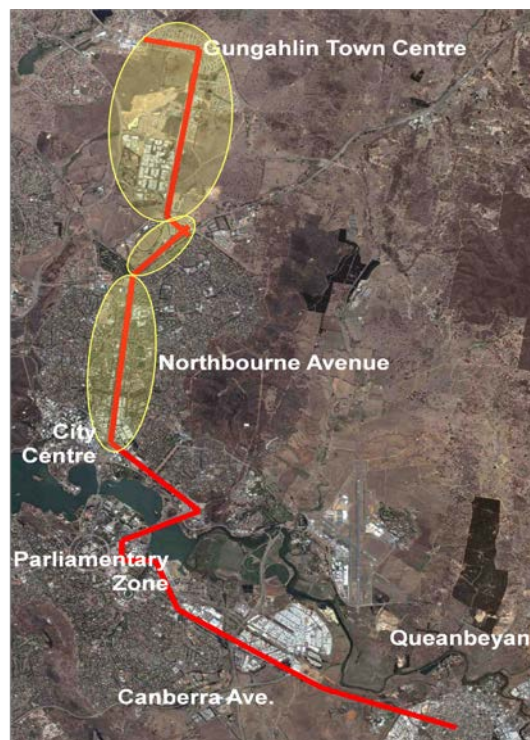




SUBMISSION TO INFRASTRUCTURE AUSTRALIA

2012 NATIONAL INFRASTRUCTURE PRIORITIES



ACT SUBMISSION – 2012 INFRASTRUCTURE PIPELINE
NORTHBOURNE AVENUE TRANSIT CORRIDOR

The [Northbourne Avenue Transit Corridor](#) is being put forward for consideration in the 2012 Update of the National Infrastructure Priorities at the [early development stage](#).

The project replaces the [Transport for Canberra Transit Way Program](#) put forward in the 2011 Update.

- **Project Value** – To be confirmed, subject to the outcomes of a feasibility study and detailed design.
- **Description** – The Northbourne Avenue Corridor is a nationally significant approach route into Canberra and is a significant transport corridor between the Central Business District and Gungahlin, one of Canberra's greenfield development areas. It is approximately 13 kilometres in length. The ACT Government has recently commenced a study to investigate light rail and bus rapid transit options to help address growing congestion and support transformational urban development opportunities along this important transport corridor.
- **Project Update** – The ACT Government is currently undertaking the Northbourne Avenue Transport Corridor Study which will provide the technical and economic assessment and business case for the development of the transport corridor. The study will include the preliminary concept design for the Northbourne Avenue Transport Corridor and the development of the corridor as a transport oriented development. It will also assess the relative feasibility of light rail transit (LRT), bus rapid transit (BRT) and LRT/BRT to achieve the broad goals and objectives outlined in the IA submission.
- **Alignment to IA Themes** – The project aligns with Infrastructure Australia's theme: *Transforming our cities*. The project is part of a package of works to improve the public transport network across the ACT. These improvements are aimed at increasing public transport patronage, together with changes to land use along key corridors, major public transport intersections and town centres. Key elements of the *Draft Transport for Canberra Plan* are:
 - integrating transport and land use planning;
 - making active travel (walking and cycling) an easy way to get around;
 - providing sustainable transport options and reducing transport emissions;
 - making all forms of transport safer; and
 - providing a transport system which is efficient and cost effective.
- The ACT is providing complementary key plans and strategies (under embargo) to support the 2012 Submission. These include the *Draft 2011-2031 Transport for Canberra Plan* ([Attachment C](#)); the *Draft 2011 ACT Planning Strategy* ([Attachment D](#)); and the *ACT Infrastructure Plan 2011-2021* ([Attachment E](#)).

INFRASTRUCTURE AUSTRALIA

**REFORM AND INVESTMENT FRAMEWORK
TEMPLATES FOR USE BY PROPONENTS**

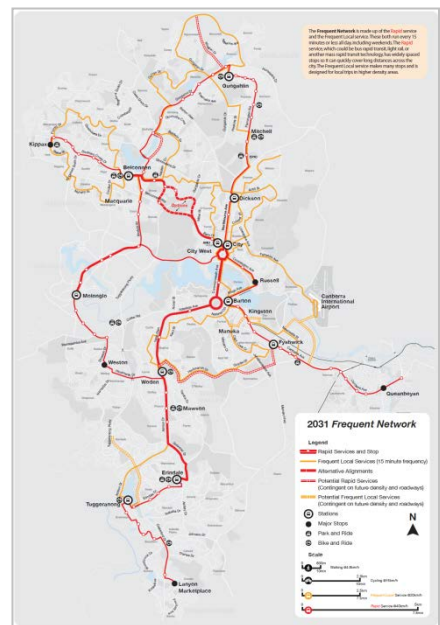
ACT Government

Northbourne Avenue Rapid Transit and Urban Renewal

November 2011

Proposal Summary

Initiative Name:	Northbourne Avenue Transport Corridor
Location (State/Region(or City)/ Locality):	Canberra, ACT
Name of Proponent Entity:	ACT Government
Contact (Name, Position, phone/e-mail):	David Papps Director General Environment and Sustainable Development Directorate, ACT Government Telephone: 02 6205 8189
Description of Initiative:	<p>Both Northbourne Avenue and Flemington Road to its north are currently experiencing significant congestion. The light rail and BRT designs being developed in the current study will provide an opportunity to achieve a broad range of sustainability outcomes – efficient transport, economic efficiency and a national showcase for transit oriented land use changes, with strong potential to facilitate urban renewal at both the residential and commercial levels. The Northbourne Avenue Transport Corridor is the gateway to the National Capital and, as such, the corridor must reflect its national significance, through high quality urban design, which accords with the principles set out in the National Capital Plan.</p> <p>The Northbourne Avenue Corridor is a nationally significant approach route into Canberra and is a significant transport corridor between the Central Business District and Gungahlin, one of Canberra’s greenfield development areas. It is approximately 13km in length. The ACT Government has recently commenced a study to investigate light rail and bus rapid transit options to help address growing congestion and support transformational urban development opportunities along this important transport corridor.</p> <p>The Northbourne Avenue Transport Corridor is a key component of the ACT’s <i>Draft Transport for Canberra Plan</i> (draft plan). The draft plan identifies the future public transport investment and initiatives that will be implemented to meet the ACT’s ambitious public transport mode share targets (the <i>Draft Transport for Canberra Plan</i> is provided at Appendix 1).</p> <p>The ACT Government is currently undertaking the Northbourne Avenue Transport Corridor Study which will provide the technical and economic assessment and business case for the development of the transport corridor. This study will develop preliminary concept designs for the corridor with transport oriented land use options, and the feasibility of light rail transit (LRT), bus rapid transit (BRT) and LRT/BRT to achieve the broad goals and objectives outlined in this submission. Following the completion of the study, detailed business cases will be developed for both ACT Government and Infrastructure Australia’s consideration, with a final report anticipated by June 2012.</p>



Theme alignment

The project aligns with Infrastructure Australia's theme: *Transforming our cities*.

The *Draft Transport for Canberra: Transport for a sustainable city* plan builds on the 2004 Sustainable Transport Plan, and aims to:

- integrate transport and land use planning;
- make active travel (walking and cycling) an easy way to get around;
- provide sustainable transport options and reduce transport emissions;
- make all forms of transport safer; and
- provide a transport system which is efficient and cost effective.

The Draft Transport for Canberra Plan confirms transport mode share targets for journeys to work as outlined below.

Mode	2006 actual	2011 actual	NEW 2016 target	2026 target
Walking	5%	6%	6.5%	7%
Cycling	2.5%	5%	6%	7%
Public Transport	7.9%	9%	10.5%	16%
Total	15.4%	20%	23%	30%

Between 2011 and 2026, approximately **48,000** additional Canberrans will need to walk, cycle or use public transport to travel to work to meet these targets. These mode share targets are also part of the ACT's commitment to reduce greenhouse gas emissions by 40% on 1990 levels by 2020. In order to meet these targets, the *Draft Transport for Canberra Plan* identifies a range of significant reform and investment requirements focusing on the new **Frequent Network** which will be the backbone of the ACT integrated transport system. The Frequent Network will establish public transport corridors to provide access to fast, frequent and reliable public transport services. The Frequent Network will provide the basis for future public and private sector investment and development on or near the network.

The Northbourne Avenue Corridor is a key transport corridor within the Frequent Network and connects the district of Gungahlin, the fastest growing residential area in the ACT, with the Canberra CBD. When fully developed, Gungahlin will have a population of approximately 90,000 residents and 15,000 workers. The Gungahlin to City corridor and surrounding areas provide excellent opportunities for increased residential densities to support transit oriented development in the corridor. Planning policy exists to ultimately support approximately 35,000 additional residents within the Gungahlin to City corridor, thereby increasing the viability of frequent public transport services and reducing the need for additional land release and long distance private vehicle travel:

- 10,000 additional residents within the Northbourne Avenue Corridor (through redevelopment).
- 20,000 additional residents within the Flemington Road corridor at the northern end (through greenfield development).
- 4,300 extra people living in the CBD.

These scenarios reflect what is possible under current planning policy; the current Northbourne study will consider how light rail could increase development opportunities along the corridor and adjacent urban areas beyond these current settings.

Construction of LRT or BRT on the corridor will create substantial opportunity to transform both the corridor and nodes along its length (particularly Dickson) into vibrant, active urban areas with many people, businesses and retail areas reaping the benefits of co-location.

Pipeline category nominated by proponent (please indicate one category only):	Early Stage. The project is currently subject of a feasibility study which will identify concept designs for LRT, BRT and LRT/BRT by December 2011. A final report is anticipated by June 2012. Detailed design would commence from 2012-13 or 2013-14, subject to funding in the ACT Budget.
Capital Cost of Initiative by Proponent (\$M, nominal, undiscounted):	To be confirmed, subject to outcomes of the feasibility study and detailed design.
Commonwealth contribution sought by Proponent, and cash flow in financial years – including any requests for project development funding (\$M, nominal, undiscounted):	To be confirmed, subject to outcomes of the feasibility study and detailed design.
Other funding (source/amount/cash flow) (\$M, nominal, undiscounted):	Other financing options, including possible public private partnership opportunities, will be investigated.
BCR by Proponent excluding Wider Economic Benefits	A previous economic analysis of bus priority measures on Northbourne Avenue produced a benefit to cost-ratio of 3.18. This figure did not include land value capture, emission reductions or other newer economic modelling approaches, and is considered conservative. Further analysis, including BCRs for light rail and BRT options, will be undertaken as part of the current feasibility study.
High level development and implementation program	<p>2011-12</p> <ul style="list-style-type: none"> Northbourne Avenue Corridor study currently being undertaken – identifying preferred concept designs for Light Rail Transit (LRT), Bus Rapid Transit (BRT) and LRT/BRT; business case seeking funding for detailed design (through ACT Government budget); and business case and assessments to support future IA submission. <p>Note: Elements of the program below are subject to future decisions of the ACT Government.</p> <p>2012-13 to 2013-14:</p> <ul style="list-style-type: none"> design and construct segregated cycle way (ACT funding); detailed design of the transport corridor, costed in accordance with IA’s criteria and assessment requirements (ACT funding), and works approval from the NCA; and comprehensive submission to IA seeking inclusion of the Northbourne Avenue Transit Corridor on the National Infrastructure Pipeline. <p>2013-14 to 2016-17:</p> <ul style="list-style-type: none"> Commencement of the construction of the transport corridor. A construction program would be prepared as part of the detailed design phase. A range of issues would need to be carefully managed during construction, including tree management, conflicts with different road users, potential relocation of services and temporary traffic management. Delivery of the full project is likely to take approximately at least 3 to 5 years depending on the design adopted by the Government following the current study.

- NA; concept designs for LRT and BRT are planned to be released publicly in December 2011.

Templates for Individual Stages in the Reform and Investment Framework

Stage 1: Goal Definition	
Goal Statements	<p><u>National goals</u></p> <p>Northbourne Avenue is a nationally significant corridor which: connects the fastest growing area in the ACT, connects about 100,000 people and 100,000 jobs; has existing opportunities to support transit oriented development for an additional 10,000 people; and is the major boulevard approach route to the Nation's Capital.</p> <p>Northbourne Avenue Corridor is identified as a Designated Area and Main Avenue for the purposes of the National Capital Plan. Special requirements in the National Capital Plan relevant to transport measures on Northbourne Avenue include:</p> <ul style="list-style-type: none"> • the main avenues and approach routes will be developed and maintained as high quality transport corridors; • in-built up areas, the established design theme of irrigated grass verges and medians and formal tree planting will be maintained; • provision for national uses, offices or national associations, tourist accommodation and residential development; • aim to minimise the consumption of energy and to enhance the physical environment of the Territory; and • transport strategies should promote the convenience and efficiency of public transport use. <p>The National Capital Plan also requires that routes for public transport services linking major employment nodes operating with a priority right of way for use by public transport services be reserved against a possible future need to develop a system of inter town and express routes suitable for buses or other technologies as appropriate.</p> <p><u>ACT goals</u></p> <p>The primary goal of this initiative is to assist in delivering the ACT Government's policy to achieve a more sustainable transport system, transport integration and addressing climate change in the ACT. Through this initiative government has committed to mode share targets for public transport of 9% of all work trips by 2011 and 16% of all work trips by 2026. The new Transport for Canberra plan will confirm these targets as ongoing government policy, subject to the outcome of public consultation and further consideration by the government.</p>

Stage 1: Goal Definition

	<p>The ACT transport system is based around a system of main roads and peripheral parkways for traffic movement and central public transport spine for urban passenger movement. LRT and/or BRT along the central spine of the Northbourne Avenue (Gungahlin to City) corridor has the potential to transform Canberra into a more sustainable city.</p> <p>Canberra currently has a population of around 364,000 and this is expected to rise up to 460,000 (mid-range estimate) by 2032. The social costs of congestion was estimated in 2005 to be about \$0.11 billion, potentially rising to \$0.2 billion by 2020, without investments of this nature.</p> <p>While the road-based system can to be augmented in the short to medium term, it also needs to be supplemented with a strong public transport network to reduce car dependence and associated economic, environmental and social impacts.</p> <p>Achievement of a central public transport spine along Northbourne Avenue will make the most of the development opportunities from existing land use settings and highlight the national significance of this entry to Canberra. With LRT or BRT, Canberra will achieve a transport system with high capacity, rapid public transport corridor, reduce travel times, lower overall costs, lower air pollution, lower green house gas emissions, reduce accidents and lower health costs, and provide more transport options for the community.</p>
<p>Objective Statements</p>	<p>To achieve the high order goal of a more sustainable Canberra, the initiative has a number of key objectives:</p> <p>National objectives</p> <p>Delivery of a light rail or bus rapid transit corridor that achieves a high level of urban design, landscaping and infrastructure quality, which enhances the national role of Northbourne Avenue as a Main Avenue and approach route to the National Capital, and builds on the high quality urban design and landscaping that are currently a feature of the corridor.</p> <p>ACT objectives</p> <ol style="list-style-type: none"> 1. Deliver a high quality public transport infrastructure project, in accordance with required planning and design outcomes to meet Northbourne Avenue’s role as a key approach route to the National Capital, and as part of delivering the new Transport for Canberra plan and draft ACT Planning Strategy. 2. Integrate transport and land use through transitway development along intertown public transport (IPT) transport corridors and create opportunities for transit oriented developments. 3. Shift the balance of travel from private vehicles towards public transport as per the mode share targets established in the ACT Sustainable Transport Plan (2004) and confirmed in the draft Transport for Canberra plan (2011). 4. Reduce the total cost of the transport system including economic, environmental and social exclusion costs. 5. Provide efficient public transport services and infrastructure in a key metropolitan corridor, servicing a growing population, with increased residential and employment density along major transport corridors.

Stage 1: Goal Definition

6. Manage congestion in a corridor carrying a high volume of vehicle traffic.
7. Improve reliability and frequency of public transport services, recognising that improved travel times and reliability can be a powerful incentive in attracting public transport patronage.
8. Increase population density and employment at town centres and nodes within the corridor, which in turn will assist in improving the viability of public transport services, and allow for increased frequency.
9. Establishment of bus-based or light rail public transport with exclusive rights of way and stations.
10. Increase economic efficiency for movement of goods and people within the corridor.

Goal and Objective Alignment

Infrastructure Australia's Strategic Priorities (SP)

SP1	SP2	SP3	SP4	SP5	SP 6	SP7
Expand Australia's productive capacity	Increase Australia's productivity	Diversify Australia's economic capabilities	Build on Australia's global competitive advantages	Develop our cities and/or regions	Reduce greenhouse emissions	Improve social equity, and quality of life

The project aligns closely with IA strategic Priorities:

SP5 - Develop our cities and/or regions

SP6 – Reduce greenhouse emissions

SP7 – Improve social equity, and quality of life

SP5 Develop our cities and/or regions

The current dispersed land use in Canberra has led to low levels of public transport usage, a high level of reliance on cars as the primary form of transport, increasing congestion on key routes, emissions, accidents, parking demand and loss of amenity for local residents. In addition, high level of reliance on cars results in reduced use of active transport and reduced productivity within the economy.

High use of private cars results in inequities across the community. The high and increasing cost of housing in inner areas means that low income earners are pushed towards the fringe where journey times are longer, and public transport services less frequent and less reliable due to congestion in the road system. The draft ACT Planning Strategy and Transport for Canberra plan seek to address some of these challenges by changing our land use settings to encourage and allow more people to live, work and play along major transport corridors like that servicing Gungahlin to the City.

Stage 1: Goal Definition

Public transport service planning and infrastructure is integral to delivering high quality urban planning outcomes in line with these two strategic policies. Providing the resident population and workforce with better transport choices will allow for the city of Canberra to be developed in a compact form. It will facilitate urban renewal of low density housing stock, within the corridor, to higher density housing and allow for development of medium to high density housing in greenfields areas at the northern end of the corridor.

Provision of high quality public transport infrastructure within key corridors increases the reliability and user experience of public transport services. Higher density developments at key nodes and interchanges, together with a mix of land uses, allows more people to access public transport and to walk and cycle. Increased population density and employment at town centres and nodes allows more people to use the services, thereby increasing their viability. This can then create a snowball effect in that higher use of the system justifies improvements to the system and a higher level of service.

In this way, the development of integrated land/use transport strategies, such as the delivery of the Northbourne Avenue transitway, support the outcomes of both the Draft Planning Strategy and the Draft Transport for Canberra Plan.

SP 6 Reduce greenhouse gas emissions

Traffic volumes on Northbourne Avenue are in the order of 30,000 vehicles per day. Peak hourly flow is around 3,000 vehicles over the three traffic lanes with interrupted conditions with traffic lights. According to the Austroads national standards, Northbourne Avenue is over capacity resulting in excessive delays and poor performance along the whole corridor.

Buses experience significant delays and late running of buses due to the congestion. As congestion on the roads increases, LRT or BRT integrated with land use planning will accommodate more of the demand with a lowering of greenhouse gas emissions, lower air pollution, reduced accidents and lower health costs compared with a continuation of the current modal balance.

The main reason for Canberra's large per capita passenger transport emission compared to other states is the high use of motor vehicles in the ACT. If the private motor vehicle and public transport use in the ACT aligned with the national average (meaning an additional 6,500 people per year catching public transport or another alternative mode of transport to work), 3,900 tonnes less of CO₂ would be produced each year.

A light rail system would potentially move people from private cars to mass transit, reducing greenhouse and other transport emissions through both mode shift (car to light rail) and the lower emissions of light rail compared to road-based buses (with a potential greenhouse emissions reduction of around 14%).

This mass public transport in Northbourne corridor therefore presents an opportunity to address the ACT Government's climate change strategy, Weathering the Change.

Mass public transport along Northbourne Avenue will assist greatly in managing congestion in the corridor. Average vehicle occupancy in the corridor is estimated at approximately 1.2 people per vehicles. On this basis, for every full bus (carrying 60 passengers) and every full rail (carrying 140 passengers) using the corridor, approximately 50 (if by bus) and 140 (if by rail) cars are taken off the road. Fewer cars and/or reduced congestion in the corridor will also mean reduced fuel consumption, and reduced noise and air pollution.

Stage 1: Goal Definition

SP7 Improve social equity, and quality of life

Providing improved public transport services increases transport choice, and allows people to reduce their reliance on private cars, which provides social benefits to the broader community, including:

- sustained community accessibility to all members of the community, despite population increases, and increases in the number of households;
- increased transport safety through reduced accidents;
- improved equity of access to transport for all groups and sectors in the community.
- provide more transport choices; and
- reduce the costs of transport, including, users' costs, accident costs, greenhouse gas emissions, noise, air pollution and other negative environmental effects of transport.

In addition, improved land use/transport outcomes in the corridor will allow for a broader range of housing choice. This means that lower income earners have the opportunity to live closer to major nodes, have access to high quality transport links, and allows for increased social inclusion of groups that may otherwise be excluded due to lack of access. Improved transport choice and service levels also facilitate more "active" transport, resulting in health benefits.

Note: More detailed goal definition will be included in the initial concept report and final report of the Northbourne Avenue Transport Corridor study, to be completed by December 2011 and June 2012 respectively.

Stage 2: Problem Identification

<p>Problem Identification:</p> <p>Current issues</p>	<p>The ACT Government has committed to meeting targets in the areas of reducing greenhouse emissions, achieving a compact city, achieving high levels of social inclusion and providing a sustainable transport network.</p> <p>There are a number of factors which are holding back the ACT's ability to create a sustainable transport network which, in turn, are holding back its ability to meet wider economic and social goals. These are increasing congestion and travel times; and high carbon emissions per capita.</p> <p>These two problems are in part a function of Canberra's low density and highly dispersed urban form, which in the absence of smart transport planning, makes car use very attractive, and could make enhancing public transport provision costly and challenging.</p> <p>Road congestion in the ACT is expected to increase significantly over the next 20 years. As Northbourne Avenue is a growth corridor, the growing congestion and capacity limitations have the following implications:</p> <p><u>Locally:</u></p> <ul style="list-style-type: none">• Increasing congestion and travel time (model estimate indicates almost double during peak periods by 2031).• Public transport services continue to be unreliable and under pressure to meet the demand due to the growing population.• Traffic infiltration through abutting North Canberra suburbs causing safety and amenity problems (modelling indicates more than 30% growth on residential roads over the next ten years).• High carbon emission per capita and pollution. <p><u>Nationally:</u></p> <ul style="list-style-type: none">• The main approach to the Nation's Capital is inefficient due to growing congestion.• Lack of public transport infrastructure on this corridor has consequence of feeding more car based traffic into Canberra CBD and Parliamentary zones.• Limited access within Canberra CBD and to the national institutions. <p><u>Regionally</u></p> <ul style="list-style-type: none">• Traffic feeding from NSW on this corridor has increased by more than 15% in the last five years.• The capacity constraints limit efficient cross border travel. <p>The traffic modelling indicates that these issues are projected to grow to unsustainable levels over the next ten years. Specific factors contributing the problem include:</p> <ul style="list-style-type: none">• Significant growth in new residential suburbs in Gungahlin, which is expected to continue for the foreseeable future (the Gungahlin district will be fully developed around 2025 and will have an ultimate population of approximately 90,000 people, with employment for only 15,000).• Rapid growth in commercial activities in the CBD – employment activity increased by 64% between 2001 and 2006 and is forecast to increase by a further 20% by 2011 (and even further by 2016).
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Stage 2: Problem Identification

	<p>The Northbourne Avenue corridor serves a residential population of around 90,000 made up of the district populations of Gungahlin and Central Canberra (inner north). In 2031, this will rise to around 147,000. Planning policy exists to ultimately support an extra 35,000 people along the corridor.</p> <p>The corridor supports an existing employment population of 105,000. This is forecast to grow to 130,000 by 2031. Therefore, the current demand in the corridor is high, and is already limiting the rapid movement of buses. Current demand shows some existing capacity constraints for public transport:</p> <ul style="list-style-type: none"> • During the course of a weekday over 500 scheduled buses travel along Northbourne Avenue. • 13 Routes use Northbourne Avenue at the peak provides high frequency service representing a bus every 2 minutes. • By 2031 the number of public transport trips in the peak hour is forecast to increase by almost 4 times reaching 5000 from a recent 1,200-1,500. This represents an increase of about 86 buses from the current 30 travelling along Northbourne Avenue. • Bus schedules currently factor in an extra 8 minutes to the normally 8 minute trip along Northbourne Avenue to the city station and they travel at less than 18 km/hr during the am peak. • For the 7km trip from Sandford Street Mitchell where bus lanes exist in the north the trip travels at 60-70 km/hr. Northbourne Avenue Rapid transit way services are planned to achieve 40km/hr. <p>The Bureau of Infrastructure, Transport and Regional Economics estimated the social costs of congestion in Canberra in 2005 to be about \$0.11 billion, potentially rising to \$0.2 billion by 2020. These social costs comprised private time costs, business time costs, extra vehicle operating costs and extra air pollution costs.</p> <p>The ACT is strongly committed to building a lower carbon Canberra, and meeting its <i>Weathering the Change</i> target of a reduction of carbon emissions to 60% of 2000 levels by 2050. Transport contributes around 24% of the ACT's emissions. The ACT's contribution to total carbon emissions in Australia is modest at 1.2 per cent of total carbon emissions. Since there is no heavy industry in the ACT, there are few options available to its residents to make a contribution.</p> <p>Canberra's per capita CO2 emissions as a result of passenger vehicle use are the highest of any capital City in Australia. In 2005, CO2 emissions as a result of passenger vehicle use in Canberra were 2,150 kilograms per person. This compares to an average of 1,744 kilograms per person in the other capital cities in Australia. Reducing carbon emissions from passenger motor vehicles is one of the main opportunities to achieve the emission reduction target.</p>
<p>Problem identification: Future scenarios</p>	<p>Under the current arrangements, public transport services in the Northbourne Avenue corridor operate within a general traffic lane. This limits the reliability of services, as they have no priority or ability to bypass traffic delays in the corridor.</p> <p>Should the public transport transit way be constructed, it will provide the opportunity for public transport to be given priority, which will increase running time reliability. Bus stations would be constructed and equipped with real time passenger information, allowing an increased level of certainty around services, and allowing for reliable interchanging. Bus routes in the north Canberra district can be routed through the corridor, allowing for increased frequency, thereby increasing the attractiveness of public transport over the private motor vehicle.</p>

Stage 2: Problem Identification

Concurrently, work is underway within the ACT Government to look at additional supporting mechanisms across the network as part of delivering Transport for Canberra, including parking pricing in major centres, infrastructure to support multi-modal trips (including bike-and-ride, and park-and-ride facilities), and real time passenger information across the frequent service network. A smart-card ticketing system (MyWay) has been successfully rolled out in 2011, and provides increased flexibility in ticket pricing, helping capture additional user data across the network, which can be used for detailed network planning purposes.

Note: More detailed problem identification will be included in the initial concept report and final report of the current Northbourne Avenue Transport Corridor study, to be completed by December 2011 and June 2012 respectively.

Stage 3: Problem Assessment

Problem assessment	<p><i>To what extent does (or will) the problem impact upon the goals and objectives?</i></p> <p>A detailed problem assessment will be included in the initial concept report and final report of the current Northbourne Avenue Transport Corridor study, to be completed by December 2011 and June 2012 respectively.</p>
Current and future problems	<p><i>How is the problem currently (and likely to) affecting the nation/ state/ region (city)/ locality?</i></p> <p><i>Quantify the extent to which the problems may affect the attainment of the goals/objectives.</i></p> <p><i>List the data and evidence available to support the quantification.</i></p> <p>A detailed problem assessment will be included in the initial concept report and final report of the current Northbourne Avenue Transport Corridor study, to be completed by December 2011 and June 2012 respectively.</p>

Stage 4: Problem Analysis

Problem analysis	<p><i>Outline the underlying causes of the problem.</i></p> <p><i>Give the policy argument explaining the genesis of the problem (e.g. market failure, incorrect pricing, lack of investment signals, governance).</i></p> <p><i>Provide data and other evidence to back up the policy arguments.</i></p> <p><i>Detailed problem analysis will be included in the final report of the Northbourne Avenue Transport Corridor study, to be completed by June 2012.</i></p>
Identify fundamental cause, not symptoms, of the problem	<p><i>Focus on the fundamental cause of the problem, e.g. the root cause of road congestion should not simply be claimed as a “lack of capacity” – what has caused the lack of capacity?</i></p> <p><i>It may, for example, be a demand/supply mismatch caused by incorrect pricing and excess demand, or a lack of supply side investment due to the absence of price signals or targeted revenue streams.</i></p> <p><i>Detailed problem analysis will be included in the final report of the Northbourne Avenue Transport Corridor study, to be completed by June 2012.</i></p>
Problem Prioritisation	<p><i>Identify why this problem has been prioritised against other problems across that network and/or region – i.e. demonstrate which problems are most likely to hinder the achievement of goals and objectives.</i></p> <p><i>More detailed and quantifiable problem analysis and prioritisation will be included in the initial concept report and final report of the current Northbourne Avenue Transport Corridor study, to be completed by December 2011 and June 2012 respectively.</i></p>

Stage 5: Option Generation

REFORM (ESSENTIALLY NON-CAPITAL INVESTMENT) OPTIONS

Option 1

Short description of the option, and how it is likely to achieve the goals/objectives.

The Northbourne Avenue Corridor study currently underway will identify and assess the range of options for the corridor as part of the broader public transport network. Detailed discussion on the options will be provided to Infrastructure Australia following the completion of the current study via an initial concept designs report in December 2012, and a final report in June 2012. This report will identify three possible concept designs to address the problems identified for the corridor: light rail, light rail combined with bus rapid transit, and bus rapid transit (convertible to light rail in future).

INVESTMENT OPTIONS

Option 1

Short description of the option, and how it is likely to achieve the goals/objectives.

Investment options including ACT Government funding and public private partnership potential will be considered as part of the Northbourne Avenue study and included in the final report in June 2012.

Stage 6: Options Assessment

Infrastructure Australia is not mandating a particular process for moving from a long list of potential options to a short list of lead candidates. The following three-step process is an indicative guide.

Long list	<p><i>A detailed options assessment will be included as part of the Northbourne Avenue study, with the final report in June 2012 to detail the methodology used to identify and shortlist the LRT, BRT and LRT/BRT concepts.</i></p> <p>Explain how an original full list ('long list') of options was initially narrowed down to an interim list.</p> <p>Summarise the results of this process, for instance the scores from a high level Multi Criteria Analysis process.</p> <p>Where possible, explain how this process incorporated different scenarios.</p>
Interim list	<p>Explain how the interim list of options was then narrowed down to a short list.</p> <p>Summarise the results of this process, for instance the scores from a detailed Multi Criteria Analysis process and the headline results of Rapid Economic Appraisals.</p> <p>Where possible, explain how this process incorporated different scenarios.</p>
Short list	<p>Explain how the interim list of options was finally narrowed down to a lead option.</p> <p>Summarise the results of this process, for instance the scores from a detailed Multi Criteria Analysis process and the main results from a detailed economic appraisal of two or three lead contenders (presenting, for instance, the Appraisal Summary Table for each lead option).</p> <p>Where possible, explain how this process incorporated different scenarios.</p>



Northbourne Avenue Transport Corridor Study (Gungahlin to City)

The \$2.8m Gungahlin to City Transport Corridor Study (known as the Northbourne Avenue transport corridor study) will consider two questions:

- What sort of light rail/bus rapid transit option would be viable for Northbourne Avenue and the Gungahlin to City corridor?
- How can it be delivered with appropriately supportive land use settings, how will it integrate into the wider transport network (including Dickson station), how can it be funded, and how can it be designed to “Transform our City” in line with the COAG Reform Council and Infrastructure Australia criteria for projects of national significance?

While transport will remain its key focus, the project will also include vital elements of urban design, development opportunities, financing options and land use integration. The study will be managed in two streams to allow its completion in line with the Government commitment to release “final proposals” by December 2011, and to produce a business case for consideration in the 2012-13 Budget.

Current and upcoming projects on the corridor

There are four related transport projects planned or underway for the corridor:

- Northbourne Avenue bus priority and Dickson major station feasibility (ESDD)
- Northbourne Avenue cycleway design/ construction (TAMS)
- Dickson major station (ESDD)
- Gungahlin to City Corridor Study (The Budget papers name this project “Northbourne Avenue transitway”) (ESDD)

Other concurrent projects/processes across government include:

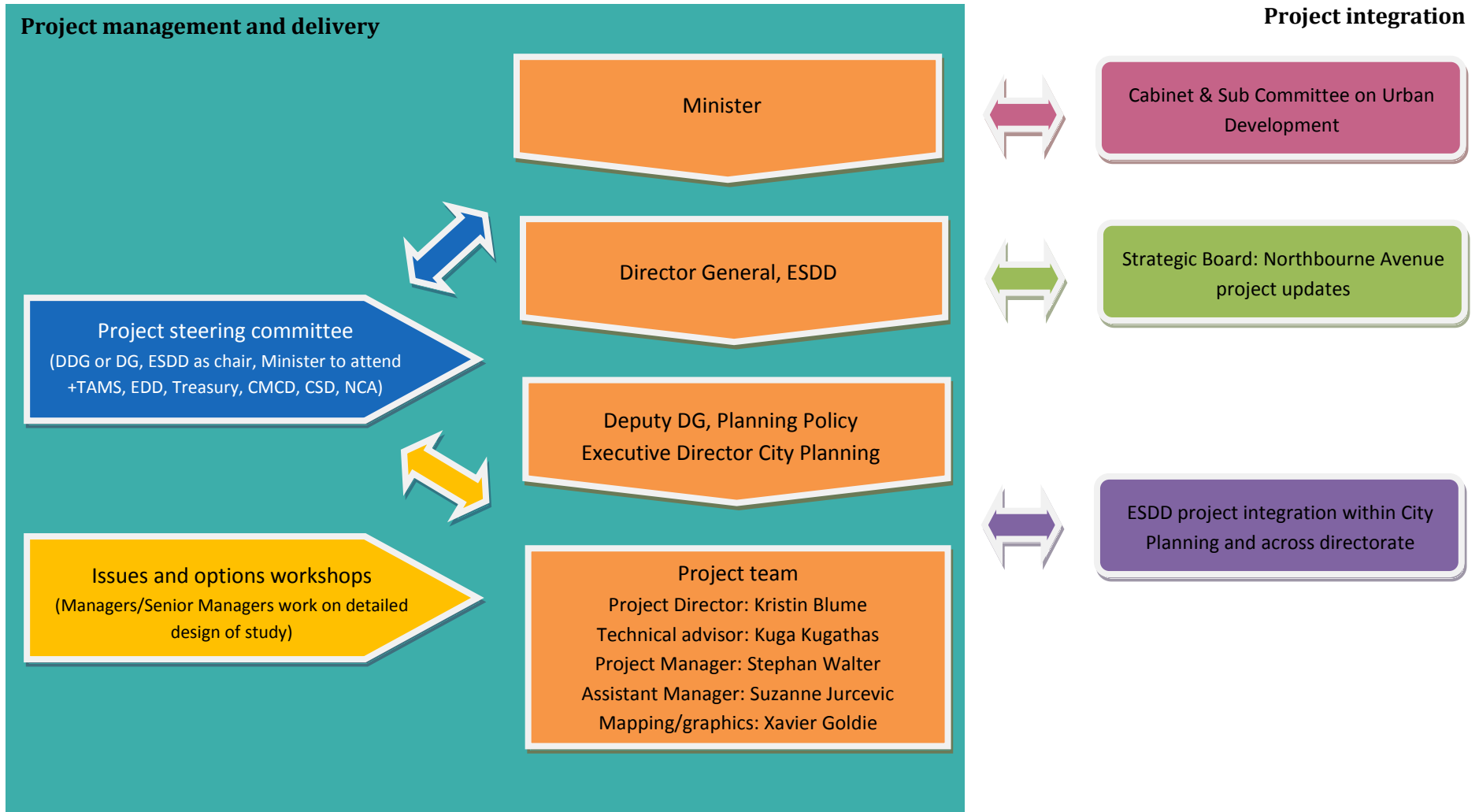
- Dickson and Gungahlin Master Plans (ESDD)
- City Area Action Plan 2010-2016 (EDD)
- Gungahlin bus station feasibility and design (ESDD/TAMS)
- Flemington Road bus priority study (TAMS)
- Northbourne Avenue traffic lights coordination options (TAMS)
- Urban tree replacement (TAMS)
- Constitution Avenue (TAMS)
- Northbourne Flats redevelopment (CSD)

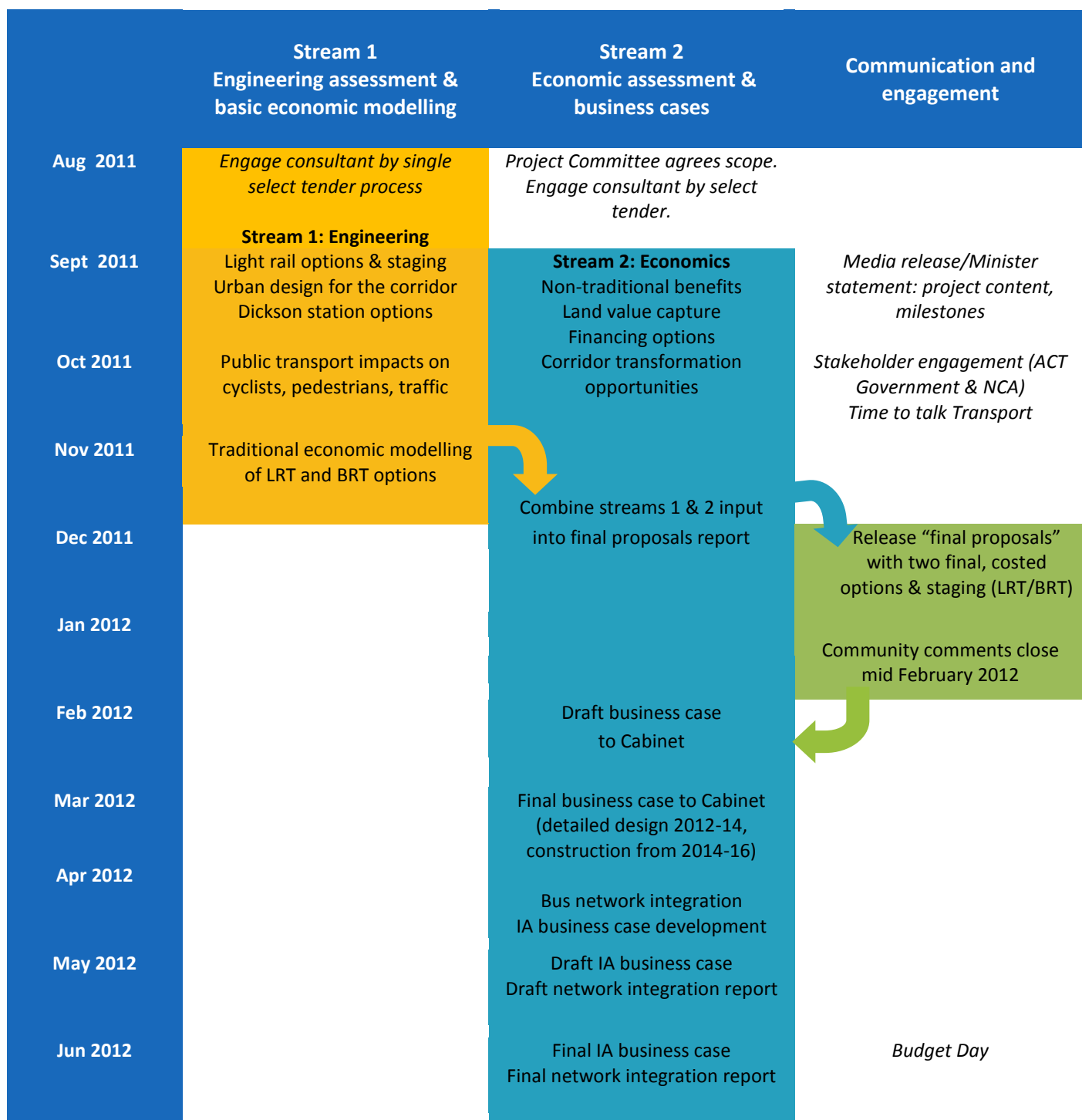
Transport related projects on the Northbourne to Gungahlin corridor

Project name	Description	Budget	Output	Current Status
Northbourne Avenue bus priority and Dickson major station feasibility (ESDD)	This study is investigating short and medium term bus priority, pedestrian and cycleway options for Northbourne Avenue. It includes updated traffic, engineering and tree assessments that will be vital inputs to the 2011-12 corridor study. It also includes options for a Dickson station consistent with the Dickson master plan and long term public transport network. Community consultation has been deferred to include in the new 2011 study.	\$0.25m (10-11 funded)	Bus priority & Dickson station feasibility study + preliminary cost/benefit analysis (bus only)	Workshop with steering committee complete. Completion of report by Sept 2011.
Northbourne Avenue cycleway design/ construction (TAMS)	TAMS have deferred any major design or construction works in anticipation of the new corridor study. Note: original funding in 2010-11 Budget was for design of a transitway.	\$4.0m	TBC – could be reallocated to design in 2012-13	On hold apart from minor technical assessments.
Dickson major station (ESDD)	Design options for Dickson station will be included in the Gungahlin to City Corridor study, as mass transit options could have a significant impact on station design. Dickson will become an important node or interchange for North-South and East-West movement in the coming five to ten years.	\$0.3m	Part of Northbourne study.	Draft options part of Northbourne study. Design to be chosen as part of Northbourne study.
Northbourne Avenue Transport Corridor Study (The Budget papers name this project “Northbourne Avenue transitway”) (ESDD)	Looking at the whole Gungahlin to City corridor including Flemington road, Northbourne Avenue & Dickson station, this study will: <ul style="list-style-type: none"> i. Investigate light rapid transit (LRT) and bus rapid transit (BRT) options; ii. Identify how LRT/BRT could be achieved in stages on the corridor; iii. Identify how LRT/BRT would integrate with the rest of the ACT public transport network (both short and long term); iv. Explore land use planning and value capture opportunities v. Incorporate world class urban design principles vi. Undertake a cost benefit analysis of the preferred option to support Budget decision making and Infrastructure Australia funding proposals; vii. Investigate financing options including PPP, land development and sales opportunities on the corridor; and viii. Include community consultation. 	\$2.5m	Final proposals released by December 2011. Business case for Budget 2012-13 Feb 2012. Final report complete by June 2012.	Steering committee meeting 29 August 2011. Stream 1 (engineering) consultant to be engaged by mid September. Stream 2 (economics) consultant to be engaged by end September.

Project governance

The \$2.8m Northbourne Avenue transport study will be led by ESDD as the planning agency, with cross government integration through the project a steering committee, supported by the project team.





Output	Target date (draft)	Target date (final)
1. Final proposals: LRT and BRT with staging and costs/benefits for public consultation	9 December 2011	18 December 2011
2. Business case for ACT Government	29 February 2012	30 March 2012
3. Business case for Infrastructure Australia	11 May 2012	22 June 2012
4. Public transport network integration report	11 May 2012	22 June 2012