Toyota Prius by providing discounted Rates. This included allowing for reduced road tolls and reduced parking fees.

Powerpoints have been included in parking and building infrastructure to allow for recharging. The program has been so successful that there is now a big demand for the powerpoints.

Halston/Burlington Canada – Stormwater Management

Burlington has created a number of Stormwater Management Ponds mostly off-line ponds to quality and quantity targets including, sediment removal targets. They have also introduced a Residential Drainage Assistance Program to neighbourhoods with flooding issues. The trial program uses a number of WSUD initiatives like porous pavements, bio-swales and rain-gardens. The City of Toronto had similar programs for households.

Victoria is currently improving its knowledge on WSUD for example, Clearwater provides and funds scholarships to enable improved knowledge for local government engineers in terms of the technologies and the benefits of WSUD. Monash Council is currently finalising its own WSUD Plan.

3. Asset Management Sustainability - Lifecycle – Factoring in maintenance, Business cases, long term planning. Congestion tax, natural disasters, climate change, terrorism

3.1. Long Term Planning and Funding

Life Cycle Costings

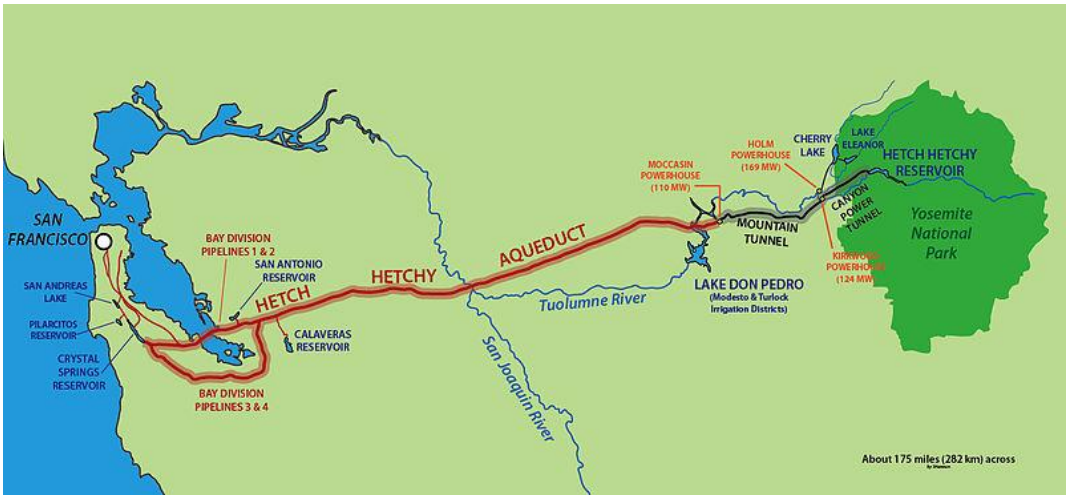
A number of the more innovative Councils were able to demonstrate life cycle costings to justify funding for some of their projects eg San Francisco was able to build a Public Utilities Building by demonstrating long term savings in energy and rental payments. Thus they were able to build a robust business case. The statuesque new $147 million San Francisco Public Utilities Commission (SFPUC) Headquarters recently achieved LEED Platinum certification.

SAN FRANCISCO PUBLIC UTILITIES BUILDING

The 13-story, 278,000-square-foot headquarters at 525 Golden Gate Avenue, a half block away from San Francisco City Hall, offers Class A office space for roughly 900 workers. SFPUC provides water and waste services to San Francisco, wholesale water to three bay area counties, and hydroelectric and solar power to San Francisco's municipal departments. It's estimated the super-efficient building will dole out $3.7 billion in ratepayer savings (or $500 million in 2011 dollars) over a 100-year lifespan.

Hetch-Hetchty water supply

The Hetch Hetchy water supply for San Francisco is a good example of long term planning. This system provides some of the cleanest water for drinking to San Francisco and provides up to 80% of the water supply at low cost. While there were some concerns about environmental issues associated with the initial construction, the scheme has proved to be visionary in its ability to supply a large portion of the City's water supply.



HETCH HETCHY WATER SUPPLY SYSTEM

Golden Gate Bridge San Francisco

There is a separate Authority for the Golden Gate Bridge which recognises the importance of the bridge to tourism. The current Chief Engineer, Eva Bauer, took us for a tour of the current maintenance works. The bridge was built as an Engineering feat with the last rivet installed in 1937. There is still a toll on the bridge and the income currently subsidises metropolitan buses. A Seismic retrofit program is currently underway with Federal subsidies. The original structure was built with little reinforcement as the original design was mainly concerned with wind damage, not earthquake. There are Biannual inspections of the bridge with annual maintenance budgets on line with a long term 10 yr plan in place.

This was an interesting case study particularly with recent structural issues in some of the bridge infrastructure in Australia, for example the WestGate Bridge in 2013 and 2014. Having a separate authority with ability to raise income and to provide long term maintenance plans appears to be a model that can work well.

THE GOLDEN GATE BRIDGE IN SAN FRANCISCO

Natural Disasters – San Francisco – Base Isolators – San Francisco Town Hall and San Francisco General Hospital - after the earthquake of 1989 the San Francisco Town Hall was retrofitted with earthquake protection via use of base isolators.

Base isolation, also known as seismic base isolation or base isolation system is one of the most popular means of protecting a structure against earthquake forces. It is a collection of structural elements which should substantially decouple a superstructure from its substructure resting on a shaking ground thus protecting a building or non-building structure's integrity. Base isolation is one of the most powerful tools of earthquake engineering pertaining to the passive structural vibration control technologies. It is meant to enable a building or non-building structure to survive a potentially devastating seismic impact through a proper initial design or subsequent modifications. In some cases, application of base isolation can raise both a structure's seismic performance and its seismic sustainability considerably. Contrary to popular belief base isolation does not make a building completely earthquake proof.

BASE ISOLATION SYSTEMS

Long term asset planning

Impact of long term planning on service asset maintenance

One of the advantages of long term asset planning is the ability to provide that information to service authorities to look for any synergies. For example Napa Valley, due to their long term planning, provide a moratorium of 5 years for service authorities before they can dig up new infrastructure based on the fact that they are given an opportunity early in the planning of the infrastructure. They are either banned or have to pay a heavy penalty if they need to dig up the infrastructure within 5 years. The rationale for this is both the waste and the public perception. It also allows the ability to plan projects together and gain savings eg water main renewal and road reconstruction.

Long Term planning Flood Protection –Thames Tidal River flood protection is an example of a massive major project with long term consequences. There were major floods in London in 1928 and 1953 and it is estimated that there are 115km^2 of flood prone area and 360,000 properties (1000yr) at risk. Apart from the aesthetically pleasing Thames River Tidal Flood gates, other works included

raising the river walls. Since 1983 the flood protection has been used on an estimated 124 occasions to save London.

LONDON FLOOD BARRIERS - FUNCTIONAL AND ARCHITECHURALLY AESTHETIC

3.2. Sustainability - Poor Example - Use of Manchurian Oak

A poor example of sustainability was the use of Manchurian Oak in the Council chambers in San Francisco. Whilst an excellent timber in terms of aesthetics and it is excellent for carving, it was poor sustainability to remove the entire plantation which means that new timber cannot be sourced.

MANCHURIAN OAK IN THE COUNCIL CHAMBERS OF SAN FRANCISCO

3.3. Transport Planning and funding

Congestion Tax

The Congestion Tax in London provides an opportunity to discourage car traffic through central London, encourage use of lower emission vehicles and use the income generated for encouraging and funding sustainable transport modes. The tax charged is lower for lower emission vehicles like hybrids and this provides incentives for car owners to buy lower emission vehicles. A major part of Central London's economy is driven by tourism. Reducing the traffic congestion assists in improving the amenity for the tourists which helps drive the economy.

3.4. Terrorism

Terrorism events like 9/11 and London Subway Bombings have changed the operational and design of some of the major security risk infrastructure in Cities like San Francisco and London. In San Francisco, additional security has been implemented for major infrastructure like the Golden Gate Bridge. In London, the approach has been building a 'fortress' around all major buildings including Scotland Yard, 10 Downing Street and the houses of Parliament. Part of the 'fortress' has included installing ram proof bollards and security cameras. So the way infrastructure is designed in some of these cities has changed forever.

In a response to the terrorist threat, a local airport in Chicago was closed by the then Mayor due to its proximity to the City Centre. Unfortunately, they did not relocate the planes before they removed some of the runways which then created huge logistical issues with removal of the planes.

BOLLARDS IN CENTRAL LONDON – BUILT FOR SECURITY BUT AESTHETICALLY PLEASING

4. Leadership – Long Term Vision, courage, Benefit/Cost, building capacity , Reporting, response to GFC

4.1. The importance of Leadership

The impact of a positive culture on customer service

The cultures of the various Councils were almost evident from the first time you walked into one of their facilities and met with staff. The organisations that had good leadership seem to exude higher energy, greater staff buy-in, positive speak about the organisation and as a result provided better Customer Service. They also spoke well of their leaders and had a clear vision of what they were trying to achieve.

4.2. Engineering Pride

APWA Conference, Chicago Delegates

There was a real pride and commitment from the local Chicago Delegates to make the conference a success. A number of the delegates took annual leave through work to show the study group around a number of projects around Chicago and went out of their way to make the conference and the experience of the attendees a good experience.

4.3. Benefit cost ration justify program

Chicago water had developed a long term business case to justify $4M/yr to convert the plant from steam to electricity with an estimated carbon savings of 17M tonnes. This project eventually got the support of Mayor Rahm Emanuel and the wider public because the benefits were competently articulated.

4.4. Long Term Infrastructure Planning

Chicago Metropolitan Agency for Planning – Go to 2040! provides an opportunity for an agency to work across all the other authorities and to prioritise works and look for synergies in projects.

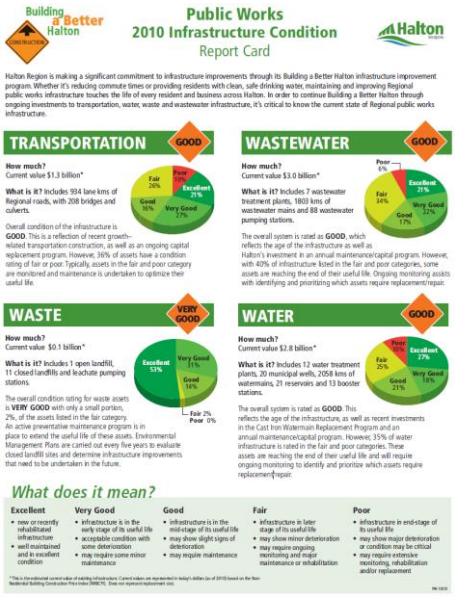
- Long Term Capital Planning and Coordination at the City of Toronto – A separate Department had been set up in a coordinating role. The role of the Capital Programming Department is to oversee capital works coordination and communication and issues management. The model of Capital Coordination Process 'See and be Seen' accommodates the planning horizon of each participants 'mutually assured delivery' 5 year program, with a moratorium of 5 years with exceptions only for emergencies. The long term planning aims for detail designs to be completed 3 years out, tender/specifications 2 years out (advance notice to Councillors), with final budgets 1 year out.
- Reporting – communication with Infrastructure Scorecards
  San Francisco and Chicago, Arlington Heights are transitioning to a National Scorecard for their Infrastructure. This provides politicians and decision makers with a real comparative indication of the current status of their infrastructure and the ability to compare apples to apples. While we have an asset renewal scorecard here in Victoria and there have been discussions

about going nationally, there is some logic in the use of a simple scorecard eg Arlington Heights had a score of 'D' like a school report which is clearly understood.

- Another example is the Halton Region – Public Works Infrastructure Condition Report Card

  The report card, which was shared with the planning and public works committee recently, graded the Region's infrastructure assets from poor to excellent. An asset is identified as poor if the infrastructure is in the end-stage of its useful life, shows possible major deterioration or requires extensive monitoring, rehabilitation and/or replacement. An asset is identified as excellent if it's a new or recently rehabilitated infrastructure and if it's well maintained and in excellent condition. Most of the Region's assets averaged a "good" grade, which meant infrastructure is in the mid-stage of its useful life and may show slight signs of deterioration. It may also require maintenance. "The Region is looking for opportunities to extend the life of assets through ongoing action such as preventative maintenance, crack sealing and lining and so on but recognising that assets are aging and considerable growth over the past decade has added quite a few assets to our inventory."Some individual assets fell in the fair to poor categories like roadways and booster stations.

  The report card is the first step to developing a long-term plan to ensure the Region is making the appropriate investments at the right time to increase the lifecycle of its infrastructure assets. The next step is to make the appropriate changes to its current infrastructure management process and refine which infrastructure assets need more investment.



HALTON – PUBLIC WORKS INFRASTRUCTURE CONDITION – REPORT CARD[5]

[5] Acknowledgement to Lisa De Angelis, Director, Business and Technical Services, Public Works, The Regional Municipality of Halton for copy of the report card.

4.5. Community Input

Referendum Funding

Councils in the US and Canada discuss the need for referendums to seek additional funding for large scale projects – in San Francisco 2/3rds majority approval from voters is required. This ensured that there were strong business cases.

4.6. GFC – Tightening the belt

Due to the effects of the Global Financial Crisis, a number of Cities in the United States and the United Kingdom have had to endure budget cuts or freezes resulting in best value considerations and prioritisation of works. The concern is for the long term asset renewal needs and the future impact of trying to find additional funding in the future to fix assets. The impact of some of these budget cuts were more evident in smaller Councils like The Borough of Tameside.

Tameside had to cut £400m from the budget which resulted in a reduction of 2000 staff, from a workforce of 4500 to a workforce of 2500. They have divested a number of buildings and are also expecting further budget cuts – 2015/16. Budget cuts have hit infrastructure cost and some Councils have resorted to turning off street lights after a certain time at night to save on electricity costs.

In more recent times the whole world has seen the problems that huge deficits and the issue of raising debt ceilings has caused for the USA including the short term shut down of Government Departments.

4.7. Good Leadership - Jacques Rochelle

Jacques Rochelle – Public Works Director at the City of Napa. Public Works Director has been able to turn around the management of assets for the City of Napa. A General Tax which requires support of 50% + 1, specific tax – 67% support has been introduced because of good communication of asset conditions and development of good long term plans.

JACQUES ROCHELLE - PICTURE OF PROJECT DELIVERED ON TIME AND ON BUDGET

4.8. Good leadership - Rahm Emanuel – Mayor of Chicago

"I want Chicago to be the greenest city in the world, and I am committed to fostering opportunities for Chicagoans to make sustainability a part of their lives and their experience in the city." -- Mayor Emanuel

The City of Chicago is a leader of innovative environmental initiatives, and sustainability is a key focus of Chicago's policies. From the Chicago Climate action Plan's broad leadership to the City's targeted energy efficiency investments, Chicago is integrating sustainability in the places residents work, live, learn, and play while preparing for a resilient future.

The Chicago Streets for Cycling Plan 2020 calls for a 645-mile network of biking facilities to be in place by 2020 to provide a bicycle accommodation within half-mile of every Chicagoan.

The plan sets forth a comprehensive strategy to achieve Mayor Emanuel's goal of making Chicago the best big city for bicycling in America. It was developed through a community process, and identifies a network of on-street bikeways that will allow all Chicagoans to feel more safe and comfortable riding on city streets. The Plan's network was developed using three key principles:

- to provide a bicycle accommodation within half-mile of every Chicagoan; to provide more bikeways where more people live; and
- to build more infrastructure where ridership is high, while
- establishing a strong backbone of infrastructure where ridership is currently lower.

4.9. Public Transport

Public Transport in an essential component of any major City plans. The issue is providing public transport that is both accessible and is punctual. Therefore separate transport systems like underground or overground trains, buses and trams with priorities and back up taxi services are all required. The Public Transport in cities like London is a good example of an integrated system.

4.10. Principal of the Halton District School Board

The Principal of Dr Frank J Hayden Secondary School in Alton Community, Burlington (Halton Region, Ontario) Jacqueline Newton, has lead the delivery of a vision which included bringing the High School to the community and the community to the High School. A multi-purpose campus to attract sports, as a major destination for regional and provincial badminton, basketball and volleyball – unique three-way partnership between the Halton District School Board, the Burlington Public Library and the City of Burlington. To enable this a number of the spaces have been developed as flexible workspaces and multifunctional. The Guiding Principles that have been developed for the programs include, a uniqueness, sports focussed, high volume, financial sustainability, growth opportunity, flexibility and community Pride.

FRANK J HAYDEN SECONDARY SCHOOL - MULTIFUNCTIONAL CANTEEN - ABILITY FOR COMMUNITY USE, USE OF LAP TOPS AND OTHER DEVICES WITH EASILY CONFIGURABLE FURNITURE

5. Recommendations

Specific Recommendations to improve Community Connections to the Lifecycle of assets are:

- Long Term Leadership Vision from Leadership is required with community input to ensure Long Term Planning for Assets. It is recommended that a minimum of 10 year plans with lifecycle costing for all assets are developed.
- If the long term programs are easily accessible and communicated then consider moratorium or penalties for any works from other Authorities that will disrupt or damage the new assets.
- Consultation and communication with the community during the all phases of Projects with that information readily available for the community preferable on line. Design or naming competitions can create interest in a project.
- Design with the community in mind to integrate Public Art, flexible community spaces, transport options, Water Sensitive Urban Design and Environmental Sustainable Designs.
- Consider some of the major themes to be achieved with capital works, eg Public Art and consider dedicating a percentage of each budget to achieving that. eg 2% of every project has to be dedicated to Public Art or sustainability.
- Design for the long term including requirements for climate change, behavioural issues like graffiti or specific issues like terrorism or natural disasters like earthquakes.
- Seek to build relationships and ownership with the community recognising cultural differences, opportunities with volunteers or correctional services, use of disability resources.
- Seek to engage your staff by building a solid culture to understand the value of community connections and to develop an ownership of assets.
- Develop easily understood report cards for all asset types so that their overall condition and status can be communicated.

6. Conclusion

If the whole reason for assets is to provide services to the community then the community needs to be part of the planning, design, construction and maintenance/use and the key to that is communication and opportunities to develop ownership. This report explores opportunities to enhance those links. The Study Tour funded by MEFVic provided opportunities to see firsthand innovative solutions in the USA, Canada and UK to expand our thinking. It is encouraged that MEFVic continue to fund these opportunities and to continue to build links with overseas local and national public work bodies. This enables local engineers and public work operators to challenge our norms and to learn from each other.

BACKGROUND TO AUTHOR OF THE REPORT
OSSIE MARTINZ – Director Infrastructure , City of Monash
Professional Background:

- *2&1/2 years State Government - RTA (VicRoads)*
- *26 years in Local Government, previous roles include:*
    - *Coordinator Traffic at the City of Moreland*
    - *Manager Traffic and Transport, Moonee Valley Council,*
    - *Infrastructure Manager Frankston City Council,*
    - *General Manager Assets at Frankston City Council and*
    - *Director Infrastructure Services at the City of Monash*
- *Director IPWEA, Vic. Board*

Aspirations

I am passionate about the continued development of Public Works Engineers and Engineering Technical Staff to ensure a continued better level of communication and high levels of technical and leadership skills.

Technical skills can be advanced by further studies, training, rotation programs, mentoring and sharing of information. There is an impending shortage of Engineering and Technical Staff which will require accelerated development of current skills. There is a lot of work to be done over the various public works areas to highlight the need for development programs and for all public works areas to take a joint responsibility. There needs to be a bit of lateral thinking with the skills shortages including better use of part-time staff, sharing of resources, up skilling of technical staff.

Leadership skill development requires training, mentoring and experience in different roles. In smaller organisations the ability to network outside your own organisation is valuable too After a reasonably long career in local government and Engineering, I am also keen to continue to contribute to the Works and Engineering Industry.

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