

Maximum Infrastructure Charges: Implications for Urban Transport Planning

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Abstract

The Productivity Commission defined the outcome of urban planning as creating efficient and effective functioning cities. Governments have the dual planning tools of regulation and pricing. Infrastructure charges for new developments are a key pricing tool that seeks to ensure beneficiaries of infrastructure help pay for it. The Queensland Government adopted a maximum infrastructure charging regime in 2011 that ensured significant local government subsidy in the provision of infrastructure. The implication for transport planners is that areas with high infrastructure cost requirements, typically greenfield development locations, became more favourable than areas with lower infrastructure costs, dispersing travel demand. Conversely it has also resulted in reduced funding for state and local governments to build transport infrastructure to meet that demand.

1. Introduction

Infrastructure charging typically falls within the responsibility of urban planning and is not often discussed by the transport planning fraternity. The decision by the Queensland State Government to set maximum infrastructure charges for urban development broke the direct relationship between the cost of providing infrastructure to support development and the charges paid by developers to cover the cost of required infrastructure. This decision has implications for transport planners seeking to provide sufficient infrastructure to meet growing travel demands, especially in urban areas with high population growth.

This paper presents the rationale for having infrastructure charges, provides a narrative around the decision to set maximum infrastructure charges and discusses the implications for transport planning. The South-East Queensland region of Queensland provides the context for the paper.

2. Role of planning

Cities in Australia play a major role in the Australian economy as cities generate 80% of the nation's gross domestic product and as 75% of the workforce live in Australian cities (Australian Government 2011). The role of land use planning in cities has been subject to debate in the context of hindering efforts by the private sector to deliver affordable housing. In response, the Council of Australian Governments tasked the Productivity Commission in 2009 to benchmark the efficiency of land use planning regulation and development assessment. The Productivity Commission suggested the role of urban planning is to create efficient and effective functioning cities, which is acknowledged as a complex undertaking (Productivity Commission, 2011). Efficiency is about the optimum allocation of urban land for different purposes taking into account the costs and benefits. Effectiveness is about facilitating the core functions and goals of residents and businesses, including broader concepts such as liveability.

The Productivity Commission identifies eight possible considerations in assessing efficient and effective functioning cities:

1. Housing – supply, diversity and affordability.
2. Infrastructure – water, sewerage, transport, telecommunications, energy, parks, stormwater, waste disposal and human services.
(Productivity Commission, 2011, pp18-19).

But there is a trade-off involved in producing affordable communities. It may be possible to deliver affordable housing, but only if infrastructure costs are reduced or if these costs are subsidised by others. The ‘Our cities, our future’ report identified three key approaches to making Australian cities more productive:

1. Improve labour and capital productivity through better aligning labour availability and capacity with demand.
2. Integrating land use with infrastructure through better planning mechanisms.
3. Improving the efficiency of urban infrastructure through maximising the returns on new and existing infrastructure and connecting private investment capital with productive infrastructure.
(Australian Government, 2011).

Invariably urban planning is about managing such trade-offs through the creation of plans and the application of planning regulation and infrastructure charging in the development assessment process. This paper focusses on the infrastructure charging aspect as this has direct implications for funding transport infrastructure.

3. Urban and infrastructure planning in Queensland

Land use and infrastructure planning are integrated in Queensland through state legislation. The urban planning task is mandated by the State Government and delegated to local government within the legislative framework of the Local Government Act 2009 and Sustainable Planning Act 2009. The State Government provides direction to local government through state planning policies and regulations and regional plans. Regional plans and infrastructure charging were introduced with the Integrated Planning Act 1997 (IPA), which included priority infrastructure plans (PIP’s). The Sustainable Planning Act 2009 (SPA) continued many of the elements of IPA.

4. Funding public infrastructure

4.1. Conceptual framework

The preference in economic theory is to link the funding of public infrastructure directly to the beneficiaries through direct user charges to provide an “incentive for efficient provision and use of infrastructure”, except where there are broader benefits and equity goals that warrant the use of the less efficient taxes (Productivity Commission, 2014, Vol 1, p 121). This is the conceptual basis behind the development of infrastructure charges linked to the cost of infrastructure supporting specific urban developments. The challenge is to apportion the benefits of public infrastructure between specific developments and the overall community.

Traditionally public infrastructure is funded by commonwealth, state and local government from general revenue or borrowings repaid by taxation (rates in the case of local government) and user charges. There is a spectrum of infrastructure totally funded from taxation (e.g. schools, prisons) to infrastructure totally funded from user charges (e.g. water and power utilities, toll roads) (Wright and Grayson, 2014). Wright and Grayson conceptually define infrastructure as; community infrastructure that supports community activity (e.g. public open space, schools); and private benefit infrastructure that supports physical

functioning of a community (e.g. roads, sewerage) (Wright and Grayson, 2014). Added to this is scale with regional infrastructure defined as community infrastructure (e.g. motorways, regional public open space) and local infrastructure (e.g. local roads, local parks).

4.2. Government funding sources

4.2.1. Commonwealth government

The Commonwealth Government has the greatest ability to raise revenue through income and excise taxation. Their role in the economy of city development tends to be limited to the cherry picking of specific transport projects that it considers to be of 'national' interest (e.g. motorways that comprise the national road network).

4.2.2. State government

State governments have primary responsibility for city development and they have a range of revenue sources within the residual powers not included in the Australian constitution, such as mining royalties, payroll tax, vehicle registration, etc. Public infrastructure is usually funded through capital borrowings that mostly rely on ongoing recurrent expenditure to repay borrowings. Some infrastructure, such as toll roads, has direct user pays revenue streams.

The Queensland state government finance model has been based on lower taxes and a high reliance on mining royalties and, for policy reasons, has delegated the task of collecting infrastructure charges to local government (Wright and Grayson, 2014).

4.2.3. Local government

The Queensland Local Government Act 2009 allows local government four means of collecting revenue:

1. General rates based on unimproved land value for services, facilities and activities undertaken by local authorities for the benefit of their community in general. General rates are not tied to specific service, facility or activity and therefore a real tax.
2. Special rates and charges for services, facilities and activities that have a special association with particular land.
3. Utility charges for service, facility or activity for waste management, sewerage or water utilities.
4. Separate rates and charges for a specific purpose, such as an environment or transport levy.
(Wright and Grayson, 2014).

Infrastructure charging in Queensland began in the 1980's with headworks charges for water and sewerage, some parks and open space. The legislative framework for Infrastructure Charges Plans occurred with the proclamation of the Integrated Planning Act in 1997.

Priority Infrastructure Plans (PIP's) were introduced in 2003 with a move towards:

1. User pays in a more systematic method across a broader range of local infrastructure.
2. Transparent linkage of infrastructure with land use plans and how infrastructure charges are derived.
(Wright, Cleary and James, 2011).

Local government now include PIP's in their planning schemes which comprise:

1. An infrastructure plan across the planning scheme area, typically the whole local authority.
2. The schedule of chargeable development infrastructure, which is divided into 'trunk' (shared or higher order infrastructure) and 'non-trunk' (local or directly and solely benefits a development). Local government is not allowed to charge for infrastructure outside this schedule.
3. The method of how charges are determined.

4.3. Maximum Infrastructure Charge Regime

Through the following events the decision to introduce a maximum infrastructure charge:

1. The introduction of 'full costing' in PIP's.
2. The state government removed 40% funding for large local government infrastructure projects with termination of the Capital Works Subsidy Scheme in 2008. This precipitated a major increase in infrastructure charges (Department of State Development, Infrastructure and Planning, 2013).
3. This increase in infrastructure charges coinciding with the Global Financial Crisis.

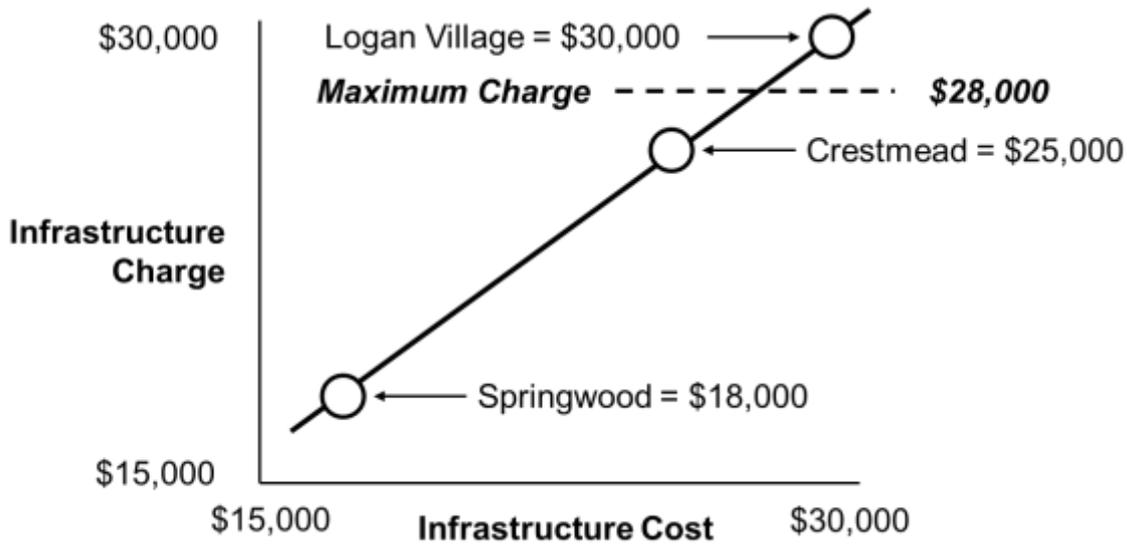
The development industry vigorously lobbied the state government to provide relief from escalating infrastructure charges (Property Council of Australia, 2010). Hodge and Cameron (2007) argued that "if charges on infrastructure were to be levied at a flat rate, they would have no effect on the location of development, given that it does not affect the relative costs of different locations. It would, however, mean that some developers were paying a lower charge than cost of development and others a higher one".

In response, the state government established the Infrastructure Charges Taskforce. This body recommended different maximum infrastructure charges for a range of residential and commercial uses (Infrastructure Charges Taskforce, 2011). The Property Council advocated a maximum charge of \$25,000 for residential buildings three bedrooms or greater¹ in their submission to the Taskforce (Property Council of Australia, 2010). The state government then adopted a State Planning Regulatory Provision that set maximum charges and gave power to local government to use 'adopted charges resolutions' within the maximum charges framework (Growth Management Queensland, 2011). The state government set the maximum charge marginally above that advocated by Property Council at \$28,000, but well below what was previously being asked of developers in many cases.

Figure 1 provides an example of the implications of the maximum infrastructure charge in Logan City Council in 2011.

¹ The maximum charge for dwellings with three or more bedrooms is used for the purpose of this paper. Maximum charges were also set for smaller dwellings and a wide range of land use purposes.

Figure 1: Example infrastructure charges (Logan City Council, 2011)



1. The diagonal line shows the infrastructure charge matching the infrastructure cost.
2. Springwood is a middle suburban location with extensive infrastructure provision (\$18,000 per dwelling). Crestmead is near the edge of urban development (\$25,000 per dwelling) and Logan Village is approximately 10km from the existing urban area (\$30,000 per dwelling).
3. Figure 1 shows greenfield areas at or beyond the current urban area benefit from the maximum charge in the City of Logan.

The 'adopted charges resolutions' allowed local government to break the connection between the cost of infrastructure and the infrastructure charge. The Logan City Council for example chose to adopt the maximum charge across the whole local authority knowing that areas with lower infrastructure costs and existing ratepayers would subsidise areas with higher infrastructure costs. The higher charge typically penalised the smaller developers who mainly undertook redevelopment of existing urban areas where infrastructure costs were previously lower. After outcry from these smaller developers, Logan City Council reverted to the previous lower charges (e.g. Springwood and Crestmead) and was unable to charge above the maximum charge for locations where the infrastructure costs were higher (e.g. Logan Village).

The state government reviewed the maximum charges framework in 2013 (Department of State Development, Infrastructure and Planning, 2013) and the Local Government Association of Queensland argued against the financial impacts of the existing maximum charge set below actual costs of infrastructure (Local Government Association of Queensland, 2013). Table 1 shows the desired outcomes which are about finding the middle ground between the development industry and local government, with no mention of efficient and effective cities previously highlighted by the Productivity Commission.

In addition, the State Government also considered reducing what local government could charge for by transferring non-trunk (local) infrastructure into the trunk (regional) infrastructure category and therefore chargeable infrastructure limited only to essential nontrunk development infrastructure (Wright and Grayson, 2014; Department of State Development, Infrastructure and Planning, 2013). The implication of this was that the extra 'trunk infrastructure' would now be paid for from local government general revenue, primarily existing ratepayers.

Table 1: State Government reform outcomes for infrastructure charges review 2013

Outcome	Result
Development feasibility	Makes Queensland a desirable place for the development industry to do business by: <ol style="list-style-type: none"> 1. Linking the quantum of infrastructure charges to a development's demand for infrastructure. 2. Minimising risks to development associated with infrastructure contributions (including time delays, increased holding costs and uncertainty).
Local authority financial affordability	Supports the long-term financial sustainability of local authorities and the planning, delivery and maintenance of local infrastructure by local authorities. The framework is cost-effective and administratively simple to implement and maintain.
Certainty	The framework is simple to understand, implement and use. Infrastructure charges are supported by transparent published methodologies and charging schedules.
Equity	Only infrastructure essential to development is eligible for infrastructure charge contributions.

(Department of State Development, Infrastructure and Planning, 2013, p14).

In 2014 the Queensland Parliament amended the Sustainable Planning Act 2009 and the South-East Queensland Water (Distribution and Retail Restructuring) Act 2009. The key outcomes of the amendments were:

1. Essentially the retention of the maximum charge through a 'capped framework';
2. Co-investment from the state government for infrastructure where a local authority has adopted a 'fair value infrastructure charges' for its municipality.
(Hopgood and Ganim, 2014).

The amendments were aimed at enticing local governments through additional funding to be more supportive of urban development via lower infrastructure charges.

5. South East Queensland

The South-East Queensland (SEQ) region comprises the Greater Brisbane, Gold Coast and Sunshine Coast areas. The impetus for a regional plan for SEQ occurred in the early 1990's in response to recognition of the interdependent roles of state and local government in dealing with rapid urban growth in SEQ. A Voluntary Regional Framework for Growth Management was agreed in 1995 followed by the statutory SEQ Regional Plan (SEQRP) in 2005 (Abbott, 2012). The primary statutory elements in the SEQRP comprised regulations limiting subdivision outside the designated Urban Footprint and limiting rural residential development to existing approvals.

SEQ provides the context for this conference paper. It has the largest population of all the regions in Queensland. It is also experiencing substantial population growth that, as shown in Table 2, with increase by 90% from 2006 to 2041. Both the state and local governments in SEQ currently face funding shortfalls to provide sufficient infrastructure for current population growth, especially the forecast growth in population for SEQ as shown in Table 1. In this scenario, transport planners face a bigger challenge to allocate limited funding for more infrastructure to greenfield areas potentially at the cost of road and public transport infrastructure to resolve congestion in existing urban areas.

Table 2: SEQ population growth forecasts

Year	Population (million)	Increase from 2006	Dwellings (million)	Increase from 2006
2006	2.8		1.1	
2011	3.1	10%	1.23	12%
2031	4.4	57%	1.78	62%
2041	5.3	89%	2.25	104%

A key question confronting both levels of government is determining the location of this predicted future urban growth. The state government has set targets for about sixty percent of the future growth in dwellings to be located within the existing urban area (Department of Infrastructure, Local Government and Planning, 2016). The setting of maximum infrastructure charges can act contrary to this infill target.

The clear conclusion from the declared policy position of the state government is finding the middle ground between the private development industry and local government with no explicit recognition of the economic efficiency and effectiveness espoused by the Productivity Commission. This position is taken despite the major growth challenges and resulting infrastructure funding implications confronting SEQ in the future. The state’s policy position is moving from a planning perspective based on sustainability and public interest principles into a neoliberal perspective (Cleary and Wright, 2011).

6. Other States

Two other state jurisdictions have also applied maximum infrastructure charges or capped development contributions. Unlike to Queensland, they are location specific so as to more closely align with the state government’s development growth policies.

6.1 New South Wales

In New South Wales (NSW) the infrastructure charges system covers contributions for both state/regional (Special Infrastructure Contributions or SIC) and local infrastructure (Section 94 and 94A contributions). Local development contributions are capped only for residential purposes as follows²:

Section 94 contribution	Demonstrated link between development and infrastructure.	Maximum charge per dwelling: <ul style="list-style-type: none"> • Infill - \$20,000 • Greenfield - \$30,000
Section 94A levies	No demonstrated link between development and infrastructure.	Percentage of estimated cost of development: <ul style="list-style-type: none"> • Under \$100,000 – no charge • \$101,000 to \$200,000 – 0.5% • Above \$201,000 – 1%

(Department of Planning and Environment Department, 2017).

In addition to this state/regional levies are also applied in designated areas, such as growth centres and employment zones.

² The maximum charge will increase by \$5,000 in 2018 for both infill and greenfield locations.

6.2 Victoria

Local government in Victoria need to adopt a Development Contributions Plan (DCP) approved by the Planning Minister as per the Planning and Environment Act 1987 to collect infrastructure charges. The DCP requires identification and justification of the infrastructure that is required for likely development, time commitments on the local council to deliver the infrastructure and apportionment of costs across beneficiaries (Planning Victoria, 2007).

In 2017 standard infrastructure charges have been applied to greenfield growth areas and strategic development areas, as determined by the Minister for Planning, through an Infrastructure Contributions Plan (ICP)(Department of Environment, Land, Water and Planning, 2016). DCP's continue to apply in locations not prescribed by the Minister as greenfield growth areas and strategic development areas.

7. Planning and funding implications

The breaking of the cost of required infrastructure to new urban development/redevelopment is inconsistent with the efficient city rationale advocated by the Productivity Commission which has implications for travel demand and funding for transport infrastructure.

7.1. Travel demand implications

The maximum infrastructure charge favours urban development in locations that are poor in infrastructure, especially transport infrastructure for greenfield areas outside existing urban areas. Existing urban areas with lower infrastructure costs, infrastructure capacity and higher raw land costs are penalised in favour of greenfield areas. This encourages a dispersal of travel demand which public transport struggles to adequately service, placing greater reliance on motor vehicles as the only viable mode of transport.

7.2. Transport funding implications

State governments currently face great strain in being able to adequately fund transport infrastructure. They face competing funding pressures to solve transport congestion where existing infrastructure is under capacity stress and providing basic transport infrastructure for greenfield areas that 'don't pay their way' as they would have under previous infrastructure pricing. Conversely it could be argued that greenfield transport infrastructure is cheaper to build than inner-suburb infrastructure with higher costs of land resumptions.

Currently there is a lack of policy information on the financial implications of maximum infrastructure charging regimes on future transport infrastructure. Urban planners rarely model the funding implications of land use options³. Transport planners and modellers often take 'land use as a given' in their network models. The implication of this stance is of little interest by both planning fraternities calculating the cost of transport infrastructure from different land use options. Ultimately transport planning is the discipline to gain the most benefit from filling this gap in policy information.

7.3 Future Research

A number of issues require resolution that future research could illuminate. There has been in recent years the development of new theories about equity and justice that have filtered through to the transport planning sphere (i.e. Martens 2016). It is not known how different configurations of infrastructure charging, including a maximum charging regime, may

³ This view is based on a search for use of models such as UrbanSim and the author's observations.

influence socio-spatial equity. The proportion of additional transport infrastructure funding that State Governments may need to provide under maximum infrastructure charging regimes is not fully explored. The effects on total household expenses including up-front housing costs but also other fees and charges such as Council rates is also not well understood. A research agenda in this area could help policy-makers ensure they have deeper insights into the implications of current settings.

8. Conclusions

This paper presents a challenge for transport planners to look beyond the efficiency of transport networks to influencing urban development policies such as maximum infrastructure charges. Extensive effort is applied to improving transport models however greater effort is needed to model the implications on the transport system of urban development policies such as maximum infrastructure charges.

The policy making process around infrastructure charges responded to pressure of from key stakeholders, that is local government and the development sector, without an explicit understanding of the cost implications for the overall community and future governments. The costs of this policy on transport planning isn't evident yet it could have major implications for transport infrastructure. Urban planners rarely use models to estimate the costs and benefits of their plans. The opportunity exists for transport planners to use and, if necessary, enhance transport models to fill this policy making vacuum.

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