PLANNING PASSENGER RAILWAYS: A Handbook

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Transport Publishing Co Ltd : Glossop : Derbyshire : England

1
20. Involving Property Developers

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Introduction: Funding Urban Railway Developments
There is no shortage of urban passenger railway schemes. Virtually every city has aspirations to build one, and most cities of a million inhabitants or more get one sooner or later. Wanting, however, is not enough to ensure that one will receive. Urban railways are expensive, and somebody needs to be convinced to pay for them. The challenge of the urban rail planner is to conceive, design, and promote a scheme that people will be convinced to pay for, either directly or indirectly.

Willingness to pay is the best test of a project's value. If people will pay for something freely, then it is probably worthwhile. Moreover, if a project is financially profitable one can simply go to a bank and borrow the money. However, few urban railway schemes are profitable; most only cover a fraction of total costs from passenger fares. Projects that do get built usually depend on a significant government subsidy, which is often justified by prospective benefits in terms of reduced air pollution and traffic congestion.

The remaining benefits of urban rail systems are usually described in terms of "improving the efficiency of a city". Nobody pays directly for this, but if it really happens it should ultimately be reflected in property values. Property owners and developers, who are widely believed to capture windfall gains when new rail lines are built, are thus a third target for funding. In fact the potential for financing new rail lines with increased property values is often overstated, first because the timing of benefits will not match the timing of expenditures, and secondly because special and controversial mechanisms including taxes and negotiated "contributions" are required if the benefit is to be captured.

If rail promoters genuinely seek to recover system costs from property developers, they need to understand exactly how a rail line will benefit a property. This depends very much on the type of development that may be possible, with and without the rail line. They may also need to make significant changes to the project itself, in terms of design and implementation. This may not be a bad thing, as the success or failure of a rail line may be measured at least partly in its effects on urban
development. A rail scheme that generates dramatic benefits in terms of property development is very likely a worthwhile scheme in other ways, while a scheme that has no impact on property may also attract few passengers and have little benefit at all.

**Property Development and Planning Permission**

Before the advent of mechanised transport, people could not commute more than a mile or two and land values dropped sharply outside of city centres. At the turn of the century railway and tram builders often bought land on the fringes of major cities, whether New York, London, or Tokyo, and developed it profitably as suburban housing. In a few cases railway builders insisted on cash contributions from property owners before they would stop commuter trains at local stations.

But this is no longer the case. With the advent of widespread car ownership government has long accepted an implicit obligation to provide a comprehensive road network. Improved rail services may allow higher density development, and may change the focus of a suburb from road to rail orientation, but it is unlikely to determine whether development of any sort is viable. Even London, with a limited road network, has some suburbs without any rail service and yet which are quite prosperous nonetheless.

Nowadays, planning permission is far more important to the feasibility of development than transport facilities; however, permission can be explicitly linked with provision of a rail service. There may be nothing wrong in principle with this type of linkage, but planners extracting payments from a developer to fund rail improvements should not pretend that these are necessarily related to a real increase in value.

**Commercial Development**

When a rail line is built into a commercial area, there are three types of possible benefit to commercial property. First, there is a general increase in accessibility. If existing transport corridors are saturated, the rail line may allow further growth both in the concentration of employment and in property values. This can, of course, only happen if there is underlying economic demand for more development.

A recent example of this type of benefit is in Los Angeles, where a new and very expensive underground Metro system is under construction. The project was delayed for years as the City, State, and Federal governments debated who should pay and whether it was indeed worthwhile at all. Finally, a collection of downtown business interests actually voted to impose a tax on all commercial space within
one-half mile of the new Metro stations, to finance system construction. The tax will raise about 10% of the total capital cost, and the line will need operating subsidies as well, but this unusual gesture was sufficient to get action and funding from Government.

Note that in Los Angeles the tax is levied on all commercial space within a one-half mile radius even though all studies show that most people will only walk half this distance from the station to their office. The half-mile radius is nonetheless reasonable because office workers within this area still compete for road space when commuting. Also the Los Angeles tax only applies in the downtown area, where roads are now saturated throughout the day. Although the rail line also serves commercial areas outside the city centre, growth of these areas is not considered to be constrained by transport capacity, as such, and so no offer to make a contribution was forthcoming. Property owners outside the city centre were not so desperate to have the Metro built, and did not make an offer to tax themselves. They will be served by the Metro as “free riders”, in economists’ jargon.

A second type of benefit to commercial property can be realised by specific land uses such as high turnover retail. Shopping centre developers in Toronto, Washington, and London have paid substantial sums towards improved connections into railway stations, in some cases simply to redirect existing pedestrian traffic to pass shop frontages. Banks have paid for the right to install their cash dispensers adjacent to ticket machines, and in one city they are in fact the same machines. Elsewhere, however, stations and ancillary facilities have been designed in such a way as virtually to preclude associated commercial development. Large bus loops, vast machine rooms, and badly arranged entrance corridors can preclude the provision of retail spaces which could have been an important convenience to passengers as well as a useful source of revenue.

Third, independent of any need for increased capacity, a new high-speed rail line may enlarge the effective catchment area for a commercial centre. Retail centres compete for spatial dominance, while office centres compete based on their employee catchment areas. With good rail connections, suburban shopping centres may compete aggressively for business with traditional downtown stores. Examples are Yorkdale Shopping Centre in Toronto (which is linked into the Spadina Subway) and Kingston-upon-Thames outside London which actually pays British Rail to operate extra trains to bring shoppers from inner London.

Centres such as Croydon (south of London) and Newark (west of New York City) promote themselves as secondary office locations, with lower rents closer to the city centres than traditional centres within the same commuting radius, to employees of firms that, over time may find their homes closer to the minimise...
lower rents but good rail connections back into and across the primary city centres. To succeed in attracting office tenants out of established centres without extreme disruption they need to be able to draw on the same commuter catchment as the established centres, so that existing employees do not all need to “up sticks” and move house. Of course over time many employees of relocating companies will move their homes closer to the new office, but the extent to which this can be minimised will increase the attractiveness of the new location.

Fig. 20.1 New York.

Most of the Manhattan “subway” lines run north-south, crossing over to Brooklyn in the south and Queens and the Bronx in the north. Although the historic business centre is around Wall Street at the tip of Manhattan, the main commuter rail terminals are two miles north and only half a mile south of the new “Midtown” district. Rockefeller Center, built in the 1930s and 1960s, is the established heart of Midtown Manhattan which altogether now accommodates more than 150,000 workers.

Newark, a smaller and historically less fashionable address, is linked directly to both Wall Street and Midtown by subway lines, and is also at a junction of many commuter lines from the western New Jersey suburbs. It has thus been recently developed as a centre in its own right, with some major companies moving their headquarters and “back offices” to take advantage of lower rents.
Where a new office centre aspires to compete on equal terms with the old downtown, as at Rockefeller Centre in New York, La Defense in Paris, Shinjuku in Tokyo or Canary Wharf in London, rail commuter connections need to be very good, with trip times roughly equal for a similarly large employee catchment area (see Figures 20.1-20.3). Rockefeller Centre in midtown Manhattan was built within a short walk of two existing subway lines but only with considerable effort did it become easy to reach New Jersey. La Defense is far from the west, but it has provided company to the suburbs of eastern Paris.

Until the 1960s Paris had no integrated regional rail system. Intercity rail lines ended at terminals along the edge of the 19th century walled city. The Metro served internal circulation trips but did not extend beyond the old walls. Interchange between the Metro and mainline railways was poor. The premier business centre was in the Opera area, served by the Metro and by the most intensive commuter rail terminal, the Gare St Lazare with lines in from the affluent western suburbs.

Construction of the RER cross-Paris rail lines allowed development of intensive commuter services from the north, south, and east, with direct trains or a single transfer to new business centres which have been developed in a ring around the Paris region. The largest new business centre is La Defense, built 1960-1990 with about 100,000 employees and the headquarters of many of France’s largest companies.

Fig. 20.2 Paris.

London has two Local "circle" line links, one long established, one early in this century. Many of the suburban regions. The third centre, Docklands, already growing from Stratford to most of the Jubilee Line East, and the Jubilee Line East, and the Jubilee Line East, which will intersect most of the East End in the West. By the end of the last century, 100,000 people will be living in Docklands.

220
of two existing subway lines and the Grand Central commuter terminal, but only with construction of the Sixth Avenue Subway in the late 1930s did it become easily accessible from the vast suburbs in Long Island and New Jersey. La Defense was built astride the main commuter rail lines from the west, but the massive RER Express Metro was required to provide comparable high speed connections from the dormitory suburbs of eastern Paris.

![Fig. 20.3 London](image)

London has two historic centres, the City and the West End. As in Tokyo a "circle" line links them and most of the suburban rail terminals together, and early in this century "tube" lines were built which short-cut across the circle. Many of the suburban lines also run directly to both the City and West End.

The third centre, now being developed around Canary Wharf in London Docklands, already has a direct connection back to the City, and a link via Stratford to most of the commuter rail lines from the northeast. Construction of the Jubilee Line Extension will give a fast connection back to the West End and intercept most of the remaining commuter rail services from the south and west. By the end of the decade it is expected that there will be more than 100,000 people working in and around Canary Wharf.
Perhaps the most spectacular and recent example of rail line construction affecting property development is in London Docklands. Since construction began on the Docklands Light Railway (DLR), an area of mostly derelict docks has seen massive redevelopment as high density, high quality offices (see also Chapter 14). After the initial DLR was completed, the Canary Wharf developers offered a substantial financial contribution to increase capacity and build an extension into the old City of London. In fact, they offered to pay half the cost of these works, with the rest being financed by government on the basis of traffic congestion benefits and anticipated increased profits (or rather decreased losses) on the London rail system as a whole. The DLR upgrading gave the necessary capacity, while the City extension provides the necessary strategic link to allow Canary Wharf to function as a modern annex to the old City. The station at Canary Wharf has been rebuilt entirely at the developer’s expense as an integral part of a shopping complex, with access directly off the platforms. This is extremely convenient for passengers, and should also be profitable in its own right.

By the end of 1992, with the Bank extension and upgrading, the DLR will provide ample capacity for the projected development of Canary Wharf through to the end of the century. However, DLR only provides good access from the City, northeast London and certain specific corridors in north and west London with good interchange at Bank. Existing companies in the “old” centre of London are reluctant to move to Canary Wharf if it means that many staff will face much longer trip times, or that they must move house. Moreover, other developments adjacent to Canary Wharf are underway which could overload the DLR.

The Canary Wharf developer thus offered a £400 million contribution towards the construction of a second rail line, this time an extension of the Jubilee line to the City and West End and intercepting commuter rail lines from the south and west. No doubt over time many new Canary Wharf employees will relocate their homes from west to east London, but with construction of the Jubilee line this is no longer so necessary as travel times from the south western suburbs to Canary Wharf will be almost identical to travel times to other parts of the Central area.

High Density Residential Development
In the 1960s and 1970s several cities successfully encouraged high density residential development around suburban rail stations; the two pre-eminent examples are Toronto and Stockholm.

Beginning in the 1950s the Stockholm city government built several new towns on large vacant sites which had been purchased before the second World War. These were developed as medium and high density residential areas, with pedestrianised streets, and copied by British planners.

Toronto followed a different approach and followed rather the D.L. pattern of City policy to ensure comprehensive mixed-use developments around stations (e.g. Don Mills and Sheppard, Eglinton). Small commercial functions and protection of existing buildings have been maintained.

The main interest in the Toronto area, followed by the city council, has been in the people who have assembled the stands.

The city completed 1950 to 1960
second World War and "land banked". Vallingby and Farsta, with medium and high density apartments clustered around the Metro station with pedestrianised community centres were widely admired and copied by British new town planners.

Toronto followed a somewhat different model. The subway has followed rather than led suburban development; however it has been City policy to encourage private redevelopment of suitable areas around stations (see Figure 20.4). Depending upon the character of the surrounding community this has resulted in everything ranging from comprehensive mixed commercial and residential redevelopment (as at Sheppard, Eglinton and St Clair), high-density residential with only a small commercial element (High Park, Davisville), or in some cases protection of existing stable communities against any change.

The main instruments used have been official plan designation of an area, followed by granting of planning permission to private developers who have assembled suitable redevelopment sites on the open market. The city complements planning designation with construction of

![Fig. 20.4 Photo of Toronto](image)

Looking along the route of the Toronto Subway the underground stations can be easily identified by the clusters of commercial and residential development which has been encouraged, while protecting the surrounding stable residential neighbourhoods.
adequate infrastructure such as trunk sewers and water mains to support the uses set out in the official plan.

One can admire the success of the Toronto and Stockholm planning efforts, and unlike some other city building efforts of the 1960s these high density communities have, by and large, aged gracefully. However as paradigms for urban railway builders at the end of the 20th century they are probably of limited value. Most modern cities now have too much multi-family housing. Also it is much more difficult to assemble large sites on the open market, at least in residential areas. Community groups are more sophisticated and would not now tolerate some of the property assembly tactics used to dislodge "holdouts".

**Suburban Residential Development**

Beckton Park and Port Greenwich are two recent housing developments by British Gas plc in London (see Figure 14.3). Both are being built on former gas works adjacent to the River Thames. Both are being served by new rail lines to Central London.

Beckton Park, approximately 5 miles east of Central London, has been developed during the 1980s as a medium density residential area, mostly with clustered and linked terrace homes. There are already good road connections outwards to the suburban motorway system, but until 1993 the fastest link to central London is by express bus. With some 5,000 homes already sold and occupied, less than 500 passengers regularly ride the express bus each morning. It seems that commuting into Central London is unimportant to the residents of Beckton Park, presumably because there are plenty of other jobs in the area accessible by private car. Of course, once the Beckton rail link opens the area may become more attractive to central London workers, but it is unclear when or how this will be reflected in property values.

Beckton will be served by a rail extension funded almost entirely by government subsidy. The line was first proposed in 1981 and was finally approved for construction in 1989. With completion in 1993 it will have been a full decade from conception to completion, and so if the overall effect is to raise property values by, say, 20% this would be reflected in an average increase of less than 2% per year, barely discernable as property prices can fluctuate by 10% to 20% in one year. Although there was an attempt to recover some of the cost from property value increases, this has been abandoned as property values seem to have actually fallen since construction began on the line.

Port Greenwich is, as the crow flies, much closer to Central London and actually just across the river from Canary Wharf. Development there has proceeded more slowly because the local planning authority
has been less favourable, and the site is badly contaminated. However the main reason claimed for the delay is poor transport links. In fact the site is bisected by the Blackwall Tunnel, a high capacity route extending South to Dover and North to Docklands and the City. One can drive from Port Greenwich to Central London in 45 minutes, even in the morning peak hour. So the site is hardly inaccessible.

The truth is that, without other transport improvements, development of Port Greenwich would further overload existing road links precisely because the site is so accessible. This would be at the expense of existing commuters from suburbs further out. Currently in the morning peak there can be a two mile queue to enter the Blackwall Tunnel from the south. Port Greenwich residents would be in a position to join at the front of the queue.

For the Port Greenwich scheme, the Department of Transport and the local planning authority have insisted that British Gas make a substantial contribution towards the cost of an extension to the Jubilee Underground line, virtually as a precondition of planning permission. The Department of Transport, which is paying the bulk of the cost of the Jubilee line, actually threatened to route the line via Blackwall, thereby missing Port Greenwich, unless a contribution was forthcoming (see Figure 14.3). Whether this is good public policy, or fair and equitable is another matter.

Homeowners in Beckton Park are getting their rail line for free, while Port Greenwich will be paying £25 million. Of course this may be effectively paid out of reduced profits to British Gas, but given the cost of decontaminating the soil and building other necessary infrastructure such as roads, the result could well be to delay construction of the housing entirely. This, of course, will benefit nobody.

Involving Developers Early

It has already been noted how some systems, particularly new heavy rail systems in sprawling American cities, have actually been designed and built in a manner which discourages close integration with other urban development. A rail transit system is an artery of the City, but it can only function to its full potential if it is closely knitted into the city fabric.

Where a new rail line is being constructed within an already densely built-up part of the city, the sheer economics of property purchase will force designers to minimize land take and to provide entrances and structures of an appropriate scale. However when a new rail lines is built through undeveloped or under-developed land, particular care must be taken to ensure that the facilities are built in a manner which
will encourage the development of complementary uses. This can be best done in a “strong” property market by working directly with a specific developer, either one who already controls adjacent property or by entering directly into some sort of joint venture arrangement. British Rail has successfully applied the joint venture approach in the redevelopment of several central London rail terminals (e.g. Charing Cross), while Vancouver has negotiated transit corridors across development sites owned by others.

Where there is no immediate prospect of development, the transit system designer can best ensure compatibility with future development prospects by retaining an architect and planning consultant to develop hypothetical schemes, to determine the appropriate protection for integration with the railway. This approach has been used on many urban railway schemes particularly in the USA, but it is highly speculative and there is no guarantee that development will actually happen in the way anticipated.

The Potential for Developer Contributions

Clearly there can be a strong inter-relationship between urban rail construction and development, but how this is manifested in developer interest or contributions depends very much on specific circumstances both of the route, design, land ownership, and timing. Developers are in business to make money, and in most cities there are plenty of sites awaiting development which already have good transport available. Beckton Park was a viable housing site even without the rail line, although the prospect of the railway being built some day in the future may have added a slight fillip to sales. Rockefeller Centre did not begin construction until the Sixth Avenue subway was itself solidly committed and under construction. La Defense was a government-coordinated project which took more than three decades to fruition, with private investment only cautiously following government funding of road and rail construction; even today it is still incomplete.

In Toronto, Washington, and Hong Kong urban railway projects have recovered a significant share of capital costs from the sale and redevelopment of surplus lands and “air rights” over stations and depots. However the net profits, after allowing for carrying charges and costs, rarely recover more than the costs of property acquisition for the line as a whole.

Only in exceptional circumstances will a developer link its fortunes to a project which may have a time span of ten years or more from conception, through construction to commissioning (plus a large measure of uncertainty, at least at the beginning). Ten years is simply too long a time to wait for a return on investment, particularly when alternative investment opportunities are available, and there is usually no guarantee that the location at the end of the line will not prove to be a disappointment. It is only in cases where there is a clear understanding of the location and the development potential, and where the landowner does not interfere, that the developer will take on the financing and development responsibility.

Cases where landowners have insisted on full control or have refused to sell at any price have led to long delays and on occasions to the abandonment of development. It is often easier to build the line first, and then sell development rights later on, than to try and sell development rights first, and then build the rail line.
too long to interest property developers paying interest rates of 10% per year or more. In the specific circumstances of Canary Wharf, the rail project itself was quite small and could be built quickly while the development was massive and would necessarily take several years. So rail and property were, exceptionally, on a similar programme. Moreover the strength of the London property market, and release from onerous planning controls, created an exceptional opportunity.

If rail planners want to repeat the example of Canary Wharf, they need to shape their schemes specifically to do so. The routes need to be selected not only to relieve existing traffic flows, whether on streets or other railways, but also to open up strategic linkages to specific development sites. For Canary Wharf, it was essential that the Jubilee Extension linked into the West End and to the south London commuter rail lines. Other routes were studied which would have attracted similar traffic volumes but would not have offered the same strategic linkage; Canary Wharf would have become a "back office" district, without the ability to grow into a metropolitan centre on a par with the City and West End.

Schemes need to be designed to be implemented quickly. This does not imply careless haste either in construction or environmental impacts; indeed, quite the reverse. In a modern city one can only build a rail line if impacts on other properties are mitigated or compensated acceptably. The Jubilee line extension was deliberately routed through less-developed parts of South London, mostly in deep tunnel under an existing rail line, to minimize the likelihood of community opposition which would cause delays. Most construction work is actually being done from riverside sites so barges can be used rather than road haulage.

Cash Up Front or Taxes?
Ultimately, the only purpose of an urban passenger railway is to make the city function more efficiently. Developer contributions, where they arise, are a good market signal that a scheme is worthwhile, but there is a vast gap between this and suggesting that lines should be wholly or substantially funded by property development. Certainly the absence of any developer interest in a rail scheme should cast doubts upon its merits, but the absence of any cash contributions cannot in any way be taken as conclusive evidence that the scheme is not a worthwhile public investment.

Nor should the dispersion of benefits among a great many properties, all of whom will do their best to be "free riders", be seen negatively. If there are benefits, these will eventually be recaptured at least in part
through taxes, both from property and from incomes resulting from the
general increase in urban efficiency. Pursuit of private developer
contributions can be a valuable and potentially rewarding part of any
urban rail scheme; however, it should not become an obsession.

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Introduction
Appraisal is the process of planning and carrying out the activities without
the railways carrying the burden of the financial planning; at the railways
into account with other

The Approach
The approach is:
a). Project
b). Estimation
c). Intention
d). Analysis
e). Author
f). Post

Project Conduct
Many ideas are generated by brainstorming idea if .
formal ideas are considered. However, there is no company
However, there is no company in the original
railway

228