# Integrating Policy into Capital Works

## Municipal Engineering Foundation Study Tour 2016

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Banyule City Council

# Foreword

This report was made possible by a scholarship provided by the Municipal Engineering Foundation Victoria, which provides opportunities for engineers in Local Government to enhance their technical and managerial skills in a national and international context through a study tour.

Many thanks to:

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> The City of Berkeley, California
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> The City of Portland, Oregon
> TriMet Transit Agency, Oregon
> Metro Planning Authority, Oregon,
> The City of Tacoma, Washington
> Jeralee Anderson of Greenroads, Washington
> The City of Richmond, British Columbia
> The City of Vancouver, British Columbia
> City of Minneapolis, Minnesota
> Hennepin County, Minnesota

# Executive Summary

Local government often experiences problems in integrating policy into capital works planning and delivery. This is generally due to poor communication, unclear policy direction, or department and organisational silos, which reduce the chance of collaboration, sharing of information and working together towards a common goal. While its effects can be felt across an organisation, from a policy perspective this results in key implementers, such as operations and maintenance personnel, not being involved in policy or project development processes, and policy makers not involved in infrastructure delivery. This produces negative impacts on budgets, operations, and capital works outcomes to the community.

The Complete Streets movement across North America is a good example of developing and incorporating policy into organisational practice. The framework developed by the National Complete Streets Coalition provides a clear direction on creating policy and reframing processes and procedures to integrate policy into the infrastructure. This allows a structured approach in developing an integrated, connected network of streets that are safe and accessible for all people, regardless of age, ability or chosen travel mode, regardless of site context.

The Municipal Engineering Foundation Victoria (MEF) awarded scholarships to three local government engineers, together with a group leader, to visit several local government authorities within United States of America and Canada and attend the American Public Works Association (AWPA) International Public Works Conference & Exhibition in Minneapolis, Minnesota.

The 2016 MEF study tour saw the group visit cities along the north western coast of North America, including San Francisco, Portland, Seattle, Vancouver BC, before heading further inland to Minneapolis for the APWA conference. This provided the opportunity to further explore Complete Streets policy and capital works integration and implementation experiences across a number of organisations.

Observations and discussions of Complete Streets policies and process throughout the tour highlighted the importance of a clear and concise policy that recognises the implications of the policy in day-to-day practices and project delivery. While the policy itself may set the overall intention to plan, design and maintain streets for all modes regardless of age or ability, the overall focus is on creating environments that relate and respond to particular site context, rather than creating an organisational framework that is too explicit to implement at the local level.

Six of the municipal government agencies visited on tour have Complete Street policies, each responding to the local community's desire for safer, accessible streets. While each organisation has their own approach, all the policies include elements that provide strong vision, direction and intent in delivering the desired outcomes. This includes establishing the community's motivation for change, clearly stated directives and exemptions on what will or won't be achieved, guidance around site context and design integration, and how the policy will be implemented.

While a policy is commitment to ensure change, implementation is where the change process begins. The National Complete Streets Coalition identifies five things that make implementation process successful, including developing an implementation plan, reviewing and changing procedures and processes, providing training and education, revising design guidance, and introducing performance indicators.

In implementing their own Complete Streets policy, the organisations visited used various tools including project checklists and integrated GIS systems to provide integration between policy and infrastructure. The identification of process improvements, such as planning for full infrastructure lifecycle and designing for maintenance, were also observed to positively impact on policy integration into project delivery and the overall bottom line. These approaches could be adopted in the development and implementation of a wide range of local government policies and strategies.

Another important consideration in implementing policy is determining overall project timing and funding allocation, particularly for new projects. While project prioritisation methods explored differed across each organisation, all provided opportunity for policy to influence how project funding is allocated. This also ensures projects are distributed fairly across areas regardless of income or ethnicity, which is particularly important in in developing integrated networks.

The tour also explored community engagement processes used across North America. Community engagement is an important component of any project, whether it be for government policy, service delivery or infrastructure. It is evident that government authorities and agencies visited have open and honest conversations with their community through outreach and engagement. The key focus is on getting community involved and influencing projects through the removal of barriers to engagement such as location and the consultation delivery.

Complete Streets provides a range of useful tools and approaches to improve integration into service delivery. Ability to apply thinking to delivery of the wide range of Council projects and services, integrating policy into delivering outcomes for community.

This report makes a number of recommendations to further integrate policy into capital works planning and operation. These recommendations can be summarised as follows:

- Council policies should include a strong vision, clear direction, intent, identification of exceptions and a clear link to how it will be implemented.
- Organisational procedures and policies need to be reviewed and checked to ensure they deliver on policy goals and intended outcomes.
- Develop and use project prioritisation tools to guide capital works funding towards projects that align and implement Council policy.
- Remove barriers to engagement and integrate and guide community input into all stages of Council projects.

# Contents

# 1   Introduction

## 1.1   MUNICIPAL ENGINEERING FOUNDATION STUDY TOUR 2016

The Municipal Engineering Foundation Victoria (MEF) was established in 1966 to provide opportunities for engineers working in local government to enhance their technical and managerial skills. This is achieved by annually allocating scholarship awards to research a wide range of internal and overseas topics as part of a study tour.

The 2016 study tour awarded three scholarships to local government engineers to visit local government authorities within United States of America (USA) and Canada and attend the American Public Works Association (APWA) International Public Works Conference & Exhibition (PWX) in Minneapolis, Minnesota. As well as attending PWX, the tour included visits to the following cities and organisations:

**1. San Francisco, California**
> Monday 15 Aug – City of Berkeley
> Tuesday 16 Aug – City of Oakland

**2. Portland, Oregon**
> Thursday 18 Aug - Metropolitan Planning Agency / TriMet
> Friday 19 Aug - Portland Bureau of Transportation / Portland State University

**3. Seattle / Tacoma, Washington**
> Monday 22 Aug - City of Tacoma

> Tuesday 23 Aug - Greenroads

**4. Vancouver, British Columbia**
> Thursday 25 Aug – City of Richmond
> Friday 26 Aug - City of Vancouver

**5. Minneapolis, Minnesota**
> Saturday 27 Aug - Wednesday 31 Aug - APWA Public Works Congress, Minneapolis
> Thursday 1 Sept – City of Minneapolis
> Friday 2 Sept – Hennepin County
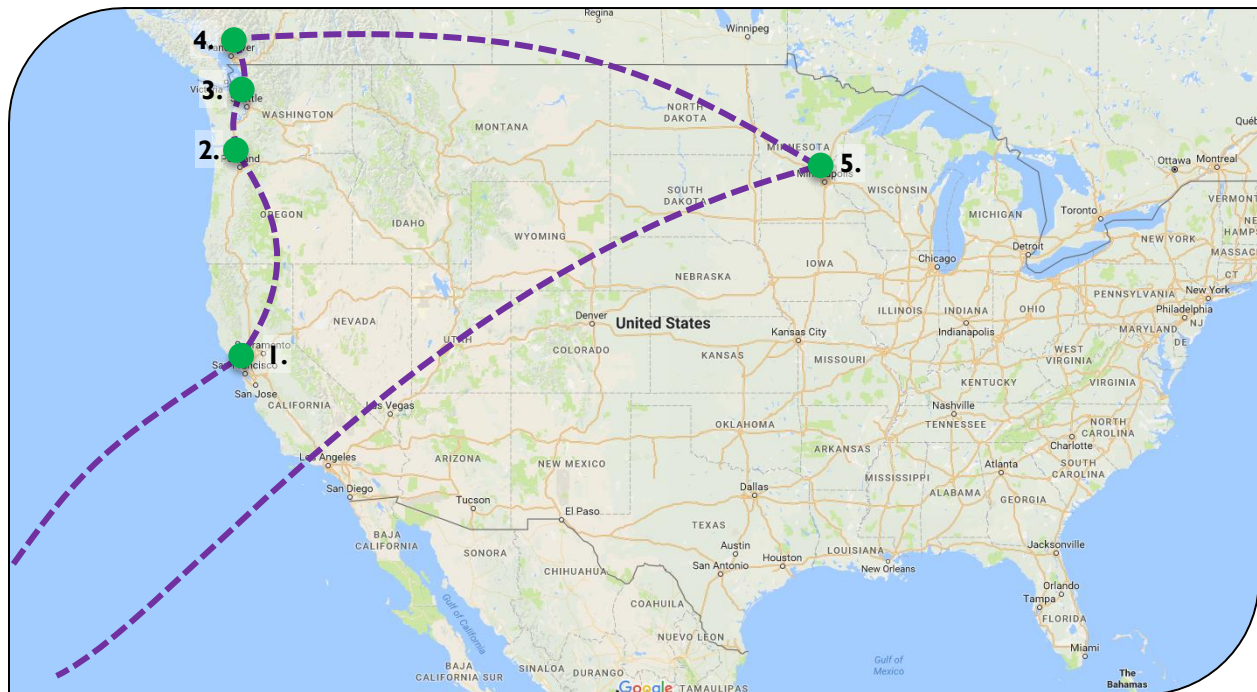


**Figure 1 – Locations visited during the 2016 Study Tour.**

**Figure 2 – 2016 Study Tour Group (L-R) Debbie, Bailey, Steven and Mark**

The four delegates, comprising of three scholarship recipients and a tour leader, are identified below together with their chosen study topic.

**Debbie Leeson-Rabie**
Assistant Manager City Works
City of Yarra

Service delivery models, use of technology, innovation and community engagement to provide best practice infrastructure maintenance

**Steven Quick**
Works Engineer
Golden Plains Shire Council

Sustainability in road construction in municipal engineering, including use recycled materials

**Bailey Byrnes**
Team Leader Transport Planning
Banyule City Council

Embedding policy into public works through process improvement, mapping and project prioritisation.

**Mark Varmalis - Tour Leader**
Director Environment & Engineering
Yarra Ranges Council
Trustee - Municipal Engineering
Foundation Victoria

Tour Leader for the group.
Interest in continuous improvement and leadership development within organisations to create a high performing culture.

## 1.2    2016 AMERICAN PUBLIC WORKS INTERNATIONAL CONFERENCE

The American Public Works Association (APWA) is an international organisation that serves professionals involved in providing community infrastructure, including roads, buildings, parks, waste facilities, electricity and water.  Across North America, APWA includes personnel from all levels of government, as well as private sector representatives who supply goods and services to the public sector.

Each year, APWA holds an annual International Public Works Conference & Exhibition (PWX) with a wide range of educational sessions and guest speakers, as well as showcasing products and services within the public works industry. The 2016 PWX was held at the Minneapolis Convention Centre in Minneapolis, Minnesota from 28 August – 31 August 2016.

Keynote speakers at the 2016 PWX included Captain Scott Kelly, retired US Navy Captain and U.S. Astronaut, Jeff Havens, Mel Robbins and Charles Marohn from Strong Towns.

Attended sessions that provided relevant and useful input to this study tour report include:

> Complete Streets Design - State-of-the-Practice.
> Longmont, Colorado's Sustainability Evaluation System - A Custom Approach.
> Turning the Corner on Municipal Transportation Policy!
> Do the Right Work at the Right Time - An Infrastructure Asset Management Approach Utilizing GIS and Mobile Technology.

## 1.3    REPORT SCOPE & PREPARATION

The integration between policy and capital works planning and delivery in local government is often made difficult due to organisational barriers, such as poor communication, unclear policy or silos that may be in effect. This results in key personnel not involved in key parts of the process, such as maintenance and operations in policy or project development processes, and policy makers in infrastructure delivery.

This report considers:

> Contextual differences and similarities with regards to government structure and funding mechanisms between Australia and North America.
> Complete Streets policy and integration to project delivery.
> Observations of the effectiveness of different approaches to community engagement across North American government bodies; and
> Recommendations for application within Victorian Local Governments.


This report has been based on information provided by our hosts during visits to government agencies and other organisations, information presented at the 2016 APWA PWX, and from other sources listed as references within the report.

# 2  Engineering and Government Policy: Influences and Context

## 2.1    GOVERNMENT STRUCTURE AND KEY INFLUENCES

While Australia, the United States and Canada have a level of government that focuses on the local community, there are significant differences to the responsibilities, operation and revenue. The following section provides a high level overview on the overall government structure and overall operation across the three countries.

### Australian Government Structure

Within Australia, there are three levels of government: federal, state and local. Unlike the federal and state levels, the power and responsibilities of local government was not identified during federation. Rather, each state and territory sets the framework for local government within their district.

 While this introduces a number of difference between the state systems for overseeing council the main roles of local government is uniform across Australia, encompassing governance, planning, community development, service delivery asset management and regulation (Department of Infrastructure and Regional Development, 2015). Due to the close connection with community, local government has detailed knowledge of the local community needs, and determines service provision according to these needs and the requirements of state legislation.

Local governments generally raise the majority of their own revenue, through property taxes, sales of goods and services, and through other means such as parking and traffic infringements, and rental income streams. Overall, less than 10% of revenue is provided by grants and subsides provided by the Federal and State governments (Department of Infrastructure and Regional Development, 2015).

### USA Government Structure

The United States has three main levels of government; Federal, State and Local. Unlike Australia, there can be a number of different tiers at the local level. Counties and municipalities are the two main tiers, with municipalities often separated further into cities, towns, boroughs and villages. These tiers, and the type and nature of the different jurisdictions, differ between states.

Given the differences at the local government level between the states, responsibilities within municipal government varies across states. However, the third tier of government in the US are the key contacts and representatives of the local community, and are often responsible for emergency services including police and fire, utilities, land use planning, public works, waste and recycling, water and stormwater, and public transport.

Revenue and funding can be collected through a number of different means, including gas, sales and property taxes, bonds, grants and general revenue. Funding streams are frequently tied to a particular use or program of projects, such as emergency service improvements or transport infrastructure projects. These measures often require community backing through votes to pass increases or the introduction of new bonds.

### Canadian Government Structure

As with Australian and the US, the Canadian government is structured into three levels - federal, provincial/territorial, and local government.  Like Australia, municipal government receives their powers

and responsibilities from the provincial government, however, similar to the US, there are often several levels of local government, including regional, county and municipal, as well as special service districts, which may cover police, health, fire and education (Department of Transport and Regional Services, 2003).

The role and responsibilities of local government in Canada can differ depending on the province. Like Australia, Canadian local government has a key representational and regulatory role, and provides a wide range of services including transport, communication, planning, and development, recreational and cultural services. However, responsibility for police and fire services, as well as utilities such as gas, electricity and phone services also lie within local government, depending on the province.

Canadian local governments raise their majority of their revenue from their own sources, including property taxes, service fees and sales of goods and services, similar to Australia. In response to changes in provincial accounting requirements, some urban local governments have applied user charges to areas such as water metering, inspection services and on some police and fire services (Department of Transport and Regional Services, 2003).

## 2.2    MUNICIPAL PLANNING, CAPITAL WORKS AND INFRASTRUCTURE

Local governments make investment in assets solely to provide services to their communities. These services are defined by the community needs and their aspirations. While most would share similar aspirations, for example, a safe, health and pleasant place to live in a sustainable environment with opportunities for social interaction, employment and reliable infrastructure, the difference lies in how each community responds to these needs (Division of Local Government, Department of Premier and Cabinet, 2012).

The Victorian Local Government Act currently requires Councils to prepare a 4-year council plan. In an ideal world, this plan should identify the key strategic direction of the Council in line with community expectations, and set the strategic commitments to deliver services and infrastructure. The recent review of the act recognises this is not always the case, and proposes development of a framework to integrate community aspirations, strategic asset management and financial plans into the overall council direction.

The integration of asset management and financial planning could be further explored in supporting council documents, such as open space or integrated transport plans. Such plans often consider community aspirations and overall vision for community, but rarely consider asset management and the lifecycle of assets in the policy development phase. This, as well as organisational and departmental silos, create difficulties in the overall policy implementation.

Silos in particular restrict sharing of information between teams and departments, reducing ownership, understanding and clarity of the community's vision and the desired policy outcomes. This leads to departments working against one another rather than together towards a common goal. It is important to remove and reduce these inefficiencies to improve service and project delivery and deliver good outcomes to the community.

Complete Streets has an integrated response to responding to the community vision and needs, addressing health, social, economic and transport concerns at the local level. Many jurisdictions across North America are introducing Complete Streets policies and reframing their processes and procedures to integrate the infrastructure response to these issues.

# 3   The 'Complete Streets' Approach to Policy

Across both North America and Australia, municipalities and cities face challenges due to population growth, climate change, increasingly sedentary lifestyles and restricted mobility.  Not only do these challenges place further strain on already congested road networks, if not addressed they will impact on the environment, the community, overall health and wellbeing, and will affect the way people live and choose to travel.

The Complete Streets approach is emerging as an influential movement in transport planning, changing the way roads are designed to have the focus put back on people, rather than private vehicles. Complete Streets aims to develop integrated, connected networks of streets that are safe and accessible for all people, regardless of age, ability, income, ethnicity or chosen travel mode (Smart Growth America, 2013).  Not only does Complete Streets change how people interact with streets and public spaces, it looks to change how governments and organisations plan, design, maintain and fund transport projects.



**Figure 3 – City of Portland's approach to planning for infrastructure shifted in the 1970's, with the community recognising and embracing the change.**

This approach recognises that context is vitally important when considering the road environment; there is no one correct approach to redesigning a street, as every street, and even every block, needs to be considered in its own context.  Understanding the users, neighbouring land uses, local environment and other sensitivities are critical in a successful infrastructure project.

Fully integrated transport systems that consider local context take support and planning, and above all, time. The City of Portland has benefited from change in transportation focus in the 1970s. This changed Portland's approach to how roads and transportation networks are planned within city core, with the community receiving the benefits and embracing the change ever since.

## 3.1   THE COMPLETE STREETS FRAMEWORK

The Complete Streets framework is based on principles around providing healthy environments, and has three main components; Policy, Implementation and Outcomes. Each component is critical in ensuring the desired outcome, as policies by themselves rarely get desired outcomes, and implementation without planning frequently leads to ad hoc and inconsistent approaches between projects. The relationship between policy and the integration process is vital to achieving the desired outcome.

Complete Streets policies formalise a community's intent to plan, design, and maintain streets so they are safe for all users of all ages and abilities (Smart Growth America, 2016). They direct transport planners, engineers and decision makers to consistently design and construct roads and streets to accommodate all anticipated users and modes, including pedestrians, bicyclists, public transport, motorists, and freight.

These policies do not typically provide a set of specific infrastructure design guidelines or requirements. Instead, the focus is on guiding principles that address the historic investments and policy decisions that focused on private vehicles as the main component in transportation. This ensures that, from the start of each project, the needs of all users are planned and designed for.

Complete Streets recognises that there is no one correct approach. Every street and even every block needs to be considered in its own context. The desire to address local issues can then be built into the project planning, delivery and overall lifecycle of a project.

## 3.2    WHAT MAKES A GOOD POLICY?

The National Complete Streets Coalition promotes a comprehensive Complete Streets policy framework that covers ten ideal elements that provide strong vision, direction and intent in delivering the outcomes.  Of the eight government organisations visited on the tour, six currently have adopted Complete Streets policies. In addition, the City of Vancouver is currently developing a Complete Streets policy following the completion of their Transportation Plan.

This section considers the main components of a Complete Streets policy and the approach used across various organisations visited on the tour.



**Figure 4 –Telegraph Avenue, in the City of Oakland, is a recent Complete Streets project which was reopened to the public in May 2016.**

### Vision

The vision in a Complete Streets policy establishes the motivation for why the community wants Complete Streets. This may relate to improving safety, promoting better health, improving travel efficiency, improving the convenience of choices, or for other reasons.

*"The City of Oakland recognises the necessity of providing safe and convenient pedestrian, bicycle and public transportation options in order to protect all road users, reduce negative environmental impacts, promote healthy living, and advance the wellbeing of Oakland citizens." (City of Oakland, 2013)*

Smart Growth America considers a strong vision to be one that *inspires* a community to follow through on its Complete Streets Policy.  This draws on the motivation behind the desire to consistently plan for all users in the planning and construction of road projects. For the City of Oakland, the vision links to the desire to reduce environmental impacts and improve the health and wellbeing of the wider community.

### Core commitment

The core commitment of a Complete Streets policy is a clearly stated directive to consider the needs of all road users, regardless of age, ability or transport mode.  In addition to this, the framework requires

clear specification on what stages of the project Complete Streets must be considered, as well as when exceptions apply.

A Complete Streets policy must begin with an understanding that pedestrians and cyclists are legitimate users of the transport system and equally deserving of safe facilities to accommodate their travel (Smart Growth America, 2013). The full integration of these modes into the planning, design and construction of the transport network is the main intention of a Complete Streets policy. Some polices go further, looking at the wide range of road users and their abilities as part of their core commitment. For example, Hennepin County consider the full spectrum of road users and their abilities, including pedestrians, cyclists, motorists, public transport users, freight and emergency vehicles when improving road corridors.

> *"Hennepin County will enhance safety, mobility, accessibility and convenience for all corridor users including pedestrians, bicyclists, transit riders, motorists, commercial and emergency vehicles, and for people of all ages and abilities by planning, designing, operating, and maintaining a network of Complete Streets." (Hennepin County, 2009)*

The ideal outcome of a Complete Streets policy is that all road infrastructure works are viewed as opportunities to improve and create safer and more accessible streets for all users. A strong Complete Streets policy integrates the consideration of all modes and users into all projects beyond new construction and reconstruction, including road rehabilitation, repair, major maintenance, and operations work.

However, implementing the intent or direction of government policy is not always possible, particularly when considering projects in a real-world context. It is important to recognise that policies cannot account for every scenario, whether it be due to the site context (i.e. pedestrian facilities on freeways), overall cost or absence of needing to accommodate a particular user. The Complete Streets framework recognises this limitation by specifying clear exception processes using clear, definitive language as well as a clear process for granting exceptions.

> *"Projects that seek exemption from the Complete Streets Policy must provide written finding of why accomodations for all modes were not included in the project, and must receive written approval by the Public Works Director or their designated representative." (City of Berkeley, 2012)*

The City of Berkeley requires written documentation to be provided to the Public Works Director before exceptions to the policy may be approved.  Exemptions may only be granted if one of six criteria are met, including where specific users are restricted by law from using the roadway, where the cost of

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**Recommendation 1.**  **As part of policy development, clearly identify where exceptions may be considered and the procedure for exception approval.**

Policies that influence the design and operation of public areas are rarely able to cover every scenario.  By specifying clear exemption criteria and approval processes, the overall intent of the policy can be carried out while considering the overall context of the site and the project. However, exceptions need to be carefully considered to ensure loopholes are minimised, and the wording is clear to remove any misunderstandings.

implementation is excessive or disproportionate to the need or likely use, where there is no current or future public transport service planned, or for where routine maintenance does not change the road geometry.

### Best Practices

There are five elements that are typically included in a Complete Streets policy - network integration, involvement of other agencies, design criteria, site context and performance standards. These set how the policy vision will be achieved across the organisation. While the National Complete Streets Coalition recommends all five elements should be including in a Complete Streets policy, it recognises not all are required, and it will depend on the organisation's ability to implement them.

In the adoption of the City of Tacoma's Complete Streets Policy, the City Council resolved to endorse the creation, implementation and ongoing development of Tacoma's Complete Streets Design Guidelines. These guidelines provide specific guidance for the implementation of Complete Streets within Tacoma's activity centre and residential areas.

The guidelines demonstrate how different street types within the City can be reconfigured to align with the principles and goals of Complete Streets, Tacoma's Comprehensive Plan and other City policies. As well as providing overarching principles and design guidance for future changes to public roads, the guidelines also provide a series of illustrative plans and sections to guide street design.



**Figure 5 - Excerpt from the City of Tacoma's Mixed-Use Centres Complete Streets Design Guidelines**

The City of Minneapolis' Complete Streets policy commits the organisation to considering the policy in the delivery of the full asset lifecycle. The policy also provides detail on how the Complete Streets framework will influence each stage of the lifecycle, and the likely stakeholders that will need to be engaged as part of the implementation process.

> *"This includes all types and phases of projects, including programming, planning, design, construction, operation and maintenance [...] The process by which the Complete Streets policy is applied will be scaled appropriately for each individual project or initiative, including private developments that influence the public right-of-way. This process will coincide with completion of the Complete Streets project delivery checklist, which is intended to document the implementation of the policy.' (City of Minneapolis, 2016).*

The clarity of each stage and the factors that need to be considered provide all departments across the City of Minneapolis clear direction in implementing the policy. This removes organisational silos and coordinates the efforts of staff in achieving similar goals.

### Implementation

While the adoption of a Complete Streets policy is key step in progressing change, planning for implementation is vital to successful policy outcomes. While the National Complete Streets Coalition identifies a number of useful implementation methods, it also recommends that specific next steps be included in policy language to ensure integration of the policy into organisational processes.

Specifying how a policy will be implemented introduces accountability in delivering policy outcomes, and ensures policy becomes practice.  It can be in the form of a detailed implementation plan that identifies required changes or the creation of new documents and processes and who is responsible for those changes, or it may be a simple statement confirming the organisation's commitment to reporting on the implementation process.

> *"Hennepin County will conduct an inventory and assessment of existing corridors, and develop Complete Streets implementation and evaluation procedures. The Complete Streets policy and implementation procedures will be referenced in the Transportation Systems Plan and other appropriate plans or documents." (Hennepin County, 2009)*

Hennepin County, as part of their Complete Streets policy, specified the organisation will conduct an inventory of the existing road corridors, and develop specific procedures to guide the implementation and evaluation of complete street projects. The identification of these steps as part of the policy development process helped integrate complete streets into decision making processes across Hennepin County.

| Recommendation 2. | When writing a policy, include specific language on how the intended outcomes will be achieved. |
|---|---|
| | Identifying how a policy will be implemented is an important part of the policy and development process, and should not be left until after the policy is formally adopted. Identification of the implementation processes provides accountability and ensures the policy becomes practice across the organisation. |

# 4   Planning for Capital Works Implementation

A Complete Streets policy is a commitment to ensure that all future transport projects take into account the needs of all road users. However, Smart Growth America contend that the implementation of that policy is where the work truly begins. The Complete Streets framework recommends five things to make this implementation process successful; developing a plan for implementation, changing procedures and processes, organising training and education for staff, reviewing and revising design guidance, and creating new measures of performance (Smart Growth America, 2016).

This inclusive approach to policy implementation could be adopted in development and implementation of a wide range of policies and strategies. The following sections explore in further detail processes and tools that have been observed to aid in further integrating policy into the capital works process.

## 4.1    POLICY INTEGRATION THROUGH CHECKLISTS

Within the Complete Streets framework, each project needs to be consistent with organisational goals, relevant to the site context and balances overall outcomes.  In addition, the successful implementation of a Complete Streets policy requires an inclusive decision making process. Across municipal governments, the implementation of policies can be delayed or disrupted by departments or other agencies that work independently from one another.  Checklists can be used to identify local context as part of an infrastructure project, ensure all parties are on the same page, as well as determining any synergies with other planned works or initiatives.



**Figure 6 - Completed Checklist for Hennepin Avenue Project, City of Minneapolis**

At the City of Minneapolis, all projects must complete the Complete Streets checklist (Figure 6, left) as part of the concept and detailed design process. This allows for documentation of the road typology, adjacent land-uses, current and projected future travel demands across all travel modes, community outreach and proposed design. This provides a document trail during the decision-making process and the details as to why trade-offs were made. The checklist approach also provides Minneapolis the opportunity to capture metrics on current infrastructure projects, such as the kilometres of footpath or shared path constructed during the year.

Checklists are also used at the City of Berkeley to assist in mapping out projects against other intended works. This can change how a project is planned for and constructed.  For example, if the project is to introduce bicycle lanes along a section of road, it may end up being included in a road resurfacing project. Or, should road resurfacing works be planned for a street expected to be completely redesigned to accommodate a range of transport modes, the road resurfacing work is instead included as a minor component of the redesigned road.

After Hennepin County adopted its complete street policy in 2010, a checklist was developed for use in highway and road construction projects. It requires detailed consideration of the corridor's context and any opportunities to introduce policy elements into the project. Staff consider a wide range of factors,

including key planning documents, existing and proposed carriageway characteristics, bike and pedestrian facilities, intersection issues, accessibility, and many additional aspects of the corridor in completing the checklist.

The checklist is a requirement for both redesign or reconstruction projects and its intent is to ensure that all stakeholders understand the project context and the type of improvements that are proposed (Slotterback & Zerger, 2013).

Checklists can also be used to determine the inclusion of sustainable processes in projects. Greenroads, a non-profit organisation based in Seattle, has developed a points based system to certify sustainable transport infrastructure projects (Greenroads, 2015). Like sustainable building rating systems such as LEEDs (US) or Green Star (Australia), Greenroads provides metrics to measure the effect of design and construction practices which can be implemented on a project to earn points toward project certification.

When considering whether to seek certification for an infrastructure project, Greenroads suggests forming a checklist of what needs to be considered, and then identify the relevant components during the scoping of each project as to what should be achieved. This helps



**Figure 7 – The recently completed Greenroads project at 23rd Avenue S and E Yesler Way in Bellevue, Washington.**

determine the overall balance of the project in terms of scope, cost and outcomes, as certification of some projects may be difficult to achieve without major cost implications.
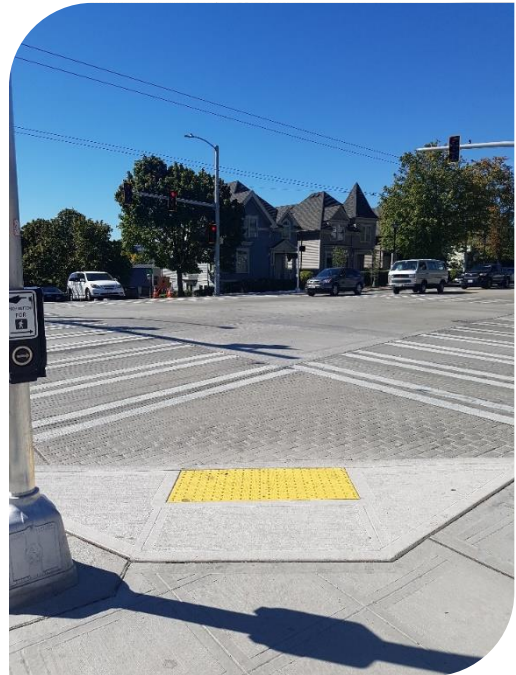
| **Recommendation 3.** | **Ensure processes are in place to check that necessary elements are considered as part of project scoping, planning and development.** |
|---|---|
| | Putting the right processes in place allows the policy and local context to be considered as part of each project. This doesn't mean that all goals and outcomes are achieved in every project, but it does certify that they have been considered, and included where possible. This also provides documentation of the decision-making process. |

## 4.2    PLANNING FOR THE FULL INFRASTRUCTURE LIFE CYCLE

As well as ensuring site-specific context is considered, the full asset life cycle is an important consideration in any infrastructure project.  For TriMet, planning for future maintenance of assets, including provision of future funding, is critical to ensure capital works projects are maintained to a proper useable standard. This includes designing projects to consider the ease of maintenance in the concept and detailed plans.

**Figure 8 – Point Defiance Regional Stormwater Treatment Facility, City of Tacoma**

Similarly, the City of Tacoma design projects to ensure minimal or reduced maintenance requirements, and plan for when the proposed asset needs to be replaced. This in turn reduces resourcing impacts on the organisation, and assists in identifying works for future years.

Maintenance requirements played a significant part in the design of the Point Defiance Regional Stormwater Treatment Facility (Figure 8). When looking at solutions to improve the stormwater runoff of the area into Puget Sound, the overall maintenance impact and costs of the options played a deciding factor in the scope and design of the project. The final facility treats a three-square kilometre catchment area across a 500 square metre facility at a rate of 30 million litres per day, capturing the worst pollutants from the area before entering the Sound.

| Recommendation 4. | Consider the full life cycle of the asset during concept planning and project development. |
|---|---|
| | Considering the full life cycle ensures the operation and maintenance requirements are understood and agreed to before the project is built. In addition to building relationships between across departments, it can also lead to reduced costs and a simpler maintenance regime. |

Minneapolis requires all city transport related decisions to follow the requirements of the Complete Streets policy. This includes all types of projects across the full asset lifecycle, including project programming, planning, design, construction, operation and maintenance. The policy provides details on each stage of the asset lifecycle, and the impacts of the policy on the decision process. This approach is appropriately scaled depending on the size of each individual project, and includes private development projects that include the public roadway.

The full lifecycle of the project is also considered in Hennepin County's approach, with agreement on maintenance and operating procedures required before the project design phase is signed off. Formal agreements are used to specify these requirements are also used where responsibilities lie across departments or organisations. In addition, the consideration of Complete Streets elements are also considered as part of regular operations and maintenance, as adjustments made during this stage of the asset lifecycle are often low cost and easy to implement.

| Recommendation 5. | Define and agree on maintenance and operation responsibilities prior to the final design signoff. |
|---|---|
| | Agreeing on responsibilities before the final design allows maintenance and operation requirements are considered and discussed during project development. This can lead to reducing overall costs during the life of the asset, as well as building relationships between departments. |

## 4.3    GIS MAPPING AND CAPITAL WORKS INTEGRATION

Infrastructure project coordination across organisations and between agencies can be assisted by visual tools.  For projects involving roads and public spaces, this can be particularly useful as projects can be identified by different departments, individuals and agencies.  For example, infrastructure projects at the City of Minneapolis can be identified through internal data on infrastructure condition, community input and requests, other City Departments, overarching policies such as bicycle or transit plans, and external agencies such as neighbouring cities or county, state or transit authorities.
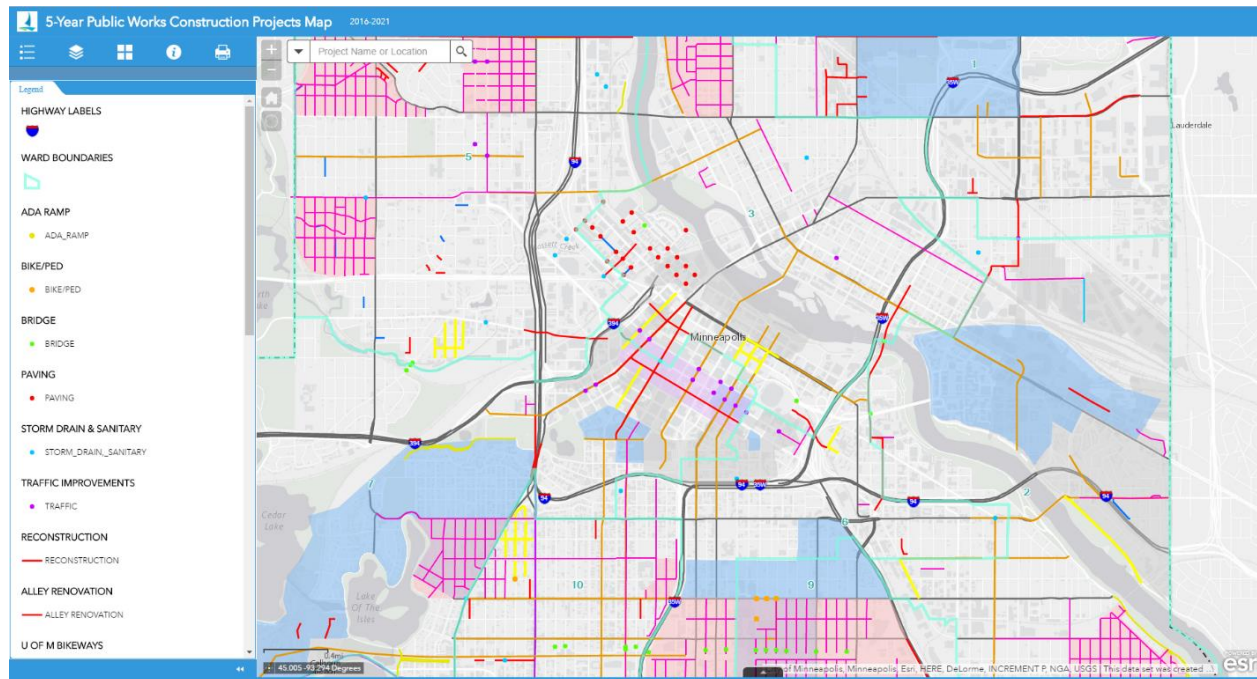


**Figure 9 - 5-Year Public Works Construction Projects Map, City of Minneapolis**

The Minneapolis Public Works department, as well as the corresponding department at the City of Oakland, use ArcGIS to map and identify where historic, current and future projects are located.  Users can log onto system and input their project data, and select layers to determine if there are any overlaps. This information is then used to guide the timing of future works, as well as incorporate projects together where appropriate.

Access can also be provided to external companies, such as utility provides and developers, to identify infrastructure works external to the municipal organisation.  Public access is also provided through the Minneapolis website (Figure 9), allowing the community to identify projects that may be of interest within their area. Providing this access allows coordination of works between agencies, reducing costs and the overall impact to the community.

**Recommendation 6.    Use GIS tools to identify current, planned and completed infrastructure works as part of the capital planning process.**

Providing a visual framework to identify and show current and planned infrastructure delivery allows for collaboration between departments and agencies, and also allows for project coordination across different sectors.

# 5  Funding and Project Prioritisation

In developing long term infrastructure plans, the timing and allocation of funding for projects is critical. While the asset lifecycle and overall condition helps govern renewal projects, the allocation of funding for new projects can be difficult and is often politically wrought if not managed correctly. This can lead to inequity in funding allocation, with less relevant projects in prominent areas receiving funding over required projects in 'quieter' areas.

Complete streets recognise that committed agencies will need to make changes to the way transportation projects are selected. Levels of Service (LOS) approaches have historically been used to govern road and transportation spending, using traffic flow, speed and density to determine funding priorities. With the shift towards a more holistic transportation system, point based systems are being developed more frequently to guide project selection. This approach can be used to compare projects within and across several sectors, depending on the way the system is developed.

This approach can allow Council plans and policies to influence the funding prioritisation system, awarding funding to projects that fulfil several identified objects, such as improving the environment, and improving access to health services. Point based prioritisation systems can also ensure projects are distributed fairly across areas regardless of income or ethnicity. This is vital in developing an integrated transport network to avoid building a great network in one suburb but providing no infrastructure in the next.

## 5.1    PRIORITISATION SCORING METHODOLOGIES

Prioritisation systems can vary from a simple approach, for example, allocating funding by biggest impact and 'bang for buck' or through detailed approaches that consider a wide range of factors. In determining investment in transport projects, the City of Portland use an outcome criteria approach which is linked to the objectives in the current Portland Transportation System Plan. Under this approach, projects are ranked against policy objectives, with projects that deliver on multiple objectives ranked highly and more likely for funding to be provided. This approach is useful for considering a wide range of projects and how they compare to an overarching policy, for example the Council Plan.

More qualitative approaches are used by the Cities of Oakland and Minneapolis. Oakland developed a prioritisation tool to facilitate the development of transport project priorities in an objective manner. As transport projects can emanate from several different sources, Oakland's approach provides a method for consolidating all
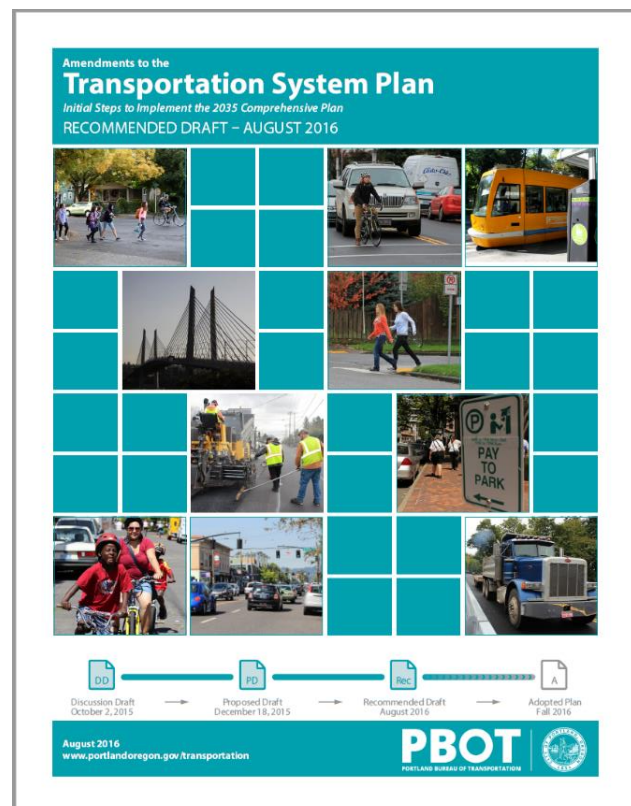


**Figure 10 – The City of Portland's Transportation System Plan, which currently being updated.**

projects into a single list, and to compare projects based on objective criteria. Furthermore, it also provided a tool that identifies projects that best meet the organisations policy goals, and allow for coordinated, effective and efficient project development (City of Oakland, 2012).

For the City of Minneapolis' 20-Year Streets Funding Plan, a comprehensive qualitative screening process has been proposed to prioritise projects based on a wide range of data. This screening process was the only system observed on the tour to incorporate asset condition into the analysis, linking it with the current and future needs of the site as well as the overall relevance to policy and context.

The proposed evaluation process (as demonstrated in Figure 11) considers projects against the community demographics for the area (including concreated poverty levels, vehicle ownership and potential mode users), overall transport use and mode (including the needs of pedestrians, cyclists, public transport, freight and current users), and the current asset condition (comprising of the Pavement Condition Index (PCI), level and quality of pedestrian infrastructure, crash history and utility needs). After considering projects against these criteria, the initial project list is then screened to determine if there are any efficiencies that could be gained by the combining of projects. Following this final screening, the final 5-year Capital Improvement Program is then prepared.
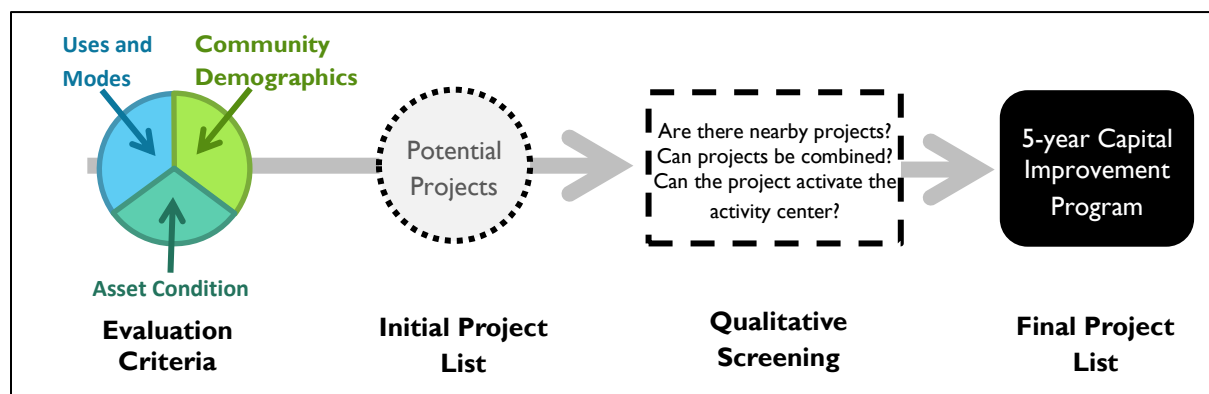


**Figure 11 – The City of Minneapolis' proposed transportation project evaluation and prioritisation process. (Koster, 2016)**

While each of these prioritisation systems vary in their application, they have been developed to ensure that the projects that are funded through the budget process align with the objectives and intentions of the overarching policy. Furthermore, providing a clear and defined approach to the allocation of funding allows for open and transparent conversations with the community during the project development process.

> **Recommendation 7. Develop and use project prioritisation tools to identify projects that align with policy goals and objectives.**
>
> Formalising a project prioritisation framework facilitates cross-organisation coordination, and provides a consistent approach to funding infrastructure projects. It can also ensure transparency in the decision-making process, allowing funding to be allocated in an objective manner.

**Figure 12 – A trial pavement project in the City of Berkeley, Allston Way, which allows stormwater runoff to infiltrate through the road and into the underground water table.**

## 5.2    PROVIDING A FAIR AND EQUITABLE SYSTEM IN POLITICAL ENVIRONMENTS

Regardless of the approach to funding allocation, the nature of local government invites involvement beyond council officers during the project selection and budgeting processes. While it does depend largely on organisational practice, this involvement may let 'pet' projects be pushed ahead of others that may provide a higher score or rank. The development of the City of Berkeley's prioritisation tool to transportation projects considers this involvement and incorporated a method of balancing this involvement in the prioritisation process.

Berkeley sought a system to provide fair and equitable guidance in decision making when considering project priority.  In developing the criteria, officers considered transport mode, local context, project readiness, overall impact and the potential for integration with other projects. Projects were then assessed and scored as per the officer's recommendations, and then presented to the Council.

Elected members were then provided the opportunity to consider their own priority projects, and refine the criteria to support them. The final criteria and project ranking, as supported by the Council, then informed the 5-year capital program. This approach encouraged open discussion, and created ownership amongst elected members for the final prioritisation process, while maintaining a consistent approach in the prioritisation of projects.

| **Recommendation 8.** | **When developing prioritisation processes, consider involving elected officials in refining of evaluation criteria.** |
|---|---|
| | As well as ensuring projects get assessed and funded in a consistent manner, this also encourages ownership of the process amongst elected officials. There is also opportunity to use this method to get community involvement in developing the system, and overall by in for the budget process. |

# 6   Community Engagement and Outreach in North America

Community outreach is an important component of policy and infrastructure planning in North America. Funding sources often need significant support and thus require the community to be on board. To do this, governments and public agencies need to know what drives the community. The organisations visited on the tour identified increased community engagement led to an increase in community support for local infrastructure projects, and over time increased trust in the delivering agency.

Good community engagement is integral to understanding local issues and context, particularly in infrastructure projects. Understanding and planning when to and how to engage with the community and the tools used, can greatly increase the overall success of the project provided the community's input and feedback is incorporated.

## 6.1    WHEN TO INVOLVE THE COMMUNITY

It is important to consider the how and when the community should be involved as part of the project planning process. For the County of Hennepin, good communication and involving the community in projects before decisions are made are key components of the project process.  Each interaction with community members is important, with significant effort made to keep community members that want to be informed and involved in their projects. Hennepin continues to build their relationship with the community by showcasing what the organisation does through a 'Citizen Academy', opening the office and depots during the evenings and weekends and allowing groups of community members go through and ask questions of County staff.

 TriMet, Portland's public transport agency, recognises the importance of bringing the community on a journey during policy and capital works projects. This means not presenting them with options or a solution, but asking what they want in a project, while providing guidance on what is realistic in terms of budget, site, environmental and social constraints. When it comes to infrastructure projects, TriMet



**Figure 13 – Tilikum Crossing, Portland Oregon**

ensures the organisation knows what is and isn't possible before going to the community, and provides further information as it arises.

A good example of this is the Tilikum Crossing (Figure 13), which opened in September 2012 as the first-ever bridge in the US dedicated to pedestrians, cyclists and public transport. A collaboration between the City of Portland, TriMet and Metro; the development of Tilikum Crossing encouraged the community to consider and refine the overall look and feel of the bridge, and used examples of architecture and scenic elements to guide the community thought on the concept and final design. The final project garnered significant community support through the overall aesthetics and use of the space, with people wanting to be there and experience the space.

The City of Richmond, BC, share a similar view when it comes to community assets. Recently constructed pump stations and district energy sites were treated as community features. With no limitations on the design, Richmond has found that the community demonstrate both appreciation and strong ownership of these assets, and are treated as a feature of the local community.

| Recommendation 9. | Involve the community early and frequently in infrastructure projects. |
|---|---|
| | The community is often the best source of local issues and information, making their early involvement a critical part of the project planning process. Determining the site context and any other relevant issues early helps ensure the project delivers on community expectations, and helps build public ownership of the outcome. |

## 6.2   ELIMINATING BARRIERS TO SUCCESSFUL ENGAGEMENT

Whether it be through language, location or understanding of the issues at hand, the presence of barriers restricts opportunity for community to have their say and influence the outcome of projects, policies and future planning. Eliminating these barriers plays a significant role in successful engagement processes.

Location can play an important factor in successful consultation. The City of Vancouver doesn't expect the community to come to them to be involved in consultation. Instead, Vancouver eliminates location as a potential barrier by taking the conversation to the community and tying consultation into events that are happening around the municipality. The City of Oakland share a similar view in getting people involved to get successful outcomes by engaging in neutral territory. Officers take the consultation out to the community, for example, as a stall in a local festival or as a touch point in a local shopping centre. By eliminating location as a barrier engages more of the community.

The City of Oakland also considers how the information is presented and then fed back to the community. Rather than allowing open slather in feedback, Oakland provides choice spectrums and work with the community on the options available. For example, when looking at parking availability in activity centres, the community was asked to consider where they were positioned between free parking and available parking, as it is hard to have both and still provide road space for other users. Where it is identified that two parts of the community are diametrically opposed on an issue, more work is done to explore the issue and the messaging and determine what additional information is required for the community to reach a consensus.

Hennepin County's approach is a little different in that they recognise the organisation doesn't know everything about the community and area they work in. A key step in the decision making and planning

process is asking the community what the problems are, and what they want to happen. While important to recognise that not everything can be implemented, giving community the opportunity to have their say provides ownership of the changes, and may suggest a better approach to doing something.

> **Recommendation 10. When conducting community consultation, remove location as a barrier by going to where the target audience is.**
>
> Barriers to community involvement prevent a significant proportion of the community from consultation. It is important to remove as many barriers as possible to provide the community with the best chance at being involved in the community consultation process.

## 6.3    THE MANY VOICES OF CHANGE

As well as when and how to engage the community, who delivers the message and the discussion can influence the effectiveness of engagement. Peer and community led discussions can lead to wider advocating for the project and a more positive experience by all stakeholders involved.

When considering street transformation projects, the City of Portland encourages the community to identify and design temporary street activation sites in their neighbourhood. 3rd Avenue (Figure 14) is one example where a group of local businesses and community representatives developed a plan for the area and advocated for permanent change. The community sought to improve the street vibrancy by reducing the number of lanes and increasing the pedestrian area along the business frontages. Bicycle lanes and bicycle parking was also introduced, together with planter boxes to separate the pedestrian environment from the through traffic. This approach helps bridge connections between the government and the community through the relinquishing of control on the road environment.



**Figure 14 – The recently activated 3rd Avenue, Portland, Oregon.**

Another approach is using a citizen community to oversee and introduce changes within the municipality. In the City of Tacoma, a citizen oversight committee looks at proposed parking restriction changes within the main activity centres. While there are strict guidelines that the committee must follow, including when to introduce and change restrictions or introduce paid parking, this approach allows the community members to be the voice for change. This community led approach allows for a more personnel engagement and provides an avenue to get community support on what may otherwise be a contentious issue.

It is important to find the appropriate type of community consultation depending on the audience that is being targeted, as different types of communication may yield different results. When developing a consultation process as part of a project, it is important to consider how open the municipality will be to responding to the information that is gathered during the consultation process. For example, Vancouver recognised that in preparing for the consultation during the planning phase of a marina development, the local community had a better understanding of the local area. When community members highlighted that the best approach to get materials to the site without impacting on sensitive areas was likely to be via the water, the municipality undertook further investigations on the approach, with the final plan aligning with the community's recommendation.

Successful engagement can be achieved from different bodies or voices, whether it be through government led consultation or peer led discussions. As well as providing a good source of information, it can also build relationships and improve trust between the community and local government.

> **Recommendation 11.** **Consider who should deliver community engagement, as sometimes local government may not be the most effective voice.**
>
> While local government plays a vital role in community engagement, sometimes government and engineering views are seen by the community as being 'pushed' onto them. Peer and community led discussions can lead to wider conversations on a particular issue or project and a more positive experience by all stakeholders involved.

# 7   Conclusion

The 2016 Study Tour provided the opportunity to understand and explore the experiences and approaches used across North America in adopting Complete Street policies and incorporating it into infrastructure planning and delivery. The tour demonstrated there are methods of improving policy integration into capital works planning and project delivery, reducing problems often experienced in local government due to departmental silos or poor communication.

Complete Streets is more than just an approach to achieving an integrated transport network. The framework developed by the National Complete Streets Coalition provides the tools to create strong policies and integrate them into daily operations and planning. As well as improving overall project delivery, it also provides clear avenues to improving collaboration and communication between teams and departments.

The tour also highlighted the importance of removing barriers to community consultation, and guiding input into all stages of Council projects.

These learnings and recommendations are applicable to the delivery of the wide range of Council projects and services, integrating policy into delivering outcomes for community.



**Figure 15 – Onsite at SR 520 in Seattle, Washington, where the new floating bridge is currently under construction.**

# 8  Recommendations

The recommendations identified in the report are summarised below:

**Policy Development**

1. As part of policy development, clearly identify where exceptions may be considered and the procedure for exception approval.
2. When writing a policy, include specific language on how the intended outcomes will be achieved.

**Capital Works Integration**

3. Ensure processes are in place to check that necessary elements are considered as part of project scoping, planning and development.
4. Consider the full life cycle of the asset during concept planning and project development.
5. Define and agree on maintenance and operation responsibilities prior to the final design signoff.
6. Use GIS tools to identify current, planned and completed infrastructure works as part of the capital planning process.

**Project Funding and Prioritisation**

7. Develop and use project prioritisation tools to identify projects that align with policy goals and objectives.
8. When developing prioritisation processes, consider involving elected officials in refining of evaluation criteria.

**Community Engagement**

9. Involve the community early and frequently in infrastructure projects.
10. When conducting community consultation, remove location as a barrier by going to where the target audience is.
11. Consider who should deliver community engagement, as sometimes local government may not be the most effective voice.

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