

New Thinking on Infrastructure Funding

Tax Increment Financing to fund public urban
infrastructure in Australia

For the Property Council of Australia

Final Report

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The photographs in Chapter 3 of this report courtesy of Mr Joe Langley of Sinclair Knight Merz

1 Executive summary

The importance of infrastructure

One of the biggest and most important challenges facing Australia today is ensuring that there is adequate provision of infrastructure to maintain economic growth and development, our international competitiveness, our future prosperity and the liveability of our cities.

Related to this is property and housing affordability. Land is in relative plentiful supply in Australia. However, land well serviced by infrastructure is not. This increases property demand relative to supply in established, well serviced areas; and adds to the cost of development in new release areas, pushing up home prices beyond what is affordable for many potential home buyers. Timely and adequate provision of infrastructure is necessary to support new housing development, which can help ease the current housing affordability crisis. This is also true for non-residential property – as timely and adequate provision of infrastructure is necessary to facilitate commercial, retail and industrial development.

The importance of infrastructure and housing affordability, and the necessity to achieve improved outcomes in relation to both, has been acknowledged by all levels of government. For instance, both infrastructure and housing affordability have recently been identified as priority areas for COAG (Council of Australian Governments) action.¹

The current problem

In recent years there has been emerging evidence that Australia's infrastructure is not keeping pace with the demands placed on it by a growing population and economy, and that the current approach to infrastructure funding and provision needs improvement.

For example, the recent *World Economic Forum Global Competitive Report* found that Australia's infrastructure performance has fallen from 13th to 18th over the past year, and that inadequate supply of infrastructure is one of our main constraints to further growth and development.²

According to Engineers Australia (EA):

"The challenge for governments is to find ways in which to fund public sector infrastructure."

"While government debt is one way, another option is hypothecated taxes, which are more appealing to a tax-

¹ See COAG Communique, 20 December 2007, available at: <http://www.coag.gov.au/>

² See: <http://www.gcr.weforum.org/> (see also: <http://www.swanmp.org/swanmp/2007/11/australia-falli.html>).

resistant paying public. As well, infrastructure bonds may provide a popular way in which Australians could invest in nation-building activities....

"The increased need for infrastructure investment will not go away. Billions of dollars will be needed to address the backlog of work as well as meet the changing needs caused by the aging and growing population, and its move to new housing estates and the coastal fringe."³

Some states, such as NSW, have resorted to increasing reliance on upfront development levies to fund infrastructure. However, there are concerns that this can result in infrastructure being 'drip fed' to an area, and that it can fail to deliver infrastructure of a sufficient scale, on time and in a coordinated manner. There are also concerns that development levies add significantly to the upfront cost of development, and hence act to impede the rate of lot uptake in new residential areas and ultimately impact on housing affordability (as well as infrastructure provision itself).

In fact, this negative relationship between housing affordability and development charges has recently been recognised by COAG. Its December 2007 *Communiqué* stated that Commonwealth/State Implementation Plans to be delivered at its March 2008 meeting were to include: "A \$500 million Housing Affordability Fund with the goal of streamlining development approval processes and reducing infrastructure charges and developer costs." At its March 2008 meeting, COAG agreed to implement five key issues aimed at improving housing affordability. This includes: lowering "the burden of infrastructure and regulatory costs built into the purchase price of a new home."⁴

Furthermore, development levies have primarily been used to fund infrastructure in new development (rather than infill) areas. However, in coming years, infrastructure additions and upgrades will be required in infill areas, and these will need to be funded in some way.

Tax increment financing (TIF) as an infrastructure funding mechanism

Tax Increment Financing (TIF) has been used extensively in the United States (US). The US experience shows that it could be applied in Australia to deliver much needed infrastructure.

Since the 1950s, TIF has been used throughout the US to fund a range of infrastructure and development projects. Today, 49 US states have TIF enabling legislation. While the concept of TIF is widely applied throughout the US, details of how it is implemented (e.g. in terms of scale and types of development, eligibility

³ Engineers Australia, *2005 Australian Infrastructure Report Card*, pp 8-9.

⁴ <http://www.coag.gov.au/meetings/260308/index.htm#housing>.

requirements, and definition of tax increment) vary from State to State, and can be tailored to suit the needs, policies and governance arrangements of specific areas.

In general terms, TIF allows a government jurisdiction (usually local government in the US) to take tax revenues derived from increases in property values within a prescribed development area (the 'TIF District') and use those 'incremental' tax revenues to fund the infrastructure and renewal projects that led to (or at least significantly contributed to) this property appreciation. For the property owner, there is no new tax⁵ or rise in property tax. A TIF represents a reallocation of part of the growth in property taxes from State Treasuries to the TIF authority. TIF districts are sometimes also referred to as Tax Allocation Districts or Revenue Allocation Districts.

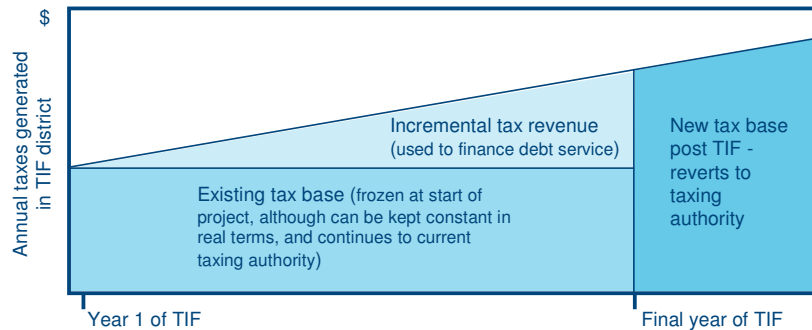
Under a TIF system, the relevant government authority or jurisdiction first assesses the suitability of an area for TIF. It then defines the TIF district and produces a TIF development plan – which, amongst other information, outlines the infrastructure and development needs of the district and provides cost estimates for these works.

The sponsoring government then usually issues bonds to provide the funds necessary for the large upfront urban renewal and infrastructure costs. Over time, as these works improve the amenity and liveability of the TIF district and/or they result in more property development in the area, property values (and hence property tax revenues) rise. The additional tax revenue (above the pre-TIF tax revenue 'base') resulting from the TIF infrastructure is then used to service and repay the TIF bonds (or other forms of debt).

Figure 1 below outlines the basic TIF model, with the tax increment (above the tax base) used to repay the debt incurred in providing the infrastructure that generated this increment in the first place. At the end of the TIF term, the total tax revenue for the area reverts to the original taxing authority. TIF terms can range from 5 years to 25 years, depending on the nature and scale of development.

⁵ Aside from some TIFs in the US, which sometimes supplement TIF revenue via a modest 'special assessment' levy (as mentioned in Chapter 3).

Figure 1: The Basic TIF Model



Applying TIF to Australia

This paper examines TIF as a potential new mechanism for funding public infrastructure in Australia.

In doing so, we:

- examine the US experience with TIF, where it has been used extensively as a means of funding infrastructure and revitalising urban areas for many years
- consider how it would be applied in Australia, including potential governance and financing arrangements
- conduct indicative modelling of a couple of TIF scenarios in NSW, to demonstrate how TIF could potentially work and provide an indication of its potential scale (including costs relative to incremental tax revenues)
- consider the potential strengths and weaknesses of TIF, including possible challenges associated with applying it in Australia.

Governance and financing arrangements

We envisage that TIF would primarily be administered via specially established TIF development authorities, with higher level supervision/governance from state governments and newly enacted supporting legislation. In consultation with state government, local government, community groups, developers and other stakeholders, these authorities would produce TIF development plans, outlining the public infrastructure needs of a 'TIF district'. These TIF development plans would be consistent with state planning strategies and local council planning instruments. They would include infrastructure cost estimates and outline governance and reporting regimes to keep stakeholders informed.

Finance would then be administered and arranged through current state financing bodies (for example, T-Corp in NSW). This could involve the issuing of generic state government backed bonds

(particularly in the early days of TIF, to build up investor confidence). Alternatively, it could involve the issuance of special 'TIF' or 'infrastructure' revenue bonds, tied to the future TIF revenue stream of particular TIF districts or infrastructure projects.

The latter, TIF revenue bond, is primarily used by TIF authorities in the US and we envisage that this would be the type of 'TIF' bond ultimately favoured by Australian governments. An advantage of TIF revenue bonds is that government does not bear the financial risk of the project. Furthermore, the TIF revenue bond rating process (discussed in Chapter 3) would ensure that capital markets impose strong discipline and rigour on infrastructure selection and delivery – which is a noted strength of the TIF process.

To account for the lag between upfront construction costs and receipt of TIF revenues, experience in the US shows that debt service can be structured to ramp-up like revenues before levelling off. Alternatively, TIFs can be re-financed at different stages of the process, to optimise the risk/cost of capital trade-off to the TIF authorities and government in general. This shows that there are a range of specific financing options for TIF.

Under the 're-finance' option, for example, a State Government would guarantee debt service for the first few years of the TIF, when TIF revenues are lowest and the TIF scheme is likely to be at its most risky stage. Once TIF revenues are stabilised, the TIF could then be refinanced through TIF revenue bonds (backed only by the TIF revenue stream). This arrangement would enhance the ratings of the TIF bonds, and lower their coupon rate. Similarly, depending on the nature of the infrastructure in question, the Commonwealth Government could inject some upfront funding into the TIF, to help service or reduce debt in the early years of the TIF program. This would constitute a form of joint Commonwealth/State funding of infrastructure, as the remaining TIF infrastructure costs would be paid via incremental state property taxes.

Beyond any short-term fluctuations or volatility in the market, indications are that demand for infrastructure and government bonds is generally strong. Institutional investors, such as superannuation funds, may be particularly interested in bonds indexed to CPI. Therefore, there is a potential market for TIF debt instruments. However, we note that demand for TIF bonds and their rates will depend on the precise nature of each TIF project (particularly potential TIF revenue volatility) and the type of bond issued.

Given the strong governance and eligibility requirements that would be imposed on TIF infrastructure and Australia's need for investment in such infrastructure, there may also be merit in considering tax incentives (e.g. to TIF bond purchasers) to enhance investor support/demand for TIF programs. In developing such tax arrangements, State and Federal Government cooperation would be required, and governments could draw on the experience (and any perceived weaknesses or flaws) of previous infrastructure incentive schemes.

We envisage that TIF revenues would be incremental state property related taxes (primarily land tax and stamp duty) within the TIF district, and that this revenue would predominantly be used to fund infrastructure otherwise funded via state governments (through the current system of state development charges, for example). Examples from the US, however, show that TIF can draw on a range of different types of government taxes (including those related directly to business activity).

Our indicative modelling of two TIF scenarios (provision of a metro station and associated infrastructure at Gladesville in Sydney), and the delivery of state infrastructure to the Sydney South West Growth Centre) suggests that NSW state property taxes could be used under TIF arrangements to assist in delivering significant state infrastructure to new release and infill areas. Interest has to be capitalised in the first few years of the TIF scheme, as it often the case in the US. However, once development gains momentum, our modelling indicates that TIF revenue exceeds debt requirements to such an extent that the costs of infrastructure in Gladesville and the South West Growth Centre are paid off by years 14 and 24, respectively. At these points, total state property tax revenue from both areas would revert to the State Government, and the TIF would cease. Our modelling assumes that the TIF authority funds 75% of these infrastructure costs in Gladesville and the SWGC, with the State Government directly funding the remaining 25%. In practice, these proportions could be adjusted, depending on the characteristics of the infrastructure and TIF district.

As mentioned above, a range of specific financing options exist for a TIF. We also note that TIF arrangements could be scaled up or down, to match the particularly infrastructure requirements and characteristics of particular locations. TIF should also not be viewed as the sole source of infrastructure funding or suitable in all instances, but merely a valuable component of a suite of potential funding mechanisms/approaches. In the US, TIF is applied on both the very small (e.g. individual sites and buildings) and much larger scale (e.g. projects covering several hectares).

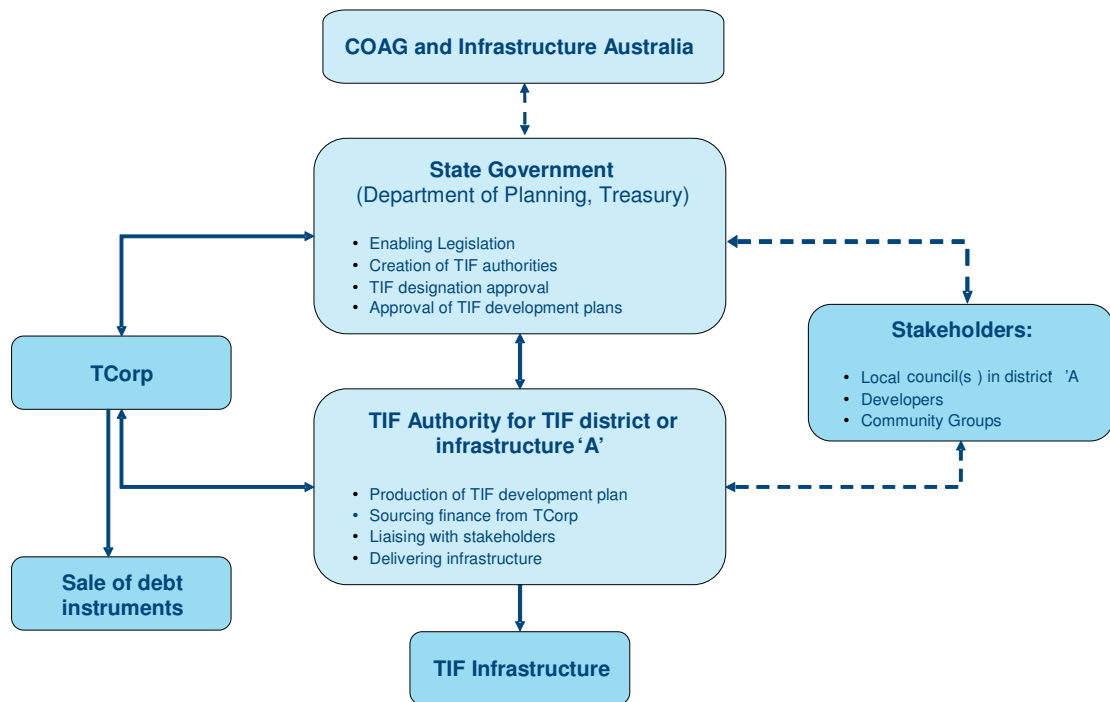
We also note that precedent exists in many States for the establishment of special infrastructure provision and development authorities, and a similar model could be applied to TIF development administration bodies. The Growth Centres Commission could be well placed, for example, to have responsibility for TIF arrangements in the South West and North West Growth Centres in Sydney; while other specially established development authorities could be granted accountability for TIF development in other suitable areas – including infill districts.

While local council rates would be quarantined from the TIF process, we propose that local council would still play a significant role in the TIF process, by providing input into TIF development plans and participating on TIF development authority boards to ensure that TIF infrastructure is appropriately matched and coordinated with local government infrastructure and local land use plans. We note that TIF infrastructure and development authorities would be still subject to

the broader regulatory framework – including planning and environmental requirements.

Figure 2 below outlines potential TIF governance/administration arrangements in Australia. This shows that we envisage that COAG and Infrastructure Australia could be involved in the initial investigation/consideration of TIF, in consultation with State Governments. The governance and operation of TIF would then ultimately be the responsibility of each State Government.

Figure 2: Potential TIF Governance arrangements in Australia



Potential hurdles to TIF implementation

Potential hurdles to TIF implementation in Australia include uncertainty over TIF revenue returns (at least in its early phases of implementation), a potentially higher cost of capital than funding infrastructure via standard government debt, and government's traditional aversion to tax revenue hypothecation. However, we believe that none of these are insurmountable or provide a strong case against TIF.

The advantages of TIF

Our analysis suggests that TIF has several key advantages relative to existing approaches to funding public infrastructure. These advantages show that TIF should be subject to serious consideration. They include the following:

- it avoids or overcomes cited deficiencies of the current development charges approach to infrastructure funding, including slowing development and adversely impacting on housing affordability;
- it provides a market test and added rigour around infrastructure selection, which enhances allocative efficiency (ie TIF administrators have a strong incentive and accountability to invest in infrastructure that generates 'value' to the community);
- it provides an upfront and sustained commitment to specified infrastructure provision – that is, it ensures that long-term funding and planning, which is necessary for the effective provision of public infrastructure, is not eroded by competing priorities or short term distractions;
- it ensures that provision of infrastructure is appropriately timed – as infrastructure provision (or at least its effects) is tied to revenue, there is an incentive to ensure that delivery is not delayed;
- it provides a transparent approach to infrastructure selection and provision; and
- it provides a transparent and equitable approach to the distribution/sharing of infrastructure cost.

Recommendations

Given the need for infrastructure investment and the potential benefits of TIF, we believe that this infrastructure funding mechanism warrants serious consideration for implementation in Australia. We therefore recommend:

- that Infrastructure Australia and COAG investigate the suitability of TIF in Australia, as part of their ongoing work on infrastructure;
- that State Governments, drawing on relevant work of Infrastructure Australia and COAG, establish TIF Working Groups to determine how the TIF model could be structured to meet Australian infrastructure funding needs; and
- that these Working Groups:
 - develop TIF pilot programs as a means of evaluating the potential broader use of TIF and confirming the details of TIF implementation and administration arrangements;
 - be comprised of representatives from key State Government agencies (including Planning and Treasury)

as well as local councils, but that responsibility and accountability for TIF pilot implementation be assigned to one central government agency

- engage key non-government stakeholders, including community groups, the property industry and the investment community, in developing the TIF pilots and reporting on their progress.

We also recommend that consideration be given as to whether favourable tax treatment (e.g. in the form of tax incentives for purchasers of TIF bonds) could advance the use of TIFs, drawing on the approach/experience in the US.

2 Background: the need for alternative infrastructure funding arrangements

In recent times, there has been emerging evidence that Australia's infrastructure is struggling to match our growing population and expanding economy. There is also general recognition that there is scope to improve the current approach to infrastructure funding and provision.

For example, in 2005 Engineers Australia (EA) rated Australia's infrastructure a 'C', indicating major changes are required to enable infrastructure to be fit for its current purpose (although infrastructure in some states, such as NSW and South Australia, has actually been rated a 'C-' in recent years).⁶ After completing its assessment of Australia's infrastructure, EA found that lack of funding for infrastructure is a fundamental problem, and that alternative funding mechanisms and approaches need to be developed. It noted its concern that:

- significant parts of Australia's infrastructure are ageing and nearing the end of their economically useful lives
- current funding commitments are either inadequate or yet to be identified, to support the substantial costs of renewal and replacement
- current planning and political processes do not provide the necessary long-term focus
- only limited infrastructure information is available in some key areas.⁷

Furthermore, a recent *World Economic Forum Global Competitiveness Report* showed that Australia's infrastructure performance has fallen from 13th to 18th over the past year.⁸ This report also found that Australia's inadequate supply of infrastructure is one of the main constraints to growth.⁹

These concerns have been recognised by all levels of Government. For instance, the Australian Government recently established Infrastructure Australia, "to identify investment priorities and policy and regulatory reforms that will be necessary to enable timely and coordinated delivery of national infrastructure investment."¹⁰

⁶See: Engineers Australia, 2005 *Australian Infrastructure Report Card*.

⁷ Engineers Australia, 2005 *Australian Infrastructure Report Card*, p 7.

⁸ World Economic Forum, 2007, *The Global Competitiveness Report 2007-2008*, <http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/index.htm>.

⁹ Wayne Swan, Member of Australian Parliament for Lilley, November 2007, <http://www.swanmp.org/swanmp/2007/11/australia-falli.html>, accessed March 2008.

¹⁰ <http://www.infrastructure.gov.au/departments/infrastructureaustralia/index.aspx>

Likewise, at its December 2007 meeting, COAG emphasised that more efficient infrastructure provision was one of its key priorities, with aims including: *“better coordination of infrastructure planning and investment across the nation, across government and the private sector”*, and *“to identify and remove blockages to productive investment in infrastructure”*.¹¹

COAG has also recently recognised the link between infrastructure, different types of infrastructure funding mechanisms and housing affordability. Its December 2007 *Communiqué* stated that Commonwealth/State Implementation Plans to be delivered at its March 2008 meeting were to include: *“A \$500 million Housing Affordability Fund with the goal of streamlining development approval process and reducing infrastructure charges and developer costs.”* At its March 2008 meeting, COAG agreed to implement five key issues aimed at improving housing affordability. This includes: lowering *“the burden of infrastructure and regulatory costs built into the purchase price of a new home.”*¹²

The link between infrastructure, housing affordability, and our general quality of life is significant. Land itself is in plentiful supply in Australia. However, land well serviced by infrastructure is in relative short supply. This is reflected in high residential and non-residential property prices in established, well serviced areas within our capital cities, and high costs of development in new release areas.

Funding of public infrastructure

Public infrastructure are capital goods like roads, public transport systems, education and health facilities, recreational areas, and utility services that are essential for our prosperity, quality of life and for our community to function properly.

The benefits of this infrastructure are widespread, often being ‘external’ to the immediate consumer or ‘non-excludable’ by nature. There is also a strong community expectation that some public infrastructure services, such as education and health, will be available to all citizens, at least at a basic level, regardless of their capacity to pay. These factors mean that, rather than leaving it to the ‘market’ to provide this infrastructure, there is often a strong case for the government to be involved in its funding and provision.

Funding of public infrastructure

Over time, various levels of government have drawn on a range of sources to fund public infrastructure. These include:

- budget appropriations or capital grants using consolidated revenue (in turn, consolidated revenue is derived primarily from taxes)

¹¹ <http://www.coag.gov.au/meetings/201207/index.htm#infra>

¹² <http://www.coag.gov.au/meetings/260308/index.htm#housing>.

- borrowings – usually in the form of bonds (eg those issued through NSW Treasury Corporation)
- Public-Private Partnerships (PPPs) in various forms
- user charges – charges for the use of services provided by infrastructure facilities
- Special Purpose Vehicles (SPVs), ‘off-budget’ agencies or companies established to operate infrastructure, often involving a mixture of funding approaches including user charges, debt finance and subsidies from government (eg the Honeysuckle Development Corporation, established to provide infrastructure and renew the urban area around Newcastle, NSW)
- development charges or levies – which require developers to provide infrastructure or make payment commensurate with infrastructure needs associated with new development (eg new development in the North West and South West Growth Centres of Sydney will be charged approximately \$23,000 per lot to fund state infrastructure in these areas).

Shortcomings of the current system

The economic and social benefits of public infrastructure can provide strong justification for funding it from general government revenue and debt. However, since the 1970s, budgetary pressures have seen public capital expenditure fall as a proportion of GDP, with governments more reluctant to use public debt to fund infrastructure. Furthermore, a problem that has emerged with financing infrastructure from general government revenue or budget appropriations is that infrastructure funds effectively have to compete with a range of short-term distractions and competing interests – for example, political expediency may mean that funds previously earmarked for an infrastructure project are instead diverted to another source, considered more pressing in the short-term. As noted by Engineers Australia, “*Budgetary commitments to critical infrastructure elements are often only short-term*”.¹³ The UDIA also points out that: “*Experience informs us that under these circumstances, infrastructure required as a consequence of long-term strategic planning may lose out to day-to-day immediacy of the political or bureaucratic demand. The infrastructure intended to support urban growth in either a timely or integrated manner is lost to the system.*”¹⁴

In recent years, some states have increasingly relied on development charges to fund investment in new infrastructure. Box 1, for example, lists the different types of charges levied on developers in NSW.

¹³ Engineers Australia, 2005 *Australian Infrastructure Report Card*, p 8.

¹⁴ UDIA, 2007, “*A Better Way – Financing Urban Infrastructure*”, Discussion Paper, pp3-4.

Box 1: Development levies in NSW

In broad terms, there are currently three different types of development levies in NSW:

- 'Section 94' contributions to local councils to fund local infrastructure costs, including local roads, local bus infrastructure, local parks and land for local community and recreational infrastructure
- Development charges imposed by utilities for the cost they incur in providing infrastructure to service new development – which, in the case of water and wastewater infrastructure, can be up to \$15,000 per lot in some areas.
- Development levies used to fund state level infrastructure. This includes:
 - Levies imposed on development in the new release areas of the North West and South West Growth Centres (NWGC and SWGC), to fund major roads, rail and bus infrastructure, and land for emergency and justice, health, education and regional open space infrastructure. In the case of the NWGC and SWGC, these state levies equate to a charge of approximately \$23,000 a lot.
 - Planning agreements negotiated development by development with various state agencies.
 - Cities Taskforce – levies in regional cities to fund local and regional infrastructure collected as a flat percentage of development cost (e.g. 3% in Parramatta), but at different rates in each city.
 - Redfern Waterloo – a flat percentage levy established under the Redfern Waterloo Authority Act, but set by regulation at 2% in addition to a further affordable housing levy.
 - A range of levies to fund specific infrastructure upgrades in more established areas - for instance, the North Sydney railway station upgrade levy imposes a charge per m² of additional floor-space constructed in the North Sydney CBD.

However, there are concerns that this focus on funding infrastructure via development charges is not delivering infrastructure of a sufficient scale or in an adequate time period. There are also concerns that this is impeding new development, and ultimately contributing to worsening housing supply and affordability and higher costs to business (via higher non-residential property prices). Furthermore, there are questions about how infill infrastructure renewal and replacement will be funded, particularly as development charges have, to date, primarily applied to new release areas. Arguments against the current use of development charges include the following:

- The negative impact that development charges can have on lot uptake, development rates, and ultimately housing affordability. Generally, there could be two schools of thought in regard to the relationship between development charges, development costs and housing affordability:
 - First, there could be an argument that high levels of development charges can make lot development uneconomic for developers, once these charges are added to the cost of land purchase and construction costs, and taking into account a price floor below which most land owners are unwilling to sell their land to developers and a price ceiling above which most home

buyers in new release areas cannot afford to go beyond. In this situation, high levels of development charges can act to reduce the developer's margin between the floor price at which it purchases land and the ceiling price at which it can ultimately sell its development.

- Alternatively, it may be argued that developers are simply able to pass on the costs of development charges to home buyers, thus maintaining their margin. Although it is reasonable to assume that higher house prices will ultimately impact negatively on demand, and hence the commercial incentive to undertake further development.
- In reality, elements of both of these scenarios may apply to varying degrees, over various time periods – ie, a developer's margin may be squeezed to some extent by development charges, but it may also be able to pass at least some costs onto final homebuyers. Regardless, under either scenario, housing affordability is ultimately reduced with higher levels of development charges. As noted above, these effects on housing affordability and lot uptake have recently been recognised by COAG.¹⁵
- Following on from the previous point, development charges that are passed onto new home buyers have equity effects that are generally regressive. When the prices of new houses rise, so does the price of its close substitute, existing houses. Thus existing home owners are made wealthier while renters and prospective home buyers face increased prices for new homes. Since established home owners generally have higher incomes than renters and first home buyers, development charges work against a more even distribution of wealth. Development charges also generally increase the cost of housing for *first* home buyers – people who are usually at a stage in their life where their finances are most stretched.¹⁶
- Related to concerns about housing affordability, some commentators believe that property owners arguably pay twice, or at least a fee in addition to the development charge: once as a consequence of the development levy being absorbed into the purchase price of their property, and a second time as a result of property taxes (land tax, transfer duty, GST on new houses) being tied to the value of the property.¹⁷ That is, while infrastructure facilitates the development and appreciation of their property, this appreciation in value is captured via the increase in property related taxes that they ultimately pay.
- Much of the public infrastructure required in new release areas – particularly state infrastructure, funded by state development

¹⁵<http://www.coag.gov.au/meetings/201207/index.htm#house>

¹⁶The Allen Consulting Group, 2003 *Funding Urban Public Infrastructure – Approaches Compared*, p 65.

¹⁷*Ibid*, p 66.

levies – is required as a consequence of general population growth in our major capital cities, rather than merely due to settlement in the new release area per se. The community beyond those living in the new release area are benefiting from this infrastructure, particularly as a significant amount of public infrastructure in many of our cities is at, or near to, full capacity – and therefore, any addition to capacity (particularly where a network of infrastructure is involved, such as roads and public transport) can have flow on benefits to the wider community.¹⁸

- In this context, it is worth noting that where population growth in established areas necessitates additional public infrastructure, much of this is usually funded from tax revenue or other sources. Furthermore, the basis behind this is sound, as it would be inequitable for only new development in an established area to fund infrastructure upgrades that are required as a result of general population growth – particularly, when all residents in the area (existing as well as new development) would benefit from such upgrades.
- Development charges essentially ‘drip feed’ income for infrastructure investment. However, to be provided on a sufficient scale, and in a timely and coordinated manner, much of this infrastructure requires large upfront investment (prior to the collection of development charges). In turn, this large upfront investment can increase the rate of development, ensure that infrastructure provision is appropriately coordinated, and minimise infrastructure costs over time.
- The service supplier should have incentives to provide the infrastructure in an efficient, timely and accountable manner. Under current arrangements, developers provide capital without guarantee of timely service delivery. This does not provide efficient incentives to suppliers or adequate levels of certainty to developers.¹⁹
- The different application and levels of development charges within and between states can distort investment decisions. Any significant additional costs added to development via development charges in NSW, for example, may shift development to another state (eg Queensland). Similarly, significantly higher use of development charges in new release areas may unduly discourage investment by developers in new suburbs relative to established areas. Some commentators have also argued that it may mean that authorities “*would have an incentive to encourage new development, which would provide its own infrastructure funds,*

¹⁸Applied Economics (2003) also notes that: “*Providing that the population increase contains a reasonable proportion of young persons and workers, taxpayers benefit in the long run from the increase in the taxbase and in economic growth and well-being of an area that is a consequence of population growth and development.*” (Applied Economics, 2003, *Financing Public Infrastructure for Urban Development*, Prepared for the Urban Development Institute of Australia).

¹⁹Applied Economics, 2003, *Financing Public Infrastructure for Urban Development*, Prepared for the Urban Development Institute of Australia (NSW), p 8.

*relative to redevelopment and infill for which they would be responsible.*²⁰

- In practice it can be difficult to identify and accurately quantify costs and benefits associated with infrastructure provision (both geographically and over time) – particularly if infrastructure arrives late or its funding is diverted to other activities. This can make development charges arbitrary and not truly cost-reflective, which in turn can distort the efficient allocation of resources.²¹
- Where significant effort is made to attribute costs and benefits, complexity and transaction costs increase. Development charges can involve a complex system of standard setting, negotiation, evaluation and disputation.
- There is a lack of transparency and a degree of uncertainty in the current process. Development charges are calculated using forecasts of rates of development and infrastructure requirements. However, these variables can be difficult to predict and subject to change. They can also be affected by the development charge itself. The current system also requires the developer to bear much of this risk. In principle, services should be paid for when they are provided.²²
- There is potential for competing incentives under the development charges regime. Developers have an incentive to fund facilities that may be less than optimal in terms of durability or scale, whereas authorities may have an interest in seeking to ‘over-build’ infrastructure to avoid future augmentation costs.²³

These concerns show that there is considerable merit in investigating alternative infrastructure funding mechanisms. One such mechanism that has the potential to avoid many of the abovementioned weaknesses is Tax Increment Financing (TIF).

²⁰ Neutze M, 1997, *Funding Urban Services: Options for physical infrastructure*, Allen & Unwin (sourced from: The Allen Consulting Group, 2003, *Funding Urban Public Infrastructure – Approaches Compared*, Report for the Property Council of Australia, p 63).

²¹ The Allen Consulting Group, 2003, *Funding Urban Public Infrastructure – Approaches Compared*, Report for the Property Council of Australia, p 66.

²² Ibid.

²³ Ibid, p 63.

3 Tax Increment Financing in the US

In general terms, Tax Increment Financing (TIF) allows a government jurisdiction (local government in the US) to take tax revenues derived from increases in property values within a prescribed development area (the 'TIF District') and use those 'incremental' tax revenues to fund the infrastructure and renewal projects that led to (or at least significantly contributed to) this property appreciation.

TIF has been used extensively in many cities throughout the United States (US). It began in California in the 1950s in reaction to cuts made in federal funding earmarked for community and economic development, and was established via enabling legislation targeted at encouraging investment in blighted urban areas. Widespread expansion of TIF to other states occurred in the late 1970s and mid-1980s. Today, it is actively employed in 49 US states to fund a range of infrastructure, although legislation and use varies from state to state.²⁴ Infrastructure subject to TIF includes: water and wastewater infrastructure augmentation and repair, park improvements, curbs and sidewalks, roads, street lighting, landscaping, environmental remediation, emergency service facilities, and community centres.

This chapter examines how TIF has been applied in the US. It concludes by listing some TIF case-studies, which shows that the exact details of TIF implementation can vary from location to location, and can be tailored to meet specific location-specific requirements.

3.1 How does TIF work?

Under a TIF system, the relevant government authority or jurisdiction (local government in the US) first assesses the suitability of an area for TIF. It then defines the TIF district and produces a TIF development plan – which, amongst other information, outlines the infrastructure and development needs of the district and provides cost estimates for these works.

The sponsoring government then usually issues bonds to provide the funds necessary for the large upfront urban renewal and infrastructure costs. Over time, as these works improve the amenity and liveability of the TIF district and/or they result in more property development in the area, property values – and hence property tax revenues – rise. The additional tax revenue (above the pre-TIF tax

²⁴ According to Weber et al (2007), while TIF has been used extensively in many cities throughout the US – including Minneapolis, Kansas City and Los Angeles – Chicago has made more extensive use of this form of off-balance sheet financing than any other major city. As of June 2002, Chicago was home to 121 TIF districts that covered 38,550 acres and 16% of the city's property tax base. Chicago has used TIF revenues to fund a variety of projects, from the expansion of manufacturing facilities to downtown mixed-use (commercial and residential) development and beautification efforts. (Weber R, Bhatta S and Merriman D, 2007, "Spillovers from tax increment financing districts: Implications for housing pricing appreciation", *Regional Science and Urban Economics*, 37, 259-281).

revenue 'base') resulting from the TIF infrastructure is then used to service and repay the TIF bonds.

Box 2 summarises how TIF arrangements usually work, although precise application varies from State to State. Some TIF case-studies from the US are outlined at the end of this chapter.

Figure 3 below illustrates the relationship between the tax revenue base and the tax increment over time. The dotted line shows that some TIF schemes only use a portion of the increment above the base, or that definitions of the base can vary. This is discussed further below.

Box 2: A summary of how TIF works

A TIF program usually begins when a municipality (the sponsoring jurisdiction), designates a geographic area as a TIF district. Traditionally, the sponsoring jurisdiction is the municipality, the district encompasses an area that is blighted or in need of revitalisation and infrastructure upgrade and the sponsor's intent is to demonstrate a public commitment to the viability of an area and thereby encourage complementary private sector investment.

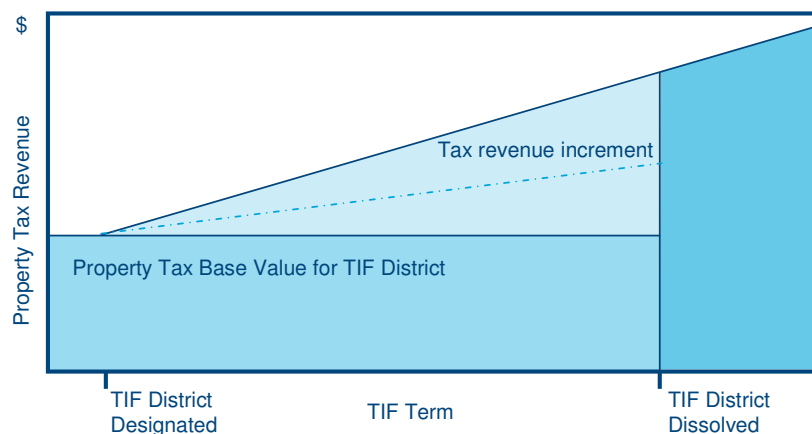
To qualify for TIF, the area and infrastructure must meet certain requirements – typically detailed in TIF enabling legislation and supporting regulation and guidelines. In general terms, these requirements are aimed at ensuring TIF-funded infrastructure and urban development/redevelopment deliver genuine benefit to the TIF district and broader community. They might require, for example, the sponsoring jurisdiction to demonstrate the need for and benefits of TIF intervention.

In the TIF district, a tax 'base' is established. This is usually the existing property tax base 'frozen' at pre-TIF levels – alternatively, it could be this tax base indexed by some factor over time (eg by the rate of inflation). The revenue from this tax base is apportioned to all taxing authorities in the standard way.

The TIF becomes operational when the sponsor borrows funds (usually via issuing bonds) and undertakes investments in eligible infrastructure and development in the TIF district. This investment and infrastructure delivery can involve varying levels of public and private partnership arrangements, and can apply to a range of development and infrastructure.

As time goes on, this investment leads to higher levels of economic activity and property appreciation – which, in turn, leads to growth in the district's tax revenue. The difference between the tax revenue and the tax base in each future year is called the incremental value, and a proportion of this increment is assigned to a special account of the sponsoring jurisdiction to service its TIF debt (usually TIF bonds). When the debt is retired, the TIF ceases to exist.

Figure 3: TIF: Tax revenue base and increment



Areas where TIF is applied/allowed

TIF has its roots in the 1949 *Federal Housing Act*, which was designed to improve blighted areas and invigorate urban renewal in cities. Cutback in federal funding for urban renewal programs during the 1970's created the need for new, more innovative sources of funding to be found, with California and Minnesota the first to make extensive use of TIF.

The focus of TIF on 'blighted' areas was based on the premise that feasible infrastructure development in this area would not have been provided through a normal market mechanism in the absence of the initial TIF funding. This may be due to the nature of the infrastructure being funded (eg public infrastructure with significant social benefit, yet insufficient or uncertain commercial return in the foreseeable future) and/or the nature of the area (eg a 'blighted' area with little scope for property value appreciation and commercial return from private investment in infrastructure without the catalyst of public investment).

By targeting a blighted area where there is little prospect for infrastructure development and property value appreciation in the absence of the TIF funded development, there is significant scope for property value (and hence property tax revenue) uplift as a result of the TIF infrastructure. Hence, the TIF system is not capturing tax revenue that would have otherwise gone to other public uses, but is using tax revenue that would not have otherwise been generated.

This use of TIF for urban renewal projects and provision of infrastructure in 'blighted' areas is still the most common application of TIF. However, it has been noted that the definition of 'blight' can vary across jurisdictions:

"It may apply to physical deterioration of buildings, to site improvements or to infrastructure. Or, it may be broadened to include 'obsolete platting and subdivision', 'inadequate infrastructure', 'economic underutilisation or obsolescence' or

*even that the project site is located in a community or neighbourhood meeting some definition of economic distress.*²⁵

In addition to 'blight', the use of TIF has also evolved to fund infrastructure and development in other areas or for other stated purposes. For example, defined allowable purposes in many states include:

- 'Brownfields rehabilitation' – abandoned or underused industrial zones, where soil or other environmental remediation is usually required (ie where market failure in the form of environmental externalities has impeded investment)
- 'Conservation' – used to stimulate social and economic revival of older areas of a city in danger of becoming 'blighted'
- 'Economic development' – where TIF is used to fund public infrastructure, or provide a rebate to private investors to develop in an area (eg commercial or retail facilities) on the assumption that this private investment delivers social benefit via increased economic activity and employment. Some commentators note that 'economic development' is often used as a 'catch-all' reason to apply TIF to a range of areas, including greenfield sites.²⁶

Legislative/governance arrangements

State enabling legislation provides the framework under which TIFs operate. This legislation differs from state to state; with the most common differences being in the criteria for the designation of TIF. These differences can include the definition of a blighted area and the ability of a municipality to use other justifications for the application of TIF (eg 'brownfields', 'conservation' and/or 'economic development' purposes), as well as differences in the type of infrastructure or development eligible for TIF funding.

In many cases, a key feature of TIF legislation is the requirement to demonstrate the need for and benefits of TIF funded infrastructure. This is important for ensuring that TIF designation is appropriately targeted, and that the infrastructure is funded from genuine incremental tax revenue – ie, tax revenue that would not have been generated in the absence of this infrastructure.

While state legislation provides the basic framework under which TIFs operate, the actual establishment of TIFs in the US are a municipal (local government) responsibility. Municipalities can identify zones they think meet the criteria for TIF zoning. It is then their responsibility (or a specially created entity such as a

²⁵Ward R, 2000, "To TIF or not to TIF: debating the issues", *Development Strategies Review*, Summer 2000, p 2.

²⁶Luce, 2003, *Reclaiming the Intent: Tax Increment Finance in the Kansas City and St Louis Metropolitan Areas*, A discussion paper prepared for the Brookings Institution on Urban and Metropolitan Policy, p 3.

development authority) to undertake the necessary research, planning and consultation to determine whether an area meets the criteria for TIF designation, and the particular infrastructure/development needs of the area.

These responsibilities broadly include, but are not restricted to:

- a detailed map and zoning descriptions of the zone being recommended for development or redevelopment
- identification and clarification of the development goals for the recommended area
- a statement listing the kind, number and allocation of all developments (eg infrastructure to be developed or restorations to be undertaken)
- extensive stakeholder consultation, including all affected community, developer, governmental and financier parties
- a statement of conformance with the municipality's overall strategic plan
- an extensive cost benefit analysis / economic feasibility study, with particular interest paid to the impacts of the development on the municipality tax bases and the potential impact on overlapping taxing jurisdictions
- a budget for the life of the TIF, which includes capital costs, operating costs, and cash flow projections
- research and recommendations on the most appropriate financing methods required to meet the project costs
- a regulatory impact statement of changes to zoning or planning requirements and the impact upon other jurisdictions
- a timetable for the development.²⁷

Upon completion of these steps, the final decision to implement the TIF differs depending on the jurisdiction. Some municipalities, upon the criteria being met and following comprehensive stakeholder engagement, will implement the TIF. In other jurisdictions, such as Pennsylvania, the three property-taxing bodies of a district (the county, the municipality and the school district) must approve the TIF for the TIF district to pass.²⁸

²⁷ For examples of steps required, please refer to: Illinois Tax Increment Association, *Tax Increment Financing in Brief*, Illinois 2006; Sereleas, L., "The ABCs of TIF", *Zoning News*. The American Planning Association, 1998; Chicago Department of Planning and Development, *Tax Increment Finance Assistance: Application Packet*, City of Chicago, 2006.

²⁸ Bridge, J et al, *Planning and Government: Tax Increment Financing as an Economic Development Tool and Policy*, Capstone Seminar 2005, Graduate School of Public and International Affairs, University of Pittsburgh, 2005, p1.

The tax base

Once the decision to proceed has been made, the TIF district's property tax revenue is usually frozen at a level reflecting the assessed property values before the TIF development. This frozen value becomes the base upon which any future tax increment increases can be calculated.

This base will apply for the TIF's lifetime, 20 plus years in most states, with the base tax revenue allocated as usual.

In some states, this base level is not indexed to natural inflation; hence the municipality also captures incremental increases in property taxes resulting from inflation.²⁹ However, to ensure the maintenance of this base level in real terms throughout the life of the TIF, indexation measures have been recommended by some commentators and can be built into TIF arrangements.

Financing arrangements

TIF bonds

The standard method for raising the capital required for infrastructure development is via the sponsoring party (municipality) issuing a bond (although other forms of debt facility can be used).

Generally, there are two types of bonds that can be issued:

- revenue bonds – backed only by the expected revenue stream of the TIF project
- general obligation (GO) bonds – backed by the assets of the issuing government (ie redeemed from general government revenue if TIF revenue is less than expected and insufficient).

TIF bonds usually fall into the revenue bond category. That is, they are secured by the tax increment revenue generated within the boundaries of a TIF district. Because of construction time and cost and a lag of several years before significant TIF revenue starts to accrue, most start-up TIF bond financings will include capitalised interest for up to three years. At some point within that three year period (although larger developments may require phasing), development usually reaches a stabilisation point and incremental property taxes solely support debt service on the bonds. When this occurs, debt service typically levels off and remains level through the life of the bonds.³⁰

²⁹ See, for example, criticism and recommendations made by Smith, B, 'The impact of tax increment finance districts on localized real estate: Evidence from Chicago's multifamily market' *Journal of Housing Economics*, 15, 2006, pg 21-37; and Bridge, J et al, *Planning and Government: Tax Increment Financing as an Economic Development Tool and Policy*, Capstone Seminar 2005, Graduate School of Public and International Affairs, University of Pittsburgh, 2005.

³⁰ International Council of Shopping Centers, 2007, *Tax Increment Finance Best Practices References Guide*, p 28.

This relationship between infrastructure costs and TIF revenues means that TIF debt facilities can sometimes be structured to allow debt service levels to ramp-up over time (with TIF revenue). Alternatively, TIF revenue can sometimes be supplemented by other funds or sources of revenue – such as special assessments (discussed below).

From the issuing government's perspective, an advantage of a revenue bond is that its credit and tax payers are not placed at risk if TIF revenues are less than expected. Rather, the bond purchasers shoulder the risk, but are generally compensated for doing so in the form of higher yield. TIF revenue bonds also ensure that capital markets impose a strong discipline and rigour on infrastructure selection and delivery – which is a noted strength of the TIF process.

There are occasions where a local government has issued GO bonds that attempt to mimic TIF (revenue) bonds. An advantage of GO bonds is that cost of capital is likely to be lower. A potential disadvantage is that they transfer risk to the government (and hence its constituents). As they are backed by the relevant government's general assets/revenue base, they are more likely to be used to fund purely public, rather than private, infrastructure developments.

Many TIF revenue bonds in the US are offered on a non-rated basis.³¹ However, rating agencies can and do assign investment grade ratings to TIF bonds. According to the Bank of America, credit considerations that are examined include: particular state law on assessed valuation growth, tax payer concentration within the TIF district, historical assessed valuation growth, future assessed growth, any tax limits, construction risk, and the 'Volatility Index'.³² The Volatility Index used by Standard & Poor's to gauge volatility of TIF revenues is as follows, with a higher ratio representing more volatility:

$$\text{Volatility Index} = \frac{\text{Project Area's Base Assessment}}{\text{Project Area's Total Assessment}}$$

Boxes 3 and 4 below outline the approach taking by two major ratings agencies in the US in assessing TIF bonds/proposals. Fitch's approach to rating TIF bonds, for instance, focuses primarily on debt service coverage by existing pledged revenue, the project area's overall development or redevelopment plan, and the legal structure and bond covenants. Credit quality is likely to improve as development progresses, incremental revenue grows and the tax revenue generating base diversifies. Fitch notes that any weaknesses in certain aspects of credit quality can at least be

³¹ Non-rated bonds are issued by Tax exempt borrowers – cities, hospitals, school districts and housing agencies – and are sold without being reviewed by a standard credit rating agency. Many non-rated bonds are below investment grade, others are from credit worthy borrowers who don't want to face the time and expense of being reviewed by a ratings agency.

³² Bank of America, 2006, *Tax Increment Finance*, Banc of America Securities Tax Exempt Real Estate Securities Group.

partially compensated through the legal structure, covenants, or other features associated with bond issuance.³³

Most of Fitch's ratings in the TIF sector range from 'BBB' to 'A', with a small number rated higher and a few as high as 'AA'. According to Fitch, the tendency toward low ratings results from the tax base concentration typical of these credits and the TIF development authority's inability to control the tax rate, tax collections, property appraisals, and penalties for failure to pay tax. Higher ratings exist primarily for larger project areas (hence, less concentration) and with project areas with significant development (and TIF revenue) already in place. The highest-rated obligations also tend to have greater thresholds for issuing additional bonds and/or limited future issuance needs.³⁴

Notably, Fitch points out that:

*"Tax increment financing will continue to be an active and important source of infrastructure and improvement funding for furthering economic development and municipality's identified goals. Most debt issuing redevelopment project areas generate incremental tax revenues in excess of debt service and have weathered substantial swings in real estate values without jeopardising bondholder security."*³⁵

³³ Fitch Ratings, 2007, "Tax Increment Finance/Tax Allocation Bond Rating Guidelines", Public Finance, Tax Supported Criteria Report.

³⁴ Ibid.

³⁵ Ibid, p 6.

Box 3: Fitch Ratings approach to assessing TIF bonds³⁶

To receive an investment-grade rating, Fitch generally requires that TIF bonds meet the following debt service coverage (DSC) tests:

- Pledged incremental tax revenue received during the previous year must cover maximum annual debt service (MADS) at least 1.0 x (times) at the time of issuance
- Adjusted pledged revenue (i.e. the previous year's revenues adjusted to reflect recent additions to the tax rolls from recent construction completion and property sales) must cover MADS, including the proposed issuance, at least 1.10 x.

As a result, incremental development in a project area must have reached this crucial threshold by the time the bonds are issued. Financing sometimes occurs prior to a project area reaching this point, but these bonds would be rated below investment grade by Fitch.

In rating TIF bonds, Fitch also focuses on the following:

- The ratio of tax increment to base value at the time of assessment (which will be a function of the number of years since the project area was established and the pace and type of development).
- The degree of existing development balanced against development potential, as represented by area of land parcels available (for example).
- Tax base composition – diverse tax bases provide stronger credit quality.
- Future development – projects under construction and planned projects.
- Redevelopment plan – Fitch assesses the TIF authority's goals against broader economic development goals for the region. For areas in the early stage of development or heavily reliant on a particular development effort, Fitch reviews agreements with the dominant developers/taxpayers.
- TIF management – Fitch favours entities with close monitoring of a development plan's implementation and also good relations between the TIF development authority and the city or county. In addition, support of the plan by overlapping municipalities can enhance credit quality. Fitch also reviews the experience of the authority and its staff.
- Taxing procedures – credit quality is enhanced by orderly and predictable tax collections.
- Debt structure – Bonds may be issued directly by the TIF development authority or through a conduit financing authority. If the latter is used, Fitch prefers a single-purpose, non profit entity set up exclusively to facilitate this or similar financings. If the entity performs other functions and could be subject to bankruptcy, Fitch will request documentation about the entity.
- Debt service reserve fund – Fitch requires investment grade TIF bonds to have a debt service reserve fund. Generally, the reserve is funded from bond proceeds at the legal limit of the least of: 125% of average annual debt service; 100% of MADS; or 10% of bond proceeds. On a case-by-case basis, Fitch will accept debt service funds at less than one-year's debt service level.
- Projected coverage – Fitch views the projected coverage provided by the issuer as most meaningful if it has been done by an outside and independent consulting firm with relevant experience in the state.
- Stress scenarios – Fitch analyses DSC levels under various 'stress' scenarios, including: no growth in incremental value and pledged revenue for three or more years; tax base and incremental revenue declines at a determined percentage for one or more years; loss of major taxpayer or taxpayers; DSC assuming all planned issuances are sold, with future sales at a multiple of current interest rates.

³⁶ Fitch Ratings, 2007, "Tax Increment Finance/Tax Allocation Bond Rating Guidelines", Public Finance, Tax Supported Criteria Report.

Box 4: Standard and Poor's approach to rating TIF bonds³⁷

Standard & Poor's Ratings Services considers the following factors in assessing/rating TIF bonds:

- Project area analysis – S&P focuses first on general economic factors that may affect economic growth of the project areas, such as population, employment and incomes levels.
- Taxpayer concentration – generally, smaller districts have higher taxpayer concentration, weaker credit characteristics and lower ratings. Districts concentrated in a particular type of property/industry, may have vulnerabilities, even if they are diverse in terms of number of taxpayers.
- Historical assessed valuation growth – S&P prefers to examine at least four years of project area assessed values, when available.
- Future assessment growth – an important indicator of future assessment growth is the acreage available for development. A fully developed area, with no redevelopment potential, effectively limits the possibility of assessed valuation growth.
- Management – policy control of a TIF development authority usually lies in a city council, with an executive director responsible for implementation. Questions for management may encompass additional debt plans, unusual features of the redevelopment plan, and the land use breakdown when the plan is completed.
- Legal considerations – S&P's analysis of the legal structure of a TIF bond focuses on the security of the pledge, flow of funds, debt service reserve fund, and provisions governing the issuance of additional parity debt. For example, lack of a fully funded reserve is viewed as a negative rating factor in view of the low debt service coverage of most TIF bonds. Additional debt issuance is likely over the life of a bond issue. Tests for additional bonds requiring 1.25x coverage of maximum annual debt service by historical revenues, or revenues to be realised as a result of the most recent finalised assessment rolls, are a typical provision. However, more established, diverse districts have issued debt with less than a 1.25x additional bonds test without negative impact on their credit rating, as their tax volatility and taxpayer concentration diminished. S&P also evaluates TIF legislation. Where TIF bonds also have a pledge of a city's GO, S&P rates such securities based on the higher of the GO or tax increment rating, since both are pledged to debt repayment.
- Financial operations – financial factors include an analysis of fluctuating tax rates and historical debt service coverage. A particular rating is not tied to a specified level of coverage, as taxpayer concentration or legal factors may be more important. Various mathematical considerations concerning the ratio of base to total assessed valuation may also affect the volatility of the revenue stream. S&P uses a revenue volatility ratio to highlight the speed at which revenues can fall in the event assessed values decline. The ratio consists of the project area's base assessment to total assessment, and can serve as a proxy for the speed with which tax increment revenues will rise or fall in the event of a fluctuation in assessed value. In general, TIF areas containing a small amount of incremental valuation in relation to their total assessed value will show greater revenue volatility – which is often the case for recently formed project areas.

³⁷ Standard & Poor's, 2006, *Public Finance Criteria: Special-Purposes Districts*, October 16, 2006.

A possible TIF financing approach is to use both GO and revenue bonds. That is: issue TIF bonds with a GO-backing that fades away when certain milestones are met – for example, when annual incremental tax revenue is equal to some pre-determined coverage requirement above debt service. This would mean that the relevant government could enjoy the benefits of the improved rate on the bonds, with the possibility of eliminating the GO backing in the future.³⁸

Alternatively, some local governments re-finance (i.e. take out) non-rated TIF revenue bonds with their rated GO bonds, once the TIF project has stabilised and advanced beyond the early years' development risk. At this point, the higher coupon, non-rated TIF bonds are replaced with lower interest rate, investment grade bonds. And the local government perceives the project risk level has reached an acceptable level and is appropriate to 'fold into' its general obligation base.

An inherent strength identified with the use of bonds is that it brings market forces into play when evaluating the merits of infrastructure development.

In the case of GO bonds, jurisdictions need to ensure that the infrastructure funded will create property value appreciation and hence the tax increments needed to finance the bonds; or else the developments will become a burden on the municipality's balance sheet. This therefore puts a significant emphasis on the importance of thorough project evaluation.

The market forces are even more powerful when utilising revenue bonds; potential investors must be convinced of the merits of the infrastructure developments to generate the incremental tax revenue required, or else they will demand a premium.³⁹

In addition to the pure 'market force' evaluation inherent in financing arrangements, some commentators have noted that a potential TIF project should also be evaluated against local land use plans and development objectives.⁴⁰

Pay-As-You-Go Financing

Sometimes it is not feasible to issue bonds at the beginning of construction or even after 'stabilisation', which may require a TIF district to proceed on as 'pay-as-you-go' basis. This may be due to factors such as the par amount of the proposed financing being below market acceptable size or an unwillingness by project

³⁸Council of Development Finance Agencies and International Council of Shopping Centres, 2007, *Tax Increment Finance Best Practices Reference Guide*.

³⁹Luce, 2003, *Reclaiming the Intent: Tax Increment Finance in the Kansas City and St. Louis Metropolitan Areas*, A discussion paper prepared for the Brookings Institution on Urban and Metropolitan Policy, pp 3-4.

⁴⁰Ibid.

participants to enter the capital markets. Pay-as-you-go arrangements can take a number of forms, for instance via a note taken back by a project developer with site-specific TIFs (see below) or through various programs administered by the TIF district or redevelopment authority. The use of pay-as-you-go TIF notes in Chicago, for example, is also discussed in section 3.2.

In some cases, TIF bonds are not issued until construction is complete and tax increment is being generated. In these instances, tax increment flowing from construction is used to offset costs incurred during construction. Once stabilisation has occurred, TIF bonds are issued and the full cost of improvements is reimbursed.

Pay-as-you-go can also be applied after TIF bonds have been issued, to invest back into the project tax increment above the debt service level. Typical uses for this excess tax increment include smaller scale infrastructure improvements, such as streetscapes, green spaces, parks and maintenance, and other projects requiring annual funding.

Developer financing

Developer financing is an alternative to traditional issuance of TIF backed bonds. In some cases, a developer may be willing to take a note from the TIF district, and is consequently reimbursed for the costs of the project over the life of this note from incremental tax revenue. Because developers require an initial sum of money greater than the incremental tax revenue trickling in, they are often required to turn to banks to fill their financing gaps and pay for TIF-eligible costs. Lenders then may require some assurance that the municipality will provide revenue to assist the borrower to service its debt.

Such arrangements can be structured in a number of different ways. They can have the benefit of reducing risk to the TIF authority, as the note to the developer is typically tied to the amount of tax increment generated on annual basis. They can also reduce time and cost, when compared to traditional bond financing.

Box 5 below outlines an example of how developer financing was applied in Hooksett, New Hampshire.

Box 5: Developer financing case-study⁴¹

In Hooksett, New Hampshire the town and developer opted to finance the public improvements through a TIF note. This followed the following process:

- 1 To determine eligible costs, invoices from contractors associated with the improvements were submitted to the town. The eligible costs (which were defined in the term of the development agreement) became the loan amount, as evidenced by the note between the town and the developer.
- 2 Each year, the tax increment is used to make debt service repayments on the note (both principal and interest) and the principal amount of the loan is reduced until such time as the note is retired or 20 years, whichever comes first.

Other forms of developer financing can involve a TIF district using the incentive of TIF revenue to attract private investment. That is, private investors are lured with the promise of rebates from incremental tax revenue increases that their development generates in the TIF zone.

This financing method is commonly used when a TIF is designed to stimulate economic activity – meeting the ‘economic development’ criteria. It effectively subsidises investment in privately owned infrastructure or development, in recognition of the positive externalities (or community benefits) that such development can generate. Las Vegas is a city that has used this form of TIF arrangement extensively for the revitalisation of its downtown area, attracting commercial, government and residential developments with the lure of TIF rebates⁴². St Louis and Chicago are further examples of municipalities that have attracted private investment through the promise of TIF rebates.⁴³

Tax treatment of TIF bonds

In the US, some TIF bonds are tax exempt, enhancing the return of investors, while others are not.

Under the US IRS code, if public improvements, such as roads and other public infrastructure, are being financed using TIF bonds, the bonds may be issued as tax exempt obligations. The policy rationale behind this is that these bonds are being used to finance socially beneficial infrastructure. In contrast, bonds used to finance private improvements will cause bonds to be taxable.

The distinction between tax exempt and taxable can be important, “*not only because the cost of capital between taxable and tax-*

⁴¹ Council of Development Finance Agencies and International Council of Shopping Centres, 2007, *Tax Increment Finance Best Practices Reference Guide*, p 32.

⁴² Berton, B, ‘Tapping into TIF’, *Urban Land*, September 2007.

⁴³ See for example: St. Louis Development Corporation, *Tax Benefit Programs*, The City of St. Louis, 2005; Lehrer, E, ‘The Town that Loves to TIF’, *Governing*, September 1999; City of Chicago Department of Planning and Development, *The Pilsen Tax Increment Financing Redevelopment Project Plan*, City of Chicago, 2004.

exempt bonds is widely different, but also because the market for non-rated, taxable municipal bonds is limited and highly inefficient when compared to the tax-exempt market.”⁴⁴

The tax increment

The proportion of tax increment used to fund development can differ depending upon the state (and provisions in its TIF enabling legislation), the criteria used for the TIF (ie blighted areas, economic development, environmental remediation, greenfield, etc), the type of project, and the type of financing method used.

The most common method applied across the US is to use all of the incremental property tax revenue increases generated by the TIF development (above the tax 'base') to fund the initial development.⁴⁵

However, various incremental proportions and funding arrangements have evolved to match the varying uses of TIFs. These evolutions take two forms.

First, limiting the proportion of incremental tax increases used to finance the development or infrastructure to x% of the total incremental increase. Under certain circumstances, TIF statutes allow the individual communities to decide on the percentage of incremental tax revenues to be redirected towards the TIF.⁴⁶

Increases in tax revenue can also be shared between overlapping taxing jurisdictions. This approach arises out of the situation of overlapping taxing jurisdictions within the US. For example, a zone that is TIF designated will not just be paying tax to the municipality, but is also likely to be paying tax to the schools district. TIFs have been criticised as they can be seen as a method in which a municipality can also 'capture' increases in property taxes that would have previously gone to schools districts (often up to 50% of the property levy).⁴⁷ Hence, other taxing jurisdictions can be given the option to 'opt out' of the TIF, meaning that only a proportion of the incremental tax revenue increase is used by the municipality to finance the TIF development.

Also, a number of states require that agencies use a percentage of their incremental tax revenues for specified purposes. For example,

⁴⁴ Council of Development Finance Agencies and International Council of Shopping Centers, 2007, *Tax Increment Finance Best Practices References Guide*, p 33.

⁴⁵ Luce, *Reclaiming the Intent: Tax Increment Finance in the Kansas City and St. Louis Metropolitan Areas*, A discussion paper prepared for the Brookings Institution on Urban and Metropolitan Policy, April 2003.

⁴⁶ Hunter K, Harris M, Carter S, 2005, "Variations in today's tax increment financing", PwC White Paper, CCH Property Tax Alert.

⁴⁷ Ward, R "To TIF or not to TIF: Debating the Issues" *Development Strategies Review*, Summer 2000. See also: Byrne, P 'Strategic interaction and adoption of tax increment financing' *Regional Science and Urban Economics*, 32, 2005; and Bridge, J et al, *Planning and Government: Tax Increment Financing as an Economic Development Tool and Policy*, Capstone Seminar 2005, Graduate School of Public and International Affairs, University of Pittsburgh, 2005.

in California, 20 percent of incremental tax revenues must be used to support low and moderate income housing.⁴⁸

There are also situations where the sponsoring jurisdiction is either unable or unwilling to utilise all of the tax increment. In these cases, the portion of the total increment the sponsor does not utilise is called the excess increment, and the sponsor releases this valuation to other taxing jurisdictions as if this portion were an additional part of the frozen tax base. In states where this release is not permanent, the annual choice of how much increment to utilise becomes a decision for the sponsor (which means that, by this choice, the sponsor can directly affect the tax base of each overlapping jurisdiction).⁴⁹

TIF rebates that are used as an incentive to private investors may also constitute only a proportion of the total incremental tax revenue that follow their development. For example, the city of Las Vegas Redevelopment Authority is offering TIF rebate incentives to private developers for high-rise residential, retail, hotel and mixed-use projects located within the Las Vegas Redevelopment Area. Under this program, up to 41% of tax increment can be rebated annually to a property developer for eligible expenditures related to a construction project. Eligible expenditures may include constructing streets, curbs, gutters, water lines, storm drainage facilities, traffic signals, paving, sidewalks, flood control improvements, utilities and other infrastructure costs.⁵⁰ Additional infrastructure in Las Vegas, such as new police headquarters and other government administration buildings, have been financed through TIF bonds.⁵¹

The **second** evolution has been the inclusion of other taxes upon which incremental increases are collected (eg taxes associated with levels of business activity, in addition to, or instead of, property taxes). The inclusion of additional taxes usually accompanies TIFs classified for the purpose of 'economic development'. For example, in St. Louis TIFs located within specially designated business areas can also use 50% of the 'New State Revenues' generated from the project. These new revenues may result from increased state sales taxes or state income taxes that result from the project and new employees within the district.⁵²

Elsewhere across parts of the US, other incremental tax revenues are being captured through:

- utility tax (electricity, gas, telephone, water)

⁴⁸ Fitch Ratings, 2007, "Tax Increment Finance/Tax Allocation Bond Rating Guidelines", Public Finance, Tax Supported Criteria Report, p 2.

⁴⁹ Lawrence D and Stephenson S, 1995, "The economics and politics of tax increment financing", *Growth and Change* 26, 1, p 108.

⁵⁰ City of Las Vegas Redevelopment Authority, <http://lvrrda.org/67.htm>.

⁵¹ Berton, B, 'Tapping into TIF', *Urban Land*, September 2007.

⁵² St. Louis Development Corporation, *Tax Benefit Programs*, The City of St. Louis, 2005

- local sales tax (attributable to the project)
- earnings tax (on the earnings of residents and workers who would not be there but for the TIF)
- state income taxes.

In Missouri, TIF districts may capture up to 50 percent of local sales and utility tax increments. This level varies depending upon municipality and TIF circumstance.⁵³

However, some commentators are critical of the inclusion of local sales tax in TIF arrangements, arguing that this creates an incentive for TIF users to implement sales-tax-intensive development strategies.⁵⁴ It is argued that, in most cases, this means retail development:

*“a type of development that creates few high wage jobs with strong career tracks. Competition for retail development is also very likely to represent a zero-sum game from the point of view of the region or the state – new development is one part of the region/state is likely to simply be displacing activity in another part of the region/state.”*⁵⁵

Return to normal taxing arrangements

When the investment in the TIF district is repaid, and the TIF expires, the total taxable revenue (base and increment) returns to the normal taxing jurisdictions.

Supplementing the increment

The nature of each TIF project and the goals that it sets out to achieve will ultimately dictate the extent of any supplementary funding that may be required.

Infrastructure required for smaller projects may be entirely funded through the issuing of a TIF bond. For larger scale projects, a mix of funding that incorporates the issuing of bonds, special assessment levies (see below), developer contributions, attraction of private funding and general tax revenue may be used in varying degrees to achieve the desired level/mix of funding required.

Complementary Special District Revenue

‘Special district’ revenue can sometimes be used to complement TIF funding. Such districts can include special assessment districts,

⁵³Ward, R “To TIF or not to TIF: Debating the Issues” *Development Strategies Review*, Summer 2000.

⁵⁴“Municipalities in the Kansas City and St. Louis metropolitan areas that use the sales tax levy rely very heavily on the tax. In 1998, municipal sales tax revenues exceeded municipal property tax revenues by a factor of 2.8 in those places.”

⁵⁵Luce, *Reclaiming the Intent: Tax Increment Finance in the Kansas City and St. Louis Metropolitan Areas*, A discussion paper prepared for the Brookings Institution on Urban and Metropolitan Policy, April 2003, p 7.

transportation districts, community improvement districts and business improvement districts.

Most special districts can impose, by vote of residents or property owners, sales tax, property tax or special assessment levies. When new sales taxes or property taxes are imposed within a special district, 100 percent of these taxes can be directed to paying the costs of specified project improvements (ie no 'base' is excluded from the revenue stream, as happens with TIF).

Special assessments cover the costs of specified infrastructure projects and improvements within a district. They are based on the 'beneficiary pays' principle and can be paid (or levied) in a lump sum or instalments over time.

If a TIF project's construction is delayed, the TIF increment may not be available within the timeframe originally anticipated. This can mean that TIF bond holders are subject to 'construction risk'.

In the US, special assessments are sometimes used to mitigate the 'construction risk' associated with TIF bond financing, since special assessments don't rely on incremental growth in property value. In some cases, TIF revenues are attached to some costs and infrastructure projects, while special assessments are attached to others. Where state statutes permit both TIF and special assessments for the same types of infrastructure, special assessments can cover all project costs, while TIF revenues (following construction) can be used to reduce the amount of special assessment a property owners pays each year.⁵⁶

Use of TIF funds – types of infrastructure/development

Due to the flexible nature of TIF, municipalities have been able to fund a vast plethora of projects. These range from relatively small and localised developments (eg local streetscape restoration and beautification) to larger scale infrastructure provision (eg rail stations, large public spaces and parks, mixed use development, etc).

TIF funded or subsidised development can include a mix of public and private infrastructure. As mentioned above, the latter (including shopping centres and commercial office space, for example) can receive a TIF 'rebate' or subsidy on the grounds that it would have been uneconomic for this private development to occur but for the TIF subsidy and that this development generates positive externalities or community benefit (eg in the form of employment generation and general economic and amenity uplift of the area).

⁵⁶ Council of Development Finance Agencies and International Council of Shopping Centres, 2007, *Tax Increment Finance Best Practices Reference Guide*.

3.2 US case studies

Below are several TIF case-studies, to provide example of various ways in which TIF has been applied in the US.

Case study 1: Chicago

Governance and financing arrangements

TIF legislation was first enacted in Illinois in 1977, in the form of the *Tax Increment Allocation Redevelopment Act*, after significant reduction in state and federal economic development funds. Chicago now has more than 130 TIF districts, comprising over 29 percent of the city's total area and approximately 19 percent of the total real property tax base.⁵⁷ TIF is used throughout the city to support the City Council's economic development agenda and to fund a wide variety of infrastructure and economic development projects.

Chicago's TIF program is administered by the City of Chicago Department of Planning & Development (DPD). TIF districts are created through the cooperation of the DPD, the community and developers, and the approval of the City Council. The DPD forms a redevelopment plan for a property or area that is contributing less than its share of City taxes due to outdated stock, underutilization, dilapidation or vacancies. The DPD holds public hearings and, following a review, the City Council authorises the creation of a TIF district. The size of TIF districts can range from blocks directly surrounding a project to entire suburbs.

TIF revenue is derived from increases in property tax revenue. The designation of a TIF district freezes the Equalized Assessed Value (EAV) of the property at its base year. The DPD is permitted to rollover revenue within a TIF district until the funds are needed for a project. The DPD offers project financing after in-house analysis of the developer's costs, and an estimate of projected TIF revenues prepared by the DPD or outside consultants. The City aims to limit public support to not more than 25 percent of total development costs. Under State law, TIF districts must resolve after 23 years, with TIF tax revenues then reverting to their original recipient(s).⁵⁸

The City of Chicago usually finances TIF projects through Pay-As-You-Go TIF Notes or the issuance of a bond for the project, supported by projected TIF revenues. Pay-As-You-Go TIF Notes are legally binding promises by the City to reimburse developers for approved project costs out of the tax increment revenue stream. Developers raise up-front funds by arranging private loans supported by the TIF notes. The City only pays for the developer's

⁵⁷ Smith B, 2006, "The impact of tax increment finance districts on localized real estate: Evidence from Chicago's multifamily markets", *Journal of Housing Economics* 15, 21-37.

⁵⁸ Bay Area Economics & Urban College, Inc, 2005, *Analysis of Incentives to Encourage Investment in Underserved Areas*, Prepared for The Atlanta Development Authority, Appendix C: Tax Increment Financing Case Studies.

costs out of the actual tax increment that flows into City funds from the TIF district. The City is under no obligation to pay for the developer's costs if the tax increment revenues are insufficient to fully fund the TIF note. From the City's perspective, TIF notes have the advantage of keeping the financial risk of redevelopment almost entirely with the developer. The TIF note process is also generally simpler and less expensive than bond issuance, avoiding of the underwriter fees of a revenue bond.⁵⁹

Chicago has used TIF to fund (or subsidise) a range of infrastructure projects and developments. Below is an outline of some examples of TIF funded projects in Chicago.

Chicago's CBD, theatre district and riverfront

Since the late 1990s, Chicago has used TIF to subsidise the redevelopment and rejuvenation of parts of its CBD, including the theatre district and riverfront area. The public infrastructure provided via TIF has helped encourage mixed use development in the previously neglected area, including the establishment of retail, residential, commercial, entertainment, hotel, and educational facilities.

In the theatre district (the State Street area), for example, TIF has been used to fund vintage style streetlights with space for banners that announce the latest theatre shows, old-fashioned kiosks with maps indicating theatre locations, newly planted trees, sidewalk planters and new sidewalk treatments, including granite and slate theatre district logos set into the pavement. Approximately \$7 million of this \$7.7 million project cost was funded by the Central Loop TIF District. The remaining \$700,000 was financed by the city's general obligation bonds.⁶⁰

Since rejuvenation of this area commenced, it has been reported that hotel operators are returning to State Street and developers have converted empty or underused buildings into residential, retail and office space.⁶¹

⁵⁹ Ibid.

⁶⁰ Lockwood C, 1998, "Chicago's Public Works", *Urban Land*, pp73-100.

⁶¹ Ibid.



Theatre District: State Street, Chicago – Image courtesy of Mr Joe Langley of Sinclair Knight Merz (SKM).

In previous decades, the Chicago River, which runs from Lake Michigan through the 'Loop' (in the CBD) and into various neighbourhoods, has been polluted and relatively inaccessible. In the late 1990s, the city initiated a program to transform the Chicago River into an asset for the city and a much-used public space, with pedestrian and bicycle paths along the water's edge, parks, restaurants, and docks for boaters. To implement this program, the city drew on funding from federal and state grants, the sale of city-owned riverfront real estate and TIF.



Chicago Riverfront Improvement District – Image courtesy of Mr Joe Langley of Sinclair Knight Merz (SKM).



Chicago Riverfront Improvement District – Image courtesy of Mr Joe Langley of Sinclair Knight Merz (SKM).

The City of Chicago has also used TIF to improve infrastructure and amenity at street level throughout the CBD, via investment in bus shelters, subway entrances, landscaping (including trees, flower beds and planters) and street lighting. This investment has attracted people and commercial activity back into the CBD. As one commentator has noted, *“by making judicious investments in newly designed streets, open spaces, and civic places, Chicago is not only attempting to create a more attractive and liveable environment but also is trying to attract the influx of private investment essential for its future prosperity.”*⁶²

⁶² Ibid, p 100.



Chicago Streetscapes maintained by TIF - Image courtesy of Mr Joe Langley of Sinclair Knight Merz (SKM).

Case-study 2: East Point, Georgia

The City of East Point, Georgia created the \$22 million Camp Creek Tax Allocation Fund (TAD) in 2001 to extend infrastructure into an area that had not been previously developed due to difficult topography. These improvements sparked the development of the Camp Creek Trade Centre (a business park), Camp Creek Market Place (a 123,000m² regional shopping centre) and 1,400 housing units in the area in 5 years. The additional tax revenue from these developments is generating the income stream to repay the TIF bonds that funded the initial improvements.

This TIF has been so successful that, in 2006, the City created its second TIF – the East Point Corridors TAD, to encourage private investment in the City's major corridors and Central Business District.

Infrastructure/development

The East Point Corridors TAD is a \$98 million TIF that is expected to generate \$164 million in appreciation of existing properties and \$191 million in new development over 25 years, thereby providing the new tax revenue needed to retire the TIF bonds. Public infrastructure to be funded by the TAD includes:

- new parks, open spaces and pathways and trails, linking to the area's parks
- roadway improvements and sidewalk and pedestrian friendly streetscape improvements
- land assemblages and/or on site preparation for private commercial and residential development
- construction of new public facilities, including a community recreation centre
- improvements to the area's basic water, sewer and transportation infrastructure.

The TAD, through provision of the above-mentioned infrastructure, is also expected to provide incentives for significant commercial, industrial and residential private development. As noted by the East Point Corridors TAD Development Plan:

*"Creating the East Point Corridors TAD will provide inducement for certain major new developments that will spur more desirable and sustainable, market-based commercial and residential development in this area. With careful planning and guidance, the Main Street Corridor, Cleveland Avenue Corridor and Washington Road Corridor – and their surrounding communities – can be transformed into desirable, viable commercial and pedestrian friendly communities."*⁶³

⁶³ City of East Point, Georgia, 2006, *East Point Corridors Tax Allocation District and Redevelopment Plan*.

Case study 3: Westwood Station, Massachusetts⁶⁴

Infrastructure/development

The project consists of mixed-use, transit oriented development on approximately 145-acres of land adjacent to a transit station, which was previously used as an industrial/business park (although the existing properties had significant vacancies and were in need of revitalisation). The development comprises:

- new roadways, utilities, stormwater management and other infrastructure to facilitate a mixed use, transit oriented 'Smart Growth' project
- retail, office and hotel space, and residential units.

The project is a joint venture between a number of private developers. The reason for the TIF is to provide public support for a portion (20%) of the infrastructure burden, including road improvements, noise mitigation and other neighbourhood improvements, aquifer management, utility upgrades, municipal and school facilities and equipment and parks, landscaping and recreation facilities.

Financing package and TIF arrangements

Under the Massachusetts Economic Development Incentive Program, tax savings are directed to the developer (which differs from traditional TIFs in other states).

In this case, the TIF is being used to offset public infrastructure costs incurred by the developer. Portions of the project will be eligible for a 5 percent state tax credit and the TIF provides a variable, formulaic exemption from local property taxes to offset the infrastructure costs of the developer. The TIF is sufficient to pay debt service on approximately \$20 million of infrastructure financing over 20 years.

TIF distributions do not occur until gross revenues are sufficient to cover municipal costs attributable to the project and a minimum net new tax benefit to Westwood. This ensures that the Town first recovers impact costs and makes a profit before the developer receives TIF incentives.

Timeframe

The review process began in January 2007, with municipal approvals and state action completed by the end of May 2007. The start of the TIF depends on when all approvals are received and construction commences.

⁶⁴ Sourced from: Council of Development Finance Agencies and International Council of Shopping Centres, 2007, *Tax Increment Finance Best Practices Reference Guide*.

Case study 4: Peninsula Town Centre⁶⁵

Infrastructure/development

Shopping centre redevelopment, including commercial and residential space, streets, public open space and pedestrian infrastructure.

Financing package and TIF arrangements

The city created the Peninsula Town Centre Community Development Authority (CDA) to assist in development of the following public improvements associated with the project:

- construction of a 750 space carpark
- construction of on-site utilities and infrastructure, including new public streets, footpaths, public parks and landscaping, water, wastewater, electricity and other utility services.

The developer and the city negotiated a financing structure that included the use of:

- Incremental tax revenue expected to be generated within the project (100% of Real Property Incremental Revenues, 50% of Sales Tax Incremental Revenues, 25% of Meals Tax Incremental Revenues and 50% of Amusement Tax Incremental Revenues).
- Special Real Property Tax – the City Council will levy and collect a special tax on each taxable parcel of real property within the CDA.
- Back-up Special Assessment to the extent that Incremental Tax Revenues and the Special Real Property Tax are insufficient to repay debt service with respect to the Bonds, the CDA will levy the Back-up Special Assessment on the owners of taxable real estate in the CDA.

The CDA is responsible for processing incremental revenues.

Timeline

In approximately 2003, the city and the developer began devising a plan to re-develop the Mall site. Once the planning and political processes were complete in early 2006, the TIF commenced with Bonds sold and placed in September 2007.

⁶⁵Sourced from: Council of Development Finance Agencies and International Council of Shopping Centres, 2007, *Tax Increment Finance Best Practices Reference Guide*.

4 Arguments for and against TIF, from the US experience

Drawing on US literature and experience with TIF, this chapter outlines potential arguments for and against TIF. It also lists some general lessons or principles that can be extracted from the US experience and commentary around TIF.

4.1 Arguments for and against TIF

Table 1 below presents arguments for and against TIF. These are primarily based on the US experience and sourced from US literature.

The strongest argument for TIF is the role it can play in facilitating infrastructure and development that generates net benefit to the community. Related to this, is the 'market test' and discipline that it imposes on infrastructure selection, as well as the public commitment to infrastructure provision and transparency that the TIF process entails.

Notably, arguments against TIF mainly relate to particular circumstances where it has been misused in the US, rather than criticisms of the TIF concept per se. These concerns primarily relate to instances where TIF arrangements have 'captured' natural tax revenue growth from other taxing jurisdictions or uses (eg schools districts). In turn, this is a result of using TIF to fund infrastructure and development that would have occurred regardless of the TIF funding, the system of overlapping taxing jurisdictions in the US, and/or lax definitions of the TIF tax base and increment.

Table 1: Arguments for and against TIF

Arguments for	Arguments against	Additional comment
<p>1 Self-funding mechanism for infrastructure</p> <p>TIF is an infrastructure funding mechanism that provides its own source of revenue – generated from infrastructure and development that would not have occurred or not have occurred at the same rate or to the same extent but for the TIF scheme.</p> <p>It is funded by owners of newly created wealth inside the TIF district, but in proportion to the increase in their asset value that the TIF facilitates.</p> <p>Furthermore, once TIF expires, the entire tax increment returns to the general tax base, providing it with a windfall gain.</p>	<p>In the US, there is argument that TIF is sometimes applied to areas in such a way that the TIF district ‘captures’ tax revenue from other taxing jurisdictions and uses, rather than genuinely generating new or incremental tax revenue above a ‘business as usual’ baseline.</p> <p>In the US, the effect of this is compounded by the fact that any given area can be subject to several taxing bodies (in addition to the TIF sponsoring municipality),⁶⁶ meaning that to the extent that a municipality’s TIF scheme is capturing ‘business as usual’ tax revenue it is taking revenue away from these overlapping taxing jurisdictions (eg the schools taxing jurisdiction), putting greater pressure on their existing tax bases (particularly given that the TIF development is likely to ultimately increase demand for their services).</p> <p>Some states have addressed these concerns by amending legislation to:</p> <ul style="list-style-type: none"> • clearly specify when and where TIF can be applied (eg in areas such as those characterised by ‘blight’ – where a genuine incremental increase from a TIF program is likely) • require demonstration that a TIF program will result in a genuine and sufficient tax revenue increment • establish ‘opt out’ provisions for other taxing jurisdictions (eg the schools district can elect to opt out of the TIF arrangements so that its tax revenue is not frozen or held at a baseline) • limiting the increment above the tax revenue baseline that 	<p>The extent to which TIF funds itself as compared to costing taxing jurisdictions in the form of foregone tax (or ‘captured’) revenue depends on how much ‘increment’ used to fund TIF infrastructure is due to natural (or ‘business as usual’) growth and how much would not have occurred in the time period but for the TIF program.</p> <p>This shows the importance of selecting appropriate TIF districts and infrastructure programs (and the requirements, evaluation and decision-making criteria behind this).</p> <p>Another way of protecting against tax ‘capture’ and potential negative impact on other taxing jurisdictions or uses is to ensure that the tax base for a TIF district is appropriately indexed over a time (eg by a ‘business as usual’ rate of growth, or at least inflation), rather than kept ‘frozen’.</p> <p>We also note that the following two factors, which have exacerbated this issue in the US, would not apply in Australia:</p> <ol style="list-style-type: none"> 1 The system of overlapping taxing jurisdictions in the US – Australia has federal, state and local revenue raising powers and funding responsibilities, but TIF arrangements could be designed in alignment with these so that, for example, increments in state government taxes are only used to fund state level infrastructure. 2 In the US, TIF has been used to fund or subsidise private infrastructure (eg shopping centres and commercial buildings) on the basis that this generates positive benefits to the community. We envisage that TIF in Australia would only be used to fund public infrastructure,

⁶⁶For example, within the physical boundaries of any given area, there are usually several taxing jurisdictions or bodies – for example, the municipality (ie local government), a schools taxing body, a water or utilities taxing body, and a parks taxing body.

Arguments for	Arguments against	Additional comment
	can be used to fund TIF development, and/or indexing the tax 'base' with the rate inflation (to maintain it in real terms).	such as currently covered by state infrastructure levies.
<p>2 Provides market test and market discipline around infrastructure selection</p> <p>TIF ensures that infrastructure is subject to a 'market test' – ie to receive adequate TIF revenue, development must produce a proportional benefit to the local community, as measured via property value/tax appreciation.</p> <p>This focuses the attention of TIF administrators and other decision-makers on ensuring that they select infrastructure that will deliver genuine benefits to the community.</p>	<p>Some commentators have been concerned that some TIF development has focused merely on high revenue generating activity, rather than development that enhances the general economic and social wellbeing of an area. This is particularly a concern when non-property related, business activity tax is included in TIF arrangements.⁶⁷</p> <p>There have also been some cases where TIF has been used to fund or subsidise private development/infrastructure that serves no discernable public interest.</p>	<p>Development projects funded from government's consolidated revenue must also generally weather project reviews built into the budget process. However, this is unlikely to compare current expenditures to the resulting future benefits in as rigorous a manner as under TIF.</p> <p>In addition to necessitating a robust pre-project cost benefit analysis, TIF essentially provides a form of post project implementation evaluation – as revenues are collected and tracked against costs.</p> <p>The potential for application of TIF to inappropriate infrastructure in Australia could be avoided by:</p> <ul style="list-style-type: none"> • only including property related taxes in TIF arrangements (property value is generally tied to the general amenity of an area, rather than pure economic activity) • applying TIF funding to public infrastructure currently funded through infrastructure/development levies • making provision for eligible infrastructure in TIF legislation and guidelines.
<p>3 A more equitable means of infrastructure funding</p> <p>TIF is an equitable means of funding public infrastructure, particularly compared to development levies.</p> <p>It is funded by owners of newly created wealth inside the TIF district, but in proportion to the increase in their asset value that the TIF facilitates.</p> <p>Via property value appreciation, TIF uses the market to</p>	<p>As mentioned above, if TIF 'captures' some natural growth in tax revenue, it is essentially taking this away from other potential uses/recipients, which may be unrelated to the TIF district (and hence, may not enjoy any of the benefits of TIF infrastructure provision).</p> <p>In addition, two concerns that can pertain specifically to TIF use in blighted areas are:</p>	<p>The potential for TIF to 'capture' tax revenue not directly attributed to it is discussed above.</p> <p>The concerns related to compulsory acquisition of property and gentrification relate to urban renewal in general – regardless of how it is funded (through TIF or other means).</p>

⁶⁷See: Luce, *Reclaiming the Intent: Tax Increment Finance in the Kansas City and St. Louis Metropolitan Areas*, A discussion paper for the Brookings Institution on Urban and Metropolitan Policy, April 2003, p 4.

Arguments for	Arguments against	Additional comment
<p>measure the benefits accruing to individual lots from infrastructure provision. This avoids any uncertainty and inequities associated with the current system of development charges, where charges are attributed to lots based on <i>forecasts</i> of how these lots may benefit from or draw on the infrastructure in question.</p> <p>TIF also applies to all properties benefiting from infrastructure provision in a given area – not just new development (which is currently a weakness of applying development levies to infrastructure provision in established areas).</p>	<ul style="list-style-type: none"> the power of compulsory acquisition is often extended to development / redevelopment agencies gentrification and urban renewal can displace lower socio-economic groups who were previously located in the area due to its low costs and housing affordability. 	
<p>4 Facilitates large, upfront infrastructure, without compromising housing affordability or take-up rates</p> <p>As mentioned above, via increased property related taxes, TIF imposes a cost on property owners/purchasers in the TIF district, but only in proportion to the increase in their asset value and only after infrastructure services (or their affect on property value) have been provided.</p>	<p>In the US, there have been some concerns that where TIF is inappropriately applied or poorly designed, it may promote inefficient development or land use patterns (eg urban sprawl) by subsidising its cost.</p>	<p>As discussed in Chapter 2, there are concerns in Australia that development charges are impeding development, lot take-up rates and ultimately housing affordability (and that housing affordability is negatively related to the level of development charges).</p> <p>Under TIF, the potential for 'inefficient' development can be avoided by establishing appropriate TIF eligibility and evaluation provisions, which require that:</p> <ul style="list-style-type: none"> the area/infrastructure of potential TIFs are adequately assessed in terms of level of genuine incremental tax revenue (value) likely to be generated over the TIF term relative to infrastructure costs TIF development plans are consistent with land use plans for the broader region.
<p>5 The TIF process ensures appropriate planning, commitment and transparency around infrastructure provision</p> <p>The TIF process ensures that:</p> <ul style="list-style-type: none"> there is a significant degree of transparency and rigour applied to the kind of infrastructure developed, its spatial allocation and the decisions behind the process 		

Arguments for	Arguments against	Additional comment
<ul style="list-style-type: none"> sponsoring governments commit to revitalisation/development periods for meaningful and clear periods of time planned infrastructure funding is not withdrawn or stalled due to competing interests (which can happen when infrastructure is funded from consolidated revenue) the development/redevelopment occurs in a co-ordinated and planned manner. 		
<p>6 TIF provides an incentive for timely and effective provision of infrastructure</p> <p>TIF provides an incentive for the timely and effective provision of infrastructure, as TIF revenue is linked to the delivery of this infrastructure and the development having effect (uplift) on property values.</p>		

4.2 Lessons learnt from the US experience

The US experience shows that TIF is a potentially powerful tool for funding public infrastructure, particularly in areas where there is significant potential for property value uplift as a result of this infrastructure.

However, robust, clear and comprehensive requirements and governance arrangements are required to support the effective implementation of TIF. Any criticism of TIF in the US primarily relates to how it is implemented (specifically, its application to inappropriate districts and/or developments) rather than the concept of TIF per se.

For example, one commentator suggests that the upshot of identified advantages and disadvantages of TIF is that states must design TIF rules well, including the definition of allowable purposes for TIF districts and project evaluation requirements (including ensuring that TIF plans are consistent with land use and economic development needs locally and in nearby areas).⁶⁸

To add to this, we believe that the US experience suggests that:

- Enabling legislation, supporting regulations and TIF development plans should provide clear criteria on situations (locations and infrastructure or types of development) where TIF can be utilised.
- TIF should be implemented across a state or country in a co-ordinated and selective way. It should be used to fund infrastructure that generates genuine incremental value and tax revenue.
- TIF administrators should be able to show that TIF funding is consistent with land use and development plans for the area and public infrastructure needs (both locally and in nearby areas). Higher level reviews should show how it contributes to the regional or state economy.
- TIF has the benefit of subjecting selected infrastructure to a market 'test'. Nevertheless, the proposed list of eligible infrastructure/development subject to TIF funding should be subject to robust and transparent economic cost benefit analysis. It should be shown that this infrastructure will deliver a net contribution to the local, regional and state community/economy.
- Unless it can be shown that TIF rebates to private infrastructure/development yield significant public benefit, TIF should be focused on funding public infrastructure.
- Prior to TIF designation/implementation, an evaluation of proposed development and forecast tax revenue is very

⁶⁸ Luce, *Reclaiming the Intent: Tax Increment Finance in the Kansas City and St. Louis Metropolitan Areas*, A discussion paper prepared for the Brookings Institution on Urban and Metropolitan Policy, April 2003, p 3.

important to determine the extent to which a TIF scheme will generate new value and tax revenue.

- Consideration should be given to indexing the tax base (eg by the rate of inflation or a 'business as usual' growth factor), rather than leaving it 'frozen'. This would reduce the 'increment' available for funding. However, it would help to ensure that TIF revenue is additional tax revenue, which is genuinely generated from the provision of the TIF infrastructure.

The US experience also shows that TIF arrangements, including legislative requirements, how it is financed, and its scale and the infrastructure to which it is applied, can vary across states and be tailored to the specific needs or goals of a jurisdiction.

5 Potential applications of TIF in Australia

With careful consideration of lessons learnt from the US experience, we believe that there is an opportunity for Australia to develop the necessary TIF criteria and governance arrangements to facilitate efficient and effective use of TIF to fund public infrastructure in suitable areas.

As is the case in the US, TIF should not be the only mechanism of funding infrastructure, and it may not be suited to all circumstances. Furthermore, as the US experience shows, there is no one strict definition or application of TIF. Rather, application of the concept can be tailored to suit local development needs and governance arrangements.

As has occurred in the US, TIF has the potential to ensure the timely delivery of much needed public infrastructure to areas where it is most needed and promote economic development.

This chapter discusses the potential application of TIF in Australia. In doing so, it outlines:

- potential TIF application, in terms of sites, taxes and infrastructure
- other potential characteristics, governance arrangements and roles and responsibilities
- financing arrangements.

It concludes by presenting indicative modelling results for two TIF case-studies, to demonstrate the potential workings and application of TIF arrangements in Australia.

5.1 Governance arrangements

The first step in implementing TIF arrangements would be for state governments – as agents primarily responsible for infrastructure funding and delivery – to establish enabling legislation and supporting regulation to:

- provide for the establishment of TIF development bodies, their composition, rights and responsibilities
- outline appropriate provisions/requirements of TIF arrangements – including steps for establishing TF districts/projects and criteria for TIF designation and approval, the development and publication of TIF Development Plans, reporting/consultation arrangements, and definitions/measurement of TIF districts, tax revenue 'base' and tax revenue 'increment'.

Such enabling legislation could provide for TIFs to be applied to 'districts' or specific infrastructure projects. We envisage that one Act would be created in each state to cover TIF arrangements – rather than a separate Act for each TIF scheme within a particular state (and that, where possible, differences in TIF legislation between states should be kept to a minimum). In NSW, for example, there is also significant precedent to draw on from the *Growth Centres (Development Corporations) Act 1974*. Consideration could be given to establishing TIF development authorities under this Act, or it could be referred to as a starting point in drafting specific TIF legislation, to minimise the time taken to get TIF arrangements up and running.

In the US, local municipalities are primarily the sponsoring agents and administrators of TIF programs. However, as outlined below, while we envisage a significant role for local councils in TIF arrangements, we propose that:

- state taxes, rather than local government rates, be subject to TIF; and
- TIF arrangements in Australia involve some coordination and oversight at the state level (primarily via the approval and establishment of TIF development authorities and TIF districts) – at least for the foreseeable future.

Likewise, while TIF arrangements in some states in the US are confined only to 'blighted' areas (although this definition of 'blighted' can be very broad – eg to include districts that aren't growing as fast as the rest of an urban area), we envisage broader application of TIF in Australia – albeit a suitably selective application, supported by an appropriate governance framework.

The sections below outline the proposed application of TIF in Australia and potential governance arrangements in further detail. A potential TIF governance/administration structure is outlined in Figure 4.

Figure 4 shows that we envisage that COAG and Infrastructure Australia could be involved in the initial investigation/consideration of TIF, in consultation with State Governments. The governance and operation of TIF would then ultimately be the responsibility of each State Government.

Application to greenfield and infill sites

In the US, TIF has primarily been used to fund urban renewal/infill infrastructure projects. Given the likely need to fund investments in public infrastructure in infill areas in Australia in the near future, there appears to be significant scope to apply TIF in a similar fashion here.

Similarly, due to the importance of the timely provision of adequate levels of public infrastructure in new release areas and concern over the effect that the current regime of development levies may have on housing affordability and/or development rates in these areas, we

believe that there is also scope to use TIF to fund public infrastructure in new release areas in Australia.

In saying this, the US experience shows that the effectiveness of TIF is likely to depend heavily on its application to suitable infrastructure and areas and the support of an appropriate governance and decision-making framework.

Aligning tax revenues with infrastructure funding responsibility

Australia is relatively well placed to implement TIF as it does not have the complication of overlapping taxing bodies or jurisdictions drawing on common tax revenues in a particular area, as occurs in the US.

However, it does have the layers of local and state government, with revenue collected (development charges, state taxes and local council rates) and infrastructure services provided in a given area at both the state and local government level.

To avoid any potential fiscal imbalance and confusion about infrastructure provision responsibility between the two levels of government and ensure that TIF can be implemented as simply as possible, we believe that it is important to align revenues received under a TIF arrangement with infrastructure funding responsibility.

That is, if incremental state tax revenue is collected under TIF, these funds should predominantly be used to fund infrastructure that would otherwise be funded by the state Government in the TIF district, rather than local government infrastructure. Likewise, if incremental local government rates or levies were to be collected under TIF, this revenue should be used to fund 'local government infrastructure'.

However, we also note that there should be scope for some flexibility to be built into TIF arrangements. For example, where there are synergies in the provision of state and local infrastructure, or these types of infrastructure overlap or are even difficult to distinguish, local councils and the relevant TIF development authority could enter into a funding and infrastructure delivery and maintenance arrangement. For instance, a local council could contribute funding to the TIF development authority, in return for the TIF authority providing 'local' infrastructure (e.g. parks, upgrades to local roads and pedestrian facilities, etc) around (or to complement) 'state' infrastructure (e.g. a rail or metro station). In any case, we envisage that local councils would have a close working relationship with TIF authorities operating within their jurisdiction (as discussed below).

State tax revenues and state infrastructure

For example, TIF arrangements in NSW would be well placed to use incremental increases in state property tax revenue (land tax, transfer duty, premium property duty) to fund state infrastructure that is currently largely financed through state development charges.

These development charges currently primarily apply to new release areas – although it is also expected that significant infrastructure upgrades will be required in established areas in coming years.

Applying TIF at this level should ensure that TIF is used in a coordinated and strategic way to deliver infrastructure that is of benefit to the state and consistent with broader land use and development objectives. It would avoid the potential for misuse of TIF, which has sometimes occurred in the US when local districts seek to ‘compete’ with each other for development and revenue base.

Using TIF to finance state infrastructure would also avoid some concerns in the US that TIF is sometimes used to inappropriately subsidise private infrastructure/development with questionable public benefit. State infrastructure – such as that currently covered by state infrastructure levies in the new release areas – has clear public benefit, with much of it needed as a result of general population growth.

The role of local council

At least initially, we propose that local government levies, rates and infrastructure would be quarantined from the TIF process. Rate pegging, which limits the appreciation of local council rates, is one current limitation that would be faced if TIF were applied at the local council level.

However, we still envisage that local councils would play a significant role in TIF arrangements. This would be in the form of input into decisions about designation of a TIF district and/or the infrastructure needs of a TIF district (which may be within the boundaries of one or several local councils), as well as an ongoing role in administration of the TIF district.

Where a TIF district is in local council area, we recommend that arrangements be established to ensure that the local council has clear input into the TIF decision making and governance framework. This could occur, for example, through local council representation on the board of the TIF development authority for the TIF district and/or legislative requirements for Memoranda of Understanding and consultation between the TIF development authority and local council(s).

TIF district designation

A central government department or authority at a state level could be charged with responsibility for TIF district designation and approval. This would have the advantage of ensuring that TIF designation occurs in a co-ordinated fashion, and is applied to appropriate areas and infrastructure, and in a way that is consistent with broader land use and development objectives.

In saying this, we propose that stakeholders such as local councils, community groups and developers could make submissions to this

authority, which would then determine and/or approve TIF district and infrastructure designation. This would enable developers and other stakeholders to be proactive in seeking TIF designation for particular districts and infrastructure, and consequently work in partnership with the relevant TIF development authority once the TIF designation has been granted.

Once a TIF district has been determined, TIF development authorities for each district would be established. In the NSW, the North West and South West Growth Centres appear obvious examples of potential TIF districts, and the Growth Centres Commission, for example, could be assigned responsibility for implementing TIF arrangements in these areas. Likewise, specific TIF development authorities could be established to administer TIF arrangements and deliver TIF infrastructure in infill areas.

We envisage that the boards of these authorities would be comprised of representatives from appropriate stakeholders, such as NSW Treasury, Local Council, the Department of Planning, the Department of Environment and Conservation and the development community, for example.

We also note that significant precedent exists for the establishment of such infrastructure provision and development authorities. For example, in NSW there are specific purpose authorities such as the Sydney Olympic Park Authority (SOPA), the Honeysuckle Development Corporation, City West and the Transport Infrastructure Development Corporation. Bodies such as these could be given greater infrastructure funding power and responsibility by being granted TIF status for specific areas or infrastructure projects. Alternatively, new TIF authorities could draw on the experience and lessons learnt of these established authorities.

The roles and responsibilities of TIF development authorities

TIF development authorities would be responsible for the detailed evaluation of infrastructure requirements, TIF administration, and infrastructure delivery.

A key role of development authorities would be production of a TIF development plan for each TIF district, which would outline proposed infrastructure requirements, costs, forecast revenues and consultation arrangements. A requirement would be to ensure that the TIF plan and its implementation are consistent with broader community development and land use objectives (such as those outlined in the NSW Government's Metropolitan Strategy). Although we note that TIF infrastructure, and the development authority, would still be subject to broader planning and environmental regulations and approval requirements.

In conjunction with state government financing bodies (e.g. T Corp in NSW), the TIF development authorities would also be responsible for determining and sourcing the most optimal means of finance (discussed below), and the most efficient means of delivering the

required infrastructure – for example, this could involve various levels or combinations of competitive procurement and private sector involvement in infrastructure delivery and/or operation.

It would also have responsibility for consulting and, where necessary, negotiating with stakeholders –including, government agencies, landholders, developers and community groups.

5.2 Financing arrangements

The US experience shows that there are a range of potential sources, or combinations of sources, to finance TIF infrastructure. However, bonds issued by municipalities have been the primary method of TIF funding. This has comprised general obligation bonds (backed by general government revenue) and, more commonly, revenue bonds (secured only by the specific TIF revenues promised to investors in the bond documents).

In practice, we expect that exact finance arrangements could vary from TIF to TIF, depending on their characteristics – including level of private sector involvement, type of infrastructure and tax base and property characteristics of the TIF district. Nevertheless, the section below provides a broad overview of how TIF financing arrangements could work in Australia.

TIF bonds and other financing instruments

In Australia, each state government has established a centralised agency to provide finance to government owned businesses (including government owned public trading enterprises and other general government businesses). In NSW, for example, T Corp carries out this function.

The role of, and rationale for, T Corp is outlined in Box 6 below. This is similar to the role/rationale of comparable state government financing bodies in other states of Australia (eg Queensland Treasury Corporation in Queensland).

Box 6: The role of T Corp

T Corp currently provides finance to NSW Government departments and government authorities, including state owned corporations and the likes of Transport Infrastructure Development Corporation and Sydney Ports Corporation. It does this via its general debt issuance (primarily its Benchmark Bond program) in the capital markets, backed by the State's AAA credit rating.⁶⁹ Under the *Public Authorities (Financial Arrangements) Act 1987*, NSW Government businesses are required to obtain all financial accommodation from T Corp, unless the Treasury grants an exemption.

T Corp also provides financial advice to Government businesses or entities where they are involved in a PPP arrangement with the private sector – although, in these situations, given private sector involvement, it may ultimately be a private financial institution that issues and markets the debt facility (eg annuity bond), rather than T Corp.

The rationale behind the establishment of T Corp is that it centralises systems, expertise and experience. Through economies of scale, combined with government AAA rating, it ensures that Government businesses are able to source the optimal mix of financing in a cost-effective manner. It also ensures that borrowing by Government businesses is carried out in a co-ordinated and transparent manner, and is able to be easily monitored by the Government (Treasury).

To improve the competitive neutrality of Government businesses and expose these businesses to the risk-related cost of debt they would have faced if they were required to borrow funds on their stand-alone (rather than the Government's) credit rating, NSW Treasury imposes a 'guarantee fee' on outstanding debt of Government businesses which: undertake commercial operations, have borrowings greater than \$1 million, have a credit rating lower than the State of NSW, and hold debt that is guaranteed by the NSW Government.

According to NSW Treasury, "Guarantee fees are based on the average amount of both short-term and long-term debt a business has outstanding in any one financial year and the interest differentials associated with its particular credit rating. These differentials are revised annually and reflect the current interest rates payable on bank loans.

"The fee for short-term debt is determined by multiplying the average short-term debt for the assessable period with the relevant interest differential. For long-term debt, a more sophisticated technology is applied with consideration of the average maturity profile of the debt."⁷⁰

As a first step in the financing process, we envisage that specific TIF development authorities would obtain preliminary approval from their respective state governments for TIF designation (as noted in the previous section).

They would then approach their respective state financing bodies (eg T Corp) with their financing needs. T Corp (or its interstate equivalent) would then work with the development authority to determine the most optimal financing arrangements. This could

⁶⁹ The *Treasury Corporation Act 1983* states that T-Corp's principal objective is "to provide financial services for, or for the benefit of, the Government, public authorities and other public bodies."

⁷⁰ NSW Treasury, 2004, *Commercial Policy Framework – Government Guarantee Fee Policy For Government Businesses*, Office of Financial Management, Policy and Guidelines Paper, p 1.

include, for example, generic State Government backed bonds. Alternatively, it could involve T Corp issuing 'TIF' or 'infrastructure' bonds for specific TIF districts and/or TIF infrastructure, with bond revenue tied to revenue of the actual TIF district or infrastructure project.

An advantage of obtaining financing through a centralised financing body, such as T Corp, rather than having individual TIF development authorities issue bonds, is that these bodies have established systems, experience, expertise and reputation in place. T Corp may charge Government businesses an administration margin, which varies depending on the complexity of the financing structure. Regardless, it would still deliver financing in a more cost effective manner than if a TIF development authority attempted to establish and operate this function.

An advantage of general obligation, government secured bonds, is that the market is likely to demand a lower risk premium (and hence cost of capital), as the bonds would be backed by the credit rating of the government – although, as noted in Box 6 above, NSW Treasury would charge the TIF development authority a guarantee fee reflecting its credit rating. A disadvantage, from the Government's perspective, is that the Government bears any risk associated with the TIF project. Furthermore, TIF infrastructure funded via a Government-backed bond would not be subject to the same level of 'market test' as a revenue bond.

A disadvantage of revenue backed bonds is that the market is likely to require a higher risk premium – meaning a higher cost of capital for the development authority. The exact risk premium may vary from TIF to TIF, with factors such as construction start date relative to bond issuance, the outlook for the real estate market, and the size and diversity of the TIF district property base (and hence revenue base) relative to the cost of infrastructure. Such risk premium may be unattractive to government, given that this would ultimately translate into more tax revenue being devoted to service debt.

However, 'TIF bonds' backed by the TIF project rather than the general assets of the government, would also mean that the government avoids any risk associated with funding the TIF infrastructure, and also reduces the amount of debt that it is ultimately liable for. This can be important, as lower levels of debt provide governments with greater flexibility. For instance, at current levels of debt, the NSW Government could increase debt in response to a severe economic downturn, without compromising its credit rating.

TIF revenue bonds would also ensure that capital markets impose strong discipline and rigour on infrastructure selection and delivery – which is a noted strength, and a key justification for, the TIF process.

In addition to the type of TIF bond or debt facility issued, it has also been noted that the timing of bond issuance can impact on the risk premium demanded by the market. For instance, revenue bonds issued several years prior to estimated completion of TIF

infrastructure are likely to carry a higher interest rate than those issued on or after construction completion (due to higher levels of uncertainty and lag between issuance and receipt of tax increment revenue). Because of the lag between costs and incremental revenue, bonds issued earlier are also likely to require a higher amount of capitalised interest. For these reasons, it has been noted that:

“Issuing bonds closer to project completion or stabilisation is advantageous, because it eliminates all or a substantial portion of capitalised interest, lessens many of the risks associated with earlier issuance and, therefore, most likely lowers the cost of borrowing, all of which mean more dollars are available to implement the TIF plan.”⁷¹

Against this, however, is the practical reality that significant upfront funds are often required to pay for significant infrastructure – although, there may be scope to stage financing arrangements.

In the US, some local governments re-finance and replace TIF revenue bonds with their general obligation bonds, once the TIF project is up and running and TIF revenue has stabilised. The coupon rate associated with the latter is lower, and at TIF ‘stabilisation’ some of these councils deem that the project risk level is sufficiently low to incorporate the TIF debt into their general obligation base.

However, an alternative, potentially attractive approach is to finance the early stages of the TIF, during construction and prior to receipt of significant TIF revenue, with general obligation bonds. These government backed bonds could then fade away and be replaced with TIF revenue bonds when certain milestones are met – for example, when annual incremental tax revenue is equal to some pre-determined coverage requirement above debt service. This would mean that once the TIF revenue bonds are issued, they would be subject to a higher credit rating and lower coupon rate.

We also note that in the US, additional rates or levies, which are charged to beneficiaries of the TIF development for a specified period, have been included in TIF schemes (eg see Case Study 4 at the end of Chapter 3). These can provide added security to TIF revenue and financing arrangements, and are discussed in the section below.

The US experience also shows that developer financing can be a feature of TIF arrangements. In Australia, there could be instances where the TIF development authority enters into a PPP arrangement with one or more private sector company. For example, the private sector may own and operate or build and operate the infrastructure, with the TIF development authority paying service fees to, or ultimately purchasing the infrastructure from, the private sector

⁷¹ Council of Development Finance Agencies and International Council of Shopping Centres, 2007, *Tax Increment Finance Best Practices Reference Guide*, p 34.

operator from the incremental tax revenues in the district. In these cases, it would be the private sector or a partnership between the private sector and the development authority which raises the initial capital – and hence the bond or debt facility would be issued through a private financial institution. In any case, we expect that the TIF development authority would still draw on the expertise and advice of a T Corp in determining these arrangements.

Depending on the nature of the infrastructure, we note that there may be scope to build some upside/downside sharing of risk into contractual arrangements with private sector infrastructure providers (eg as an incentive to ensure that the infrastructure is provided on time, and in a manner that maximises benefit – and hence property value – to the surrounding community). However, as with details of any TIF financing arrangement, this could only be assessed on a case-by-case basis, and would ultimately be a consideration for the TIF development authorities, in consultation with their State Treasuries, when deciding how to most efficiently deliver the required portfolio of infrastructure for a TIF district.

Finally, we note that if TIF development authorities did borrow through centralised finance organisations such as T-Corp, it begs the question:

To what extent is this different from Government (or its agencies) simply borrowing money to fund public infrastructure investment, as currently occurs in NSW through the likes of TIDC and Sydney Ports Corporation?

In response, we note that the TIF framework would provide an added ‘market test’ and commitment to infrastructure provision. The TIF development authority would be focused on investing in infrastructure that generates sufficient value uplift and tax revenue to service its debt. TIF arrangements also avoid the risk associated with infrastructure funding from general Government debt or revenue that infrastructure provision could stall or fail to reach its originally intended scale due short term distractions or competing interests. As the UDIA notes:

“Experience informs us that under these circumstances, infrastructure required as a consequence of long-term strategic planning may lose out to day-to-day immediacy of the political or bureaucratic demand. The infrastructure intended to support urban growth in either a timely or integrated manner is ‘lost to the system.’”⁷²

Market appetite for TIF bonds

As reported by the Reserve Bank of Australia, the Australian bond market can be divided into five categories:

⁷²UDIA, 2007, “A Better Way – Financing Urban Infrastructure”, Discussion Paper, pp3-4.

- Bonds issued by the Australian Government (CGS) and state borrowing authorities (semis);
- Bonds issued by Australian financial institutions;
- Bonds issued by Australian corporates;
- Asset backed bonds issued by Australian domiciled vehicles; and
- Australia dollar bonds issued in Australia by non-residents – Kangaroo bonds.⁷³

Table 2 shows that, while the stock of public debt has been reasonably static, the market share of government bonds has declined significantly over the last 10 years.

Table 2: Domestic bonds outstanding⁷⁴

Bond type	Outstanding \$ (billion)		Share (%)		Av. annual growth
	1998	2008	1998	2008	1998-2008
CGS	86.6	54.3	52.6	11.3	-4.6
Semi-govt	44.9	66.0	27.2	13.8	3.9
Financials	7.2	89.3	4.4	18.6	28.7
Corporate	7.2	44.8	4.4	9.3	20.0
ABS	16.2	116.0	9.9	24.2	21.7
Kangaroos	2.6	108.7	1.6	22.7	45.3
Total	164.7	479.2	100.0	100.0	11.3

Relative to supply, the demand for infrastructure and government issued bonds in Australia is generally high. While funds available for investment in Australia have increased over time (driven by the growth in superannuation funds), the perceived lack of expenditure on public infrastructure investment has limited opportunities for potential investors. In recent years, this has led at least one commentator to note that:

*“...even though there is a deficiency of infrastructure in Australia, the demand for infrastructure investments has exceeded its supply, resulting in un-drawn commitments to place funds (mainly from superannuation funds) and lags in infrastructure fund managers getting suitable exposure. In some cases, this is forcing available funds offshore.”*⁷⁵

⁷³ Debelle, G, Assistant Governor (Financial Markets), Reserve Bank of Australia, 2008, “Recent Developments in the Australian Bond Market”, Address to the Westpac/KangaNews Speed-meeting Summit: Kangaroo and Kauris, 5 March 2008.

⁷⁴ Ibid.

⁷⁵ AMP Capital Investors, 2005, “Infrastructure for investors”, *Oliver’s insights*, 4 October 2005.

In particular, the demand from institutional investors for inflation-indexed bonds has grown, with the primary source of these CPI-indexed bonds being infrastructure vehicles supported by revenues linked to CPI. The principal and interest of inflation-indexed bonds are adjusted with CPI. Their popularity with institutional investors, such as superannuation funds, stems from the fact that they can hedge CPI-linked annuity payments made to their policy holders.

If revenue of the borrower moves with CPI, inflation-linked bonds can be a viable funding option. This should generally be the case with TIF revenue, as it will be tied to development activity and property values. CPI linked bonds have been popular in Australia for infrastructure projects with values between \$100 million to \$300 million. However, we note that the optimal financing arrangement for TIF should be assessed on a case-by-case basis.

As with any investment, the market appetite for TIF bonds will depend on the risk/return trade-off, which will depend on the characteristics of each TIF scheme and the particular nature of each bond. In turn, this is likely to depend on factors such as the size and type of development or infrastructure, the existing tax base and its composition, and scope for future development within the TIF district. Nevertheless, indications are that, beyond any short-term market volatility, a potential market exists in Australia for TIF bonds.

Tax incentives for investment in TIF

At various times, governments in Australia have encouraged investment in infrastructure through tax incentives. And, as noted in Chapter 3, this is a feature of TIF in the US.

These incentives recognise the significant social benefit that infrastructure provision can deliver, as well as the fact that, due to the large, upfront costs of infrastructure, revenues can often lag costs for some years.

For example, in 1992 the Federal Government introduced the Infrastructure Borrowing Scheme (IBS). Under this legislation, interest paid on infrastructure bonds was tax exempt in the hand of the lender and not tax deductible in the hands of the borrower. The intention of the scheme was for lenders to pass back the benefit of tax exempt interest in the form of lower lending rates.

However, the Federal Government soon became concerned that:

- schemes being proposed were “*exploiting the concession for tax minimisation schemes*”; and
- these additional taxation benefits were “*principally being accessed by financial packagers and high marginal tax investors.*”

It found that “*The transfer of tax benefits as originally intended under legislation is not working. Most of the benefits are being captured by financiers and tax planners.*”⁷⁶

Consequently, in 1997 this scheme was replaced by the Infrastructure Borrowings Tax Offset Scheme (IBTOS). Like the IBS, the purpose of IBTOS is to encourage private sector investment in the provision of infrastructure by reducing finance costs. It allows infrastructure financiers to apply for a tax rebate on interest received from infrastructure providers, in return for the infrastructure providers foregoing a tax deduction on that interest.

However, unlike the IBS, which could be used to finance construction of a wide range of infrastructure facilities, IBTOS is limited to approved road and rail projects (although non-land projects that applied under the previous scheme are eligible to apply for a tax rebate). There is also a cap on overall cost to the scheme of \$75 million per annum.

IBTOS is a selection (rather than entitlement) scheme, based on eligibility requirements and the merits of each project. In 2003, it was reported that only a small number of proponents had availed themselves of the IBTOS rebate. This was believed to be because commercial decisions were made not to proceed with the project or the tax regime of the applicant was such that greater or commensurate benefits to the IBTOS rebate could be obtained elsewhere.⁷⁷

In the 2004 Federal Budget, the Treasurer announced that the IBTOS is being phased out and that no further applications will be called for.⁷⁸ This is mainly because of concern that such tax benefits are still being primarily accessed by financial packagers and high marginal tax rate investors.

However, given the strong governance and eligibility requirements that would be imposed on TIF infrastructure and Australia's need for investment in such infrastructure, there may be merit in considering tax incentives for investors (e.g. TIF bond purchasers) to support TIF programs. In developing these tax arrangements, State and Federal Government cooperation would be required. Governments could also draw on the experience (and any perceived weaknesses or flaws) of previous infrastructure incentive schemes, as well as arrangements in the US.

⁷⁶ Australian Government, The Treasury, *Press Release Number 3*, 1997, “Infrastructure Borrowings Taxation Concession”, <http://www.treasury.gov.au/contentitem.asp?NavId=022&ContentID=144>.

⁷⁷ The Allen Consulting Group, 2003, *Funding Urban Public Infrastructure*, Report Prepared for the Property Council of Australia, p 44.

⁷⁸ The Australian Taxation Office, *The Commissioner of Taxation Annual Report 2003-04*, <http://ato.gov.au/individuals/content.asp?doc=/content/50383.htm&page=140&H140>.

Measurement and collection of incremental tax revenue

We envisage that NSW Treasury would identify and collect the tax revenue increment, and then re-distribute this to the TIF development authorities to enable them to service their debt.

Key items for consideration are the definitions of the tax 'base' and the tax 'increment'. Apart from 'freezing' the tax base at pre-TIF nominal levels, as occurs in some states in the US, options include indexing the tax base by the rate of inflation (to ensure that it is maintained in real terms) or indexing it by a forecast 'business as usual' growth factor. The latter approach may generate less incremental tax revenue, and hence may require some additional 'top-up' funding from Government or other sources. However, it would ensure that TIF incremental tax revenue is additional tax revenue that is genuinely generated from the provision of the TIF infrastructure.

A rate to supplement TIF?

Closely related to TIF is the concept of Special Assessment Districts (SAD). In the US, state enabling legislation allows a public agency to construct and maintain public infrastructure improvements, and to levy a charge against parcels of property in a defined area that have benefited from this infrastructure. The Special Assessment Levy can only be levied against parcels of real estate that have been identified as obtaining a direct and unique benefit from the public infrastructure project.

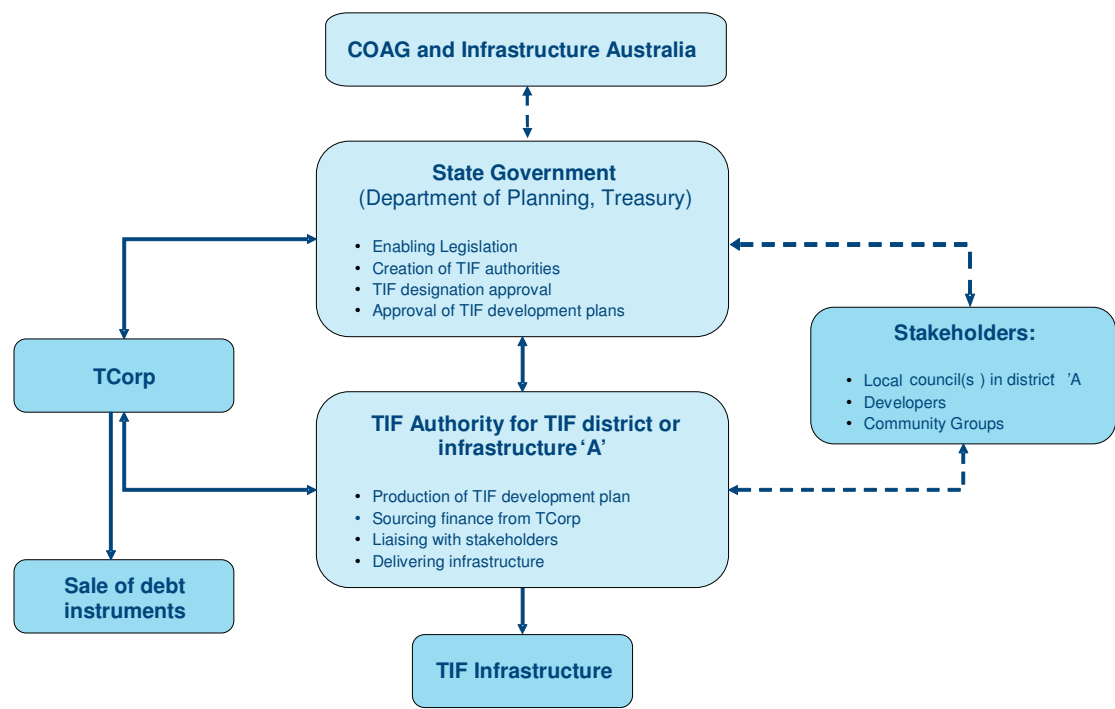
These levies are based on the principle of beneficiary pays. Drawing on this principle, and to assist funding TIF infrastructure for a limited period of time, consideration could also be given to levying a supplementary charge or levy on property owners within the TIF district.

The merits and necessity of this could be assessed on a case-by-case basis, depending on factors such as the nature of the TIF infrastructure, forecasts costs relative to revenue and the timing of these, and the socio-economic characteristics of the TIF district. It may be that it is not warranted, or is even an unwanted distraction from the core TIF arrangement. Alternatively, it may prove a valuable supplement to TIF incremental tax revenue – particularly in the first few years of a TIF development term, before the tax revenue 'increment' has had a chance to gain momentum and take full effect.

Where this rate is applied, it must be set at an appropriate/reasonable level, and for a specified period of time. There should also be a direct and obvious link between the charge and the benefits to the levied property (in the form of property/asset value appreciation). We foresee that it could be levied annually on households and non-residential properties on a dollar per dwelling type or dollar per m² basis, for example. And that it could be collected by Local Councils (to be redistributed to the TIF development authority) via its rates collection system (ie it would be a clearly identified separate charge on each property's rates bill).

For our indicative modelling of the two TIF scenarios in the next section of this chapter, we added provision for such supplementary rates to be levied on households and non-residential lots. However, given the significant cost of the infrastructure, the impact of these rates on the rate at which debt was repaid was minimal. Table B.1 in Appendix B presents various levels of these rates, and the impact they have on paying off the initial TIF debt.

Figure 4: Potential TIF Governance arrangements in Australia



5.3 Indicative TIF modelling

To demonstrate how TIF could work to fund infrastructure in Australia, and to obtain an indication of the likely magnitude of state infrastructure costs relative to TIF revenues, we have conducted indicative modelling of potential TIF arrangements in two areas in NSW:

- an established infill area – Gladesville
- a greenfield area – the South West Growth Centre.

This modelling is not aiming to provide an exact forecast of TIF revenue and cost streams. Rather, it is intended to demonstrate the potential workings of TIF, and to provide an indication of the potential type and scale of infrastructure to which it could be applied. Where possible, we believe we have erred on the side of conservatism in our estimates.

We also note that in addition to the infrastructure featured in these case-studies, other potential TIF districts/projects that readily spring to mind in NSW include the Redfern Waterloo precinct upgrade, the North Sydney Station upgrade (and others like it), and infrastructure associated with the Barangaroo development.

An indicative TIF scenario in an infill area – Gladesville

The NSW Government has recently announced that it will construct a North West Metro line, with high frequency trains from the city to Rouse Hill, via a number of metro stations, including Rozelle, Drummoyne, Gladesville and Ryde.

To provide an example of how TIF could be applied to deliver infrastructure in NSW, we have modelled an indicative scenario as follows:

- the TIF district is defined as the suburb of Gladesville (3.6 km²)
- the TIF is established to deliver:
 - a metro station, as part of the North West Metro line (\$75 million)
 - an adjacent car park (\$20 million)
 - a public plaza (5000m², \$20 million)
 - streetscaping and a public park (5,000m², \$10 million)
- the taxes subject to the TIF are state land tax and transfer duty (stamp duty) on residential and non-residential property.

Gladesville is a relatively well positioned suburb, being less than 10 kilometres from the CBD and adjacent to the Parramatta River. However, the amenity of the area can suffer as a result of heavy traffic congestion along Parramatta Road – which would only be expected to worsen over time in the absence of significant additional transport infrastructure. Furthermore, with the introduction of a draft

plan to 'revitalise Gladesville Town Centre and Victoria Road'; the local council itself has recently recognised that the local town centre and retail district is ailing and in need of revitalisation.⁷⁹

Reports have previously suggested that a metro line would cut travel times to the city by a third,⁸⁰ and that a station at Gladesville would be a "massive boost" to property value in the area.⁸¹

Given these factors, we envisage significant benefit and uplift in property value from the provision of the above-mentioned infrastructure in Gladesville. While the relationship between infrastructure provision and property values is generally location specific, results of other studies show that it can be significantly positive. Studies in the US, for example, looking at the effect of new rail transit provision on house prices have generally found positive effects, showing significant statistical evidence of residential property price increases of up to 25%.⁸² In Japan, the value of commercial parcels of land within 50 metres of stations increased by 57%.⁸³ The ACT Planning & Land Authority reports that property values near Brisbane's South East Busway grew 20%, largely due to the transitway construction.⁸⁴ It also notes the relationship between the provision of infrastructure such as public transport facilities with increased construction and commercial and residential development within an area. Notably, studies in the US indicate that properties within TIF districts exhibit higher rates of appreciation than those outside TIF districts or prior to TIF designation.⁸⁵ Appendix C lists the results of a number of other overseas studies looking at the relationship between transport infrastructure and property values.

For indicative modelling purposes, we have assumed that:

- inflation is 3% per annum (with both tax base and tax increment indexed to inflation), the interest rate for debt is 8% and the interest rate for income (when the TIF has a positive cash balance) is 6%
- real property values increase by an average of 2.5% per annum for the first 4 years of the TIF (during construction), and then by an average of 5% per annum for the subsequent three years (ie, a 25% increase over 7 years)

⁷⁹ See City of Ryde's *Draft Gladesville Town Centre and Victoria Road Masterplan*, 2005, available at: http://www.ryde.nsw.gov.au/development/planning_controls/gladesville.htm.

⁸⁰ *Sydney Morning Herald*, "New east-west line may cut congestion", 14 September, 2007.

⁸¹ Gough J, 2008, "Sydney's Growing Pains", *Australian Property Investor*, January 2008.

⁸² Du & Mulley, 2007, p 24.

⁸³ *Ibid.*

⁸⁴ ACT Planning & Land Authority, "Economic Benefits of Transitways", Belconnen – City Transitway Facts.

⁸⁵ For example, see Smith B., 2006, "The impact of tax increment finance districts on localized real estate: Evidence from Chicago's multifamily markets", *Journal of Housing Economics*, 15, 21-37.

- additions to the property stock in the form of more apartments, town houses and non-residential lots occur at an average rate of 2.5% per annum for the first 8 years of the TIF (however, the stock of detached houses is assumed to remain constant).

We have assumed that the TIF only has to fund 75% of the infrastructure costs, with the State Government directly funding the remaining 25%. In practice, these proportions could vary depending on the nature, scale and significance of the infrastructure project. The Commonwealth Government could also fund a proportion of some TIF infrastructure projects. Other assumptions and sources of information are outlined in Appendix A.

Table 3 below lists the results of our modelling. This shows that, while TIF tax increment revenue is less than debt service cost for the first 4 years of the TIF, revenue would fully repay the cost of this infrastructure by year 14 of the scheme. Therefore, while these results can only be considered *indicative* – due to less than perfect information and the need for us to make a number of assumptions – they do show that applying state property taxes to TIF could fund significant public infrastructure in an infill area.

Figures 5 and 6 below present TIF tax revenue relative to the tax base. Figure 5 assumes that the tax base is indexed to inflation, while Figure 6 keeps the tax base ‘frozen’ at pre-TIF levels.

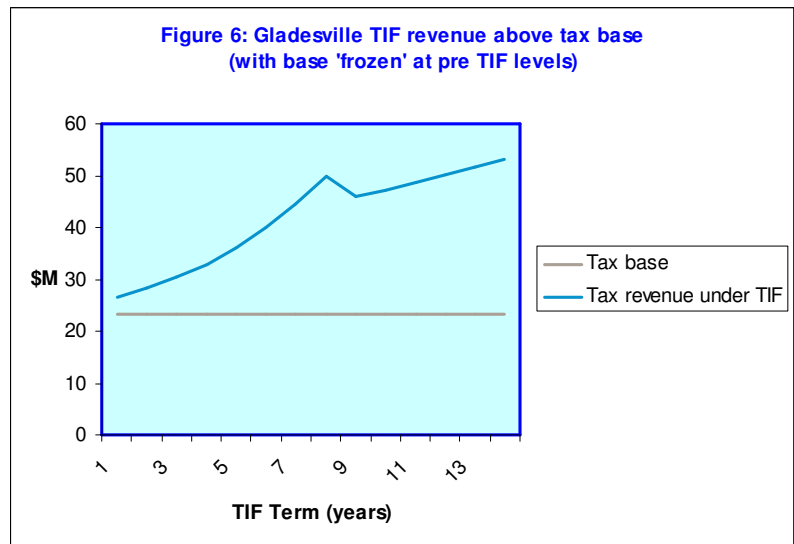
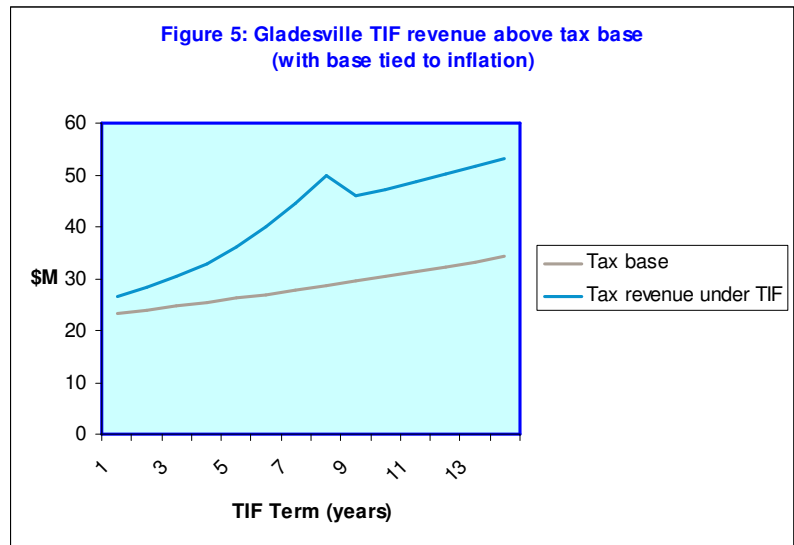


Table 3: Results of indicative modelling of TIF scenario: Metro station and associated public infrastructure at Gladesville

TIF cash flows \$'Million														
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CAPEX for Stage 1	\$93.75m													
Level of debt	100% (at 8%)													
Tax base	23	24	25	25	26	27	28	29	29	30	31	32	33	34
TIF revenue	27	29	31	33	36	40	44	50	46	47	49	50	52	53
TIF Tax increment	3	5	6	7	10	13	17	21	16	17	17	18	18	19
TIF debt cost (interest only)	8	8	8	8	8	8	8	8	8	8	8	8	8	8
TIF net revenue	-4	-3	-2	0	3	6	9	14	9	9	10	10	11	11
TIF cash balance (debt at 8%, income at 6%)	-5	-8	-11	-12	-10	-4	5	20	30	42	55	69	85	102
Principal repaid														✓



An indicative TIF scenario in a new release area – South West Growth Centre

The NSW Government has identified the South West and North West Growth Centres (SWGC and NWGC) as the main locations for new residential development in Sydney over coming years.

The SWGC is approximately 17,000 hectares in area, and is currently within the boundaries of Liverpool, Camden and Campbelltown local councils. It is expected to accommodate approximately 115,000 new homes over the next 25 years, with development scheduled to occur steadily over this period.

To provide an example of how TIF could be applied to deliver infrastructure to a new release area in NSW, we have modelled an indicative scenario as follows:

- the TIF district is defined as the SWGC
- the TIF is established to deliver approximately \$2.6 billion in state infrastructure (\$2007/08), as identified in the Growth Centres Commission's 2006 Special Infrastructure Contribution Practice Note (we assume that the TIF funds 75% of this cost – which is that proportion of costs currently covered by state development charges)
- the taxes subject to the TIF are transfer duty (stamp duty) on property
- inflation is 3% per annum (with both tax base and tax increment indexed to inflation), the interest rate for debt is 8% and the interest rate for income (when the TIF has a positive cash balance) is 6%.

In practice, we envisage that land tax would also be included in the TIF. However, for modelling purposes we have just focused on revenue from transfer (stamp) duty. This is primarily due to an absence, at this stage, of information on the likely patterns and mix of non-residential development in the SWGC.

Under this scenario, the TIF funded infrastructure facilitates a shift from the current sparsely populated, semi-rural land use mix, to urban residential and non-residential development, comprising a significant number of apartments, town houses, detached homes and commercial and industrial lots.

We assume that our starting residential and non-residential property values (which are based on current market prices in surrounding urban areas) will increase by a real rate of 1.5% per annum for the first 10 years of the TIF (after which they remain constant in real terms). While it is difficult to forecast property values for a new release area, our assumptions are based on the view that provision of timely, upfront infrastructure will lead to uplift in real property values.

Our modelling is conservative in the sense that:

- as mentioned above, we have excluded land tax revenue
- we assume that development (and hence revenue) will be slower at first, picking up after the 'initial' phase, and then slowing again in the final years of the development term (we assume that for the first 5 years 10% of properties are developed; for the next 10 years, 60% of properties are developed; and for the final 10 years, 30% of dwellings are developed)
- we assume that infrastructure costs will be higher at first – with 50% incurred over the first 10 years of development, and the remaining 50% being incurred over the last 15 years of development.

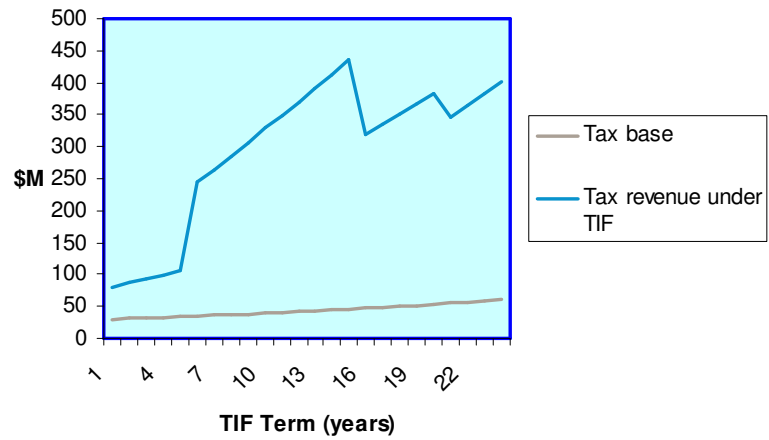
For the purposes of financing such a significant amount of infrastructure, debt would likely be split into several stages (e.g. this could be in parcels of \$100 million to \$300 million). For illustrative purposes, Table 4 presents, first, the estimated cash flows associated with debt to finance half of the total costs of infrastructure development to be funded by the TIF (\$1.3 billion). The second stage of debt (\$1.7 billion) then commences in year 11 (the point at which the second half of infrastructure is assumed to start to be required – per the dot point above). Table 4 shows that:

- The TIF tax increment is less than debt service cost for the first 5 years of the TIF. This interest cost therefore has to be capitalised. (In the US, it has been noted that most start-up TIF bond financings will include capitalised interest for the first few years, before development reaches stabilisation and incremental tax revenue is sufficient to support debt service on the bonds.)⁸⁶
- However, once development gains momentum, TIF revenue increases to such an extent that TIF tax increment is able to cover the interest cost of both Stage 1 and 2 debt for several years (once the latter comes into effect in year 11).
- Stage 1 debt is repaid in full in year 16. This would be several years earlier if Stage 2 debt was not also being serviced from year 11 onwards. Stage 2 debt is repaid in full in year 24.

Figures 7 and 8 below present TIF tax revenue relative to the tax base. Figure 7 assumes that the tax base is indexed to inflation, while Figure 8 keeps the tax base 'frozen' at pre-TIF levels.

⁸⁶ Council of Development Finance Agencies and International Council of Shopping Centers, 2007, *Tax Increment Finance Best Practices References Guide*, p 28.

**Figure 7: SWGC TIF revenue above tax base
(base indexed to inflation)**



**Figure 8: SWGC TIF revenue above tax base (base
'frozen' at pre-TIF levels)**

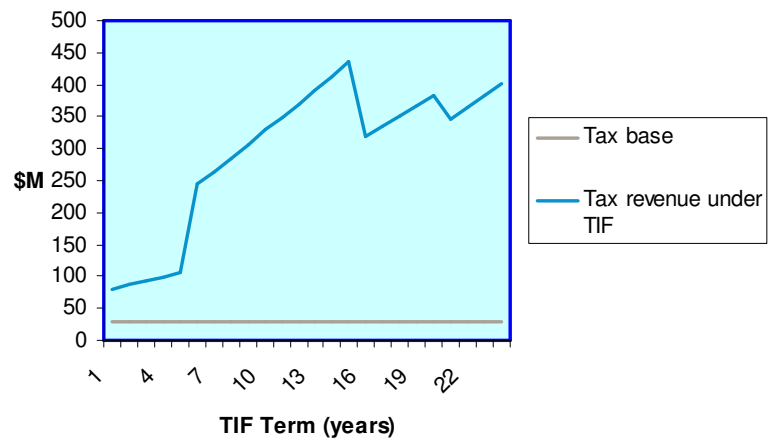


Table 4: Results of indicative modelling of TIF scenario: State infrastructure to SWGC

TIF cash flows \$'Million																								
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
CAPEX for Stage 1	\$1.3b																							
CAPEX for Stage 2											\$1.7b													
Level of debt	100% at 8%										100% at 8%													
Tax base	30	31	32	33	34	35	36	37	38	40	41	42	43	45	46	47	49	50	52	53	55	56	58	60
Tax revenue	80	87	93	100	106	244	263	284	306	330	349	369	391	413	436	319	334	350	367	384	347	364	382	400
TIF Tax increment	50	56	61	66	72	209	227	247	268	290	308	327	348	368	390	272	285	300	315	331	292	308	324	341
TIF debt cost Stage 1 (interest only)	-104	-104	-104	-104	-104	-104	-104	-104	-104	-104	-104	-104	-104	-104	-104	-104	0	0	0	0	0	0	0	0
TIF debt cost Stage 2 (interest only)	0	0	0	0	0	0	0	0	0	0	-139	-139	-139	-139	-139	-139	-139	-139	-139	-139	-139	-139	-139	-139
TIF net revenue	-54	-48	-43	-37	-32	105	124	143	164	186	65	84	104	125	147	28	146	160	176	191	153	168	184	201
TIF cash balance (debt at 8%, income at 6%)	-58	-114	-169	-223	-275	-183	-65	83	262	475	573	697	849	1,033	1,251	1,357	219	402	612	852	1,065	1,307	1,581	1,889
Principal repaid (Stages 1 and 2)																								



6 Risks Vs advantages of TIF

Any evaluation of a potential new policy instrument requires a consideration of potential risks associated with its implementation. This chapter outlines our views on these risks and also summarises the advantages of applying TIF in Australia to fund much needed public infrastructure.

In general, we believe that there are no insurmountable risks or impediments to the implementation of TIF in Australia. Furthermore, our review of the TIF process suggests that it has the potential to deliver significant gains to the community, through the timely and effective provision of public infrastructure.

6.1 Risks/potential barriers to TIF?

Uncertainty and a risk premium

Depending on the nature of the TIF district and infrastructure in question, there may be uncertainty about, or volatility around, the level and timing of incremental tax revenue (eg greenfield Vs infill areas, large upfront infrastructure Vs staged, smaller scale infrastructure provision, etc). The implications of this, and the distribution of risk, will depend on the guarantees provided to the lender or bond purchaser.

For instance, where bonds are ultimately backed by the government, the government bears the risk. Where this occurs, and the TIF development authority is issuing the bond, the government is likely charge a risk premium to the authority. If revenues are less than expected, and TIF debt cannot be repaid, a potential issue of concern is impact on the government's balance sheet and its debt position. In turn, this would depend on the size of the TIF scheme and the government's budget position at the time.

Where bonds are backed only by the revenue and assets of the TIF scheme, investors would require a premium on the bond, reflecting their view of the risks associated with a particular TIF. All other things being equal, this would likely be significantly higher in the early days of TIF (ie, before the concept is tried and tested in Australia) – although the extent of this premium would depend on the specific characteristics of each TIF scheme.

However, in regards to any risk premium imposed on TIF borrowing, we note that this market responsiveness or market 'test' is in fact one of the key benefits of TIF arrangements. A TIF scheme is designed to ensure that the value derived from infrastructure selection and investment can fund its cost (including any risk premium attached to financing arrangements). In this way, TIF helps to promote allocative efficiency.

As discussed in section 5.2, TIF authorities in the US have been known to re-finance and switch between GO and revenue bonds (or vice-versa), once a TIF project is up and running and TIF revenue

has stabilised, to optimise the trade-off between risk and cost of capital to the TIF authority/government. Such an option could be considered in Australia, where state governments could initially provide debt service coverage for the first few years of the TIF scheme until TIF revenues are stabilised and able to adequately service debt. The TIF authority could then use TIF revenues to refund the government any cost incurred and also service the newly issued TIF revenue bond. In consultation with government financing entities (e.g. T Corp), such options could be considered on a case by case basis.

Government's reluctance to hypothecate tax revenue

Government has traditionally been reluctant to hypothecate tax revenue. A state Treasury official may argue, for example, that by 'capturing' a future stream of tax revenue, TIF is limiting the government's flexibility in how future revenue is spent.

Depending on the infrastructure and TIF arrangement in question, however, there may be an argument that this incremental revenue is generated by the TIF funded infrastructure itself and hence government is not actually forgoing these funds.

Furthermore, it is the upfront and long-term commitment of future funds to a specified list of public infrastructure that has been identified as a key advantage or strength of TIF.

Changes to Government policy

Another potential consideration is the propensity for governments to change taxes over time (as has happened before with property related taxes in NSW, for example). This could be viewed as a concern if it places uncertainty over TIF revenue or if TIF is viewed as limiting government's ability to make such changes to its tax policy.

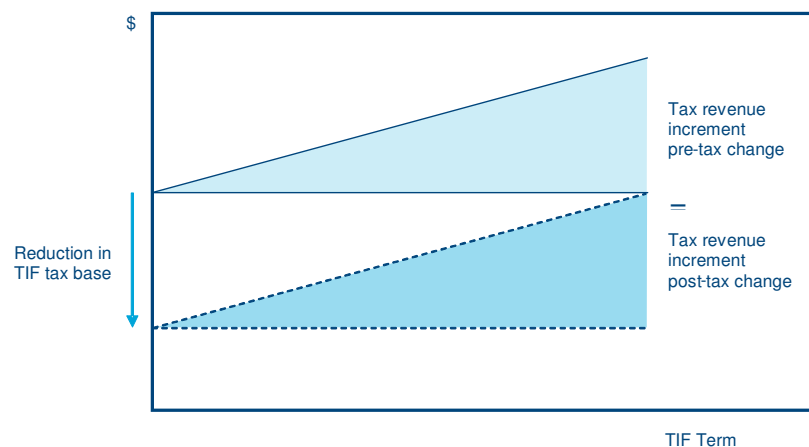
However, TIF legislation and agreements could account for this possibility by referring to contingency arrangements (eg replacement of previous tax with amended or new taxes, while ensuring that 'like' is replaced with 'like') and/or amendment/review procedures (ie a trigger to review TIF arrangements if taxes are changed substantially). If changes to taxes occur once a TIF is operational, one option would be to adjust the tax base down so that the tax increment (and hence TIF revenue level) is maintained. This is shown in Figure 9 below.

In conducting its ratings assessment of TIF bonds and evaluating risks associated with changes to tax policy in the US, Fitch Ratings reviews the valuation and taxing practices of the overlapping taxing entities in a TIF district. Fitch evaluates the entities' history of tax rate reductions, their magnitude and likelihood of reductions in the future. Where tax reduction risk does exist, Fitch models a stress

scenario that includes such action and at a magnitude greater than has occurred in the past.⁸⁷

We note that, if overseen at a State Government level, TIF arrangements in Australia would not have the risks and complications of overlapping taxing jurisdictions, which face TIF authorities in the US. Fitch points out that risk is reduced in the US *“if the dominant overlapping taxing entities and the TIF development agency have overlapping governance membership and strong cooperation that enables the agency’s debt repayment needs to be considered when setting tax rates.”*⁸⁸

Figure 9: Potential adjustment to the TIF tax base if rates/policy changes



A staged approach to TIF implementation?

We have not identified any insurmountable risks or barriers to the implementation of TIF in Australia, provided it is supported by appropriate governance arrangements. In any case, we note that to assure key stakeholders about the viability of TIF, it could initially be implemented in a staged or piloted manner. In NSW, this could involve, for example, applying it to one of the early release precincts of the SWGC; and to one of the infill areas scheduled for renewal and upgrade, as identified in the NSW Metropolitan Plan. These could then work as demonstration projects.

⁸⁷ Fitch Ratings, 2007, “Tax Increment Finance/Tax Allocation Bond Rating Guidelines”, Public Finance, Tax Supported Criteria Report, www.fitchratings.com.

⁸⁸ Ibid.

6.2 What are the advantages of TIF in Australia?

Government policy makers may pose the question: what are the advantages of TIF relative to the current system of infrastructure funding, or merely funding infrastructure from general government borrowing or revenue?

Our analysis suggests that TIF has several key advantages, including:

- it avoids or overcomes cited deficiencies of the current development charges approach to infrastructure funding, including slowing development and adversely impacting on housing affordability
- it provides a market test and added rigour around infrastructure selection (ie TIF administrators have a strong incentive and accountability to invest in infrastructure that generates 'value' to the community)
- it provides an upfront and sustained commitment to specified infrastructure provision – that is, it ensures that long-term funding and planning, which is necessary for the effective provision of public infrastructure, is not eroded by competing priorities or short term distractions (in the US, it has been noted that one of the drivers behind the widespread use of TIFs is not just the reduction in federal economic development money, but also the fact that “*what little funding is available is usually offered on a short-term annual basis, which makes it too unreliable to support multi-year revitalization and development programs*”⁸⁹)
- it ensures that provision of infrastructure is appropriately timed – as infrastructure provision (or at least its effects) is tied to revenue, there is an incentive to ensure that delivery is not delayed
- it provides a transparent approach to infrastructure selection and provision
- it provides a transparent and equitable approach to the distribution/sharing of infrastructure cost

This suggests that TIF arrangements, drawing from the experience in the US and tailored to suit the tax and governance structures of Australia, should be subject to serious consideration by Australian governments.

⁸⁹ Healy L and McCormick J, 1999, “Urban Revitalization and Tax Increment Financing in Chicago”, *Government Finance Review*, pp 27-30.

6.3 Recommendations

TIF is a proven financing model for urban infrastructure, being employed in 49 US States. Indications are that its targeted application in Australia could be an effective means of delivering much needed infrastructure, while also assisting in improving housing affordability. TIF should not be viewed as the only infrastructure funding mechanism, nor may it be suitable in all circumstances. Rather, it should be considered as a potentially valuable component of a suite of infrastructure funding options.

Given the need for infrastructure investment and the potential benefits of TIF, we recommend:

- that Infrastructure Australia and COAG investigate the suitability of TIF in Australia, as part of their ongoing work on infrastructure;
- that State Governments, drawing on relevant work of Infrastructure Australia and COAG, establish TIF Working Groups to determine how the TIF model could be structured to meet Australian infrastructure funding needs; and
- that these Working Groups:
 - develop TIF pilot programs as a priority, as a means of evaluating the potential broader use of TIF and confirming the details of TIF implementation and administration arrangements;
 - be comprised of representatives from key State Government agencies (including Planning and Treasury) as well as local councils, but that responsibility and accountability for TIF pilot implementation be assigned to one central government agency
 - engage key non-government stakeholders, including community groups, the property industry and the investment community, in developing the TIF pilots and reporting on their progress.

We also recommend that consideration be given as to whether favourable tax treatment (e.g. in the form of tax incentives for purchasers of TIF bonds) could advance the use of TIFs.

Appendix A Assumptions for TIF modelling

Tables A.1 and A.2 below present the key assumptions used in carrying out indicative modelling of TIF scenarios in Gladesville and the South West Growth Centre (as discussed in Chapter 4).

Table A.1: Indicative modelling of TIF in Gladesville – key assumptions

Variable	Assumptions
Infrastructure, its cost and timeframe for construction	<p>Total infrastructure package estimated to cost \$125 million. This is comprised of:</p> <ul style="list-style-type: none"> • Metro station - \$75 million • Car park - \$20 million • Public plaza (approximately 5,000m²) - \$20 million • Streetscaping and public park (approximately 5,000m²) - \$10 million <p>We have assumed that the TIF scheme is only liable for 75% of total infrastructure costs.</p>
Financing	<ul style="list-style-type: none"> • \$93.75 million is borrowed upfront. • Interest rate for debt is 8%. • Interest rate for income (positive cash balance) is 6%.
Inflation	3% per annum
State property tax base	<p>Pre-TIF (current) estimated tax base maintained at real levels throughout the TIF period.</p> <p>As discussed below, assumed increases in property value due to TIF infrastructure were assumed to be in addition to a 'business as usual' scenario.</p>
Tax 'increment'	<p>Property values (residential and non-residential) increase by an average of 2.5% per annum for the first 4 years of the TIF (during construction), and then by an average of 5% per annum for the next 3 years after that.</p> <p>Additions to the property stock (in the form of more apartments, town houses and non-residential lots) occur at an average rate of 2.5% per annum for the first 8 years of the TIF. It is assumed that the number of detached houses does not grow.</p> <p>This increment in tax revenue is assumed to be above and beyond 'business as usual' growth.</p>
Residential property numbers and composition	<p>Obtained from 2006 ABS Census data – 'Community Profile' for Gladesville.</p> <p>This provides total housing stock, and breakdown of this stock by dwelling type (detached house, unit, etc). It also provides % of residents that are owner-occupiers and those that are renters (which we used to assess % of residential properties potentially subject to land tax).</p>
Residential property –	Median prices for Gladesville (2008), sourced from

Variable	Assumptions
current market value	www.propertyvalue.com.au.
Residential property sales per annum	Based on sales data in Gladesville over a 12 month period (2006/07), as sourced from www.propertyvalue.com.au.
Commercial/industrial property sales per annum	Based on commercial and industrial property sales in Gladesville over the last four years, as sourced from www.commercialpriceguide.com.au.
Properties subject to land tax	<p>Residential: non-owner occupied dwellings (obtained from 2006 ABS Census data – ‘Community Profile’ for Gladesville), above the land tax threshold.</p> <p>Non-residential: all properties. To estimate total stock of non-residential properties, it is assumed that sales per annum over the last four constitute 5% of the total stock. Over the last 4 years, an average of 17 commercial and industrial properties per year have been sold in Gladesville, we therefore assumed that there are a total of 370 commercial and industrial properties in the area and that all of these are subject to land tax.</p>

Table A.2: Indicative modelling of TIF in SWGC – key assumptions

Variable	Assumptions
Infrastructure, its cost and timeframe for construction	<p>Infrastructure and its costs are as listed in the Growth Centres Commission’s “Special Infrastructure Contribution Practice Note – Section One”, December 2006.</p> <p>We assume that:</p> <ul style="list-style-type: none"> the TIF is responsible for 75% of these costs (ie the proportion currently covered via development charges), which equates to about \$2.6 billion infrastructure costs will be higher at first – with 50% incurred over the first 10 years of development, and the remaining 50% being incurred over the last 15 years of development.
Inflation	3% per annum
Financing	<ul style="list-style-type: none"> 50% of total infrastructure cost is borrowed upfront (\$1.3 billion). Remaining 50% of infrastructure cost is then borrowed in year 11 (= \$1.3 billion x inflation = \$1.7b). Interest rate for debt is 8%. Interest rate for income (when TIF cash balance is positive) is 6%.
State property tax base	Stamp duty on residential and non-residential property transfers. (Land tax is excluded for modelling purposes, due to the absence of data).
Tax ‘increment’	<p>We assume several stages of property transfer:</p> <ul style="list-style-type: none"> Sales of lands to developers post TIF designation (we assume that this happens at a rate of 5% per annum)

Variable	Assumptions
	<ul style="list-style-type: none"> Sales of residential and non-residential properties from developers to initial purchasers (we assume that: for the first 5 years 10% of properties are developed; for the next 10 years 60% of properties are developed; and for the final 10 years 30% of dwellings are developed) Sales of residential and non-residential properties from initial purchasers to subsequent purchasers. For this, we assume the following rates of sales/transfers per annum (net of additions to new housing stock: <ul style="list-style-type: none"> Apartments – 10% Townhouse - 7.5% Semi detached – 5% Detached medium – 4% Detached large – 2.5% Detached 1000m²-2000m² – 2.5% Non-residential – 2.5%
Residential property numbers and composition	Numbers and composition from the Growth Centres Commission (for example, see the Planning Report for the South West Growth Centre, 2005).
Residential property – current market value	Starting values based on median house prices in the Camden area for the last 12 months, as sourced from www.propertyvalue.com . We then assume these values increase by a real rate of 1.5% per annum for the first 10 years of the TIF (after which they remain constant in real terms).
Commercial/industrial property numbers/composition	<p>The Planning Report for the South West Growth Centre (2005, Section 4, p 15) lists a range for total retail space. We have used the midpoint of this figure (226,500m²). This document also lists a range for expected numbers of supermarkets and department stores. We have used the midpoint of this figure (23) for the assumed number of retail properties (providing an average retail property size of 9,848m²).</p> <p>In terms of industrial property, the Precinct Plan for Oran Park indicates that this precinct will have 15ha of industrial or employment land. Oran Park comprises 17,000 of the total 98,500 dwellings for the SWGC. We have scaled up the Oran Park figure to derive an estimate of total industrial land for the SWGC (ie 15ha is scale up by a factor of 1/(17000/total dwellings in SWGC)).</p> <p>The NSW Department of Lands produces land value (for land tax purposes) and corresponding land areas for representative 'large' and 'small' industrial properties in a range of areas throughout Sydney. We have assumed that the average industrial lot size in the SWGC would be 11,000m². This is approximately the midpoint (or average) between typical small and large industrial properties in this 'representative' list (see: www.lands.nsw.gov.au).</p> <p>Total industrial area divided by average industrial lot size provides us with an estimate of total</p>

Variable	Assumptions
	number of industrial properties (92).
Starting non-residential property value	<p>Assumed starting industrial/commercial property value (\$650 per m²) is based on recent commercial/industrial property sales data for the South West region (postcode 2170). This was sourced from 'commercial price guide'.</p> <p>The assumed starting retail property value (\$3,500 per m²) was based on recent retail sales data from Knight Frank's NSW Retail Market Overview (July 2007). Based on retail sales listed in this publication (p 9), we used our judgement to estimate a market price for the SWGC.</p>

Appendix B Sensitivity of financing results to an additional annual supplementary rate

Table B.1: Impact of supplementary rates on TIF modelling

Rate scenario – for Gladesville	Year in which TIF debt repaid
No supplementary rates	14
\$100 charge per household, for first 5 years	14
\$500 charge per household, for first 5 years	13
\$1,000 charge per household, for first 20 years	10
Rate scenario – for SWGC	Year in which phase 1 TIF debt repaid*
No supplementary rates	16
\$100 charge per household, for first 5 years	16
\$500 charge per household, for first 5 years	16
\$1,000 charge per household, for first 20 years	13

*While also servicing Stage 2 debt from year 11 onward.

Appendix C Results from a selection of studies on the relationship between transport infrastructure and property values

Study ⁹⁰	Results
Mussad A, Duecker K, Strathman J, 1992, "Light Rail Transit Stations and Property Values: A Hedonic Price Approach", Discussion Paper 92-04, <i>Presented at Transportation Research Board 72nd Annual Meeting</i> , Center for Urban Studies, School of Urban and Public Affairs, Portland State University, December.	In metropolitan Portland, Oregon, two distance models to Light Rail Transit stations were compared. The first showed a positive capitalisation in sale prices for homes within 500m walking distance. The second model found a statistically weak negative price gradient for homes within the 500 m zone. The results imply a positive influence of proximity, where homes are priced about 10% higher. Zoning for higher density around stations also raised site values.
Armstrong R, 1994, "Impacts of Commuter Rail Service as Reflected in Single Family Residential Property Values", <i>Transportation Research Record</i> , 1466, 88-97.	This study examines single family residential properties in Boston. Results indicate that there is an increase in single-family residential property values of approximately 6.7% by virtue of being located within a community having a commuter rail station.
Baum-Snow N and Kahn M, 2001, "The Effects of Public Transit Projects to Expand Urban Rail Transit", <i>Journal of Public Economics</i> , 77, pp 241-263.	Study of land values in Boston, Atlanta, Chicago, Portland and Washington DC found that a decrease from three to one kilometre distance from transit stations increases rents by \$19 per month and housing values by \$4,972.
Benjamin J and Sirmin G, 1996, "Mass Transportation, Apartment Rent and Property Values", <i>The Journal of Real Estate Research</i> , 12, 1.	From over 250 observations of 81 apartment complexes, the authors find that rents decrease by 2.4% to 2.6% for each one-tenth mile in distance from a Metro station in Washington, DC.
Cervero R, 1996, "Transit-Based Housing in the San Francisco Bay Area: Market Profiles and Rent Premiums", <i>Transportation Quarterly</i> , 50, 3, pp 33-49.	This study evaluated apartment rents around three BART stations in the San Francisco bay Area. Around two of the stations, rents were 10%-15% higher. Around the third, no rent premium was found.
Cervero R, 2002, "Benefits of Proximity to Rail and Housing Markets: Experiences in Santa Clara County", <i>Journal of Public Transportation</i> , 5, 1.	Hedonic price models show that nearness to light rail and commuter rail stops substantially add value to residential parcels. Large apartments within ¼ mile of LRT stations command land value premiums as high as 45%.
Cervero R and Duncan M, 2002, "Transit's Value Added: Effects of Light Commercial Rail Services on Commercial Land Values", <i>Presented at TRB Annual Meeting, 2002</i> .	This study models the value effects of proximity to light rail and commuter rail stations, as well as freeway intersections, in Santa Clara County, California. Substantial capitalisation benefits to commercial, retail and office properties were found, in the order of 23% for a typical commercial parcel near an LRT stop and more than 120% for commercial land in a business district within a quarter mile

⁹⁰ Selection of studies from: Smith J and Gihring T, 2006, "Financing Transit Systems Through Value Capture – An Annotated Bibliography", Victoria Transport Policy Institute, www.vtpi.org.

Study ⁹⁰	Results																																				
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Hong C, Rufolo A, and Dueker K, 1998, “Measuring the Impact of Light Rail Systems on Single Family Home Values: An Hedonic Approach with GIS Application”, <i>Transportation Research Record 1617, TRB, National Research Council, Washington DC</i> .	Proximity to transit stations account for a 10.5% home price differential.																																				
Ghebreegziabiher D, Pels E and Rietveld P, 2006, <i>The Impact of Rail Transport on Real Estate Prices: Empirical Study of the Dutch Housing Market</i> , Tinbergen Institute.	This study used a hedonic pricing model to analyse railways impacts on house prices. Correcting for various other house price determinants, it finds that dwellings very close to a station are on average about 25% more expensive than dwellings 15kms or more distant. This percentage ranges between 19% for low frequency stations and 33% for high frequency stations.																																				
Garrett, TA, 2004, <i>Light Rail Transit in America: Policy Issues and Prospects for Economic Development</i> , Federal Reserve Bank of St Louis.	An hedonic pricing model applied to residential property values in St Louis found that average home values increase \$140 for every 10 feet closer they are to a MetroLink rail transit station, beginning at 1,460 feet. A home located 100 feet from the station has a price premium of \$19,029 compared with the same house located 1,460 feet away. This represents a 32% increase in property values.																																				
Gruen A, 1997, <i>The Effect of CTA and METRA Stations on Residential Property Values: Transit Stations Influence Residential Property Values</i> , Report to the Regional Transportation Authority.	This study observes 96 Chicago Transit Authority and METRA stations and uses hedonic modelling supplemented by a literature review and interviews with realtors and other experts on local market conditions. The price of a single family house located 1,000 feet from a station is 20% higher than a comparable house located a mile away. Apartment properties located closer to train stations tend to realise higher rents and occupancy levels than comparable apartments less conveniently located.																																				
Hass-Klau, Crampton and Benjari, 2004, <i>Economic Impact of Light Rail: The Results of 15 Urban Areas in France, Germany, UK and North America</i> , Environmental & Transport Planning.	<div><div>This report investigates the effect of trams and light rail on travel patterns and economic activity in numerous cities in Europe and North America. Property value impacts of rail proximity are reported as follows:</div><table><tr><th>City</th><th>Factor</th><th>Difference</th></tr><tr><td>Newcastle upon Tyne</td><td>House prices</td><td>+ 20%</td></tr><tr><td>Greater Manchester</td><td>Noted stated</td><td>+10%</td></tr><tr><td>Portland</td><td>House prices</td><td>+10%</td></tr><tr><td>Portland Gresham</td><td>Residential rent</td><td>>5%</td></tr><tr><td>Strasbourg</td><td>Residential rent</td><td>+7%</td></tr><tr><td>Strasbourg</td><td>Office rent</td><td>+10%-15%</td></tr><tr><td>Rouen</td><td>Rent and houses</td><td>+10%</td></tr><tr><td>Hannover</td><td>Residential rent</td><td>+5%</td></tr><tr><td>Freiburg</td><td>Residential rent</td><td>+3%</td></tr><tr><td>Freiburg</td><td>Office rent</td><td>+15-20%</td></tr><tr><td>Bremen</td><td>Office rents</td><td>+50% in most cases.</td></tr></table></div>	City	Factor	Difference	Newcastle upon Tyne	House prices	+ 20%	Greater Manchester	Noted stated	+10%	Portland	House prices	+10%	Portland Gresham	Residential rent	>5%	Strasbourg	Residential rent	+7%	Strasbourg	Office rent	+10%-15%	Rouen	Rent and houses	+10%	Hannover	Residential rent	+5%	Freiburg	Residential rent	+3%	Freiburg	Office rent	+15-20%	Bremen	Office rents	+50% in most cases.
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Hess D and Almeida T, 2007, "Impact of Proximity to Light Rail Rapid Transit on Station-Area Property Values in Buffalo", <i>Urban Studies</i> , 44, Issue 5 & 6, pp 1041-1068.	This study assesses the impact of proximity to light rail on residential property values near stations in Buffalo, New York. It finds that a home located within one-quarter mile radius of a light rail station can earn a premium between \$1,300 to \$3,000, or 4% to 11% of the median assessed home value. However, effects are not felt evenly throughout the Metro system.
Kay J and Haikalas G, 2000, "All Aboard", <i>Planning</i> , 66, 10, pp 14-19.	In Dallas, property values around transit stations increased by approximately 25% since DART began operation in 1996.
Rodriguez D and Targa F, "The Value of Accessibility to Bogota's Bus Rapid Transit System", <i>Transport Reviews</i> , 24, 5, pp 587-610.	This study determines the extent to which access to BRT stations in Bogota, Columbia are capitalised into land values. Results suggest that every additional 5 minutes of walking time to a BRT station reduced rental price 6.8% to 9.3%, after controlling for structural characteristics, neighbourhood attributes and proximity to the BRT corridor.
Weinstein B and Clower T, 1999, <i>The Initial Economic Impacts of the DART LRT System</i> , Center for Economic Development and Research, University of North Texas.	Values of properties adjoining Dallas' DART light rail stations grew 25% more than similar properties not served by rail.
Gihring T, 2001, "Applying Value Capture in the Seattle Region", <i>Journal of Planning Practice & Research</i> , 16, 3-4, pp 307-320.	Using the Broadway station area of Sound Transit's proposed LINK light rail line, the author employs a model simulating the tax effects of (i) a general land value property tax and (ii) a land value gains tax (LVT) within the transit benefit district itself. The gains tax targets the difference between the annual assessed land value increase and the revenue derived from the general property tax within the half-mile radius benefit district. Given the rapid rises in values in recent years, "a land value gains tax combined with a hypothecated general LVT can raise as much as \$118 million to support the necessary transit improvements. At a minimum, about \$24 million could be raised from an incremental gains tax alone." Sound Transit estimates station and street improvements (excluding the right-of-way acquisition) construction costs at \$80 million.
Batt H W, "Value Capture as a Policy Too in Transportation Economics: An Exploration in Public Finance in the Tradition of Henry George", <i>The American Journal of Economics and Sociology</i> , 60, 1, 195-228.	This study shows how 'value capture' could have been used to finance a 9-mile portion of the New York State interstate highway system. The added increment of land value attributed to the Northway sector amounted to 11 times the cost of right-of-way acquisition, road and bridge construction. The author concludes that the gains in land value that fell to private landowners could easily have paid off the bonds issued to build the project.
Nathanson P and Booher G, 1983, <i>Survey of Joint Development and Value Capture Activity in Selected Metropolitan Areas</i> , City of Los Angeles Planning Dept.	Miami's Metrorail raised enough site sent to cover 25% of its total capital cost (\$116 million).
Riley D, 2001, <i>Taken for a Ride: Trains, Taxpayers and the Treasury</i> , Centre for Land Policy Studies, UK.	London's Jubilee extension cost £3.5 billion, and raised the nearby land's rental value by £1.3 billion. Public collection of 25% of that increase would pay off the Jubilee in 20 years.
Hack J, 2002, <i>Regeneration and Spatial Development: a Review of Research and Current Practice</i> , IBI Group, Toronto.	<p>This paper provides examples of how urban transit investment (primarily light rail) has stimulated urban regeneration and created opportunities for private sector investment in transit corridors:</p> <p>European cities:</p> <ul style="list-style-type: none"> • Tyne & Wear Metro, Newcastle, UK, 55 km/44 stations: house prices increased 2% within 200 metres of metro stations.

Study ⁹⁰	Results
	<ul style="list-style-type: none"> • London Docklands Light Railway, 13km/16 stations: 50% of capital cost recaptured through transport costs reduction and reduction in congestion and accidents, while 50% recaptured through office development and job creation. • Helsinki Metro, Finland (1982): price of property located within walking distance of the nearest railway or metro station increased 7.5% over other locations (impact was most significant at a distance of 500-750m, as opposed to immediately adjacent locations where values dropped). In the best locations, dwelling prices increased by 11%. • Vienna S-Bahn, Austria (opened 1962, 14 km): districts located along S-Bahn corridor have witnessed increases in number of new housing units of 18.7% over 10 year period, as opposed to 4% and 10% in more remote locations. <p>North America</p> <ul style="list-style-type: none"> • Portland Metropolitan Express (15 miles/32 stations, plus plans for 18 miles expansion): Since 1986, \$1.9 billion in property development in the immediate vicinity of the line. • St Louis, Missouri (opened 1993, 18 miles/18 stations): to date, development spurred by transit system totals \$530 million and includes major projects. A \$1.5 billion expansion of LRT is expected to have a \$2.3 billion impact on business sales. • Metro Toronto Subway (built during 1950s & 1960s): between 1959-1964, 90% of all new office spaces and 40% of apartment buildings in Toronto took place along the metro lines; tax assessment values near City centre stations rose by 45% and by 107% around suburban stations, as opposed to 25% elsewhere; office space rentals adjacent to the stations average 30% more than average for the City as a whole, while office rents within 500m of stations rose by 10% more than average. • Chicago LRT: Chicago Transit Authority estimates that maintaining a 'good repair' scenario in its transit system would yield \$4.6 billion in additional business sales, 41,209 jobs and over 20 years and annual tax revenues of \$154 million. Overall, Chicago authority projected that return on capital investment in LRT was \$6 for every \$1 spent. • Dallas Area Rapid Transit (DART): The value of property nearby DART lines is 25% higher than similar real estate elsewhere in the area.

