MEF Vic 2016 International Study Tour

USA and Canada

The Municipal Engineering Foundation has been in existence since 1966 and was established for the express purpose of providing opportunities for engineers working in local government in Victoria to enhance their technical and managerial skills. This is achieved by annually allocating scholarship awards to research a wide range of internal and overseas study topics.

The 2016 tour was awarded to three engineers to travel the United States of America and Canada including attending the American Public Works Association Congress in Minneapolis, Minnesota from 27 to 31 August 2016. Each scholarship provides $10,000 to cover travel, accommodation and congress registration.

Successful recipients of the 2015 scholarship are –

- Bailey Byrnes, Transport Planning Team Leader, City of Banyule
- Debbie Leeson-Rabie, Assistant Manager City Works, City of Yarra
- Steven Quick, Works Engineer Golden Plains Shire Council

Trustee, Mark Varmalis Director Environment & Engineering of Yarra Ranges Council, will also be joining the tour.

Tour Itinerary

- San Francisco – 12 to 17 August
- Portland – 17 to 20 August
- Seattle – 20 to 24 August
- Vancouver – 24 to 27 August
- Minneapolis – 27 August to 3 September

Planning for the study tour

Planning for the study tour commenced at the beginning of March. The group has met 14 times either face to face or via teleconference to plan all aspects of the tour; initially identifying cities to visit, arranging flights and accommodation, establishing contact with representatives of organisations we will visit, establishing itineraries for each site visit and making arrangements to attend the APWA Congress in Minneapolis.
San Francisco

After setting off from Melbourne at 9.30am Friday 12 August and a quick stopover in Sydney we arrived in San Francisco at 10.30am Friday 12 August - the International Date Line makes it seem to be an easy trip, we wish!

We have settled ourselves in really well, keeping active on the Friday of our arrival by walking around the city area, visited Coit Tower and then down to Pier 39 at Fisherman's Warf. The following day we were up and about early for a trip to Alcatraz where we heard about the history of the island from its early US military establishment to the use as a Federal Penitentiary, its occupancy by American Indians for two years and more recently as a tourist destination. From there we went on to the famous Lombard Street then to the redeveloped Ghirardelli’s Chocolate factory site and then took a Trolley Car ride.
Today (Sunday) we caught a bus to the far side of the Golden Gate Bridge and then walked back across the bridge and down to the San Francisco National Cemetery and then to the Presidio where the Sunday Picnic was happening with quite a number of variety of Food Trucks followed by a visit to the Walt Disney Family Museum.
L-R Debbie Leeson-Rabie, Bailey Byrnes, Steven Quick & Mark Varmalis
Tomorrow we start our visits with organisations, with a visit to the City of Berkeley and Tuesday will be a visit to the City of Oakland.
City of Berkeley

Today we travelled via San Francisco’s BART to the east of the bay to meet with the City of Berkeley. Berkeley’s Director of Public Works, Phil Harrington, led the group on a wide discussion introducing us to organisational practices and the role of community engagement in raising additional funding for public works.

The group then visited the Transportation Division building, where we met with the Transportation Manager, Farid Javandel, to learn more about Berkeley’s key transportation projects currently underway within the city, the City's approach to Compete Streets, and the integration of the transportation plans into the five-year asset plan.

Following lunch we returned to the Public Works Administration office for a discussion on Council governance processes and culture. The day finished with a visit to a current trial project on Allston Way, which featured permeable paving which allows stormwater runoff to infiltrate through the road and into the underground water table.

L-R Phil Harrington, Bailey, Debbie, Steven and Mark
City of Oakland

Today we headed back across the Bay to spend the day at City of Oakland.

Our host Jimmy Mach greeted us on the 4th floor, where we had a short tour of the Public Works department before meeting with the Director, Brooke Levin.

Following a round of introductions, we had a range of technical discussion on GIS systems with Brian Kimball, pavement and road asset management with Jimmy, sidewalk and kerb ramp programs with Kevin Kashi and parking and mobility trends with Michael Ford before heading to lunch with our host city.
Sustainability, parks and trees were the focus of the afternoon, with an inspiring and in-depth conversation around energy and carbon emissions with Daniel Hamilton, Oakland’s Sustainability Program Manager. Brian Carthan, Manager of Parks and Tree services continued the afternoon with an insight into the delivery of parks maintenance across the city and Jeffrey Tumlin provided an overview of the development of the new Transportation directorate.

We then finished the day with a walk down Telegraph Avenue, where work was recently completed to provide dedicated, parking-protected cycling facilities and pedestrian improvements along a 9-block section.
Portland

After an early rise and Bart train trip from the cbd of San Francisco we then took a relatively short plane trip (one and a half hours) to the City of Portland, Oregon arriving middle of the day.

First impressions of the city is that it is very liveable.

We hear of the competition for the most liveable city internationally, and Portland stands strong. The city leaders have made a focused decision to renew the street environment by reallocating road space to pedestrians, cyclists and public transport (light rail, trams and buses). It is nothing short of impressive. The provision for cyclists is obvious everywhere, footpaths are consistently wide and inviting for pedestrians, there are street trees everywhere, public transport infrastructure is high quality and the frequency of public transport seems to be very consistent.

We have made our way around the cbd down to the waterfront and gained a fairly good impression of what this city has to offer. Our next two days with organisations that have led this transformation will be extremely interesting as the city environment has had a strong first impression upon us all.
Metro and Tilikum Crossing

After a pleasant walk along wide shaded footpaths we arrived at the offices of Portland State University and were met by Nancy Hales, Director, First Stop Portland. In her role with First Stop Portland, Nancy has coordinated our study tour visits for two days in Portland.

Tom Hughes, Metro Council President shared the role of regional government and how the Metro provides strategic land use and transport planning for the greater metropolitan area of Portland of 24 cities, 3 counties and a population of approximately 1,750,000. Portland is the fastest growing city in USA. Land use and transport planning are integrally connected through the extension of rail networks to regional areas encouraging economic and population growth can be disbursed along the growth corridor. This approach allows the land use planning controls and population density in existing neighbourhoods to be maintained.

Later in the morning we caught a Portland Street Car to Tilikum Crossing where we met up with Sean Batty, Director Operating Projects and David Tertadian, Director Civil Construction of Tri-Met’s Capital Projects Division. Tilikum Crossing, Bridge of the People, is a cable-stayed bridge across the Willamette River and was opened in September 2015. Sean led the project in the early stages of securing funding, community and statutory approvals and also developed the concept design and parameters. For the construction phase, David supervised the joint detailed design and construction contractor. The ‘green’ bridge only accommodates sustainable transport modes, the light rail passenger trains, buses, Portland Streetcar, bicycles...
and pedestrians and brings new connections and transport options to the greater Portland community.
We ended our tour with a trip on the Portland Aerial Tram. The tram (cable car) carries commuters between Portland’s waterfront district near Tilikum Crossing and the University/Hospital (Portland’s largest employer) on Marquam Hill. The tram travels 1,000m horizontally and 150m vertically in just three minutes.
Portland Department of Transport and Portland State University

Today we were back to Portland State University (PSU) where we were greeted by James Alexander and Sarah Iannarone, Assistant Director of First Stop Portland, who coordinated our second visit. There we met with key staff of the City of Portland’s Bureau of Transportation (PBOT), and discussed the key themes and influences on the Portland transportation network.

Art Pearce, PBOT’s Policy, Planning and Projects Manager, provided us with a snapshot of how Portland shifted its direction in the 1970’s away from single occupant vehicles to get to the sustainable transport city we see today. As Portland is one of the USA’s fastest growing cities, there is a need to accommodate the future demand for trips, or ‘trip gap’, within and beyond the city area.

Alissa Mahar, Executive Director of Finance and Business Operations gave us an insight to the overall structure of PBOT, with a wide ranging discussion on the use of technology in asset management and community engagement. Steve Townsen and Michael Magee, PBOT’s Chief Engineer and Senior Engineer, shared their experiences with transportation projects and infrastructure maintenance, and the role of all staff as ambassadors for change and putting a ‘face’ to public works projects.

We then took to the streets as Sarah and James led us on a guided tour of the sustainability features of the PSU campus. Montgomery Street is an example where
water sensitive urban design treatments along sidewalks and the use of permeable paving at intersections have helped mitigate and direct the flow of storm water while improving the overall pedestrian realm. People power has also been used in developing the bicycle network, with crowd mapping tools used to plan the location of bicycle facilities and hire stations throughout the campus. Thanks to Nike (who are based in Portland), the synthetic sporting field is made up of materials from recycling sports shoes.
Seattle

In planning the study trip we decided that taking the train from Portland to Seattle would be a good alternative to flying. Time wise, the train was around 4 hours duration, no fuss checking in and a short 45 minute wait. The train also arrives in the cbd, with hotel transfers being walkable. Whilst a flight would only have been around an hour, there is the transfer to the airport, two hours wait time including the security screening and check in then transfer from the airport to hotel at the other end. We all agreed that it was a good choice, and we got to see the local country side (sorry about the grotty windows).
On arriving in Seattle, we dropped our bags at the hotel and headed off for a visit to the Boeing factory at the Future of Flight Centre, Paine Field, Mukilteo. It was an incredible experience to see the manufacturing of the Boeing 747-8 and the Dreamliner, with planes in a massive factory in various stages of being built. Unfortunately we were not permitted to take photos, however all of what we saw is viewable on line at the Boeing website.
Future of Flight interactive display.

Image of the Boeing Factory to the left of the photo with a number of planes in the foreground that have come off the factory line and are nearing readiness for delivery to various airlines.

From the Boeing factory, we then headed to Safeco Field for the Seattle Mariners v Milwaukee Brewers baseball game. It was quite a good game, with Seattle winning 8 - 2. This included two home runs over the fence.
Today (Sunday) we have made our way around Seattle, taking in the famous Pike Market, a ferry trip around Elliott Bay and a visit to the iconic Space Needle.
Tomorrow we recommence our study tour with a visit to the City of Tacoma.
City of Tacoma

We have had a sensational day at the City of Tacoma. Our day started with an hour long bus journey south on the Sounder Transit to City Hall in Tacoma where we were introduced to the Public Works and Environmental Services Leadership team:

- Kurtis Kingsolver – Public Works Director / City Engineer
- Michael Slevin – Director Environmental Services
- Jeffrey Jenkins – Public Works Assistant Director
- Rae Bailey – Street Operations Division Manager
- Chris Larson – Engineering Division Manager
- Steven Standley – Site and Building Division Manager
- Erik Sloan – Asset Management

Through round table discussion the group shared how their divisions were resourceful during the global financial crisis and were able to fast track capital works projects at reduced construction costs. The future challenge for the City is improving the quality of stormwater discharging to Puget Sound and maintaining the ageing road infrastructure. The City maintains approximately 1,450 traffic lane kilometres of roads (including arterials), made up of 8-9,000 street blocks, 337 signalised intersections, 22,000 street lights and 41 bridges servicing a population of 210,000. Approximately half of the roads and associated infrastructure require significant maintenance to extend their asset life.
A number of the group joined us as we crossed the newly refurbished Murray Morgan Vertical Lift Bridge on route to the new 6 STAR energy efficiency rated office Centre for Urban Waters. The refurbishment of the 100 year old bridge was made possible by local and federal funding of $47 million and took two years to complete.

Sue O’Neill, Assistant Engineering Division Manager shared a number of progressive and collaborative engineering projects recently delivered with significant stakeholder input and involvement. The clean-up of the deep water industrial port, Thea Foss Waterway, has realised significant environmental and economic benefits to the foreshore. The final project closely reflects the original vision for the area, which at concept appeared to be unattainable.

Jessica Knickerbocker, Science and Engineering Division, presented a number of Green Road projects delivered to date, these included the use of permeable road pavements and a regional stormwater treatment facility at Point Defiance. The Sustainability Commission has given the directive for Green Roads to be adopted Council wide, resulting in an internal committee to drive the initiative in future projects.

The presentations concluded with an Environmental and Asset Management Presentation from Karen Bartlett and Erik Sloan. The key learning was improved integration of pavement condition, sign inventory and traffic data to inform future asset management programs. The City is working towards combining data from a number of systems (maintenance works orders, road condition data collection, asset management, pavement management and project management) to be accessible from their GIS system.
Our afternoon included a tour of a number of the project locations showcased in earlier presentations. These included a walk along the Thea Foss Esplanade, Prairie Line Trail (Rails to Trails Project), Point Defiance Regional Treatment Facility, Green Roads projects on a number of local roads and the Cheney Stadium car park, and a joint Department of Education and City funded road reconstruction fronting a school site.
The tour concluded with a tour of the City’s owned and managed asphalt plant. The asphalt plant opened in 1946 and meets the majority of the City’s asphalting needs producing up to 350 tonnes of asphalt / day. Two years ago the plant started manufacturing asphalt with 10% recycled materials and is aiming to increase the recycled content to 15%.
Greenroads

Today we joined Jeralee Anderson from Greenroads for an amazing whirlwind tour of a number of Green Road accredited projects. Greenroads is a rating system of sustainability best practices and activities that apply to transportation capital projects, much like green rating systems for buildings. Greenroad certification is not dependant on the scale of a project but is defined by the extent of the construction.

Our first stop was with City of Bothell to look at the SR522 crossroads and Multiway Boulevard Phases I and II projects. We were joined by Ryan, City of Bothell’s design and construction Project Manager; Kurt Wiseman, the project Consultant from Pertet Inc.; David, City of Bothell’s Storm Group Specialist and Steve from the Public Works Maintenance team.

Phase I of the project is a shared space service lane. As this phase is complete, we walked along the lane learning about the sustainable elements that earned the project Greenroads accreditation. At a high level, some of the elements are permeable pavement, LED lighting and raingardens. We also looked at a length of pathway constructed out of permeable concrete.
Kurt Wiseman of Perteet Inc. guided us through the highest ever Greenroads accredited project on 120th Street, City of Kirkland. This project was initially scored against the Greenroads criteria as a pilot project. This good early commitment and early assessment enabled the designers to develop a clear strategy to improve the design to ultimately achieve Gold Status accreditation for the project. The project scope included long life asphalt pavement, good material reuse policy including pulverising existing material on site to be used as the base course, LED lighting, street trees in side entry pits, stormwater detention basin, disability access provision and smart traffic signal technology to improve travel time for emergency vehicles to the nearby hospital. The street light pollution is in accordance with the European ‘dark night’ requirements.
Our next stop at the floating bridge on State Road 520 was amazing. We were met by Matt Weinberger, Project Engineering and Management Consultant to Washington State Department of Transport and Daniel Brodie the Communications Consultant. On arrival we were kitted out with the necessary PPE for the construction site. The tour led us through the materials storage area, vehicle wheel wash bay and onto a temporary bridge used to construct the West Bridge Approach North section. In the shallow water area, we observed a number of pylons in different stages of construction, including the installation of large seismic isolation bearings at the top of the pylons. The tour took us up a tall ladder to the new road deck where we saw crews pouring concrete for the new road pavement. The ramp sections of the dismantled old bridge could be seen in the distance waiting to be floated way for reuse elsewhere. The project delivery has incorporated cultural heritage, sensitive waterways, community feedback and waterway access requirements. To keep the community up to date on the status of the project and upcoming works, a monthly newsletter is distributed as well as employing a multitude of engagement techniques.
L -R  Daniel Brodie, Matt Weinberger, Bailey, Steven, Debbie and Jeralee
L-R Daniel Brodie, Bailey, Steven, Debbie, Jeralee and Mark
Jesse Thomsen of Perteet Inc. guided us along the 23rd Avenue Corridor Improvement Project for Washington State Department of Transport. This project is a joint Complete Streets and Green Roads project to be delivered over three phases. The project started out as a pavement upgrade project (arterial asphalt to concrete), but soon included Complete Streets methodology. The complete street component included proposals to improve safety, increase the footpath, create a vegetated buffer zone between traffic and pedestrians by reducing the width of the traffic lanes. Cyclists facilities are provided on a parallel road as part of the Neighbourhood Green Ways network.
Our last visit for the day took us to the Mercer Corridor East Phase Project linking the I-5 interstate highway to the Port of Seattle for freight traffic. Mercer Street was remodelled to improve safety and connectivity to the through traffic and pedestrians traversing the corridor. The project has been divided into six parts for individual Green Roads accreditation as each section provided different sustainability features, so could not be scored as a complete project.
Vancouver

The next leg of our study tour is Vancouver, where we again travelled by train. The train travels along the coastline giving us the opportunity to take in the waterfront views, which was very enjoyable.
Arriving in Vancouver we made our way to the hotel and then stepped out to visit the Granville Island market via the Granville Bridge, where the views were quite something.
Later in the afternoon we caught a tour to Capilano Suspension Bridge Park and then Grouse Mountain. The cliffwalk, suspension bridge, tree tops walk and views of the gorge and incredibly tall Douglas Fir Trees and Western Red Cedar Trees were amazing.
At Grouse Mountain we took a cable car ride to the top of the mountain where we experienced the incredible views of Vancouver as the sun began to set.

Over the next two days we recommence our visits, with the City of Richmond on the Thursday and City of Vancouver Friday before we head off to Minneapolis for the APWA Public Works Congress.
City of Richmond

Today we hopped on Vancouver’s famous driverless Skytrain for the half hour journey south of Vancouver to the City of Richmond. We were greeted by Richmond's Senior Manager Sustainability & District Energy, Peter Russell. Also joining us for the morning were Romeo Bicego, Manager Sewerage & Drainage and Lloyd Bie, Manager of Engineering Planning. The day commenced with a short discussion explaining the overview and history of Government within Vancouver.

The first presentation by Peter Russell gave an overview of District Energy Systems in the City of Richmond. A District Energy System for those unfamiliar with the term, is a system that centralises the production of heating and cooling for a neighbourhood using a system of underground pipes to convey heating/cooling to buildings. This is an innovative enterprise that provides sustainable energy to the residents of Richmond.

This was followed with a presentation by Lloyd who described the challenges for an island city of 220,000 residents that is only 1m above mean sea level, with flat topography, a high water table and soft soils. To help mitigate risks associated with flooding and climate change (sea level rise) the City of Richmond maintains 49km of dikes surrounding the entire island. These dikes have been constructed to a level two feet above the highest ever recorded water level (recorded in 1894) or the equivalent of a 1 in 200 year flood event.
After a quick break for lunch our group was joined by Kevin Roberts, Project Engineer District Engineer, and took a quick tour of two City assets. First up was the No. 4 Road Pump Station. This is one of the newest drainage conveyance stations that recently won an innovation award from the Association of Professional Engineers and Geologists of British Columbia. We were met on site by one of the pump station's supervisors, Denny, who gave the group a quick run down on the operations of the pump station.
L-R  Denny, Lloyd Bie, Kevin Roberts, Debbie, Bailey and Steven
The final stop of the tour was a visit to the Alexandra District Energy site. Opened in 2012 this was Richmond’s first District Energy site (a second was opened at Oval Village in 2015 with a third planned for the North City Centre in 2017). This project was the recipient of a national sustainability award.
City of Vancouver

Our second and final stop in Canada was the City of Vancouver.

Our visit commenced at 10am with a meeting with City of Vancouver planning and engineering staff, including:

- Paul Kruger, Planner
- Peter Cohen, Section Head Project Coordination
- Michael Irvine, Engineer Water Design
- Jennifer Draper, Transportation Planning
- Nino Maclang, Transportation Planning
- Lon LaClaire, Director Transportation

Paul Kruger gave a presentation on the City of Vancouver’s Transportation 2040 Plan. This plan is the City’s long term strategic document that helps to guide transportation priorities and land use decisions into the long term future. The plan has a strong emphasis on promoting walking, cycling and transit as priorities to help the City cope with a road network that is struggling with existing traffic demand.
We then met with Jeff Markovic, Manager, Kent Services, who took us on a tour of Kent Yard, the City’s very own asphalt plant and construction site. The yard supplies asphalt, aggregate and precast concrete products. It has a very strong focus on sustainability, with a majority of product manufactured from excess excavation materials, reclaimed asphalt and waste concrete products. We would also like to pass on our thanks to Jeff for providing these four Australians with a pack of Tim Tams to help make us feel right at home.
After returning to the offices we met with Mike Zipf, Senior Engineering Assistant from the Active Transportation team who took the group on a cycling tour of the city showing all the major stops on the city’s bike routes. The highlights of this tour included how the City of Vancouver has provided priority treatments for cycling across the city and the Burrard Street and Cornwall Avenue intersection where reconfiguration of the intersection has significantly improved cyclist safety.
Diagonal cyclist crossing of an intersection

Tomorrow we will be waking up in the very early hours of the morning to catch a flight to our final destination, Minneapolis.

**Minneapolis**

We had a very early rise for our flight from Vancouver to Minneapolis, as the flight was due to leave at 6.40am and arrive in Minneapolis at noon (including a 2 hour shift in time zone). Unfortunately it did not quite turn out that way. There was a problem with the plane's navigation system that required a replacement part. After sitting on the plane for quite a while, we had to get off and wait in the boarding area. After a 4 hour delay we were back on the plane however the flight was redirected to go via Salt Lake City to collect then faulty part. It was OK to fly to Salt Lake City as the sky was clear for landing, unfortunately Minneapolis had cloud cover for which the navigation system was sought of critical. After a short stopover in Salt Lake City we were back on our way and finally got to Minneapolis at 6.30pm, instead of 12 noon.

All however is good and we are here safely.
APWA PWX Conference

The APWA PWX Conference started out strongly with a keynote presentation from astronaut Scott Kelly. Captain Kelly spent 340 days on the international space station and had a fantastic story of his journey to become initially a pilot with the US Navy and then go on to be an astronaut.
The venue here in Minneapolis is quite something. There are 87 break out rooms, a huge auditorium that seats 3,400 and an exhibition space of 44,000 sq. metres.
We have had the opportunity to sit in on a great variety of speaker sessions ranging on topics that included workplace culture, new and emerging technology, asset management, fleet management, community engagement, complete streets, staff engagement, park maintenance and multimodal transportation systems.

The keynote presentations on the Monday - Uncrapify your life, Tuesday - The 5 Second Rule and Wednesday - Strong Towns were all highly informative and engaging.
The 5 Second Rule

The moment you have an impulse to act on a goal, you must push yourself to move within 5 seconds or your brain will kill it.
There has been a long standing tradition that the Australian group attending the conference all wear a version of the Greg Norman akubra in white. One of the great values of the hat is spotting colleagues in the crowd and another is being recognised as an Australian at the event. The hats however are quite well known by many conference attendees, with each of us hearing stories of how the person chatting with us or someone they knew had been given one of the hats at a past conference. A part of the tradition is that we all give away our hats before the end of the conference. With each of us doing this we clearly made 4 lucky people very happy – which made us feel quite good also.
Bailey, Steven and Debbie with Jeralee Anderson from Greenroads at the conference exhibition.

Gabriella gets a hat from Mark
City of Minneapolis

The day after the APWA Public Works Expo wrapped up the group visited the City of Minneapolis at their Currie Maintenance Facility. We first met with Gayle Prest, Director of Sustainability, John Scharffbillig, Director Fleet Services Division, Al Thunberg, Maintenance Manager and Tim Melser, Fleet Manager.

Gayle gave a presentation on sustainability in the City of Minneapolis and described to us the City’s focus on the three E’s; economic opportunity, social equality and environmental sustainability. Although the sustainability department is small, containing only four employees, there is a strong emphasis on integrating sustainability concepts into other City departments and policies. This is highlighted by the number of green policies by which the City must adhere, including a green fleet policy, green building policy, green cleaning policy, green procurement policy and city land for urban agriculture policy to name a few.

This was followed by a discussion with John, Al and Tim regarding the City’s green fleet policy. This policy has been recognised across the US having placed 21st in the National Green Fleet AwardsTM 2015 and also being one of only two platinum rated fleet policies by the National Association of Fleet Administration (NAFA).

We were then met by Nathan Koster, Transportation Planning Manager. Nathan presented to the group on Complete Streets Policy & Capital Programming. This emphasised to us what we have learnt from previous visits is that complete streets are not simply a one size fits all, and that a complete streets policy should be process
driven as opposed to results driven. The process must allow for all stages of a project including planning, design, construction, operation and maintenance.

After a break for lunch, we were given a tour of the Currie Maintenance Facility. The City is responsible for over 2,000 items of fleet (including emergency vehicles), plant and equipment and the maintenance facility is central to the maintenance of these items. It also includes an on-site car wash and re-fuelling facilities.
Upon returning from this tour, we met with Mike Kennedy, Director Transportation Maintenance & Repair, Larry Matsumoto, Paving Construction, Steve Collins, Street Maintenance Engineer and Paul Ogren, Superintendent Environmental Engineering to discuss best practices in engineering maintenance and the use of recycled materials in road maintenance. Like all other areas of Public Works within the City of Minneapolis, the engineering representatives shared a strong commitment to sustainable practices. The City has been recycling the waste concrete and asphalt products from their construction activities for many years. In terms of concrete, they have been crushing waste concrete dating back to 1976 (totalling 3.2 million tons of crushed concrete) and re-using the recycled material in many different and innovative ways within their construction and maintenance activities. We concluded our visit with discussions around asset management practices relating to road maintenance and repair. We had a fantastic day and learnt many valuable lessons relating to public works and sustainability.
Special thanks to Jennifer Smith for helping organise the day’s activities.

Tomorrow we visit Hennepin County for our last official day of study.
Hennepin County

For our tenth and final municipal visit we met up with Kariann Gottesman, Transport Project Delivery Business Manager at Hennepin County, and Richard McCoy, Director Public Works at the City of Robbinsdale for a tour of the Hennepin Energy Recovery Centre (HERC). At the HERC we were greeted by Randy Kiser, Mark Zaben and Enrique Vinos who provided an overview of the facility.

The HERC is a mass-burn waste-to-energy facility were solid waste is combusted to produce steam and generate electricity. The facility burns 365,000 tons of waste per year, generating enough energy to provide power to 25,000 homes. The steam is used to heat the nearby Target Fields baseball stadium, as well has providing direct heating to 100 nearby businesses.

Engineers from Hennepin County and Covanta Energy Corp, the plant operator, gave us an overview of the facility and guided us on a walk-around of the facility, including the waste pit, control centre, furnaces and boiler rooms. What is truly impressive with the HERC is the low greenhouse gas emissions generated by the facility, and the ability to recover scrap metal for recycling.

L-R Steven, Randy Kiser, Richard McCoy, Kariann Gottesman, Bailey, Debbie, Enrique Vinos and Mark Zaben
After the tour we farewelled Richard and the team at HERC, and then travelled north-west of Minneapolis to the Hennepin Public Works Facility at Medina. There we meet with Kariann and a number of personnel the Transportation Division, including:

- Jim Gurbe, Director Transportation Project Delivery
- Chris Sagsveen, Director, Transportation Operations
- Bob Byers, Senior Project Engineer, Transportation Planning
- Nick Peterson, Design Manager
- Maury Hooper, Traffic Manager
- Steve Groen, Right of Way Manager
- Andy Kraemer, Operations Manager

Jim, Chris and the rest of the group gave a presentation on the role of the County and the transportation division, as well as an insight to the roles, functions, challenges and innovations of each area within the department.

Then it was time for us to return the favour, with a wide ranging discussion on the challenges faced by each of our municipalities back home, as well as some of the things we have learnt both in our day-to-day work and during the past three weeks.

The visit ended with a tour of the vast public works facility, including the transport planning and project design areas, the traffic control centre, traffic signalling and sign workshop and the vehicle depot.
Thank you MEF Vic

After three weeks of travelling, five cities, 10 visits to authorities and four days at the APWA PWX Conference we have come to the end of our study tour for 2016.

We have met some wonderful people in our travels and experienced the finest of hospitality from every one of our visits.

Thank you to all of those that hosted us on our study tour and made this such a memorable experience.

Thank you also to our family, friends and colleagues who have been watching our progress via this blog.

Thank you most of all to the Municipal Engineering Foundation of Victoria for supporting us with the study tour, both through the study tour award and the preparation for our tour.

Tomorrow we leave Minneapolis and head for Melbourne with a stopover in Los Angeles on our way.

It has been a great experience – thanks.