MASS TRANSIT PROJECT FINANCING – NEW & ALTERNATIVE APPROACHES

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ABSTRACT

In major cities around the world, the appetite for better mass transit systems is strong – with many locations needing to enhance both capacity and coverage to address population growth and increased transport movement. Available resources from traditional government sources are limited, however. In this paper, several potential 'alternative' project financing structures will be reviewed – mainly focusing on PPPs – but also briefly taking-in 'Joint Powers' and other arrangements operating under a 'blended' financing model.

The paper seeks to analyse and clarify the attributes, pitfalls, and potential benefits of these different arrangements, drawing on the documentation and stated aims of several recent and current worldwide exemplars. A literature review and summary case study approach is adopted - with reference to mainstream sources on mass transit capital financing and planning. Cross-comparison of the different approaches adopted in various exemplars is engaged.

The paper then draws interpretation of the wider applicability of these project options for future mass transit delivery efforts – and touches on the conditions, criteria, and policy settings under which they might be positioned to deliver effectively.

The paper addresses substantive, current and emerging issues around the ability of transit stakeholders in growing cities to surpass the limitations of prevailing project financing cultures and constraints.

Keywords: public transport finance, mass transit project, PPPs, joint powers

1. INTRODUCTION – END OF THE LINE FOR BUSINESS AS USUAL

Transport planning and transport infrastructure decisions are proverbially political in nature. But a different discussion opens-up when researchers step back from the parochial debate about which projects receive funding in which locations and when. The time may have come for a more nuanced discussion regarding the options available to accelerate the roll-out of needed public transport infrastructure.

Certain jurisdictions such as Los Angeles, under their "30-10" rubric seem on the face of it to have found a solution in which a suite of transport projects is accelerated into delivery (LA MCTA 2010a; 2010b). It is difficult to identify any negatives around the 30-10 concept. If anything, one wonders why such approaches are not more widely adopted (politics aside). Equally we could look at the high-intensity transit environments of East Asia and identify a commercially-oriented approach that seems to have been remarkably successful in supporting mass transit infrastructure delivery over an extended period (Cervero & Murakami 2009; Miller & Hale 2011). Again, one may wonder what the drawbacks of these approaches could possibly be...

In Australia and the UK, however, and to some degree in the United States, any discussion around project financing innovation for public transport seems to leap immediately and heroically into an assumption that *public private partnerships* (PPPs) are the only option worth considering (see RTD 2007; IPA 2012). Indeed, project documentation from the Gold Coast Rapid Transit project recently suggested, tautologically, that the PPP methodology was chosen because;

"*...all three levels of government felt a strong obligation to develop a delivery method which would meet the desires of the market for a large Public Private Partership (PPP).*"
(GCRT 2011, p28)

PPPs seem to work to a degree in fields such as water and energy supply, or in toll road projects, although outcomes are mixed there at best for investors. But the track record in *public transport* is thin. Review of recent literature (admittedly primarily industry-written, rather than academic) would even suggest a certain level of crudeness in the PPP intellectual space – in which the concepts of "transport projects" and/or "road projects" are confused (see IPA 2012, p13; PWC 2011). The transport-related capital investment PPPs delivered so-far (in Australia at least) are overwhelmingly road projects. Hence it may be time for PPP scholars and participants to use more specific and nuanced language – and talk about "road PPPs" when that is what they mean, rather than "transport infrastructure PPPs" – which tends to imply a degree of inter-changeability that is not reflected in the mix of actual delivered projects, nor in the specific skills needed in different types of transport project.

In that sense, this paper offers opportunity for critical review of the role that PPPs are playing very specifically in *public transport infrastructure* delivery – and this is done primarily through appraisal of recent literature, and through a consolidated listing of recognised public transport PPPs. For despite the meagre representation of mass transit in the overall set of transport-related private finance projects, recent years do seem to have seen a certain threshold crossed – and a small but possibly critical mass of public transport PPPs have been transacted, implemented, or put out to tender (at the time of writing).

In short - public transport researchers can no longer ignore the idea of transit PPPs – and their future is something of an open book.

Table 1. Selected Contemporary Transit PPPs & Innovative Projects: Asia-Pacific & North America

Project	*Location*	*Reported Value ($US at 2012)*	*Major Private Investor*	*% private capital*	*Project type & commentary*	*Timing*
KL Central Station[i]	Kuala Lumpur, Malaysia	$184m	Malaysian Resources Corp.	64%	Major station facilities & TOD project. Build, operate, transfer	Transaction 2000. Opened 2001
Southern Cross Station[ii]	Melbourne, VIC	$309m (NPV)*	Civic Nexus	100%	Iconic urban station interchange. Design-B-O-T	Contract 2002, completed 2006. 30 year mgt term.
Shenzhen Subway Line 4[iii]	Guangdong Province (Southern China)	$733m	HK MTR Corp.	100%	B-O-T. 15 stations. "Classic east-Asian metro rail" configuration. Direct negotiation process.	Transaction 2005, Opened 2011, transfer 2035
Beijing Subway Line 4[iv]	Beijing City	$577m	HK MTR Corp.	49%	B-O-T. 24 stations. "Classic east-Asian metro rail" configuration. Competitive tender.	Transaction 2006, Opened 2009, transfer 2036
Transbay Terminal[v]	San Francisco, CA	$4.2b	Private N/A. Transbay Joint Powers Authority	nil	Major station facilities & TOD project. Joint Powers Authority	Transaction 2003. Expected full completion 2017
Eagle P3 Project[vi]	Denver, CO	$2.185b	Denver Transit Partners (consortium)	Around 50%	Light & heavy rail expansion PPP. Incl. design, build, infrastructure & rolling stock. Operate on availability basis	RFQ 2008, transaction 2010, 50 year build/operate period (?)**
Waratah	Sydney, NSW	$3.6b (AUD)[vii]	Reliance Rail (consortium)	~ 100%	Heavy rail rolling stock – design, build, maintain 78 trains (& maintenance facility)	Contract date 2006. Specify operate 2013 – 2043[viii] Program slippage has occurred.
Gold Coast Light Rail – phase 1	Gold Coast, QLD	$949m (AUD)[ix]	GoldLinq (consortium)	100%. Construct & avail. payments from local, state & national govt	Light rail – design, build, operate. Availability payments.	Franchisee appointed May 2011. Operation commence due 2014, till 2029[x]
Manila LRT Line 1[xi]	Manila	$1.25b	TBA	50%	Light rail extension – build, operate, maintain	Tender late 2012
Northwest Rail Link[xii]	Sydney metropolitan region, NSW	TBA	TBA	"optimal combination" sought. Avail. payments from State govt	Heavy rail – operations, maintenance & rolling stock. Competitive tender	Tender early 2013. 10-15 year contract likely

notes: *total amount debated; ** agreement term is poorly documented

First steps into greater engagement with the potential of public transport PPPs are taken in Table 1 – which summarises a selection of mainstream contemporary projects, alongside a San Francisco project also considered "innovative" (but not a PPP, as such). A researcher interested in public transport projects is perhaps compelled by this listing of exemplars to countenance and engage with the idea of PPPs emerging as a mainstream transit infrastructure delivery model. An imperative arises to grapple in earnest with transit PPPs, to understand their strengths, weaknesses and nuances, and to engage in constructive communication, dialogue and analysis with the aim of improving practice and understanding (suggested also in Shaoul et al 2012).

From this listing of recent projects (in Table 1.), one set of issues and challenges appears to revolve around **engineering design and transit system performance** focus (or project scope). Another set of imperatives seems to arise from the once-off transaction or **up-front contract arrangement** (and the manner in which that agreement is then monitored and repositioned over the longer-run). This is related to another set of needs and demands around the medium and **longer-term operations and business goals** of the transit project or partnership (as distinct from the purely contractual treatment of such).

Stepping back, one dares to suggest that a water or energy supply PPP might be more easily defined... or possibly has fewer 'parameters'. They assume perhaps a certain quantum of energy or water supply, at a certain quality or specification, delivered to certain locations over an agreed time horizon, in return for certain payments. When we come to public transport movements, however, the changing and inherently variable demands of passengers and local residents seems to add an entire additional layer of complexity and "noisiness" in operational and contract terms (see 'traditional' transit infrastructure sources such as Vuchic 2005; 2007; Mees 2010; DfT 2011; Hale 2011a). Some PPP experts may be willing to argue that energy, water and/or roads are equally "people-defined", but at this stage of the paper it seems worth raising the possibility that a public transport PPP is another type of PPP entirely – and quite possibly a more difficult and challenging variant. This seems to connect again with the curious industry-readiness to engage in discussion of "transport PPPs" (see IPA 2012; PWC 2011) while studiously skirting the more specific topic of *public transport* PPPs.

In this paper (via table 1 as a starting point, and then in Part 4) we also bring in an emergent analysis of project arrangements one step beyond the narrow industry-accepted definition of "a PPP". All kinds of projects invariably involve *partnerships*, and invariably they involve a cast of public and private entities. But the emphasis in certain other emerging models (joint powers arrangements, for example) may well extend relatively effortlessly beyond the *transactional*, and connect with medium and longer-term city building and public transport ridership objectives (see Miller & Hale 2011 for contextual discussion). We also briefly (in Part 2.) refer back to the pros-and-cons of 'traditional procurement' approaches for the delivery of transit infrastructure enhancement. Undoubtedly these will continue to be utilised – and any shift toward PPPs needs to demonstrate an addressing of the pros involved in traditional methods, and some bettering of the cons. Part 3 offers the primary engagement with mainstream options for public transport PPP.

From review of these options and arrangements one thing seems to be emerging clearly even at this early stage... The immediate and longer-term future of mass transit projects and financing in the USA or Australia (in particular) is unlikely to be the same as the previous 20 years. The paper discusses a list of 'reasons' and strategic realities that clarify this new juncture in transit project approaches.

In project financing for mass transit, we seem to have reached the end of the line for business as usual.

2. REFLECTIONS ON TRADITIONAL TRANSIT INFRASTRUCTURE PROCUREMENT

Depending on our assessment criteria, 'traditional procurement' could either be seen as the method most oriented to the public interest, or the method that is least likely to deliver substantial quanta of new infrastructure in a given city over a given period. Hodge & Duffield (2010, ch17) paint a picture of the long-term industry circumstances that contextualised ever-greater movement away from 'traditional' procurement, into PPP/PFI and related forms.

The pros of traditional approaches revolve around the ability of government agencies to plan and procure infrastructure that is entirely fit-for-purpose, and scoped to address the needs of future users. Mainstream ideas of the 'proper method for planning rail transport projects' tend to describe the same process that occurs under traditional procurement and agency-side project management (see Profillidis 2006, p112) - rather than the course of pre-construction events that is described in PPP literature or practice. The focus in this approach would appear to be more firmly oriented on the operation of the infrastructure once-complete. A 'traditional' procurement of some section of mass transit infrastructure is a sub-set of the operationally-focussed activities of a transit agency or government transport stakeholder. The question of *contracts* and *transactions* is not merely lesser-order, under this traditional thinking - they become almost invisible as issues. The procuring stakeholder is seen as managing and operating mass transit day-to-day, and then occasionally it steps outside of that immediate-term focus to design and deliver something that presumably meets a recognised (and/or estimated) need into the future.

The cons of this mode of endeavour, however, are also clearly evident - and a range of stakeholders and commentators remind us of these regularly. Cost over-runs have been nominated as public enemy number one in mass transit (Flyvbjerg et al 2004; Raisbeck et al 2010). Analyses of this issue have not always clarified the difference between variation from early-stage cost-estimates, on the one hand – as opposed to any *variation between contract cost and end cost*. The latter form of variance is based on clearer scope, and tends to be subject to much smaller, if still notable, cost over-runs.

Disconnect between the focus of design-construct actors and end-operators has also been raised as an issue with traditional transit infrastructure procurement (Duffield 2010, p194). And in a sense, PPPs and related policy directions are *of themselves* something of a critique of traditional methods. Acceptance of this critique seems to revolve very much around acceptance of the proposition that government or public sector actors are inefficient, and that private sector actors are inherently more efficient and creative (see Shaoul et al 2012 for nuanced discussion). This theme recurs in almost any project or policy-level discourse around the move toward PPPs in the Anglo world and beyond (summarised in Hodge & Duffield 2010, p400-401; RTD 2007). Indeed, it would be a brave or foolhardy commentator who stood on a soapbox to argue in favour of the productivity, efficiency, creativity or flexibility of public sector actors or Anglosphere transit agencies. On the other hand, the availability of *clear benchmarking* of relative private vs public sector labour or project efficiency is certainly nowhere near the level of the *rhetorical or assertive* emphasis that this topic receives (as per IPA 2012). At an anecdotal level, this particular researcher – who has worked alongside actors from both sectors – is not clear that employees of large private sector organisations such as consultancies are inherently "better" or "more productive" than their equivalents in slightly larger public sector organisations. Department for Transport, UK (2011) presents confounding evidence on this very topic, with the privatised, consultant-dependent UK rail sector benchmarked as clearly less efficient than the more 'public', less consultant-reliant continental equivalent:

"*The industry also has weaknesses in ...management which have allowed excessive wage drift, at all levels, and the continuation of inefficient work practices*." (DfT 2011, p10)

A recent contribution from Shaoul et al (2012) seems to crystallise this problem of an assumption toward comparative private-sector efficiency that is not based on clear supporting evidence – at least in the UK transport context.

The crux – not enough public transport infrastructure delivery...

The one issue or critique around 'traditional' public sector transit infrastructure procurement in the Anglosphere (Australia, USA, UK perhaps) that this researcher *is* certain of surrounds the weak track record of system build-out over the past generation, relative to the equivalent level of investment and network expansion that has occurred in European or East Asian jurisdictions. Although, at the same time, it needs to be recognised that the European and Asian transit infrastructure build-out has not necessarily been a resounding demonstration of the absolute necessity of strict *PPP*-style approaches, per se (see Cervero & Murakami; Bratzel 1999; Peters 2010; Tang & Lo 2010).

In these contexts, a clamour has arisen for new methods and options beyond 'traditional' procurement (Miller & Hale 2011; Hale 2011a; DfT 2012; Brookings Institution & Reconnecting America 2009; US GAO 2010). A number of the alternative options addressed in these sources are not PPPs. And this nascent enquiry into new, innovative and alternative project financing and implementation options appears to be a somewhat different line of enquiry to the leap-of-faith sometimes displayed in connecting lack of projects with *PPPs as the only option worth considering* (see Shaoul et al 2012). As an example of the more rigidly PPP-focused thinking, Infrastructure Partnerships Australia (2012) recently spoke in one paragraph of needing to adopt an 'agnostic' approach to the selection of delivery methods on a project-by-project basis, before daringly suggesting that PPPs would be the most likely approach (under this 'agnostic' selection of options):

"*The private sector already plays an important role in the delivery of publicly funded transport projects. However given the existing funding constraints and the inherent value of private sector risk transfer and innovation, it is sensible that the Government consider a greater role for the private sector in delivering and maintaining new transport infrastructure through Public Private Partnerships*." (IPA 2012, p18)

IPA did not, at that point, nor elsewhere in their document, comprehensively or clearly document or benchmark any evidence of actual and/or observable "...*inherent value of private sector risk transfer or innovation...*"

The literature, the observable reality, and the IPA document for that matter, all generally affirm that time has come for a new look at a range of options outside of traditional procurement for mass transit. PPPs could well be one of these methods, but we would invariably want to cast the net reasonably wide to countenance a full range of possibilities. If PPPs do indeed emerge as the logical solution to public transport under-investment, then few would argue with that outcome. But equally, it could be that revitalisation of traditional procurement strategies is part of the solution (and a certain amount of research and policy literature does indeed venture in this direction). Stakeholders are also increasingly interested to learn about any other options (outside of PPPs or traditional procurement) that hold promise for greater levels of transit project delivery (see Transport for NSW 2012, ch10).

3. TWO SORTS OF TRANSIT PPP

In this section, two core public transport PPP options or types are reviewed. These are consolidated from the salient attributes of the exemplar projects detailed in Table 1. and themed into "availability-based" and "revenue-oriented" transit PPPs.

Availability-based PPPs
In an availability-based PPP for public transport, the transaction (presumably) does not reference ridership or farebox revenue realities to any significant degree. It may be suggested from the outset that this arrangement is probably the most "certain" from the private provider's point of view and involves a greater level of risk-adoption from the public or government side to the transaction. The four exemplars listed in table 1. (Eagle P3, GCLR phase one, NWRL, and Waratah) offer interesting interpretive opportunities.

Denver's Eagle
Eagle P3 appears to be based on the design and construction or upgrade (among other activities) of light and heavy rail corridors, and the running of vehicles up-and-down the corridor by some formula or agreed arrangement (RTD 2011; RTD & Denver Transit Partners 2010; RTD 2008). An obvious counter-point to the procuring agency's enthusiasm for this arrangement is that it seemingly renders the operator oblivious to the *ridership and passenger-growth opportunities* associated with rail service. Undoubtedly, this Denver corridor is presumed in the documentation to be a loss-making, heavily subsidised operation. But one would need to question the degree to which the transaction arrangement and the discussion in the documentation either presumes or perhaps *reinforces* that outcome... This researcher's appraisal would also suggest that the ridership-oblivious nature of Eagle P3 has become apparent in its actual design and engineering. The project designs and fly-throughs seem to suggest light and heavy rail corridors that are:

a) Lacking in connectedness and reference to any substantial set of obvious local-scale activity generators or ridership catchments
b) Lacking integration to surrounding street networks. There appears to be no "structure plan" for the station areas as understood in the contemporary urban design literature or discussion (refer GCCC 2011 for contrast)
c) Not embracing of contemporary notions around station-area TOD
d) Predicated almost entirely on park-and-ride as the only access mechanism or infrastructure. Access by pedestrians, cyclists or bus feeder does not appear to be countenanced to any great degree – despite the important role these modal options play in most successful international rail-based transit offerings (see Hale 2011b)

While not wishing to be overly negative about the Eagle P3 project or its proponents – this project exemplar could serve to alert other public transport financing stakeholders further abroad to the sorts of engineering and design outcomes that may well be a logical result of *a PPP that does not reference ridership or ticket revenue-related goals*. Eagle's documentation also seems to express a *transaction* focus throughout, and this seems to be problematic for any longer-term strategic outcome (see RTD 2011, esp parts 1-2).

Gold Coast Light Rail – Phase one (GCLR)
The Gold Coast project, which involves construction and operations on an availability basis, (similar, in passing, to Eagle) seemingly differs from the Denver project substantially via its greater resourcing and development of an initial reference case design, prior to the solicitation of bids (see GCRT 2011; GCCC 2011). This renders the winning bidder responsible for *detailed engineering design* and then construction and delivery within more

clearly-developed and articulated corridor and performance parameters. These parameters have included emphasis on interacting with and enhancing the urban corridor through "city building" philosophies. In practicality, the scope of *actual* transit-supportive urban design infrastructure intervention via the GCLR project itself is relatively limited – but at the very least these outcomes are not precluded by the chosen design (GCRT 2011; GCCC 2011).

The GCLR approach seems useful, in offering the idea that state and local government agencies would work together for a city-responsive, land-use responsive rail project outcome, with private sector innovation narrowed-down into still-challenging aspects such as rolling stock delivery, detailed engineering, and operational efficiency. Eagle's procurers, by contrast, have placed great store in the "flexibility" and opportunities for "creativity" that a less proscriptive design approach implies. They nominate a project saving of some $300m as evidence of this value – although have not clearly demonstrated to the reader of their "lessons learned" document (RTD 2011) that this is an *efficiency* rather than a *de-scoping* outcome. Any confusion between productivity, innovation and efficiency on the one hand, and de-scoping (which is quite a different thing) on the other should be assiduously avoided in project contexts.

"*It is recommended that future projects similarly invest significant resources upfront into the development of the reference design*." (GCLR 2011, p35)

On the other hand, GCLR seems to share Eagle's lack of connectedness to any sense of a clear ridership growth or revenue incentive package – and this could be viewed as a problem in itself.

North West Rail Link (NWRL) - Sydney
The NWRL exemplar is interesting because it steps back completely from the idea (expressed via Eagle and GCLR) of fully-integrating infrastructure design, delivery, construction, and passenger operations (see Transport for NSW 2012a). NWRL's main PPP play is "rolling stock supply and rail operations". And there has been some advancement of the idea that the large overall NWRL corridor development is better placed (from Government's perspective) when broken into manageable chunks (Transport for NSW 2012a, p12-15). In practice this has meant separating "rolling stock and operations" from two traditionally-procured design-construction elements (at-grade and underground corridor respectively) and a preparatory civil works contract. Perhaps, harsh lessons from NWRL's very different rolling stock PPP predecessor (Waratah) have focused NSW government minds on the necessity of risk-mitigation for large-scale transport works. This realistic approach to risk, and the sensible idea of breaking a large project into manageable components seem to run counter to many anecdotally-expressed hopes that PPPs would provide a mega-scale feeding frenzy for the corporate sector.

"*The PPP will ...ensure ...appropriate balance of risk transfer with the optimal combination of private sector financing and State contribution*." (Transport for NSW 2011a, p15)

Fare revenue and ridership are again treated agnostically in the NWRL concept. The project is pitched as a PPP (which it is), but documentation is clear that funding ultimately comes entirely from state government consolidated revenue (see Transport for NSW 2011a, p15).

Waratah

Any lessons for future projects arising from Sydney's Waratah rolling stock delivery and leasing project are not clear-cut - but they do seem to speak to possible pitfalls for PPPs where the private-side actor is not tied into any sense of the demands that large daily passenger volumes place on transit agencies. The "costs" of project delay are undoubtedly huge for an agency such as RailCorp, and its elected overseers (see Saulwick 2011;

RailCorp 2012, p7). The public narrative of Waratah has revolved around manufacturing integration problems leading to timing and cost over-runs. There appears to be another emergent narrative of the sponsoring government being, in reality, the last port-of-call and the ultimate guarantor of project risk where and as the private-side partner comes into project-related problems (see AAP 2012). It is not clear that this scenario is specific only to the "availability" PPP model, but it does again indicate that this particular variant carries significant sponsor-side risk potential. Waratah stands notable as one of the largest public transport PPPs in Australian or recent international experience (see Table 1.) – and also for its status as one of the larger PPPs of any type ever executed in Australia (Hodge & Duffield 2010, p410). This "risk" dynamic belies the common anecdotal (rather than evidence-based) storyline that moving toward PPPs invariably involves a useful "*shifting of risk to those parties in a best position to bear it*..." Another, blunter interpretation might simply be that the public sector *is* the party most able to bear large-scale risk in large-scale public works projects (see Hodge & Duffield 2010, p405).

Revenue-oriented transit PPP exemplars

A revenue-oriented public transport PPP would appear to be one that *does* incorporate some level of ridership and farebox, or other revenue risk - and upside opportunity.

The discussion on public transport planning, financing and operations tends to suggest quite clearly that transit agencies are best placed where they roll up their sleeves and proactively chase ridership growth, and improved farebox position over time (Vuchic 2005, ch7-9; Walker 2008; DfT 2011; Transport for NSW 2012b, ch10). One can only assume that this dictum would follow-through into a transit PPP design-build-operate scenario or similar. Undoubtedly any interpretation of the value of "chasing ridership" is complicated by the split between profitable East Asian rail companies, and subsidised European, US and Australian counterparts. Although this particular researcher's view suggests that the more successful of European and US players (say; Munich MVV, Transport for London; BART; Washington DC's WMATA) all tend to see reasonably robust farebox recovery, correspondingly low levels of subsidy (comparatively speaking) and some documented sense of being in a strategic, tactical and marketing-based "hunt for passengers" over time (Hale 2011a). The outstanding revenue position of the East Asian industry also seems in large part a function of their revenue-focused strategic paradigm (see HK MTR 2011). Train tickets do not sell themselves, to be sure...

The passenger rail industry in Australia is a) quite robust in passenger volume terms (BITRE 2012), but b) exceedingly heavily subsidised (Hale 2011a), and c) traditionally somewhat averse to proactive ridership growth goals or revenue-consolidation strategies. In this sense, Australia operators such as Metro Trains Melbourne (part-owned by Hong Kong MTR) or Queensland Rail (a service-contracted government-owned corporation) appear to be stuck in a cash-for-train-movements scenario, which is revenue and ridership-agnostic. As an example - during 2011-12 Queensland Rail slightly increased its revenues, primarily from government transfer, against a slight fall in ridership (Queensland Rail 2012).

At face value (and being forgiving about the lack of readily-available project and partnership details) there seem to be useful transit PPP reference cases emerging via the Asian mass transit project examples (see Table 1.) - including the Beijing and Shenzhen metro lines (the latter of which the researcher has experienced first-hand) and presumably the emerging Manila LRT 1 corridor and transaction. Of the Shenzhen exemplar, an observer can at least say (in contrast to the Denver Eagle P3 project) that it is built and positioned to handle large numbers of passengers in a 'traditional' mass transit format that is closely integrated with land use and ridership generation clusters. The Manila example is also scant in terms of publically-available information. But details which *do* emerge speak of a high-volume corridor, at an affordable construction cost (around $US 62.5m per km), where ridership and

revenue are positioned for presumed operating profitability (the currently operational section is quoted at a farebox ratio of 1.45) (LRTA and Department of Transport & Communications 2012). This is clearly a mass transit *business* exercise in the fullest sense – where design, engineering, operations and marketing will presumably be positioned around optimising revenue against cost through ridership growth and volume. Customer-service orientation is likely to be reasonably robust in this context. The Manila model is also notable in seemingly countenancing a 50/50 government/private project cost arrangement. Whether this is a potential *equity* arrangement is not clear – but the possibility does not seem precluded. More problematic is the documentation's suggestion that "highest concession fee" is the key financial criteria for bid selection. It is not entirely clear that this is the logical first priority in a public interest setting, where infrastructure and operations plays a cornerstone role in urban structure and movement. The established literature would suggest a large variety of alternative and competing economic, financial and functional criteria for mass transit beyond direct *payments to government* (see Vuchic 2005; Mees 2010; Cervero 1998). At the very least one wonders what such payments to government (arising from a mass transit PPP) could possibly be employed for, if not for improving the experience of public transport users and the position of transit infrastructure in Manila... If these are to be priorities, then the importance of a *payment to government* becomes unclear or problematic in a PPP-bid scenario.

Summary of two pathways

One is drawn to the depth of information and pre-planning that appears to have been employed in the GCLR exemplar – which tends to set a standard via a medium-term program in which broader transport planning imperatives feed into a transit PPP design-construct-operate contract. GCLR appears to have produced sensible system design outcomes and future city-building opportunities, via a solid concept development process accompanied by reasonably open documentation. Less clear is the longer-term relationship between Goldlinq as operator, and its passenger market. Eagle, by contrast, appears to have been excessively contract or transaction-focused at the expense of mainstream public transport goals (such as ridership and city-shaping).

The revenue-oriented PPP option seems at first glance relevant mainly to Asian conditions of high passenger volume and a liquid operating finance position in mass transit. But on the other hand, it is not conceptually or logically clear that ridership targets and ridership risk/opportunity could not be built into a transit PPP arrangement in an Australian or US context... The UK's privatisation history has proven confounding – with subsidies seemingly growing at a faster rate than ridership (Shaoul et al 2012). Perhaps the ultimate path forward for PPPs as a transit implementation option revolves around a maturing of the market's willingness to engage with ridership risk.

Risk more broadly is, as expected, clearly present as a core topic throughout the listed exemplars. Whether in a stations context (at Southern Cross) or in rolling stock availability (Waratah) – large project cost over-runs involve a burdening of either private or public stakeholders with the logical outcomes of demanding risk guarantor roles. In Southern Cross, the private sector largely bore the brunt, while in Waratah, public stakeholders became the ultimate port-of-call when cost escalation exceeded the private guarantor's ability to cope (regardless of intentions in contract). An overall appraisal might tend to suggest that large-scale risk-shifting to the private sector, on the balance of probability, is not as applicable a rationale for transit PPPs as first-generation PPP proponents might have suggested (for discussion see Wilson et al 2010; Raisbeck et al 2010, p346; Shaoul et al 2012).

4. BEYOND PPP - JOINT POWERS AUTHORITIES AND OTHER 'BLENDED FINANCING' EXAMPLES

International experience would tend to suggest another set of emergent "non-mainstream" project approaches that bring together various public sector stakeholders around commercial revenue streams in a transit infrastructure setting. For want of a better terminology, these will be referred to below interchangeably as "Joint Powers" and/or "blended financing" options and models.

Great promise, few exemplars...

The leading exemplar of the "joint powers" project type, and one of very few that reaches genuine scale, would appear to be San Francisco's *Transbay Terminal* project (see TJPA 2011a; SFRA 2011). In this instance, a list of reasonably diverse public sector agencies combine their interests in development of a specific facility via a special purpose arrangement that also addresses commercial revenue (primarily in the form of real estate development), and which incorporates mainstream project borrowing. In short, multiple government revenue and borrowing streams are incorporated (TJPA 2011b).

The reason for including this particular model, given its lack of broad track record or any wide-ranging industry support seems to be the almost unassailable logic of combining various interests into an equity-based arrangement - which opens the possibility of commercial revenues and commercial returns in a public transit infrastructure context.

The Los Angeles 30-10 plan (LACMTA 2010a; 2010b), while not immediately or obviously connected to the Transbay Terminal example, will also be listed in this paper because of its status as an *innovative project suite* (or project approach) in its own right. Its point of commonality with Transbay may well be the idea that a fit-for-purpose project arrangement should be created - rather than mobilising an off-the-shelf project typology in search of a project (as the PPP option often seems to be, in its public transport incarnations). For the purposes of this paper we will apply a "blended finance" label to LA 30-10 (and by implication, to other projects that may emerge under this approach or typology).

LA 30-10 combines quite a wide array of funding streams and folds them into project-level financing and implementation packages. The strengths of this "blended finance" approach seem to revolve around flexibility, openness, and the willingness to source and utilise *multiple* funding streams with the aim of leveraging and accelerating implementation with the assistance of project-level borrowing. So many mass transit infrastructure projects, especially in Australia, tend toward the assumption of only one or two sources of go-or-no-go public sector funds - and when this fails a "lack of money" is invariably blamed and bemoaned. The alternative then seems to be "a PPP" – although proponents seldom spell-out the user-pays or consolidated-revenue regime presumably required to back any availability payments.

This researcher would judge the "blended" model likely to achieve certain levels of awareness and interest in years to come, with stakeholders perhaps watching LA 30-10 for signs of success, failure, re-applicability, or otherwise. Equally, the "joint powers" model offered by Transbay seems likely to emerge as a concept that increasingly competes with PPPs as an implementation packaging option. These are predicated around ideas of value capture – a topic receiving ever-increasing attention (see Transport for NSW 2012b, ch10; Miller & Hale 2011; US GAO 2010). These models also seem to connect meaningfully with the concept of "institutional PPPs" as a more business-like, equity-based, multi-partner arrangement (see Duffield 2010, p187).

5. CONCLUSIONS – FLEXIBILITY, OPENNESS AND PASSENGER EXPERIENCE AS CRITERIA FOR FUTURE FOCUS

"*Governance in its broadest sense is very strategic and involves rules about behaviours that we wish to have exhibited in our society. It is not just about profit maximisation. It is, for example, truthfulness, fairness, transparency, probity and integrity in how we achieve a stable, healthy society in the fullest sense ...*" (Wilson et al 2010, p201)

In this concluding section we briefly re-summarise and re-appraise the value and applicability of various PPP approaches and the other identified project resourcing options.

With PPPs, an initial issue tends to emerge in scoping – around whether a reasonably clear corridor reference design is important, or not. A further set of issues seem then to revolve around whether an immediate-horizon contract or transaction is the focus, or whether longer-term contingencies and partnerships are the goal. Both of these questions come together in the choice, if one exists, between pursuing a revenue-oriented or revenue-agnostic and availability-based PPP option.

The obsessive *transaction* emphasis of many PPP exercises should be debated more vigorously. With transit being a people-focused, complex and challenging set of activities, it seems almost impossible that any given PPP contract could ever cover the full range of contingencies, changed circumstances, demand fluctuations, and new scenarios that emerge over, say, a 20 year contract period (Shaoul et al 2012). In this sense, this researcher is highly critical of the idea that a public transport PPP "works" as an outcome of initial contract negotiation, on the basis of rigid up-and-down-the-line movement of vehicles. The basic need for flexibility over time does not seem to be addressed in many pre-existing transit PPPs.

Regarding the two different PPP orientations for public transport, one can only presume that a *revenue-oriented* model is "better" - in so far as it connects with the established body of literature, understanding and practice that focuses on ridership growth and revenue optimisation as necessary elements in mass transit success. This is inter-related to the need for customer-service orientation, and close integration with passenger catchments and markets - whether through urban design and station facilities, network integration, or other mechanisms.

There are two counter-points to the "revenue-oriented" PPP approach – one obvious, one less-so. Firstly, many commentators would undoubtedly point to the subsidised nature of mass transit operations in the USA, Europe or Australia and suggest that a ticket revenue or ridership focused transit PPP is inherently non-applicable in their jurisdiction. But any such presumption would be incorrect – in that corporatized or privatised passenger operations such as Queensland Rail or Metro Trains Melbourne actually run on a commercial profit-margin basis. Government simply *guarantees* their organisational operating margin via an effective subsidy whereby the cost of running trains over and above ticket sales is covered. So – in these instances, a private/corporate arrangement *is* profitable for the private or corporate franchisee, despite the subsidised nature of Australian mass transit. This particular researcher has often engaged in discussion with localised transit stakeholders around the problem of Metro Trains and/or Queensland Rail being almost entirely reduced to a train-movement focus, with only the most opaque and vague connection between ridership growth and organisational incentive. Undoubtedly though, ridership-cultivation and customer service are difficult challenges. It is quite possible that the corporate sector *prefers* to move trains up-and-down the line while receiving a guaranteed margin for that activity – rather than engaging with the messy question of actually competing against private vehicles for travellers

in order to define organisational success or failure. Perhaps this "lack of interest" in moving into a contested transport market is the second, and possibly the most influential reason why the corporate sector tends to push an availability model where transit PPPs or other privatised scenarios are envisaged.

Table 2. Criteria for Adopting Emergent Transit Project Financing Approaches **– as proffered in a variety of sources**
Unconvincing Criteria
"PPPs because the market demands one"
"PPPs because the private sector is inherently better"
"Unless there is a PPP, it won't get built"
"If investors go broke – the public gets free infrastructure"
Payments to government as primary bid criteria
De-scoping of project presented as 'efficiency' dividend
Hand-over detailed project planning to consortium - to relieve public sector burden of involvement in planning
'Risk transfer' from public to private actors
'Off balance sheet' capital investment option (for governments)
Convincing & Valid Criteria
Selection of the most cost-effective option (regardless of model)
Selecting a financing option in line with orderly ongoing capital investment programs
Selecting option that optimises project scope or system performance
Maximising transit ridership or usage
Optimising value and impact of available subsidy and resources
Maximising ticket revenues
Effective land use integration & urban design outcomes
Better facilities for passengers
Improved overall level-of-service
Flexibility over time
Creating private and public sector capital investment opportunities that support agreed strategic goals over time (e.g.- mode share, ridership, system expansion)
Transparency & accountability
The public interest

Another major challenge lies in the fields of openness, transparency, governance and transport organisational cultures. Reading through the documentation from our exemplars, it became clear that certain project participants were at pains to communicate and address their "lessons learned" to *industry* (rather than to the public or taxpayers). Perhaps they are touting for future work – because the documents often read that way to this reviewer. On the whole, PPPs (and our listed transit project exemplars to some degree) seem to exist in a continuum of confidentiality and even secrecy that does not appear to be justified by the

pretext of “commerciality”. Taxpayer funds are taxpayer funds - and while initial negotiation and the proposals of non-successful bidders should remain “commercial in-confidence”, there appears to be no valid reason for avoiding full disclosure and clarity of the arrangements between taxpayers and their corporate PPP servants. In Australia, this reality is at least partially recognised in the public posting of major *Metro Trains Melbourne* contracts. In summary, a full maturing of the transit PPP as an implementation option can probably only arise alongside a maturing of corporate and government posture toward project openness and transparency.

Final points surround the important role “joint powers” and “blended finance” models will likely play in transit infrastructure delivery in years to come. The PPP option has been framed as a choice between “traditional” design-construct procurement and a corporate-led revolution in infrastructure efficiency and productivity (via PPPs which paradoxically carry massive financing and transactional costs). An objective appraisal might conclude, by contrast, that there are actually *three* basic pathways now open to public transport stakeholders. They can: procure traditionally; pursue PPP options; or compare both of these to a commercially-driven joint powers arrangement that mixes multiple sources of public sector funding and equity, closely matched to community and stakeholder needs across a range of fronts.

And herein lies the shock of the new for PPP-proponents. Just as the PPP model reaches a certain level of formative maturity in public transport contexts, another option – perhaps more flexible – emerges to compete for attention.

In the discussion of public transport project options, we have definitely reached the end of the line for business as usual...

Figure 1 – Former Transbay Terminal in San Francisco – an unlikely launching pad for a 21st century mass transit financing revolution...? (author 2008)

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